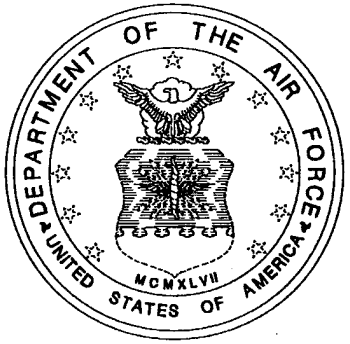
UNCLASSIFIED

DEPARTMENT OF THE AIR FORCE

SUPPORTING DATA FOR FISCAL YEAR 1997

RESEARCH, DEVELOPMENT, TEST AND EVALUATION

DESCRIPTIVE SUMMARIES



MARCH 1996

VOLUME II

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BUDGET JUSTIFICATION FOR PROGRAM ELEMENTS OF THE DEPARTMENT OF THE AIR FORCE RESEARCH AND DEVELOPMENT PROGRAM FY 1997 BUDGET ESTIMATES MARCH 1996

INTRODUCTION AND EXPLANATION OF CONTENTS

1. GENERAL: This document has been prepared to provide information on the United States Air Force (USAF) Research, Development, Test and Evaluation (RDT&E) program to Congressional committees during the hearings on the Fiscal Year 1997 Budget Estimates. This information is in addition to the testimony given by DoD witnesses.

a. Exhibits R-2 and R-3 provide narrative information for all RDT&E program elements and projects within the USAF FY97 RDT&E program except those listed in Vol III. The formats and contents of this document are in accordance with the guidelines and requirement of the Congressional committees insofar as possible.

b. The "Other Program Funding Summary" portion of the R-2 includes, in addition to RDT&E funds, Procurement funds and quantities, Military Construction appropriation funds on specific development programs, Operations and Maintenance appropriation funds where they are essential to the development effort described, and where appropriate, Department of Energy (DoE) costs.

c. There are no FY97 "Facilities Exhibits" that contain information on major improvement to and construction of government owned facilities funded by RDT&E.

2: CLASSIFICATION: All R-2 and R-3 exhibits contained in Volumes I and II are UNCLASSIFIED. Classified R-2 and R-3 exhibits are now contained in Volume III. Classified pages bear the appropriate security classification and classified data is identified by use of brackets []. A list of R-2 and R-3 exhibits not included in this submission (due to the level of security classification and necessity of special security clearances) is located in Vol III.

3. COMPARISON OF FISCAL YEARS 1996 AND 1997 DATA. A direct comparison of Fiscal Years 1996 and 1997 data shown in this document with corresponding data in the Descriptive Summaries dated February 1995 will reveal differences. The table below highlights the relationship of the FY97 budget structure to the FY96 Budget approved by Congress:

PE	TITLE	REMARKS
0101113F	B-52 Squadrons	Project 4493 is FY97 New Start.
0102412F	North Warning System (NWS)	Project 2710 completed in FY96.
0207129F	F-111 Squadrons	Project 3079 completed in FY96.
0207136F	Manned Destructive Suppression	Project 2671 is FY96 New Start. Project 4375 terminated in FY96. Project 4516 is FY96 Congressional add.
0207217F	Podded Reconnaissance System	Project 3652 is FY97 New Start.
0207268F	Aircraft Engine Component Improvement Program	New PE. FY96 and prior effort funded in PE 0604268F.
0207320F	Sensor Fused Weapon (SFW)	Project New Start in FY96 for Preplanned Product Improvement. FY 96 reclassification from PE 0604604F, project 1016 is pending.
0207325F	Joint Air-to-Surface Standoff Missile (JASSM)	New Start in FY96
0207431F	Combat Air Intellligence System Activities	New Start in FY97.
0207590F	Seek Eagle	Project 2784 transferred from PE 0604602F in FY96.
0207601F	USAF Wargaming and Simulation	Project 4474 transferred to PE 0605704, project 1010. Project 1011 is FY96 New Start
0303131F	Minimum Essential Emergency Communications	Transfers to project 4521 from PE 0603851, project 1024;

		PE 0604851F, project 13C4; PE 0101213F; and PE 0303131F, project 2832. Project 4521 (DIRECT) funded in project 2832 in FY96 and prior.
0303144F	Electromagnetic Compatibility Analysis Center	FY96 funding transferred from DISA for Joint Spectrum Center. Program returned to Air Force budget in FY97.
0303152F	World-Wide Military Command and Control Systems	Project 4485 was FY95 New Start. FY97 is first budget submission.
0303601F	Milstar Satellite Communications System (SPACE)	Project 2932 transferred from PE 0303606F in FY97 to project 2487.
0303606F	UHF Satellite Communications	Project 2932 effort and resources transferred to PE 0303601F, project 2487 in FY97.
0305145F	Arms Control Implementation	Project 4190 completed in FY96. Project 4520 is FY97 New Start.
0305164F	NAVSTAR Global Positioning System -- User Equip	Project 3028 effort related to Combat Survivor Evader Locator transferred to PE 0305176F.
0305176F	Combat Survivor Evader Locator	New PE in FY96. Project effort moved from PE 35164F, project 3028
0305906F	NCMC-TW/AA Systems	Project 4409 was FY95 New Start. FY97 is first budget submission for the project.
0305910F	SPACETRACK (SPACE)	Project 4239 completed FY96. Project 4241 is FY96 Congressional add.

0308610F	Information Management Automation Program	New Start in FY96 . Congress transferred funds from Operations and Maintenance.
0401119F	C-5 Airlift Squadrons	Project 4523 is FY96 New Start. Projects 4377 and 4495 are FY97 New Starts.
0401130F	C-17 Aircraft	Effort and resources transferred from PE 0604231F to project 2569 in FY97. Included jointly on PE 0604231F descriptive summary.
0401214F	Air Cargo Materiel Handling	New Start in FY97. Projects 5120 and 5150 initiated for effort transferred from PE 0604704F, project 3852.
0401218F	KC-135s	Project 4403 is FY97 New Start.
0601102F	Defense Research Sciences	Starting in FY96, project 06SR funding is eliminated. Infrastructure costs and civilian salaries have been transferred to each technical project.
0602102F	Materials	Starting in FY96, project 06ML funding is eliminated. Infrastructure costs and civilian salaries have been transferred to each technical project.
0602201F	Aerospace Flight Dynamics	Starting in FY96, project 06FS funding is eliminated. Infrastructure costs and civilian salaries have been transferred to each technical project.
0602202F	Armstrong Lab Exploratory Development	In FY96, technical projects/funding from PEs 0602205F and 0602206F were transferred to PE 0602202F, projects 1121, 6302, 7231, 7719, and 7930. Projects in source PEs were eliminated.

		Starting in FY96, project 06MD funding is eliminated. Infrastructure costs and civilian salaries have been transferred to each technical project.
0602203F	Aerospace Propulsion	Starting in FY96, project 06PP funding is eliminated. Infrastructure costs and civilian salaries have been transferred to each technical project.
0602204F	Aerospace Avionics	Starting in FY96, project 06AA funding is eliminated. Infrastructure costs and civilian salaries have been transferred to each technical project.
0602601F	Phillips Lab Exploratory Development	Starting in FY96, project 06WL funding is eliminated. Infrastructure costs and civilian salaries have been transferred to each technical project.
0602602F	Conventional Munitions	Starting in FY96, project 06AL funding is eliminated. Infrastructure costs and civilian salaries have been transferred to each technical project. Project 2567 funding for included in project 2502.
0602702F	Command Control and Communications	Starting in FY96, project 06RA funding is eliminated. Infrastructure costs and civilian salaries have been transferred to each technical project.
0603108F	Integrated Data Systems	FY95 New Start. FY96 Congressional add in PE 0603728F. FY97 is first budget submission.
0603205F	Flight Vehicle Technology	Effort transferred from project 2508 to project 2978.

0603238F	Global Surveillance and Communication Technology	Effort transferred from project 4217 to project 4216.
0603401F	Advanced Spacecraft Technology	Project 0003 is FY96 Congressional add.
0603432F	Polar Adjunct (SPACE)	New Start in FY95. FY97 is first budget submission.
0603771F	Industrial Preparedness Manufacturing Technology	Transferred to PE 0708011F in FY96.
0603790F	NATO Research and Development	New Start in FY97. Transfer to Project NATO from PE 0603790D.
0603851F	Intercontinental Ballistic Missile -- Dem/Val	Effort in project 1024 related to DIRECT transferred to PE 0303131F, project 4521.
0603854F	Global Broadcast Service (GBS)	New Start in FY96
0603855F	Space Architect Office	New Start in FY96
0604201F	Aircraft Avionics Equipment Development	Project 4017 terminated in FY96.
0604231F	C-17 Program	Transferring to PE 0401130F in FY97. Included jointly on descriptive summary with PE 0401130F.
0604249F	Night/Precision Attack	Project 2693 terminated in FY96.
0604268F	Aircraft Engine Component Improvement Program	Transferred to PE 0207268F in FY97.
0604270F	EW Development	Project 3945 is FY97 New Start to combine effort from multiple formerly classified programs.
0604441F	Space Based Infrared Architecture -- EMD (SPACE)	Project 0002 completed in FY96.

0604602F	Armament/Ordnance Development	Project 2784 transferred to PE 0207590F in FY96.
0604604F	Submunitions	Project 1016 will be reclassified to PE 0207320F in FY96.
0604704F	Common Support Equip Dev	Project 2479 completed in FY96. Project 3852 transferred to PE 0401214F, projects 5120 and 5150 in FY97.
0604706F	Life Support Systems	Project 3812 is FY96 New Start.
0604740F	Computer Resource Technology Transition	Project 2524 completed in FY96.
0604851F	Intercontinental Ballistic Missile -- EMD	Project 13C4 created in FY97 to consolidate related efforts. The portion related to DIRECT transferred to PE 0303131F, project 4521. Project 133B completed in FY96.
0605704F	Theater Air Defense BMC4I	New Start in FY96. Funds transferred to project 1010 from PE 0207601F, project 4474.
0605708F	Navigation/Radar/Sled Track Test Support	FY96 Congressional add transferred to PE 0604759, project 2904.
0708011F	Industrial Preparedness	Transferred from PE 603771F in FY96.
1001018F	NATO Joint STARS	Project 0002 initiated for FY95 and FY96 based on Congressional direction.

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24	0603245F	Flight Vehicle Technology Integration	360
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55	0603851F	ICBM Modernization Dem/Val	619
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195	0308610F	Information Management Automation Program 3	1053
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179	0305137F	National Airspace System (NAS)	1466
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53	0603790F	NATO Cooperative Research & Development	598
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191	0305906F	NCMC-TW/AA Systems	1541
71	0604249F	Night Precision Attack	816
129	0102412F	North Warning System	1207
62	0604222F	Nuclear Weapons Support	694
194	0305913F	Nudet Detection System (Space)	1592
21	0603227F	Personnel, Training, and Simulation Technology	333
10	0602601F	Phillips Laboratory Exploratory Development	174
138	0207217F	Podded Reconnaissance System	1282
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142	0207320F	Sensor Fuzed Weapon (SFW) (comprises R-1 Line Nos: 81 and 142) (Single R-2 covers this PE and PE 0604604F, Submunitions, R-1 Line No. 81)	898
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604321F Combat Intelligence System
PROJECT NO. AND NAME 2758 Combat Intelligence System	

COST ($ In Thousands)	FY 1995 Actual	1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2758 Combat Intelligence System	8,313	3,617	1,943	1,625	995	1,024	1,038	0	TBD

(U) Note: AF will request reclassification of RDT&E funds in PE 0207431F.

(U) A. Mission Description and Budget Item Justification

(U) Combat Intelligence System (CIS) is the single, standard Air Force intelligence automation system optimizing both component and unit-level intelligence functions to provide warfighters with the most accurate and timely intelligence data available. CIS is the core capability for automating the receipt, correlation, and dissemination of intelligence information to a variety of intelligence and operational systems supporting combat planning and execution. It provides an automated capability at the component and unit levels to rapidly receive and process All-Source intelligence data to support Contingency Theater Automated Planning System (CTAPS) as the CIS builds and maintains in-theater situational awareness while deploying to the theater and provides indications and warning (I&W) support upon arrival. CIS provides the capability to receive all source intelligence near-real-time from national, theater, tactical reconnaissance, and intelligence functions. CIS is electronically interoperable and compatible with other intelligence systems to provide an integrated system capable of intelligence support to warfighters, decision makers, battle planners and mission planners.

(U) The category of research being performed in this program element is Engineering and Manufacturing Development because it is developing new and upgrading current capability as the intelligence segment to Theater Battle Management Core Systems (TBMCS)

(U) Acquisition Approach: Full and open competition leading to a cost plus award fee contract.

(U) FY 1995

- (U) $1,575 Implement Special Compartmented Information (SCI) level correlation capability and begin to enhance capability.
- (U) $4,688 Continue integrating upgrades to CIS including mapping, imagery, multimedia, and air/ground situations.
- (U) $2,050 Begin CIS software development under TBMCS.
- (U) $8,313 Total

(U) FY 1996

- (U) $ 588 Complete SCI level correlation enhancements.
- (U) $2,761 Continue CIS software development under TBMCS to include targeting, damage assessment, and mission reporting.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604321F Combat Intelligence System
PROJECT NO. AND NAME 2758 Combat Intelligence System	

- (U) $ 268 Conduct studies for future CIS intelligence interoperability with Global Command and Control System.
- (U) $3,617 Total

(U) FY 1997

- (U) $1,404 Continue software development under TBMCS.
- (U) $ 432 Implement results of studies into CIS software under TBMCS.
- (U) $ 107 Continue studies for CIS intelligence interoperability.
- (U) $1,943 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	8,476	3,938	2,035	TBD
(U) Appropriated Value	8,666	3,938		
(U) Adjustments to Budget since FY96 PB				
a. General Congressional reduction	-190	-160		
b. SBIR	-161	-81		
c. Omnibus and Other Above Threshold Reprogrammings		-80		
d. Below Threshold Reprogramming	-2			
(U) Adjustment to Budget Years Since FY 96 PB			-92	
(U) Current Budget Submit/President's Budget	8,313	3,617	1,943	TBD

(U) Change Summary Explanation:

Funding: FY97 reduction due to Operations & Maintenance RDT&E reduction.

Schedule: Not Applicable

Technical: Not Applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604321F Combat Intelligence System

PROJECT NO. AND NAME: 2758 Combat Intelligence System

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Complete	Total Cost
(U) RDT&E, PE 0207431F, Combat Air Intelligence System (CAIS)	0	0	7,749	6,966	5,194	4,431	3,581	Cont	TBD
(U) Other Procurement, PE 0207431F, CAIS	5,406	1,973	2,269	1,976	1,204	1,210	1,192	Cont	TBD
(U) Other Procurement, PE 0207414F, Combat Intelligence System (Proc)	17,596	9,114	9,716	8,705	5,264	5,391	5,511	Cont	TBD

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Formal Request for Proposal	X											
(U) CIS 1.1 Release			X									
(U) Contract Award				X								
(U) Development Test & Evaluation (DT&E) Start							X					
(U) DT&E Complete for Software Increment (S/W) #1								X				
(U) Initial Operational Test & Evaluation (IOT&E) Start								X				
(U) IOT&E Complete for S/W #1									X			
(U) Version Release S/W #1									X			
(U) Initial Operational Capability											X	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604321F Combat Intelligence System
PROJECT NO. AND NAME 2758 Combat Intelligence System	

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Software Development	5,425	2,577	1,132
(U) Test and Evaluation	143	116	106
(U) Program Management Support	968	297	259
(U) Travel	242	181	130
(U) Government Engineering Support	203	251	201
(U) System Engineering Support	743	195	115
(U) Miscellaneous	327		
(U) PBD Reductions	262		
(U) Total	8,313	3,617	1,943

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Total Program
Product Development Organizations									
BTG, Inc F19628-92-D0005	SS/CPAF	Sep 92	3,154	3,154		1,575	588		3,101
Loral Cmd & Ctrl Systems and various others F19628-95-C0143	SS/CPAF	Oct 95	TBD	TBD		4,884	2,421	1,367	TBD

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604321F Combat Intelligence System

PROJECT NO. AND NAME: 2758 Combat Intelligence System

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Total Program
Support and Management Organizations									
TEMS	Ongoing					743	195	211	TBD
Various Contractors	Ongoing					968	297	259	TBD
Test and Evaluation Organizations									
Test Support	Ongoing					143	116	106	TBD

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property: Not Applicable

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Total Program
Subtotal Product Development				3,240	6,459	3,009	1,367	TBD
Subtotal Support and Management				2,271	1,711	492	470	TBD
Subtotal Test and Evaluation				87	143	116	106	TBD
Total Project				5,598	8,313	3,617	1,943	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604441F Space Based IR Arch (EMD) (Space)

COST (*$ In Thousands*)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	112,981	162,276	173,290	300,155	540,530	631,291	656,151	Continuing	Continuing
3616 SBIRS High Element EMD	97,681	153,178	173,290	300,155	540,530	631,291	656,151	Continuing	Continuing
0002 Miniature Sensor Technology Integration (MSTI)	15,300	9,098	0	0	0	0	0	0	24,398

(U) **A. Mission Description and Budget Item Justification**

(U) The purpose is to develop a system to provide increased performance to meet requirements in US Space Command's Capstone Requirements Document. The system's primary mission is to provide initial warning of a ballistic missile attack on the US, its deployed forces or its allies. The Space-Based InfraRed System (SBIRS) will incorporate new technologies that would enhance detection, improve reporting of ICBM, SLBM and tactical ballistic missiles, and provide critical mid-course tracking and discrimination data for national and theater missile defense. The system will consist of satellites in Geosynchronous Orbits (GEO), Highly Elliptical Orbits (HEO) and Low Earth Orbits (LEO) and an integrated, centralized ground station serving all space elements of the SBIRS system, as well as the Defense Support Program (DSP). This Program Element funds SBIRS Engineering and Manufacturing Development (EMD) activities, and is therefore assigned to Budget Activity Research Category Engineering and Manufacturing Development. Funding is also provided in FY95 and FY96 for the Miniature Sensor Technology Integration (MSTI) and Cobra Brass (CB) programs. Funding for the SBIRS program is also provided by PE #603441F and PE #305915F.

(U) **Acquisition Strategy:**

(U) The SBIRS program is a lead program for acquisition streamlining. Program documentation has been consolidated into a single document, the Single Acquisition and Management Plan (SAMP). The pre-EMD contracts were competed in a full and open competition. Two contracts were awarded to Lockheed/Loral/Aerojet and Hughes/TRW for the pre-EMD phase, and a downselect to a single contractor is planned for the EMD phase.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604441F Space Based IR Arch (EMD) (Space)

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996*	FY 1997	Total Cost
(U) Previous President's Budget	112,981	152,219	198,982	Continuing
(U) Appropriated Value	104,000	172,219		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	- 1,864	-4,048		
b. SBIR	-2,155	-3779		
c. BPAC Realignment	13,000			
d. Omnibus or Other Above Threshold Reprogram		-2116		
(U) Adjustments to Budget Years Since FY96 PB			- 25,692	
(U) Current Budget Submit/President's Budget	112,981	162,276	173,290	Continuing

(U) Change Summary Explanation:

Funding: Adjustments to Budget Years Since FY96 PB: In FY97, a $15,400 decrease due to a transfer of funds for the Mission Control Station (MCS) into the proper account (Military Construction), a $2,000 decrease due to reductions in phenomenology studies cut, a $630 decrease for Operations & Maintenance support, and a $7,301decrease for inflation savings. In addition, $19,895 transferred from procurement by Congress and moved into RDT&E in FY96.

* The FY96 PB amount does not reflect funding reductions that are reserved for other DoD reprogramming needs ($1,799).

Schedule: Not Applicable.

Technical: Not Applicable.

(U) **C. Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Complete	Total Cost
(U) Other Procurement			25,939	41,548	19,865	9,704	11,123	Continuing	Continuing
(U) Operations & Maintenance				16,949	15,952	16,947	16,945	Continuing	Continuing

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604441F Space Based IR Arch (EMD) (Space)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Complete	Total Cost

Related RDT&E:

(U) PE #603441F - Space Based InfraRed System - Dem/Val
(U) PE #305911F - Defense Support Program (DSP)
(U) PE #603216C - TALON SHIELD (BMDO Advanced Development)

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) DRB Architecture Approval												
(U) DAE Program Review		X										
(U) RFP Release		X										
(U) Pre-EMD Contract Award				X								
(U) System Requirements Review							X					
(U) System Functional Review								X				
(U) DAE Program Review								X				
(U) EMD Authority To Proceed (ATP)									X			
(U) *Other Events Beyond Budget Years*												
(U) PDR (SBIR Consolidated Ground)		1st Qtr FY98										
(U) PDR (HIGH Space Segment)		2nd Qtr FY98										
(U) Consolidated Grnd IOC for DSP		4th Qtr FY99										
(U) Consolidated Grnd IOC for HIGH		1st Qtr FY01										
(U) First Satellite Delivery		2nd Qtr FY01										
(U) First GEO Launch		FY02										
(U) First HEO Launch		FY02										

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604441F Space Based IR Arch (EMD) (Space)

PROJECT NO. AND NAME: 3616 SBIRS High Element EMD

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3616 SBIRS High Element EMD	97,681	153,178	173,290	300,155	540,530	631,291	656,151	Continuing	Continuing

(U) **A. Mission Description and Budget Item Justification**

(U) The purpose is to develop a system to provide increased performance to meet requirements in US Space Command's Capstone Requirements Document. The system's primary mission is to provide initial warning of a ballistic missile attack on the US, its deployed forces or its allies. The Space-Based InfraRed System (SBIRS) will incorporate new technologies that would enhance detection, improve reporting of ICBM. SLBM and tactical ballistic missiles, and provide critical mid-course tracking and discrimination data for national and theater missile defense. The system will consist of satellites in Geosynchronous Orbits (GEO), Highly Elliptical Orbits(HEO) and Low Earth Orbits (LEO) and an integrated, centralized ground station serving all space elements of the SBIRS system, as well as the Defense Support Program (DSP). This Program Element funds SBIRS Engineering and Manufacturing Development (EMD) activities. Funding for the SBIRS program is also provided by PE #603441F and PE #305915F.

(U) FY 1995

- (U) $46,000 Award Pre-EMD contracts for Space and Ground segment development
- (U) $13,300 Begin Space Based InfraRed technology and phenomenology projects
- (U) Defense Acquisition Executive (DAE) Program Review (Feb 95)
- (U) $15,381 Continue Program Office activities
- (U) RFP Release for Pre-EMD phase (Mar 95)
- (U) Contract Award (Aug 95)
- (U) $10,000 Continue Cobra Brass Project
- (U) $13,000 MSTI funds moved from BPAC 3616 to 0002 within this PE
- (U) $97,681 Total

(U) FY 1996

- (U) $107,700 Continue Pre-EMD contracts for Space and Ground segment Development
- (U) $21,200 Continue Space Based InfraRed technology and phenomenology projects
- (U) DAE Program Review (Jun 96) for EMD Phase
- (U) $22,200 Continue Program Office activities
- (U) Source Selection for down-select for EMD Phase (Jun 96)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604441F Space Based IR Arch (EMD) (Space)
PROJECT NO. AND NAME 3616 SBIRS High Element EMD	

- (U) $2,078 MSTI funds to be moved from BPAC 3616 to 0002 within this PE
- (U) $153,178 Total

(U) FY 1997
- (U) $141,500 Initiate EMD contracts for Space and Ground segment Development
- (U) $19,190 Continue Program Office activities
- (U) $12,600 Continue Space Based InfraRed technology and phenomenology projects
- (U) $173,290 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	102,136	152,219	198,982	Continuing
(U) Appropriated Value	104,000	172,219		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	- 1,864	-3746		
b. SBIR	- 2,155	-3779		
c. Omnibus or Above Threshold Reprogramming		-2116		
d. BPAC Realignment (1)	13,000			
e. BPAC Realignment (2)	-15,300	-9400		
(U) Adjustments to Budget Years Since FY96 PB			- 25,692	
(U) Current Budget Submit/President's Budget	97,681	153,178	173,290	Continuing

(U) Change Summary Explanation:

Funding: Adjustments to Budget Years Since FY96 PB: In FY97, a $15,400 decrease due to a transfer of funds for the Mission Control Station (MCS) into the proper account (Military Construction), a $2,000 decrease due to reductions in phenomenology studies, a $792 decrease for Operations & Maintenance support, and a $7,500 decrease for inflation savings.

Schedule: Not Applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604441F Space Based IR Arch (EMD) (Space)
PROJECT NO. AND NAME 3616 SBIRS High Element EMD	

Technical: Not Applicable.

(U) **C. Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Complete	Total Cost
(U) Other Procurement			25,939	41,548	19,865	9,704	11,123	Continuing	Continuing
(U) Operations & Maintenance				16,949	15,952	16,947	16,945	Continuing	Continuing

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) DRB Architecture Approval												
(U) DAE Program Review		X										
(U) RFP Release		X										
(U) Pre-EMD Contract Award				X								
(U) System Requirements Review							X					
(U) System Functional Review								X				
(U) DAE Program Review								X				
(U) EMD Authority To Proceed (ATP)									X			
(U) *Other Events Beyond Budget Years*												
(U) PDR (SBIR Consolidated Ground)		1st Qtr FY98										
(U) PDR (HIGH Space Segment)		2nd Qtr FY98										
(U) Consolidated Grnd IOC for DSP		2nd Qtr FY99										
(U) Consolidated Grnd IOC for HIGH		1st Qtr FY01										
(U) First Satellite Delivery		2nd Qtr FY01										
(U) First GEO Launch		FY02										
(U) First HEO Launch		FY02										

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604441F Space Based IR Arch (EMD) (Space)
PROJECT NO. AND NAME 3616 SBIRS High Element EMD	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Pre-EMD Contract	46,000	107,700	0
(U) EMD Contract	0	0	141,500
(U) Technology	5,000	10,800	6,600
(U) Phenomenology	8,300	10,400	6,000
(U) Cobra Brass	10,000	0	0
(U) System Program Office Support	8,361	11,000	7,960
(U) Aerospace Corp	7,020	11,200	11,230
(U) Adjustment for BPAC Realignment	13,000	2,078	
(U) Total	97,681	153,178	173,290

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
TBD(Pre-EMD)	C/CPFF	Jul 95	TBD	161,000	0	46,000	107,700			153,700
TBD(EMD)	C/CPAF	Oct 96	TBD	TBD	0	0	0	141,500	Cont	Cont
TBD(Technology)	TBD	Sep 95	TBD	27,500	0	5,000	10,800	6,600	0	22,400
TBD(Phenomena)	TBD	Sep 95	TBD	26,800	0	8,300	10,400	6,000	0	24,700

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604441F Space Based IR Arch (EMD) (Space)

PROJECT NO. AND NAME: 3616 SBIRS High Element EMD

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Sandia National Laboratory (Cobra Brass)	TBD	Sep 95	TBD	10,000	0	10,000	0	0	0	10,000
Support and Management Organizations										
Aerospace Corp	MORD	Sep 95			0	7,020	11,200	11,230	Cont	Cont
Prgm Mgmt Supt	Various	Sep 95			0	8,361	11,000	7,960	Cont	Cont
Test and Evaluation Organizations										
Not Applicable.										
Subtotal Product Development						128,900	154,100	Cont	Cont	
Subtotal Support and Management						22,200	19,190	Cont	Cont	
Subtotal Test and Evaluation										
Adjustment for BPAC Realignment						2,078				
Total Project						153,178	173,290	Cont	Cont	

(U) B. **Budget Acquisition History and Planning Information Continued ($ in Thousands)**

Government Furnished Property: Not Applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604441F Space Based IR Arch (EMD) (Space)

PROJECT NO. AND NAME: 0002 Miniature Sensor Technology Integration (MSTI)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
0002 Miniature Sensor Technology Integration (MSTI)	15,300	9,098	0	0	0	0	0	0	24,398

*NOTE: FY95 funding for Project 0002 (MSTI) includes an internal administrative reprogramming of $13,000 from PE #603402F and Internal Reprogramming ($15,300) from project 3616 to this 0002 project.

(U) A. Mission Description and Budget Item Justification

(U) The Miniature Sensor Technology Integration (MSTI) program will provide phenomenology data for the SBIRS program. In FY95, an additional $13,000 was appropriated and was transferred from PE #603402F.

(U) FY 1995

- (U) $14,780 Complete payload calibration and spacecraft test
- (U) $4,950 Perform launch integration and operations
- (U) $8,570 Perform on-orbit operations and program support
- (U) $-13,000 Funds moved from BPAC 3616 to 0002 within this PE
- (U) $15,300 Total

(U) FY 1996

- (U) $11,176 Perform on-orbit operations and program support
- (U) $-2,078 Funds to be moved from BPAC 3616 to 0002 within this PE
- (U) $9,098 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	9,600	0	
(U) Appropriated Value	0	9,600		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions		-302		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604441F Space Based IR Arch (EMD) (Space)
PROJECT NO. AND NAME 0002 Miniature Sensor Technology Integration (MSTI)	

	FY 1995	FY 1996	FY 1997	Total Cost
b. SBIR				
c. Internal Realignment Reprogramming	15,300	9,400		
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY96 PB				
(U) Current Budget Submit/President's Budget	15,300	9,098	0	24,398

* Note: $13,000 appropriated in PE 63402F was realigned to PE 64441F and was used for the purpose for which it was appropriated.

(U) Change Summary Explanation:

Funding: FY95 Above Threshold Reprogramming reflects realignment of $15,300 to this project from project 3616. In addition, $13,000 was appropriated for MSTI in FY95 and realigned to this PE from 63402F. FY96 - $1,700 was BTR to MSTI to support MSTI launch slip

Schedule: Not Applicable.

Technical: Not Applicable.

(U) **C. Other Program Funding Summary ($ in Thousands)**

Not Applicable.

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Spacecraft Complete				X								
(U) MSTI Spacecraft Launch							X					
(U) On-orbit Operations								X	X			

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604441F Space Based IR Arch (EMD) (Space)
PROJECT NO. AND NAME 0002 Miniature Sensor Technology Integration (MSTI)	

(U) **A. Project Cost Breakdown ($000 in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) MSTI Spacecraft	14,780		
(U) Launch	4,950		
(U) On-orbit Ops and Support	8,570	11,176	
(U) Total planned to be available	28,300	11,176	0
(U) Adjustments for BPAC Realignment	-13,000	-2,078	
(U) Subtotal that equals Data Base amount	15,300	9,098	

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Spectrum Astro	CPAF	Sep 95	39,400	39,400	0	28,300	11,176	0	0	39,476
BPAC Adjustment	*n/a*	*n/a*				*-13,000*	*-2,078*			

Support and Management Organizations
Not Applicable.

Test and Evaluation Organizations
Not Applicable.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604441F Space Based IR Arch (EMD) (Space)
PROJECT NO. AND NAME 0002 Miniature Sensor Technology Integration (MSTI)	

(U) B. Budget Acquisition History and Planning Information Continued ($000 in Thousands)

Government Furnished Property:
Not Applicable.

Contractor or Government Performing Activity	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Subtotal Product Development					28,300	11,176	0	0	39,476
Subtotal Support and Management									
Subtotal Test and Evaluation									
Adjustments for BPAC Raalignment					-13,000	-2,078			-15,078
Total Project					15,3000	9,098			24,398

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604479F Milstar LDR/MDR Sat Comm (Space)
PROJECT NO. AND NAME 5010 Milstar Sat Comm Sys	

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
5010 Milstar Sat Comm Sys	581,242	541,869	700,278	672,577	580,005	342,265	187,973	291,900	9,699,619

(U) A. Mission Description and Budget Item Justification

Milstar is a joint service program to develop and acquire extremely high frequency (EHF) satellites, satellite mission control segment, and new or modified Army, Navy, and Air Force communication terminals for survivable, jam-resistant, world-wide, secure communications for the strategic and tactical warfighter in all levels of conflict. This document addresses the space and mission control segments of the Milstar program. This program is in Budget Activity Research Category Engineering and Manufacturing Development, based on Defense Acquisition Board and Defense Planning Guidance direction to fabricate and launch Satellites 3M through 6.

(U) FY 1995

- (U) $116,423 Milstar I
- (U) Completed Milstar I Phase I IOT&E Dedicated Asset Test (DAT).
- (U) Delivered Satellite 2 and placed in storage.
- (U) Completed Milstar I Phase I IOT&E.
- (U) Implemented ECPs as needed based on operational requirement.
- (U) Transitioned from MCE to Satellite Mission Control Subsystem (SMCS).
- (U) Continued contractor support for MCS software sustainment for mission planning and satellite operations.
- (U) Developed operator training equipment.
- (U) $357,319 Milstar II
- (U) Continued MDR payload manufacturing for Satellites 3M.
- (U) Completed bus component manufacturing for Satellite 3M.
- (U) Completed MDR System CDR.
- (U) Continued bus component manufacturing for Satellite 4.
- (U) Continued LDR integration and test for Satellite 3M.
- (U) Continued LDR payload manufacturing on Satellite 4.
- (U) Awarded contract to start acquisition of Satellites 5 and 6.
- (U) Started LDR unit build, MDR payload manufacturing, and bus component manufacturing for Satellites 5 and 6.
- (U) Started Milstar II upgrade of MCS software for mission planning.
- (U) $107,500 Other Government Costs
- (U) $581,242 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604479F Milstar LDR/MDR Sat Comm (Space)
PROJECT NO. AND NAME 5010 Milstar Sat Comm Sys	

(U) FY 1996

–	(U) $60,000	Milstar I
–	(U)	Launched and performed on-orbit checkout of Satellite 2.
–	(U)	Continue to support on-orbit operations for Satellite 1.
–	(U)	Start Milstar I Phase II IOT&E.
–	(U)	Implement ECPs as needed based on operational requirement.
–	(U)	Develop and implement modifications to SMCS to enhance mission control operations.
–	(U)	Continue contractor support for MCS software sustainment for mission planning and satellite operations.
–	(U)	Develop and field operator training equipment.
–	(U) $431,469	Milstar II
–	(U)	Complete MDR payload manufacturing on Satellite 3M, and start MDR integration and test on Satellite 3M.
–	(U)	Start MDR payload manufacturing for Satellite 4.
–	(U)	Start and complete bus integration and test for Satellite 3M.
–	(U)	Continue bus component manufacturing for Satellite 4.
–	(U)	Complete LDR integration and test on Satellite 3M, and start LDR integration and test on Satellite 4.
–	(U)	Complete LDR payload manufacturing on Satellite 4.
–	(U)	Continue LDR unit build, MDR payload manufacturing, and bus component manufacturing for Satellites 5 and 6.
–	(U)	Continue Milstar II upgrade of MCS software for mission planning.
–	(U) $50,400	Other Government Costs
–	(U) $541,869	Total

(U) FY 1997

–	(U) $56,500	Milstar I
–	(U)	Continue to support on-orbit operations for Satellites 1 and 2.
–	(U)	Complete Milstar I Phase II IOT&E.
–	(U)	Implement ECPs as needed based on operational requirement.
–	(U)	Continue to implement modifications to MCS to enhance mission control operations.
–	(U)	Transition to organic support for MCS software sustainment for mission planning and satellite operations.
–	(U)	Develop and field operator training equipment.
–	(U) $594,578	Milstar II

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604479F Milstar LDR/MDR Sat Comm (Space)
PROJECT NO. AND NAME 5010 Milstar Sat Comm Sys	

- (U) Complete MDR payload manufacturing on Satellite 4, and start MDR integration and test on Satellite 4.
- (U) Complete bus component manufacturing on Satellite 4.
- (U) Continue LDR integration and test on Satellite 4.
- (U) Continue LDR unit build, MDR payload manufacturing, and bus component manufacturing for Satellites 5 and 6.
- (U) Complete MDR payload integration and test on Satellite 3M.
- (U) Start satellite integration and test on Satellite 3M.
- (U) Continue Milstar II upgrade of MCS software for mission planning
- (U) $49,200 Other Government Costs
- (U) $700,278 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Previous President's Budget	607,248	649,666	744,990
(U) Appropriated Value	607,248	577,666	
(U) Adjustments to Appropriated Value			
a. Congressional General Reductions	-10,238	-14,225	
b. SBIR	-11,337	-15,062	
c. Omnibus and Other Above Threshold Reprogram (Bosnia)	0	-6,510	
d. Below Threshold Reprogram	-4,431		
(U) Adjustments to Budget Years Since FY96 PB		0	-44,712
(U) Current Budget Submit	581,242	541,869	700,278

(U) Change Summary Explanation:

Funding: Savings realized across the FYDP due to final negotiations for satellites 5 and 6 contract and acquisition reform initiatives. FY96 appropriated value represents implementation of the special termination cost clause on the Milstar contract. Eliminated factory support for test, identification, and resolution of major anomalies to on-orbit satellites.

Schedule: Satellite 2 launch delayed to 6 Nov 95 due to Titan IV vehicle processing issues.
Technical: None.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604479F Milstar LDR/MDR Sat Comm (Space)
PROJECT NO. AND NAME 5010 Milstar Sat Comm Sys	

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Complete	Total Cost
(U) Not Applicable.$0									

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Milstar I (LDR Only)												
(U) Satellite 2 Launch					*							
(U) IOC I										x		
(U) Milstar I (LDR) OT&E, Phase I				*								
(U) Milstar I (LDR) OT&E, Phase II								x				
(U) Milstar II (LDR/MDR)												
(U) Milstar II System CDR	*											
(U) Contract Award for Sats 5 & 6	*											
(U) Satellite 3M Launch - 1QFY99												
(U) Satellite 4 Launch - 1QFY00												
(U) Satellite 5 Launch - 1QFY01												
(U) Satellite 6 Launch - 1QFY02												
(U) MDR IOT&E - 2QFY00												
(U) IOC II - 1QFY01												
(U) FOC - 1QFY05												

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604479F Milstar LDR/MDR Sat Comm (Space)
PROJECT NO. AND NAME 5010 Milstar Sat Comm Sys	

(U) A. **Project Cost Breakdown ($0 in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Satellites 1/2/3L	116,423	60,000	56,500
(U) Satellite 3M	84,796	99,280	97,074
(U) Satellite 4	171,268	217,246	244,202
(U) Satellite 5	74,500	82,071	147,994
(U) Satellite 6	26,755	32,872	105,308
(U) Other Government Costs	107,500	50,400	49,200
(U) Total	581,242	541,869	700,278

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604479F Milstar LDR/MDR Sat Comm (Space)
PROJECT NO. AND NAME 5010 Milstar Sat Comm Sys	

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
LMSC (Milstar I) [Sats 1,2,3L]	C/CPAF	Jun 83	2,181,587*	2,181,587*	4,554,429	116,423	60,000	56,500	17,500	4,804,852
LMSC (Milstar II) [Sats 3M, 4, 5, 6]	SS/CPAF	Oct 92/ Nov 94	3,355,600	3,355,600	883,635	357,319	431,469	594,578	1,667,020	3,934,021
Support and Management Organizations										
Aerospace	SS/CPFF/AF	Various			77,286	20,150	15,334	14,682	145,337	272,789
LINCOM	SS/CPAF	Various			9,069	4,930	4,693	3,743	2,824	25,259
Lincoln Lab	SS/MIPR	Various			5,885	11,900	2,704	3,030	5,730	29,249
Ogden	SS/MIPR	Various			5,505	1,550	1,510	1,704	17,709	27,978
Logicon	SS/CPFF	Various			6,264	1,333	757	779	13,155	22,288
ANSER	CPFF	Feb 91			2,378	1,162	1,109	0	0	4,649
Miscellaneous					257,059	66,475	24,293	25,262	205,445	578,534

Test and Evaluation Organizations

None.

Note: Due to the overrun on the Milstar I contract, an Over Target Baseline (OTB) was established in Jan 91 to provide a credible cost performance baseline for the remaining contractual effort. The EAC reflects the unclassified cost of remaining work scheduled after the Jan 91 rebaseline. The total program value includes all unclassified prior funding (approx $4B in FY82 - 92), all unclassified fees & incentives, and ECPs not yet definitized.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604479F Milstar LDR/MDR Sat Comm (Space)
PROJECT NO. AND NAME 5010 Milstar Sat Comm Sys	

(U) B. Budget Acquisition History and Planning Information Continued ($0 in Thousands)

Government Furnished Property:

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Property									
None.									
Support and Management Property									
None.									
Test and Evaluation Property									
None.									
Subtotal Product Development				5,438,064	473,742	491,469	651,078	1,684,520	8,738,873
Subtotal Support and Management				363,446	107,500	50,400	49,200	390,200	960,746
Subtotal Test and Evaluation									
Total Project				5,801,501	581,242	541,869	700,278	2,074,720	9,699,619

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604480F Global Positioning System Block IIF (Space)
PROJECT NO. AND NAME 0005 NAVSTAR GPS BLOCK IIF	

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
0005 NAVSTAR GPS BLOCK IIF	0	18,656	37,142	74,944	65,262	62,559	61,129	Continuing	Continuing

(U) **A. Mission Description and Budget Item Justification**

This program element funds Research and Development for the NAVSTAR Global Positioning System (GPS) space, and control systems of the Block IIF Sustainment Program. This includes satellite design and development; control system, training simulator, and mission operation support center development and test; satellite upgrade design and development; control system, simulator and support center software upgrades; and R&D efforts to support deployment of GPS Block IIF. This PE is classified as research category/budget activity Engineering and Manufacturing Development (EMD) because it supports EMD of the GPS Block IIF satellite. Production funding for the Block IIF satellite is carried in PE 0305165.

(U) FY 1995

Not Applicable

(U) FY 1996

(U)	Award Contract for Block IIF - System Sustainment
(U) $14,273	- Satellite System Development
(U) $1,177	- Ground System/Simulator Development
(U) $3,090	- System Integration
(U) $116	Mission Support
(U) $18,656	Total

(U) FY 1997

(U) $	Continue Development of Block IIF - System Sustainment
(U) $29,659	- Satellite System Development
(U) $1,183	- Ground System/Simulator Development
(U) $6,169	- System Integration
(U) $131	Mission Support
(U) $37,142	Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604480F Global Positioning System Block IIF (Space)
PROJECT NO. AND NAME 0005 NAVSTAR GPS BLOCK IIF	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996*	FY 1997	Total Cost
(U) Previous President's Budget	0	19,699	38,901	Continuing
(U) Appropriated Value	0	19,699		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions		- 386		
b. SBIR		- 416		
c. Omnibus or Other Above Threshold Reprogram		- 241		
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY96 PB			- 1,759	
(U) Current Budget Submit/President's Budget	0	18,656	37,142	Continuing

(U) Change Summary Explanation:

Funding: "Omnibus or Other Above Threshold Reprogramming" amount adjusted in FY96 (-241) reflects Bosnia reductions. "Adjustments to Budget Years Since FY96 PB" in FY97 (-1,565) reflects Non-Pay Inflation and overhead reductions.

* The FY96 PB amount does not reflect funding reductions that are reserved for other DoD reprogramming needs ($206)

Schedule: No Change

Technical: No Change

(U) **C. Other Program Funding Summary ($ in Thousands)**

(U) Not Applicable.

Related RDT&E:

(U) PE 0305164F, NAVSTAR GPS (User Equipment), provides receivers to use the positioning, navigation, and timing signals from satellites.

(U) PE 0101221N, Fleet Ballistic Missile System, range positioning.

(U) PE 0301357F and 0305913F (formerly 0102433F), Nuclear Detonation Detection System (NDS), fund NDS payloads on the GPS satellites.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604480F Global Positioning System Block IIF (Space)
PROJECT NO. AND NAME 0005 NAVSTAR GPS BLOCK IIF	

(U) PE 0305119F Space Boosters, funds launch services (Delta II).
(U) PE 0305130F, Consolidated Space Operations Center (CSOC), funds CSOC which hosts the operational GPS Master Control Station.
(U) PE 0305165F, NAVSTAR GPS Space/Control, funds for Block IIR, CSEL, JPO support, and current ground system.

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Award Block IIF System Sustainment Contract						x						
(U) System Design Review									x			
(U) Preliminary Design Review												x

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Block IIF Development	N/A	18,656	37,142
(U) Total		18,656	37,142

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604480F Global Positioning System Block IIF (Space)
PROJECT NO. AND NAME 0005 NAVSTAR GPS BLOCK IIF	

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Block IIF Development (TBD)	FPAF	3rd Qtr 96	N/A	N/A	N/A	N/A	18,656	37,142	Cont	Cont
Subtotal Product Development							18,656	37,142	Cont	Cont
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project							18,656	37,142	Cont	Cont

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604600F Munitions Dispenser Development

PROJECT NO. AND NAME: 1015 Wind Corrected Munitions Dispenser Kit

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
1015 Wind Corrected Munitions Dispenser Kit	26,318	50,088	56,229	18,228	7,784	0	0	0	158,647

(U) **A. Mission Description and Budget Item Justification**

This PE develops a guidance kit for the CBU-87/B, CBU-89/B, and the CBU-97/B dispensers that provide inertial navigation to correct for the effects of wind transients and ballistic errors caused by wind when these munitions are released from medium to high altitudes. WCMD Kit fitted weapons will improve effectiveness of both bombers and fighters and significantly contribute to Air Force war fighting capabilities in two nearly simultaneous Major Regional Conflicts (MRC). WCMD Kit fitted CBU-97's dropped from bombers are key to stopping enemy armored forces in the second MRC. A full and open competition in FY 95 led to dual awards for a competitive development effort that includes a competitive fly-off and also maintains the option for competition in production. This is funded in Engineering and Manufacturing Development because this program is developing a weapon system.

(U) FY 1995 ($ in Thousands):

- (U) $16,446 Awarded EMD dual contracts for Test Hardware Design and Fabrication
- (U) $500 Conducted government test
- (U) $2,811 Program management support; includes travel, program office supplies and equipment, training, and technical engineering support
- (U) $2,906 Provided other government support, GFE
- (U) $3,655 Aircraft Integration
- (U) $26,318 Total

(U) FY 1996 ($ in Thousands):

- (U) $24,323 Continue dual EMD contracts for test hardware fabrication and aircraft integration
- (U) $3,829 Program management support; includes travel, program office supplies and equipment, training, and technical engineering support
- (U) $1,400 Conduct flight/ground tests
- (U) $1,536 Provide other government support, GFE
- (U) $15,400 Continue aircraft integration
- (U) $3,600 Development of Common Munitions Built-In-Test (BIT)/ Reprogramming Equipment (CMBRE)
- (U) $50,088 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604600F Munitions Dispenser Development
PROJECT NO. AND NAME 1015 Wind Corrected Munitions Dispenser Kit	

(U) FY 1997 ($ in Thousands):

- (U) $31,608 Continue dual EMD contracts. Buy 200 EMD Wind Corrected Munitions Dispenser (WCMD) tail kits.
- (U) $3,600 Continue flight tests
- (U) $6,721 Program management support; includes travel, program office supplies and equipment, training, and technical engineering support
- (U) $4,000 Provide other government support, GFE
- (U) $10,000 Continue aircraft integration
- (U) $300 Continue development of CMBRE
- (U) $56,229 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Previous President's Budget	23,468	53,254	58,914
(U) Appropriated Value	23,468	53,254	
(U) Adjustments to Appropriated Value			
a. Cong Gen Reductions	-200	-1,044	
b. SBIR	-442	-1,321	
c. Omnibus or Other Above Threshold Reprogram	-7	-801	
d. Below Threshold Reprogramming	3,499		
(U) Adjustments to Budget Years Since FY 1996 PB			-2,685
(U) Current Budget Submit/President's Budget	26,318	50,088	56,229

(U) Change Summary Explanation:

Funding: In FY96 above threshold reprogramming, $547,000 was for the Bosnia bill and $254,000 was for F-16s for Jordan. FY97 reductions are due to inflation adjustment.

Schedule: No changes.

Technical: No changes.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604600F Munitions Dispenser Development

PROJECT NO. AND NAME: 1015 Wind Corrected Munitions Dispenser Kit

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) WCMD Kit Production, Missile Proc, AF	0	0	0	15,917	24,347	76,987	76,466	1,274,429	1,468,146
(U) SEEK EAGLE, Missile Proc, AF	0	0	0	909	2,814	1,730	0	0	5,453
(U) TOTAL	0	0	0	16,826	27,161	78,717	76,466	1,274,429	1,473,599

(U) D. Schedule Profile

	FY 1995			FY 1996				FY 1997		
	2	3	4	1	2	3	4	1	2	3	4
(U) Engineering Milestones											
Design Reviews	X					X					
Pilot Production									X		
(U) T&E Milestones											
Aircraft Cert Tests			X								
Devel Testing				X							
Competitive Fly-Off									X		
(U) Contract Milestones											
EMD Contract Award	X										
Downselect									X		
(U) Other Program Events											
DT/OT FY 98/1											
LRIP FY 98/2 (B-52)											
RAA FY 99/4 (F-16)											
Milestone III FY 99/4											
FRP FY 00/1											

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604600F Munitions Dispenser Development

PROJECT NO. AND NAME: 1015 Wind Corrected Munitions Dispenser Kit

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Major Contracts	16,446	24,323	31,608
(U) Support Contracts	1,809	1,613	2,875
(U) Program Office Support	1,002	2,216	3,846
(U) Test And Evaluation	500	1,400	3,600
(U) Aircrafr integration	3,655	15,400	10,000
(U) Government Furnished Equipment (GFE)	2,906	1,536	4,000
(U) CMBRE		3,600	300
(U) Total	26,318	50,088	56,229

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
WCMD Development Contractors	C/CPAF	Jan 95		82,431	0	16,446	24,323	31,608	10,054	82,431
Support and Management Organizations										
Sverdrup	C/CPAF	Oct 95		6,091	0	1,090	1,001	1,600	2,400	6,091
TAMS	C/CPAF	Oct 95		2,064	0	375	339	500	850	2,064
SAIC	C/CPAF	Oct 95		1,517	0	344	273	300	600	1,517
ASC/YH	n/a	n/a		8,885	0	1,002	2,216	4,321	1,346	8,885

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604600F Munitions Dispenser Development

PROJECT NO. AND NAME: 1015 Wind Corrected Munitions Dispenser Kit

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Test and Evaluation Organizations										
46 OG/OGML				12,462	0	500	1,400	3,600	6,962	12,462
Acft Integration				29,055	0	3,655	15,400	10,000	0	29,055
Government Furnished Property:										
Product Development Property										
SFW/CEM/SE	FPI	Apr 96	Jan 97		0	2,906	1,536	4,000	3,800	12,242
CMBRE	CPAF	Feb 96			0	0	3,600	300		3,900
Support and Management Property: None										
Test and Evaluation Property: None										
Subtotal Product Development					0	19,352	29,459	35,908	13,854	98,573
Subtotal Support and Management					0	2,811	3,829	6,721	5,196	18,557
Subtotal Test and Evaluation					0	4,155	16,800	13,600	6,962	41,517
TOTAL					0	26,318	50,088	56,229	26,012	158,647

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604602F Armament Ordnance Development

	COST ($ In Thousands)		FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost		18,100	7,597	3,642	1,609	137	142	140	Continuing	TBD
2784	Armament Standard/Control/ Handling Equipment	Munitions Material	1725	0	0	0	0	0	0	0	N/A
3133	Bombs & Fuzes		16,172	7,460	3,509	1,472	0	0	0	0	36,540
5613	Container Design Retrieval System		203	137	133	137	137	142	140	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

The Armament Standardization/Control/Munitions Material Handling Equipment (MMHE), Project 2784, and the Container Design Retrieval System (CDRS), Project 5613, satisfy several USAF and tri-service requirements for standardization of armament and support equipment and eliminate unnecessary duplication of MMHE and containers. (Funding for Project 2784 for FY96 and beyond was transferred to PE 27590F, SEEK EAGLE.) The Bombs and Fuzes Project 3133 satisfies TAF ROC 323-75, Proximity Fuzes, dated 2 Sep 75; TAF SON 305-85, Hardened Target Munitions, dated 14 Oct 86; OSD letter requirement for a common bomb fuze, dated 11 Apr 80; SAC message 041901Z Feb 87, M117 High Drag Capability(s); Joint Mission Need Statement (MNS) TAF 401-91 for Adverse Weather Strike Capability, dated 4 Nov 91; and CAF MNS 314-90 for the Advanced Fuze Family, dated 13 May 93. This project funds development of a specific fuze type for air-to-ground munitions. The RDT&E Research Category/Budget Activity is Engineering and Manufacturing Development because the projects support the EMD development phase of several munitions related items and functions. This program is funded in budget activity 5 - Engineering and Manufacturing Development because the projects support the EMD development phase of several munitions related items and functions.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604602F Armament Ordnance Development

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Previous President's Budget	18,294	8,075	3,796
(U) Appropriated Value	18,294		
(U) Adjustments to Appropriated Value			
a. Cong Gen Reductions		-159	
b. SBIR		-152	
c. Omnibus or Other Above Threshold Reprogram		-167	
d. Below Threshold Reprogramming	-194		
(U) Adjustments to Budget Years Since FY 1996 PB			-154
(U) Current Budget Submit/President's Budget	18,100	7,597	3,642

(U) Change Summary Explanation:

Funding: FY95 Below Threshold Reprogramming reduction was for computer support, classified reprogramming, and Hurricane Erin support. FY96 reductions were for SBIR, general Congressional Reductions, support for Bosnia operations, and reprogramming for F-16s to Jordan. FY97 reduction due to inflation adjustment.

Schedule: N/A

Technical: N/A

(U) **C. Other Program Funding Summary ($ in Thousands)**

FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
0	0	4,125	5,940	8,140	8,340	8,528	236,869	271,942

Appropriation Missile Procurement, AF: Budget Activity 6, Munitions and Related Equipment;
PE: 0208030F Program Title: Joint Programmable Fuze WSC 276170

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604602F Armament Ordnance Development

PROJECT NO. AND NAME: 2784 Armament Standard/Control/ Munitions Material Handling Equipment

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2784 Armament Standard/Control/ Munitions Material Handling Equipment	1725	0	0	0	0	0	0	0	N/A

(U) A. Mission Description and Budget Item Justification

Armament Standardization/Control/Munitions Material Handling Equipment (MMHE): This continuing project develops and improves the standardization and commonality of improved munitions handling and armament equipment to preclude duplication and proliferation. This project's efforts are limited to the study, design, and development of MMHE and armament control systems. Any procurement will be performed and funded by the applicable weapons system project. (Funding for Project 2784 for FY96 and beyond was transferred to PE 27590F, SEEK EAGLE.)

(U) FY 1995 ($ in Thousands):
- (U) $ 1,130 Initiate/continue/complete design/development of various MMHE projects, including completing design of B1-B Preload Adapter, F-22 Pylon Adapter, and testing of Navy LALS, B-1 Ram Assembly, and B-1 T-bar Adapter, and conduct MHU-110 Upgrade Evaluation.
- (U) $ 485 Complete conceptual design robotics Advanced Technological Demonstrator.
- (U) $ 10 Complete evaluation of universal armament test capability.
- (U) $ 100 Complete design B-1/B-52/B-2 Rotary Launcher Load Adapter and B-52H Pylon Load Adapter.
- (U) $ 1,725 Total

(U) FY 1996 ($ in Thousands):
(U) Not applicable. Project moved to PE 020750, SEEK EAGLE

(U) FY 1997 ($ in Thousands):
(U) Not applicable. Project moved to PE 020750, SEEK EAGLE

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604602F Armament Ordnance Development
PROJECT NO. AND NAME 2784 Armament Standard/Control/ Munitions Material Handling Equipment	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	1,830	0	0	N/A
(U) Appropriated Value	1,830			
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-105			
b. SBIR*				
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY 1996 PB		0	0	0
(U) Current Budget Submit/President's Budget	1,725	0	0	N/A

(U) Change Summary Explanation:

Funding: Project funding and responsibility for FY96 and beyond was transferred to PE 27590, SEEK EAGLE.

Schedule: Not applicable

Technical: Not applicable

(U) **C. Other Program Funding Summary ($ in Thousands)**: Not Applicable

Related Activities: There is no other unnecessary duplication of effort within the Air Force or Department of Defense.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604602F Armament Ordnance Development
PROJECT NO. AND NAME 2784 Armament Standard/Control/ Munitions Material Handling Equipment	

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) LALS II Ammo Loader	150	0	0
(U) Robotics	485	0	0
(U) Contractor support	500	0	0
(U) Launcher/Pylon Adapter	100	0	0
(U) Launcher/Pylon Adapter	246	0	0
(U) Testing	20	0	0
(U) Other	224	0	0
(U) Total	1,725	0	0

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604602F Armament Ordnance Development
PROJECT NO. AND NAME 2784 Armament Standard/Control/ Munitions Material Handling Equipment	

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Naval Air Warfare Center	PO	Sep 93	830	1,040	730	310	0	0	0	N/A
Dept. of Energy/ NASA	PO	Mar 94	502	502	267	235	0	0	0	N/A
Support and Management Organizations										
TEAS/TEAMS	CP	Oct 93	728	728	330	398	0	0	0	N/A
ASC/ALZ	CP	Oct 93	452	452	230	222	0	0	0	N/A
Other		Oct 93	894	894	604	540	0	0	0	N/A
Test and Evaluation Organizations										
46th Test Wing	PO	Con't	30	30	10	20	0	0	0	N/A
Government Furnished Property: Not Applicable										
Subtotal Product Development					997	0	0	0	N/A	
Subtotal Support and Management					1,164	0	0	0	N/A	
Subtotal Test and Evaluation					10	0	0	0	N/A	
Total Project					2,171	0	0	0	N/A	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604602F Armament Ordnance Development

PROJECT NO. AND NAME: 3133 Bombs & Fuzes

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3133 Bombs & Fuzes	16,172	7,460	3,509	1,472	0	0	0	0	36,540

(U) **A. Mission Description and Budget Item Justification**

Bombs and Fuzes: This project develops and improves conventional bombs and fuzes including the development of the Joint Programmable Fuze (JPF) and a unitary warhead for the Joint Direct Attack Munition (JDAM) program.

(U) FY 1995 ($ in Thousands):
- (U) $ 8,072 Continue the JPF development effort, including completion of detail design and CT&E.
- (U) $ 100 Begin JPF Developmental Test and Evaluation (DT&E).
- (U) $ 8,000 Conduct Conventional Air-Launched Cruise Missile demonstration of Anti-Armor Variant.
- (U) $ 16,172 Total

(U) FY 1996 ($ in Thousands):
- (U) $ 3,.610 Complete JPF DT&E,
- (U) $ 3,432 Fabricate JPF Initial Operational Test and Evaluation (IOT&E)
- (U) $ 418 Begin JPF IOT&E.
- (U) $ 7,460 Total

(U) FY 1997 ($ in Thousands):
- (U) $ 200 Complete JPF IOT&E.
- (U) $ 100 Complete JPF Functional Configuration Audit. Production Readiness Review, and Physical Configuration Audit.
- (U) $ 3,209 Start JPF/JDAM Integration Flight Test.
- (U) $ 3,509 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604602F Armament Ordnance Development
PROJECT NO. AND NAME 3133 Bombs & Fuzes	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	8,820	7,935	3,657	38,078
(U) Appropriated Value	16,820	7,935		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-100	-156		
b. SBIR	-354	-152		
c. Omnibus or Other Above Threshold Reprogram		-167		
d. Below Threshold Reprogramming	-194			
(U) Adjustments to Budget Years Since FY 1994 PB			-148	
(U) Current Budget Submit/President's Budget	16,172	7,460	3,509	36,540

(U) Change Summary Explanation:

Funding: FY95: Congressional add of $8 Million for demonstration of Anti-Armor variant of Conventional Air-Launched Cruise Missile (CALCM) and range extension kit for TMDs. Reductions were for SBIR and general Congressional and AF reductions. FY96 reductions were for SBIR, general Congressional Reductions, support for Bosnia operations, and reprogramming for F-16s to Jordan. FY97 reduction due to inflation adjustment.

Schedule: N/A

Technical: N/A

U) **C. Other Program Funding Summary ($ in Thousands)**

Appropriation: Missile Procurement, AF: Budget Activity 6, Munitions and Related Equipment

PE: 0208030F Program Title: Joint Programmable Fuze WSC 276170

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U)	0	0	4,125	5,940	8,140	8,340	8,528	236,869	271,942

Related Activities:

PE 0604618F and PE 0604618N, Joint Direct Attack Munition

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604602F Armament Ordnance Development
PROJECT NO. AND NAME 3133 Bombs & Fuzes	

There is no unnecessary duplication of effort within the Air Force or Department of Defense.

(U) D. Schedule Profile

Joint Programmable Fuze (JPF)

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Critical Design Review (CDR)				X								
(U) Complete CT&E				X								
(U) Start DT&E							X					
(U) Production Readiness Review (PRR) #1								X				
(U) Final Delivery LRIP I								X				
(U) Start IOT&E								X				
(U) Complete DT&E									X			
(U) Complete IOT&E										X		
(U) FCA/PRR 2/PCA										X		
(U) Start JPF/JDAM Integration Flight Test								X				

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604602F Armament Ordnance Development
PROJECT NO. AND NAME 3133 Bombs & Fuzes	

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) a. Contractor	4,350	5,515	1,392
(U) b. Government			
Testing	3,015	951	500
Contractor support	493	293	500
Management support	314	486	550
ECO	0	265	567
Government Total	3,822	2,029	2,117
(U) c. CALCM Anti-Armor Demonstration	8,000	0	0
(U) Total	16,172	7,460	3,509

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604602F Armament Ordnance Development

PROJECT NO. AND NAME: 3133 Bombs & Fuzes

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Motorola		Jul 93	16,362	16,800	6,019	4,350	5,515	1,392	277	17,553
Support and Management Organizations										
TEAS/TEAMS		Oct 92	2,205	2,205	369	493	243	500	600	2,205
ASC/YHP			2,503	2,503	919	314	486	550	150	2,419
Other			1,449	1,449	172		265	567	445	1,449
Test and Evaluation Organizations										
46th Test Wing		Mar 94	4,914	4,914	448	3,015	951	500		4,914
CALCM Anti-Armor Demo		TBD	8,000	8,000		8,000				8,000

Government Furnished Property: Not Applicable

Subtotal Product Development	6,019	5,515	1,392	271	17,553
Subtotal Support and Management	1,460	1,078	1,617	1,195	6,157
Subtotal Test and Evaluation	448	951	500	0	12,914
Total Project	7,927	7,460	3,509	1,472	36,540

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604602F Armament Ordnance Development
PROJECT NO. AND NAME 5613 Container Design Retrieval System	

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
5613 Container Design Retrieval System	203	137	133	137	137	142	140	Continuing	TBD

(U) A. **Mission Description and Budget Item Justification**

Containers: This project funds the operation of the tri-service Container Design Retrieval System (CDRS). This system includes the maintenance of a container database to preclude proliferation and duplication of munitions containers. It also supports organic container design, prototyping, and testing capabilities. This project's efforts are limited to the study, design, and development of container systems. Any procurement will be performed and funded by the applicable weapons system project.

(U) FY 1995 ($ in Thousands):

- (U) $43 Initiate/continue/complete design/development of various CDRS projects including containers for the AGM-142 components, the Multi-Spectral Aircraft Decoy, the AMRAAM BIT modification, Special Projects, and the JSOW (AF).
- (U) $30 Provide container design expertise, management, and technical support to ongoing programs under contract development or production such as JDAM, JSOW (Navy), AGM-130, DSU-33 A/B, Joint Programmable Fuze, and MILSTAR.
- (U) $130 Manage and operate the CDRS and data base,
- (U) $203 Total

(U) FY 1996 ($ in Thousands):

- (U) $5 Initiate/continue/complete design/development of various CDRS projects, including containers and fixtures for AGM-142 components, Multi-Spectral Aircraft Decoy, Mobile Aircraft Arresting System, and Special Projects.
- (U) $5 Provide container design expertise, management, and technical support to programs, such as AIM-9X, AMRAAM, JASSM, AGM-142, JDAM, AGM-130, DSU-33 A/B, Wind Corrected Munitions Dispenser (WCMD), JPF, and MILSTAR.
- (U) $127 Manage and operate the CDRS data base and support service.
- (U) $137 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604602F Armament Ordnance Development
PROJECT NO. AND NAME 5613 Container Design Retrieval System	

(U) FY 1997 ($ in Thousands):

- (U) $4 Initiate/continue/complete design/development of various CDRS projects, including a modular mobility container system, and special projects.
- (U) $5 Provide container design expertise, management, and technical support to programs such as AIM-9X, JASSM, AMRAAM, AGM-142, JDAM, AGM-130, and WCMD.
- (U) $124 Manage and operate the CDRS data base and support service.
- (U) $133 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	203	140	139	1,998
(U) Appropriated Value	203	140		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions		-3		
b. SBIR				
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY 1994 PB			-6	
(U) Current Budget Submit/President's Budget	203	137	133	1,828

(U) Change Summary Explanation:
Funding: Funding: FY96 changes results from general Congressionalreductions. FY97 changes result frominflation reductions.
Schedule: Not Applicable
Technical: Not Applicable

(U) C. Other Program Funding Summary ($ in Thousands): Not Applicable

Related Activities: There is no other unnecessary duplication of effort within the Air Force or Department of Defense.

(U) D. Schedule Profile: Not Applicable

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604602F Armament Ordnance Development

PROJECT NO. AND NAME: 5613 Container Design Retrieval System

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Travel/Transportation	50	40	40
(U) Supplies/Equipment	50	40	40
(U) Contractor Support	60	37	35
(U) Mission Support	43	20	18
(U) Test Support	0	0	0
(U) Total	203	137	133

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
N/A										
Support and Management Organizations										
Sverdrup (TEAS)		Oct 93	TBD	TBD	1,455					1,455
ASC/YHS			TBD	TBD	533	35	23	24	Continuing	TBD
Other			TBD	TBD	283	168	114	109	Continuing	TBD
Test and Evaluation Organizations										
46th Test Wing			TBD	TBD	190	0	0	0	Continuing	TBD

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604602F Armament Ordnance Development
PROJECT NO. AND NAME 5613 Container Design Retrieval System	

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property: Not Applicable

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Subtotal Product Development	N/A								
Subtotal Support and Management				2,271	203	137	133	Continuing	TBD
Subtotal Test and Evaluation				190	0	0	0	Continuing	TBD
Total Project				2,461	203	137	133	Continuing	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604604F/0207320F Submunitions/Sensor Fuzed Weapon (SFW)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	4,963	14,350	4,873	4,997	4,948	5,054	5,101	Contuining	TBD
3166 Joint Smart Munition Test and Evaluation Program	3,499	4,754	4,873	4,997	4,948	5,054	5,101	Continuing	TBD
1016 Sensor Fuzed Weapon Production Support	1,464	9,596	0	0	0	0	0	TBD	TBD

(U) **A. Mission Description and Budget Item Justification**

This program contains two unrelated projects. We plan to move project 1016 to the Sensor Fuzed Weapon (SFW) program element (PE 0207320) because it is for SFW pre-planned product improvement (P3I). Project 3166 is a joint US Air Force/US Army program which evaluates developmental smart munitions and related emerging technology with applications against mobile ground vehicle targets and Theater Air Defense units by determining performance against actual foreign targets in realistic environments and in the presence of countermeasures.

(U) **Acquisition Strategy**

The acquisition strategy is competitive. Cost plus or firm fixed price contracts.

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Previous President's Budget	4,896	4,953	5,105
(U) Appropriated Value	4,896	14,953	
(U) Adjustments to Appropriated Value			
a. Cong Gen Reductions		-293	
b. SBIR			
c. Omnibus or Other Above Threshold Reprogram		-310	
d. Below Threshold Reprogramming	+67		
(U) Adjustments to Budget Years Since FY 1996			-232
(U) Current Budget Submit/President's Budget	4,963	14,350	4,873

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604604F/0207320F Submunitions/Sensor Fuzed Weapon (SFW)

(U) Change Summary Explanation:

Funding: In FY95,we added $67,000 to the joint test and evaluation project (project 3166) to fund a shortfall. In FY96 above threshold reprogramming, $154,000 is for Bosnia and $156,000 is for F-16s for Jordan. In FY97, the reduction is due to the inflation adjustment.

Schedule: No change

Technical: No change

(U) C. Other Program Funding Summary ($ in Thousands)

(U) See Individual projects.

(U) D. Schedule Profile

(U) See Individual projects.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604604F/0207320F Submunitions/Sensor Fuzed Weapon (SFW)

COST ($ In Thousands)		FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3166 Joint Smart Munition Test and Evaluation Program	3,499	4,754	4,873	4,997	4,948	5,054	5,101	Continuing	TBD	TBD

(U) **A. Mission Description and Budget Item Justification**

Project 3166 is a joint US Air Force/US Army program which evaluates developmental smart munitions and related emerging technology with applications against mobile ground vehicle targets and Theater Air Defense units by determining performance against actual foreign targets in realistic environments and in the presence of countermeasures. Data gathered is used to meet developmental decision points requiring highly reliable, realistic performance data. The project is a major focal point for joint Air Force and Army target signature collection and dissemination for development and exploitation purposes. This PE provides support for smart munitions test and evaluation (T&E) activities including T&E support for programs in engineering and manufacturing development. This project is funded in BA 5 because it is a continuing RDT&E activity supporting mostly acquisition programs in Engineering and Manufacturing Development.

(U) FY 1995 ($ in Thousands):

- (U) $969 Completed Phase III of the weapon effectiveness evaluation and initiate planning for Phase IV of the program
- (U) $780 Selected next generation of seeker/sensors and warheads for evaluation and started captive flight tests evaluation and analyses
- (U) $300 Developed smart weapons models and simulations for digitized battlefields
- (U) $650 Continued test support of smart munitions test community, for weapon effectiveness and target signature
- (U) $500 Conducted advanced warhead effectiveness tests and analysis
- (U) $300 Maintained detailed signature and warhead/vulnerability databases
- (U) $3,499 Total

(U) FY 1996 ($ in Thousands):

- (U) $1100 Start Phase IV of the weapon effectiveness evaluation.
- (U) $300 Develop models and simulation tools to support electronic engagement simulations
- (U) $600 Continue maintenance and expansion of vulnerability/lethality and signature databases
- (U) $1148 Plan and conduct Captive Flight Tests for signature collection and seeker/sensor evaluations and algorithm development
- (U) $8383 Conduct advanced warhead effectiveness evaluation, and Continue vulnerability analysis of SEAD and TMD targets
- (U) $4,754 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604604F/0207320F Submunitions/Sensor Fuzed Weapon (SFW)
PROJECT NO. AND NAME 3166 Joint Smart Munition Test and Evaluation Program	

(U) FY 1997 ($ in Thousands):

- (U) $1200 Continue Phase IV of the weapon effectiveness evaluation
- (U) $300 Develop models and simulation tools to support electronic engagement simulations
- (U) $700 Continue maintenance and expansion of vulnerability/lethality and signature databases
- (U) $1200 Plan and conduct Captive Flight Tests and signature collection for seeker/sensor evaluations and algorithm development
- (U) $700 Conduct advanced warhead effectiveness evaluation
- (U) $773 Continue vulnerability analysis of Enemy Air Defense (SEAD), and Theater Missile Defense (TMD) targets
- (U) $4,873 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Previous President's Budget	3,432	4,953	5,105
(U) Appropriated Value	3,432	4,953	
(U) Adjustments to Appropriated Value			
a. Cong Gen Reductions		-97	
b. SBIR			
c. Omnibus or Other Above Threshold Reprogram		-102	
d. Below Threshold Reprogramming	+67		
(U) Adjustments to Budget Years Since FY 1996 PB			-232
(U) Current Budget Submit/President's Budget	3,499	4,754	4,873

(U) Change Summary Explanation:
Funding: In FY96 above threshold reprogramming, $51,000 is for Bosnia, and $51,000 is for F-16s for Jordan.
Schedule: No change.
Technical: No change.

(U) C. Other Program Funding Summary ($ in Thousands): None

(U) D. Schedule Profile: Not applicable as this is a continuing test effort (target/warhead evaluation/analysis, signature tests, captive flight tests, are ongoing throughout the year and continue through the FYDP).

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604604F/0207320F Submunitions/Sensor Fuzed Weapon (SFW)
PROJECT NO. AND NAME 3166 Joint Smart Munition Test and Evaluation Program	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Program Support	960	938	1,023
(U) Target Support	673	683	685
(U) Warhead Range Operations	300	280	315
(U) Captive Flight Tests	700	230	250
(U) Database Support (Inc TABILS)	200	500	440
(U) Vulnerability/Effectiveness Analysis	179	573	600
(U) Warhead Evaluation	400	450	460
(U) Target Signature Tests	87	800	800
(U) Models and Simulation Tools	0	300	300
(U) Total	3,499	4,754	4,873

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
N/A										
Support and Management Organizations										
Sverdrup	C/CIF				4,972	1,243	1,375	1,478	Cont	9,068
ANSTEC	C/FFP				579	191	211	245	Cont	1,226
46 OG/OGML					3,830	301	422	435	Cont	4,987

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604604F/0207320F Submunitions/Sensor Fuzed Weapon (SFW)
PROJECT NO. AND NAME 3166 Joint Smart Munition Test and Evaluation Program	

Test and Evaluation Organizations						
46 OG/OGML	59,457	1,764	2,746	2,715	Cont	66,682
Subtotal Product Development	0	0	0	0	0	0
Subtotal Support and Management	9,381	1,735	2,008	2,158	Cont	15,282
Subtotal Test and Evaluation	59,457	1,764	2,746	2,715	Cont	66,682
TOTAL	68,838	3,499	4,754	4,873	Cont	82,964

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY
5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE
0604604F/0207320F Submunitions/Sensor Fuzed Weapon (SFW)

PROJECT NO. AND NAME
3166 Joint Smart Munition Test and Evaluation Program

COST ($ In Thousands)		FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
1016 Sensor Fuzed Weapon Production Support	1,464	9,596	0	0	0	0	0	TBD	TBD	TBD

* In FY96, Congress added these funds in PE 0604604F, Submunitions to start the SFW P3I program. AF will move these funds into PE 0207320F, Sensor Fuzed Weapon.

(U) **A. Mission Description and Budget Item Justification**

In FY95, this project funded SFW production program support. Starting in FY 96 the activity funds an improvement program for SFW. These improvements will enhance weapon performance against primary targets, targets with countermeasures, and potentially allow for use against alternative targets. The improvements will also enhance the performance of SFW when fitted with the Wind Corrected Munitions Dispenser (WCMD) Kit and the anti-armor version of the Joint Standoff Weapon (JSOW/BLU-108). This program is in budget activity 5 - Engineering and Manufacturing Development, because it develops an improved BLU-108 submunition for the Sensor Fuzed Weapon.

(U) FY 1995 ($ in Thousands):
- (U) $1,464 Program management support, includes travel, program office supplies and equipment, training and technical engineering support
- (U) $1,464 Total

(U) FY 1996* ($ in Thousands):
- (U) $8,121 Award EMD contract for design, development and test of SFW P3I
- (U) $750 Conduct government tests
- (U) $725 Program management support, includes travel, program office supplies and equipment, training and technical engineering support
- (U) $9,596 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604604F/0207320F Submunitions/Sensor Fuzed Weapon (SFW)
PROJECT NO. AND NAME 1016 Sensor Fuzed Weapon Production Support	

The FY1997 PB has no funds programmed for SFW P3I in FY 1997 and FY1998. However, the Air Force will identify sources for SFW P3I funds in these years. The SFW P3I will need $19.1 million in FY1997 and $19.9 in FY1998 to complete the SFW P3I program. The planned progam for FY1997 is as follows:

(U) FY 1997 ($ in Thousands):
- (U) $16,300 Continue EMD contract for design, development, and test of SFW P3I
- (U) $1,200 Conduct government tests
- (U) $100 Other government support, GFE
- (U) $1,500 Program management support, includes travel, program office supplies and equipment, training and technical engineering support
- (U) $19,100 Total

(U) B. Program Change Summary ($ in Thousands)

	1995	FY 1996	FY 1997
(U) Previous President's Budget	1,464	0	0
(U) Appropriated Value	1,464	10,000*	
(U) Adjustments to Appropriated Value			
a. Cong Gen Reductions		-196	
b. SBIR			
c. Omnibus or Other Above Threshold Reprogram		-208	
d. Below Threshold Reprogramming			
(U) Adjustments to Budget Years Since FY 1996 PB			0
(U) Current Budget Submit/President's Budget	1,464	9,596	0

* FY96 Congressional add

(U) Change Summary Explanation:

Funding: In FY95, $1,429,000 was reprogrammed to PE 0207320F (Sensor Fuzed Weapon) and $35,000 remained in PE 0604604F, which we plan to reprogram to PE 0207320F. These funds are for SFW production support and belong in the SFW PE. Congress added funds in FY96 to start SFW P3I. Of the above threshold reprogramming in FY96, $103,000 is for the Bosnia bill and $105,000 is for F-16s for Jordan.

Schedule: None.

Technical: None.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604604F/0207320F Submunitions/Sensor Fuzed Weapon (SFW)
PROJECT NO. AND NAME 1016 Sensor Fuzed Weapon Production Support	

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) SFW Production (Appn 3011)	108,464	160,811	131,146	140,163	150,080	146,846	149,875	501,422	1,710,484
(U) SEEK EAGLE (Appn 3011)	4,252	4,636	0	0	0	0		0	10,888
(U) TOTAL	112,716	165,447	131,146	140,163	150,080	146,846	149,875	501,422	1,721,372

(U) D. **Schedule Profile (SFW P3I program)**

		FY 1995	FY 1996				FY 1997			
			1	2	3	4	1	2	3	4
(U) Contract Award				X						
(U) SRR				X						
(U) Development				X	X	X	X	X	X	
(U) Trade Studies				X	X	X				
(U) PDR							X			
(U) Detailed Design/DevelopTesting					X	X	X	X	X	X
(U) CDR	FY98									
(U) Hardware Build/Qual test	FY98									
(U) FRP	FY99									
(U) P3I ECP	FY99									

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604604F/0207320F Submunitions/Sensor Fuzed Weapon (SFW)
PROJECT NO. AND NAME 1016 Sensor Fuzed Weapon Production Support	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Major Contracts	0	8,121	0
(U) Support Contracts	0	325	0
(U) Program Office Support	1,464	400	0
(U) Test and Evaluation	0	750	0
(U) Government Furnished Equipment (GFE)	0	0	0
(U) Total	1,464	9,596	0

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Textron Defense	C/CPIF	Mar 96		TBD	0	0	8,121	0	TBD	TBD
Support and Management Organizations										
Sverdrup	C/CPAF	Apr 96		TBD	0	0	250	0	TBD	TBD
SAIC	C/CPAF	Apr 96		TBD	0	0	75	0	TBD	TBD
ASC/YH	N/A			TBD	0	1,464	400	0	TBD	TBD
Test and Evaluation Organizations										
46 OG/OGML				TBD	0	0	750	0	TBD	TBD

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604604F/0207320F Submunitions/Sensor Fuzed Weapon (SFW)
PROJECT NO. AND NAME 1016 Sensor Fuzed Weapon Production Support	

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property:

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Property									
Octol Army, Rock Island				0	0	0	0	0	0
Support and Management Property									
None									
Test and Evaluation Property									
None									
Subtotal Product Development				0	0	8,121	0	TBD	TBD
Subtotal Support and Management				0	1,464	725	0	TBD	TBD
Subtotal Test and Evaluation				0	0	750	0	TBD	TBD
Total Project				0	1,464	9,596	0	TBD	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604617F Air Base Operability

PROJECT NO. AND NAME: 2895 Air Base Operability

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	5,432	9,077	2,926	1,435	2,577	2,651	2,689	0	38,689
2895 Air Base Operability	5,432	9,077	2,926	1,435	2,577	2,651	2,689	0	Continuing

(U) A. Mission Description and Budget Item Justification

This program is in budget activity 5 - Research, Development, Test and Evaluation because it supports Engineering and Manufacturing Development (EMD) of selected Air Base Systems (ABS). Air Base Operability (ABO) integrates capabilities to rapidly deploy, and defend and sustain air base operations, which are prerequisites to establishing air superiority. ABS provide beddown for aircraft, support equipment, and forces at both main operating bases and contingency operating locations, which may have only a runway and a water source. The need for ABS was dramatically illustrated during DESERT SHIELD/DESERT STORM/PROVIDE COMFORT, and other global contingencies over the past 5 years. Lighter-weight rapidly deployable facilities and equipment have become essential in supporting contingencies for security, base defense, relief efforts, and special operations throughout the world. ABS capabilities being developed include: joint Service (Army-led) test, evaluation and acquisition of protective vehicles to be used by Air Force security police, civil engineers, and explosive ordnance disposal technicians for air base defense and reconnaissance missions; a deployable system to repair/reinforce runways; a deployable fire protection system to detect and extinguish aircraft, Petroleum, Oil, and Lubricants, and structural fires at remote locations; and camouflage, concealment and deception systems to protect critical mission resources. Because of reduced funding and support for ABO in FY97 and beyond, we have consolidated all efforts into one project, 2895. All programs/project efforts continue in the Air Base Operability Project; no efforts were terminated.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604617F Air Base Operability
PROJECT NO. AND NAME 2895 Air Base Operability	

(U) FY 1995 ($ in Thousands):

–	(U) $1	Provided technical support for the Explosive Ordnance Disposal/Mortuary Shield evaluation. (2QFY95)
–	(U) $1,500	Integrated Base Recovery Communication System requirements with the Wing Command and Control System. (4QFY95)
–	(U) $208	Supported Army Engineering and Manufacturing Development (EMD) contract award for the Up-Armored Heavy High Mobility Multi-Wheeled Vehicles (UA-HHV). (3QFY95)
–	(U) $721	Continued Repair Quality Criteria (RQC) modeling for rapid runway repair analysis. (4QFY95)
–	(U) $952	Completed EMD for the Deployable Pavement Repair System (DPRS). (4QFY95)
–	(U) $32	Completed EMD of Mobile Aircraft Arresting System (MAAS) Upgrade program. (4QFY95)
–	(U) $585	Continued support of Camouflage, Concealment and Deception (CCD) development. (4QFY95)
–	(U) $71	Continued technical support for production of Petroleum, Oil and Lubricants (POL) Rapid Utility Repair Kits (RURK) Phases I and II. (3QFY95)
–	(U) $458	Awarded EMD contract for Deployable Fire Protection System (DFPS). (4QFY95)
–	(U) $904	Continued other technical support. (4QFY95)
–	(U) $5,432	Total

(U) FY 1996 ($ in Thousands):

–	(U) $1,580	Complete EMD for UA-HHV and support Army production effort. (2QFY96)
–	(U) $700	Complete EMD for DFPS. (4QFY96)
–	(U) $1,250	Continue RQC modeling for rapid runway repair analysis. (3QFY96)
–	(U) $950	Award EMD contract for Rapid Ordnance Removal System (RORS). (3QFY96)
–	(U) $367	Initiate EMD for Deployable Power Generation and Distribution System. (3QFY96)
–	(U) $250	Initiate Contingency Base Operations Tailored Threat Assessment. (2QFY96)
–	(U) $650	Implement Bare Base Phase III EMD Study. (2QFY96)
–	(U) $1,055	Establish Bare Base Test Bed. (4QFY96)
–	(U) $2,275	Continue other technical support. (4QFY95)
–	(U) $9,077	Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604617F Air Base Operability
PROJECT NO. AND NAME 2895 Air Base Operability	

(U) FY 1997 ($ in Thousands):

- (U) $400 Continue Repair Quality Criteria modeling for rapid runway repair analysis. (3QFY97)
- (U) $450 Continue Engineering and Manufacturing Development (EMD) for Rapid Ordnance Removal System. (3QFY97)
- (U) $700 Continue EMD for Deployable Power Generation and Distribution System. (3QFY97)
- (U) $800 Initiate EMD for Medium/Large Shelters. (3QFY97)
- (U) $576 Continue other technical support. (4QFY97)
- (U) $2,926 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	9,580	9,742	3,079	Cont
(U) Appropriated Value	5,606	9,742		
(U) Adjustments to Appropriated Value				
a. Congressional Gen Reductions	-62	-189		
b. SBIR	-105	-226		
c. Below Threshold Reprogramming	-7	-99		
d. Omnibus and Above Threshold Reprogramming		-101		
(U) Adjustments to Budget Years Since FY 1996 PB		-50	-153	
(U) Current Budget Submit/President's Budget	5,432	9,077	2,926	Cont

(U) Change Summary Explanation:

Funding: Adjustments to Budget Years since FY96 PB were non-pay purchases inflation and Congressional reductions. FY96 Omnibus and Above Threshold Reprogramming adjustments due to Bosnia Reprogramming and F-16s to Jordan.

Schedule: No change.

Technical: No change.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604617F Air Base Operability
PROJECT NO. AND NAME 2895 Air Base Operability	

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Other Procurement, AF, Other Base Maintenance and Support Program (0208028F):									
BP 82, Vehicles	0	4,974	3,300	12,177	10,082	4,300	0	0	34,833
BP 83, Communications	8,746	3,956	0	0	0	0	0	0	12,702
BP 84, Explosive Ordnance Disposal	0	0	0	1,000	5,927	8,038	1,552	Cont	16,517
BP 84, Rapid Runway Repair	2,076	3,290	860	2,828	0	0	0	0	9,054
BP 84, Deployable Fire Protection System	0	871	1,274	119	0	0	0	0	2,264
BP 84, Petroleum-Oil-Lubricants Rapid Utilities Repair Kit	1,954	0	0	0	0	0	0	0	1,954
BP84, Medium/Large Shelters	0	0	0	0	0	3,000	0	0	3,000

(U) D. **Schedule Profile** (asterisks denote start of an effort)

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
Deployable Pavement Repair System												
Engineering and Manufacturing Development	*			X								
Development test and evaluation & operational test and evaluation	*			X								
Milestone III				X								
Production				*								X

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604617F Air Base Operability

PROJECT NO. AND NAME: 2895 Air Base Operability

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
Up-Armored Heavy High Mobility Multi-Purpose Wheeled Vehicles												
Demonstration/Validation (Dem/Val)		X										
Milestone II		X										
Engineering and Manufacturing Development (EMD)			*			X						
Milestone III							X					
Production							*					
Base Recovery Communications System												
Integrate w/ Wing Cmd Control System				X								
Rapid Ordnance Removal System												
Dem/Val				X								
Milestone II							X					
EMD							*					X
Camouflage, Concealment and Deception (CCD) Ground Jammer				X								
Development Test and Evaluation & Initial Operational Test and Evaluation				X								
CCD Multispectral Ground Decoys				X								
Dem/Val												
Milestone II		X										
EMD (Truck/F-16)			X									
EMD (F-15)			X									
CCD Multispectral Nets												
Milestone I/II				X								
EMD				X								
CCD Point Target Obscurant System												
Dem/Val			X									

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604617F Air Base Operability
PROJECT NO. AND NAME 2895 Air Base Operability	

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
Petroleum, Oil and Lubricants Rapid Utilities Repair Kit II												
Engineering and manufacturing development (EMD)												
Development test and evaluation & initial operational test and evaluation (DT&E/IOT&E)												
Milestone III	X											
Production				*					X			
Deployable Fire Protection System												
Milestone II		X										
EMD				*				X				
Milestone III								X				
Production								*				X

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604617F Air Base Operability

PROJECT NO. AND NAME: 2895 Air Base Operability

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Engineering and Manufacturing Development (EMD)	562	1,911	750
(U) Development/Operational Test and Evaluation	101	90	70
(U) SETA Support	980	2,731	950
(U) Other Government Agencies	2,233	824	300
(U) Materials/Equipment	244	494	0
(U) Other Test Support	69	127	40
(U) Technical Support	339	524	240
(U) Management Support	904	2,376	576
(U) Total	5,432	9,077	2,926

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
DPRS-Entwistle	FPIF	Jan 96	5,488	5,488	4,533	952	0	0	0	5,485
UA-HHV-Army TACOM	MIPR	Jun 95	512	512	142	208	1,580	0	0	1,930
DFPS-TBD	FFP	Jun 95	901	901	94	458	700	0	0	1,252
CALS-Multielectric	FFP	Sep 94	1,046	1,046	946	0	0	0	0	946
BRCS-ESC/AV	AF Form 616	Sep 95	3,622	3,622	2,122	1,500	0	0	0	3,622

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604617F Air Base Operability

PROJECT NO. AND NAME: 2895 Air Base Operability

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
POL RURK - Phase I-Keko	C/FP	Sep 95	1,659	1,659	1,628	31	0	0	0	1,659
RORS-Army	MIPR	May 96	1,400	1,400	0	0	950	450	0	1,400
EOD/Mortuary Shield-Various	Various	Various	169	169	138	1	0	0	0	139
Mat Anchoring-ARA	C/FP	Jun 95	268	268	243	0	0	0	0	243
MAAS Upgrade-Esco	Option	Jan 95	118	118	86	32	0	0	0	118
CCD Projects-Various	Various	Various	12,434	12,434	1,884	585	0	0	0	2,469
POL RURK - Phase II-DOE/SETA	MIPR	May 93	1,568	1,568	1,528	40	0	0	0	1,568
Deployable Power	TBD	TBD	2,400	2,400	0	0	367	700	0	1,067
Bare Base Test	SETA	TBD	1,055	1,055	0	0	1,055	0	0	1,055
Medium/Large Shelters	TBD	TBD	1,540	1,540	0	0	0	800	800	1,600
EMD Studies & Air Base Threat Support-Various	Various	Various	7,766	7,760	4,416	721	2,150	400	0	7,687

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604617F Air Base Operability

PROJECT NO. AND NAME: 2895 Air Base Operability

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Support and Management Organizations										
Various	Various	Various	0	0	3,609	904	2,275	576	2,652	10,117
Test and Evaluation Organizations										
N/A										

(U) B. **Budget Acquisition History and Planning Information Continued ($ in Thousands)**

Subtotal Product Development	17,760	4,528	6,802	800	32,240
Subtotal Support and Management	3,609	904	2,275	2,652	10,016
Subtotal Test and Evaluation					
Total Project	21,369	5,432	9,077	3,452	42,256

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604618F Joint Direct Attack Munition

PROJECT NO. AND NAME: 3890 Joint Direct Attack Munitions

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3890 Joint Direct Attack Munitions	65,553	85,916	38,636	34,717	24,567	1,459	1,238	1,800	337,340

(U) **A. Mission Description and Budget Item Justification**

Desert Storm confirmed the need for a more accurate weapon delivery capability in adverse weather conditions from medium/high altitudes. Failure to satisfy this requirement will allow the enemy to continue to take advantage of the sanctuary of weather and/or prevent US air power from prosecuting a conflict on its terms. JDAM is an Air Force and Navy munitions program to correct these shortfalls, with the Air Force as the executive service. JDAM will upgrade the existing inventory of general purpose bombs (Mk-84, BLU-109, and Mk-83/BLU-110) by integrating them with a guidance kit consisting of a global positioning system aided inertial navigation system (INS/GPS). JDAM will provide an accurate (13 meters) adverse weather capability. JDAM will initially be integrated with the B-52H, B-2, B-1B and F/A-18C/D aircraft with follow-on integration on the F-16, F-15E, F-22, A/V-8B and other aircraft. The JDAM Product Improvement Program (PIP) will field improvements to the JDAM system with emphasis on improving accuracy beyond 13 meters as well as JDAM system robustness. JDAM development is a two-phased Engineering and Manufacturing Development (EMD) effort. EMD Phase 1 emphasized competitive design and manufacturing processes. This phase completed 10 Oct 95. EMD Phase II emphasizes full scale hardware build and flight test to verify system performance and will support OT&E. This program is funded in Budget Activity 5, EMD, because of the focus on devising an affordable design and manufacturing process.

(U) FY 1995 ($ in Thousands):

- (U) $24,050 Completed EMD Phase 1 prime contractors' development activities, including fabrication and testing engineering evaluation units, instrumented measurement vehicles, separation test vehicles and guided test vehicles
- (U) $33,202 Conducted Program Office Mission/Engineering Support tasks including aircraft interface requirements definition, tail kit design requirements definition, aircraft safe separation wind tunnel tests, and flight tests of contractor designs
- (U) $8,301 Continued Product Improvement Program (PIP) planning efforts to include Differential GPS (DGPS), and Mission Planning improvements
- (U) $65,553 Total

(U) FY 1996 ($ in Thousands):

- (U) $66,606 Initiated EMD prime contractor activities to fabricate development and operational test hardware and software, final definition and proof of production processes, and engineering support of aircraft integration and test activities
- (U) $8,150 Continued Program Office Mission/Engineering Support tasks to define and coordinate the program activities of the prime contractor and various government development and test organizations

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604618F Joint Direct Attack Munition
PROJECT NO. AND NAME 3890 Joint Direct Attack Munitions	

- (U) $7,460 Began JDAM Development Test and Evaluation (DT&E) activities including B-52 Instrumented Measurement Vehicle testing, safe separation flight tests on the F/A-18C/D, F-16, B-52 and B-1, ground margin testing and related mission planning activities
- (U) $3,700 Continued PIP development to include improved guidance concept demonstrations, concept exploration studies for GPS anti-jam capabilities and improved mission planning/target location error efforts
- (U) $85,916 Total

(U) FY 1997 ($ in Thousands):

- (U) $8,596 Continue EMD prime contractor activities to include delivery of Guided Test vehicles (GTVs) and ground test equipment for DT/OT&E
- (U) $8,357 Continue Program Office Mission/Engineering Support tasks to define and coordinate efforts of the prime contractor and various government and development test organizations
- (U) $16,283 Conduct guided test flights for DT/OT&E on the F/A-18C/D, F-16, B-1, B-2, and B-52.
- (U) $5,400 Conduct cost/benefit design analysis to define final PIP configuration and initiate integration into baseline tail kit design
- (U) $38,636 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	84,995	92,161	85,907	697,519
(U) Appropriated Value	67,583	92,161		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-744	-1,826		
b. SBIR	-1,269	-1,905		
c. Omnibus or Other Above Threshold Reprogram		-2,514		
d. Below Threshold Reprogramming	-17			
(U) Adjustments to Budget Years Since FY 1996 PB			-47,271	-360,179
(U) Current Budget Submit/President's Budget	65,553	85,916	38,636	337,340

(U) Change Summary Explanation:

Funding:

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604618F Joint Direct Attack Munition
PROJECT NO. AND NAME 3890 Joint Direct Attack Munitions	

FY96: Reductions for Small Business Innovative Research, General Congressional Reductions, $1.567M reprogramming for F-16s to Jordan, and $.947M reprogramming for Bosnia operations.
FY97: The largest contributions to the $47.271M change were a transferal of $26M RDT&E funds to procurement to start Low Rate Initial Production (LRIP) one year earlier - see Schedule below; reduction in Product Improvement Program (PIP) funding ($6.9M) for adapting seeker technologies to JDAM which was removed due to affordability concerns and competing budget priorities; and a $9.0M reduction due to slower than planned program execution.
Total Costs: Reductions in cost beyond FY97 are due to the elimination of funding for the development of a terminal seeker for JDAM PIP and lower than expected EMD Phase II costs. These reductions combined with the above changes resulted in a total cost reduction of $360M.

Schedule: Acceleration of JDAM program shifts LRIP (Lot 1) start forward nine months from Dec 97 to Apr 97 and moves MSIII (Full Rate Production Decision) ahead by 15 months from Jul 99 to Apr 98. PIP technology efforts have been deleted.

Technical: PIP efforts are now focused on improving weapons accuracy through enhancements in the baseline GPS receiver, target location error reduction, and improved guidance and control.

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Appropriation: Missile Procurement, Air Force, Budget Activity: 2, Program Title: JDAM									
(U) Missile Procurement	0	0	23,000	61,513	62,659	144,571	234,381	811,168	1,337,302
(U) Quantities	0	0	937	2,696	2,676	6,410	10,202	39,079	62,000

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Critical Design Review				x								
(U) Milestone II				x								
(U) EMD Phase II Contract Option					x							
(U) DT&E-Tech Eval Start					x							
(U) Operational Assessment										x		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604618F Joint Direct Attack Munition

PROJECT NO. AND NAME: 3890 Joint Direct Attack Munitions

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) IOT&E-OPEVAL Start											x	
(U) LRIP											x	

Additional Major Program Events

(U) B-52 DT&E/IOT&E Complete	FY98/Q2
(U) Milestone III	FY98/Q2
(U) LRIP Deliveries Begin	FY98/Q3

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604618F Joint Direct Attack Munition
PROJECT NO. AND NAME 3890 Joint Direct Attack Munitions	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Primary Hardware Development	24,050	68,692	8,596
(U) Test & Evaluation	17,360	7,460	16,283
(U) Engineering & Prog Mgt Support	15,842	6,064	8,357
(U) Product Improvement Program	8,301	3,700	5,400
(U) Total	65,553	85,916	38,636

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Prime Development Contractors	CPAF	Oct-95	179,242	179,242	52,604	22,551	65,073	8,596	30,418	179,242
Product Improvement Program (PIP)	Various	Various	48,690	48,690	9,704	8,136	3,700	5,400	21,750	48,690
CMBRE	TBD	Jan-96	1,783	1,783		250	1,533			1,783
JDAM OFP F-16 Test S/W	UNK	Jan-95	3,500	3,500		3,500				3,500

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604618F Joint Direct Attack Munition

PROJECT NO. AND NAME: 3890 Joint Direct Attack Munitions

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Support and Management Organizations										
In-House Support										
TEAS Contractor	CPAF	Annual	8,172	8,172	3,097	1,238	1,606	1,099	1,132	8,172
NAWC Field Station	MIPR	Annual	5,789	5,789	2,064	2,556	458	348	363	5,789
GFE/GFP Mgt	Various	Various	3,206	3,206	2,438	416	302	50		3,206
Mission Planning S/W	UNK	Sep-93	7,123	7,123	200	2,315	1,300	1,495	1,813	7,123
JDAM B-1 OFP DT&E S/W	UNK	Jul-93	3,787	3,787	1,200	2,587				3,787
Aircraft Interface Definition	P.O.	Various	2,500	2,500	2,500					2,500
GPS Jamming 746 Test Sqdn			284	284		34	250			284
EMI Testing (NSWC)	MIPR	Feb-95	500	500		500				500
DT Targets	MIPR	Jan-96	1,772	1,772			100	1,672		1,772
TAMS Contractor	CPAF	Various	4,169	4,169	1,452	944	585	541	647	4,169
Program Office	Various	Various	19,046	19,046	7,149	3,666	3,049	3,152	2,030	19,046
Test and Evaluation Organizations										
Group 1 A/C Test	Various	Various	37,763	37,763	202	8,740	7,210	16,033	5,578	37,763
ASC-SK	P.O.	Annual	679	679	59	70	250	250	50	679
AEDC Support	P.O.	Sep-94	9,335	9,335	785	8,550				9,335

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604618F Joint Direct Attack Munition
PROJECT NO. AND NAME 3890 Joint Direct Attack Munitions	

	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Subtotal Product Development	62,308	13,996	52,168	233,215		
Subtotal Test and Evaluation	1,046	16,283	5,628	47,777		
Subtotal Support and Management	20,100	8,357	5,985	56,348		
Total Project	83,454	38,636	63,781	337,340		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604703F Aeromedical Systems Development

PROJECT NO. AND NAME: 2866 Aeromedical/Casualty Care Systems Dev

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2866 Aeromedical/Casualty Care Systems Dev	7,890*	5,936	5,977	4,390	2,077	583	99	Cont	Cont

***See note on page 3**

(U) **A. Mission Description and Budget Item Justification**

This program is in budget activity 5 - Research, Development, Test and Evaluation because it supports development of systems for treatment, evacuation, and prediction of wartime casualties in a conventional or non-conventional warfare environment. Tactical, strategic, and covert aeromedical evacuation systems and medical treatment equipment are developed and fielded to meet unique Air Force medical readiness and operational requirements.

(U) FY 1995 ($ in Thousands):

- (U) $336 Transportable Blood Transshipment Center - Conducted functional configuration audit and initial production readiness review (1QFY95), completed operational test and evaluation (OT&E) (2QFY95), obtained Milestone III decision approval, initiated production (3QFY95), met initial operational capability (4QFY95).
- (U) $140 Spinal Cord Injury Transport System - Conducted a requirements analysis study supporting tri-Service requirements definition. (4QFY95)
- (U) $949 Threat Related Attrition Model - Completed integration testing for Build 1 and developed the ground attack module for Build 2. (4QFY95)
- (U) $51 Wartime Medical Planning System - Prepared initial acquisition strategy and initiated a system analysis and market analysis of potential commercial off-the-shelf solutions. (4QFY95)
- (U) $40 Alternating Current Interface Unit - Obtained Milestone III decision approval and awarded production contract. (4QFY95)
- (U) $114 Continuous/Intermittent Suction Unit - Studied and prepared acquisition strategy and released draft Request for Proposal. (2QFY95)
- (U) $400 Civil Reserve Air Fleet Aeromedical Evacuation Shipsets - Completed re-packaging of shipsets (1QFY95), met full operational capability and conducted concept studies and engineering analysis for different aircraft configurations. (4QFY95)
- (U) $2,686 Chemically Hardened Air Transportable Hospital/Chemically Hardened Air Management Plant (CHATH/CHAMP) - Completed Phase I of engineering and manufacturing development and initiated Phase II. (4QFY95)
- (U) $376 Aeromedical Systems Analysis - Conducted foundation studies and analyses to support core aeromedical/casualty care and health care requirements in support of USAF/SG medical reengineering goals and objectives. (Continuing War Gaming and Electrical Conversion Conditioning Unit)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604703F Aeromedical Systems Development
PROJECT NO. AND NAME 2866 Aeromedical/Casualty Care Systems Dev	

- (U) $1,199 Funded proportional efforts of Human Systems Center, System Program Office, and Technical Engineering and Management Support contractor. (4QFY95)
- (U) $6,291 Total

(U) FY 1996 ($ in Thousands):
- (U) $157 Transportable Blood Transshipment Center - Deliver initial production units. Study module concepts to support USAF/SG medical readiness reengineering initiative. (4QFY96)
- (U) $854 Spinal Cord Injury Transport System (SCITS) - Develop acquisition strategy and obtain Milestone I/II decision approval to support tri-Service requirements. (4QFY96)
- (U) $1,068 Threat Related Attrition Model - Integrate ground attack model for Build 2 and complete integration testing, deliver Build 2 and develop nuclear, biological and chemical modules. (4QFY96)
- (U) $126 Wartime Medical Planning System - Complete systems requirements analysis. (3QFY96)
- (U) $1,532 Continuous/Intermittent Suction Unit - Obtain Milestone II decision approval and begin engineering and manufacturing development. (4QFY96)
- (U) $22 Alternating Current Interface Unit (ACIU) - Complete production. (4QFY96)
- (U) $1,105 Chemically Hardened Air Transportable Hospital/Chemically Hardened Air Management Plant (CHATH/CHAMP) - Complete CHAMP development test and evaluation (DT&E). (4QFY96)
- (U) $31 Aeromedical Systems Analysis - Conduct foundation studies and analyses to support core aeromedical and casualty care and health care requirements in support of USAF/SG medical reengineering goals and objectives. (Continuing War Gaming and Electrical Conversion Conditioning Unit)
- (U) $552 Civil Reserve Air Fleet Aeromedical Evacuation Shipsets - Continue studies and support analysis for different airframes and configurations. (4QFY96)
- (U) $489 Funded proportional efforts of Human Systems Center, System Program Office, and Technical Engineering and Management Support contractor. (4QFY96)
- (U) $5,936 Total

(U) FY 1997 ($ in Thousands):
- (U) $138 CHATH/CHAMP - Complete CHAMP operational test and evaluation, meet initial operational capability (1QFY97), obtain Milestone III decision approval and exercise production option (3QFY97).
- (U) $617 SCITS - Begin DT&E. (3QFY97).

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604703F Aeromedical Systems Development
PROJECT NO. AND NAME 2866 Aeromedical/Casualty Care Systems Dev	

- (U) $75 Threat Related Attrition Model - Integrate nuclear, biological and chemical modules for Build 3, complete integration testing (3QFY97), and deliver Build 3 (4QFY97).
- (U) $337 Theater Medical Information Program - Conduct engineering and manufacturing development (EMD) planning. (4QFY97)
- (U) $40 Continuous/Intermittent Suction Unit - Complete operational testing (2QFY97) and obtain Milestone III decision approval. (3QFY97)
- (U) $2,868 Civil Reserve Air Fleet Aeromedical Evacuation Shipsets - Continue development of modifications of shipsets to support Air Mobility Command selected airframes and provide associated support equipment including the Casualty Transport System. (4QFY97)
- (U) NSP Aeromedical Systems Analysis - Conduct foundation studies and analyses to support core aeromedical and casualty care and health care requirements in support of USAF/SG medical reengineering goals and objectives. (Continuing)
- (U) $168 Air Force Medical Wargaming System - Conduct EMD planning. (4QFY97)
- (U) $1,734 Funded proportional efforts of Human Systems Center, System Program Office, and Technical Engineering and Management Support contractor. (4QFY97)
- (U) $5,977 Total

U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	8,178	6,267	6,225	Cont
(U) Appropriated Value	8,178	6,267		
(U) Adjustments to Appropriated Value				
a. Congressional Gen Reductions	-123	-122		
b. SBIR	-153	-113		
c. Below Threshold Reprogramming	-1,611	-64		
d. Omnibus and Above Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY 1995 PB		-32	-248	
(U) Current Budget Submit/President's Budget	6,291	5,936	5,977	Cont

(U) Change Summary Explanation:

Funding: Adjustments to Budget Years since FY96 PB were non-pay purchase inflation and Congressional reductions. Below Threshold Reprogramming ($1.6M) due to program requirements redefinition (reprogramming paperwork in process).

Schedule: No change.

Technical: No change.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604703F Aeromedical Systems Development

PROJECT NO. AND NAME: 2866 Aeromedical/Casualty Care Systems Dev

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Other Procurement, AF, BP , Other Base and Maintenance Support, Medical/Dental Equipment	6,500	10,921	7,655	4,536	5,827	3,000	0	Cont	Cont

(U) D. **Schedule Profile** (asterisks denote start of effort)

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
Transportable Blood Transshipment Center												
Critical Design Review												
Development Test & Evaluation (DT&E)												
Functional Configuration Audit	X											
Operational Test & Evaluation		X										
Initiate Production			*									
Initial Operational Capability (IOC)				X								
Full Operational Capability (FOC)												*
Spinal Cord Injury Transport System												
Analysis Supporting Tri-Service Reqts				X								
Milestone I/II								X				
DT&E											X	
Threat Related Attrition Model												
IOC					X							
FOC												X

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604703F Aeromedical Systems Development

PROJECT NO. AND NAME: 2866 Aeromedical/Casualty Care Systems Dev

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
Wartime Medical Planning System Systems/Market Analysis				*		X						
Alternating Current Interface Unit Production Contract				*				X				
Civil Reserve Air Fleet Aeromedical Evacuation Shipsets												
Repackage shipsets/rewrite manuals	X											
Full Operational Capability				X								
Conduct Studies/Analysis for aircraft configurations				*				X				
Complete shipset modifications												X
Chemically Hardened Air Transportable Hospital/Chemically Hardened Air Management Plant (CHATH/CHAMP)												
Engineering and Manufacturing Development												X
Complete CHAMP development test & evaluation								X				
Complete CHAMP operational test and evaluation									X			
Exercise Production option											*	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604703F Aeromedical Systems Development
PROJECT NO. AND NAME 2866 Aeromedical/Casualty Care Systems Dev	

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
Continuous/Intermittent Suction Unit												
Release draft request for proposal		X										
Milestone II					X							
EMD								X				
Milestone III											X	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Engineering and Manufacturing Development	3,731	3,477	3,828
(U) Development/Operational Test and Evaluation	422	179	121
(U) Contractor Engineering Support	1,199	1,657	1,412
(U) Miscellaneous (System Program Office Operations)	925	561	555
(U) Mission Support/Supplies	14	62	61
(U) Total	6,291	5,936	5,977

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604703F Aeromedical Systems Development

PROJECT NO. AND NAME: 2866 Aeromedical/Casualty Care Systems Dev

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
TBTC-Arthur D. Little	CPAF/FFP	Mar 91	11,033	13,289	13,134	73	82	0	0	13,289
CHATH/CHAMP Phase I-EASI and Guild	FPIF	Dec 94	2,989	2,989	2,985	4	0	0	0	2,989
CHATH/CHAMP Phase II-TBD	FPIF	Aug 95	TBD	5,048	1,793	1,747	1,081	138	0	4,759
CISU-TBD	CPIF	Jul 96	TBD	69	0	25	34	10	0	69
WAR-MED PS-BDM	CPAF	May 96	6,159	6,159	0	10	0	0	0	10
THREAT-BDM	CPFF	Aug 94	2,784	2,784	864	765	1,117	1,063	222	4,031
New Business-Various	Various	Various			17,477	609	903	2,540	Cont	21,529
Miscellaneous-Various	Various	Various			17,234	498	260	77	Cont	18,069
Support and Management Organizations										
TEAMS-OpTech, McDonald Tech, MTC	Delivery Order	Various			3,061	1,199	1,657	1,412	Cont	7,329
SPO Operations	Various	Various			3,767	818	561	555	Cont	5,701

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604703F Aeromedical Systems Development

PROJECT NO. AND NAME: 2866 Aeromedical/Casualty Care Systems Dev

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Mission Support/ Supplies	Various	Various			532	121	62	61	Cont	776
Test and Evaluation Organizations										
White Sands Missile Range					0	197	0	0	0	197
Aberdeen Proving Ground					0	114	0	0	0	114
SA-ALC					2	4	0	0	0	6
Armstrong Lab					0	5	0	0	0	5
Other					138	102	179	121	0	540

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

	Total Prior to FY 1995					
Subtotal Product Development	53,487	3,731	3,477	3,828	222	64,745
Subtotal Support and Management	7,360	2,138	2,280	2,028	Cont	13,806
Subtotal Test and Evaluation	140	422	179	121	Cont	862
Total Project	60,987	6,291	5,936	5,977	Cont	79,413

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604704F Common Support Equip Dev

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	1,383	1,118	0	0	0	0	0	0	51,862
2479 Common Support Equipment Development	304	0	0	0	0	0	0	0	6,210
3759 Air Force Support Equipment Management	471	0	0	0	0	0	0	0	3,775
3852 60K Pound Capacity Aircraft Transporter Loader	608	1,118	0	0	0	0	0	0	41,877

(U) A. **Mission Description and Budget Item Justification**

This program is in budget activity 5 - Engineering and Manufacturing Development (EMD), Research Category 6.4 because the majority of the funded efforts focus on preparing for an acquisition milestone III decision to initiate production. This program element supports projects and tasks that develop, test, evaluate and field improved aircraft common support equipment to meet the operational mission needs of both Global Reach and Global Power forces; which cannot be met through non-developmental item (NDI) acquisitions. Its goal is to limit proliferation; increase standardization; reduce the deployment footprint; reduce the environmental impact; and improve performance, availability, and reliability and maintainability; thereby reducing the life cycle costs. This program element also supports the development of an air transportable 60,000 (60K) pound capacity aircraft transporter loader, project #3852. Project numbers 3759 and 3852 are being transferred to other PEs. Project number 3759, Air Force Support Equipment Management, will transfer to PE 0708611F, Support Systems Development. Project number 3852, 60K Pound Capacity Aircraft Transporter Loader, will transfer to PE 0401214F, Air Cargo Materiel Handling (463L).

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604704F Common Support Equip Dev

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	1,605	1,874	1,306	4,785
(U) Appropriated Value	1,605	1,167		2,772
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-17	-23		-40
b. SBIR	-30	-17		-47
c. Omnibus or Other Above Threshold Reprogram		-9		-9
d. Below Threshold Reprogramming	-175			-175
(U) Adjustments to Budget Years Since FY 1996 PB		-756	-1,306	-2,062
(U) Current Budget Submit/President's Budget	1,383	1,118	0	2,501

(U) Change Summary Explanation:

Funding: FY1995 BTR was in support of the C-17 program. FY1996 adjustment was for the realignment of project #3759 from this Program Element (PE) to PE 0708611F, Support Systems Development. FY1997 adjustment was for realignment of projects #3759 and #3852. Project #3852 was realigned from this PE to PE0401214F, Air Cargo Materiel Handling (463L).

Schedule: No impact to the program.

Technical: No impact to the program.

(U) **C. Other Program Funding Summary ($ in Thousands)**

(U) Appropriation: Other Procurement, AF

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) 60K Loader	29,475	42,336	40,296	50,517	59,660	60,562	31,652	0	TBD

(U) **D. Schedule Profile**: See individual project R-2 Exhibit Sheets.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604704F Common Support Equip Dev

PROJECT NO. AND NAME: 2479 Common Support Equipment Development

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2479 Common Support Equipment Development	304	0	0	0	0	0	0	0	6,210

(U) **A. Mission Description and Budget Item Justification**

Project #2479, Common Support Equipment (SE): This project develops and tests common SE to fill a continuing need to improve aircraft readiness through improved acquisition of new SE. Improved acquisition of new common SE for the aircraft will decrease the mobility footprint, increase standardization, increase reliability and maintainability, reduce the environmental impact, and lower the life cycle costs. The Advanced X-ray Equipment System (AXES) task developed and tested a more rugged and deployable high resolution x-ray system. The AXES development task was terminated because the acquisition strategy was changed from R&D to Commercial Off-The-Shelf (COTS).

(U) FY 1995 ($ in Thousands):

- (U) $304 Completed acquisition phase II and terminated the AXES development task, effective 2Q95
- (U) $304 Total

(U) FY 1996 ($ in Thousands): Not Applicable.

(U) FY 1997 ($ in Thousands): Not Applicable.

(U) **B. Program Change Summary ($ in Thousands)**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604704F Common Support Equip Dev

PROJECT NO. AND NAME: 2479 Common Support Equipment Development

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	304	153	103	560
(U) Appropriated Value	304			304
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions				
b. SBIR				
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY 1996 PB		-153	-103	-256
(U) Current Budget Submit/President's Budget	304	0	0	304

(U) Change Summary Explanation:

Funding: FY1996 and 1997 adjustments were reprogrammed to the 60K Loader project #3852.

Schedule: No impact to the program.

Technical: No impact to the program.

(U) **C. Other Program Funding Summary ($ in Thousands)**: Not Applicable.

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Completed acquisition phase II	X											
(U) Terminated the AXES task		X										

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604704F Common Support Equip Dev
PROJECT NO. AND NAME 2479 Common Support Equipment Development	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Engineering and Support	304		
(U) Total	304	0	0

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**: Not Applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604704F Common Support Equip Dev
PROJECT NO. AND NAME 3759 Air Force Support Equipment Management	

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3759 Air Force Support Equipment Management	471	0	0	0	0	0	0	0	3,775

(U) **A. Mission Description and Budget Item Justification**

Project #3759, Air Force Support Equipment Management: The Automatic Test Systems (ATS) Product Group Manager's (PGM) Product Master Plan (PMP) and ATS database and software standards effort is designed to provide the tools to track and plan the ATS direction and provide the interface with commercial software standards. The PMP will support standardization and ATS PGM long-term planning by capturing essential data on all Air Force ATS. The ATS database will include all ATS identified in the PMP and be used to interface with Integrated Weapon System Master Plans. It will provide ATS managers and users the capability to match new test requirements to existing test capabilities (Note: This project has been transferred to PE 0708611F, Support Systems Development, beginning in FY1996).

(U) FY 1995 ($ in Thousands):

- (U) $159 Completed development of the ATS Master Plans
- (U) $5 Continued ATS Product Master Plan (PMP) data maintenance
- (U) $243 Programmed upgrades and updates and maintained the ATS database
- (U) $64 Program management support
- (U) $471 Total

(U) FY 1996 ($ in Thousands): Not Applicable.

(U) FY 1997 ($ in Thousands): Not Applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604704F Common Support Equip Dev
PROJECT NO. AND NAME 3759 Air Force Support Equipment Management	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	693	701	689	12,083
(U) Appropriated Value	693			693
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-17	-210	-210	-437
b. SBIR	-30			-30
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogramming	-175	-		-175
(U) Adjustments to Budget Years Since FY 1996 PB		-491	-479	-970
(U) Current Budget Submit/President's Budget	471	0	0	471

(U) Change Summary Explanation:

Funding: This project, #3759, and associated funding transferred to PE 0708611F, Support Systems Development, beginning in FY1996.

Schedule: No impact to the program.

Technical: No impact to the program.

(U) **C. Other Program Funding Summary ($ in Thousands)**: Not Applicable.

(U) **D. Schedule Profile**: Not Applicable.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604704F Common Support Equip Dev
PROJECT NO. AND NAME 3759 Air Force Support Equipment Management	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Develop and maintain ATS Master Plan	164		
(U) Develop and maintain ATS database	243		
(U) Program management support	64		
(U) Total	471	0	0

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**: Not Applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604704F Common Support Equip Dev

PROJECT NO. AND NAME: 3852 60K Pound Capacity Aircraft Transporter Loader

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3852 60K Pound Capacity Aircraft Transporter Loader	608	1,118	0	0	0	0	0	0	41,877

(U) **A. Mission Description and Budget Item Justification**

Project #3852, 60,000 (60K) Pound Capacity Aircraft Transporter Loader: This project will develop the 60K loader to fulfill the requirement of Air Mobility Command's (AMC) Operational Requirements Document (ORD) 002-89-1. The project provides a single, unique loader to on/off load various aircraft like the C-17, C-5, C-141, C-130, C-27, KC-10, and Civil Reserve Air Fleet (CRAF) aircraft; while combining the capabilities of the 40K, wide-body elevator, and lower-lobe loaders. The 60K loader will be driven on/off of the C-17, C-5, and C-141 aircraft without shoring. The 60K loader will also be capable of meeting the US Army's requirement to move/load a type V airdrop platform weighing a full 60,000 pounds. It will be significantly more reliable with a 100 hours mean time between failure (MTBF) versus the 40K loader's 18 hours MTBF. A major reduction in deployment preparation times will be achieved; from 30 man-hours to 3 man-hours.

(U) FY 1995 ($ in Thousands):
- (U) $25 Materials and labor for ECO testing on prototype loaders
- (U) $583 Provided program management support
- (U) $608 Total

(U) FY 1996 ($ in Thousands):
- (U) $540 Provide technical support for the Initial Operational Test and Evaluation (IOT&E)
- (U) $80 Research ECPs
- (U) $498 Provide program management support
- (U) $1,118 Total

(U) FY 1997 ($ in Thousands): Not Applicable.

(U) **B. Program Change Summary ($ in Thousands)**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604704F Common Support Equip Dev
PROJECT NO. AND NAME 3852 60K Pound Capacity Aircraft Transporter Loader	

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	608	1,020	514	1,628
(U) Appropriated Value	608			608
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions		-23	-3	-26
b. SBIR		-17		-17
c. Omnibus or Other Above Threshold Reprogram		-9		-9
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY 1996 PB		+152	-511	-359
(U) Current Budget Submit/President's Budget	608	1,118	0	1,726

(U) Change Summary Explanation:

Funding: This project and associated funding has been transferred/realigned to PE 0401214F, Air Cargo Materiel Handling (463-L) beginning in FY1997.

Schedule: No impact to the program.

Technical: No impact to the program.

(U) **C. Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Appropriation: Other Procurement, AF	29,475	42,336	40,296	50,517	59,660	60,562	31,652	0	TBD

(U) **D. Schedule Profile**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604704F Common Support Equip Dev
PROJECT NO. AND NAME 3852 60K Pound Capacity Aircraft Transporter Loader	

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Begin LRIP Delivery							X					
(U) Start IOT&E								X				
(U) Complete IOT&E									X			
(U) Milestone III										X		
(U) IOC											X	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604704F Common Support Equip Dev
PROJECT NO. AND NAME 3852 60K Pound Capacity Aircraft Transporter Loader	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) ECO testing	25		
(U) Research ECPs		80	
(U) Program management support	583	498	
(U) IOT&E		540	
(U) Total	608	1,118	0

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**: Not Applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604706F Life Support System

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	4,868	3,809	4,363	3,756	3,854	3,876	3,999	Continuing	TBD
3111 Aircraft Mishap Prevention Program	169	0	0	0	0	0	0	0	15,617
3812 COMBAT EDGE	551	435	0	0	0	0	0	0	15,213
412A Life Support Systems	4,148	3,374	4,363	3,756	3,854	3,876	3,999	Continuing	TBD

(U) A. **Mission Description and Budget Item Justification**

This program element is devoted to Engineering and Manufacturing Development (EMD) of aircrew life support equipment. This program element is managed from pre-concept to disposal under the Integrated Weapon System Management (IWSM) single manager concept. The Life Support program provides consolidated management for the development, acquisition, production, deployment, and support of aircrew protective equipment. The aircraft subsystems enable aircrews, passengers, and ground support personnel to operate safely in combat and training environments. Equipment developed under this program are generally classified as operational environment life support systems, escape and descent systems, and survival and recovery systems. Project 3111 develops a management information system to reduce loss of aircrew lives and aircraft due to human factors. Project 3812 develops a pressure breathing anti-Gravity (G) system for F-15 and F-16 crew members to help reduce the likelihood of G-induced loss of consciousness incidents and increase pilot endurance under high-G combat conditions. The majority of the equipment has been developed through the continuing core project, Project 412A. This project provides centralized management of life support items and subsystems. They include the following: flight clothing, flight helmets, oxygen breathing equipment for aviators, anti-G coveralls, survival radios, night vision devices, active/passive noise reduction devices, parachute releases and aircraft ejection seats.

(U) **Acquisition Strategy:**

Acquisition strategy is incorporated at the project level.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604706F Life Support System

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget (PB)	5,058	4,055	3,983	TBD
(U) Appropriated Value	5,058	4,055		
(U) Adjustments to Appropriated Value				
a. Congressional General Reductions	-96	-98		
b. Omnibus and Other Above Threshold Reprogramming		-43		
c. Small Business Innovative Research (SBIR)	-94	-85		
(U) Adjustments to Budget Years		-20	380	
(U) Current Budget Submit/President's Budget	4,868	3,809	4,363	TBD

(U) Change Summary Explanation:

Funding: Changes since last President's Budget are due to congressional reductions. Increase in FY97 is due to a new start program, Advanced Technology Anti-Gravity Suit (ATAGS).

Schedule: Incorporated at the Project Level

Technical: No Changes

(U) **C. Other Program Funding Summary ($ in Thousands)** Not Applicable

(U) **D. Schedule Profile** Incorporated at the Project level

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604706F Life Support System

PROJECT NO. AND NAME: 3111 Aircraft Mishap Prevention Program

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3111 Aircraft Mishap Prevention Program	169	0	0	0	0	0	0	0	15,617

(U) **A. Mission Description and Budget Item Justification**

Project 3111 developed a management information system to reduce loss of aircrew lives and aircraft due to human factors. This is a centralized system for the Air Force Safety Agency (AFSA) to analyze the human factor elements in aircraft mishaps. The results will assist the Air Force in the reduction of aircraft mishaps and the loss of human life. The system was delivered to AFSA at the end of FY94, completing the work under this project. The prime contractor for AMPP was ETA Technologies Corp. Acquisition was through Firm Fixed Price/Fixed Incentive contract.

(U) FY 1995
- (U) $169 Provided program support to AFSA for initial AMPP operations
- (U) $169 Total

(U) FY 1996 Not Applicable

(U) FY 1997 Not Applicable

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	0	0	16,380
(U) Appropriated Value				
(U) Adjustments to Appropriated Value				
a. Below Threshold Reprogramming	169			
(U) Current Budget Submit/President's Budget	169	0	0	15,617

(U) Change Summary Explanation:
Funding: No Change

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604706F Life Support System
PROJECT NO. AND NAME 3111 Aircraft Mishap Prevention Program	

Schedule: No Changes

Technical: No Changes

(U) C. **Other Program Funding Summary ($ in Thousands)** Not Applicable

(U) D. **Schedule Profile**

	FY 1995				FY 1996				FY 1997			
1	2	3	4	1	2	3	4	1	2	3	4

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604706F Life Support System

PROJECT NO. AND NAME: 3812 COMBAT EDGE

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3812 COMBAT EDGE	551	435	0	0	0	0	0	0	15,213

(U) A. Mission Description and Budget Item Justification

This project develops and fields a positive pressure breathing anti-G system for F-15 and F-16 crew members, called the COMBined Advanced Technology Enhanced Design Anti-Gravity Ensemble (COMBAT EDGE). This system is designed to reduce the cumulative effects of G-induced stress and fatigue and thus reduce the number of G-induced Loss Of Consciousness (G-LOC) incidents. The system supplements the current anti-G suit garment with the additional following equipment: an upper torso counter pressure vest, a tensioning bladder modification kit incorporated into the current HGU-55/P helmet, a new oxygen mask, a modified oxygen regulator, and a modified high-flow anti-G valve. For COMBAT EDGE Gentex Corporation and Carleton Technologies are the prime contractors with firm fixed price contract.

(U) FY 1995

- (U) $262 Completed the deployment of COMBAT EDGE to ANG and Active F-16 units
- (U) $169 Initiated deployment of COMBAT EDGE system to F-15 units
- (U) $120 Initiated FOT&E on mask improvements (comfort and design)
- (U) $551 Total

(U) FY 1996

- (U) $80 Conduct manrating on mask improvements (comfort and design)
- (U) $25 Complete FOT&E on mask improvements
- (U) $25 Conduct Functional Configuration Audit/Physical Configuration Audit (FCA/PCA) on overall improved mask
- (U) $305 Deploy COMBAT EDGE to F-15 units
- (U) $435 Total

(U) FY 1997 - Not Applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604706F Life Support System
PROJECT NO. AND NAME 3812 COMBAT EDGE	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	80	0	0	13,906
(U) Appropriated Value	80	0		
(U) Adjustments to Appropriated Value				
a. Below Threshold Reprogramming	471			
(U) Adjustments to Budget Years since FY95 PB		435		
(U) Current Budget Submit/President's Budget	551	435	0	14,812

(U) Change Summary Explanation:

Funding: FY95 Below Threshold Reprogramming was to initiate the deployment of COMBAT EDGE to F-16 units. FY96 budget year was increased to complete Follow-On Test and Evaluation (FOT&E) on mask improvements and to complete the deployment of COMBAT EDGE to F-15 units.

Schedule: Integration tests on mask improvements (comfort and design) moved from FY95 to the first quarter of FY96 due to defective test items delivered by the contractor for FOT&E on the concept 1 mask improvements. The initiation in the deployment of COMBAT EDGE to F-15 units was rescheduled to begin in the first quarter of 1996.

Technical: No Changes

(U) **C. Other Program Funding Summary ($ in Thousands)** - Not Applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604706F Life Support System
PROJECT NO. AND NAME 3812 COMBAT EDGE	

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) - Completed F-16 depolyment	**X**											
(U) - Initiate F-15 deployment					**X**							
(U) - Integration tests on mask improvements (comfort and hang)					X							
(U) - Complete F-15 deployment								X				
(U) - Complete FOT&E on mask improvements									**X**			
(U) - Conduct Functional Configuraton Audit/Physical Configuration Audit on overall improved mask									X			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604706F Life Support System
PROJECT NO. AND NAME 412A Life Support Systems	

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
412A Life Support Systems	4,148	3,374	4,363	3,756	3,854	3,876	3,999	Continuing	TBD

(U) A. **Mission Description and Budget Item Justification**

This project provides for Engineering, Manufacturing, and Development (EMD) of life support equipment and subsystems to satisfy operational command requirements for improved life support equipment. This project also maximizes life support items and subsystems such as the following: flight clothing, flight helmets, oxygen breathing equipment for aviators, anti-G coveralls, survival radios, night vision devices, active/passive noise reduction devices, parachute releases, and aircraft ejection seats. Program management support includes tasks to assess deficiencies of currently fielded equipment. It also aids in transitions of new technology into EMD and to support all current life support projects. Life Support Systems top three major contractors are ITT Electro-Optical Products Division, Bose Corporation, and Conax Florida Corp. Life Support efforts result from full and open competition among qualified vendors to select a single primary source for EMD and follow-on production.

(U) FY 1995

- (U) $2,975 Received Night Vision System (NVS) Developmental Testing and Evaluation (DT&E) units
- (U) $594 Initiated NVS government conducted DT&E
- (U) NSP Provided technical support for Universal Water Activated Release System (UWARS) production contract.
- (U) NSP Initiated Active Noise Reduction (ANR) government DT&E. ($643K Air Force Special Operations Command (AFSOC) funded)
- (U) NSP Completed UWARS government DT&E
- (U) NSP Completed UWARS Initial Operational Test & Evaluation (IOT&E). (Funded by PE64609F, R&M Maturation/Tech Insertion Program)
- (U) $579 Program Management Support and Travel
- (U) $4,148 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604706F Life Support System
PROJECT NO. AND NAME 412A Life Support Systems	

(U) FY 1996

–	(U) $1,972	Complete Design, then build initial test assets for combined NVS Developmental Test & Evaluation Operational Test and Evaluation (DT&E/OT&E)
–	(U) $1,052	Perform NVS Contractor-conducted qualification testing
–	(U) NSP	Complete ANR government DT&E and IOT&E. (AFSOC funded)
–	(U) NSP	Deliver/Support ANR production units. (Production $1,482K-AFSOC funded; Support-NSP)
–	(U) NSP	Start/Support UWARS production deliveries. (Support-NSP, Production funded under PE 27596F, Base Ops - Tactical Air Forces)
–	(U) $350	Program Management Support and Travel
–	(U) $3,374	Total

(U) FY 1997

–	(U) $1,712	Receive final test assets for NVS Developmental / Operational Test and Evaluation (DT&E / OTE)
–	(U) $426	Complete NVS Contractor-conducted qualification testing
–	(U) $1,058	Perform Government-conducted NVS Combined DT&E / OT&E
–	(U) NSP	Complete/Support ANR production deliveries. (Production - AFSOC funded; Support-NSP)
–	(U) NSP	Continue UWARS production deliveries
–	(U) $600	Initiate the Advanced Technology Concept Anti-Gravity Suit (ATAGS) project
–	(U) $567	Program Management Support and travel
–	(U) $4,363	Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604706F Life Support System
PROJECT NO. AND NAME 412A Life Support Systems	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	4,249	3,600	3,983	TBD
(U) Appropriated Value	4,038	3,600		
(U) Adjustments to Appropriated Value				
a. Congressional General Reduction		-98		
b. Omnibus & Other Above Threshold Reprogramming		-43		
c. Small Business Innovative Research (SBIR)		-85		
(U) Adjustments to Budget Years since FY95 PB	-101		380	
(U) Current Budget Submit/President's Budget	4,148	3,374	4,363	TBD

(U) Change Summary Explanation:

Funding: FY96 and FY97 NVS program re-structure incorporated an improved NVS optical design and combined DT&E with OT&E, thereby reducing testing costs and maintaining the scheduled Initial Operating Capability (IOC).

Schedule: Re-design of NVS optics resulted in later delivery of test assets; however, combination of DT&E and OT&E cut test costs and test schedule, preserving net schedule for IOC.

Technical: NVS optical design incorporates breakout technology and is not driven by any failure in the previous design.

(U) **C. Other Program Funding Summary ($ in Thousands)** - Not Applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604706F Life Support System

PROJECT NO. AND NAME: 412A Life Support Systems

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Completed Active Noise Reduction (ANR) Requirements Definitions	X											
(U) Government Assessment of NVS Prototype	X											
(U) Completed Universal Water Activated Release System Qualification Testing	X											
(U) Complete UWARS Initial Operational Testing and Evaluation (IOT&E)			X									
(U) Complete UWARS Government DT&E				X								
(U) Complete ANR DT&E and IOT&E							X					
(U) Receive NVS DT&E / OT&E Units							X					
(U) Perform NVS Contractor Qual Test								X				
(U) Complete ANR Deliveries									X			
(U) Start UWARS Production Deliveries										X		
(U) Complete Government Conducted NVS DT&E / OT&E											X	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604706F Life Support System
PROJECT NO. AND NAME 412A Life Support Systems	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Contracts	2,975	2,455	2,198
(U) Technical Engineering Support	461	460	454
(U) Travel	113	109	86
(U) Government Testing	20	0	1,058
(U) Program Management Support	579	350	567
(U) Total	4,148	3,374	4,363

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Kaiser Electronics	C,CPAF	18 Jan 93	4,831	4,831	4,831	0	0	0	0	4,831
ITT	C,CPAF	18 Jan 93	15,397	15,397	6,275	2,975	2,455	1,598	79	13,382
Future Award for (ATAGS)		Oct 96	0	0	0	0	0	600	800	1,400
Other Previous Contracts			7,623	7,623	7,623	0	0	0	0	7,623

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604706F Life Support System

PROJECT NO. AND NAME: 412A Life Support Systems

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Support and Management Organizations										
Program Management Support			1,137	1,137	1,226	579	350	567	Cont.	TBD
Travel			929	929	389	113	109	86	Cont.	TBD
System Eng Tech Asst (SETA)			3,239	3,239	1,995	461	460	454	Cont.	TBD
Test and Evaluation Organizations										
Air Force Flight Test Center			4,082	4,082	2,858	20	0	1,058	Cont.	TBD
Subtotal Product Development			27,851	27,851	18,729	2,975	2,455	2,198	79	26,853
Subtotal Support and Management			5,305	5,305	3,610	1,153	919	1,107	Cont.	TBD
Subtotal Test and Evaluation			4,082	4,082	2,858	20	0	1,058	Cont.	TBD
Total Project			37,238	37,238	25,197	4,148	3,374	4,363	Cont.	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604708F Civil, Fire, Environmental, Shelter

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	3,086	2,598	2,736	2,843	2,922	2,985	3,057	Continuing	Continuing
2054 Aerospace Facilities Engineering Development	665	645	713	737	760	778	795	Continuing	Continuing
2505 Aircraft Firefighting Suppression & Rescue	1,165	1,157	1,125	1,165	1,208	1,238	1,269	Continuing	Continuing
2674 Tactical Shelters	591	152	185	204	193	190	197	Continuing	Continuing
3788 Environmental Quality	665	644	713	737	761	779	796	Continuing	Continuing

(U) A. **Mission Description and Budget Item Justification**

This program funds the development, testing and evaluation of materials, equipment and procedures in four separate areas: a) Facilities Engineering improves the operational effectiveness, survivability, durability, and longevity of air base pavements, buildings and utilities; the overall objective is to provide an infrastructure that effectively supports the Air Force mission, contributes to high sortie rates, supports forward projection of air power, is less susceptible to damage from enemy actions or natural disasters, and is more rapidly returned to service if damaged. b) Fire Fighting Suppression and Rescue develops new concepts and technology applications to increase fire fighting support of combat operations, to improve base recovery after attack capabilities, and to reduce fire risks to personnel and resources. c) Tactical Shelters is the USAF portion of a tri service effort to develop standardized, low maintenance, survivable shelters and shelter accessories that are easily mobilized and compatible with air, sea and land transport systems. These products will effectively support high mobility aircraft support, command and control, communications, medical, and data processing units for the tactical and strategic forces. d) Environmental Quality ensures Air Force compliance with existing laws, executive orders, and Air Force policies by developing technologies to identify, reduce, and eliminate pollutant sources, identify and dispose of hazardous waste, conduct remediation, and mitigate the effects wastes and pollutants. This project develops equipment, materials, and processes in support of the Air Force environmental program. Environmental work performed under this program element is Engineering and Manufacturing Development because it takes emerging technologies and develops them for Air Force use.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604708F Civil, Fire, Environmental, Shelter

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget (96 PB)	3,214	2,737	2,835	Cont
(U) Appropriated Value	3,214	2,137		
(U) Adjustment to Budget Years Since FY 96 PB		(96)	(99)	
(U) Adjustments to Appropriated Value				
a. Undistributed Congressional Reductions	(68)			
b. SBIR	(60)	(43)		
(U) Current Budget Submit/President's Budget	3,086	2,598	2,736	Cont

(U) Change Summary Explanation:

Funding: FY 96 and FY 97 programs adjusted for inflation and to cover higher priority requirements.

Schedule: Not Applicable.

Technical: Not Applicable.

(U) **C. Other Program Funding Summary ($ in Thousands):** Not Applicable.

(U) **D. Schedule Profile:** Not Applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604708F Civil, Fire, Environmental, Shelter

PROJECT NO. AND NAME: 2054 Aerospace Facilities Engineering Development

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2054 Aerospace Facilities Engineering Development	665	645	713	737	760	778	795	Continuing	Continuing

(U) **A. Mission Description and Budget Item Justification**

Develops equipment, materials, and procedures to improve the operational effectiveness of aerospace facilities.

(U) FY 1995 ($ in Thousands):

(U) $120 Complete development of new family of environmental control units.
(U) $295 Begin Bare Base Systems requirements analysis.
(U) $160 Begin development of new family of Bare Base shelters.
(U) $90 Begin development of light weight deployable power generation/distribution systems.
(U) $665 Total

(U) FY 1996 ($ in Thousands):

(U) $226 Complete Bare Base Systems requirements analysis.
(U) $230 Continue development of new family of Bare Base shelters.
(U) $189 Continue development of light weight deployable power generation/distribution systems.
(U) $645 Total

(U) FY 1997 ($ in Thousands):

(U) $403 Continue development of new family of Bare Base shelters.
(U) $310 Continue development of light weight deployable power generation/distribution systems.
(U) $713 Total

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	665	663	739	Cont

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604708F Civil, Fire, Environmental, Shelter
PROJECT NO. AND NAME 2054 Aerospace Facilities Engineering Development	

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Appropriated Value	665			
(U) Adjustments to Budget Years Since FY 95 PB		(18)	(26)	
(U) Adjustments to Appropriated Value				
(U) Current Budget Submit/President's Budget	665	645	713	Cont

(U) Change Summary Explanation:

Funding: FY 96 and FY 97 programs adjusted for inflation and to cover higher priority requirements.

Schedule: Not Applicable

Technical: Not Applicable.

(U) C. Other Program Funding Summary ($ in Thousands): Not Applicable.

(U) D. Schedule Profile: Not Applicable.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604708F Civil, Fire, Environmental, Shelter
PROJECT NO. AND NAME 2054 Aerospace Facilities Engineering Development	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) New Family of Environmental Control Units	120		
(U) Bare Base Systems Analysis	295	226	
(U) New Family of Portable Shelters	160	230	403
(U) Light Weight Deployable Generator	90	189	310
(U) Total	665	645	713

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands):** Not Applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604708F Civil, Fire, Environmental, Shelter

PROJECT NO. AND NAME: 2505 Aircraft Firefighting Suppression & Rescue

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2505 Aircraft Firefighting Suppression & Rescue	1,165	1,157	1,125	1,165	1,208	1,238	1,269	Continuing	Continuing

(U) **A. Mission Description and Budget Item Justification**

Develops improved fire fighting, suppression and rescue equipment, materials, and methods to increase fire protection readiness, mobility, and effectiveness.

(U) FY 1995 ($ in Thousands):

(U) $530	Award EMD contract for DFPS and begin support of production contract.
(U) $230	Continue courseware development for FMTS. Develop FMTS for structural, C-747, C-17 aircraft and HAZMAT I and II.
(U) $330	Continue commercial technology exploitation.
(U) $45	Begin development of fire fighter emergency response ensemble with body cooling system.
(U) $30	Complete development of SCBA.
(U) $1,165	Total

(U) FY 1996 ($ in Thousands):

(U) $330	Continue courseware development of FMTS. Completes courseware for HAZMAT III, IV, and V.
(U) $334	Continue commercial technology exploitation.
(U) $343	Continue development of fire fighter emergency response ensemble with body cooling system.
(U) $50	Begin development of environmentally acceptable AFFF/Halon replacement.
(U) $100	Begin follow-on improvement of DFPS.
(U) $1,157	Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604708F Civil, Fire, Environmental, Shelter
PROJECT NO. AND NAME 2505 Aircraft Firefighting Suppression & Rescue	

(U) **A. Mission Description and Budget Item Justification Continued**

(U) FY 1997 ($ in Thousands):

(U) $330	Continue courseware development of FMTS.
(U) $250	Continue commercial technology exploitation.
(U) $250	Continue development of fire fighter emergency response ensemble with body cooling system.
(U) $195	Continue development of environmentally acceptable AFFF/Halon replacement.
(U) $100	Continue follow-on improvement of DFPS.
(U) $1,125	Total

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	1,165	1,189	1,165	Cont
(U) Appropriated Value	1,165			
(U) Adjustments to Budget Years Since FY 95 PB		(32)	(40)	
(U) Adjustments to Appropriated Value				
a. Undistributed Congressional Reductions				
(U) Current Budget Submit/President's Budget	1,165	1,157	1,125	Cont

(U) Change Summary Explanation:

Funding: FY 96 and FY 97 programs adjusted for inflation and to cover higher priority requirements.

Schedule: Not Applicable.

Technical: Not Applicable.

(U) **C. Other Program Funding Summary ($ in Thousands):** Not Applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604708F Civil, Fire, Environmental, Shelter
PROJECT NO. AND NAME 2505 Aircraft Firefighting Suppression & Rescue	

(U) **D.** **Schedule Profile:** Not Applicable.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604708F Civil, Fire, Environmental, Shelter
PROJECT NO. AND NAME 2505 Aircraft Firefighting Suppression & Rescue	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Deployable Fire Protection System	530	100	100
(U) Self Contained Breathing Apparatus	30		
(U) Firefighter Multimedia Training System	230	330	330
(U) Commercial Technology Exploitation	330	334	250
(U) Emergency Response Ensemble	45	343	250
(U) Halon/AFFF Agent Replacement		50	195
(U) Total	1,165	1,157	1,125

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands):** Not Applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604708F Civil, Fire, Environmental, Shelter

PROJECT NO. AND NAME: 2674 Tactical Shelters

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2674 Tactical Shelters	591	152	185	204	193	190	197	Continuing	Continuing

(U) **A. Mission Description and Budget Item Justification**

Provides reliable, cost effective tactical shelters required to ensure the success of Air Force missions, provides Air Force membership in the DOD Tactical Shelter Program, and provides technology insertion for shelter development.

(U) FY 1995 ($ in Thousands):

(U) $260 Complete EMD phase of R-134a environmental control unit upgrade to non-ozone depleting chemicals.

(U) $331 Attend JOCOTAS and ASTM meetings. Coordinate with other Air Force agencies. Fund ESC personnel, contractor support, MITRE support, travel, equipment, supplies, and overhead.

(U) $591 Total

(U) FY 1996 ($ in Thousands):

(U) $152 Attend JOCOTAS and ASTM meetings. Coordinate with other Air Force agencies. Fund ESC personnel, contractor support travel, equipment, supplies, and overhead.

(U) $152 Total

(U) FY 1997 ($ in Thousands):

(U) $185 Attend JOCOTAS and ASTM meetings. Coordinate with other Air Force agencies . Fund ESC personnel, contractor support travel, equipment, supplies, and overhead.

(U) $185 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604708F Civil, Fire, Environmental, Shelter
PROJECT NO. AND NAME 2674 Tactical Shelters	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	591	223	192	Cont
(U) Appropriated Value	591			
(U) Adjustments to Budget Years Since FY 95 PB		(28)	(7)	
(U) Adjustments to Appropriated Value				
a. Undistributed Congressional Reductions				
b. SBIR		(43)		
(U) Current Budget Submit/President's Budget	591	152	185	Cont

(U) Change Summary Explanation:

Funding: FY 96 and FY 97 programs adjusted for inflation and to cover higher priority requirements.

Schedule: Not Applicable.

Technical: Not Applicable.

(U) **C. Other Program Funding Summary ($ in Thousands):** Not Applicable.

(U) **D. Schedule Profile:** Not Applicable.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604708F Civil, Fire, Environmental, Shelter
PROJECT NO. AND NAME 2674 Tactical Shelters	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Study Electromagnetic Interference (EMI)			
(U) Shelter Chemical/Biological Development Program			
(U) Field Application of EMI Coatings			
(U) Environmental Control Unit R-134a Upgrade	260		
(U) New Shelter Systems			
(U) Shelters 2000 Program			
(U) Engineering Support	331	152	185
(U) Total	591	152	185

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands):** Not Applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604708F Civil, Fire, Environmental, Shelter
PROJECT NO. AND NAME 3788 Environmental Quality	

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3788 Environmental Quality	665	644	713	737	761	779	796	Continuing	Continuing

(U) A. **Mission Description and Budget Item Justification**

Develops equipment, materials, and processes in support of the Air Force environmental program including pollution prevention, compliance, restoration, and conservation. The focus is on technologies to reduce and eliminate pollutant sources, provide cost effective waste disposal, conduct remediation, and mitigate the effects of wastes and pollutants.

(U) FY 1995 ($ in Thousands):

(U) $200 Compliance - Highly Energetic Material Program.
- (U) Review and comment on documentation to provide at completion of Lab transition.
- (U) Participate in pilot demonstration.
- (U) Prepare to execute program pending full funding of effort
- (U) Review and develop program proposals to meet Air Force needs identified in the Air Force ESOH Technology Needs Survey.
- (U) Prepare for technology transition and program execution.

(U) $132 Remediation - SCAPS.
- (U) Continue to manage ARPA program.
- (U) Represent AF at Tri-Service meetings.
- (U) Inform AF users of availability of services and capabilities.

(U) $333 Pollution Prevention.
- (U) Define scope and effort involved in supporting AF effort to reduce the use of ODCs and HAZMATS.
- (U) Develop and submit program proposals to NDCEE and ESTCP.
- (U) Continue execution of replacement identification program for engines at NDCEE.
- (U) Review and develop program proposals to meet AF needs identified in AF ESOH Technical Needs Survey.
- (U) Prepare for technology transition and program execution.

(U) $665 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604708F Civil, Fire, Environmental, Shelter
PROJECT NO. AND NAME 3788 Environmental Quality	

(U) **A. Mission Description and Budget Item Justification Continued**

(U) FY 1996 ($ in Thousands):

(U) $200 Compliance - Highly Energetic Material Program.
- (U) Review and comment on documentation to provide at completion of lab effort.
- (U) Prepare to execute program pending full funding of effort.
- (U) Review and develop program proposals to meet AF needs identified in AF ESOH Technology Needs Survey.
- (U) Prepare for technology transition and program execution.

(U) $130 Remediation - SCAPS.
- (U) Continue to manage ARPA program.
- (U) Represent AF at Tri-Service meetings.
- (U) Inform AF users of availability of services and capabilities.

(U) $314 Pollution Prevention.
- (U) Define scope and effort involved in supporting AF effort to reduce the use of ODCs and HAZMATS.
- (U) Develop and submit program proposals to NDCEE and ESTCP.
- (U) Continue execution of replacement identification program for engines at NDCEE.
- (U) Review and develop program proposals to meet AF needs identified in AF ESOH Technical Needs Survey.
- (U) Prepare for technology transition and program execution.

(U) $644 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604708F Civil, Fire, Environmental, Shelter
PROJECT NO. AND NAME 3788 Environmental Quality	

(U) A. **Mission Description and Budget Item Justification Continued**

(U) FY 1997 ($ in Thousands):

-(U) $221	Compliance - Highly Energetic Material Program.
-	Continue to review and comment on documentation to provide at completion of lab efforts.
-	Execute program pending full funding of effort.
-	Continue to review and develop program proposals to meet AF needs identified in AF ESOH Technology Needs Survey.
-	Prepare for technology transition and program execution.
-(U) $148	Remediation - SCAPS.
-	Continue to manage ARPA program.
-	Inform AF users of availability of services and capabilities.
-	Represent AF at Tri-Service meetings.
-	RF Heating; work a full scale solvent remediation systems at realistic depths.
-(U) $344	Pollution Prevention.
-	Define scope and effort involved in supporting AF effort to reduce the use of EPA 17, NESHAPS and other HAZMATS.
-	Develop and submit program proposals for DOD Environmental initiatives (funding sources).
-	Continue execution of material/process substitution program for engines at NDCEE.
-	Review and develop program proposals to meet AF needs identified in AF ESOH Technical Needs Survey.
-	Prepare for technology transition and program execution.
-	Define scope and effort involved in supporting AF effort to reduce the use of ODCs and HAZMATS.
-	Develop and submit program proposals for DOD Environmental initiatives (funding sources).
-	Continue execution of material/process substitution program for engines at NDCEE.
-	Review and develop program proposals to meet AF needs identified in AF ESOH Technical Needs Survey.
-(U) $713	Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604708F Civil, Fire, Environmental, Shelter
PROJECT NO. AND NAME 3788 Environmental Quality	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	665	662	739	Cont
(U) Appropriated Value	665			
(U) Adjustments to Budget Years Since FY 96 PB		(18)	(26)	
(U) Current Budget Submit/President's Budget	665	644	713	Cont

(U) Change Summary Explanation:

Funding: FY 96 and FY 97 programs adjusted for inflation.

Schedule: Not Applicable.

Technical: Not Applicable.

(U) **C. Other Program Funding Summary ($ in Thousands):** Not Applicable.

(U) **D. Schedule Profile:** Not Applicable.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604708F Civil, Fire, Environmental, Shelter
PROJECT NO. AND NAME 3788 Environmental Quality	

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Compliance	200	200	221
(U) Site Remediation	132	130	148
(U) Site Characterization and Analysis Penetrometer System (U) Pollution Prevention	333	314	344
(U) Total	665	644	713

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands):** Not Applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604727F Joint Standoff Weapons Systems

PROJECT NO. AND NAME: 1000 Joint Standoff Weapon

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
1000 Joint Standoff Weapon	54,805	41,448	23,563	16,732	10,857	8,190	0	0	184,150

(U) A. **Mission Description and Budget Item Justification**

The Joint Standoff Weapon (JSOW) is an air-to-ground weapon designed to attack a variety of targets during day, night, and adverse weather conditions. JSOW will enhance aircraft survivability as compared to current interdiction weapon systems by providing the capability for launch aircraft to standoff outside the range of point defenses. The JSOW launch-and-leave capability will allow several target kills per aircraft sortie. The program provides for development and test of a dispenser design for the JSOW/BLU-108 variant which employs a BLU-108/B submunition payload. Integration of the JSOW Baseline weapon (BLU-97 Combined Effects Munition variant) and the JSOW/BLU-108 with the F-16C/D aircraft is also included. Future integration is planned with the B-1B, B-52, and the F-15E. The program also includes the development of Common Munitions BIT (Built-In Test), Reprogramming Equipment (CMBRE) software, a tester for JSOW, Joint Direct Attack Munitions (JDAM), Wind Corrected Munitions Dispenser (WCMD), and future smart weapons. The RDT&E Research Category/Budget Activity is Engineering and Manufacturing Development - the phase of the program following a successful Milestone II (Acquisition Decision Memorandum dated 26 April 1995).

(U) FY 1995

- (U) $ 10,791 - Plan, design and produce test vehicles
- (U) $ 1,216 - Plan, design and initiate flight testing
- (U) $ 8,900 - Start development of the Operational Flight Program (OFP) tape and program office flight test support for F-16
- (U) $ 13,298 - Design, develop, and test Air Force Mission Support System (AFMSS) module; perform Integrated Logistics System (ILS) tasks; participate in Critical Design Review (CDR)
- (U) $ 4,402 - Engineering support, program office support
- (U) $ 5,000 - Plan, design and produce MIL-STD-1760 carriage store
- (U) $ 501 - Conduct Survivability Analysis
- (U) $ 10,698 - Design BLU-108 dispenser; perform weapon pattern optimization; conduct Preliminary Design Review
- (U) $ 54,805 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604727F Joint Standoff Weapons Systems
PROJECT NO. AND NAME 1000 Joint Standoff Weapon	

(U) FY 1996

- (U) $ 15,394 - Plan, design and produce test vehicles
- (U) $ 6,334 - Plan, design and conduct flight testing
- (U) $ 5,230 - Design, develop, and test AFMSS module; perform ILS tasks
- (U) $ 3,388 - Engineering support, program office support
- (U) $ 11,072 - Conduct JSOW/BLU-108 CDR; plan, design and conduct flight testing to qualify the BLU-108 dispenser
- (U) $ 30 - Complete Survivability Analysis
- (U) $ 41,448 Total

(U) FY 1997

- (U) $ 1,366 - Plan, design and produce Initial Operational Test & Evaluation (IOT&E) test vehicles
- (U) $ 6,025 - Plan and conduct Developmental Test & Evaluation flight testing
- (U) $ 2,562 - Complete development and test AFMSS module; perform Integrated Logistics Support (ILS) tasks
- (U) $ 7,936 - Continue flight testing to qualify BLU-108 dispenser
- (U) $ 2,599 - Engineering support, program office support
- (U) $ 2,000 - Smart Rack integration and flight testing
- (U) $ 588 - Common Munitions BIT (Built-In Test) Reprogramming Equipment (CMBRE) software development
- (U) $ 487 - Complete Develpment of the OFP tape for the F-16.
- (U) $ 23,563 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604727F Joint Standoff Weapons Systems

PROJECT NO. AND NAME: 1000 Joint Standoff Weapon

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	48,966	44,025	24,565	188,698
(U) Appropriated Value	55,966			
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-611	-862		
b. SBIR	-1,051	-1,104		
c. Omnibus or Other Above Threshold Reprogram		-611		
d. Below Threshold Reprogramming	501			
(U) Adjustments to Budget Years Since FY1996 PB			-1,002	
(U) Current Budget Submit/FY97 PB	54,805	41,448	23,563	184,150

(U) Change Summary Explanation:

Funding: FY96 reductions were for SBIR, general Congressional Reductions, $453,000 support for Bosnia operations, and $158,000 reprogramming for F-16s to Jordan. FY97 reduction due to inflation adjustment.

Schedule: Restructuring slipped EMD contract award six months. DT&E schedule unchanged. Baseline delivery begins in FY99.

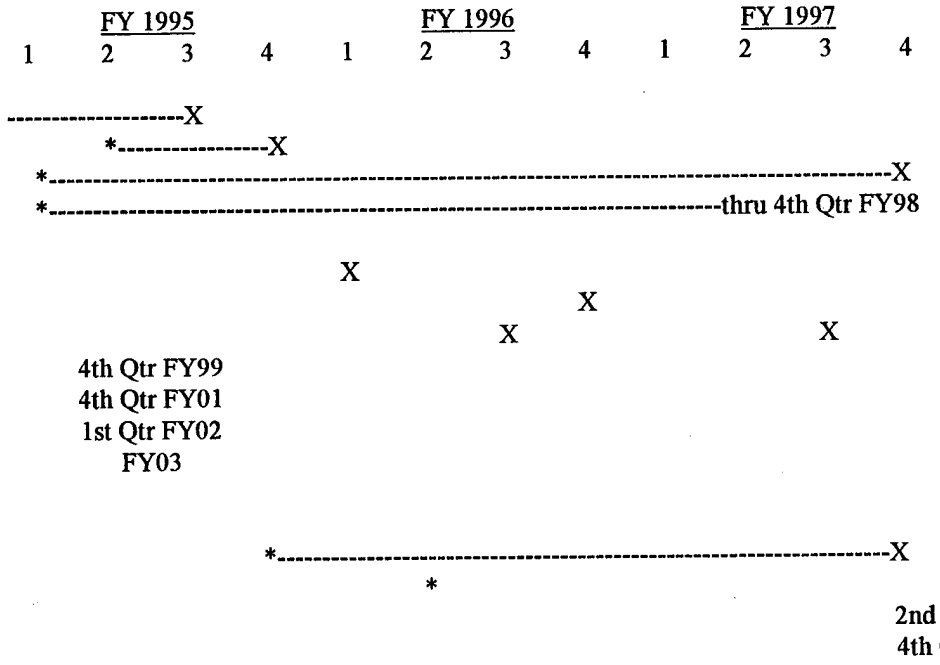
Technical: None

(U) **C. Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Weapon Procurement, AF	0	0	0	8,177	36,339	63,867	84,770	TBD	TBD
(U) SEEK EAGLE (PE 0207590F)	0	0	8,033	9,157	2,129	3,547			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604727F Joint Standoff Weapons Systems
PROJECT NO. AND NAME 1000 Joint Standoff Weapon	

(U) D. Schedule Profile



RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604727F Joint Standoff Weapons Systems
PROJECT NO. AND NAME 1000 Joint Standoff Weapon	

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Primary Hardware Development	12,078	12,355	2,018
(U) Ancillary Hardware Development	36	131	223
(U) Development Support Equipment	6,836	317	
(U) Software Development	11,814	5,289	1,986
(U) Systems Engineering	17,133	10,000	8,903
(U) Training Development	29	251	57
(U) Technical Data	462	3,987	2,446
(U) Developmental Test and Evaluation	1,014	5,701	5,312
(U) Contractor Engineering Support	1,761	1,257	1,709
(U) Government Engineering Support	1,521	274	1019
(U) Program Management Support/ Other Direct Cite	1,620	1,856	-110
(U) Survivability Analysis	501	30	
(U) Total	54,805	41,448	23,563

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604727F Joint Standoff Weapons Systems

PROJECT NO. AND NAME: 1000 Joint Standoff Weapon

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Texas Instruments	SS/CPIF	various	TBD	TBD	20,345	32,304	34,162	18,480	22,573	127,864
Lockheed	MIPR to ASC/YP	various	TBD	TBD		8,900		486		9,386
M Tech	SS/SBIR Phase 3, FP/CPIF	various	TBD	TBD		5,000				5,000
Textron	TBD	TBD	TBD	TBD		2,972	2,000	18		4,990
Support and Management Organizations										
China Lake NWC	MIPR	various	TBD	TBD	1,569	1,021	200	938	500	4,228
Miscellaneous	Misc	various	TBD	TBD	5,400	4,281	3,139	1,749	12,706	27,275
Test and Evaluation Organizations										
AFDTC, Eglin AFB	PO	various	TBD	TBD	1,241	327	1,947	1,892		5,407
Subtotal Product Development					20,345	36,162	18,984	22,573	147,240	
Subtotal Support and Management					6,969	3,339	2,687	13,232	31,529	
Subtotal Test and Evaluation					1,241	1,947	1,892		5,407	
Total Project					28,555	41,448	23,563	35,779	184,150	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604735F Combat Training Ranges

PROJECT NO. AND NAME: 2286 Combat Training Range Equipment

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2286 Combat Training Range Equipment	13,664	9,739	23,018	20,501	15,014	13,432	14,560	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

This program develops the electronic, telecommunications, and instrumentation equipment/systems for training ranges worldwide. These systems provide real-time monitoring and control of aircrew air-to-air, air-to-ground, and electronic warfare training along with the ability to record events for crew debriefing and analysis. The primary developmental effort is the Nellis Air Combat Training System (NACTS) at Nellis AFB. NACTS is a Global Positioning System (GPS) based system to replace the current Red Flag Measurement and Debriefing System (RFMDS) increasing to 100 the number of instrumented participants, improving aircraft position tracking accuracy, expanding range coverage, multiplying weapons simulations and adding electronic warfare threat/aircrew interaction. The development effort involves software development to increase the number of high activity players as well as the integration and test of the training system comprised of ground equipment and aircraft pods purchased by procurement funding. This program element also funds the continued development of advanced electronic threats, aircraft/pod interfaces, software interoperability among service ranges and the encryption of range/aircraft data links. The Air Force continues to participate with the Navy-led Joint Tactical Combat Training System (JTCTS) development effort to ensure interoperability with AF ranges. JTCTS is a GPS based system to track and record aircraft, surface vessel, and submarine training operations. Procurement funding will be used for ground equipment and aircraft pods. The acquisition strategy is competitive, with cost plus contracts.This program is in budget activity 5 - Engineering and Manufacturing Development because the Combat Training Ranges (CTR) Program directly contributes to the effectiveness and survivability of US combat forces by developing range instrumentation and training systems to increase the effectiveness of the training spectrum from individual aircrew skill training to large-scale exercises.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604735F Combat Training Ranges
PROJECT NO. AND NAME 2286 Combat Training Range Equipment	

(U) **FY 1995 ($ in Thousands)**

- (U) 3,204 Continue CTR basic operating support, and system acquisition and engineering support for range and threat systems
- (U) 8,074 Continue EMD of NACTS
  - -- Conduct software design and development through System Design Review (SDR) (NSP)
  - -- Design and develop prototype pod (NSP)
  - -- Continue hardware design (NSP)
- (U) 2,221 Continue interoperability improvements with Navy to include software upgrades and weapons simulation development.
- (U) 165 Other technical support
- (U) 13,664 Total

(U) **FY 1996 ($ in Thousands)**

- (U) 2,729 Continue CTR basic operating support, and system acquisition and engineering support for range and threat systems
- (U) 5,600 Continue Engineering and Manufacturing Development (EMD) of the Nellis Air Combat Training System (NACTS)
  - -- Continue NACTS software design through Final Design Review and incorporate into hardware (NSP)
  - -- Conduct proof of concept of Interim - NACTS (NSP)
  - -- Continue development of prototype pod (NSP)
  - -- Initiate hardware and software testing (NSP)
  - -- Conduct SEEK EAGLE certifications program as required (NSP)
- (U) 1,000 Continue Advanced Message Oriented Data Security Module (AMODSM) development with the Navy
- (U) 100 Continue interoperability improvements with the Navy including development of weapons simulations and range software block upgrades.
- (U) 100 Begin development of aircraft interfaces with aircraft/pod interfaces with aircraft program offices, for range applications
- (U) 100 Begin interoperability efforts with Joint Tactical Combat Training System (JTCTS) for AF unique requirements
- (U) 110 Other technical support
- (U) 9,739 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604735F Combat Training Ranges
PROJECT NO. AND NAME 2286 Combat Training Range Equipment	

(U) **FY 1997 ($ in Thousands)**

- (U) 3,578 Continue CTR basic operating support, and system acquisition and engineering support for range and threat systems
- (U) 8,900 Continue EMD of NACTS
  - -- Finalize NACTS software design (NSP)
  - -- Complete system integration and factory testing (NSP)
  - -- Complete prototype flight testing (NSP)
  - -- Finalize weapons simulation integration efforts (NSP)
  - -- Initiate site acceptance testing (NSP)
- (U) 5,040 Continue interoperability improvements with the Navy to include software upgrades and weapons simulations
- (U) 500 Begin advanced threat development study
- (U) 2,500 JTCTS interoperability program
- (U) 2,500 Begin AMODSM interface development and integration of interface kits into existing pod and training ranges
- (U) 23,018 Total

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) FY1996 President's Budget	18,301	10,418	16,098	TBD
(U) Appropriated Value	14,101			
(U) Adjustments to Appropriated Value				
a. Congressional General Reduction	-154	-204		
b. Below Threshold Reprogramming (BTR)	-18			
c. Small Business Innovative Research (SBIR)	-265	-259		
d. Omnibus or Other Above Threshold Reprogramming		-216		
(U) Adjustments to Budget Since FY96 Budget			6,920	
(U) Current Budget Submit/FY97 President's Budget	13,664	9,739	23,018	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604735F Combat Training Ranges
PROJECT NO. AND NAME 2286 Combat Training Range Equipment	

(U) **Change Summary Explanation**:

Funding: Decrease in FY96 is reprogramming to fund Bosnia and F-16s to Jordan.
Increase in FY97 is to support the JTCTS interoperability and advanced threat development.

Schedule: None

Technical: None

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Comp	Total Cost
(U) PE 27429F: Appropriation: Other Procurement, AF (OPAF) Budget Activity: OPAF/Electronics & Telecommunications Equipment, Program Title: Combat Training Ranges. Spares not included.	11,607	2,065	11,364	13,375	14,691	18,513	34,273	Cont	TBD
(U) PE 27249F: Appropriation: Aircraft Procurement, AF Budget Activity: Aircraft (A/C) Procurement/Other Production Charges, Program Title: Combat Training Ranges.	20,941	3,795	21,203	10,285	17,794	19,004	20,402	Cont	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604735F Combat Training Ranges
PROJECT NO. AND NAME 2286 Combat Training Range Equipment	

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) D. Schedule Profile												
(U) Nellis Air Combat Training System (NACTS)												
(U) Contract Award		X										
(U) Complete Streamline Modification				X---		---X						
(U) Initial Design Review (IDR)							X					
(U) Final Design Review (FDR)								X				
(U) Complete System Integration and Factory Testing										X		
(U) Complete Site Installation											X	
(U) Site Acceptance Testing												X
(U) System Turnover Activity												
(U) IOC												
(U) Joint Tactical Combat Training System (JTCTS) Fixed Ranges												
(U) Contract Award		X										
(U) Preliminary Design Review (PDR)						X						
(U) Phased Critical Design (CDR)							X					
(U) Development Test/Operational Test												
(U)Delivery of first AF and Navy Units TBD												

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604735F Combat Training Ranges

PROJECT NO. AND NAME: 2286 Combat Training Range Equipment

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Software Interoperability												
(U) Block 5 Development Upgrade			X									
(U) Block Upgrade Range Installation and Checkout					X	-----	-----	X				
(U) New Block Upgrade										X		
(U) Advanced Message Oriented Data Security Module (AMODSM)												
(U) Encryption Unit Development												
(U) RFP Release 4/94												
(U) Contract Award		X										
(U) Deliver Engineering Development Models (EMDs)									X			
(U) Start Production												
(U) AF Aircraft Integration Development												
-- RFP Release								X				
-- Contract Award									X			
-- Complete Development of Kit												

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604735F Combat Training Ranges
PROJECT NO. AND NAME 2286 Combat Training Range Equipment	

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Nellis Air Combat Training System (NACTS)			
EMD Contract	7,309	3,600	6,900
Government Support	765	2,000	2,000
(U) Advanced Message Oriented Data Security Module (AMODSM)			
EMD Contract	0	1,000	2,500
(U) Joint Tactical Combat training System (JTCTS)	0	200	2,500
(U) Software Interoperablility			
Continue to Develop (with Navy)	2,221	210	5,040
Interoperability Improvements			
(U) Basic Operating Support	3,204	2,729	3,578
(U) Advanced Threats			500
(U) Total	13,449	9,739	23,018

(U) B. Budget Acquisition History and Planning Information ($ in Thousands) NACTS

Performing Organizations:

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604735F Combat Training Ranges

PROJECT NO. AND NAME: 2286 Combat Training Range Equipment

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Cubic	C/CPAF/FFP	Mar 95	24,466	24,466	3,258	7,708	3,600	6,900	0	24,466
Support and Management Organizations										
ASC/VXC					859	765	800	800	0	4,024
Test and Evaluation Organizations										
Nellis and TARIF					200	0	1,200	1,200	0	4,800

(U) B. **Budget Acquisition History and Planning Information Continued ($ in Thousands)**

Government Furnished Property: None

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Subtotal Product Development				3,258	7,708	3,600	6,900	0	24,466
Subtotal Support and Management				859	765	800	800	0	4,024
Subtotal Test and Evaluation				200	0	1,200	1,200	0	4,800
Total Project				4,316	8,473	5,600	8,900	0	33,289

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604740F Computer Resource Technology Transition (CRTT)

COST (*In Thousands*)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	12,120	8,746	1,956	2,107	2,139	2,304	2,437	0	Continuing	Continuing
2522 Advanced Computer Technology Transition	2,124	6,177	1,292	1,367	1,345	1,487	1,609	0	Continuing	Continuing
2523 Architectural Implementation	1,427	669	664	740	794	817	828	0	Continuing	Continuing
2524 Reuse and Component Support	6,000	1,900	0	0	0	0	0	0	Continuing	Continuing
3315 Digital Information Technology Transition*	2,569	0	0	0	0	0	0	0	Continuing	Continuing

* Beginning in FY 96, funding from this effort transfers to PE 0708611F, Project 3318. Product Data Systems Modernization (PDSM).

(U) A. Mission Description and Budget Item Justification

This program is in budget activity 5 - The goal of this program is to reduce software lifecycle costs and to improve the quality of computer systems development and support. This is the only Air Force program for transitioning software technology across the board into the USAF (rather than into a specific acquisition program). The program consists of five major projects. Project 2522 will establish the foundational elements of an effective methodology to support transitioned capability. Project 2523 will initially address a particular instantiation, namely command and control architectures, of reusable technology which are available or can be developed in the near term. Project 2524 will address the technologies/processes inherent in operating and maintaining a domain central repository of software, software algorithms, and reusable technologies. Project 3315 will provide a totally integrated capability to create, accept, retrieve and store digital (paperless) technical information for life cycle support for Air force logistics. Engineering and Manufacturing Development, because specifically, it addresses acquiring, developing, and supporting emerging computer resources.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604740F Computer Resource Technology Transition (CRTT)

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	Total Cost
(U) FY 1996 President's Budget	20,855	2,166	2,048	2,177	Continuing
(U) Appropriated Value	21,121	9,166			
(U) Adjustments to Appropriated Value					
a. Transfer to PE 0603108F, Integrated Data Systems	-8,500				
b. Congressional General Reduction	-266				
c. Small Business Innovative Research (SBIR)	-235	-200			
d. Bosnia I Reprogramming		-42			
e. Sec 8101, 8125, & 8129 (FFRDC)		-178			
f. Non-Pay Inflation			-82		
Adjustments to Budget Years Since FY 96 PB			-10	-70	
(U) Current Budget Submit/FY 1997 President's Budget	12,120	8,746	1,956	2,107	Continuing

(U) Change Summary Explanation:

Funding: FY 95 reduction due to transfer of Integrated Maintenance Data Systems (IMDS) funding to PE 0603108F, Integrated Data Systems. Adjustments to FY 1997 and FY 1998 fundings were made to FY 97 and FY 98 funding by the Air Force to support other higher priority programs.

Schedule: None.

Technical: None.

(U) **C. Other Program Funding Summary ($ in Thousands)**

Not Applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604740F Computer Resource Technology Transition (CRTT)
PROJECT NO. AND NAME 2522 Advanced Computer Technology Transition	

COST (*In Thousands*)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	Cost to Complete	Total Cost
2522 Advanced Computer Technology Transition	2,124	6,177	1,292	1,367	1,345	1,487	1,609	0	Continuing	Continuing

(U) A. **Mission Description and Budget Item Justification**

Develops, through interaction with AF MAJCOMs, tools and technologies for improving the software development environment and processes, and accelerates transition of software technology to the users. Emphasis is on identifying software technology items that provide the best return in investment and setting up receptor groups at the user organizations that support transition and productization.

Project Type

New Start

Termination

X Not Applicable

(U) FY 1995 ($ in Thousands)

- (U) 977 Continue to develop technology transition infrastructure within the Air Force.
- (U) 225 Continue funding JLC activities in software re engineering and modernization of obsolescent, expensive software.
- (U) 922 Complete development and continue to implement Air Force-wide metrics repository.
- (U) 2,124 Total

(U) FY 1996 ($ in Thousands)

- (U) 376 Continue to develop technology transition infrastructure within the Air Force.
- (U) 140 Continue funding JLC activities in software re engineering and modernization of obsolescent, expensive software.
- (U) 878 Improve and continue to implement Air Force-wide metrics repository.
- (U) 4,783 Develop tools for new software design method
- (U) $6,1,77 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604740F Computer Resource Technology Transition (CRTT)
PROJECT NO. AND NAME 2522 Advanced Computer Technology Transition	

(U) FY 1997 ($ in Thousands)

- (U) 381 Continue to develop technology transition infrastructure within the Air Force.
- (U) 140 Continue funding JLC activities in software re engineering and modernization of obsolescent, expensive software.
- (U) 771 Improve and continue to implement Air Force-wide metrics repository.
- (U) 1,292 Total

(U) FY 1998 ($ in Thousands)

- (U) 403 Continue to develop technology transition infrastructure within the Air Force.
- (U) 145 Continue funding JLC activities in software re-engineering and modernization of obsolescent, expensive software.
- (U) 819 Improve and continue to implement Air Force-wide metrics repository.
- (U) $1,367 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	Total Cost
(U) FY 1996 President's Budget	10,859	1,458	1,353	1,412	Continuing
(U) Appropriated Value	10,859	6,458			
(U) Adjustments to Appropriated Value					
a. Congressional General Reduction	-100				
b. Small Business Innovative Research (SBIR)	-135	-141			
c. Transfer to PE 0603108F, Integrated Data Systems	-8,500				
e. Small Business Innovative Research (SBIR)		-125			
f. Bosnia I Reprogramming		-15			
g. Non-Pay Inflation			-54	-38	
(U) Adjustment to Budget Years Since FY 95 PB			-7	-7	
(U) Current Budget Submit/FY 1997 President's Budget	8,124	6,177	1,292	1,367	Continuing

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604740F Computer Resource Technology Transition (CRTT)
PROJECT NO. AND NAME 2522 Advanced Computer Technology Transition	

(U) Change Summary Explanation:

Funding: FY 95 decrease due to transfer of $8.5 million to PE 0603108F, Integrated Data Systems for the Integrated Maintenance Data System (IMDS). Air Force reduced FY 97 and FY 98 funding to support higher priority programs.

Schedule: None.

Technical: None.

(U) C. Other Program Funding Summary ($ in Thousands)

Not applicable.

(U) D. Schedule Profile

Not applicable.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604740F Computer Resource Technology Transition (CRTT)
PROJECT NO. AND NAME 2522 Advanced Computer Technology Transition	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998
(U) Continue to develop technology transition infrastructure within the Air Force	977	376	381	
(U) Continue funding JLC activities in software re engineering and modernization of obsolescent, expensive software	225	140	140	
(U) Air Force-wide metrics repository	922	878	771	
(U) Develop tools for new software design method (Work will actually be performed in Project 2525 (Critical Software Research) Database is being updated to reflect this change)		4,783		
(U) Total	2,124	6,177	1,292	1,367

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Not applicable.

(U) **D. Schedule Profile**

Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604740F Computer Resource Technology Transition (CRTT)

PROJECT NO. AND NAME: 2523 Architectural Implementation

COST (*In Thousands*)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	Cost to Complete	Total Cost
2523 Architectural Implementation	1,427	669	664	740	794	817	828	0	Continuing	Continuing

(U) **A. Mission Description and Budget Item Justification**

This project develops, through rapid prototyping and interaction with Air Force users, a tailorable architecture for support of command and control applications. The architecture will address the components common to most command centers (e.g., message processing, display processing, user interfaces) and will focus on the migration of multilevel computer security applications/technologies into AF operations. This project is needed to mitigate development time associated with command center acquisitions so that the system is not obsolete when delivered.

Project Type

New Start

Termination

X Not Applicable

(U) FY 1995 ($ in Thousands)

- (U) 850 Update tailorable command center architecture and continue to qualify software components.
- (U) 100 Continue development of Command Center Concept of Operations.
- (U) 477 Continue identifying multilevel security issues/solutions, testing, analysis, and technology transition.
- (U) 1,427 Total

(U) FY 1996 ($ in Thousands)

- (U) 471 Update tailorable command center architecture and continue to qualify software components.
- (U) 198 Continue identifying multilevel security issues/solutions, testing, analysis and technology transition.
- (U) 669 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604740F Computer Resource Technology Transition (CRTT)
PROJECT NO. AND NAME 2523 Architectural Implementation	

(U) FY 1997 ($ in Thousands)
- (U) 473 Update tailorable command center architecture and continue to qualify software components.
- (U) 191 Continue identifying multilevel security issues/solutions, testing, analysis, and technology transition.
- (U) 664 Total

(U) FY 1998 ($ in Thousands)
- (U) 521 Update tailorable command center architecture and continue to qualify software components.
- (U) 219 Continue identifying multilevel security issues/solutions, testing, analysis, and technology transition.
- (U) 740 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	Total Cost
(U) FY 1996 President's Budget	1,427	708	695	765	Continuing
(U) Appropriated Value	1,493	708			
(U) Adjustments to Appropriated Value					
a. Congressional General Reduction	-66				
b. Small Business Innovative Research (SBIR)		-15			
c. Sec 8125, 8129 (FFRDC)		-17			
d. Bosnia I Reprogramming		-7			
e. Non-Pay Inflation			-28	-21	
(U) Adjustment to Budget Years Since FY 95 PB			-3	-4	
(U) Current Budget Submit/FY 1997 President's Budget	1,427	669	664	740	Continuing

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604740F Computer Resource Technology Transition (CRTT)
PROJECT NO. AND NAME 2523 Architectural Implementation	

(U) Change Summary Explanation:

Funding: Air Force reduced FY 97 and FY 98 funding to support higher priority programs.

Schedule: None.

Technical: None.

(U) C. Other Program Funding Summary ($ in Thousands)

Not applicable.

(U) D. Schedule Profile

Not applicable.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604740F Computer Resource Technology Transition (CRTT)
PROJECT NO. AND NAME 2523 Architectural Implementation	

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998
(U) Update tailorable command center architecture and continue to qualify software components	850	471	473	
(U) Continue development of Command Center Concept of Operations	100			
(U) Continue identifying multilevel security issues/solutions and STAF testing, analysis and technology transition	477	198	191	
(U) Total	1,427	669	664	740

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands)**

Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604740F Computer Resource Technology Transition (CRTT)

PROJECT NO. AND NAME: 2524 Reuse and Component Support

COST (*In Thousands*)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	Cost to Complete	Total Cost
2524 Reuse and Component Support	6,000	1,900	0	0	0	0	0	0	Continuing	Continuing

(U) A. Mission Description and Budget Item Justification

This initative develops a documented knowledge for establishing software reuse libraries that support specific application domains. These libraries will support system engineers through the reuse of large scale software components. This program is needed so that the Air Force can reuse software that it has already purchased by developing a central repository of software and software algorithms. Reusing software will result in lower software development costs, faster software development schedules, and lower software development risks.

Project Type

New Start

Termination

X Not Applicable

(U) FY 1995 ($ in Thousands)

- (U) 4,167 Continue evaluation and certification of software reuse modules for C4I Systems.
- (U) 1, 833 Update and maintain software reuse library for C4I Systems.
- (U) $6,000 Total

(U) FY 1996 ($ in Thousands)

- (U) 1,900 Update and maintain software reuse library for C4I Systems.
- (U) 1,900 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604740F Computer Resource Technology Transition (CRTT)
PROJECT NO. AND NAME 2524 Reuse and Component Support	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	Total Cost
(U) FY 1996 President's Budget	0	0	0	0	Continuing
(U) Appropriated Value	6,000	1,900			
(U) Adjustments to Appropriated Value					
a. Congressional General Reduction					
b. Small Business Innovative Research (SBIR)					
c. Below Threshold Reprogramming					
(U) Current Budget Submit/FY 1997 President's Budget	6,000	1,900	0	0	Continuing

(U) Change Summary Explanation:

Funding: Development of the Central Archive for Reusable Defense Software (CARDS) program to develop a reuse blueprint for DoD and establish a reuse library. Transfer of $6.0 million in FY 95 funds corrects inadvertent placement in project 2522.

Schedule: None.

Technical: None.

(U) **C. Other Program Funding Summary ($ in Thousands)**

Not applicable.

(U) **D. Schedule Profile**

Not applicable.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604740F Computer Resource Technology Transition (CRTT)
PROJECT NO. AND NAME 2524 Reuse and Component Support	

(U) A. **Project Cost Breakdown ($ in Thousands)**

Not applicable.

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands)**

Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604740F Computer Resource Technology Transition (CRTT)

PROJECT NO. AND NAME
3315 Digital Information Technology Transition*

COST (*In Thousands*)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	Cost to Complete	Total Cost
3315 Digital Information Technology Transition*	2,569	0	0	0	0	0	0	0	Continuing	Continuing

* Beginning in FY 96, funding from this effort transfers to PE 0708611F, Project 3318. Product Data Systems Modernization (PDSM).

(U) A. **Mission Description and Budget Item Justification**

DOD Defense Guidance and Office of the Secretary of Defense (OSD) funding initiatives have emphasized the need to improve the preparation, delivery, use, and updating of digital technical information used in the design, manufacture, maintenance, and operation of DOD weapon systems. This project is needed to transition from a paper-intensive weapon system acquisition and support process to a largely automated and integrated mode of operations. This will allow the Air Force to create data once and use it many times

Project Type
New Start
Termination
X Not Applicable

(U) FY 1995 ($ in Thousands)

–	(U) 1,440	Continue to manage the development and implementation of the Air Force digital product data infrastructure.
–	(U) 760	Manage the deployment of digital technical and engineering product data systems such as Joint Computer-aided Acquistion and Logistics Support (JCALS) and Joint Engineering Data Management and Information Control System (JEDMICS).
–	(U) 70	Plan and implement the conversion of AF legacy data for use by future systems such as JCALS and JEDMICS.
–	(U) 139	Coordinate transition from AF legacy data systems to digital technical and engineering product data systems such as JCALS and JEDMICS.
–	(U) 160	Develop and present CALS orientation materials and instruction to AF users of digital product data systems such as JCALS and JEDMICS.
–	(U) 2,569	Total

(U) FY 1996

Beginning in FY 96, funding from this effort transfers to PE 0708611F, Project 3318, Product Data Systems Modernization (PDSM).

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604740F Computer Resource Technology Transition (CRTT)
PROJECT NO. AND NAME 3315 Digital Information Technology Transition*	

(U) FY 1997

Not applicable.

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	Total Cost
(U) Previous President's Budget	2,569	0	0	0	Not applicable
(U) Appropriated Value	2,569				
(U) Adjustments to Appropriated Value					
a. Congressional General Reduction					
b. Small Business Innovative Research (SBIR)					
c. Below Threshold Reprogramming					
(U) Current Budget Submit/President's Budget	2,569	0	0	0	Not applicable

(U) Change Summary Explanation:

Funding: Beginning in FY 96, funding transfers to PE 0708611F, Project 3318, Product Data Systems Modernization (PDSM).

Schedule: None.

Technical: None.

(U) C. Other Program Funding Summary ($ in Thousands)

Not applicable.

(U) D. Schedule Profile

Not applicable.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604740F Computer Resource Technology Transition (CRTT)
PROJECT NO. AND NAME 3315 Digital Information Technology Transition*	

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998
(U) Planned for AF CPO participation in CALS EXPO 94				
(U) Developed test cases for AF infrastructure to implement CALS				
(U) Developed and coordinated digital data strategy				
(U) Transitioned Air Force CALS Strategic Plan/Roadmap into electronic document				
(U) Continue to manage the development and implementation of the Air Force digital product data infrastructure.	1,440			
(U) Manage the deployment of digital technical and engineering product data systems such as Joint Computer-aided Acquistion and Logistics Support (JCALS) and Joint Engineering Data Management and Information Control System (JEDMICS).	760			
(U) Plan and implement the conversion of AF legacy data for use by future systems such as JCALS and JEDMICS.	70			
(U) Coordinate transition from AF legacy data systems to digital technical and engineering product data systems such as JCALS and JEDMICS.	139			
(U) Develop and present CALS orientation materials and instruction to AF users of digital product data systems such as JCALS and JEDMICS.	160			
(U) Total	2,569			

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands)**

Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604750F Intelligence Equipment

PROJECT NO. AND NAME: 2053 National Air Intel Center

COST *($ In Thousands)*	FY 1995 Actual	1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2053 National Air Intel Center	2,553	1,255	1,211	1,298	1,338	1,417	1,388	0	TBD

(U) A. Mission Description and Budget Item Justification

(U) Intelligence Equipment (IE) provides continuing development and upgrades of National Air Intelligence Center (NAIC) and Air Force Information Warfare Center (AFIWC) threat analysis capabilities. IE provides NAIC and AFIWC with the tools necessary to make timely assessments of foreign weapon systems. IE develops the tools to model and assess foreign airborne and aerospace systems. Both organizations are tasked with providing detailed foreign technology intelligence information to a variety of both DOD and Non-DOD customers. In the past few years, customers' requirements have been more sophisticated, dictating more detailed and timely intelligence not only in the technology regime but also in the economic, world crisis, and political arenas. The Rome Laboratory is charged with providing new analysis capabilities and tools to meet these evolving requirements. This effort is Budget Activity 5, Engineering & Manufacturing Development, because the program develops and inserts new technology into existing systems and models to keep existing systems current.

(U) FY 1995

- (U) $ 373 Continue Model Systesis Interface.
- (U) $ 422 Complete Radio Frequency (RF) Weapons Modeling.
- (U) $ 533 Continue Flexible infrared (IR) Signature Techniques - FIST.
- (U) $ 365 Perform Air Surveillance C3 - specific foreign system evaluation.
- (U) $ 415 Continue Man-In-The-Loop Engagement Simulation.
- (U) $ 445 Initiate Threat Engagement Analysis Model (TEAM) Upgrades.
- (U) $2,553 Total

(U) FY 1996

- (U) $ 147 Continue Model Systhesis Interface.
- (U) $ 196 Complete flexible IR Signature Techniques - FIST.
- (U) $ 276 Perform Air Surveillance C3 - ground control intercept modeling.
- (U) $ 158 Complete Man-In-The-Loop Engagement Simulation.
- (U) $ 65 Complete Threat Engagement Analysis Model (TEAM) Upgrades
- (U) $ 413 Perform Advanced Migration Tools
- (U) $1,255 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604750F Intelligence Equipment
PROJECT NO. AND NAME 2053 National Air Intel Center	

(U) FY 1997

- (U) $ 200 Continue Model Systhesis Interface.
- (U) $ 364 Initiate Electromagnetic Antenna Modeling.
- (U) $ 384 Initiate Automated Electro-Optic Tools.
- (U) $ 263 Initiate next generation digital intelligence products (CD-ROM based) for Reference Threat Packages (RTP).
- (U) $1,211 Total

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	2,603	1,294	1,268	TBD
(U) Appropriated Value	2,633	3,938		
(U) Adjustments to Budget since FY96 PB				
a. General Congressional reduction	-30	-25		
b. SBIR	-1			
c. Omnibus and Other Above Threshold Reprogrammings	-49	-14		
d. Below Threshold Reprogramming			-57	
(U) Adjustment to Budget Years Since FY 96 PB				
(U) Current Budget Submit/President's Budget	2,553	1,255	1,211	TBD

(U) Change Summary Explanation:

Funding: FY97 reduction due to Operations & Maintenance RDT&E reduction.

Schedule: Not Applicable

Technical: Not Applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604750F Intelligence Equipment
PROJECT NO. AND NAME 2053 National Air Intel Center	

(U) **C. Other Program Funding Summary ($ in Thousands)**

(U) Not Applicable

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Model Synthesis Interface continuing												
(U) Radio Frequency Weapons Modeling complete			X									
(U) Air Surveillance C3 - foreign system evolution complete				X								
(U) Flexible Infrared Signature Techniques complete						X						
(U) Man-In-The-Loop Engagement Simulation complete						X						
(U) Threat Engagement Analysis Model (TEAM) Upgrades complete						X						
(U) Air Surveillance C3 - ground control intercept modeling complete							X					
(U) Advanced Migration Tools complete							X					
(U) Start Electromagnetic Antenna Modeling												
(U) Start Automated Electro-Optic Tools												
(U) Start Reference Threat Packages												

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604750F Intelligence Equipment

PROJECT NO. AND NAME: 2053 National Air Intel Center

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Model Synthesis Interface	373	147	200
(U) RF Weapons Modeling	422		
(U) Flexible IR Signatures Techniques	533	196	
(U) Air Surveillance C3 - system analysis	365		
(U) Man-In-The-Loop Engagement Simulation	415	158	
(U) Threat Engagement Analysis Model Upgrades	445	65	
(U) Air Surveillance C3 - ground control intercept modeling		276	
(U) Advance TAN Migration Tools		413	
(U) Electromagnetic Antenna Modeling			364
(U) Automated Electro-Optics Tools			384
(U) IPIDS/Reference Threat Packages			263
(U) Total	2,553	1,255	1,211

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget FY 1998	Total Program
Product Development Organizations										
GRCI	93-C-0261/0	30 Sep 93	2,256	2,256	55	311	118	180	180	2,256
Rockwell	93-C-0142	1 Apr 93	1,649	1,649	1,292	357				1,649
Photon Reasearch	93-C-0182	30 Sep 93	1,227	603	468	156				1,227
GRCI	93-C-0261/1	24 Apr 93	770	770	300	350	120			770

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604750F Intelligence Equipment

PROJECT NO. AND NAME: 2053 National Air Intel Center

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget FY 1998	Total Program
GRCI	93-C-0261/11	16 Mar 95	425	425	0	380	45			425
Cslspan	F33657-90-D-2100		200	200	0	200				200
Naval Post Grad School	-		100	100		100				100
Contractor TBD	-						631	841	934	TBD
Rome Laboratory						387	185	190	220	TBD

Support and Management Organizations
(U) Not Applicable

Test and Evaluation Organizations
(U) Not Applicable

Government Furnished Property: Not Applicable

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Total Program
Subtotal Product Development				4,980	2,553	1,255	1,211	TBD
Subtotal Support and Management								
Subtotal Test and Evaluation								
Total Project				4,980	2,553	1,255	1,211	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604754F Joint Tactical Information Distribution System

PROJECT NO. AND NAME: P771 JTIDS

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
P771 JTIDS	10,975	9,124	11,075	9,449	9,525	9,910	10,175	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

Joint Tactical Information Distribution System (JTIDS) effort provides the Army, Navy, Air Force, and Marine Theater Command and Control (C2) elements with a secure, jam-resistant, high capacity data link communications system for use in a tactical combat environment. JTIDS is the communications component of the Tactical Digital Information Link (TADIL) designated Link-16, and is synonymous with the TADIL J message standard. The JTIDS family of terminals (Class 2 and 2H for the Air Force, Navy and Marine Corps; and 2M for Army) is a joint development program which employs Time Division Multiple Access (TDMA), and spread spectrum techniques. JTIDS permits rapid and secure exchange of essential command control, and status information with all terminals in the tactical theater. Host platforms (i.e. E-3, E-8, F-15, RIVET JOINT, ABCCC, MAOC, and MCE) program and budget for JTIDS production terminals.

(U) **PY 1995**

– (U) **3,700** **PROGRAMS**: Efforts associated with Acquisition and Integration of Class 2/2H and Fighter Data Link Terminals.
- -- (U) System integration and software development for E-3, E-8, F-15, RIVET JOINT, ABCCC, and MCE.
- -- (U) Prepare DAB materials and procurement package

– (U) **2,100** **INTEGRATION/INTEROPERABILITY:** Efforts associated with Integration of terminals and insuring Link-16 operates effectively across all platforms
- -- (U) Provided support and on-site Enhanced JTIDS System Exerciser (EJSE) operators for host platform developers and integrators.
- -- (U Continued Affordability/Manufacturing Technology Demonstration (AMTD) bench tests at Eglin AFB.

– (U) **3,575** **SUSTAINMENT:** Efforts associated with ensuring fielded terminals are supported.
- -- (U) Integrated Software Support Activity (ISSA) technical engineering software support at Warner Robins AFB
- -- (U) Class 2 terminal logistics support (PRE-OP)

– (U) **1,600** **TEST:** Efforts associated with fielding terminals
- -- (U) IOT&E for MCEs, JSTARS, RIVET JOINT, Class 2M Terminal
- -- (U) F-15 Operational Special Project (OSP) Complete
- -- (U) Verified MIP correction and support E-8, ABCCC and MCE development efforts
- -- (U) Supported AF host platform participation in joint exercises in Ballistic Missile Defense demonstrations

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604754F Joint Tactical Information Distribution System
PROJECT NO. AND NAME P771 JTIDS	

– (U) 10,975 **TOTAL**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604754F Joint Tactical Information Distribution System
PROJECT NO. AND NAME P771 JTIDS	

(U) **FY 1996**

– (U) **1,402** **PROGRAMS:** Efforts associated with Acquisition and Integration of Class 2/2H and Fighter Data Link (FDL) terminals

-- (U) Write and administer contracts for E-3, E-8, F-15, RIVET JOINT, Cobra Ball, ABCCC, MAOC, and MCE platforms.

-- (U) F-15 FDL Acquisition and Integration.

--- Integration of Link-16 into F-15 C/D and F-15 E.

--- FDL System Spec Development.

--- Interface Control Document (ICD) Development

--- Test Plan Development.

--- Technical support to JTIDS Operations at Mountain Home AFB and Nellis AFB.

-- (U) Command and Control (C2) Terminal Acquisition Support.

--- Determine terminal technical and configuration requirements

--- Establish delivery schedule; establish maintenance plans

--- Establish maintenance training schedules.

– (U) **1,233** **INTEGRATION:** Efforts associated with integration of terminals into the various platform

-- (U) On-going integration support to AWACS, Rivet Joint, ABCCC, MAOC, MCE, JSTARS, and F-22.

-- (U) Technical Improvements:

--- Technical support to AF Platforms to integrate Pre-Planned Product Improvements (P3I)

--- Assist in processing P3I;

-- (U) Field Support for F-15 Operations.

--- Provide two sheltered JTIDS systems (SJSs) to Nellis AFB

--- Support flight training, exercises, and scenario development/demonstrations

--- Support Data Link Utility Evaluation through OSP and follow-on activities

--- Support F-15 Electronic Combat Identification (CID) Development Test and Engineering (DT&E) and follow-on activities.

-- (U) Provide technical assistance to Boost Phase Intercept Programs.

--- High Gear Program: Testing sensor tracking of theater missile

--- Airborne Interceptor: Establish procedures for intercepting theater missile.

– (U) **1,603** **INTEROPERABILITY:** Efforts associated with ensuring Link-16 operates effectively across all host platforms.

-- (U) AF platform interoperability.

--- Support Multi-Service Interoperability Tests.

--- Support All Service Combat Identification Evaluation Team (ASCIET) tests.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604754F Joint Tactical Information Distribution System
PROJECT NO. AND NAME P771 JTIDS	

--- Support to Engineering Interoperability Review Groups (IORGS US/UK bilateral)
--- Support definition of Link-16 Network Structures to support Interoperability.
-- (U) Network Support.
--- Air Force Network Design
---- Provide Network Design Expertise.
---- Determine Network Design for Integration Testing.
---- Provide Network Design for Integration Testing.
---- Maintain AF Network Design Aid for Operations.
---- Evaluate Navy Network Design Aid for ACC Users.
--- Investigate internet-networking of JTIDS and Transport Control Protocol Internet Protocol Networks.

- (U) **2,842** **SUSTAINMENT:** Efforts associated with ensuring fielded terminals are supported.
-- (U) ISSA technical engineering software support at Warner Robins AFB.
-- (U) Class 2/2H Technical Manual updates.
-- (U) Class 2 Log support (PRE-OP).
-- (U) Maintain and upgrade the SJSs, Link-16 Winnebagos.
-- (U) Maintain and upgrade the MULTI-LINK Translator and Display System (MTDS) prototype hardware.

- (U) **2,044** **TEST:** Efforts associated with fielding terminals
-- (U) Support provided by the 46th Test Squadron
--- Software Support
--- Platform integration support
--- Product Improvement and Special Projects Support
--- Regression Test and Integration
--- Product Improvement/Development Support

- (U) **9,124** **TOTAL**

- **(U) FY1997**
- (U) **1,144** **PROGRAMS:** Efforts associated with Acquisition and Integration of Class 2/2H and Fighter Data Link.
-- (U) Class 2/2H Terminals.
--- Write and administrate contracts for E-3, E-8, F-15, RIVET JOINT, Cobra Ball, ABCCC, MAOC, and MCE platforms.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604754F Joint Tactical Information Distribution System
PROJECT NO. AND NAME P771 JTIDS	

-- (U) F-15 FDL Acquisition and Integration.
--- Integration of Link-16 into F-15 C/D and F-15E.
--- FDL System Spec Development.
--- Interface Control Document (ICD) Development
--- Test Plan Development.
--- Technical support to JTIDS Operations at Mountain Home AFB and Nellis AFB.
-- (U) Command and Control (C2) Terminal Acquisition Support.
--- Determine Terminal Technical and Configuration Requirements
--- Establish delivery schedule.
--- Coordinate Spare Requirements
--- Establish Maintenance Plans
--- Establish Maintenance Training Schedules.

- (U) **2,449** **INTEGRATION:** Continue efforts associated with integration of terminals into the various platforms.
-- (U) On-going integration support to AWACS, Rivet Joint, ABCCC, MAOC, MCE, JSTARS, and F-22.
-- (U) Technical Improvements:
--- Technical support to AF Platforms to integrate Pre-Planned Product Improvements (P3I)
--- Assist in processing P3I;
-- (U) Field Support for F-15 Operations.
--- Provide two shelterized JTIDS systems (SJSs) to Nellis AFB
--- Support flight training, exercises, and scenario development/demonstrations
--- Support Data Link Utility Evaluation through Operational Special Project (OSP) and follow-on activities
--- Support F-15 Electronic Combat Identification (CID) DT&E and Follow-on Activities.
-- (U) Provide technical assistance to Boost Phase Intercept Programs.
--- High Gear Program: Testing sensor tracking of Theater Missile
--- Airborne Interceptor: Establish procedures for intercepting Theater Missile.

- (U) **3,689** **INTEROPERABILITY:** Efforts associated with ensuring Link-16 operates effectively across all Host Platforms.
-- (U) AF Platform Interoperability.
--- Support multi-service interoperability tests.
--- Support All Service Combat Identification Evaluation Team (ASCEIT) tests.
--- Support to Engineering Interoperability Review Groups (IORGS US/UK bilateral)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604754F Joint Tactical Information Distribution System
PROJECT NO. AND NAME P771 JTIDS	

--- Support definition of Link-16 network structures to support Interoperability.
--- Develop Enhanced Position Location Radio System (EPLRS)/Link-16 gateway
-- (U) Network Support.
--- Air Force Network Design
---- Provide network design expertise.
---- Determine network design for integration testing.
---- Provide network design for integration testing.
---- Maintain AF network design aid for operations.
---- Evaluate Navy network design aid for ACC users.
--- Investigate internet-networking of JTIDS and transport control internet protocol networks.

– (U) **1,507** **SUSTAINMENT:** Efforts associated with ensuring fielded terminals are supported.
-- (U) ISSA technical engineering software support at Warner Robins AFB.
-- (U) Maintain and upgrade the SJSs, Link-16 Winnebagos.
-- (U) Maintain and upgrade the MULTI-LINK Translator and Display System (MTDS) prototype hardware.

– (U) **2,286** **TEST:** Efforts associated with fielding terminals
-- (U) Support provided by the 46th Test Squadron
--- Software support
--- Platform integration support
--- Product improvement and special projects support
--- Regression test and integration
--- Product improvement/development support

– (U) **11,075** **TOTAL**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604754F Joint Tactical Information Distribution System

PROJECT NO. AND NAME: P771 JTIDS

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget (FY 1996)	10,978	10,146	9,594	30,718
(U) Appropriated Value	11,634			
(U) Adjustments to Appropriated Value				
a. General Congressional Reduction	-444	-596	-519	
b. Small Business Innovative Research	-215	-217		
c. Omnibus and Other Above Threshold Reprogrammings		-209		
(U) Adjustments to Budget Years Since FY96 PB			2,000	
(U) Current Budget Submit/President's Budget	10,975	9,124	11,075	31,280

(U) Change Summary Explanation:

Funding: FY 1997 increased $2M for development of an EPLRS/Link-16 gateway.

Schedule: Joint STARS IOT&E slipped from Feb 96 to May 96 due to test re-structuring.

Technical: None

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Complete	Total Cost
(U) Other Proc AF, PE 27419F (ABCCC)	0	0	0	0	0	0	0	4,800
(U) Other Proc AF, PE 27417F (AWACS)	24,200	33,600	4,300	3,300	300	0	0	99,100
(U) Other Proc AF, PE 27581F (JSTARS)	5,500	5,600	3,400	3,500	3,500	2,000	0	39,400
(U) Other Proc AF, PE 27412F (MCE)	0	0	6,500	22,100	15,000	0	0	150,400
(U) Other Proc AF, PE 35154F (AIA)	2,000	4,400	6,300	6,400	6,500	6,200	0	31,800

- (U) Related RDT&E:

(U)- Program Element #64770F E-8 (Joint STARS)

(U)- Program Element #27417F, E-3 (AWACS)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604754F Joint Tactical Information Distribution System
PROJECT NO. AND NAME P771 JTIDS	

(U)- Program Element #27412F Modular Control Equipment (MCE)
(U)- Program Element #27419F Airborne Battlefield Command and Control Center (ABCCC)
(U)- Program Element #35154F AIA.

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Acquisition Milestones												
- Milestone III FRP Class 2/2H		XX										
- LRIP Decision Class 2M		XX										
- Milestone III FRP 2M										XX		
(U) T&E Milestones												
- F-15 OSP Complete			XX									
- MCE IOT&E											XX	
- JSTARS IOT&E							XX					
- MS OT-III									XX			
- RIVET JOINT IOT&E							XX					
- IOT&E Class 2M									XX			
(U) Contract Milestones												
- FRP Class 2/2H		XX										
- LRIP Contract Award Class 2M					XX							
- FRP Class 2M											XX	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604754F Joint Tactical Information Distribution System

PROJECT NO. AND NAME: P771 JTIDS

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Programs	3,700	1,402	1,144
(U) Integration	2,100	1,233	2,449
(U) Interoperability	*Note 1	1,603	3,689
(U) Sustainment	3,575	2,842	1,507
(U) Test	1,600	2,044	2,286
(U) Total	10,975	9,124	11,075

NOTE 1: In FY 1995 Interoperability is included in the Integration line.

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
GEC-MARCONI	FFP	DEC 85	80,727	80,727	59,143	1,027	280	2,297	Continue	TBD
LOCKHEED	FFP	JUN 93	3,373	3,373	3,373	1,288	0	0	Continue	3,373
GEC-MARCONI	FFP	JUN 93	850	850	850	0	0	0	Continue	850
CACD	FFP	JUN 93	1,072	1,072	1,072	0	0	0	0	1,072

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604754F Joint Tactical Information Distribution System

PROJECT NO. AND NAME: P771 JTIDS

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
MCAIR	CPFF	MAR 94	2,434	2,434	2,434	0	0	0	0	2,434
RADC	PO/616	Various	Various	Various	1,913	757	0	0	0	2,670
WR-ALC	PO/616	Various	Various	Various	1,405	1,104	457	254	0	3,220
NADEP	MIPR	Various	Various	Various	413	382	0	0	0	795
ACSI	FFP	SEP 94	445	445	445	0	0	0	0	445
Support and Management Organizations										
ESC	Various	Various	26,600	26,600	16,390	1,119	2,937	2,335	Continue	TBD
CONTRACTOR SUPPORT	Various	Various	52,457	52,457	35,741	1,649	1,825	1,989	Continue	TBD
MITRE	FPLOE	Various	89,854	89,854	70,590	4,604	3,072	2,450	Continue	TBD
Test and Evaluation Organizations										
MT HOME AFB	PO/616	Various	Various	Various	83	333				416
EGLIN AFB	PO/616	Various	Various	Various	50		553	1,750	Continue	TBD
Government Furnished Property: NOT APPLICABLE										
Subtotal Product Development					71,048	3,270	737	2,551	Continue	TBD
Subtotal Support and Management					122,721	7,372	7,834	6,774	Continue	TBD
Subtotal Test and Evaluation					133	333	553	1,750	Continue	TBD
Total Project					193,902	10,975	9,124	11,075	Continue	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604770F JSTARS

PROJECT NO. AND NAME: 3551 JSTARS

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3551 JSTARS	166,278	165,002	207,284	206,358	64,803	34,914	36,611	Continuing	TBD

(U) **A. Mission Description and Budget Item Justification**

This program is in budget activity 5 - Engineering and Manufacturing Development, Research Category 6.4 because there is an Air Force and Army need to provide, from airborne platforms, near-real time surveillance and targeting information on moving and stationary ground targets (growth to maritime operations), slow moving rotary and fixed wing aircraft, and rotating antennas. This information would enable operational and tactical commanders to make and execute battle decisions. To meet these needs, the Air Force and Army initiated the Joint Surveillance Target Attack Radar System (Joint STARS) program with the Air Force as lead service. Joint STARS will be capable of providing target information for pairing direct attack aircraft and standoff weapons against selected targets. The system will be capable of being cued by other reconnaissance, surveillance, and target acquisition systems; able to respond rapidly to worldwide contingencies; and provide surveillance and attack information in all light and near-all-weather conditions. The operational utility of the system was effectively demonstrated by the outstanding performance of two developmental aircraft in support of combat operations during Desert Storm. In Dec 1995 two developmental aircraft (one E-8A and one E-8C) were deployed in support of Operation Joint Endeavor in Bosnia. A Defense Acquisition Board (DAB) Milestone III (Full Rate Production) is planned for 4Q FY96.

(U) FY 1995 ($ in Thousands):

- (U) 25,906 Continued E-8C follow-on development and testing program
- (U) 97,787 Continued Ground Support Systems (GSS), Self Defense Suite (SDS), Multi-Stage Improvement Plan (MSIP), Post Delivery Test Support (PDTS) and Crew Trainers Development
- (U) 42,585 Continued GFE, program support, test, and other miscellaneous efforts
- (U) 166,278 Total

(U) FY 1996 ($ in Thousands):

- (U) 19,481 Continue E-8C follow-on development and testing program
- (U) 42,067 Continue GSS and SDS Development
- (U) 37,066 Continue MSIP and Crew Trainers Development
- (U) 26,660 Complete PDTS contract and start E-8C Follow-on Test Support (FOTS) contract
- (U) 39,728 Continue GFE, program support, test, and other miscellaneous efforts
- (U) 165,002 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604770F JSTARS
PROJECT NO. AND NAME 3551 JSTARS	

(U) FY 1997 ($ in Thousands):

- (U) 9,908 Continue E-8C follow-on development and testing program
- (U) 88,567 Continue GSS and SDS Development
- (U) 15,316 Complete Crew Trainer Development
- (U) 40,182 Continue E-8C FOTS and MSIP
- (U) 53,311 Continue GFE, NATO, program support, test, and other miscellaneous efforts
- (U) 207,284 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	172,260	169,702	200,382	TBD
(U) Appropriated Value	175,408	182,202		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	(3,148)	(4,738)		
b. SBIR	(3,271)	(4,036)		
c. Omnibus, Other Above Threshhold Reprogramming		(3,926)		
d. Below Threshold Reprogramming	(2,711)			
e. NATO Alliance Ground Surveillance (AGS) Prog.		(4,500)		
(U) Adjustments to Budget Years Since FY 1995 PB			6,902	
(U) Current Budget Submit/President's Budget	166,278	165,002	207,284	TBD

(U) Change Summary Explanation:

Funding:

- FY95 Reductions are for AF reprogramming for must pay bills.
- The FY96 appropriation included a $20M increase for communications, a $12M reduction for tech order overrun, and a $4.5M increase for NATO for a net increase of $12.5M. The FY96 adjustments to Appropriated Value include transfer to NATO AGS ($4.5M) and reductions for: SBIR ($4.035M), Bosnia ($1.865M), FFRDC ($1.170M), Overhead/Improved Management ($2.434M), Reduced Economic Assumptions ($1.097M) ADP ($.037M) and deployment of F-16s to Jordan ($2.061M).
- The FY97 change was for a general reduction of $0.998M, an increase for NATO AGS of $6.3M, and an increase for Improved Data Modem (IDM) of $1.6M, for a net increase of $6.902M.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604770F JSTARS

PROJECT NO. AND NAME: 3551 JSTARS

Schedule:
Technical:

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Aircraft Procurement	656,929	522,997	559,137	497,632	463,384	500,479	453,967	177,406	5,142,031
(U) Quantities	2	2	2	2	1	2	2	2	19*
(U) Military Construction	14,300	6,900	18,645	25,780					119,625

* Procurement began with 2 aircraft in FY93 and 2 in FY94.

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997				FY 1998			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(U) DT&E Complete (FOFSD)				X*												
(U) MOT&E Start					X*											
(U) First SDS Installation (Group A)						X										
(U) Flight/Mission Sim. Deliv (NOTE)									X							
(U) First Tng Sqd Ready for Tng (NOTE)						X										
(U) Depot Support Date (NOTE)						X										
(U) Required Asset Avail (RAA) (NOTE)							X									
(U) Organic Support Capability (NOTE)										X						
(U) MOT&E Complete							X									
(U) First A/C Delivery to ACC							X									
(U) Software Support Facility Delivery							X									
(U) Milestone III								X								
(U) Full Rate Production Contract Award									X							
(U) IOC (NOTE)										X						
(U) Mature Reliability																X

NOTE: Due to FY96 and out-year budget cuts, program cost growth, and the requirement to deploy assets in support of Operation Joint Endeavor, these program milestones are under review.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604770F JSTARS

PROJECT NO. AND NAME: 3551 JSTARS

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Product Development	77,821	98,198	135,830
(U) Support and Management	32,362	29,536	30,900
(U) Test and Evaluation	56,095	37,268	40,554
(U) Total	166,278	165,002	207,284

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
GMSD* F19628-85-C-0053	C/FPI	Sep 85	1,156,200	1,156,200	962,646					962,646
GMSD F19628-90-C-0197	SS/CPIF	Nov 90	845,460	845,460	743,136	25,906	21,681	34,940	19,797	845,460
GMSD F19628-91-C-0034	SS/CPIF	Oct 93	25,662	25,662	25,662					25,662
Boeing N0001983C0176	SS/FP	Jan 83	95,617	95,617	95,617					95,617
GMSD F19628-93-C-0067	SS/CPIF	Oct 93	146,791	146,791	45,463	28,624	31,876	27,328	13,500	146,791
SDS Studies Various Contracts		Ongoing			4,021	1,279				5,300

* Grumman Melbourne Systems Division

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604770F JSTARS

PROJECT NO. AND NAME: 3551 JSTARS

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
MSIP Block I GMSD	SS/CPIF	Mar 96	61,629	61,629	6,315	4,342	28,678	15,294	7,000	61,629
S/W Spt Facility GMSD	TBD	TBD	37,212	37,212			212	17,000	20,000	37,212
Depl Mission Spt Cap (DMSC) GMSD	SS/CPIF	Jun 96	31,445	31,445			6,445	15,000	10,000	31,445
Flt Crew Sim Dual and Assoc. F33657-93-C-0046	SS/CPAF/FFP	May 94	27,568	27,568	5,639	2,784	4,034	15,111		27,568
Maint Trainers	Various		20,166	20,166	4,194	12,683	3.189	100		20,166
MSIP Blk2 Upgr	TBD	TBD	66,952	66,952			1,000		65,952	66,952
TADIL-J GSS Courseware	TBD	TBD	10,900	10,900				3,000	7,900	10,900
NATO GMSD	SS/T&M	Mar 96	6,300	6,300				6,300		6,300
Support and Management Organizations										
MITRE F19628-85-C-0001		Ongoing			128,580	12,611	11,712	10,600	30,998	194,501
TEMS - Various		Ongoing			67,490	7,578	7,861	7,100	23,148	113,177
INFOTEC F19628-85-C-0022	C/FP	Apr 85	Ongoing		35,571	2,464				38,035
Other Spt & Mgt					116,158	9,709	9,963	13,200	35,453	184,483
Test and Evaluation Organizations										

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604770F JSTARS

PROJECT NO. AND NAME: 3551 JSTARS

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
3246 Test Wing Eglin AFB Range Spt - PO	PO				20,828	2,928	1,038	1,066	12,110	37,970
Elect Technical Lab - RVAN	MIPR				10,404					10,404
PDTS F19628-94-C-0040	SS/FFP	Jun 94	68,870	68,870	26,448	27,702	14,720			68,870
E-8C FOTS GMSD	SS/FFP/CPFF	Jun 96	216,293	216,293		19,000	11,940	32,888	152,465	216,293
JTF Support	Allotment				34,319	6,295	9,500	6,530	32,797	89,441
Other Test Spt		Ongoing			20,836	170	70	70	430	21,576

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property:

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Property									
JTIDS			Ongoing	17,001	975	811	1,507	386	20,680
MILSTRIP GMSD	Various		Ongoing	2,778	1,228	272	250	250	4,778
Support and Management Property									
Test and Evaluation Property									

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604770F JSTARS

PROJECT NO. AND NAME: 3551 JSTARS

Subtotal Product Development	1,912,472	77,821	98,198	135,830	144,785	2,369,106
Subtotal Support and Management	347,799	32,632	29,536	30,900	89,599	530,196
Subtotal Test and Evaluation	112,835	56,095	37,268	40,554	197,802	444,554
Total Project	2,373,106	166,278	165,002	207,284	432,186	3,343,856

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604779F Joint Interoperability Tactical Command/Control

PROJECT NO. AND NAME: 2189 JINTACCS

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2189 JINTACCS	1,918	5,824	5,976	6,174	6,226	6,404	6,501	Continuing	TBD

(U) A. **Mission Description and Budget Item Justification**

This program is in budget activity 5 - Engineering and Manufacturing Development, because it is designed to improve the interoperability of Tactical Command and Control (C2) Systems used in support of joint operations. JINTACCS supports Air Force participation with the Army, Navy and Marines, and the Joint Interoperability and Engineering Organization (JIEO) which acts as the Executive Agent. Service and agency activities are governed by Joint Chiefs of Staff (JCS) approved documentation including Technical Interface Concepts and Technical Interface Design Plans. Close liaison across each of the Service JINTACCS programs precludes duplication of efforts. Elements of the Tactical Air Control System, E-3 Airborne Warning and Control System (AWACS) and Joint Tactical Information Distribution System (JTIDS) participate in this program. The JINTACCS program, formerly Ground and Amphibious Military Operation (GAMO), is directed by JCS Memorandum 205-72, dated 1 April 1971, as modified by a Secretary of Defense memorandum, "Reorganization of the DoD Program to Achieve Interoperability of Tactical C2 Systems for GAMO," dated 2 Aug 1977. The program complies with requirements of DoD Directive 4630.5, "Compatibility, Interoperability, and Integration of Command, Control, Communications, and Intelligence (C3I) Systems," November 12, 1992, and DoD Instruction 4630.8, "Procedures for Compatibility, Interoperability, and Integration of C3I Systems," November 18, 1992. The JINTACCS program entails the compatibility and interoperability of C3 systems including tactical intelligence for joint or combined operations through the development and management of a joint architecture, requirements process, interface definitions, message text formats (MTFs), Tactical Digital Information Links (TADILs), and other combat data link standards. This includes the coordination of all combat data link and MTF testing certification and configuration management of standards efforts under one program element. This project supports the efforts to ensure C3 systems' interoperability among all the CINCs, DoD agencies, and the services. Development/certification testing is a pre-production requirement IAW DoDD 4630.5 and DoDI 4630.8.

(U) **FY 1995**

- (U) $ 200 Begin Joint testing of JMI.
- (U) $ 50 Begin exercise participation of expanded USMTF processing Proof-of-Concept.
- (U) $ 25 Begin Theater Battle Management (TBM) C4I architecture development/data model development.
- (U) $ 190 Continue technology exchange/integration with Joint Staff GCCS project.
- (U) $ 70 Continue Air Force testing of the TADIL-J message standard.
- (U) $ 100 Continue CAF preliminary testing of TADIL-J in ABCCC and E-3.
- (U) $ 50 Continue review of impact of emerging DoD data element standardization on USMTF standard.
- (U) $ 50 Continue feasibility analysis of ADA 9X for use in object-oriented prototype development.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604779F Joint Interoperability Tactical Command/Control
PROJECT NO. AND NAME 2189 JINTACCS	

- (U) $ 415 Continue acquisition of JTD/enhancements.
- (U) $ 100 Continue development of automated test analysis system.
- (U) $ 50 Continue modification of message standards supporting TMD.
- (U) $ 50 Continue development of DMTD and VMF standards.
- (U) $ 25 Continue development of TADIL-J capability.
- (U) $ 60 Continue network design and aids development for JTIDS network design facility and architecture.
- (U) $ 100 Continue advanced MTF processing development.
- (U) $ 43 Continue expansion of MTF certification testing to fielded systems.
- (U) $ 100 Continue integration of MCE OPFAC into test facilities.
- (U) $ 240 Complete acquisition of IADS test equipment.
- (U) $ **1,918** **Total**

U) **FY 1996**

- (U) $ 175 Begin CAF testing of MCE Pre-Planned Product Improvements (P3I).
- (U) $ 150 Begin CAF testing of IADS.
- (U) $ 300 Begin acquisition of JSTARS test equipment.
- (U) $ 200 Begin integration of JSTARS OPFAC into test facility.
- (U) $ 600 Begin development/evaluation of follow-on USMTF replacement.
- (U) $ 500 Begin development of interactive USMTF tool.
- (U) $ 164 Continue exercise participation for expanded USMTF processing Proof-of-Concept.
- (U) $ 200 Continue TBM C4I architecture development/data model development.
- (U) $ 200 Continue technology exchange/integration with Joint Staff GCCS project.
- (U) $ 100 Continue CAF preliminary testing of TADIL-J in ABCCC and E-3.
- (U) $ 200 Continue review of impact of emerging DoD data element standardization on USMTF standard.
- (U) $ 234 Continue feasibility analysis of ADA 9X for use in object-oriented prototype development.
- (U) $ 100 Continue acquisition of JTD/enhancements.
- (U) $ 400 Continue development of automated test analysis system.
- (U) $ 300 Continue modification of message standards supporting TMD.
- (U) $ 167 Continue development of DMTD and VMF standards.
- (U) $ 300 Continue development of TADIL-J capability.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604779F Joint Interoperability Tactical Command/Control
PROJECT NO. AND NAME 2189 JINTACCS	

- (U) $ 500 Continue network design and aids development for JTIDS network design facility and architecture.
- (U) $ 534 Continue advanced MTF processing development.
- (U) $ 300 Continue expansion of MTF certification testing to fielded systems.
- (U) $ 200 Complete integration of MCE OPFAC into test facilities.
- (U) $ **5,824** **Total**

(U) **FY 1997**

- (U) $ 200 Begin CAF testing of Joint Surveillance Target Attack Radar System (JSTARS).
- (U) $ 168 Begin Joint testing of IADS.
- (U) $ 150 Continue CAF testing of MCE P3I.
- (U) $ 600 Continue development/evaluation of follow-on USMTF replacement.
- (U) $ 500 Continue development of interactive USMTF tool.
- (U) $ 150 Continue exercise participation for expanded USMTF processing Proof-of-Concept.
- (U) $ 200 Continue TBM C4I architecture development/data model development.
- (U) $ 200 Continue technology exchange/integration with Joint Staff GCCS project.
- (U) $ 100 Continue CAF preliminary testing of TADIL-J in ABCCC and E-3.
- (U) $ 200 Continue review of impact of emerging DoD data element standardization on USMTF standard.
- (U) $ 300 Continue feasibility analysis of ADA 9X for use in object-oriented prototype development.
- (U) $ 246 Continue acquisition of JTD/enhancements.
- (U) $ 400 Continue development of automated test analysis system.
- (U) $ 300 Continue modification of message standards supporting TMD.
- (U) $ 137 Continue development of DMTD and VMF standards.
- (U) $ 200 Continue development of TADIL-J capability.
- (U) $ 500 Continue network design and aids development for JTIDS network design facility and architecture.
- (U) $ 600 Continue advanced MTF processing development.
- (U) $ 300 Continue expansion of MTF certification testing to fielded systems.
- (U) $ 300 Complete acquisition of JSTARS test equipment.
- (U) $ 225 Complete integration of JSTARS OPFAC into test facility.
- (U) $ **5,976** **Total**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604779F Joint Interoperability Tactical Command/Control
PROJECT NO. AND NAME 2189 JINTACCS	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	1,919	6,356	6,230	14,505
(U) Appropriated Value	2,063			
(U) Adjustments to Appropriated Value				
a. General Congressional Reduction	-107	-268		
b. Small Business Innovative Research	-38	-134		
c. Omnibus and other Above Threshold Reprogrammings		-130		
(U) Adjustments to Budget Years Since FY96 PB			-254	
(U) Current Budget Submit/President's Budget	1,918	5,824	5,976	13,784

(U) Change Summary Explanation:

Funding: None
Schedule: None.
Technical: None.

(U) **C. Other Program Funding Summary ($ in Thousands)** NOT APPLICABLE

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604779F Joint Interoperability Tactical Command/Control
PROJECT NO. AND NAME 2189 JINTACCS	

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) CERTIFICATION TESTING												
- JMI												
CAF			X									
Joint				X								
- MCE P^3I												
CAF							X					
Joint									X			
- IADS												
CAF							X					
Joint									X			
- JSTARS												
CAF											X	
(U) OPFAC INSTALL/INTEGRATION												
- ABCCC												
Complete												
- MCE P^3I												
Complete						X						
- IADS												
Begin												
Complete				X								
- JSTARS												
Begin						*						
Complete											X	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604779F Joint Interoperability Tactical Command/Control
PROJECT NO. AND NAME 2189 JINTACCS	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Certification Testing Support Equipment Acquisition	800	400	546
(U) System Engineering	498	4,082	3,862
(U) Certification Testing & Evaluation	400	692	918
(U) Joint Service TADIL/MTF Configuration Management	100	500	500
(U) Travel	120	150	150
(U) Total	1,918	5,824	5,976

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)** NOT APPLICABLE

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604851F ICBM Modernization EMD

	COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	140,565	180,911	198,595	120,510	67,916	32,009	0	TBD	TBD
133B	Rapid Execution and Combat Targeting	21,758	3,988	0	0	0	0	0	0	292,962
3085	Guidance Replacement Program	90,198	110,753	108,211	44,352	0	0	0	0	494,546
4210	Propulsion Replacement Program	28,609	66,170	87,567	76,158	67,916	32,009	0	0	367,799
13C4	Strategic C4 Program	0	0	2,817	0	0	0	0	TBD	TBD

NOTE:

- FY94 funding under PE 0101213F, Minuteman Squadrons.
- Project/program funding for FY95 does not accurately reflect adjustments to appropriated value for all projects. See individual project Program Change Summary for details/explanation.

(U) A. Mission Description and Budget Item Justification

(U) ICBM modernization efforts will extend the operational life of the Minuteman ICBM weapon system. The Rapid Execution and Combat Targeting (REACT) Program replaces unsupportable Minuteman launch control center equipment with a modern command, control, and communications system. The Guidance Replacement Program (GRP) will replace failing guidance system electronics. The Propulsion Replacement Program (PRP) will remanufacture solid fuel stages to correct age-related degradations and maintain existing weapon system reliability. The Strategic C4 (Command, Control, Communications, and Computers) Program will modernize the command, control, communications, and computer systems associated with assured force execution/termination of the ICBM forces. These efforts were defined and validated in DoD's Nuclear Posture Review. These programs are in Budget Activity/Research Activity Engineering and Manufacturing Development (EMD).

(U) Acquisition Strategy:

(U) REACT. This program covers the production and installation of the REACT Class V modification. The contractual vehicle, a fixed-price incentive (firm target)/award fee (FPIF/AF), was issued as a sole source acquisition. Deployment will complete in FY96.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604851F ICBM Modernization EMD

(U) Guidance Replacement Program. An EMD contract was awarded to develop, test, and replace selected guidance electronics and software. A cost plus-award-fee (CPAF) contract was issued following full and open competition.

(U) Propulsion Replacement Program. Planned acquisition will consist of all hardware and software modifications; integration and flight test support; delivery of remanufactured Stage 1, 2, and 3 motors; nuclear certification analysis tasks; and independent software certification. All contractual actions are sole source negotiated procurements using cost plus-award-fee (CPAF) contracts.

(U) Strategic C4. The program will initially focus on the modification and integration of existing Miniature Receive Terminals (MRT) into Modified Miniature Receive Terminals (MMRT) for use in ICBM launch control centers (LCC). The type of engineering and manufacturing development (EMD) contract, and the production contract are TBD. An acquisition strategy similar to that used for the E-4B/E-6B MEECN-sponsored MMRT program is anticipated.

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996*	FY 1997	Total Cost
(U) Previous President's Budget	140,153	192,719	162,213	TBD
(U) Appropriated Value	138,048	192,719		
(U) Adjustments to Appropriated Value				
a. Congressional/General	-1,515	-3,773		
b. SBIR	-2,881	-5,210		
c. Below Threshold Reprogramming				
d. Omnibus and other Above Threshold	6,913	-2,825		
(U) Adjustments to Budget Years Since FY96 PB			36,382	
(U) Current Budget Submit/President's Budget	140,565	180,911	198,595	TBD

(U) Change Summary Explanation:

Funding: See individual projects.
* The FY96 amount does not reflect funding reductions that are reserved for other DoD reprogramming needs ($2,199)

Schedule: See individual projects.

Technical: See individual projects.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604851F ICBM Modernization EMD

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) APPN #14 (Missile Procurement - AF), (Minuteman Squadrons), BA-03 (Weapons Procurement), WSC M30MLG	0	16,453	60,152	183,796	310,930	454,790	514,897	2,139,200	4,002,918

Related RDT&E: None

(U) D. **Schedule Profile:** See individual projects

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604851F ICBM Modernization EMD
PROJECT NO. AND NAME 133B Rapid Execution and Combat Targeting	

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
133B Rapid Execution and Combat Targeting	21,758	3,988	0	0	0	0	0	0	292,962

(U) A. **Mission Description and Budget Item Justification**

(U) Minuteman launch control centers (LCCs) have been deployed since the early 1960's. Since the original deployment, numerous communications and weapon system modifications have been installed on a stand-alone basis without consideration for human engineering interfaces and space limitations of the LCC. Additional communications requirements and changes in crew procedures have, over time, resulted in task saturation of the crew members. Air Force Material Command studies show that the weapon system control element is reaching the end of its useful life. Manufacturers no longer produce many of the replacement parts and computer memory capacity has reached its limits. The Rapid Execution and Combat Targeting (REACT) program was initiated in 1988 to address these concerns. The program combines five related efforts to improve maintainability, supportability, reliability, responsiveness and operability of the weapon system: weapon system controller hardware replacement, rapid message processing, rapid retargeting software, launch control center console integration, and missile procedures trainer computer replacement. The program will modify LCCs and associated trainers. The new weapon system control element provides significantly increased system capacity and eliminates supportability difficulties of the current weapon system controller. REACT will be integrated into both currently deployed versions of the Minuteman LCC (AM & B weapon systems). The rapid message processing element and rapid retargeting will streamline current procedures and provide greater flexibility for crew members responding to critical National Command Authority directives. The missile procedures trainer modification will reflect current operational configurations and ensure crew members receive maximum benefit from training time. This project sustains a fielded operational weapon system.

(U) FY 1995

- (U) $12,232 Continued weapon system control element hardware and software development (B system).
- (U) $2,889 Continued REACT communications element development (B system).
- (U) $2,527 Continued nuclear safety cross check analysis of operational software.
- (U) $4,110 Completed AM weapon system deployment, conducted B system software configuration audits, began B weapon system Initial Operational Test and Evaluation (IOT&E). Completed formal B weapon system test, obtained nuclear certification of B weapon system software.
- (U) $21,758 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604851F ICBM Modernization EMD
PROJECT NO. AND NAME 133B Rapid Execution and Combat Targeting	

(U) FY 1996

- (U) $3,384 Obtain FAD of B system, complete B system deployment, achieve Last Asset Delivery (LAD).
- (U) $604 Other
- (U) $3,988 Total

(U) FY 1997 - N/A

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	21,792	4,092	0	293,100
(U) Appropriated Value	21,792	4,092		
(U) Adjustments to Appropriated Value				
a. Congressional/General		-81		
b. SBIR				
c. Below Threshold Reprogramming	-34			
d. Omnibus and other Above Threshold		-23		
(U) Adjustments to Budget Years Since FY96 PB				
(U) Current Budget Submit/President's Budget	21,758	3,988	0	292,962

(U) Change Summary Explanation:

Funding: Not applicable

Schedule: Not applicable

Technical: Not applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604851F ICBM Modernization EMD
PROJECT NO. AND NAME 133B Rapid Execution and Combat Targeting	

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) APPN #14 (Missile Procurement - AF), Cost Cat 2100 (Missile Modifications), PE 0101213F (Minuteman Squadrons), BA-03 (Weapons Procurement), WSC M30MLG	0	16,453	0	0	0	0	0	0	339,153

(U) D. **Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) First Asset Delivery (AM System)	X*											
(U) Last Asset Delivery (AM System)						X						
(U) First Asset Delivery (B System)					X*							
(U) Last Asset Delivery (B System)								X				
(U) DT&E (B System)				X*								
(U) IOT&E (B System)				X*								

* Complete

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604851F ICBM Modernization EMD

PROJECT NO. AND NAME: 133B Rapid Execution and Combat Targeting

(U) A. Project Cost Breakdown ($0 in Thousands)

	FY 1995	FY 1996	FY 1997
(U) B Weapon System Development	15,121		
(U) Nuclear Safety Cross Check Analysis	2,527		
(U) B Systems Test	4,110	2,388	0
(U) Complete AM & B Deployment		1,600	
(U) Total	21,758	3,988	0

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Loral	FFP/CPAF	4 Apr 89	160,200	159,200	267,216	21,758	3,988	0	0	292,962
Support and Management Organizations: None										
Test and Evaluation Organizations: None										
Government Furnished Property: Not Applicable										
Subtotal Product Development					267,216	21,758	3,988	0	0	292,962
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project					267,216	21,758	3,988	0	0	292,962

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604851F ICBM Modernization EMD

PROJECT NO. AND NAME: 3085 Guidance Replacement Program

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3085 Guidance Replacement Program	90,198	110,753	108,211	44,352	0	0	0	0	494,546

(U) **A. Mission Description and Budget Item Justification**

(U) Ongoing Minuteman life extension efforts are required to extend the life of the Minuteman. The Joint Requirements Oversight Council validated the Mission Need Statement for a Future Guidance System for Intercontinental Ballistic Missiles (ICBM) on 5 November, 1992. GRP replaces failing guidance system electronics, and preserves the option to configure the missiles with the Peacekeeper Mk 21 reentry vehicle and an advanced inertial measurement unit. The Engineering and Manufacturing Development (EMD) contract was awarded to Rockwell International in August 1993. GRP includes the EMD, production, and installation of replacement guidance components to extend the life of the operational Minuteman force. Funding reflected here is for EMD.

(U) FY 1995

- (U) $78,086 Hardware/software development.
- (U) $3,190 Nuclear safety cross check analysis and independent validation and verification.
- (U) $2,275 ICBM codes development.
- (U) $7,714 Systems engineering and technical support.
- (U) $1,706 Other engineering support.
- (U) ($2,773) Partial Adjustment to Appropriated Value funded from Propulsion Replacement Program (BPAC 4210, this PE).
- (U) $90,198 Total

(U) FY 1996

- (U) $90,142 Hardware/software development.
- (U) $3,788 Nuclear safety cross check analysis and independent validation and verification.
- (U) $1,288 ICBM codes development.
- (U) $6,967 Systems engineering and technical support.
- (U) $3,097 Labs and support agencies.
- (U) $4,585 Testing and other engineering support.
- (U) $886 Other
- (U) $110,753 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604851F ICBM Modernization EMD
PROJECT NO. AND NAME 3085 Guidance Replacement Program	

(U) FY 1997

- (U) $57,541 Hardware/software development.
- (U) $3,788 Nuclear safety cross check analysis and independent validation and verification.
- (U) $1,400 ICBM codes development.
- (U) $5,766 Systems engineering and technical support.
- (U) $11,425 Labs and support agencies.
- (U) $28,202 Testing and other engineering support.
- (U) $108,211 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	92,525	120,755	70,113	417,251
(U) Appropriated Value	90,383	120,755		
(U) Adjustments to Appropriated Value				
a. Congressional/General	-4,305*	-2,364		
b. SBIR	-2,881	-5,210		
c. Omnibus and other Above Threshold		-2,428		
d. Below Threshold Reprogramming	7,001			
(U) Adjustments to Budget Years Since FY96 PB			38,098	
(U) Current Budget Submit/President's Budget	90,198	110,753	108,211	491,773

* Includes $2,773 in General Congressional Reductions funded by Propulsion Replacement Program (BPAC 4210, this PE).

(U) Change Summary Explanation:

Funding: Guidance Replacement Program restructured; FY97-98 funding estimates adjusted accordingly. Non-pay inflation adjustments made in FY97-01.

Schedule: Program schedule restructured consistent with new funding profile.

Technical: No change.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604851F ICBM Modernization EMD
PROJECT NO. AND NAME 3085 Guidance Replacement Program	

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) APPN #14 (Missile Procurement - AF), Cost Cat 21000 (Missile Modifications), PE 0101213F (Minuteman Squadrons), BA-03 (Weapons Procurement), WSC M30MLG	0	0	60,152	183,796	310,930	321,597	315,510	23,100	1,193,165

(U) D. **Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Program Milestones												
(U) Milestone III AFSARC										X		
(U) Engineering Milestones												
(U) PDR					X*							
(U) CDR										X		
(U) FCA											2QFY98	
(U) PCA											3QFY98	
(U) T&E Milestones												
(U) Combined DT&E/IOT&E Start											3QFY97	
(U) First Flight Test											1QFY98	
(U) Contract Milestones												
(U) Low Rate Initial Production											X	

* Complete

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604851F ICBM Modernization EMD

PROJECT NO. AND NAME: 3085 Guidance Replacement Program

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Hardware/Software Development	78,086	90,142	57,541
(U) ICBM Codes Contract	2,275	1,288	1,400
(U) Nuclear Safety Cross Check Analysis Contract	3,190	3,788	3,877
(U) Labs/Agencies	285	3,097	11,425
(U) SETA	7,714	6,967	5,766
(U) Other Engineering Support & Testing	1,421	5,471	28,202
(U) Administrative Adjustment*	-2,773		
(U) Total	90,198	110,753	108,211

* See note accompanying Program Change Summary.

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Rockwell	CPAF	31 Aug 93		348,705	105,297	78,086	90,142	57,541	17,848	348,914
Codes Contract				5,960	425	2,275	1,288	1,400	572	5,960

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604851F ICBM Modernization EMD

PROJECT NO. AND NAME: 3085 Guidance Replacement Program

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Support and Management Organizations										
NSCCA/IV&V	CPAF	31 Mar 94		16,233	2,940	3,190	3,788	3,877	2,438	16,233
SETA	CPAF	4 Jan 94		42,868	19,401	7,734	6,967	5,766	3,000	42,868
CSDL	FP	30 Jun 94		5,264	5,264	0	0	0	0	5,264
Other Engineering Support		31 Aug 93		61,031	4,670	1,401	6,559	28,492	19,694	60,816
Test and Evaluation Organizations										
AGMC	PO			207	74	33	100	0	0	207
White Sands	PO			795	41	0	754	0	0	795
VAFB	PO/MIPR			11,508	110	243	345	10,510	300	11,508
Strategic Missile Integration Complex (SMIC)	PO			275	0	0	230	45	0	275
Maxwell	MIPR			37	37	0	0	0	0	37
Sandia	PO			1,660	0	0	580	580	500	1,660
Army Research Lab	PO/MIPR			9	0	9	0	0	0	9
Subtotal Product Development					105,722	80,361	91,430	58,941	18,420	354,874
Subtotal Support and Management					32,275	12,325	17,314	38,135	25,132	125,181
Subtotal Test and Evaluation					262	285	2.009	11,135	800	14,491
Total Project					138,259	90,198*	110,753	108,211	44,352	494,546

Government Furnished Property: Not Applicable

* Includes credit for partial FY95 General Congressional Reductions funded from Propulsion Replacement Program (BPAC 4210, this PE).

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604851F ICBM Modernization EMD

PROJECT NO. AND NAME: 4210 Propulsion Replacement Program

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4210 Propulsion Replacement Program	28,609	66,170	87,567	76,158	67,916	32,009	0	0	367,799

(U) A. Mission Description and Budget Item Justification

(U) The Propulsion Replacement Program will remanufacture solid fuel stages to correct age-related degradations, maintain existing weapon system reliability, and support Minuteman life extension. Any of the degradations (propellant cracking, case corrosion, liner deterioration, inhibitor deterioration, and liner debond) can cause catastrophic motor failure and, in turn, mission failure. RDT&E efforts will identify replacement materials that are no longer available or which have become environmentally unacceptable, reduce life cycle costs, and identify corrections to age-related degradations. This project incorporates only changes that can be demonstrated in an appropriate time frame to ensure the Minuteman propulsion system continues to meet existing performance capabilities and remains viable and supportable. The project entered Phase 2 (Engineering Manufacturing and Development) in FY94.

(U) FY 1995

- (U) $9,741 Integrated program activities such as system engineering, program management, range support, AEDC testing, booster disassembly/assembly, booster transportation.
- (U) $9,453 Continued fabrication, tooling and waste disposal for change verification motors.
- (U) $6,642 Continued component reuse and materials replacement studies, continued stage design and development.
- (U) $2,773 Partial Adjustments to Appropriated Value for Guidance Replacement Program (BPAC 3085, this PE) but funded from Propulsion Replacement Program (BPAC 4210, this PE).
- (U) $28,609 Total

(U) FY 1996

- (U) $23,688 Continue fabrication, tooling and waste disposal for change verification motors.
- (U) $23,226 Integrate program activities such as system engineering, program management, range support, AEDC testing, booster disassembly/assembly, booster transportation.
- (U) $19,256 Continue component reuse and materials replacement studies, continue stage design and development to include refurbishment.
- (U) $66,170 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604851F ICBM Modernization EMD
PROJECT NO. AND NAME 4210 Propulsion Replacement Program	

(U) FY 1997

- (U) $25,876 Continue component reuse and materials replacement studies, continue stage design and development to include refurbishment.
- (U) $28,317 Integrate program activities such as system engineering, program management, range support, AEDC testing, booster disassembly/assembly, booster transportation.
- (U) $27,594 Continue fabrication, tooling and waste disposal for change verification motors.
- (U) $6,920 Begin software modification.
- (U) $1,927 Begin ordnance development effort
- (U) $87,567 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	25,836	67,872	92,100	384,197
(U) Appropriated Value	25,873	67,872		
(U) Adjustments to Appropriated Value				
a. Congressional/General	-37	-1,328		
b. Omnibus and other Above Threshold		-374		
(U) Adjustments to Budget Years Since FY96 PB			-4,533	-13,625
(U) Administrative Correction*				
(U) Current Budget Submit/President's Budget	28,609*	66,170	87,567	370,572

* Includes partial General Congressional Reductions ($2,773) assessed against Guidance Replacement Program (BPAC 3085, this PE) but funded by Propulsion Replacement Program.

(U) Change Summary Explanation:

Funding: FY97 and outyear funding reduced as result of RDT&E reduction during FY97 APOM and non-pay inflation adjustment .

Schedule: No significant impact.

Technical: No significant impact.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604851F ICBM Modernization EMD

PROJECT NO. AND NAME: 4210 Propulsion Replacement Program

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) APPN #14 (Missile Procurement - AF), Cost Cat 21000 (Missile Modifications), PE 0101213F (Minuteman Squadrons), BA-03 (Weapons Procurement), WSC M30MLG	0	0	0	0	0	133,193	199,387	2,116,100	2,470,600

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Engineering Milestones												
(U) Stage PDR									X			
(U) T&E Milestones												
(U) Change Verification Test			X*	X*	X*	X	X	X	X	X	X	X
(U) Contract Milestones												
(U) EMD Contract Awards												
(U) Software Contract Award										X		
(U) DT&E/IOT&E	2Q98-3Q00											
(U) LRIP	1Q00											
(U) Milestone III	4Q00											

* Complete

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604851F ICBM Modernization EMD

PROJECT NO. AND NAME: 4210 Propulsion Replacement Program

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Technology Insertion	18,909	53,435	62,776
(U) Software	0	0	6,894
(U) Other Program Cost	835	1,238	2,096
(U) SE/TA	5,214	6,272	7,595
(U) ECO	224	4,442	5,089
(U) Risks	654	783	3,117
(U) Administrative Adjustment*	2,773		
(U) Total	28,609	66,170	87,567

* See note accompanying Program Change Summary.

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Thiokol	SS CPAF	Aug 94	98,352	93,035	4,469	5,351	16,182	21,712	45,321	93,035
Aerojet	SS CPAF	Jul 94	97,337	92,460	5,403	7,440	20,593	22,852	36,172	92,460
CSD	SS CPAF	Jul 94	101,502	96,366	4,997	6,996	21,921	24,572	37,880	96,366
Ordnance	C CPAF	TBD	TBD	6,539	0	0	0	1,920	4,619	6,539
Software	C CPAF	2Q97		22,054	0	0	0	6,894	15,160	22,054

\# Data not available until after contract award.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604851F ICBM Modernization EMD

PROJECT NO. AND NAME: 4210 Propulsion Replacement Program

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Support and Management Organizations										
TRW	SS CPAF	Oct 94	N/A	36,599	0	5,214	6,272	7,571	14,418	33,475
Program Integration			N/A	3,032	47	408	400	540	1,719	3,032
Test and Evaluation Organizations										
AEDC	PO	Periodic	N/A	8,766	0	412	804	1,516	5,960	8,766
Range (VAFB)	PO	Nov 99	N/A	12,061	0	0	0	0	12,061	12,061
Phillips Lab	PO			15	0	15	15	0	0	16
Wright Lab				0	0	0	16	0		16
Subtotal Product Development					14,869	19,787	58,663	77,950	139,152	310,421
Subtotal Support and Management					47	5,622	6,672	8,101	16,137	36,579
Subtotal Test and Evaluation					0	427	835	1,516	18,021	20,799
Total Project					14,916	25,836*	66,170	87,567	173,310	367,799

Government Furnished Property: Not Applicable

* Excludes funds for partial FY95 General Congressional Reductions funded by this project but assessed to Guidance Replacement Program (BPAC 3085, this PE).

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604851F ICBM Modernization EMD
PROJECT NO. AND NAME 13C4 Strategic C4 Program	

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
13C4 Strategic C4 Program	0	0	2,817	0	0	0	0	TBD	TBD

(U) A. Mission Description and Budget Item Justification

(U) The Strategic C4 program will modernize the command, control, communications and computers (C4) systems associated with assured force execution/termination of the ICBM force structure. The program will initially focus on the modification and integration of existing government furnished Miniature Receive Terminals (MRT) for use in ICBM launch control centers (LCCs). The MRT is a VLF receiver already designed, developed, and installed in the B-1B and B-52 bombers. This program will use MRT assets no longer required by the B-1 and B-52.

(U) FY 1995 ($ in Thousands): Accomplished under MEECN (PE 0303131F)

(U) FY 1996 ($ in Thousands): Accomplished under MEECN (PE 0303131F)

(U) FY 1997 ($ in Thousands):

- (U) $2,817 MMRT modification and integration into LCCs.
- (U) $2,817 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	0	0	0
(U) Appropriated Value		0		
(U) Adjustments to Appropriated Value				
(U) Adjustments to Budget Years Since FY 1996 PB			2,817	TBD
(U) Current Budget Submit/President's Budget	0	0	2,817	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604851F ICBM Modernization EMD
PROJECT NO. AND NAME 13C4 Strategic C4 Program	

(U) Change Summary Explanation:

Funding: FY97 funding from PE 0303131F ($1,937) and FY97 BES cycle plus-up ($1,000). FY98 and beyond funding requirements being addressed in the FY98 POM. FY97 funding decreased by $120 for non-pay inflation adjustment.

Schedule: Not applicable

Technical: Work transferred into this project is strategic C4 EMD efforts specifically applicable to ICBMs.

(U) C. Other Program Funding Summary ($ in Thousands):

0303131F - Minimum Essential Emergency Communications Network (MEECN)

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) MMRT in ICBM LCCs									X			

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604851F ICBM Modernization EMD

PROJECT NO. AND NAME: 13C4 Strategic C4 Program

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Integration of MMRTs in ICBM LCCs	0	0	2,817
(U) Total	0	0	2,817

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
TBD	TBD	TBD	TBD	TBD	0	0	0	2,817	TBD	TBD
Support and Management Organizations										
TBD	TBD	TBD	TBD	TBD	0	0	0			
Test and Evaluation Organizations										
AFOTEC	TBD	TBD	TBD	TBD	0	0	0	0	TBD	TBD

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property: TBD

Subtotal Product Development	0	0	0	2,817	TBD	TBD
Subtotal Support and Management	0	0	0	0	TBD	TBD
Subtotal Test and Evaluation	0	0	0	0	TBD	TBD
Total Project	0	0	0	2,817	TBD	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0308610F Information Management - Automation - Program 3

PROJECT NO. AND NAME: 4533 GCSS-AF (BLSM II)

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4533 GCSS-AF (BLSM II)	0	10,400	15,193	15,597	16,096	16,595	17,089	TBD	TBD

(U) A. Mission Description and Budget Item Justification

The mission of GCSS-AF (BLSM II) is to modernize the software portion of standard Automated Information Systems (AISs) into integrated systems that are responsive to Air Force needs during wartime and peacetime. GCSS-AF will give Wing Commanders and other users the ability to access readily available mission information which resides on geographically and functionally disparate systems. GCSS-AF will create standard software applications that can be used effectively both during wartime and peacetime which will end the need to learn a new system when deployed. GCSS-AF applications will use an open systems environment. The applications will inter-operate with other base level support systems, key Air Force systems, and command and control (C2) systems. This will increase the operational readiness of all base level automated data processing systems supporting the weapon systems, reduce logistics support costs, improve the productivity of Air Force personnel, and provide critical decision making information to operational commanders. This program is in Budget Activity 6, Management Support, because the program modernizes Automated Information Systems (AISs).

(U) FY 1996

- (U) 10,400 Application Modernization/COE Migration
  - (U) 8,900 Supply component
  - (U) 1,000 Rehost prototypes
  - (U) 500 COE Migration
- (U) 10,400 Total

(U) FY 1997

- (U) 3,143 Modernization Planning Task Order
- (U) 12,050 Application Modernization/COE Migration
  - (U) 7,550 Supply component
  - (U) 2,000 Rehost prototypes
  - (U) 2,500 COE Migration
- (U) 15,193 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0308610F Information Management - Automation - Program 3
PROJECT NO. AND NAME 4533 GCSS-AF (BLSM II)	

(U) B. Program Change Summary ($ in Thousands)	FY 95	FY 96	FY 97	Total Cost
(U) Previous President's Budget (FY 1996)	0	0	0	TBD
(U) Appropriated Value	0	10,400	15,193	
(U) Adjustments to Budget Years				
(U) Current Budget Submit/President's Budget	0	10,400	15,193	TBD

(U) Change Summary Explanation:

(U) Funding: The FY96 Appropriations bill required much of the GCSS-AF activity to be RDT&E funded vice O&M funded.

(U) Schedule: No change to program schedule.

(U) Technical: No change to program technical requirements.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0308610F Information Management - Automation - Program 3

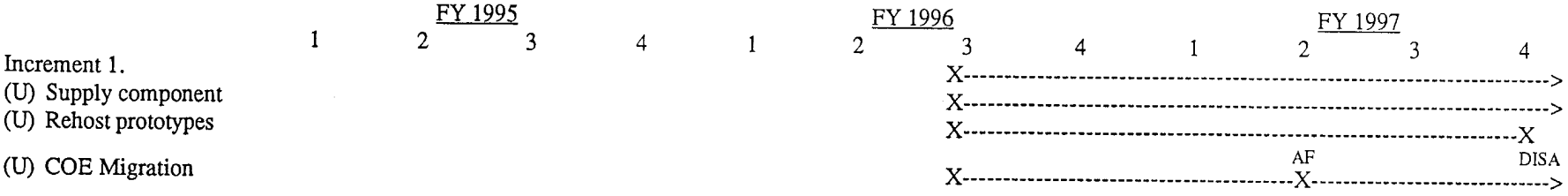
PROJECT NO. AND NAME: 4533 GCSS-AF (BLSM II)

(U) C. Other Program Funding Summary ($ in Thousands)*

	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	To Compl	Total Cost
(U) O&M (BLSM I)**	3,500	500						4,000
(U) Other Proc (BLSM I)**	8,300	4,258						8,300
(U) O&M (BLSM II)***	4,400		16,000	21,400	22,500	23,400	TBD	TBD
(U) Other Proc (BLSM II)***	3,000	4,000						7,300
(U) DBOF (civilian pay, military pay, and Base Operating Support)***		8,023	9,198	9,148	9,480	9,690	TBD	TBD
(U) O&M****			4,000	4,100	4,200	4,300	TBD	TBD

* O&M and procurement funds located within PE 0308610.
** Funding for fielding the BLSM I prototype systems.
*** Reprogramming to RDT&E funds in process.
**** Sustainment of fielded increments.

(U) D. Schedule Profile



RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0308610F Information Management - Automation - Program 3
PROJECT NO. AND NAME 4533 GCSS-AF (BLSM II)	

(U) A. Project Cost Breakdown ($000 in Thousands)

	FY 96	FY 97
(U) Modernization Planning Task Order	0	3,143
(U) Increment 1		
(U) Supply component	8,900	7,550
(U) Rehost prototypes	1,000	2,000
(U) COE Migration	500	2,500
(U) Total	10,400	15,193

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0603402F Space Test Program (Space)

PROJECT NO. AND NAME: 2617 Space Research Flight Support*

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2617 Space Research Flight Support*	53,281	45,032	44,752	45,731	46,701	47,790	48,136	Continuing	Continuing

*** FY95 submission referred to project 2617 as "Free-Flyer Spacecraft Missions." Projects 2620 and 4233 have been deleted and 2617 renamed in this submission. FY95 and out years funding reflect sums of all three projects. FY 95 budget in BAC 4.**

(U) **A. Mission Description and Budget Item Justification**

(U) Space Test Program (STP) is a Budget Activity/Research Category RDT&E Management Support program. It provides support to the DoD space research community by providing unique spaceflight testing opportunities for experiments with military relevance whose scopes can range from basic research to advanced development. STP missions are the most cost-effective way to flight test new space systems technologies, concepts and designs, providing an inexpensive way to:

- Demonstrate the feasibility of new space systems and technologies,
- Improve operational design by characterizing the space environment and event or sensor physics proposed for an operational system or system upgrade,
- Provide early operational capabilities to evaluate their usefulness or quickly react to new developments,
- Perform operational risk reduction through direct flight test of prototype components,
- Develop the knowledge base from which to plan new and improved operational systems and system upgrades, and
- Exploit unanticipated discoveries and opportunities.

This DoD program provides the only substantial spaceflight capability to perform fly-before-buy, risk-reducing demonstrations of advanced technologies in operational space environments.

(U) The space research experiments that STP supports are justified, developed and delivered by various Service laboratories and DoD agencies, with the goal of improving DoD's current and future operational space system's performance. Experiments are considered for spaceflight based on the priority that they are assigned by a DoD Space Experiment Review Board, a group that is independent of the STP Program Office, and is comprised of Air Force, Army, Navy, and BMDO representatives with expertise in DoD operational space requirements. STP is given the Board's prioritized list of experiments and then seeks out the least expensive means of spaceflight so as to fly as many of the experiments as it can within the constraints of priority, opportunity and available funding. The most common spaceflight opportunities include piggybacking on military or commercial satellites, both foreign and domestic; and the various payload modes of the Space Shuttle. For those experiments whose requirements cannot be satisfied with these "secondary" opportunities, dedicated STP spacecraft and launch vehicle hardware are procured within the constraints of available funding and according to experiment requirements. These includes Small and Medium Launch Vehicle class satellites, as well as Small Launch Vehicle class boosters themselves. Medium Launch Vehicle class boosters are provided as required by PE 35119F. If a particular

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0603402F Space Test Program (Space)
PROJECT NO. AND NAME 2617 Space Research Flight Support*	

manifested experiment fails to materialize, is deemed impractical to fly given current funding, or if the appropriate spaceflight opportunity becomes unavailable, STP shifts what resources remain to provide spaceflight support for the next highest priority experiments.

(U) The Air Force requires a stable funding level and the flexibility necessary to take advantage of whatever means of spaceflight is deemed to be most cost effective for a given experiment or complement of experiments. This flexibility is essential to take advantage of inexpensive "target of opportunity" space hardware, including operational spacecraft, where margin is usually firmly identified during the later stages of spacecraft development. This assures that the greatest amount of DoD space research is accomplished with the limited funds available. Without the requested funding, DoD would lose its most successful and most cost effective capability to launch and test new technologies prior to their initial incorporation into our nation's very expensive and demanding operational space systems. Insufficient funding would also force each of the Services and DoD agencies to create individual launch capabilities in an attempt to duplicate STP's current low cost, risk mitigating capability. Such a redundancy would result in the loss of the contractual economy of scale that a single space test organization provides, as well as the filtering function of the STP Space Experiment Review Board in assuring minimum duplication.

($ In Thousands)

(U) FY 1995

- (U) $53,281 Worked spaceflight opportunities for as many of the highest ranked experiments from the 1994 Space Experiment Review Board (SERB) list as was possible, consistent with the availability of practical spaceflight means and funding. Continued to develop the spaceflight missions for those experiments currently manifested and managed the launch effort for those ready for flight, as appropriate.
- (U) $53,281 Total

(U) FY 1996

- (U) $45,032 Work spaceflight opportunities for as many of the highest ranked experiments from the 1995 SERB list as possible, consistent with the availability of practical spaceflight means and funding. Continue to develop the spaceflight missions for those experiments that are manifested and manage the launch effort for those ready for flight, as appropriate.
- (U) $45,032 Total

(U) FY 1997

- (U) $44,752 Work spaceflight opportunities for as many of the highest ranked experiments from the 1996 SERB list as possible, consistent with the availability of practical spaceflight means and funding. Continue to develop the spaceflight missions for those experiments that are manifested and managed the launch effort for those ready for flight, as appropriate.
- (U) $44,752 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0603402F Space Test Program (Space)

PROJECT NO. AND NAME: 2617 Space Research Flight Support*

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996*	FY 1997	Total Cost
(U) Previous President's Budget	65,477	57,710	36,120	Continuing
(U) Appropriated Value	67,998	47,000		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	- 1,365	-1,166		
b. SBIR	- 1,139	-131		
c. Omnibus or Other Above Threshold Reprogram	-13,000			
d. Below Threshold Reprogramming	787	-671		
(U) Adjustments to Budget Years Since FY96 PB			8,632	
(U) Current Budget Submit/President's Budget	53,281	45,032	44,752	Continuing

(U) Change Summary Explanation:

Funding: The Air Force has received direction from the Under Secretary of the Air Force and the Secretary of Defense that reinstates the program's original support to all DoD users and restores approximately one-third of the FY96 PB reductions, $10,620 in FY97; internal USAF adjustments have reduced the net increase by $1,988.

* The FY96 PB amount does not reflect funding reductions that are reserved for other DoD reprogramming needs ($491)

Schedule: Mission delay induced cost growth.

Technical: Not Applicable.

(U) **C. Other Program Funding Summary ($ in Thousands):**

Not Applicable

Related RDT&E:

(U) PE #305119F, (Medium Launch Vehicles)

(U) PE #305171F, (Space Launch Support)

Experiments are funded by many S&T PE's in: USAF, Army, Navy, ARPA, BMDO, DoE, NASA, and NRO programs.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0603402F Space Test Program (Space)
PROJECT NO. AND NAME 2617 Space Research Flight Support*	

(U) **D. Schedule Profile** (Current projection. Experiments are added as new spaceflight opportunities and budget permits)

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) AMOS (STS-61) (U) CONCOP-1, APE-B (STS-60)												
(U) BETSU, AMOS, APE-B (STS-62) (U) ACRE (S93-2)												
(U) TAOS (P90-5) (U) STL (NASA), VFT-4 (STS-59)												
(U) SIDEX (P91-2) (U) DUCTED, ADS, CHAMPION, PEA (P90-1)												
(U) PASP Plus, CRUX, FERRO (P90-6/APEX) (U) MAST, AMOS (STS-65)												
(U) MAST, AMOS, RME III, LITE-1 (STS-64) (U) CREAM, MAST (STS-68)												
(U) SWIM (S91-4)	X											
(U) MAHRSI, STL/NIH (STS-66/ CRIS-SPAS: S90-4)	X											
(U) FUVIS, WINDEX, CREAMS(2), RME III, STL/NIHL-C (STS-63/P90-4)		X										
(U) PLUMES(MSX) (STS-75)		X										
(U) ACTEX II, EDMM, SQUOD, SAMMES, SAWAFE (P92-2)			X									
(U) HERCULES, STL-B, AMOS, PLUMES(MSX), VFT-4, RME III, WINDEX, MIS-B (STS-70)				X								
(U) CHARGECON-GEO (S90-3)				X								

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0603402F Space Test Program (Space)

PROJECT NO. AND NAME: 2617 Space Research Flight Support*

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) STL /NIH, PLUMES(MSX) (STS-69)				X								
(U) FLEX BEAM, STL/NIH-C, PLUMES(MSX) (STS-72/P93-6)						X						
(U) TRIS II (STS-76/S85-2)						X						
(U) REX II (P94-2)							X					
(U) LMTE (LiTE), STL-A (STS-77/S93-5)							X					
(U) STL (STS-78)							X					
(U) FORTE (P94-1)								X				
(U) ESEX, USA, GIMI, SPADUS, CIV, HIRAAS, HTSSE II, EUVIP (P91-1/ARGOS)											X	
(U) EMPE, OOAM, DIDM (P95-A/STEP4)											X	
(U) POGS-II (S92-1)												X
(U) COOLAR (STS-85)												X
(U) PANSAT (STS-86/S94D)												X

*NOTE: NASA does not manifest shuttle flights (STS) beyond 18 months.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0604256F Threat Simulator Development

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	38,900	55,113	43,635	44,879	33,689	31,994	32,951	0	TBD
3321 Electronic Warfare Ground Test Resources	33,058	41,090	28,744	31,956	24,573	25,260	25,964	Continuing	TBD
6510 Electronic Warfare Flight Test Resources	4,930	10,242	11,067	9,029	5,145	2,703	2,897	0	TBD
2900 RATSCAT Upgrade	0	1,937	1,990	1,990	1,990	1,990	1,989	Continuing	TBD
2907 Electronic Warfare Intel Support (1)	0	1,844	1,834	1,904	1,981	2,041	2,101	Continuing	TBD
1006 HAVE NOTE (2)	912	0	0	0	0	0	0	Continuing	TBD

(1) This project was transferred from PE 0605708F, Nav/Radar/Sled Track Support, effective FY 96.
(2) This project was transferred from PE 0305887F, Electronic Combat Intelligence Support, effective FY 96.

(U) A. **Mission Description and Budget Item Justification:** This PE provides funding for the elements necessary to support the AF Electronic Warfare (EW) Test Process. This test process provides a methodology to ensure the effective disciplined and efficient testing of AF EW and avionics systems. Each capability or facility improvement is pursued in concert with the others so as to avoid duplicate capabilities while at the same time produce the proper mix of test resources needed to support the AF EW Test Process. This PE provides funding for the management and technical oversight of implementation activities, the Air Force-led tri-Service effort to establish a common modeling and simulation architecture, measurement facilities operation and improvements, hardware in the loop test facilities operation and improvements, installed system test facility improvement, and development and improvement of open air threat simulators for flight testing. This PE also provides funding to support the Radar Target Scatter program (supports radar cross-section measurement), and the Foreign Materiel Program, specifically, operational exploitation.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604256F Threat Simulator Development

(U) **B. Program Change Summary ($ in Thousands):**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	38,900	53,377	48,171	Cont
(U) Appropriated Value				
(U) Adjustments to Appropriated Value				
a. SBIR		-387		
b. ADP Savings SEC 8101		-11		
c. Economic Assum Sec 8125		-354		
d. FFRDCS SEC 8046		-3		
e. Bosnia #1 (revised)		-2,222		
f. Ovrhead/Imprvd Mgmt SEC 8129		-787		
g. Appropriated Values		5,500		
h. Adjustments to FY97 Budget Year			-4,536	
(U) Current Budget Submit/President's Budget	38,900	55,113	43,635	Cont

(U) Change Summary Explanation:

Funding:

FY 97:

Electronic Combat Integrated Test (ECIT)	+ 400	Minor adjustment
J-MASS	+2,000	ZBT to realign wargaming and simulation activities within this program element
REDCAP	- 6,936	Scheduled activities reduced.

Schedule: For Electronic Warfare Ground Test Resources (3321), REDCAP SUAWACS-BM/C^3 project completed in 1Q FY 94 (vs 3Q FY 95). AFEWES RSAM upgrade project canceled. REDCAP Option E (Advanced EW/GCI Radar Simulators) project canceled.

Technical: None.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604256F Threat Simulator Development

(U) C. **Other Program Funding Summary ($ in Thousands):**

	1995	1996	1997	1998	1999	2000	2001	Compl	Cost
Appropriation: Military Construction, Budget Activity: Defense-Wide Mission Support, Program Title: Electronic Combat Integrated Test (ECIT)		11,000	4,900					N/A	16,000
	1995	1996	1997	1998	1999	2000	2001	Compl	Cost
Appropriation: Military Construction, Budget Activity: Defense-Wide Mission Support, Program Title: Central Test and Evaluation Investment Program (CTEIP)	7,565	9,800	24,220	7,370	3,500			N/A	52,455

Related RDT&E:
(U) PE 0604759F, Major T&E Investment
(U) PE 0604735F, Combat Training Ranges
(U) PE 0207122F, F-16
(U) PE 0604239F, F-22
(U) PE 0604231F, C-17
(U) PE 0604226F, B-1

(U) D. **Schedule Profile:**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) REDCAP Architecture-SUAWACS-BM/C^3 Upgrade (Option 0) IOC.				X								
(U) REDCAP IADS/Data Link (Options A/B) IOC.							X					
(U) REDCAP Surveillance Radar Integration (Option C) Complete										X		
(U) AFEWES RAI Upgrade IOC.											X	
(U) J-MASS Releases.		X							X			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0604256F Threat Simulator Development

PROJECT NO. AND NAME: 3321 Electronic Warfare Ground Test Resources

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3321 Electronic Warfare Ground Test Resources	33,058	41,090	28,744	31,956	24,573	25,260	25,964	Continuing	TBD

(U) A. **Mission Description and Budget Item Justification:** The AF requires a comprehensive set of ground test facilities to implement the Air Force Electronic Warfare (EW) Test Process. In order that program risk throughout the weapon system acquisition life cycle is managed effectively and flight testing is conducted effectively and efficiently, a range of ground test capabilities from modeling and simulation architecture to the installed system test facility (ISTF) are required. The EW Test Process Support task provides for management, and coordinated technical oversight of the investment in and application of EW test facilities including analyses, studies and related documentation. The Joint Modeling and Simulation System (J-MASS) is an Air Force-led, Tri-Service project to establish a DoD-wide common digital simulation architecture in support of test and evaluation. This standard architecture will provide for credibility and correlation of test and evaluation results for all phases of the weapon system acquisition life cycle. The Hardware in the Loop (HITL) test facilities evaluate electronic support and countermeasures effectiveness prior to installation on the aircraft. Together the two AF HITL facilities, the Air Force Electronic Warfare Evaluation Simulator (AFEWES) and the Real Time Electromagnetic Digitally Controlled Analyzer and Processor (REDCAP) provide the ability to realistically evaluate hardware components against manned hardware threat representations early enough to affect final system design. The Electronic Combat Integrated Test (ECIT) project upgrades the AF ISTF at Edwards AFB, CA. The ISTF provides for thorough weapon system evaluation in a large instrumented anechoic chamber prior to and during flight test. Three sources of funding are required to support the ECIT upgrade. Funding from this program element will provide for Air Force-unique and general infrastructure. Air Force funds from the F-22, C-17, B-1, and F-16 programs will provide for aircraft-specific test requirements. OSD funding from the Central Test and Evaluation Improvement Program (CTEIP) will provide for joint Navy/Air Force development of the radar target generator, infrared (IR) target generator, and the communication, navigation, and identification friend or foe (CNI) simulator system. These three systems will be incorporated into both the AF ISTF and Navy ISTF at Patuxent River, MD. The antenna measurement and analysis facilities at Rome Laboratory, NY, supported by this project are transitioning to full customer funding beginning in FY 96.

(U) FY 1995 ($ in Thousands) Program:

- (U) $1,000 EW Test Process Support. Began the definition of a test facilities network that will support the full application of the EW Test Process in each phase of the DoD System Acquisition Process for federated and integrated avionics systems.
- (U) $2,366 J-MASS. Developed software upgrade. Continued development of enhanced modeling and simulation architecture to support one-on-one simulations. Developed real-time applications and a few-on-few modeling capability. Developed a C++ model development capability.
- (U) $4,820 AFEWES Operation and Upgrade. Continued operation of the AFEWES in support of Army, Navy, Air Force and non-DoD customers. Continued work on the Test Director System (TDS) and the Reconfigurable Airborne Interceptor (RAI) simulator. Canceled development of the Reconfigureable Surface-to-Air Missile (RSAM) simulator. Integrated the Multiple Emitter Generator (MEG) with the RAI simulator to provide multiple threat signals to the jammer being tested against the RAI.
- (U) $12,000 REDCAP Operation and Upgrade. Continued REDCAP operations in support of Army, Navy, Air Force, and non-DoD customers.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604256F Threat Simulator Development
PROJECT NO. AND NAME 3321 Electronic Warfare Ground Test Resources	

Continued documentation of existing REDCAP EW/GCI (Ground Controlled Intercept) radars and their integration with the new/upgraded REDCAP facility architecture.

- (U) $8,866 ECIT. Released RFP, conducted source selection, and awarded a risk-reduction contract for generic EW and avionics installed system test facility.
- (U) $2,006 ECCM. Acquired an additional millimeter wave (MMW) simulator channel for ECCM efforts in Guided Weapons Evaluation Facility (GWEF), and procured a scenario controller, electro-optical EO/IR imaging simulator, and advanced stores management avionics simulator for the Pre-Flight Integration of Munitions and Electronic Systems (PRIMES) facility.
- (U) $2,000 Rome Laboratory Antenna Measurement Facilities. Continued operation, development and improvement of ground and airborne far-field antenna measurement and analysis facilities. Optimized the range to support F-22 Aperture Development Program. Provided capability to support AF Special Operations Command, Warner Robins Air Logistics Center, and 412th Test Wing C-130 Gunship EW and Advanced Signal Collection Upgrade Programs. Developed capability to support the F-15 production decision on Manned Destructive Suppression of Enemy Air Defenses Program. Modified the B-1B testbed to support the Conventional Mission Upgrade Program.
- (U) $33,058 Total

(U) FY 1996 ($ in Thousands) Planned Program:

- (U) $1,500 EW Test Process Support. Continue the definition of a test facilities network that will support the full application of the EW Test Process in each phase of the DoD System Acquisition Process for federated and integrated avionics systems. Formulate an investment strategy and implementation plan to realize this network.
- (U) $2,224 J-MASS. Develop capability to run simulations composed of models that can be written on a variety of hardware platforms. Integrate MOSAIC models to provide an infrared simulation capability. Integrate the SUPPRESSOR model to provide mission training. Continue providing J-MASS user support and training. Add terrain modeling and an object-oriented database management system.
- (U) $7,592 AFEWES Operation and Upgrade. Continue AFEWES operations in support of Air Force, Army, Navy, and non-DoD test customers. Complete development of the TDS and RAI simulator. Upgrade the TWS-10 simulator to conform to the latest intelligence data. Initiate upgrades to the IR laboratories to test integrated IR alert/response, improve jammer-to-signal (J/S) ratio, and IR computer.
- (U) $12,571 REDCAP Operation and Upgrade. Continue REDCAP operations in support of Air Force, Army, Navy, and non-DoD test customers. Initiate digital threat system modeling and simulation including an integrated air defense model in support of the EW Test Process. Use FY 96 funds to sustain FY 97 REDCAP in support of Army, Navy, and Air Force and non-DoD customers.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604256F Threat Simulator Development
PROJECT NO. AND NAME 3321 Electronic Warfare Ground Test Resources	

- (U) $17,009 ECIT. Complete risk-reduction phase and select contractor for full-scale development of generic EW and avionics installed system test facility. Begin military construction of ECIT facilities.
- (U) $0 Rome Labs. The antenna pattern measurement facilities at this installation will transition to full funding by customers.
- (U) $194 Revised economic assumptions
- (U) $41,090 Total

(U) FY 1997 ($ in Thousands) Planned Program:

- (U) $1,536 EW Test Process Support. Begin implementation of the EW test facilities network. Continue the analysis and planning of upgrades to the network to improve implementation of the EW Test Process and support emerging EW technologies.
- (U) $4,058 J-MASS. Improve model and scenario development tools, such as visual programming, graphical user interface, hardware-in-the-loop and man-in-the-loop, and data management capabilities. Increase simulation speed. Increase the number of hardware platforms that J-MASS can support. Support a growing library of models, and provide user training, support and documentation.
- (U) $3,069 AFEWES Operation and Upgrade. Continue AFEWES operations in support of Air Force, Army, Navy, and non-DoD test customers. Complete IR laboratory upgrades.
- (U) $20,081 ECIT. Continue development of infrastructure and generic EW and avionics installed system test capabilities. Complete military construction efforts for ECIT facilities.
- (U) $28,744 Total

(U) B. Program Change Summary ($ in Thousands):

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	33,058	38,987	33,280	TBD
(U) Appropriated Value		44,487		
(U) Adjustments to Appropriated Value				
a. Small Business (SBIR) Spread		-302		
b. ADP Savings SEC 8101		-9		
c. Economic Assum SEC 8125		-268		
d. FFRDCS SEC 8046		-2		
e. Ovrhead/Imprvd Mgmt SEC 8129		-594		
f. Adjustments to FY 97 Budget Year			-4,536	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604256F Threat Simulator Development
PROJECT NO. AND NAME 3321 Electronic Warfare Ground Test Resources	

	FY 1995	FY 1996	FY 1997	Total Cost
g. Bosnia Reprogramming 1		-2,222		
(U) Current Budget Submit/President's Budget	33,058	41,090	28,744	TBD

(U) Change Summary Explanation:

Funding:

FY 97 Funding: Funding:

FY 97:

Electronic Combat Integrated Test (ECIT)	+ 400	Minor adjustment
J-MASS	+2,000	ZBT to realign wargaming and simulation activities within this program element
REDCAP	- 6,936	Scheduled activities reduced.

Schedule: REDCAP SUAWACS-BM/C^3 project completed in 1Q FY 94 (vs 3Q FY 95). AFEWES RSAM upgrade project canceled. REDCAP Option E for advanced EW/GCI radar simulators canceled.

Technical: None.

(U) C. **Other Program Funding Summary ($ in Thousands):**

	1995	1996	1997	1998	1999	2000	2001	Compl	Cost
Appropriation: Military Construction, Budget Activity: Defense-Wide Mission Support, Program Title: Electronic Combat Integrated Test (ECIT)		11,000	4,900					N/A	16,000
Appropriation: Military Construction, Budget Activity: Defense-Wide Mission Support, Program Title: Central Test and Evaluation Investment Program (CTEIP)	4,125	2,100	7,820	4,370	3,500			N/A	21,915

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604256F Threat Simulator Development
PROJECT NO. AND NAME 3321 Electronic Warfare Ground Test Resources	

Related RDT&E:

(U) PE 0604759F, Major T&E Investment
(U) PE 0604735F, Combat Training Ranges
(U) PE 0207122F, F-16
(U) PE 0604239F, F-22
(U) PE 0604231F, C-17
(U) PE 0604226F, B-1

(U) D. Schedule Profile:

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) REDCAP Architecture-SUAWACS-BM/C^3 Upgrade (Option 0) IOC												
(U) REDCAP IADS/Data Link (Options A/B) IOC			X									
(U) REDCAP Surveillance Radar Integration (Option C) Complete						X						
(U) AFEWES RAI Upgrade IOC							X					
(U) J-MASS Releases.					X				X			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0604256F Threat Simulator Development

PROJECT NO. AND NAME: 6510 Electronic Warfare Flight Test Resources

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
6510 Electronic Warfare Flight Test Resources	4,930	10,242	11,067	9,029	5,145	2,703	2,897	0	TBD

(U) A. **Mission Description and Budget Item Justification:** This project funds those resources, including simulators and instrumentation, necessary to support flight test in an open-air environment. It includes the development of advanced signal sources to represent ground and airborne threats and the upgrade of existing threat simulators to maintain currency with the latest intelligence. This project funds the development of an Advanced Airborne Interceptor Simulator (AAIS) in conjunction with the Central Test and Evaluation Improvement Program (CTEIP). CTEIP funds the non-recurring engineering (NRE) portion of AAIS development, whereas this project acquires the AAIS hardware.

(U) FY 1995 ($ in Thousands) Program:
- (U) $1,964 EMTE. Electromagnetic Test Environment Acquired SADS XII antenna. Continued instrumentation and closed-loop missile simulation on foreign surface-to-air missile (SADS VM). Incorporated the latest intelligence information into simulators for threats for which real systems are not available.
- (U) $2,966 AAIS. Awarded contract to develop, fabricate, integrate, and test an airborne test simulator to be completed 4Q FY 98.
- (U) $4,930 Total

(U) FY 1996 ($ in Thousands) Planned Program:
- (U) $10,242 AAIS. Complete design phase and begin fabrication phase.
- (U) $10,242 Total

(U) FY 1997 ($ in Thousands) Planned Program:
- (U) $11,067 AAIS. Complete fabrication phase. Begin preparation for integration/testing phases.
- (U) $11,067 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0604256F Threat Simulator Development

PROJECT NO. AND NAME: 6510 Electronic Warfare Flight Test Resources

(U) **B. Program Change Summary ($ in Thousands):**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	4,930	10,520	11,067	Cont
(U) Appropriated Value				
(U) Adjustments to Appropriated Value				
a. Adjustments to FY 96 and FY 97 budget years				
b. Small Business (SBIR) Spread		-71		
c. ADP Savings SEC 8101		-2		
d. Economic Assum SEC 8125		-63		
e. FFRDCS SEC 8046		-1		
f. Ovrhead/Imprvd Mgmt SEC 8129		-141		
(U) Current Budget Submit/President's Budget	4,930	10,242	11,067	Cont

(U) Change Summary Explanation:

Funding: None.

Schedule: None.

Technical: None.

(U) **C. Other Program Funding Summary ($ in Thousands):**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Comp	Total Cost
(U) PE 0604940D, Central T&E Improvement Program	1,600	6,400	6,400	4,000					18,400

Related RDT&E:

PE 0604759F, Major T&E Investment
PE 0604735F, Combat Training Ranges

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604256F Threat Simulator Development
PROJECT NO. AND NAME 6510 Electronic Warfare Flight Test Resources	

(U) D. Schedule Profile:

	FY 1995				FY 1996				FY 1997			
N/A	1	2	3	4	1	2	3	4	1	2	3	4

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0604256F Threat Simulator Development

PROJECT NO. AND NAME: 2900 RATSCAT Upgrade

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2900 RATSCAT Upgrade	0	1,937	1,990	1,990	1,990	1,990	1,989	Continuing	TBD

(1) This project transferred from PE 0605708F, Nav/Radar/Sled Track Support, effective FY 96. (FY 94/95 funding was $2,000 per year.)

(U) A. **Mission Description and Budget Item Justification:** This project provides improvements to the Radar Target Scatter (RATSCAT) facility in order to assure support to address radar cross section (RCS) measurement requirements of DoD customers. Key areas of improvement complement and support the existing stand-alone Central Test and Evaluation Improvement Program (CTEIP) funded program and include radar upgrades standardization of data processing equipment and techniques, bistatic testing, pylon background reduction, low frequency measurement capability upgrades, and efficiency related equipment. The DoD continues an aggressive R&D program to achieve low observable technology. This project provides a continuous effort to allow test technology to keep pace with these activities. In a related effort, OSD CTEIP provides funding for the Data Acquisition and Processing System (DAPS), Bistatic Coherent Measurement System (BICOMS), RATSCAT Advanced Measurement System (RAMS) Radar Replacement, and the Next Generation Pylon. For DAPS, CTEIP funds the hardware, development, instrumentation, and spares. For BICOMS, CTEIP funds part of the hardware and labor. For the Next Generation Pylon, CTEIP funds the pylon and installation. For RAMS Radar Replacement, CTEIP funds the hardware and labor.

(U) FY 1995 ($ in Thousands) Program:

- (U) $2,000 Procured RAMS (previously Integrated Radar Measurement System) efficiency upgrades, completed the preliminary design review for BICOMS, and completed acquisition of advanced technology pylon skirts.
- (U) $2,000 Total

(U) FY 1996 ($ in Thousands) Planned Program:

- (U) $1,937 Procuring risk reduction hardware for North Range Radar efficiency upgrades. Completing the design specifications for RAMS Radar Replacement. Buying additional DAPS system.
- (U) $1,937 Total

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604256F Threat Simulator Development
PROJECT NO. AND NAME 2900 RATSCAT Upgrade	

(U) FY 1997 ($ in Thousands) Planned Program:

- (U) $1,990 Complete procurement of DAPS for Mainsite. Continue North Range Radar Improvements. Procure RAMS radar to improve the dynamic range and system sensitivity.
- (U) $1,990 Total

(U) B. Program Change Summary ($ in Thousands):

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	N/A	1,990	1,990	Cont
(U) Appropriated Value				
(U) Adjustments to Appropriated Value				
a. Small Business (SBIR) Spread		-14		
b. Economic Assum SEC 8125		-12		
c. Ovrhead/Imprvd Mgmt SEC 8129		-27		
(U) Current Budget Submit/President's Budget	N/A	1,937	1,990	Cont
(U) Funding from PE 0605708F	2,000			

(U) Change Summary Explanation:

Funding: This project is covered under PE 0605708F for FY 1994 and FY 1995.

Schedule: None.

Technical: None.

(U) C. Other Program Funding Summary ($ in Thousands):

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Comp	Total Cost
(U) PE 0604940D, CTEIP	1,840	1,300	10,000	3,000	0	0	0	0	19,640

(U) D. Schedule Profile: Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0604256F Threat Simulator Development

PROJECT NO. AND NAME: 2907 Electronic Warfare Intel Support (1)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2907 Electronic Warfare Intel Support (1)	0	1,844	1,834	1,904	1,981	2,041	2,101	Continuing	TBD

(1) This project was transferred from PE 0305887F, Electronic Combat Intelligence Support, effective FY 96.

(U) **A. Mission Description and Budget Item Justification:** This project provides funding to support Foreign Materiel Operational Test and Evaluation (FMOT&E) which ensures the ability of operational commands to test and develop effective Electronic Attack/Electronic Protection (EA/EP) and tactics. Funds are required for: deployment of blue systems to test facilities, travel for personnel to the test sites to evaluate and validate test results real-time, reimbursement for industrial-funded range and laboratory costs; costs for instrumentation of blue systems; contracted engineering support for the conduct of tests and subsequent reporting. Funding for this program is required to prevent future aircraft losses due to improper and inaccurate aircrew tactics (e.g., lack of evasive action or proper tactics training to avoid missile attack).

(U) FY 1995 ($ in Thousands) Program:

See PE 0305887F.

- (U) $0 Total

(U) FY 1996 ($ in Thousands) Planned Program:

- (U) $1,844 Funds testing for foreign materiel operational exploitation. Extensive evaluations and reporting to be accomplished.
- (U) $1,844 Total

(U) FY 1997 ($ in Thousands) Planned Program:

- (U) $1,834 Funds continued testing for foreign materiel operational exploitation. Extensive evaluations and reporting to be accomplished.
- (U) $1,834 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604256F Threat Simulator Development
PROJECT NO. AND NAME 2907 Electronic Warfare Intel Support (1)	

(U) **B. Program Change Summary ($ in Thousands):**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	N/A	1,880	1,834	N/A
(U) Appropriated Value				
(U) Adjustments to Appropriated Value				
a. Adjustment to FY 96 and FY 97 budget years				
b. Economic Assum SEC 8125		-11		
c. Ovrhead/Imprvd Mgmt SEC 8129		-25		
(U) Current Budget Submit/President's Budget	N/A	1,844	1,834	N/A
Funding from PE 0305887F:	1,788			

(U) Change Summary Explanation:

Funding: Transferred from PE 0305887F, effective FY 96.

Schedule: None.

Technical: None.

(U) **C. Other Program Funding Summary ($ in Thousands):** Not applicable.

(U) **D. Schedule Profile:** Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0604256F Threat Simulator Development

PROJECT NO. AND NAME: 1006 HAVE NOTE (2)

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
1006 HAVE NOTE (2)	912	0	0	0	0	0	0	Continuing	TBD

(U) A. **Mission Description and Budget Item Justification:** Developed, improved and supported the Rome Laboratory Electromagnetic Radiation (EMR) test facilities including an anechoic chamber for free space electromagnetic environments simulations; a mode-tuned reverberation chamber for rapid "quick look" evaluations; a small anechoic chamber used for subsystem evaluations; and a radio frequency (RF) and microwave instrumentation development facility. The electromagnetic susceptibility data produced at these facilities is used to perform weapon system and C^3I system vulnerability assessments and update test methods, acquisition specifications, hardening design guidelines, and maintenance of technical orders. For FY 96 and the out years, this project is transitions to full customer funding.

(U) FY 1995 ($ in Thousands) Program:

- (U) $912 Continued operation, development and improvement of Electromagnetic Environmental Effects (E^3) Assessment Facilities. Configured anechoic chamber to support vulnerability assessment of SFW Pre-planned Product Improvement (P^3I) hardware. Procured replacement of $400K multiband high-power traveling wave tube power supply and modulator. Prepared and instrumented anechoic chamber facility to support Joint Direct Attack Munition (JDAM) SPO.
- (U) $912 Total

(U) FY 1996 ($ in Thousands) Planned Program:

Becomes fully customer funded.

- (U) $0 Total

(U) FY 1997 ($ in Thousands) Planned Program:

Fully customer funded.

- (U) $0 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604256F Threat Simulator Development
PROJECT NO. AND NAME 1006 HAVE NOTE (2)	

(U) **B. Program Change Summary ($ in Thousands):**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	912	0	0	Cont
(U) Appropriated Value	912			
(U) Adjustments to Appropriated Value				
a. Adjustments to FY 96 and FY 97 budget year				
(U) Current Budget Submit/President's Budget	912	0	0	N/A

(U) Change Summary Explanation:

Funding: Fully customer funded beginning in FY 96.

Schedule: None.

Technical: None.

(U) **C. Other Program Funding Summary ($ in Thousands):** Not applicable.

(U) **D. Schedule Profile:** Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0604258F Target Systems Development

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	7,336	5,055	4,966	5,223	5,367	5,533	5,609	Continuing	TBD
2459 Target Payload System	1,093	3,930	4,966	5,223	5,367	5,533	5,609	Continuing	TBD
3165 QF-4 Development	6,243	1,125	0	0	0	0	0	Continuing	51,113

(U) **A. Mission Description and Budget Item Justification**

Aerial Targets are used to determine air-to-air weapons effectiveness and mission proficiency of our tactical systems against enemy aircraft. The overall objective is to improve air-to-air weapons systems accuracy and reliability by developing improved aerial target systems for Air Force weapons system test and evaluation. This program is in budget activity 6 - Management Support because it provides overall support to research and development activities.

(U) **Acquisition Strategy:**

The acquisition strategy is competitive, cost plus contracts.

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	7,576	5,362	5,234	TBD
(U) Appropriated Value	7,576			
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-88	-105		
b. SBIR	-142	-91		
c. Omnibus or Other Above Threshold Reprogram		-111		
d. Below Threshold Reprogramming	-10			
(U) Adjustments to Budget Years Since FY 1995 PB			-268	
(U) Current Budget Submit/President's Budget	7,336	5,055	4,966	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604258F Target Systems Development

(U) Change Summary Explanation:

Funding: Decrease in FY96 is reprogramming to fund Bosnia and F-16s to Jordan.

Schedule: None

Technical: None

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) PE 35116F: Appropriation: Weapon Procurement , AF Budget Activity: 4, Program Title: Target Drones									
WSC: M107 (MQM-107E)	10	1,463	8,936	18,713	20,069	21,390	22,410	Cont	TBD
WSC: M04AQF (QF-4E)	22,872	33,724	23,924	21,274	21,144	20,840	21,180	Cont	TBD
Spares (Firebee), QF-4E, MQM-107, QF-106)	1,437	1,322	2,920	3,911	4,029	4,124	4,217	Cont	TBD
PE 35116F: Appropriation: Operations and Maintenance, AF Budget Activity 4, Program Title: Target Drones									
	350	783	847	2,549	2,609	2,706	2,962	Cont	TBD

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
Full Scale Aerial Target Systems												
QF-4 Contract Award 2/92												
Developmental Test and Evaluation (DT&E)			X									
Operational Test and Evaluation (OT&E)			X									
White Sands (DT&E/OT&E)			X		X							
Production Decision Lot 1			X									

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604258F Target Systems Development

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
Lot 1 Deliveries Begin							X	-----	-----	X		
Production Decision Lot 2							X					
IOC							X					
Target Payloads												
NAVS												
- Hardware Preliminary Design Review/ Software Specification Review 4/93												
- Software Preliminary Design Review	X											
- Hardware Critical Design Review (CDR)	X											
- Quality Testing						X	X					
- Ground Accuracy Tests							X	X				
- Flight Test									X	X		
- Milestone III									X			
- Production Option									X			
DREEM												
- RFP Release							X					
- Contract Award								X				
- Testing										X		
- Production Decision												
- Delivery (FY99)												
Next Generation Aerial Target (NGAT)												
- RFP Release												
- Contract Award												

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0604258F Target Systems Development

PROJECT NO. AND NAME: 2459 Target Payload System

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2459 Target Payload System	1,093	3,930	4,966	5,223	5,367	5,533	5,609	Continuing	TBD

(U) **A. Mission Description and Budget Item Justification**

Specialized payload subsystems are developed for full-scale and subscale targets for missile scoring, electronic and infrared (IR) countermeasures, and radar and IR signature augmentation. Current scoring systems provide only miss distance information. Noncooperative Airborne Vector Scoring (NAVS), is the tri-service system under development to provide missile path and position relative to the target at point of closest approach, which are essential to accurately calculate the probability of kill. An Interim Vector Scoring (IVS) system test and checkout is underway to meet scoring requirements until NAVs is fielded. IR signature augmentation on subscale targets provides a signature representative of threat military jet engines. Electronic and IR countermeasures (ECM & IRCM) include systems such as chaff and flare dispensers, Drone Radar Cross Section (RCS) Electronic Enhancement Mechanism (DREEM) provides RCS enhancement of Aerial Targets to replicate threats, and is used for Developmental Test and Evaluation/Initial Operational Test and Evaluation of air-to-air missiles, air-to-air Weapons System Evaluation Program (WSEP). The acquisition strategy is competitive, cost plus contracts

(U) FY 1995 ($ in Thousands):

- (U) $375 IVS Accuracy Testing
- (U) $62 Collect and compile target signature data for use in test planning
- (U) $150 Next Generation Aerial Target (NGAT) Mission Need Statement/Cost and Operational Effectiveness Analysis (MNS/COEA)
- (U) $50 Drone Radar Cross Section (RCS) Electronic Enhancement Mechanism (DREEM) Analysis
- (U) $456 Other technical support
- (U) $1,093 Total

(U) FY 1996 ($ in Thousands):

- (U) $290 Gulf Range Drone Control Upgrade System (GRDCUS)/MQM-107E Simulation & Integration
- (U) $1,500 Initiate Demonstration and Evaluation (DEMVAL) for DREEM
- (U) $620 Initiate follow-on aerial target study
- (U) $30 IVS Enhancement Study
- (U) $75 GRDCUS/BQM-34 Heading Hold Integration
- (U) $470 MQM-107E Signal Processor Vehicle Interface/Digital Autopilot (SPVI/DAP) Combination

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604258F Target Systems Development
PROJECT NO. AND NAME 2459 Target Payload System	

- (U) $130 Target Reliance technical support
- (U) $60 Initiate enhanced subscale demonstration
- (U) $755 Other technical support
- (U) $3,930 Total

(U) FY 1997 ($ in Thousands):
- (U) $700 Continue follow-on aerial targets study
- (U) $3,000 Continue DEMVAL for DREEM
- (U) $300 MQM-107E SPVI/DAP combination
- (U) $100 Enhanced subscale demonstration
- (U) $866 Other technical support
- (U) $4,966 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	966	4,177	5,234	Continuing
(U) Appropriated Value	966			
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-24	-82		
b. SBIR	-53	-91		
c. Omnibus or Other Above Threshold Reprogram		-74		
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY 1995 PB	204		-268	
(U) Current Budget Submit/President's Budget	1093	3,930	4,966	

(U) Change Summary Explanation:
Funding: Decrease in FY96 is reprogramming to fund Bosnia and F-16s to Jordan.
Program reduced in FY97 to fund high priority efforts and for revised economic assumptions.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604258F Target Systems Development
PROJECT NO. AND NAME 2459 Target Payload System	

Schedule: None

Technical: FY97 cuts reduced the scope of new technology upgrade and the RF survivability effort and technology upgrades for both Full Scale and Subscale Aerial Targets.

(U) C. **Other Program Funding Summary ($ in Thousands)**
Not Applicable

(U) D. **Schedule Profile**
Refer to Program Element Schedule, Page 2, Section D

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0604258F Target Systems Development

PROJECT NO. AND NAME: 3165 QF-4 Development

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3165 QF-4 Development	6,243	1,125	0	0	0	0	0	Continuing	51,113

(U) A. Mission Description and Budget Item Justification

The Air Force is lead for a tri-service program for the development of the QF-4E full scale aerial target. The QF-4E is the follow-on to the QF-106 full scale target used today. The final buy of the QF-106 was in FY93 with deliveries complete in 4Qtr94. The first QF-4 production is scheduled for delivery in 3Qtr FY96 and is funded by PE 35116F procurement. Additional production options are scheduled to begin delivery in 3Qtr97 and 3Qtr98 respectively The QF-4 Full-scale Aerial Target (FSAT) will be operated at Tyndall AFB, FL to meet over-water test requirement, and then (4Qtr97) operated at the White Sands Missile Range, NM to meet over-land test requirement. The Navy will begin using the QF-4E in FY99. Full-scale targets are representative of the threat, with realistic maneuvering performance, radar cross section and afterburning engine infrared (IR) signature. The overall objective is to improve air-to-air weapon system accuracy and reliability by developing aerial target systems for Air Force weapon system test and evaluation. Public law mandates all new or upgraded weapon systems must demonstrate lethality against a representative threat before approval to proceed with procurement. In addition to AMRAAM, AIM-7, AIM-9X, and F-22, full-scale targets are also used to support US Army air defense test and evaluation programs such as the Divisional Air Defense follow-on program, Stinger, Patriot and Improved Hawk.

(U) FY 1995 ($000 in Thousands):

- (U) $4,385 Complete development of basic system through Drone Formation Control System testing
- -- Conduct Production Readiness Review #2 (NSP)
- -- Make production decision (exercise production option #1) (NSP)
- -- Conduct final software Physical Configuration Audit (PCA) (NSP)
- -- Complete Engineering and Manufacturing Development (EMD) phase of contract (NSP)
- (U) $1,135 Test and Evaluation Support
- -- Begin DT&E/IOT&E at White Sands Missile Range for the integrated QF-4E system (NSP)
- (U) $723 Other Technical Support
- (U) $6,243 Total

(U) FY 1996 ($ in Thousands):

- (U) $942 Complete EMD phase of program
- -- Complete White Sands Missile Range testing (NSP)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604258F Target Systems Development
PROJECT NO. AND NAME 3165 QF-4 Development	

– -- Conduct drone operations training (NSP)
– -- Conduct QF-4 FSAT Physical Configuration Audit (NSP)
– -- Deliver FSAT system level III drawing package (NSP)
– -- Exercise Production Option #2 (NSP)
– -- Receive first production QF-4 FSAT target (NSP)
– (U) $183 Other technical support
– (U) $1,125 Total

(U) FY 1997 ($ in Thousands):
– (U) $0 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	6,610	1,191	0	TBD
(U) Appropriated Value	6,610			
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-64	-23		
b. SBIR	-89			
c. Omnibus or Other Above Threshold Reprogram		-37		
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY 1995 PB	-214	-6		
(U) Current Budget Submit/President's Budget	6,243	1,125	0	TBD

(U) Change Summary Explanation:
Funding: FY96 reduced to reflect revised inflation and reprogramming for Bosnia.

Schedule: None

Technical: None

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604258F Target Systems Development
PROJECT NO. AND NAME 3165 QF-4 Development	

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) PE 35116F: Appropriation: Weapons Procurement, AF Budget Activity: 4, Program Title: Target Drones									
WSC: M04AQF (QF-4E)	22,872	33,724	23,924	21,274	21,144$0	20,840	21,180	Cont	TBD

(U) D. Schedule Profile

Refer to Program Element Schedule, Page 2, Section D.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0604759F Major Test And Evaluation Investment

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	48,492	38,815	33,529	39,472	39,580	40,755	39,563	Continuing	TBD
3120 Air Force Development Test Center (AFDTC)	15,442	10,546	9,405	16,317	19,870	21,610	17,882	Continuing	TBD
3285 Arnold Engineering Development Center (AEDC)	10,235	5,368	5,745	5,305	5,473	4,153	6,038	Continuing	TBD
3620 Air Force Flight Test Center (AFFTC)	22,815	19,901	18,379	17,850	14,237	14,992	15,643	Continuing	TBD
2904 Holloman Hypersonic Sled Track	0	3,000	0	0	0	0	0	0	0

(U) A. **Mission Description and Budget Item Justification:** This program element provides planning, improvements, and modernization for test capabilities at three Air Force Test Centers: Arnold Engineering Development Center (AEDC), Air Force Development Test Center (AFDTC), and Air Force Flight Test Center (AFFTC). The purpose is to help test centers keep pace with emerging weapon system technologies. The fluctuations in the funding at these locations are due to changing priorities in the improvement and modernization requirements as defined through the AF Test Investment Planning & Programming Process and documented in the AF Test Investment Strategic Plan. Also, all projects have been reviewed through the Tri-Service Reliance effort (to communicate AF efforts to the other services and avoid unwarranted duplication of effort) and are documented in the Test Capability Master Plans. Further, each specific project has its own planning, development, equipment acquisition/facility construction, equipment installation, and checkout phases which often requires significant differences in funding from one year to the next. As such, the changes in funding from year to year do not necessarily indicate program growth but rather a planned phasing of improvement and modernization efforts. (For FY 96 only 17 of 124 validated projects are funded, which reflects the mandated downsizing of the DoD budget, not a change in requirements.) The test capabilities at these centers enable testing through all phases of weapon system acquisition from system concept exploration through component and full scale integrated weapon system testing to operational testing. These three test centers have over $10B worth of unique test facilities/capabilities. They are a national asset operated and maintained by the Air Force for DoD test and evaluation missions, but they are available to others having a requirement for their unique capabilities. (FY96 Congressional language added $3 million for the Holloman High Speed Test Track to PE 65708F, which no longer exists. These funds, which are not included in the FY 96 total, will be included in a separate project within this program element after release from OSD withhold.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604759F Major Test And Evaluation Investment

(U) **B. Program Change Summary ($ in Thousands):**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	51,056	37,879	36,229	Cont
(U) Appropriated Value				
(U) Adjustments to Appropriated Value				
a. SBIR		-313		
b. ADP Savings Sec 8101		-7		
c. Economic Assum Sec 8125		-227		
d. FFRDCS Sec 8046		-1		
e. Ovrhead/Imprvd Mgmt Sec 8129		-506		
f. Bosnia Reprogramming 1		-1,010		
g. Adjustments to FY 97 Budget Year			-2,700	
(U) Current Budget Submit/President's Budget	51,056	35,815	33,529	Cont

(U) Change Summary Explanation:

Funding: Funding reduced during FY 97 PB build to realign resources with actual requirements.

Schedule: None.

Technical: None.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604759F Major Test And Evaluation Investment

(U) C. **Other Program Funding Summary ($ in Thousands):**

	1995	1996	1997	1998	1999	2000	2001	Compl	Cost
Appropriation: Military Construction, Budget Activity: Defense-Wide Mission Support, Program Title: McKinley Lab Upgrade	20,000							N/A	62,000
Appropriation: Military Construction, Budget Activity: Defense-Wide Mission Support, Program Title: Fighter Inlet Flow			4,000	5,700				0	9,700

Related RDT&E:
(U) PE 0604940D, Central Test & Evaluation Improvement Program
(U) PE 0604256F, Threat Simulator Development
(U) PE 0604735F, Combat Training Ranges

(U) D. **Schedule Profile:** Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0604759F Major Test And Evaluation Investment

PROJECT NO. AND NAME: 3120 Air Force Development Test Center (AFDTC)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3120 Air Force Development Test Center (AFDTC)	15,442	10,546	9,405	16,317	19,870	21,610	17,882	Continuing	TBD

(U) A. **Mission Description and Budget Item Justification:** The AFDTC, located at Eglin AFB, FL, conducts and supports developmental test and evaluation and operational test and evaluation of non-nuclear air armaments, electronic warfare systems, and target acquisition and weapon delivery systems; provides a climatic simulation capability; and determines target/test item electronic signatures. The Guided Weapon Evaluation Facility (GWEF) provides a full spectrum, multifunctional seeker/sensor laboratory test capability for all guided weapons. Common Airborne Instrumentation System (CAIS) Integration provides standardized airborne test to enhance interoperability and commonality. GPS Range Systems will provide a major improvement for Time-Space-Position-Information (TSPI) at all MRTFBs and specifically at the Eglin Ranges for munitions testing. These projects ensure test center technology is compatible with weapon systems to be tested such as AMRAAM, JDAM, AGM-130, ASRAAM, JTIDS, JSTARS, Combat Talon, etc.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604759F Major Test And Evaluation Investment
PROJECT NO. AND NAME 3120 Air Force Development Test Center (AFDTC)	

(U) FY 1995 ($ in Thousands) Program:

- (U) $1,375 PRIMES. Completed the third phase of the GWEF/PRIMES link, (advanced scenario simulators) and completed the procurement of data analysis and completed the Radio Frequency (RF) Spectrum Monitor/Verification System and initiated efforts Reactive Loop.
- (U) $1,739 GWEF. Continued acquisition of the Infrared (IR) Target Generator, began software development to utilize the distribution network to support multimode seeker testing, started procurement of a multi-mode test capability to simultaneously control two test area scene generators and real-time simulations, and began procurement/installation of a wide band, digital RF memory to support millimeter Wave (MMW) simulation.
- (U) $1,205 Seeker T&E completes IR Pod Consolidation which combines the capabilities of two instrumentation pods into one, allowing it to support all test scenarios. Continued procurement of MMW Instrumentation and electro-optical EO/IR/Laser Support Systems.
- (U) $3,094 ASTE Range Systems. Continued Cine-T Encoder Upgrades, Central Timing Upgrades to replace Loran C Time Code Generators (TCGs), began replacement of four transportable microwave (MW) antenna towers, and upgraded Range telemetry (TM).
- (U) $1,123 Mission Control/Data Analysis. Continued procurement of data display equipment for the classified mission control rooms to provide full mission capability, and completed acquisition of the video data analysis system and procured a computer for real-time network upgrade.
- (U) $3,585 GPS Range Integration. Continued data link acquisition and equipment integration, and integrated TSPI range efforts to incorporate Range Applications Joint Program Office (RAJPO) equipment.
- (U) $2,293 Common Airborne Instrumentation System (CAIS). Continued procurement and installation of Standard Aircraft Instrumentation kits to promote compatibility and range interoperability, and shorten test preparation time. Continued acquisition of support equipment to upgrade ground stations, purchased portable TM units, and updated computer-assisted design (CAD) systems. Acquired pre-production CAIS units for bench mock-ups.
- (U) $1,028 Continued work on the following projects (less than $1,000 each): Climatic Test Facility upgrades, Range Data System upgrades. and Joint Program Office (JPO) for T&E support.
- (U) $15,442 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604759F Major Test And Evaluation Investment
PROJECT NO. AND NAME 3120 Air Force Development Test Center (AFDTC)	

(U) FY 1996 ($ in Thousands) Planned Program:

- (U) $5,395 CAIS integration will procure interim CAIS production units to provide commonality and interoperability to aircraft instrumentation. Continue acquisition of support equipment for ground stations, portable Test Information Management (TIM) equipment, and CAD system upgrades. Continue pod development , procuring video cameras, recorders and time code generators.
- (U) $3,252 GWEF will develop software and hardware to provide multimode targets for hardware-in-the-loop (HITL) testing, continue investments in an expanded radar simulator with acquisition of software and hardware to provide expanded RF/MMW simulation capabilities in the GWEF. Complete the IR target generator project, adding target/background scenes required to conduct HITL testing of long-wave guided weapons.
- (U) $1,899 GPS Range integration will continue data link acquisition and integration of RAJPO equipment to fully implement GPS architecture on Eglin Test Ranges.
- (U) $10,546 Total

(U) FY 1997 ($ in Thousands) Planned Program:

- (U) $4,168 Continue CAIS integration, procure CAIS production units, and continue procurement of support equipment for bench, laboratory, and preflight.
- (U) $3,081 GWEF will complete the multimode project, continue expanded radar simulator and begin development of multispectral man-in-the-loop.
- (U) $2,011 Continue procurement of GPS instrumentation for surface and airborne TSPI.
- (U) $145 Continued work on the following projects (less than $1,000 each): Joint Program Office (JPO) for T&E support.
- (U) $9,405 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604759F Major Test And Evaluation Investment
PROJECT NO. AND NAME 3120 Air Force Development Test Center (AFDTC)	

(U) **B. Program Change Summary ($ in Thousands):**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	15,442	11,546	10,161	Cont
(U) Appropriated Value				
(U) Adjustments to Appropriated Value				
a. Small Business (SBIR) Spread		-95		
b. ADP Savings SEC 8101		-2		
c. Economics Assum SEC 8125		-69		
d. FFRDCS SEC 8046		-1		
e. Ovrhead/Imprvd Mgmt SEC 8129		-154		
f. Bosnia Reprogramming 1		-679		
g. Minor adjustment to FY 97 Budget Year			-756	
(U) Current Budget Submit/President's Budget	15,442	10,546	9,405	Cont

(U) Change Summary Explanation:

Funding: Funding reduced during FY 97 PB build to realign resources with actual requirements.

Schedule: None.

Technical: None.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604759F Major Test And Evaluation Investment
PROJECT NO. AND NAME 3120 Air Force Development Test Center (AFDTC)	

(U) C. **Other Program Funding Summary ($ in Thousands):**

	1995	1996	1997	1998	1999	2000	2001	Compl	Cost
Appropriation: Military Construction,								N/A	62,000
Budget Activity: Defense-Wide Mission Support,									
Program Title: McKinley Lab Upgrade									

Related RDT&E:
(U) PE 0604940D, Central Test & Evaluation Improvement Program
(U) PE 0604256F, Threat Simulator Development
(U) PE 0604735F, Combat Training Ranges

(U) D. **Schedule Profile:** Not applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0604759F Major Test And Evaluation Investment

PROJECT NO. AND NAME: 3285 Arnold Engineering Development Center (AEDC)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3285 Arnold Engineering Development Center (AEDC)	10,235	5,368	5,745	5,305	5,473	4,153	6,038	Continuing	TBD

(U) A. Mission Description and Budget Item Justification: **Arnold Engineering Development Center** (AEDC), Arnold AS, TN, provides ground environmental test support for DoD aeronautical, missile, and space programs. The center has 53 test facilities providing: aerodynamic testing of scale model aircraft, missile, and space systems; testing of large and full-scale satellites, sensors, and space vehicles in a simulated space environment; altitude environmental testing for aircraft, missile, and spacecraft propulsion systems; and testing of large-scale models such as space boosters together with their propulsion systems. The AEDC Data Acquisition and Processing System (DAPS) provides processing capability for advanced turbine engine testing on programs like the F-22. This effort also upgrades data systems for the arc heaters and hypervelocity gun facility for Theater High Altitude Air Defense (THAAD) testing. Inefficiencies in these current data systems result in increased program costs and schedule delays. The Computer Aided Modernization Project (CMP) will provide increased capability for data processing and storage and provide wider availability of workstations. The Fighter Engine Test Capability will upgrade turbine engine test cells to accommodate higher thrust engines, and upgrade J-2 test cell with Exhaust Gas Management System for axisymmetric vectored exhaust nozzles.

(U) FY 1995 ($ in Thousands) Program:

- (U) $4,730 Continued AEDC Data Acquisition and Processing System with acquisition and installation of additional work stations/processors.
- (U) $2,053 Completed Preliminary and Critical Design Reviews. Purchased first increment of CMP workstations.
- (U) $1,724 Completed design, purchase vacuum jacketed piping and begin fabrication to upgrade the J-4 Cryogenic Liquid Rocket Test Capability. (This project will be completed using customer funds.)
- (U) $1,728 Completed FOC of J-6 project, T-7 Control System IOC for Test Unit Support System (TUSS) project, increased thrust rating of the T-cells for the ongoing Fighter Engine Test Capability upgrade, continued studies of existing test capabilities used for weather erosion testing and Joint Program Office (JPO) for T&E support.
- (U) $10,235 Total

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604759F Major Test And Evaluation Investment
PROJECT NO. AND NAME 3285 Arnold Engineering Development Center (AEDC)	

(U) FY 1996 ($ in Thousands) Planned Program:

- (U) $3,621 Begin installation of the Aeropropulsion System Test Facility (ASTF) portion of the Data Acquisition and Processing System (DAPS). Complete design and procure system equipment for the engine test cells and complete upgrades to all data analysis areas. Complete data recording upgrade for Trenton cells.
- (U) $1,675 Complete IOC of Phase I of CMP (replacement of current system) and purchase Phase II workstations. (second increment) Complete Reengineering of Processes by which CAM/CAD/CAE functions are accomplished internally and also with external customers.
- (U) $72 Continue work on following projects (less than $1,000 each): JPO (T&E) support
- (U) $5,368 Total

(U) FY 1997 ($ in Thousands) Planned Program:

- (U) $3,583 Continue AEDC Data Acquisition and Processing System with acquisition and installation of additional work stations/processors in the engine test cells IOC ASTF portion of DAPS..
- (U) $1,499 Continue purchase of Phase II CMP workstations (third increment).
- (U) $663 Continue work on following projects (less than $1,000 each): JPO (T&E) support
- (U) $5,745 Total

(U) B. Program Change Summary ($ in Thousands):

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	10,235	5,522	6,205	Cont
(U) Appropriated Value				
(U) Adjustments to Appropriated Value				
a. Small Business (SBIR) Spread		-46		
b. ADP Savings SEC 8101		-1		
c. Economic Assum SEC		-33		
d. Ovrhead/Imprvd Mgmt SEC 8129		-74		
e. Adjustment to FY 97 Budget Year			-460	
(U) Current Budget Submit/President's Budget	10,235	5,368	5,745	Cont

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604759F Major Test And Evaluation Investment
PROJECT NO. AND NAME 3285 Arnold Engineering Development Center (AEDC)	

(U) Change Summary Explanation:

Funding: Funding reduced during FY 97 PB build to realign resources with actual requirements.

Schedule: None.

Technical: None.

(U) C. **Other Program Funding Summary ($ in Thousands):**

	1995	1996	1997	1998	1999	2000	2001	To Compl	Total Cost
Appropriation: Military Construction, Budget Activity: Defense-Wide Mission Support, Program Title: Fighter Inlet Flow			4,000	5,700					9,700

Related RDT&E:

(U) PE 0604940D, Central Test & Evaluation Improvement Program

(U) D. **Schedule Profile:** Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0604759F Major Test And Evaluation Investment

PROJECT NO. AND NAME: 3620 Air Force Flight Test Center (AFFTC)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3620 Air Force Flight Test Center (AFFTC)	22,815	19,901	18,379	17,850	14,237	14,992	15,643	Continuing	TBD

(U) A. **Mission Description and Budget Item Justification:** The AFFTC, located at Edwards AFB, conducts and supports developmental test and evaluation and operational test and evaluation of aircraft and aircraft systems, aerospace research vehicles, unmanned miniature vehicles, cruise missiles, parachutes delivery/recovery systems, and cargo-handling systems. The AF Common Airborne Instrumentation System (CAIS) Integration & Support (CAIS I&S) supports DoD objectives for interoperability/commonality. The goal of CAIS I&S is to integrate CAIS equipment and supporting instrumentation equipment and systems to provide a full airborne instrumentation operational capability. The Advanced Data Acquisition and Processing Systems (ADAPS) project provides an integrated capability to satisfy real-time first generation post-test data processing, archival, and display requirements through the 1990s. The developmental approach is directed towards providing a high degree of interoperability between systems and components by adherence to Air Force and DoD guidelines. The technologies being developed under ADAPS have the potential to satisfy data processing and display needs at various multi-service test ranges. The AF GPS RAJPO Equipment project provides funding for the purchase of production GPS equipment developed by the RAJPO (OSD funded) for tri-service application. The Space Based Data Relay (SBDR) project provides the capability for ARIA to fulfill customer needs for real time, high-speed data, and greatly improve the overall range data relay capability. The ARIA Extended S-Band Telemetry upgrade ensures the compatibility of the ARIA with the Expendable Launch Vehicles (ELV) and major DoD ranges.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604759F Major Test And Evaluation Investment
PROJECT NO. AND NAME 3620 Air Force Flight Test Center (AFFTC)	

(U) FY 1995 ($ in Thousands) Program:

– (U) $1,650	Continued procurement of RAJPO GPS equipment.
– (U) $5,161	Finished the development and installation of the prototype (build #1) ADAPS system. Began development of a mass storage and database capability. This system will eventually replace the 65,000 nine-track tapes currently being stored at the AFFTC.
– (U) $1,340	Under the Automated Test Data Management System (ATDMS) project, completed the development of the first automated data setup in support of the ADAPS system. Provided an interface to the Test Information Management System (TIMS). Conducted Preliminary Design Review and Critical Design Review.
– (U) $4,326	Continued CAIS I&S development. Released version 2.2 of the TIMS software to support CAIS. Awarded development contract for data recorder, and continued to order CAIS hardware. Awarded requirements contract for TIMS ground support equipment. Awarded development contract for full S-Band transmitter.
– (U) $5,806	Began equipment purchase and T-2 Mod Design for the ARIA Space Based Data Relay System program.
– (U) $1,169	Continued the ARIA S-Band program with purchase of equipment and modification of first aircraft.
– (U) $3,363	Continued upgrades to several projects (less than $1,000 each): Local Range Network, Digital Switch, Ground TSPI, Scientific and Computer Acquisition Project, Test Instrumentation Project, CAE/CAM, Test and Evaluation Mission Simulator (TEMS), Avionics Test Bay Systems (ATBS), and Joint Program Office (JPO) for T&E support.
– (U) $22,815	Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604759F Major Test And Evaluation Investment
PROJECT NO. AND NAME 3620 Air Force Flight Test Center (AFFTC)	

(U) FY 1996 ($ in Thousands) Planned Program:

- (U) $6,122 Continue CAIS I&S development. Complete CAIS diagnostic bench integration. Purchase CAIS low rate data recorder initial spares. Complete TIMS integration with CAIS (assumes availability of CAIS units).
- (U) $5,363 IOC first ADAPS real-time/post-processing (RT/PP) system. Procure the first mass storage archive system to replace nine track tapes currently being used.
- (U) $3,408 Continue purchase of RAJPO GPS equipment. Conduct acceptance testing of GPS equipment purchased in FY 95.
- (U) $2,812 Continue ARIA Space Based Data Relay System program. Complete non-recurring engineering work on system design and T-2 aircraft modification. Commence equipment installation and aircraft modification.
- (U) $1,697 Continue the ARIA Extended S-Band program equipment installation and aircraft #1-4 modification.
- (U) $429 Continued upgrades to several projects (less than $1,000 each): JPO T&E support.
- (U) $70 OSD Withhold
- (U) $19,901 Total

(U) FY 1997 ($ in Thousands) Planned Program:

- (U) $6,835 Continue ARIA Space Based Data Relay program. Continue equipment installation/fabrication and #2 aircraft modification.
- (U) $4,635 Continue CAIS I&S development. Purchase CAIS components for AFFTC use. Continue TIMS development with automated setup of systems, automated diagnostics, and simulation capability. Begin development of a CAIS optical bus interface unit.
- (U) $3,998 FOC of ADAPS RTE/PTP. Procure second mass storage archive system. Begin integration of ADAPS with ground test simulation capabilities.
- (U) $1,758 Continue the ARIA Extended S-Band equipment installation and modification on second aircraft.
- (U) $1,163 Continued work on following projects (less than $1,000 each): Complete RAJPO GPS Integration, JPO (T&E) Support.
- (U) $18,389 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604759F Major Test And Evaluation Investment
PROJECT NO. AND NAME 3620 Air Force Flight Test Center (AFFTC)	

(U) **B. Program Change Summary ($ in Thousands):**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	22,815	20,811	19,863	Cont
(U) Appropriated Value				
(U) Adjustments to Appropriated Value				
a. Small Business (SBIR) Spread		-172		
b. ADP Savings SEC 8101		-4		
c. Economic Assum SEC 8125		-125		
d. Ovrhead/Imprvd Mgmt SEC 8129		-278		
e. Bosnia Reprogramming 1		-331		
f. Adjustment to the FY 97 Budget Year			-1,484	
(U) Current Budget Submit/President's Budget	22,815	19,901	18,379	Cont

(U) Change Summary Explanation:

Funding: Funding reduced during FY 97 PB build to realign resources with actual requirements.

Schedule: None.

Technical: None.

(U) **C. Other Program Funding Summary ($ in Thousands):**

(U) Related RDT&E:
(U) PE 0604940D, Central Test & Evaluation Improvement Program
(U) PE 0604256F, Threat Simulator Development
(U) PE 0604735F, Combat Training Ranges

(U) **D. Schedule Profile:** Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0604759F Major Test And Evaluation Investment

PROJECT NO. AND NAME: 2904 Holloman Hypersonic Sled Track

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2904 Holloman Hypersonic Sled Track	0	3,000	0	0	0	0	0	0	0

(U) A. Mission Description and Budget Item Justification. Provides technological upgrades to the Holloman Hypersonic Sled Track through the Magnetic Levitation (Maglev) development program.

(U) FY 1995 ($ in Thousands): Not applicable.

(U) FY 1996 ($ in Thousands):
- (U) $3,000 Complete development and prototyping of a sled and rail girder system.
- (U) $3,000 Total

(U) FY 1997 ($ in Thousands): None.

(U) FY 1998 ($ in Thousands): None.

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	Total Cost
(U) Previous President's Budget	0	0	0	0	TBD
(U) Appropriated Value		3,000			
(U) Adjustments to Appropriated Value					
(U) Adjustments to Budget Years Since FY 1995 PB					
(U) Current Budget Submit/President's Budget		3,000	0	0	TBD

(U) Change Summary Explanation:
Funding: None.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0604759F Major Test And Evaluation Investment
PROJECT NO. AND NAME 2904 Holloman Hypersonic Sled Track	

Schedule: None.

Technical: None.

(U) C. **Other Program Funding Summary ($ in Thousands)**: Not applicable

(U) D. **Schedule Profile**

	FY 1995				FY 1996				FY 1997				FY 1998			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(U) Complete prototype								X								

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0605101F Rand Project Air Force

PROJECT NO. AND NAME: 1110 RAND Project AIR FORCE

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
1110 RAND Project AIR FORCE	24,000	24,000	23,292	23,151	22,997	22,856	22,691	Continuing	Continuing

(U) A. Mission Description and Budget Item Justification

Program funds RAND Project AIR FORCE (PAF), the only Air Force Federally Funded Research and Development Center for studies and analyses. It provides for continuing analytical research across a broad spectrum of aerospace issues and concerns. The PAF research agenda is focused primarily on mid- to long-term problems; in addition, PAF provides quick response assistance for senior Air Force officials on high priority, near-term issues. Results and analytical findings directly impact senior management deliberations on major issues. The Air Force Advisory Group (AFAG), chaired by the Vice Chief of Staff, reviews, monitors, and approves PAF research efforts. Each project is initiated, processed, and approved IAW PAF Sponsoring Agreement that requires General Officer (or SES equivalent) sponsorship and involvement on a continuing basis. This program primarily focuses on studies and analyses, and is in Research Category and Budget Activity for Management Support. An initiative to increase FY98-03 funding will be addressed in the FFRDC Review.

(U) PAF research continued to be organized in the seven projects shown in 1995. These seven projects were aimed at ensuring the Air Force can project aerospace power across the entire spectrum of conflict in an era of declining budgets, personnel, and force structure. These projects are continuing efforts, and do not lend themselves to a specific schedule profile.

(U) In 1995, principal research efforts included studies on the future bomber force, Air Force operations within the JROC/JWCA process, airpower projection force mix, future aircraft technologies, enhancing the effectiveness of mobility forces, counter-proliferation, planning forces for the long-term security environment, modeling airpower operations in a joint theater campaign, implementing the Air Force C4I architecture, implementation of lean logistics, economic viability of the military aircraft industry, and a new paradigm for Air Force acquisition.

(U) In 1996, the principal focus of PAF research is to transition the Air Force into the 21st century. Where should the Air Force head in response to shifts in national security demands and diminished budgets? What are the problems and risks in getting there?

(U) Projects to be undertaken in PAF address cross-cutting issues using an integrated end-to-end approach. The scope of the research agenda encompasses future security environment and strategy, force development and force application, operational sustainment, applications of new technology, advances in modeling and simulation and analytical methods, resource management and system acquisition.

(U) PAF research is managed under three interrelated programs with integrated research at the division level; the projected level of effort in 1996 is shown below.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605101F Rand Project Air Force
PROJECT NO. AND NAME 1110 RAND Project AIR FORCE	

(U) In 1997, Research will continue on long-term projects initiated in 1996 and prior years. New topics will evolve from the major issues established by the AFAG in which PAF has developed special expertise and can continue to make unique contributions to the Air Force.

(U) PAF research will continue to be organized in three interrelated programs with integrated research at the division level; the projected level of effort in 1997 is shown below.

(U) FY 1995 ($ in Thousands):
- (U) $3,800 Strategy and Doctrine
- (U) $2,300 Force Structure
- (U) $4,200 Aero Systems Modernization
- (U) $3,100 Force Employment
- (U) $3,300 C3I/Space
- (U) $3,100 Logistics
- (U) $4,200 Acquisition
- (U) $24,000 Total

(U) FY 1996 ($ in Thousands):
- (U) $4,800 Strategy and Doctrine
- (U) $7,700 Force Employment and Modernization
- (U) $7,200 Resource Management and System Acquisition
- (U) $4,300 Division-Wide
- (U) $24,000 Total

(U) FY 1997 ($ in Thousands):
- (U) $5,000 Strategy and Doctrine
- (U) $7,292 Force Employment and Modernization
- (U) $7,500 Resource Management and System Acquisition
- (U) $3,500 Division-Wide
- (U) $23,292 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605101F Rand Project Air Force
PROJECT NO. AND NAME 1110 RAND Project AIR FORCE	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	24,039	25,924	26,571	TBD
(U) Appropriated Value	27,000	25,924		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-3,000	-1924		
(U) Adjustment to Budget Years Since FY96PB			-3279	
(U) Current Budget Submit	24000	25,924	23292	

(U) Change Summary Explanation:

Funding:
FY96 decreases: $5K for ADP Savings, Sec 8101; $156K for Economic Assumptions, Sec 8125; $1417K for FFRDCs, Sec 8046; $346K for Overhead, Improved Mgt, Sec 8129
FY97 decrease s: $2571K for higher AF priority; $708K for OMB/OSD-directed inflation adjustment

(U) **C. Other Program Funding Summary ($ in Thousands)** Not Applicable

- (U) PAF efforts span functional and organizational boundaries. As a result, the research conducted relates to a wide spectrum of Air Force activities.
- (U) The results are deposited with the Defense Technical Information Center for appropriate dissemination to other qualified recipients.
- (U) To assure unnecessary duplication, each newly proposed research effort is reviewed by the Air Force Studies and Analysis Agency.
- (U) There is no unnecessary duplication of effort within the Air Force or the Department of Defense.

(U) **D. Schedule Profile** Not Applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0605306F Ranch Hand II Epidemiology Study

PROJECT NO. AND NAME: 2767 Ranch Hand II Epidemiology Study

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2767 Ranch Hand II Epidemiology Study	3,156	3,025	9,212	9,703	4,526	4,667	4,730	Continuing	Continuing

(U) A. Mission Description and Budget Item Justification: This RDT&E Management Support program was directed in 1980 by the Assistant to the President of the United States for Domestic Affairs and Policy upon the recommendation of the Interagency Working Group on the Possible Long-Term Effects of Phenoxy Herbicides and Contaminants. As a result of this Presidential direction, PE 0605306F was established to conduct a 20-year epidemiology investigation of approximately 1,200 Air Force personnel who were involved with aerial spraying of herbicides in Vietnam from 1962 to 1971 (Operation Ranch Hand). The objective of this investigation is to determine whether long-term health effects exist and can be attributed to occupational exposure to phenoxy herbicides and their associated dioxins. Dioxin is an unwanted by-product from manufacturing Herbicide Orange.

This project involves a 20-year study that compares United States Air Force (USAF) Ranch Hand personnel to other USAF crew members and support personnel who were not exposed to herbicides while serving in Vietnam. Approximately 2,200 individuals (exposed personnel group plus control group) are participating in the study. Analyses of yearly mortality rates and the past and present health status of the study population were begun in 1982 with follow-up health examination schedules at the 3-, 5-, 10-, 15-, and 20-year time periods. The study includes examination of the possible occurrence of birth defects in children as determined from children's medical records and family medical histories.

(U) FY 1995 ($ in Thousands):
- (U) $669 Completed Year-10 morbidity report.
- (U) $729 Completed annual mortality update.
- (U) $734 Conducted statistical analysis of data sets.
- (U) $500 Demonstrated archiving of baseline physical exams.
- (U) $524 Conducted additional analyses and reports.
- (U) $3,156 Total

(U) FY 1996 ($ in Thousands):
- (U) $1,893 Issue Air Force Health Study contract.
- (U) $516 Complete annual mortality update.
- (U) $163 Complete archiving of 1985 physical exams.
- (U) $250 Conduct Participant Data Base Management.
- (U) $203 Conduct statistical analyses in support of journals and reports.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605306F Ranch Hand II Epidemiology Study
PROJECT NO. AND NAME 2767 Ranch Hand II Epidemiology Study	

- (U) $3,025 Total

(U) FY 1997 ($ in Thousands):
- (U) $7,413 Initiate next cycle of physical examinations, questionnaires, and participant data base.
- (U) $359 Conduct assays and data searches in support of ongoing epidemiologic study.
- (U) $1,440 Process and document examination data.
  - (U) Archive the 1985/1987 examination data and digitize the 1997 data as received.
  - (U) Conduct medical records coding and examination data base verification.
  - (U) Perform annual mortality analysis.
- (U) $9,212 Total

(U) B. Program Change Summary ($ in Thousands):

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	3,156	3,139	9,709	Cont
(U) Appropriated Value	3,160	3,139		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-4	-61		
b. SBIR		-53		
(U) Current Budget Submit	3,156	3,025	9,212	Cont

(U) Change Summary Explanation:
Funding: Funding levels vary due to timing of patient physical exams

Schedule: Not Applicable.

Technical: Not Applicable.

(U) C. Other Program Funding Summary: Not Applicable.

(U) D. Schedule Profile: Not Applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0605704F Theater Air Defense BMC4I

PROJECT NO. AND NAME: 1010 Theater Air Defense Battle Mgt C4I

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
1010 Theater Air Defense Battle Mgt C4I	0	0*	12,496	18,382	18,126	18,149	17,863	0	TBD

*** In FY 96 TAD BMC4I was funded in P.E. 27601 and subsequently moved to this P.E. after this documentation was prepared. FY 96 description of effort is included below for consistency.**

(U) **A. Mission Description and Budget Item Justification**

This project was established in response to a charter from ASD/C3I identifying the Air Force as the Executive Agent for Theater Air Defense Battle Management Command, Control, Communications, Computers, and Intelligence (TAD BMC4I). It supports the study, analysis, demonstration and establishment of integrated TAD BMC4I which fuses and expands on existing capabilities to support the theater CINCs. This project involves defining baseline TAD BMC4I architectures and developing objective architectures; analyzing TAD BMC4I issues in a coordinated Joint Staff/Services/CINCs/Defense Agencies manner; reviewing TAD requirements, programs, systems, architectures, studies, modeling and any associated impacts on TAD BMC4I interoperability; identifying TAD BMC4I shortfalls and proposed solutions; establishing and maintaining a TAD BMC4I requirements database; assessing allied TAD BMC4I issues; and supporting exercises and demonstrations of integrated TAD BMC4I capabilities. The P.E. is included in Budget Activity 6 because it provides management support to the Executive Agent for Theater Air Defense BMC4I.

(U) FY 1997 ($ in Thousands):

- (U) $4,178 Develop framework and concepts for architecture validation and migration roadmap for objective TAD BMC4I architecture, including required technical and operational/functional migrations.
- (U) $4,832 Continue interoperability reviews for requirements, programs, systems, architectures, modeling affecting TAD BMC4I and exploring Service and Joint Battle Management Command, Control, Communications, Computers, and Intelligence (BMC4I) systems for disconnects and opportunities to improve joint integrated BMC4I..
- (U) $931 Continue Command and Control (C2) Plan development to fully integrate Battle Management and Intelligence functions, and plan automated Joint TAD BMC4I planning capability.
- (U) $2,555 Support CINCs' assessments of operational Theater Air Defense capabilities, identify procedural and architectural shortcomings, and experiment with potential procedural and hardware/software solutions and demonstrations which support the Theater Air Defense (TAD) architecture.
- (U) $12,496 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605704F Theater Air Defense BMC4I
PROJECT NO. AND NAME 1010 Theater Air Defense Battle Mgt C4I	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget (FY 1996)		0	0	Continuing
(U) Appropriated Value		0		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions				
b. SBIR				
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY 1996 PB				
(U) Current Budget Submit/President's Budget			+12,496	

(U) Change Summary Explanation:

(U) **C. Other Program Funding Summary ($ in Thousands): Not Applicable**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0605712F Initial Operational Test & Eval

PROJECT NO. AND NAME: 0191 Initial Operational Test & Evaluation

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
0191 Initial Operational Test & Evaluation	30,504	23,806	26,921	34,601	31,320	32,255	33,216	Continuing	TBD

(U) A. **Mission Description and Budget Item Justification:** This program funds IOT&E tests conducted to evaluate a system's operational effectiveness and suitability and to identify any operational deficiencies or need for modifications in support of the acquisition process. This PE funds Congressionally mandated IOT&E to support major weapon system acquisition decision (Milestone III). For major systems designated for use in combat, the law requires IOT&E be completed under realistic field conditions before proceeding beyond low rate initial production. As an essential element of IOT&E, this PE will fund major Operational Utility Evaluations (OUE), Early Operational Assessments (EOA) and Operational Assessments (OA) which support major milestones and decision points prior to Milestone III. IOT&E is an operational evaluation of a system's performance when the complete system is tested and evaluated against operational criteria by personnel with the same qualifications as those who will operate, maintain and support the system when deployed. In general, IOT&Es are performed on new systems in development, major modifications and other systems as directed. IOT&E programs are identified in five categories: aircraft/support; space; missile/munitions; computer, communication, command and control and information (C4I); and general. This PE funds the costs of the test (e.g., data reduction, range costs, etc.), not the development of test resources or the maintenance of test infrastructure.

(U) FY 1995 ($ in Thousands)

- (U) $30,504 FY 95 IOT&E Planning Program: HQ AFOTEC conducted IOT&E on the following 96 programs. The FY 95 list of programs may not be all inclusive due to changing program schedules and "pop-up" requirements.
  - (U) Category: Aircraft/Support F-15C/E Tactical Electronic Warfare System (TEWS), C-17, F-22 Advanced Tactical Fighter, Follow-on Tactical Reconnaissance System (FOTRS), B-2, B-1B Conventional Munitions Upgrade Program (CMUP), F-16 Block 50D, EF-111A System Improvement Program (SIP), Advanced Strategic and Tactical IR Expend (ASTE), CV-22 Osprey, Simulator For Elect Combat (SECT), KC-135R Expanded Refueling Capability (ERC), Compass Call, Loader 60K, B-1B Conventional Munitions Upgrade Pgm Block D/E (B-1B CMUP BLK D/E), Directed IR Countermeasures (DIRCM), F-15 APG-63 Radar, AT/T-38 Avionics, F-117 Upgrades, and Joint Service Electronic CM System (JSECST). B-1 Electronic Countermeasures (ECM) and B-52 ALQ-172 Modification.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605712F Initial Operational Test & Eval
PROJECT NO. AND NAME 0191 Initial Operational Test & Evaluation	

- (U) Category: Space Cheyenne Mountain Upgrade (CMU), ICBM-Rapid Execution and Combat Target (REACT), Navstar GPS Phase III, Milstar, Integrated Correlation and Display System (ICADS), Survivable Defense Satellite Program (DSP-1), HAVE STARE Radar, Ground NDS Terminal (GNT), Brilliant Eyes (BE), Ballistic Missile Defense (BMD), DMSP Block VI, Early Warning Radar, GND Base Electro-Optical Deep Space Survival (GEODSS), Airborne Laser Lab (ABL), Alert Locate and Report Missiles (ALARM), ICBM Minuteman III Guidance Program Phase I (ICBM-MMIII GR), ICBM Minuteman III Propulsion Replacement Program (ICBM-MMIII PRP), Navstar GPS Block IIR (GPS IIR), GPS Block II Follow-on (GPS IIF), RSA Network Control (RSA-NC), RSA Centralized Telemetry Processing Systems (RSA-CTPS),Advanced Electro-optical System (AEOS), Attach & Launch Early Report to Theater (ALERT), Ballastic Missile Defense System Command Control Element (BMD C2E), Evolved Expendable Launch Vehicle (EELV), and ICBM Minuteman III Safety Enhanced Reentry Vehicle (ICBM MMIII SERV/W).

- (U) Category: Missile/Munitions QF-4, Sensor Fused Weapon (SFW), Joint Direct Attack Munitions (JDAM), Joint Standoff Weapon (JSOW), AOD-Joint Programmable Fuze (JPF), AIM-9X Air-to-Air Missile (AIM-9X), Theater Missile Defense-Intercept Missile (TMD-INTERCEPT), and AMRAAM (AIM-120C) P3I Phase 3 (AMRAAM P3I PH3).

- (U) Category: Computer, Communication, Command and Control and Information System (C4I) JTIDS (JTIDS Class 2 terminal Multiservice), Joint STARS, E-3 Radar System Improvement Program (E-3 RSIP), AMC C-2 Info Processing System II-IV, Modular TACC (CTAPPS), Combat Survival Evader Locator (CSEL), Region/Sector Operations Control Center (R/SOCC), Combat Intelligence System (CIS), Improvement of Selected Intelligence Data Handling (IDHS), Modular Control Equipment (MCE P3I), Global Transportation Network (GTN), Tower Restoral Vehicle (TRV), Advance Training System (ADV TNG SYS), E4B Universal Modem (E-4B UM ATV), Combat ID/Cooperative Aircraft ID (CI/CAI), E4B Mod Miniature Receive Terminal (E4B MMRT), Military Airspace Management System (MAMS), Common Missile Warning System (CMWS), Precision Landing System Receiver (PLSR),and Theater Battle Management Core Systems (TBM Core).

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605712F Initial Operational Test & Eval
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- (U) Category: General CCD-Multispectral Decoys (CCD-MS Decoy), LS-Active Noise Reduction (LS-ANR), ABO-Armored Multi-Role Vehicle (ABO-ARMRV), CCD-Vertical Smoke and Obscurant (CCD-V Smoke), CWD-Disposable Eye/Respiratory Protect (DERP), LS-Advanced Night Vision System (LS-ANVS), CSD-Transportable Blood Transshipment Center (CSD-TBT), BISS Active Denial System, Environmental Control Unit (ECU) Replacement, LS-Passenger Smoke and Fire Protection, SAB-POL RURK, LS-Universal Water Activated Release System (LS-UWARS), CCD-Multispectral Smoke (CCD-MS-SMOKE), Wind Correction Munitions Dispenser (WCMD), LS-Light Weight Low Profile Backstyle Parachute (LS-LTWT PARACHUTE), CWD Ground Crew Ensemble (CWD-GCENS), AGM-130 Integration, Helmet Mounted Cueing System (HMCS), CWD-Fire Fighter's Ensemble (CWD-FFENS), and RRR-Deployable Pavement Repair System (RRR-DPRS).

- (U) $30,504 Total

(U) FY 1996 ($ in Thousands)

- (U) $23,806 FY 96 IOT&E Planning Program: HQ AFOTEC will conduct IOT&E on the following 102 programs. The FY 96 list of programs may not be all inclusive due to changing program schedules and "pop-up" requirements.

  - (U) Category: Aircraft/Support F-15C/E Tactical Electronic Warfare System (TEWS), C-17, Loader 60K, F-22 Advanced Tactical Fighter, Follow-on Tactical Reconnaissance System (FOTRS), B-2, B-1B Conventional Munitions Upgrade Program (CMUP), Compass Call, CV-22 Osprey, F-15 APG-63 Radar, KC-135R Expanded Refueling Capability (ERC), Simulator for Electronic Combat (SECT), Advanced Strategic and Tactical IR Expend (ASTE), B-1B Conventional Munitions Upgrade Pgm Block D/E (B-1B CNUP BLK D/E), B-52 ALQ 172 Modification, Directed IR Countermeasures SOF (DIRCM), AT/T-38 Avionics, B-1 Electronic Countermeasures (B-1 ECM), Common Munitions Bit/Reprogram Equip (CMBRE), EF-111 Upgrades, Integrated Defensive Electronic Countermeasures (ID ECM), Joint service Electronic CM System Test (JSECST), Joint Service Fighter (JSF), Large Aircraft IR Countermeasures (LIRCM), Preemtive Destruction Enemy Air Defense (PDEAD), and F16 Block 50D..

  - (U) Category: Space Cheyenne Mountain Upgrade (CMU), Milstar, Integrated Correlation and Display System (ICADS), Survivable Defense Satellite Program (DSP-1), HAVE STARE Radar, Ground NDS Terminal (GNT), DMSP Block VI, Airborne Laser Lab (ABL), Attack and Launch Early Reporting to Theater (ALERT), Ballistic Missile Defense (BMD) System, Early Warning Radar (EWR), Ground Base Electro-Optical Deep Space Surveillance (GEODSS), ICBM Minuteman III Propulsion Replacement Program (ICBM-MMIII PRP), Navstar GPS Block IIR (GPS IIR), GPS Block II Follow-on (GPS IIF), ICBM Minuteman III Guidance Program Phase II (ICBM-MMIII GRP II), RSA Network Control (RSA-NC), RSA Centralized Telemetry Processing Systems (RSA-CTPS),

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
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Advanced Electro-Optical System (AEOS), ICBM-Rapid Execution and Combat Target (REACT), Ballistic Missile Defense System Command Control Element (BMD C2E), Evolved Expendable Launch Vehicle (EELV), and ICBM MMIII Safety-Enhanced Reentry Vehicle (SERV/W), GPS-3, ICBM Minuteman III Miniature Receiver terminal (ICBM MMIII MMRT), Maui Space Surveillance Site (MSSS), Spaced-Based Infared Systems-High (SBIRS-High), and Spaced-Based Infared Systems-Low (SBIRS-LOW).

- (U) Category: Missile/Munitions Joint Direct Attack Munitions (JDAM), Joint Standoff Weapon (JSOW), AOD-Joint Programmable Fuze (JPF), AIM-9X Air-to-Air Missile (AIM-9X), Theater Missile Defense-Intercept Missile (TMD-Intercept), AMRAAM (AIM-120C) P3I Phase 3 (AMRAAM P3I PH3), and Sensor Fused Weapon (SFW), and Joint Air-to-Surface Stand-Off Missile (JASSM.

- (U) Category: Computer, Communication, Command and Control and Information System (C4 I) Joint STARS, Combat Survival Evader Locator (CSEL), Region/Sector Operations Control Center (R/SOCC), Modular Control Equipment (MCE P3I), Military Airspace Management System (MAMS), Global Transportation Network (GTN), Tower Restoral Vehicle (TRV), Advance Training System (ADV TNG SYS), E3 Radar System Improvement Program (E3 RSIP), JTIDS Class 2 Terminal Multiservice (JTIDS CL2), E4B Universal Modem (E4B UM ATV), Combat Intelligence System (CIS), Combat ID/Cooperative Aircraft ID (CI/CAI), E4B Mod Miniature Receive Terminal (E4B MMRT), Common Missile Warning System (CMWS), Del Crisis Action Plan and Execution Sys (DCAPES), Precision Landing System Receiver (PLSR), Theater Battle Management Core Systems (TBM CORE) AMC C2 Integrated Planning System(AMC C2 IPS), Air Force Global Command and Control System (AF GCCS), TBM-Contingency Theater Automatic Plan System (TBM-CTAPS), Defense IE Mats Replace C2 Terminals (DIRET), Joint Precision Approach & Landing System (JPALS), TBM-Combat Intelligence System (TBM-CIS), TBM-Wing Command & Control System (TBM-WCCS), and Tactical Weather Radar (TWR).

(U) Category: General ABO-Armored Multi-Role Vehicle (ABO-ARMRV), AFF Crash/Fire, CCD-Vertical Smoke and □Obscurant (CCD-V Smoke), CCD-Laser Warning/Laser Defeat (Laser), CWD-Fire Fighter's Ensemble (CWD-FFEN), ABO-EOD/Medical Protective Shield (ABO-EOD Shield), RRR-Deployable Pavement Repair System, ABO-Rapid Ordnance Removable System (ABO-RORS), BISS Active Denial System, Environmental Control Unit (ECU) Replacement, SAB-POL RURK, AGM-130 Integration, LS Advanced Technology Anit-G Suite (LS ATAGS), LS Light Weight Low Profile Backstyle Parachute (LS LTWT Parachute), Hard and Deeply Burred Target Defeat Cap (HDBTDC), CSD Chemically Hardened Air Transportable Hostpital (CSD-CHATH), and Wind Connection Munitions Dispenser (WCMD).

- (U) $23,806 Total

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(U) FY 1997 ($ in Thousands)

- (U) $26,921 FY 97 IOT&E Planning Program: HQ AFOTEC will conduct IOT&E on the following 82 programs. The FY 97 list of programs may not be all inclusive due to changing program schedules and "pop-up" requirements.

  - (U) Category: Aircraft/Support F-22 Advanced Tactical Fighter, B-2, B-1B Conventional Munitions Upgrade Program (CMUP), Compass Call, CV-22 Osprey, F-15 APG-63 Radar, KC-135R Expanded Refueling Capability (ERC), Advanced Strategic and Tactical IR Expend (ASTE), B1B Conventional Munitions Upgrade Pgm Block D/E (B1B CMUP BLK D/E), AT/T-38 Avionics, Common Missile Warning System (CMWS), Directed IR Countermeasures SOF (DIRCM), F-15 Tactical Electronic Warfare System (F-15 TEWS), Common Munitions Bit/Reprogram Equip (CMBRE), Joint service Electronic CM System Tester (JSECST), and Airborne Structure, Loader 60K.

  - (U) Category: Space Cheyenne Mountain Upgrade (CMU), Milstar, Integrated Correlation and Display System (ICADS), Survivable Defense Satellite Program (DSP-1), Ground NDS Terminal (GNT), DMSP Block VI, Airborne Laser Lab (ABL), Ballistic Missile Defense (BMD) System, HAVE STARE Radar, Early Warning Radar (EWR), Ground Based Electro-Optical Deep Space Surveillance (GEODSS), ICBM Minuteman III Propulsion Replacement Program (ICBM-MMIII PRP), Navstar GPS Block IIR (GPS IIR), GPS Block II Follow-on (GPS IIF), ICBM Minuteman III Guidance Program Phase II (ICBM-MMIII GRP II), RSA Network Control (RSA-NC), Advanced Electro-Optical System (AEOS), Attach & Launch Early Report to Theater (ALERT), Ballistic Missile Defense System Command Control Element (BMD C2E), Space-Based Infared Systems-High (SBIRS-High), and Spaced-Based Infared Systems-Low (SBIRS-Low).

  - (U) Category: Missile/Munitions Joint Direct Attack Munitions (JDAM), Joint Standoff Weapon (JSOW), AOD-Joint Programmable Fuze (JPF), AIM-9X Air-to-Air Missile (AIM-9X), Theater Missile Defense-Intercept Missile (TMD-Intercept), and Joint Air-to Surface Stand-Off Missile (JASSM).

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- (U) Category: Computer, Communication, Command and Control and Information System (C4I) Region/Sector Operations Control □Center (R/SOCC), Military Airspace Management System (MAMS), JOINT STARS, JTIDS Class 2 Terminal Multiservice (JTIDS CL2), E4B Mod Miniature Receive Terminal (E4B MMRT), Global Transportation Network (GTN), Precision Landing System Receiver (PLSR), Theater Battle Management Core Systems (TB CORE), and Combat Survivor Evader Locator (CSEL).

- (U) Category: General ABO-Anti-Penetration Tactical Shelters (ABO-TAC), AFF Crash/Fire, RRR-Mat Anchoring, CCD-Simulation, CCD-Runway Signature Characterization Disguise (CCD-RSCD), CSD-Transportable Blood Transshipment Center (CSD-TBTC), Helmet Mounted Cueing System (HMCS), ABO-Mobile Ordnance Disrupter System (MODS), RRR-Deployable Pavement Repair System, ABO-Rapid Ordnance Removable System (ABO-RORS), Environmental Control Unit (ECU) Replacement, ABO-Aircraft Expedient Dispersal Tech, ABO-EHR Munitions Stores Bins/Containers, SAB-POL RURK, AGM-130 Integration, ABO Buried Ordnance Rem/Neutralization (ABO-Buried), CCD Fuzz, CWD Aircraft Interior Decon (CWD ACFT), CWD Aircraft Interior Detector (CWD AIDET), CWD Body Cooling (CWD BODY), CWD Disposable Eye/Respiratory Protect (CWD DERP), Wind Corrected Munitions Dispenser (WCMD), BISS Delayed Denial Technology (BISS-DDT), CCD Laser Warning defeat (CCD-LWD), CCD Multispectral Materials (CCD-MS Mats), CCD Point Target Observation System (CCD PTOS), CCD SOMS, Explosive Ordance Protective Shields (EOPS), Elect Systems-Contingency Restoration Unit (ES-CRU), Water Systems CRU (WS-CRU).

- (U) $26,921 Total

(U) B. Program Change Summary ($ in Thousands):

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	33,004	24,506	26,921	Cont
(U) Appropriated Value				
(U) Adjustments to Appropriated Value				
a. Minor adjustments		-700		
(U) Current Budget Submit/President's Budget	33,004	23,806	26,921	Cont

(U) Change Summary Explanation:

Funding: None.

Schedule: None.

Technical: None.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605712F Initial Operational Test & Eval
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(U) C. **Other Program Funding Summary ($ in Thousands):** Not applicable.

(U) D. **Schedule Profile:** Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0605807F Test And Evaluation Spt

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	499,033	423,827	425,195	437,024	435,323	440,687	429,031	Continuing	TBD
06TS Test and Evaluation Support (1)	377,227	316,725	314,101	322,541	317,638	321,465	309,128	Continuing	TBD
06AS Aircraft Support (1)	34,476	12,294	12,161	13,137	13,850	15,054	16,292	Continuing	TBD
06MC Minor Construction (1)	3,531	3,588	3,717	3,893	4,084	4,204	4,329	Continuing	TBD
06MR Maintenance and Repair (1)	54,245	69,565	74,122	75,898	77,524	77,537	76,892	Continuing	TBD
06TG 46 Test Group (1)	29,554	21,655	21,094	21,555	22,227	22,427	22,390	Continuing	TBD

(1) Test and Evaluation Support, project 6606TS, was combined from projects 06RB, 06YA, and 06ZA in this PE, effective FY 96. (FY 95 total includes project 06UC). Base Operating Support (BOS) funds ($26,400 in FY 96) were transferred from PE 0605807 (Arnold Engineering Development Center) into PE 0605896F. The purpose of the transfer is to more evenly account for BOS-type efforts within PE 0605896F at the three major AF test centers. Similarly, approximately $26,000 has also been transferred in FY 97-01.

(2) Aircraft Support, project 6606AS, was transferred from PE 0605863F (combining projects 662111 and 662112), effective FY 96. Funding in FY 95 refers to PE 0605863F.

(3) Minor Construction, project 6606MC, was transferred from PE 0605876F, effective FY 96. Funding in FY 95 refers to PE 0605876F.

(4) Maintenance and Repair, project 6606MR, was transferred from PE 0605878F, effective FY 96. Funding in FY 95 refers to PE 0605878F.

(5) 46 Test Group, project, 6606TG, was transferred from PE 0605708F, effective FY 96. FY 95 totals include both the test infrastructure and test investment portion of PE 0605708F. Beginning in FY 96, the funding in this project is only for test infrastructure. Radar Target Scatter investment transfers to PE 0604256F.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605807F Test And Evaluation Spt

(U) **A. Mission Description and Budget Item Justification:** This program element consolidates five PEs (or portions thereof) as mentioned above. The aircraft support project provides resources for maintaining Air Force Materiel Command (AFMC) assigned test and test support coded aircraft which are included as a portion of the Department of Defense Major Range and Test Facility Base (MRTFB). The Minor Construction project provides essential minor construction at the three Air Force MRTFBs (Eglin AFB FL, Edwards AFB CA, and Arnold AFB TN). The Maintenance and Repair project provides real property maintenance and repair at the three MRTFBs. The 46 Test Group (46TG) project provides the following unique capabilities as part of the DoD MRTFB: the High Speed Test Track (HSTT), Central Inertial Guidance Test Facility (CIGTF), and the Radar Target Scatter (RATSCAT) facility. The Test and Evaluation (T&E) Support program provides resources to operate the above Air Force test activities. The increase in FY 97 represents funding for implementing the majority of the Level 1 requirements for Commander's Facility Assessment with a particular emphasis on operational facilities and base infrastructure.

(U) **B. Program Change Summary ($ in Thousands):**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	499,033	454,067	458,335	Cont
(U) Appropriated Value		434,167		
(U) Adjustments to Appropriated Value				
a. ADP Savings Sec 8101		-86		
b. Economic Assum Sec 8125		-2,613		
c. Ovrhead/Imprvd Mgmt Sec 8129		-5,801		
d. Bosnia Reprogramming 1		-1,840		
e. Adjustment to FY 97 budget year			-33,140	
(U) Current Budget Submit/President's Budget	499,033	423,827	425,195	Cont

(U) Change Summary Explanation:

Funding: FY 97 reduction due to civilian workforce reduction (- $13,130) and inflation and cost savings adjustments (- $20,010)

Schedule: Impacts of cuts TBD.

Technical: Impacts of cuts TBD.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605807F Test And Evaluation Spt

(U) C. **Other Program Funding Summary ($ in Thousands):** Not applicable.

Related RDT&E:
(U) PE 0605856F, Environmental Compliance
(U) PE 0605896F, Base Operations RDT&E (Base operating support)
(U) PE 0604759F, Major T&E Investment (Technical capability improvement and modernization)
(U) PE 0604256F, Threat Simulator Development
(U) PE 0604940D, Central Test & Evaluation Improvement Program (T&E investments for new tri-service test capabilities)

(U) D. **Schedule Profile:** Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0605807F Test And Evaluation Spt

PROJECT NO. AND NAME: 06TS Test and Evaluation Support (1)

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
06TS Test and Evaluation Support (1)	377,227	316,725	314,101	322,541	317,638	321,465	309,128	Continuing	TBD

(1) Test and Evaluation Support, project 6606TS, was combined from projects 06RB, 06YA, and 06ZA in this PE, effective FY 96. FY 95 total includes project 06UC, Utah Test and Training Range). Base Operating Support (BOS) funds ($26,400 in FY 96) were transferred from PE 0605807 (Arnold Engineering Development Center) into PE 0605896F. The purpose of the transfer is to more evenly account for BOS-type efforts within PE 0605896F at the three major AF test centers. Similarly, approximately $26,000 has also been transferred in FY 97-01.

(U) **A. Mission Description and Budget Item Justification:** This project provides resources to operate the Air Force test activities which are included in the Department of Defense (DoD) Major Range and Test Facility Base (MRTFB). Test facilities/capabilities operated through this program include wind tunnels, rocket and jet engine test cells, space environmental simulation chambers, armament test ranges, climatic test facilities, avionics test facilities, aircraft testbeds, dry lakebed landing sites, and instrumented test ranges. T&E Support funds test infrastructure overhead activities including: command and supervisory staffs; supply stocks; upkeep, refurbishment, repair, and replacement of worn or obsolete test equipment; test infrastructure for data collection, transmission, reduction, and analysis; civilian salaries; temporary duty travel; support contract costs for hardware and software engineering and maintenance; and minor improvement and modernization projects. Three major Air Force test centers are supported by this project: (1) Arnold Engineering and Development Center (AEDC) which provides the test infrastructure overhead support to operate the largest complex of ground test facilities in the free world (includes transonic, supersonic, and hypersonic wind tunnels; rocket motor and turbine engine test cells; space environmental test chambers, hyperballistic ranges; and other specialized facilities). (2) Air Force Flight Test Center (AFFTC), Edwards AFB CA which provides test infrastructure overhead support for development and operational test and evaluation support for aircraft and aircraft systems, aerospace research vehicles, unmanned miniature vehicles, cruise missiles, parachute delivery/recovery systems, and cargo handling systems, and Electronic Warfare (EW) systems for DoD and allied forces. The AFFTC also operates the Utah Test and Training Range (UTTR) in Northwest Utah which will be transferred to ACC in FY 97. (3) Air Force Development Test Center (AFDTC), Eglin AFB FL which provides the test infrastructure overhead support for non-nuclear air armaments (including aircraft guns, ammunition, bombs, and missiles). AFDTC provides a scientific test process that supports the development and enhancement of munitions systems. This process reduces the risk of acquisition programs and ensures military equipment will work in the combat environment.

(U) FY 1995 ($ in Thousands) Program:

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605807F Test And Evaluation Spt
PROJECT NO. AND NAME 06TS Test and Evaluation Support (1)	

Arnold Engineering and Development Center

- (U) $143,333 Continued test infrastructure overhead support to enable testing for classified programs, and unclassified programs (F-22, JDAM, F-15, F-16, Minuteman, and F-18).
- (U) $6,300 FY95 Omnibus funding for contract recompetition and conversion costs.

Aircraft Modification Directorate

- (U) $2,976 Funded indirect labor and supporting expenses (training, travel, office supplies, etc.) and support services required for the aircraft modification mission in support of Reimbursable Budget Authority (RBA) programs in excess of $25,900.

Air Force Flight Test Center

- (U) $121,447 Continued to provide test infrastructure overhead support enabling testing of the B-1B, B-2, F-16, F-15, F-15E, F-22, AFTI/F-16, Gunship/Combat Talon II, C-17, Avionics Test and Integration Complex (ATIC), ARIA, SMILS, ECCM, electronic warfare (JSTARS, F15-TEWS, etc.), and classified programs.
- (U) $17,500 USAF Test Pilot School operating costs.
- (U) $2,700 Funded US test pilots to attend foreign test pilot schools.
- (U) $4,000 FY95 Omnibus funding for civilian pay locality increases.

Air Force Development Test Center

- (U) $77,471 Continued test infrastructure overhead support for non-nuclear air armaments (AMRAAM, WCMD, AGM-130, IDL, OFP, SEEK EAGLE, TMD, JDAM, JSOW, ASRAAM, and AIM-9); electronic warfare (JSTARS, F15-TEWS, etc.); C4I (JTIDS, AWACS, BISS, Combat Intelligence Systems, Combat Weather Systems, etc.); and refurbishment of the Climatic Test Facility.
- (U) $1,500 FY95 Omnibus funding for Hurricane Erin relief
- (U) $377,227 Total

(U) FY 1996 ($ in Thousands) Planned Program:

Arnold Engineering and Development Center

- (U) $103,952 Continue test infrastructure overhead support to enable testing for classified programs, and unclassified programs (F-22, JDAM, F-15, F-16, Minuteman, and F-18).
- (U) $2,008 Hurricane Opal loan to AFDTC pending FY96 Omnibus.
- (U) $1,816 Bosnia II OSD withhold.

Aircraft Modification Directorate

- (U) $2,000 Fund indirect labor and supporting expenses (training, travel, office supplies, etc.) and support services required for the Developmental Manufacturing and Modification Facility (DMMF) mission in support of RBA programs in excess of $25,900.

Air Force Flight Test Center

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605807F Test And Evaluation Spt
PROJECT NO. AND NAME 06TS Test and Evaluation Support (1)	

- (U) $103,031 Continue to provide test infrastructure overhead support enabling testing of the B-1B, B-2, F-16, F-15, F-15E, F-22, AFTI/F-16, C-17, ATIC, ARIA, SMILS, ECCM, EW (JSTARS, F-15 TEWS, etc.) and classified programs.
- (U) $18,000 USAF Test Pilot School operating costs.
- (U) $3,153 Hurricane Opal loan to AFDTC pending FY96 Omnibus.
- (U) $2,070 Bosnia II OSD withhold.

Air Force Development Test Center

- (U) $50,971 Continued test infrastructure overhead support for non-nuclear air armaments (AMRAAM, WCMD, JASSM, AGM 130, IDL, OFP, SEEK EAGLE, TMD, JDAM, JSOW, etc.), EW (JSTARS, F15-TEWS, etc); C4I (JTIDS, AWACS, BISS, AFMSS), and refurbishment of the Climatic Test Facility.
- (U) $13,560 Cash flow Hurricane Opal repair pending FY96 Omnibus Funding.
- (U) $5,668 Hurricane Opal loan from AEDC/AFFTC pending FY96 Omnibus Funding.
- (U) $9,400 Financial Reporting Support: Provide funding from Defense Business Operating Fund (DBOF) for T&E financial reporting.
- (U) $1,096 Bosnia II OSD withhold.
- (U) $316,725 Total

(U) FY 1997 ($ in Thousands) Planned Program:

Arnold Engineering and Development Center

- (U) $110,461 Continue test infrastructure overhead support to enable testing for classified programs, and unclassified programs (F-22, JDAM, F-15, F-16, Minuteman, and F-18).

Aircraft Modification Directorate

- (U) $2,000 Fund indirect labor and supporting expenses (training, travel, office supplies, etc.) and support services required for the aircraft modification mission in support of RBA programs in excess of $25,900.

Air Force Flight Test Center

- (U) $100,957 Continue to provide test infrastructure overhead support enabling testing of the B-1B, B-2, F-16, F-15, F-15E, F-22, AFTI/F-16, C-17, ATIC, ARIA, ECCM, EW (JSTARS, F-15-TEWS, etc.), and classified programs.
- (U) $18,600 USAF Test Pilot School operating costs.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605807F Test And Evaluation Spt
PROJECT NO. AND NAME 06TS Test and Evaluation Support (1)	

Air Force Development Test Center

- (U) $71,183 Continued test infrastructure overhead support for non-nuclear air armaments (AMRAAM, SEEK EAGLE, TMD, JDAM, JSOW, WCMD, etc.); electronic warfare (JSTARS, F15-TEWS, F-16 ALR 56M, etc); C4I (JTIDS, BISS, TMD), and aircraft software upgrades.
- (U) $10,900 Financial Reporting Support: Provide funding from Defense Business Operating Fund (DBOF) for T&E financial reporting.
- (U) $314,101 Total

(U) B. Program Change Summary ($ in Thousands):

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	377,227	330,727	334,054	Cont
(U) Appropriated Value		324,927		
(U) Adjustments to Appropriated Value				
a. ADP Savings Sec 8101		-65		
b. Economic Assum Sec 8125		-1,956		
c. Ovrhead/Imprvd Mgmt Sec 8129		-4,341		
d. Bosnia Reprogramming 1		-1,840		
e. Adjustment to FY 97 budget year			-19,953	
(U) Current Budget Submit/President's Budget	377,227	316,725	314,101	Cont

(U) Change Summary Explanation:.

Funding: FY 97 reductions due to civilian workforce reduction (- $2,838) and inflation and cost savings adjustments (-$17,115)

Schedule: None.

Technical: None.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605807F Test And Evaluation Spt
PROJECT NO. AND NAME 06TS Test and Evaluation Support (1)	

(U) C. Other Program Funding Summary ($ in Thousands): Not applicable.

Related RDT&E:

(U) PE 0605856F, Environmental Compliance

(U) PE 0605896F, Base Operations RDT&E (Base operating support)

(U) PE 0604759F, Major T&E Investment (Technical capability improvement and modernization)

(U) PE 0604256F, Threat Simulator Development

(U) PE 0604940D, Central Test & Evaluation Improvement Program (T&E investments for new tri-service test capabilities)

(U) D. Schedule Profile: Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0605807F Test And Evaluation Spt

PROJECT NO. AND NAME: 06AS Aircraft Support (1)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
06AS Aircraft Support (1)	34,476	12,294	12,161	13,137	13,850	15,054	16,292	Continuing	TBD

(1) Aircraft Support, project 6606AS, was transferred from PE 0605863F (combining projects 662111 and 662112), effective FY 96.

(U) A. Mission Description and Budget Item Justification: The RDT&E aircraft support program provides resources for maintaining Air Force Materiel Command (AFMC) assigned test and test support coded aircraft which are included as a portion of the Department of Defense Major Range and Test Facility Base (MRTFB). This program supports 128 RDT&E aircraft of 18 different types. These include a multitude of configurations, with many prototype, preproduction, and extensively modified/instrumented one-of-a-kind aircraft. Funds pay for depot level maintenance such as: Programmed Depot Maintenance (PDM), the calendar-based cyclic scheduling of aircraft into depots for update/inspection; modifications and any other depot level repairs required by the aircraft System Program Directors (SPD); engine overhauls and engine modules; depot-provided area assistance; and assorted ground support equipment overhauls that require reimbursement.

(U) FY 1995 ($ in Thousands) Program
- (U) $34,476 Performed PDM and engine overhauls.
- (U) $34,476 Total

(U) FY 1996 ($ in Thousands) Planned Program
- (U) $12,294 Perform PDM and engine overhauls.
- (U) $12,294 Total

(U) FY 1997 ($ in Thousands) Planned Program
- (U) $12,161 Perform PDM and engine overhauls.
- (U) $12,161 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605807F Test And Evaluation Spt
PROJECT NO. AND NAME 06AS Aircraft Support (1)	

(U) **B. Program Change Summary ($ in Thousands):**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	34,476	12,539	12,229	Cont
(U) Appropriated Value		12,539		
(U) Adjustments to Appropriated Value				
a. FY95 Actuals				
b. ADP Savings Sec 8101		-2		
c. Economic Assum Sec 8125		-75		
d. Ovrhead/Imprvd Mgmt Sec 8129		-168		
e. Adjustments to FY 97 budget year			- 68	
(U) Current Budget Submit/President's Budget	34,476	12,294	12,161	Cont

(U) Change Summary Explanation:

Funding: No significant changes.

Schedule: None.

Technical: None.

(U) **C. Other Program Funding Summary ($ in Thousands):** Not applicable.

Related RDT&E:

(U) PE 0605856F, Environmental Compliance
(U) PE 0605896F, Base Operations RDT&E (Base operating support)
(U) PE 0604759F, Major T&E Investment (Technical capability improvement and modernization)
(U) PE 0604256F, Threat Simulator Development
(U) PE 0604940D, Central Test & Evaluation Improvement Program (T&E investments for new tri-service test capabilities)

(U) **D. Schedule Profile:** Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0605807F Test And Evaluation Spt

PROJECT NO. AND NAME: 06MC Minor Construction (1)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
06MC Minor Construction (1)	3,531	3,588	3,717	3,893	4,084	4,204	4,329	Continuing	TBD

(1) Minor Construction, project 6606MC, was transferred from PE 0605876F, effective FY 96. Funding in FY 95 refers to PE 0605876F.

(U) **A. Mission Description and Budget Item Justification:** This program element provides essential minor construction at three DoD Major Range and Test Facility Base locations: Eglin AFB FL, Edwards AFB CA, and Arnold AFB TN. Physical plant maintained by this account covers 800,000 acres of land; over four thousand structures in excess of 30 years old encompassing fifteen million square feet; over five million square yards of airfield pavement; 1900 miles of road network; utility systems that include 120 wells, 10 sewage treatment plants, 20 substations and over 1600 miles of high voltage electrical distribution lines.

(U) FY 1995 ($ in Thousands) Program:

- (U) $3,531 Financed in-house work performed by government employees (supplies, materials and equipment). Financed construction of airman leadership school and classroom, and replacement of propulsion wind tunnel transformer, and altered aeropropulsion systems test facility control room. Constructed new facility at a cost of $288K after damage caused by Hurricane Erin.
- (U) $3,531 Total

(U) FY 1996 ($ in Thousands) Planned Program:

- (U) $3,588 Finance in-house work performed by government employees (to include supplies, materials and equipment). Finance construction of airman leadership school and classroom (2nd building), explosive ordnance disposal facility and performance of the most critical minor construction at the three MRTFBs.
- (U) $3,588 Total

(U) FY 1997 ($ in Thousands) Planned Program:

- (U) $3,717 Finance in-house work performed by government employees (to include supplies, materials and equipment). Finance construction of Human Resource Development Computer Laboratory, replace plenum escape system transformer and add 16KV circuit breaker to plenum escape system substation; and finance addition to equipment research laboratory and provide additional well reservoir.
- (U) $3,717 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605807F Test And Evaluation Spt
PROJECT NO. AND NAME 06MC Minor Construction (1)	

(U) **B. Program Change Summary ($ in Thousands):**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	3,531	3,660	3,738	Cont
(U) Appropriated Value		3,660		
(U) Adjustments to Appropriated Value				
b. ADP Savings Sec 8101		-1		
c. Economic Assum Sec 8125		-22		
d. Ovrhead/Imprvd Mgmt Sec 8129		-49		
e. Adjustment to FY 97 Budget Year			-21	
(U) Current Budget Submit/President's Budget	3,531	3,588	3,717	Cont

(U) Change Summary Explanation:

Funding: None.

Schedule: None.

Technical: None.

(U) **C. Other Program Funding Summary ($ in Thousands):** Not applicable.

Related RDT&E:

(U) PE 0605856F, Environmental Compliance
(U) PE 0605896F, Base Operations RDT&E (Base operating support)
(U) PE 0604256F, Threat Simulator Development
(U) PE 0604759F, Major T&E Investment (Technical capability improvement and modernization)

(U) **D. Schedule Profile:** Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0605807F Test And Evaluation Spt

PROJECT NO. AND NAME: 06MR Maintenance and Repair (1)

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
06MR Maintenance and Repair (1)	54,245	69,565	74,122	75,898	77,524	77,537	76,892	Continuing	TBD

(1) Maintenance and Repair, project 6606MR, was transferred from PE 0605878F, effective FY 96. Funding in FY 95 refers to PE 0605878F.

(U) A. Mission Description and Budget Item Justification: This project provides essential Real Property Maintenance and Repair at three DoD Major Range and Test Facility Base (MRTFB) locations: Eglin AFB FL, Edwards AFB CA, and Arnold AFB TN. Physical plant maintained by this account covers 800,000 acres of land; over four thousand structures in excess of 30 years old encompassing fifteen million square feet; over five million square yards of airfield pavement; 1900 miles of road network; utility systems that include 120 wells, 10 sewage treatment plants, 20 substations and over 1600 miles of high voltage electrical distribution lines. Beginning in FY 96, the increases represent an Air Force corporate decision to implement a new initiative to measure and improve facility conditions: the Commander's Facility Assessment (CFA). CFA puts a "readiness face" on real property maintenance requirements by having commanders at all levels assess their facility's condition and its impact on mission accomplishment. Facilities are assessed as either Level 1 (Unsatisfactory - minimal mission support) or Level 2 (Degraded - impaired mission support). The field commanders have unanimously endorsed CFA as the best way to determine and address mission impacts due to facility deficiencies. The program increases represent a concerted effort to fund the majority of the Level 1 requirements with a particular emphasis on operational facilities and base infrastructure.

(U) FY 1995 ($ in Thousands) Program:

- (U) $33,883 Financed in house work force.
- (U) $8,600 Financed repairs to airfield asphalt and runway, overhead lines, electrical substation and various sewer lines.
- (U) $11,762 Performed various M&R activities [overlay roads, repair aftercooler bundles, transformers, rotor discs, hangar doors, HVAC (heating, ventilation and air conditioning), asbestos abatement]; conducted seismic studies in various buildings; and repaired Hurricane Erin damage at Eglin AFB.
- (U) $54,245 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605807F Test And Evaluation Spt
PROJECT NO. AND NAME 06MR Maintenance and Repair (1)	

(U) FY 1996 ($ in Thousands) Planned Program:

- (U) $35,755 Finance in house work force.
- (U) $12,889 Repair heat exchangers in engine test facility, 26,500 hp rotor and starter, process air valve, liquid rheostats and water manifolds, and installation of EMC and SCADA systems. .
- (U) $10,834 Repair various water and sewer lines, dorms, circuit breakers, asbestos abatement, seismic studies, and various roofs.
- (U) $10,087 Commander's Facility Assessment (CFA) identified requirements necessary to repair "unsatisfactory" conditions.
- (U) $69,565 Total

(U) FY 1997 ($ in Thousands) Planned Program:

- (U) $38,445 Finance in-house work force.
- (U) $13,225 Repair refrigerant insulation, rotor discs, gaseous helium refrigerators, heaters in air processing system and water control valves.
- (U) $12,350 Repair various roads, underground cable, HVAC (heating, ventilation and air conditioning), airfield pavement, electrical distribution lines , and asbestos abatement, seismic studies, and re-roof buildings.
- (U) $10,102 CFA exercise identified requirements necessary to repair "unsatisfactory" conditions.
- (U) $74,122 Total

(U) B. Program Change Summary ($ in Thousands):

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	54,245	84,354	86,135	Cont
(U) Appropriated Value		70,954		
(U) Adjustments to Appropriated Value				
a. ADP Savings Sec 8101		-14		
b. Economic Assum Sec 8125		-427		
c. Ovrhead/Imprvd Mgmt Sec 8129		-948		
d. Adjustments to FY 97 budget year			-12,013	
(U) Current Budget Submit/President's Budget	54,245	69,565	74,122	Cont

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605807F Test And Evaluation Spt
PROJECT NO. AND NAME 06MR Maintenance and Repair (1)	

(U) Change Summary Explanation:

Funding: The program increases beginning in FY 96 represent a concerted effort to fund the majority of the Level 1 requirements with a particular emphasis on operational facilities and base infrastructure.

Schedule: None.

Technical: None.

(U) C. Other Program Funding Summary ($ in Thousands): Not applicable.

Related RDT&E:

(U) PE 0605856F, Environmental Compliance
(U) PE 0605896F, Base Operations RDT&E (Base operating support)
(U) PE 0604759F, Major T&E Investment (Technical capability improvement and modernization)
(U) PE 0604256F, Threat Simulator Development
(U) PE 0604940D, Central Test & Evaluation Improvement Program (T&E investments for new tri-service test capabilities)

(U) D. Schedule Profile: Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0605807F Test And Evaluation Spt

PROJECT NO. AND NAME: 06TG 46 Test Group (1)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
06TG 46 Test Group (1)	29,554	21,655	21,094	21,555	22,227	22,427	22,390	Continuing	TBD

(1) 46 Test Group, project, 6606TG, was transferred from PE 0605708F, effective FY 96. FY 95 totals include both the test infrastructure and test investment portion of PE 0605708F. Beginning in FY 96, the funding in this project is only for test infrastructure. The investment portion transfers to PE 0604256F.

(U) A. **Mission Description and Budget Item Justification:** Beginning in FY 96, this project funds only test infrastructure overhead support including: command and supervisory staffs; supply stocks; upkeep, refurbishment, repair, and replacement of non-repairable or obsolete test equipment; test infrastructure for data collection, transmission, reduction, and analysis; civilian salaries, utilities, temporary duty travel, support contract costs for hardware and software engineering and maintenance. Project infrastructure support is provided for the unique capabilities of the 46th Test Group facilities: the High Speed Test Track (HSTT), Central Inertial Guidance Test Facility (CIGTF), and the Radar Target Scatter (RATSCAT) facility. In FY 95 part of the funding was for investment programs: Radar Target Scatter (RATSCAT), Aircraft Navigation System Verification, and the Hypersonic Sled Track Development programs. The RATSCAT program transferred to PE 0604256F in FY 96. There is no Air Force funding in FY 96 and beyond for either the Aircraft Navigation System Verification or the Hypersonic Sled Track Development programs.

(U) FY 1995 ($ in Thousands) Program:

- (U) $22,554 Provided infrastructure test support for programs such as AIMS, Minuteman III, IRCM, TMD, THAAD, PAC-3, Arrow, GBI, standard missile II, GPS jamming and spoofing, FAA GPS Precision Approach field tests, GPS integrated and imbedded INS programs, aircraft navigation systems, including B-2, F-117A antenna testing, and static RCS testing for both classified and unclassified programs including the F-117A; completed development of an automated trajectory system to reduce the cost of egress, flare and IRCM testing at the sled track deferred from FY 92.
  Investments.
- (U) $7,000 Continued test support operations for Aircraft Navigation System Verification; continued RATSCAT upgrades.
- (U) $29,554 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605807F Test And Evaluation Spt
PROJECT NO. AND NAME 06TG 46 Test Group (1)	

(U) FY 1996 ($ in Thousands) Planned Program:

- (U) $21,364 Provide infrastructure test support for programs such as AIMS, IRCM, Peacekeeper, THAAD, F-111, Sparrow, Corps SAM, Standard Missile II, Patriot III, GPS jamming and spoofing, FAA Wide Area Augmentation System, GPS integrated and imbedded INS programs, aircraft navigation systems, including B-2, missile and munitions navigation systems for Trident and JDAM, F-22, and static RCS testing for QF-4, JDAM, ATACMS, CCV and low observable testbeds; initiate acquisition of special avionics to support GPS integration and testing.
- (U) $291 OSD Withhold for revised economic assumptions.
- (U) $21,655 Total

(U) FY 1997 ($ in Thousands) Planned Program:

- (U) $21,094 Provide infrastructure test support for programs such as F-22A escape system, 4th Generation Ejection Seat, Standard Missile 2, PAC-3 LFT&E, JPATS Escape System, THAAD LFT&E, Directed Infrared Countermeasures (DIRCM), SOF DIRCM and AN/AAR44 System improvements, continued GPS-JPO RTO responsibilities, Project 2000 integration support, GPS jamming and spoofing, FAA Wide Area Augmentation System, GPS integrated and embedded INS programs, aircraft navigation systems, including B-2 and F-22, missile and munitions navigation systems for Trident and JDAM, and static RCS testing for stores, low observable testbeds, and other classified programs.
- (U) $21,094 Total

(U) B. Program Change Summary ($ in Thousands):

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	29,554	22,787	22,179	Cont
(U) Appropriated Value		22,087		
(U) Adjustments to Appropriated Value				
a. ADP Savings Sec 8101		-4		
b. Economic Assum Sec 8125		-133		
c. Ovrhead/Imprvd Mgmt Sec 8129		-295		
d. Adjustments to FY 97 Budget Year			-1,085	
(U) Current Budget Submit/President's Budget	29,554	21,655	21,094	Cont

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605807F Test And Evaluation Spt
PROJECT NO. AND NAME 06TG 46 Test Group (1)	

(U) Change Summary Explanation:

Funding: Adjustments to FY 97 funding include civilian pay reprice and non-pay inflation adjustment.

Schedule: None.

Technical: None.

(U) **C. Other Program Funding Summary ($ in Thousands):** Not applicable.

(U) **D. Schedule Profile:** Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0605808F Development Planning

PROJECT NO. AND NAME: 3361 Mission & System Planning

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3361 Mission & System Planning	5,911	6,495	6,531	6,673	6,832	7,010	7,176	Continuing	TBD

(U) **A. Mission Description and Budget Item Justification**

This Program Element is the only dedicated source of funds for Air Force Mission and Functional Area Teams (MATs & FATs) to perform the studies and analyses that support the Modernization Planning Process. The Air Force, through the Modernization Planning Process, is in compliance with the DoD 5000 series regulations and JCS MOP 77 which mandate that a full range of requirements analyses be continuously conducted to identify and substantiate current operational deficiencies, to identify technology needs and exploit technology opportunities, and when necessary to define the requirements for materiel solutions. First, a Mission Area Assessment (MAA) is conducted to identify tasks and substantiate operational deficiencies. These deficiencies must relate directly to assigned Air Force operational roles, missions, and supporting tasks that cannot be performed efficiently or in a cost effective manner. Second, a Mission Needs Analysis (MNA) is conducted to identify potential cost effective, non-materiel and materiel alternatives that address the deficiency, or present new technological opportunities. Non-materiel alternatives include doctrine, tactics, training, and organizational changes. Materiel alternatives include modifications to existing systems; procurement of existing DoD, Allied and non-developmental systems; or the development of new systems. Operational requirements analyses and supporting acquisition milestone documentation include MAAs, MNAs, and Mission Need Statements (MNS). Phase 0 concepts studies and Cost and Operational Effectiveness Analyses (COEAs) are not normally conducted in this program element. The major commands and Air Staff functional agencies annually propose studies for the upcoming fiscal year. An Air Force board prioritizes the proposals using a rigorous Analytical Hierarchy Process. Proposals may be modified or delayed to accommodate programmed funding. The highest priority proposals are listed in this descriptive summary and a detailed description is provided to the Congressional Appropriations committees for approval to receive funding. This process eliminates duplication of effort within the Air Force or DoD. This program is in budget activity 6 - Management Support because the results of the studies and analyses performed have a substantial impact on future Air Force warfighting capability as an input to technology, acquisition (prior to Milestone 0), and procurement investment decisions.

(U) FY 1995 ($ in Thousands):

- (U) $992 Continued development of Integrated Definition for Functional (IDEF) Modeling analysis of merged Air Mobility command and control processes - identified mission area deficiencies and alternative solutions.
- (U) $789 Completed MNA to identify options for hostile target identification. Selected options to transition into existing programs.
- (U) $395 Completed MNA for systems for destruction of non-emitting surface-to-air targets and investigation of alternatives for incorporation into existing aircraft and munitions programs
- (U) $948 Completed MNA efforts for theater missile defense concepts.
- (U) $158 Completed Mission Area Assessment/Mission Needs Analysis (MAA/MNA) of C4I architectures for Theater Battle Management.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605808F Development Planning
PROJECT NO. AND NAME 3361 Mission & System Planning	

- (U) $789 Continued surveillance and reconnaissance MNA to identify architecture alternatives to support the battlefield commander.
- (U) $533 Initiated Integrated Definition for Functional (IDEF) MAA of intelligence systems.
- (U) $680 Initiated IDEF MAA of combat weather requirements for worldwide Air Force and Army missions.
- (U) $309 Initiated Future Space Architectures (FSA) studies to support development of Air Force Space Command Mission Area Plans (MAPs).
- (U) $213 Initiated tool definition for education and training MAAs to include student throughput, technological advances, and force structure changes.
- (U) $105 Initiated MNA for next generation bare base operations.
- (U) $5,911 Total

(U) FY 1996 ($ in Thousands):

- (U) $732 Initiate MAP analysis support to Counterair, Strategic Attack/Interdiction, Theater Missile Defense, and Close Air Support MAPs.
- (U) $968 Continue surveillance and reconnaissance mission area study to identify architecture alternatives to support the battlefield commander.
- (U) $664 Initiate Standard Data Base Architecture study to identify and recommend a solution to C4I architecture and database deficiencies stated in the Air Force Special Operations Command MAPs, the Air Force Intelligence Functional Area Plan (FAP), the Air Force C4 FAP, and the Air Force Surveillance and Reconnaissance MAP.
- (U) $385 Continue Air Education and Training Command mission areas throughput and resource allocation model development.
- (U) $722 Continue Future Space Architectures (FSA) studies to support development of Air Force Space Command MAPs.
- (U) $462 Initiate effort to adapt existing air mobility modeling and simulation tools to distributed interactive simulation (DIS) standards to support air mobility MAAs.
- (U) $395 Initiate a study to determine modeling and simulation (M&S) requirements for Special Operations Forces missions and produce a list of existing M&S tools that can be used as is or modified, or recommend other alternatives as required.
- (U) $1,078 Complete MAA/MNA of Air Mobility Command's missions to identify requirements for a single, integrated command and control system.
- (U) $241 Initiate studies on health and safety issues of non-lethal weapons to support Air Force Surgeon General functional area analysis and assessment.
- (U) $626 Continue IDEF MAA/MNA of combat weather support requirements for worldwide Air Force and Army missions.
- (U) $222 Initiate study to support MNA for the Special Operations Forces Provide Mobility in Denied Territory mission area.
- (U) $6,495 Total

(U) FY 1997 ($ in Thousands):

- (U) $1,020 Initiate studies of SOF aircraft mission vulnerabilities and potential countermeasures.
- (U) $1,600 Continue/initiate efforts in support of Air Combat Command mission areas.
- (U) $680 Continue throughput and resource allocation studies in support of Air Education and Training Command mission areas.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605808F Development Planning
PROJECT NO. AND NAME 3361 Mission & System Planning	

- (U) $730 Complete Future Space Architectures (FSA) studies to support development of Air Force Space Command MAPs.
- (U) $466 Continue effort to adapt existing air mobility modeling and simulation tools to DIS standards to support air mobility MAAs.
- (U) $875 Initiate efforts in support of Air Mobility MNAs and requirements definition.
- (U) $580 Initiate efforts in support of the Air Force Medical Functional Area.
- (U) $580 Continue IDEF MAA/MNA of combat weather support requirements for worldwide Air Force and Army missions.
- (U) $6,531 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	5,870	6,745	6,764	Continuing
(U) Appropriated Value	7,500	6,745		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-1,589	-198		
b. SBIR				
c. Omnibus or Other Above Threshold Reprogram		-52		
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY 1996 PB			-233	
(U) Current Budget Submit/President's Budget	5,911	6,495	6,531	Continuing

(U) Change Summary Explanation:
Funding: Funding is reduced in FY97 to support higher priority efforts and for revised economic assumptions.
Schedule: Not Applicable
Technical: Not Applicable

(U) C. Other Program Funding Summary ($ in Thousands)
Not Applicable

(U) D. Schedule Profile
Not Applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0605853F Environmental Conservation

PROJECT NO. AND NAME: 5853 Environmental Conservation

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
5853 Environmental Conservation	0	4,055	10,870	11,195	11,203	11,057	10,975	Continuing	TBD

* FY96-01 funding was transferred to this account from the environmental compliance program element (65856F).

(U) A. **Mission Description and Budget Item Justification**

– This program element provides environmental conservation services at three Air Force Material Command Major Range and Test Facility Bases: Eglin AFB, FL; Edwards AFB, CA; and Arnold AFB, TN. The account pays for operations and services (O&S or recurring work to keep the gates open), Level I (work to correct current non-compliance with federal, state or local environmental laws) and Level II (work to correct known future non-compliance) projects. Typical services and projects include: surveying, monitoring and protection of endangered species; environmental assessments and impact analysis; surveying, monitoring and protection of wetlands and floodplains; cultural resources evaluations; and archeological surveys.

(U) FY 1995 *Not Applicable*

(U) FY 1996

– (U) $4,055 Fund "must pay" O&S requirements such as civilian pay, education and training, updates to integrated natural resources management plans, and environmental impact analysis (EIAP) activities. The EIAP process allows the Air Force to determine the magnitude and significance of the anticipated environment impact of proposed actions.
– (U) $4,055 Total

(U) FY 1997

– (U) $7,630 Fund "must pay" O&S requirements such as civilian pay, education and training, updates to integrated natural resources management plans, and environmental impact analysis (EIAP) activities. The EIAP process allows the Air Force to determine the magnitude and significance of the anticipated environment impact of proposed actions.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605853F Environmental Conservation
PROJECT NO. AND NAME 5853 Environmental Conservation	

- (U) $3,240 Fund surveys and protection of endangered species (flora and fauna), wetlands, historic and archeological sites required by federal and state laws. The states of California and Florida have laws requiring extensive surveys of facilities. Surveys generate plans and programs to preserve natural and cultural resources in compliance with state and federal requirements.
- (U) $10,870 Total

(U) **Acquisition Strategy:** *Not Applicable*

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) FY96 President's Budget	0	14,169	11,200	TBD
(U) Congressional Programmatic Reduction		-10,000		
(U) Appropriated Value		4,169		
(U) Adjustments to Appropriated Value		0		
a. Congressional General Reductions		-82		
b. SBIR		0		
c. Omnibus or Other Above Threshold Reprogram*		-32		
d. Adjustments to Budget Years since FY96 PB		0	-330	
(U) Current Budget Submit/President's Budget	0	4,055	10,870	TBD

(U) Change Summary Explanation:

Funding: The funds for this program were transferred from the environmental compliance program (0605956F) in FY95. The program element did not exist prior to this DoD-directed transfer. Congressional programmatic reductions of $10M are preventing the three RDT&E installations from performing activities to comply with Federal, state, and local environmental laws. These activities are necessary to permit the Air Force to conduct weapon system testing at these installations. The Air Force is exploring various avenues to reprogram funds into this account for FY96. FY97 funding is less than FY96's PB request because of fewer required Level 1 projects.

Schedule: *Not Applicable*

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605853F Environmental Conservation
PROJECT NO. AND NAME 5853 Environmental Conservation	

Technical: *Not Applicable*

(U) C. **Other Program Funding Summary ($ in Thousands)** *Not Applicable*

(U) D. **Schedule Profile** *Not Applicable*

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0605854F Pollution Prevention

PROJECT NO. AND NAME: 1007 Pollution Prevention

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
1007 Pollution Prevention	0	13,486	20,628	6,686	4,743	5,812	5,927	Continuing	TBD

(U) **A. Mission Description and Budget Item Justification**

This program is in budget activity 6 - Management Support because it funds pollution prevention efforts required to accomplish the objectives and subobjectives of the Air Force Pollution Prevention Strategy to include installation level programs at the Research and Development Activities Installations (Eglin, Arnold, and Edwards AFBs) and cross-cutting weapons systems pollution prevention tools such as the integration of life cycle cost evaluations. It also funds efforts to validate and qualify environmentally acceptable materials and processes to replace existing common hazardous materials and processes. The account provides funds for Operations and Services (O&S), Level 1 (ozone depleting chemical and legal requirements), Level 2 (meet future goals, policies, and legal requirements), and Level 3 (beyond goals and legal requirements) projects. Typical project areas include eliminating the use of ozone depleting chemicals and hazardous materials; reducing the generation of hazardous waste, air emissions, and solid wastes; establishing and operating recycling and composting programs; and establishing hazardous material pharmacies and centralized hazardous material tracking. Prior to FY 96, all funding for this program was in program element (PE) 0708054F. To properly realign program funding into the appropriate major force programs and budget activities for the supported installations, additional PEs were established in Jul 94 (mandatory use starting in FY 96). All RDT&E funding in PE 0708054F was then realigned to PE 0605854F.

(U) FY 1995 ($ in Thousands):

- (U) $0 Program element did not exist this fiscal year. Requirements were funded under pollution prevention PE 0708054F (RDT&E Appropriation).
- (U) $0 Total

(U) FY 1996 ($ in Thousands):

- (U) $6,869 Funding of Eglin, Arnold, and Edwards AFBs pollution prevention requirements (to include solid waste recycling, composting, hazardous waste minimization, and hazardous material management) and cross-cutting weapons systems pollution prevention tools.
- (U) $6,617 Validation and qualification of commercially available material, equipment, and processes to support the Montreal Protocol and Air Force Pollution Prevention Strategy objectives and subobjectives in accordance with the Environmental Research and Development Strategic Plan.
- (U) $13,486 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605854F Pollution Prevention
PROJECT NO. AND NAME 1007 Pollution Prevention	

(U) FY 1997 ($ in Thousands):

- (U) $7,268 Funding of Eglin, Arnold, and Edwards AFBs pollution prevention requirements (to include solid waste recycling, composting, hazardous waste minimization, and hazardous material management) and cross-cutting weapons systems pollution prevention tools.
- (U) $13,360 Validation and qualification of commercially available material, equipment, and processes to support the Montreal Protocol and Air Force Pollution Prevention Strategy objectives and subobjectives in accordance with the Environmental Research and Development Strategic Plan.
- (U) $20,628 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	14,046	21,255	TDB
(U) Appropriated Value		14,046		
(U) Adjustments to Appropriated Value				
a. Congressional General Reductions		-276		
b. SBIR		-175		
c. Omnibus or Other Above Threshold Reprogram		-109		
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY 1996 PB			-627	
(U) Current Budget Submit/President's Budget	0	13,486	20,628	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605854F Pollution Prevention
PROJECT NO. AND NAME 1007 Pollution Prevention	

(U) Change Summary Explanation:

Funding: This program element was established to properly realign program funding into the appropriate budget structure (major force program and budget activity) for the supported installations. It reflects a transfer of RDT&E appropriation funding from PE 0708054F to PE 0605854F and covers installation level pollution prevention programs and evaluation of commercially available, environmentally acceptable materials and processes. Funding change between FY 96 and FY 97 reflects adjustments made in the program to increase efforts associated with eliminating the requirement for ozone depleting chemicals and reducing the use of hazardous materials and the generation of hazardous waste. The FY 97 reduction from the FY 96 PB reflects the revised economic assumptions forecast.

Schedule: Not Applicable
Technical: Not Applicable

(U) **C. Other Program Funding Summary ($ in Thousands):** Not Applicable
(U) **D. Schedule Profile:** Not Applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0605856F Environmental Compliance

PROJECT NO. AND NAME: 5856 Environmental Compliance

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
5856 Environmental Compliance	42,375	25,692	22,698	22,632	21,631	21,336	22,042	Continuing	TBD

(U) A. **Mission Description and Budget Item Justification**

This program element provides environmental compliance services at three Air Force Material Command Major Range and Test Facility Bases: Eglin AFB, FL; Edwards AFB, CA; and Arnold AFB, TN. The account pays for operations and services (O&S or recurring work to keep the gates open), Level I (work to correct current non-compliance with federal, state or local environmental laws) and Level II (work to correct known future non-compliance) projects. Typical services and projects include: hazardous waste management and disposal; upgrade and removal of underground fuel storage tanks; air and water pollution compliance projects; asbestos abatement and disposal; and polychlorinated biphenyl elimination. Account also funds for environmental sampling and analysis; studies; testing and inspections; permits and fees. Funding for environmental conservation was moved to PE 65853F in FY96 and beyond.

- (U) FY 1995
  - (U) $24,757 Funded essential "must pay" O&S requirements such as civilian pay, hazardous waste disposal; and environmental permits and fees.
  - (U) $10,518 Funded Level I (out of compliance) requirements.
  - (U) $7,100 Funded a limited number of projects classified as Level II (required to meet a known future compliance date). Funding only permitted accomplishment of the most critical of these requirements that would have gone out of compliance during the FY.
  - (U) $42,375 Total

- (U) FY 1996
  - (U) $21,753 Fund essential "must pay" O&S requirements such as civilian pay, hazardous waste disposal; and environmental permits and fees.
  - (U) $3,400 Fund Level I (out of compliance) requirements.
  - (U) $539 Fund a limited number of projects classified as Level II (required to meet a known future compliance date). Funding will only permit accomplishment of the most critical of these requirements that would go out of compliance during the program FY.
  - (U) $25,692 Total

- (U) FY 1997
  - (U) $17,920 Fund essential "must pay" O&S requirements such as civilian pay, hazardous waste disposal; and environmental permits and fees.
  - (U) $2,900 Fund Level I (out of compliance) requirements.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605856F Environmental Compliance
PROJECT NO. AND NAME 5856 Environmental Compliance	

- (U) $1,878 Fund a limited number of projects classified as Level II (required to meet a known future compliance date). Funding will only permit accomplishment of the most critical of these requirements that would go out of compliance during the program fiscal year.
- (U) $22,698 Total

(U) Acquisition Strategy: *Not Applicable*

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) FY96 President's Budget	42,375	26,423	23,220	TBD
(U) Appropriated Value	42,876	26,423		
(U) Adjustments to Appropriated Value				
a. Congressional Reduction	-10	-517		
b. General Reductions	-495			
c. Below Threshold Reprogramming	4			
d. SBIR		-11		
e. Omnibus or Other Above Threshold Reprogramming*		-203		
(U) Adjustment to Budget Years			-522	
(U) Current Budget/President's Budget	42,375	25,692	22,698	TBD

(U) Change Summary Explanation:
Funding: From FY96-01 $14,000,000 per year was transferred from this program element to the environmental conservation program element (65853F) along with the responsibility for compliance with natural and cultural resources laws. Adjustments to FY95 include a general reduction of $495,000 and a below threshold reprogramming of $4,000 from PE 65807F. Adjustments to FY96 include a Congressional reduction of $517,000, small business investment research reduction of $11,000, and other above threshold reprogramming of $203,000. FY97 funding is less than FY96's PB request because of fewer required O&S requirements. Adjustments to the budget year are due to lower than anticipated inflation rates.

Schedule: *Not Applicable*

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605856F Environmental Compliance
PROJECT NO. AND NAME 5856 Environmental Compliance	

Technical: *Not Applicable*

(U) C. **Other Program Funding Summary ($ in Thousands)** *Not Applicable*

(U) D. **Schedule Profile** *Not Applicable*

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0605860F Rocket System Launch Program

PROJECT NO. AND NAME: 1023 Rocket System Launch Program (RSLP)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
1023 Rocket System Launch Program (RSLP)	0	32,808	8,152	8,474	8,609	8,866	8,999	Continuing	Continuing

(U) **A. Mission Description and Budget Item Justification**

(U) Rocket System Launch Program (RSLP) is tasked to provide Research, Development, Test and Evaluation (RDT&E) launch vehicle support to DoD and other government agencies. RSLP mission was established by the Secretary of Defense in 1972. It provides mission planning, payload integration, launch support, booster storage and disposal, maintenance and logistics support for selected DoD RDT&E launches. Costs directly attributable to a specific launch or program are paid by the user (Air Force, Navy, Army, Ballistic Missile Defense Organization, etc.). RSLP directly supports deactivation of Minuteman II by providing storage of these and other assets. RSLP performs research and development support operations required for general rocket system launch research and development use.

(U) FY 1995 Funding shown in FY95 Budget Item Justification carried over from ICBM Dem/Val (PE 0603851F) (RSLP Project (BPAC 1023) and Long Range Planning Project (BPAC 4209)); see that PE for details concerning appropriation and adjustments thereto.

– (U)	Researched test launch vehicle configurations; developed, acquired, stored and maintained test launch vehicles, motors, components, facilities and capabilities in support of projected governmental user requirements.		$5,369
– (U)	Provided necessary storage requirements for deactivated Minuteman and other missile flight test assets.		$8,458
– (U)	Continued Multiservice Launch System (MSLS) development.		$9,491
– (U)	Develop transportable launch support equipment to launch from various national and state test ranges.		$7,500
– (U)	Provided launch assets and technical assistance for all DoD RDT&E launches. (Funded by Users).		$0
– (U)	Total	Total	$30,818

(U) FY 1996

– (U) $4,282	Continue storage and refurbishment of deactivated Minuteman and other missile flight test assets.
– (U) $11,500	Launch Air Force Academy cadet-developed satellite
– (U) $16,800	Develop transportable range equipment
– (U) $0	Provide launch assets and technical assistance for all DoD RDT&E launches. (Funded by Users).
– (U) $226	Partial payment of General Reductions assessed Guidance Applications Project and RSLP Project, ICBM Dem/Val Program (PE 0603851F, BPACs 1020 and 1023 respectively)
– (U) $32,808	Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605860F Rocket System Launch Program
PROJECT NO. AND NAME 1023 Rocket System Launch Program (RSLP)	

(U) FY 1997

- (U) $6,126 Continue storage and refurbishment of deactivated Minuteman and other missile flight test assets.
- (U) $2,026 Perform aging/surveillance-related activities on stored motors; perform analyses/studies to identify and evaluate potential safety-related issues affecting stored motors.
- (U) $0 Provide launch assets and technical assistance for all DoD RDT&E launches. (Funded by Users).
- (U) $8,152 Total

(U) **Acquisition Strategy:** Not applicable

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	5,949	6,126	Continuing
(U) Appropriated Value	0	22,749		
(U) Adjustments to Appropriated Value				
a. Congressional/General		-220**		
b. SBIR		-523		
c. Below Threshold Reprogramming				
d. Omnibus and other Above Threshold		-473		
(U) Adjustments to Budget Years Since FY96 PB		11,275	2,026	
(U) Current Budget Submit/President's Budget	0	32,808	8,152	Continuing

(U) Change Summary Explanation:

Funding: The FY96 President's Budget funding request covered only booster storage; the increase in FY97 and outyears supports aging surveillance-related activities for stored motors to monitor/ensure the continued safety of stored assets. Congressional FY96 Appropriation included an additional $16,800 to develop transportable launch and range support instrumentation. Also, $11,275 appropriated in FY96 to PE 0603851F (BPAC 1023 - RSLP) has been reprogrammed into this PE. FY97-01 has also been adjusted for non-pay inflation.

* The FY96 PB amount does not reflect funding reductions that are reserved for other DoD reprogramming needs ($-358)

** Includes credit for $226 for partial payment of General Reductions assessed against Guidance Applications, ICBM Dem/Val Program (PE 0603851F, BPAC 1020)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605860F Rocket System Launch Program
PROJECT NO. AND NAME 1023 Rocket System Launch Program (RSLP)	

Schedule: No impact.

Technical: See above.

(U) C. **Other Program Funding Summary ($ in Thousands)**: Not Applicable

Related RDT&E:
(U) PE 0603851F (ICBM Modernization Dem/Val)

(U) D. **Schedule Profile:** Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0605896F Base Operations - RDT&E

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	106,125	121,556	128,676	134,789	125,468	103,449	87,520	0	TBD
06BS Base Operating Support	60,567	72,898	80,372	82,138	71,237	47,591	29,986	0	TBD
06CE Other Support	20,358	22,792	21,131	24,663	25,403	26,165	26,950	Continuing	TBD
06UT Operations Of Utilities	25,200	25,866	27,173	27,988	28,828	29,693	30,584	Continuing	TBD

(U) A. **Mission Description and Budget Item Justification:** This program element provides basic, essential real property services and base operating support at Eglin AFB, FL; Edwards AFB, CA; and Arnold AFB, TN. The host units for these bases, respectively, are: Air Force Development Test Center (AFDTC), Air Force Flight Test Center (AFFTC) and Arnold Engineering Development Center (AEDC). These host units form the core of the Air Force Test and Evaluation infrastructure belonging to the DoD Major Range and Test Facility Base (MRTFB). These Air Force installations are unique national assets specifically established as part of the MRTFB for test and evaluation. The program finances "quality of life" costs for day-to-day support for these three bases which have over 90 tenant organizations and an aggregate population in excess of 55,000 people. Civilian payroll represents approximately 40 percent of the total program, with the remainder of the program financing administrative support, security and guard services, dormitories, billeting, food services, training, utility operations, civil engineering services, transportation, and motor pools. Functions supported by this program element include comptroller, chaplain, personnel, supply, transportation and information management. Beginning in FY 96, Base Operating Support mission and associated funding ($26,400) were transferred from PE 65807F (Arnold Engineering Development Center) into 65896F. Purpose of the transfer was to more accurately account for BOS type efforts within PE 65896F at the three AF RDT&E bases. Transfer reflected in previous PB contained errors of approximately $7-$10 million/FY. FY96 error ($9.9 million) was corrected by Congressional mark up of FY96 PB. FY97 and outyears were adjusted for the Current President's Budget submission (FY97-01).

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605896F Base Operations - RDT&E

(U) **B. Program Change Summary ($ in Thousands):**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	106,125	117,083	124,311	Cont
(U) Appropriated Value		123,983		
(U) Adjustments to Appropriated Value				
a. ADP Savings Sec 8101		-25		
b. Economic Assum Sec 8125		-746		
c. Overhead/Imprvd Mgmt Sec 8129		-1,656		
d. Adjustments to FY 97 budget year			+4,365	
(U) Current Budget Submit/President's Budget	106,125	121,556	128,676	Cont

(U) Change Summary Explanation:

Funding: FY 97 funding increase from previous President's budget ($4,365) is actually a realignment of BOS content and funding from PE 65807F as explained in the justification.

Schedule: None.

Technical: None.

(U) **C. Other Program Funding Summary ($ in Thousands):** Not applicable.

(U) **D. Schedule Profile:** Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0605896F Base Operations - RDT&E

PROJECT NO. AND NAME: 06BS Base Operating Support

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
06BS Base Operating Support	60,567	72,898	80,372	82,138	71,237	47,591	29,986	0	TBD

(U) A. **Mission Description and Budget Item Justification:** Finances essential base operating support which includes civilian pay, security and guard services, dormitories, billeting, food services, training, transportation and motor pools, comptroller, chaplain, supply, information management and quality of life services for the three bases. FY 97 increase due to realignment of BOS content and funding from PE 65807F.

(U) FY 1995 ($ in Thousands)

- (U) $35,467 Supported civilian payroll.
- (U) $1,300 Supported mission-related travel.
- (U) $4,200 Supported rental and transportation costs (permanent change of stations [PCS]).
- (U) $5,900 Supported communications systems, tools, contract education, and equipment maintenance.
- (U) $10,000 Supported supplies, fuels, and miscellaneous contract services.
- (U) $3,700 Supported information processing and other equipment, data processing services, and non-flying support of depot-level repairables.
- (U) $60,567 Total

(U) FY 1996 ($ in Thousands)

- (U) $35,270 Supports civilian payroll.
- (U) $1,700 Supports mission-related travel.
- (U) $5,400 Supports rental and transportation costs (permanent change of stations [PCS]).
- (U) $6,900 Supports communications systems, tools, contract education, and equipment maintenance.
- (U) $16,500 Supports supplies, fuels, and miscellaneous contract services.
- (U) $5,817 Supports information processing and other equipment, data processing services, and non-flying support of depot-level repairables.
- (U) $1,311 OSD Withhold.
- (U) $72,898 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605896F Base Operations - RDT&E
PROJECT NO. AND NAME 06BS Base Operating Support	

(U) FY 1997 ($ in Thousands)

- (U) $35,793 Supports civilian payroll.
- (U) $1,618 Supports mission-related travel.
- (U) $4,900 Supports rental and transportation costs (permanent change of stations [PCS]).
- (U) $8,495 Supports communications systems, tools, contract education, and equipment maintenance.
- (U) $23,066 Supports supplies, fuels, and miscellaneous contract services.
- (U) $6,500 Supports information processing and other equipment, data processing services, and non-flying support of depot-level repairables.
- (U) $80,372 Total

(U) B. Program Change Summary ($ in Thousands):

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	60,567	67,453	73,193	Cont
(U) Appropriated Value		74,353		
(U) Adjustments to Appropriated Value				
a. ADP Savings Sec 1801		-15		
b. Economic Assum Sec 8125		-447		
c. Overhead/Imprvd Mgmt Sec 8129		-993		
d. Adjustments to FY 97 budget year			7,179	
(U) Current Budget Submit/President's Budget	60,567	72,898	80,372	Cont

(U) Change Summary Explanation:

Funding: FY 97 increase from previous year's President's Budget is due to realignment of BOS content and funding from PE 65807F.

Schedule: None.

Technical: None.

(U) C. Other Program Funding Summary ($ in Thousands): Not applicable.

(U) D. Schedule Profile: Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0605896F Base Operations - RDT&E

PROJECT NO. AND NAME: 06CE Other Support

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
06CE Other Support	20,358	22,792	21,131	24,663	25,403	26,165	26,950	Continuing	TBD

(U) A. **Mission Description and Budget Item Justification:** Provides resources for fundamental civil engineering services such as custodial, fire protection, hazardous material systems certification, refuse collection, insect and pest control, rentals and leases, architectural and engineering design, grounds maintenance as well as civil engineering administrative costs, including equipment, supplies, temporary duty and civilian pay.

(U) FY 1995 ($ in Thousands)
- (U) $7,126 Civilian positions.
- (U) $400 Mission-related travel.
- (U) $4,432 Architect/engineering and other CE services.
- (U) $900 Miscellaneous contract services, contract education, and equipment maintenance.
- (U) $7,500 Custodial service, supplies, fuels and equipment purchases.
- (U) $20,358 Total

(U) FY 1996 ($ in Thousands)
- (U) $7,548 Civilian positions.
- (U) $500 Mission-related travel.
- (U) $4,788 Architect/engineering and other CE services.
- (U) $1,484 Miscellaneous contract services, contract education, and equipment maintenance.
- (U) $8,472 Custodial service, supplies, fuels and equipment purchases.
- (U) $22,792 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605896F Base Operations - RDT&E
PROJECT NO. AND NAME 06CE Other Support	

(U) FY 1997 ($ in Thousands)

- (U) $6,748 Civilian positions.
- (U) $441 Mission-related travel.
- (U) $4,147 Architect/engineering and other CE services.
- (U) $1,412 Miscellaneous contract services, contract education, and equipment maintenance.
- (U) $8,383 Custodial service, supplies, fuels and equipment purchases.
- (U) $21,131 Total

(U) B. Program Change Summary ($ in Thousands):

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	20,358	23,248	23,945	Cont
(U) Appropriated Value				
(U) Adjustments to Appropriated Value				
a. ADP Savings Sec 1801		-5		
b. Economic Assum Sec 8125		-140		
c. Overhead/Imprvd Mgmt Sec 8129		-311		
d. Adjustments to FY 97 budget year			-2,814	
(U) Current Budget Submit/President's Budget	20,358	22,792	21,131	Cont

(U) Change Summary Explanation:

Funding: None.

Schedule: None.

Technical: None.

(U) C. Other Program Funding Summary ($ in Thousands): Not applicable.

(U) D. Schedule Profile: Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 6 - Management Support

PE NUMBER AND TITLE: 0605896F Base Operations - RDT&E

PROJECT NO. AND NAME: 06UT Operations Of Utilities

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
06UT Operations Of Utilities	25,200	25,866	27,173	27,988	28,828	29,693	30,584	Continuing	TBD

(U) A. **Mission Description and Budget Item Justification:** Finances purchase of utilities (electricity, natural gas, water and sewage treatment), base operation of water and sewage treatment plants and distribution systems. Amounts of utilities consumed and waste processed for discharge exceed those of other operating bases due to unique test mission. FY 97 increase due to forecast local utility rate increases.

(U) FY 1995 ($ in Thousands)
- (U) $2,200 Civilian positions.
- (U) $19,900 Purchased utilities.
- (U) $700 Rentals, other CE, contract education, travel and miscellaneous contracts.
- (U) $2,400 Equipment purchases and maintenance, supplies and materials, and fuels.
- (U) $25,200 Total

(U) FY 1996 ($ in Thousands)
- (U) $2,157 Civilian positions.
- (U) $20,081 Purchased utilities.
- (U) $1,177 Rentals, other CE, contract education, travel and miscellaneous contracts.
- (U) $2,451 Equipment purchases and maintenance, supplies and materials, and fuels.
- (U) $25,866 Total

(U) FY 1997 ($ in Thousands)
- (U) $2,300 Civilian positions.
- (U) $20,873 Purchased utilities.
- (U) $1,500 Rentals, other CE, contract education, travel and miscellaneous contracts.
- (U) $2,500 Equipment purchases and maintenance, supplies and materials, and fuels.
- (U) $27,173 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 6 - Management Support	PE NUMBER AND TITLE 0605896F Base Operations - RDT&E
PROJECT NO. AND NAME 06UT Operations Of Utilities	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	25,200	26,382	27,173	Cont
(U) Appropriated Value		26,382		
(U) Adjustments to Appropriated Value				
a. ADP Savings Sec 1801		-6		
b. Economic Assum Sec 8125		-158		
c. Overhead/Imprvd Mgmt Sec 8129		-352		
(U) Current Budget Submit/President's Budget	25,200	25,866	27,173	Cont

(U) Change Summary Explanation:

Funding: None.

Schedule: None.

Technical: None.

(U) **C. Other Program Funding Summary ($ in Thousands):** Not applicable.

(U) **D. Schedule Profile:** Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0101113F B-52 Squadrons

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	20,005	11,035	955	0	0	0	0	4,518	36,513
4401 Air Force Mission Support System	0	2,801	5,507	955	0	0	0	0	0	9,263
4370 Advanced Weapons Integration	0	3,742	0	0	0	0	0	0	0	3,742
4371 Global Positioning System TACAN Emulation	0	9,085	0	0	0	0	0	0	0	9,085
4402 Electronic Countermeasures Improvement	0	0	4,921	0	0	0	0	0	0	4,921
4493 B-61 Mod 11 Flight Tests	0	0	607	0	0	0	0	0	4,518	5,125
4494 AGM-130 Integration	0	4,377	0	0	0	0	0	0	0	4,377

(U) A. Mission Description and Budget Item Justification

This program is in budget activity 7 - Operational System Development because it supports a currently operational system. The B-52 is the primary nuclear roled bomber in the USAF inventory. It provides the only Air Launch Cruise Missile carriage within the USAF. The B-52 also provides theater CINCs with a long range strike capability. The B-52 is undergoing a Conventional Enhancement Modification which allows it to carry MIL-STD 1760 weapons. The current service life of the aircraft extends past 2030. The Advanced Weapons Integration (AWI) program supports the conventional enhancement of the B-52 through the addition of the Wind Corrected Munitions Dispenser (WCMD), Joint Direct Attack Munition (JDAM), Joint Stand-off Weapon (JSOW), and the Joint Air-to-Surface Stand-off Missile (JASSM). The Air Force Mission Support System supports the Air Force movement of all mission planning to a common system. GPS TACAN Emulation provides support to the Congressionally-directed GPS-2000. Electronic Countermeasures Improvement supports a DESERT STORM identified deficiency. The B-61 Mod 11 program was added at the direction of the Nuclear Posture Review and Presidential Decision Directive-30. The AGM-130 integration is directed by Congressional language. The B-52 program manager is provided by Air Force Material Command's Oklahoma Air Logistics Center. The prime contractor for these projects is Boeing Defense and Space Group.

(U) Acquisition Strategy:

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0101113F B-52 Squadrons

1. The AFMSS program is organically conducted at OC-ALC/LAS. Previously funded by the AFMSS Program Element.
2. The AWI program placed Boeing Space and Defense Group Wichita, KS (BD&SG) on a Cost Plus-Fixed-Fee contract as the Product Development Organization, supported by OC-ALC/LH. Due to the short notice requirement, interface development and initial software requirements definition is being accomplished under the B-52 fleet support contract; a time and materials contract. The first phase will be to support the Direct Attack Stores Management Overlay (SMO) Developmental Test and Evaluation (DT&E) and DT&E of hardware interface equipment. The Direct Attack SMO supports WCMD and JDAM. The second phase will support the DT&E of the Stand-off SMO. The Stand-off SMO supports JSOW and JASSM. Due to the concurrency of the RDT&E program and the need for an early Required Assets Availability (RAA) date, concurrency of the production and RDT&E efforts is required. With no direct aircraft modifications associated with this modification, there is limited risk. Due to this concurrency, the procurement of production hardware and release of formal tech data will be sole source to BD&SG.
3. The GPS TACAN program placed Boeing Space and Defense Group, Wichita, KS on a Firm-Fixed-Price contract as the Product Development Organization, supported by OC-ALC/LH, WR-ALC/LKN and OO-ALC/LIH.
4. The ECM Improvement program placed Boeing Space and Defense Wichita, KS and ITT Avionics Nutley, NJ on Firm-Fixed-Price contracts as Product Development Organizations. Boeing provides the aircraft specific integration expertise, while ITT provides expertise on the ALQ-172 system. They are supported by OC-ALC/LH and WR-ALC/LNR.
5. The Department of Energy is organically conducting the modifications to the B-61 weapon.
6. The AGM-130 Integration program placed Boeing Space and Defense Group Wichita, KS on a Firm-Fixed-Price contract as the Product Development Organization, supported by OC-ALC/LH and Rockwell Corporation.

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	16505	7457	23962
(U) Appropriated Value	0	21005	0	27305
(U) Adjustments to Appr Value (Undist Cong Reductions)	0	-1,000	0	133
(U) Changes to Current Year Budget	0	0	3,578	12913
(U) Current Budget Submit/President's Budget	0	20,005	11,035	64047

(U) Change Summary Explanation:

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0101113F B-52 Squadrons

Funding: FY96 Congressional Appropriations added $4.5M for AGM-130 Integration.

Schedule: None

Technical: None

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Aircraft Procurement (PE 11113F)	34,317	4,765	8,782	31,391	65,490	43,302	34,127	24,400	246,574
(U) Missile Procurement (PE 11113F)	2,175	2,002	1,855	1,926	2,002	2,062	2,125	n/a	n/a
(U) Mission Planning Systems (PE 28006F)	180	0	0	0	0	0	0	n/a	n/a

(U) D. Schedule Profile

	FY 1997				FY 1998				FY 1999				FY 2000			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(U) WCMD IOC						X										
(U) GPS TACAN IOC										X						
(U) ECM Improvement IOC														X		
(U) B-61 Mod 11 Flight Test Completed				X												

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0101113F B-52 Squadrons

PROJECT NO. AND NAME: 4401 Air Force Mission Support System

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	Cost to Complete	Total Cost
4401 Air Force Mission Support System	0	2,801	5,507	955	0	0	0	0	0	9,263

(U) A. Mission Description and Budget Item Justification

Air Force Mission Support System (AFMSS) previously funded out of the AFMSS program element. Develops an aircraft specific avionics/weapons/electronic countermeasures (A/W/E) module to be used in conjunction with core AFMSS. AFMSS is the replacement mission planning system for the current B-52 Mission Data Preparation System. AFMSS will provide future ground/inflight mission planning capability. Block 1 provides the capability to plan conventional gravity missions at the unit level. Block 2 provides the capability to plan nuclear weapons via AFMSS. Block 3 of this project will add smart weapons (like JASSM and JDAM) capabilities and enhancements to the first two AFMSS blocks. Provides funding for the Periodic Depot Maintenance of the B-52H test aircraft stationed at Edwards Air Force Base.

(U) FY 1995
- (U) $0 No activity

(U) FY 1996
- (U) $2,801 Block 2 nuclear software development
- (U) $2,801 Total

(U) FY 1997
- (U) $5,507 Block 3 conventional software development for advanced weapons and PDM for the B-52H test aircraft.
- (U) $5,507 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0101113F B-52 Squadrons
PROJECT NO. AND NAME 4401 Air Force Mission Support System	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	2,983	2,386	5,369
(U) Appropriated Value	0	2,983	0	2,983
(U) Adjustments to Appr Value (Undist Cong Reductions)	0	-182	0	-182
(U) Changes to Current Year Budget	0	0	3,121	3,121
(U) Current Budget Submit/President's Budget	0	2,801	5,507	8,308

(U) Change Summary Explanation:

Funding: $3,288 added to support Periodic Depot Maintenance of the B-52H test aircraft.

Schedule: None

Technical: None

(U) **C. Other Program Funding Summary ($ in Thousands) - Not applicable**

(U) **D. Schedule Profile**

The B-52 peculiar mission planning software development is accomplished and delivered incrementally. Each work package within a block build is treated as a mini-development with its own analysis, design, and test. The work packages are integrated with one another and with the AFMSS core. Requirements are continually evolving, however, the program is geared to complete known requirements by Feb 98.

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Contract award Block 2	X											
(U) Software development Block 2	X	X	X	X	X							
(U) Contract award Block 3					X							
(U) Software development Block 3					X	X	X	X				
(U) Test aircraft PDM					X							

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0101113F B-52 Squadrons

PROJECT NO. AND NAME: 4401 Air Force Mission Support System

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Software development	0	2,701	2,119
(U) System Program Office support	0	100	100
(U) OC-ALC/LH Program Depot Maintenance	0	0	3,288
(U) Total	0	2,801	5,662

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Oklahoma ALC/LAS	organic			5,775	0	0	2,701	2,119	955	5,775
Support and Management Organizations										
OKC ALC/LH	organic			200	0	0	100	100	n/a	3,488
OKC ALC/LH	organic			3,288				3288		
Test and Evaluation Organizations										
OO-ALC/LIRC	compatibility									
USAFAWC/28 TESTS	flight testing organic funds									

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0101113F B-52 Squadrons

PROJECT NO. AND NAME: 4370 Advanced Weapons Integration

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	Cost to Complete	Total Cost
4370 Advanced Weapons Integration	0	3,742	0	0	0	0	0	0	0	3,742

(U) A. **Mission Description and Budget Item Justification**

The requirement exists for the integration of near precision and precision guided MIL-STD 1760 weapons on the B-52. This includes the Wind Corrected Munitions Dispenser (WCMD), Joint Direct Attack Munition (JDAM), Joint Stand-off Weapon (JSOW) and the Joint Air-to-Surface Stand-off Missile (JASSM). The B-52 is designated as the bomber test platform for WCMD, JDAM, and JASSM with the objective of meeting aircraft integration and weapon testing requirements. To provide complete understanding of the program and its funding, the following information will reflect the money received from the WCMD, JDAM, and JASSM program elements for weapons integration on the B-52.

(U) FY 1995
- (U) $0 Total

(U) FY 1996
- (U) $3,742 Software/hardware requirements
- (U) $3,742 Total

(U) FY 1997
- (U) $0 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0101113F B-52 Squadrons
PROJECT NO. AND NAME 4370 Advanced Weapons Integration	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	3,977	0	3,900
(U) Appropriated Value	0	3,900	0	3,900
(U) Adjustments to Appropriated Value	0	-158	0	-158
(U) Changes to Current Budget Year	0	0	0	0
(U) Current Budget Submit/President's Budget	0	3,742	0	3,742

(U) Change Summary Explanation:

Funding: -$158K Undistributed Congressional Reductions

Schedule: None

Technical: None

(U) **C. Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	To Compl	Total Cost
(U) RDT&E (WCMD - PE 27600F)	2,250	4,300	3,500	n/a	10,050
(U) RDT&E (JDAM - PE 27583F)	2,650	4,500	6,500	n/a	13,650
(U) RDT&E (JASSM - PE 27160F)	0	2,000	8,500	10,900	21,400
(U) Aircraft Procurement (PE 11113F)	0	0	4,600	11,400	16,000
(U) Weapon Procurement (PE 27600F)	0	0	0	206,757	206,757

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0101113F B-52 Squadrons
PROJECT NO. AND NAME 4370 Advanced Weapons Integration	

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Direct Attack SMO												
(U) Contractor interface development	X	X	X	X								
(U) Software/hardware Req DT&E	X	X	X	X								
(U) Test planning	X	X	X	X	X	X	X					
(U) Technical data development		X	X	X	X	X						
(U) Ground/flight testing		X				X	X	X				
(U) AFMSS module DT&E	X	X	X	X	X	X						
(U) Program office support	X	X	X	X	X	X	X	X				
(U) Stand-off SMO												
(U) Contractor interface development	X	X	X	X								
(U) Software/hardware Req DT&E				X	X	X	X	X				
(U) Test planning	X	X	X	X	X	X	X	X				
(U) Technical data development							X	X				
(U) Ground/flight testing				X		X	X					
(U) AFMSS module DT&E						X	X	X				
(U) Program office support					X	X	X	X				

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Software/hardware requirements	0	3,742	0
(U) Total	0	3,742	0

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0101113F B-52 Squadrons
PROJECT NO. AND NAME 4370 Advanced Weapons Integration	

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Boeing Space and Defense Group Wichita KS	CPFF		3,742	0	0	3,742	0	0	n/a	3,742
Support and Management Organizations										
Test and Evaluation Organizations										

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0101113F B-52 Squadrons

PROJECT NO. AND NAME: 4371 Global Positioning System TACAN Emulation

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	Cost to Complete	Total Cost
4371 Global Positioning System TACAN Emulation	0	9,085	0	0	0	0	0	0	0	9,085

(U) A. **Mission Description and Budget Item Justification**

GPS TACAN Emulation includes installation of a Control Display Unit (CDU) at the pilot and copilot stations and the integration of current TACAN capabilities into the on-board GPS system. The TACAN Replacement System (TRS) will satisfy current TACAN emulation requirements directed by Congressional mandate and provide an architecture to expand/increase navigational capabilities/requirements planned by FAA and IOAC bodies.

(U) FY 1995

- (U) $0 No activity

(U) FY 1996

- (U) $1,400 System Requirement Review completion
- (U) $200 Preliminary Design Review completion
- (U) $1,900 Fabrication of lab demonstration system
- (U) $3,300 Fabrication of system mock-up
- (U) $2,000 Fabrication of prototype unit
- (U) $85 Critical Design Review
- (U) $200 Test and Evaluation
- (U) $9,085 Total

(U) FY 1997

- (U) $0 No activity

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0101113F B-52 Squadrons

PROJECT NO. AND NAME: 4371 Global Positioning System TACAN Emulation

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	9,545	0	9,545
(U) Appropriated Value	0	9,360	0	9,360
(U) Adjustments to Appr Value (Undistr Cong Reductions)	0	-275	0	-275
(U) Changes to Current Budget Year	0	0	0	0
(U) Current Budget Submit/President's Budget	0	9,085	0	9,085

(U) Change Summary Explanation:

Funding: $185 taken in FY96 for Undistributed Congressional Reductions.

Schedule: Schedule changes were necessary to provide concurrent R&D with GPS Line-Replaceable-Units (LRU) redesign effort. The requirement for 19 additional aircraft to receive NAVSTAR GPS provoked re-design of key Group B LRUs. The TRS new start provided an opportunity to combine the two efforts, reducing additional LRUs originally planned for TRS and incorporating requirements into a single, integrated design. Thus, instead of designing and fielding two separate systems (GPS and TRS), the software and hardware requirements will be integrated. Reducing engineering time and independent costs associated with each program.

Technical: Technical changes include eliminating the requirement for a separate Interface Unit for TACAN and integrating TACAN system requirements in the GPS Interface Unit, currently installed on NAVSTAR GPS equipped aircraft. This also eliminates the requirement for a Signal Data Converter to interface the GPS and TRS. The majority of TRS program requirements will affect software integration. The hardware requirements are essentially CDUs at the pilot and copilot positions and associated Group A necessary for installation.

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	To Compl	Total Cost
(U) Aircraft Procurement (PE 11113F)	0	0	4,800	28,500	33,300

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0101113F B-52 Squadrons
PROJECT NO. AND NAME 4371 Global Positioning System TACAN Emulation	

(U) **D. Schedule Profile**

	1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Contract award		X	X									
(U) Human resource interface on equipment placement		X	X									
(U) System Requirement Review documentation		X										
(U) Preliminary Design Review				X								
(U) Fabrication of upgraded development at contractor support facilities			X	X	X	X						
(U) Development of prototype unit					X	X	X					
(U) Ground/flight testing								X				

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0101113F B-52 Squadrons
PROJECT NO. AND NAME 4371 Global Positioning System TACAN Emulation	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) System Requirement Review completion	0	1,400	0
(U) Preliminary Design Review completion	0	200	0
(U) Fabrication of lab demonstration system	0	1,900	0
(U) Fabrication of system mock-up	0	3,300	0
(U) Fabrication of prototype unit	0	2,000	0
(U) Critical Design Review	0	85	0
(U) Test and evaluation	0	200	0
(U) Total	0	9,085	0

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0101113F B-52 Squadrons
PROJECT NO. AND NAME 4371 Global Positioning System TACAN Emulation	

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Boeing Space and Defense Group Wichita, KS	FFP	Feb 96	8,935		0	0	8,935	0	n/a	8,935
Support and Management Organizations										
OKC ALC/LH				50	0	0	50	0	n/a	50
WR ALC/LKN				50	0	0	50	0	n/a	50
OO-ALC/LIR				50	0	0	50	0	n/a	50
Test and Evaluation Organizations										

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property: None

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0101113F B-52 Squadrons

PROJECT NO. AND NAME: 4402 Electronic Countermeasures Improvement

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	Cost to Complete	Total Cost
4402 Electronic Countermeasures Improvement	0	0	4,921	0	0	0	0	0	0	4,921

(U) A. Mission Description and Budget Item Justification

The electronic countermeasures of the B-52 ALQ-172 ECM suite must be improved to cover a requirement identified during DESERT STORM. The improvement provides for an increased memory capability to handle advanced threats as well as correcting a coverage capability problem. The project adds a third ALQ-172 to the ECM suite and develops the new display required by the addition of the third system. The modification also improves two common core Line-Replaceable-Units. Normal circuit cards are replaced with circuit cards holding erasable PROMs and gate array modules. Memory is increased 400% and Mean-Time-Between-Failure is increased

(U) FY 1995
- (U) $0 No activity

(U) FY 1996
- (U) $0 No activity

(U) FY 1997
- (U) $150 System Requirement Review
- (U) $300 Fabrication of lab mock-up
- (U) $4,371 Developmental kit fabrication
- (U) $100 System Program Office support
- (U) $4,921 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0101113F B-52 Squadrons
PROJECT NO. AND NAME 4402 Electronic Countermeasures Improvement	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	0	5,071	5,071
(U) Appropriated Value	0	0	0	0
(U) Adjustments to Appropriated Value	0	0	-150	-150
(U) Changes to Current Budget Year	0	0	0	0
(U) Current Budget Submit/President's Budget	0	0	4,921	4,921

(U) Change Summary Explanation:

Funding: None

Schedule: None

Technical: None

(U) **C. Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	To Compl	Total Cost
(U) Aircraft Procurement (PE 11113F)	0	0	0	114,600	114,600

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Contract award					X							
(U) Kit proof								X				
(U) System Requirement Review								X				

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0101113F B-52 Squadrons
PROJECT NO. AND NAME 4402 Electronic Countermeasures Improvement	

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) System Requirement Review	0	0	150
(U) Mock-up fabrication	0	0	300
(U) Developmental kit proof	0	0	4,371
(U) System Program Office support	0	0	100
(U) Total	0	0	4,921

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0101113F B-52 Squadrons
PROJECT NO. AND NAME 4402 Electronic Countermeasures Improvement	

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Boeing Space and Defense Group Wichita, KS	FFP	Oct 96	4,521		0	0	0	4,521	n/a	4,521
ITT Avionics, Nutley, NJ	FFP	Oct 96	300					300	n/a	300
Support and Management Organizations										
OKC ALC/LH				50	0	0	0	50	n/a	50
WR ALC/LKN				50	0	0	0	50	n/a	50
Test and Evaluation Organizations										
419th FLTS Edwards AFB, CA	organic									

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property: None

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0101113F B-52 Squadrons
PROJECT NO. AND NAME 4493 B-61 Mod 11 Flight Tests	

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	Cost to Complete	Total Cost
4493 B-61 Mod 11 Flight Tests	0	0	607	0	0	0	0	0	4,518	5,125

(U) A. Mission Description and Budget Item Justification

The program involves development and testing of a modified nuclear weapon on B-52 operational aircraft. Replacement of a strategic weapon was recommended by the Nuclear Posture Review and directed by Presidential Decision Directive-30. Congress was notified during the second quarter of 1995, of the Department of Defense, and the Department of Energy intent to modify an existing weapon to provide a replacement option. Modifications (made by the Department of Energy) to the B-61 Mod 7 strategic bomb accomplish the mission requirements of the replaced weapon. Modification of an existing weapon is less expensive than the cost to develop a new weapon from "scratch." Flight testing by the 419th FLTS, Edwards AFB, CA is required to certify the modified weapon mass and physics properties are the same as the Mod 7 device. Program Budget Decision (PBD) 632 "Congressional Adjustments to Air Force Investment Appropriations stated that "since the Air Force does not have a documented requirement for the AGM-130 effort, and has not funded this effort, the $4.5M added by Congress in FY96 can be used to finance FY1997 B-52 development program requirements." Therefore $4.5M is deleted from the FY1997 budget. The money was taken from modification 4493 "B-61 Mod 11 Flight Tests. The following funding stream reflects the required program funding. Only flight testing of the DOE provided weapons can be performed with the remaining $607K.

(U) FY 1995
- (U) $0 No activity

(U) FY 1996
- (U) $0 No activity

(U) FY 1997
- (U) $51 Aerodynamic Analysis
- (U) $556 Flight testing
- (U) $607 Total

(U) B. Program Change Summary ($ in Thousands)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0101113F B-52 Squadrons

PROJECT NO. AND NAME: 4493 B-61 Mod 11 Flight Tests

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	0	5,125	5,125
(U) Appropriated Value	0	0	0	0
(U) Adjustments to Appropriated Value	0	0	0	0
(U) Changes to Current Year Budget	0	0	-4,518	-4,518
(U) Current Budget Submit/President's Budget	0	0	607	607

(U) Change Summary Explanation:

Funding: Funding realigned to satisfy approved military requirements.

Schedule: None

Technical: None

(U) **C. Other Program Funding Summary ($ in Thousands) - Not applicable**

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Aerodynamic Analysis					X							
(U) Flight tests with test drops					X							

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0101113F B-52 Squadrons
PROJECT NO. AND NAME 4493 B-61 Mod 11 Flight Tests	

(U) A. Project Cost Breakdown ($ in Thousands):

	FY 1995	FY 1996	FY 1997
(U) Aerodynamic Analysis	0	0	51
(U) Flight tests with test drops	0	0	556
(U) Total	0	0	607

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
DOE	organic		51		0	0	0	51	3,067	3,118
Test and Evaluation Organizations										
419th FLTS Edwards AFB, CA			556		0	0	0	556	n/a	556

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property: None

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0101113F B-52 Squadrons

PROJECT NO. AND NAME: 4494 AGM-130 Integration

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	Cost to Complete	Total Cost
4494 AGM-130 Integration	0	4,377	0	0	0	0	0	0	0	4,377

(U) A. Mission Description and Budget Item Justification

Congressional language inserted funding for the Air Force to integrate the AGM-130 standoff attack missile on the B-52 aircraft with a common pylon modification. Hq ACC/DRP established that ACC does not have a requirement for the AGM-130 missile on the B-52.

(U) FY 1995
- (U) $0 No activity

(U) FY 1996
- (U) $4,377 ACC/DRP has no requirement for the AGM-130 missile. The money will be realigned to satisfy approved military requirements.
- (U) $4,377 Total

(U) FY 1997
- (U) $0 No activity

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	0	0	0
(U) Appropriated Value	0	4,500	0	4,500
(U) Adjustments to Appr Value (Undistr Cong Reductions)	0	-123	0	-123
(U) Changes to Current Budget Year	0	-123	0	-123
(U) Current Budget Submit/President's Budget	0	4,377	0	4,377

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0101113F B-52 Squadrons
PROJECT NO. AND NAME 4494 AGM-130 Integration	

(U) Change Summary Explanation:

Funding: Congressional Appropriations bill added $4.5 million for integration of the AGM-130 missile on the B-52H. The funds will realigned to satisfy approved military requirements.

Schedule: None

Technical: None

(U) C. Other Program Funding Summary ($ in Thousands) - Not applicable

(U) D. Schedule Profile - Not applicable

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997

(U) not applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0101120F Advanced Cruise Missile

PROJECT NO. AND NAME: 3844 (U) Advanced Cruise Missile

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3844 (U) Advanced Cruise Missile	0	6,792	1,165	0	0	0	0	0	7,957

(U) A. **Mission Description and Budget Item Justification**

The ACM is a low-observable, air-launched, strategic missile with significant improvements over the ALCM-B in range, accuracy, and survivability. Armed with a W80 warhead, it is designed to evade air and ground-based defenses in order to strike heavily defended, hardened targets at any location within any potential enemy's territory. The ACM is designed for B-52H external carriage. Missile procurement is complete. FY 96, FY 97 and FY98 funds are required to complete the last 15% of mission support development work. This program is in budget activity 7, Operational System Development, because the program effort involves depot development.

(U) FY 1996 ($ in Thousands):
- (U) $2,197 Complete Sensor Depot Development
- (U) $1,539 Continue Software Depot Development
- (U) $2,064 Complete Guidance Depot Development
- (U) $ 992 Mission Support/Other
- (U) $6,792 Total

(U) FY 1997 ($ in Thousands):
- (U) $1,165 Complete Software Depot Development
- (U) $1,165 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0101120F Advanced Cruise Missile
PROJECT NO. AND NAME 3844 (U) Advanced Cruise Missile	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	7,060		
(U) Appropriated Value	0	7,060		
(U) Adjustments to Appropriated Value				
a. Congressional General Reductions		(137)		
b. SBIR		(76)		
c. Omnibus or Other Above Threshold Reprogram		(55)		
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY 95 PB			1,165**	
(U) Current Budget Submit/President's Budget	0	6,766	1,165**	7,957

(U) Change Summary Explanation:

Funding: The FY95 President's Budget did not contain program funding pending decision on depot support strategy. FY96/97 funding is required to complete development of sensor, guidance, and flight control software repair capabilities at the depot. FY97 money to complete software depot development ($1.2M) was transferred from FY97 Procurement (3020) Air Vehicles and Spares accounts.

** $1.2M minus $35,000 inflation reduction

Schedule: None
Technical: None

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0101120F Advanced Cruise Missile

PROJECT NO. AND NAME: 3844 (U) Advanced Cruise Missile

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Weapon Procurement (3020)									
(U) Budget Activity									
(U) 2. Air Vehicles	0	1,822	1,236	852	1,031	1,084	2,086		8,111
(U) 4. Spares	1,293	951	242	770	716	700	640		5,312
(U) Operations and Maintenance (3400)	18,244	14,286	16,462	16,394	17,571	17,420	17,107		117,484

(U) Related RDT&E (3600): None

(U) D. **Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Contract Milestones												
(U) Weapon System Support (WSS) Award												
(U) WSS Option 1 Award												
(U) Test Instrumentation Kit Award			X									
(U) Other Program Events												
(U) Depot Activation											X	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0101120F Advanced Cruise Missile
PROJECT NO. AND NAME 3844 (U) Advanced Cruise Missile	

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Depot Activation			
(U) Sensor Depot Test/Repair		2,197	
(U) Guidance Depot Test/Repair		2,064	
(U) Software Compiler Rehost		1,539	800
(U) Surveillance			
(U) Operational Test Launch Payloads			
(U) Redesign Test Payloads			
(U) Other Efforts			
(U) Support Contracts		517	296
(U) Mission Support		475	069
(U) Total		6,792	1,165

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0101120F Advanced Cruise Missile

PROJECT NO. AND NAME: 3844 (U) Advanced Cruise Missile

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

(U) Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
(U) Product Development Organizations										
Hughes MSC Tucson, AZ	SS/FPIF	May 92	16,914	16,914	15,946		1,764			17,710
Kearfott Wayne, NJ	SS/FFP	Aug 93	8,077	8,077	6,200		1,877			8,077
AGMC	PO	Oct 94/ Sep 96			3,361		620			3,981
OC-ALC	PO	Oct 94/ Dec 96			3,135		1,539	800		5,474
SA-ALC	PO	Oct 94			25					25
Miscellaneous					6,907					6,907

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE: March 1996
BUDGET ACTIVITY: 7 - Operational System Development			PE NUMBER AND TITLE: 0101120F Advanced Cruise Missile		
PROJECT NO. AND NAME: 3844 (U) Advanced Cruise Missile					
(U) Support and Management Organizations					
Logistics CAAS	Time/ Material	Jan 95	1,943	262	118	2,323
Miscellaneous CAAS		Dec 94	599	255	178	1,032
DSO Mission Support			3,165	475	69	3,709
(U) Test and Evaluation Organizations : Not Applicable						
(U) Government Furnished Property: Not Applicable						
(U) Subtotal Product Development			35,574	5,800	800	42,174
(U) Subtotal Support and Management			5,707	992	365	7,064
(U) Subtotal Test and Evaluation						
(U) Total Project			41,281	6,792	1,165	49,238

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0102325F Joint Surveillance System

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	2,661	4,582	13,239	15,824	19,927	15,582	4,858	Continuing	TBD
2976 Joint Surveillance System-Connectivity (JSS-C)	662	637	611	633	638	681	691	Continuing	TBD
2996 FAA/AF Radar Replacement (FARR)	1,999	3,945	12,628	15,191	19,289	14,901	4,167	Continuing	TBD

(U) A. **Mission Description and Budget Item Justification**

The Joint Surveillance System (JSS) provides command, control and communications (C^3) capability in support of NORAD's Atmospheric Tactical Warning and Attack Assessment (ATW/AA) air sovereignty, and air defense requirements. The JSS Connectivity (JSS-C) program provides improvements to this capability by integrating new sensor data and enhancing communications capabilities via the Advance Interface Control Unit (AICU). The Region and Sector Operations Control Center (R/SOCC) Modernization program will provide a modernized C4I system with enhanced capability to integrate data from existing and future civil and military defense surveillance systems into a comprehensive recognized air picture to enhance NORAD's capability to conduct peacetime air sovereignty, transition and conventional warfare in the event of aggression toward the North American Continent. The current system has reached saturation in its capability to receive, process, display, exchange, and employ air surveillance data from current sensor systems. In some cases, it has exceeded processing and displaying capacity, thus contributing to delayed C4I decisions. The outdated technology has become increasingly difficult and costly to maintain. The FAA/Air Force Radar Replacement (FARR) program will replace 40 existing JSS radars with solid-state, three-dimensional ARSR-4 radars to improve mission performance and reduce operation and maintenance costs. The JSS-C portion of this PE falls under Budget Activity 7 research category 6.7 Operational System Development, as it is a system being deployed to the operational community to solve an operational deficiency in the existing operational system and is post Milestone Three. The FARR portion of this program element also falls under Budget Activity 7 Operational System Development as it has received approval for production.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0102325F Joint Surveillance System

(U) **Acquisition Strategy:**

Management for the R/SOCC Modernization is by ESC, AFMC, Hanscom AFB, MA. The R/SOCC Modernization acquisition is currently being refined in preparation of the MS II decision. Development of the system will be executed through full and open competition. Management of the JSS Connectivity is by the Electronic Systems Center, Air Force Materiel Command, Hanscom AFB, MA. The prime contractor for the AICU is TRW, Aurora, CO. Enhanced Traffic Management System (ETMS), Department of Transportation, Cambridge, MA provides the AICU with flight plan information from FAA sources. The Federal Aviation Administration (FAA) is the lead acquisition agency for the FAA/AF Radar Replacement Program in accordance with a 19 November 1984 sub-agreement (as amended by Amendment 1, dated 1 September 1988) to FAA/AF National Agreement (NAT) 711. The FAA and the Air Force have established a joint Program Office at HQ, FAA, Washington, DC for this procurement. Westinghouse Corporation, Linthicum, MD is the prime contractor for the FARR program.

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	2,719	4,711	4,400	TBD
(U) Appropriated Value	2,770	4,711		
(U) Adjustments to Appropriated Value				
a. General Congressional Reduction	-51	-129		
b. Below Threshold Reprogramming	-1			
c. SBIR	-57			
d. Omnibus and Ahove Threshold Reprogramming				
(U) Adjustments to the Budget since FY96 PB				
a. General POM Reductions/increases			339	
b. R/SOCC Modernization			8,500	
(U) Current Budget Submit	2,661	4,582	13,239	TBD

(U) Change Summary Explanation:

Funding:

(FY97) $8.5 million addition for R/SOCC modernization

Schedule: None

Technical: None

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0102325F Joint Surveillance System

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Other Procurement AF Total	14,336	553	0	135	65	12,953	5,629	TBD	TBD
Budget Activity 3 WSC 838010	14,059	0	0	0	0	0	0	0	14,059
Budget Activity 3, WSC 83790A	0	0	0	0	0	0	0	0	0
Budget Activity 4, WSC 84590A	277	0	0	0	0	0	0	0	277
Budget Activity 6, WSC 86190A	0	553	0	135	65	0	0	TBD	TBD
R/SOCC Modernization Procurement	0	0	0	0	0	12,953	5,629	TBD	TBD

Related RDT&E:

(U) None

(U) D. **Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) ECP-5 (Config Record)												
(U) QOT&E	x											
(U) FOT&E		x										
(U) CONUS FOC			x									
(U) Automated Air Movement Data System IOC					x							
(U) Advanced Interface Control Unit FOC						x						
(U) FARR Operational Readiness Date										x		
(U) R/SOCC Modernization Milestone I				x								
(U) R/SOCC Modernization Milestone II								x				
(U) R/SOCC Modernization Contract Award									x			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0102325F Joint Surveillance System

PROJECT NO. AND NAME: 2976 Joint Surveillance System-Connectivity (JSS-C)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2976 Joint Surveillance System-Connectivity (JSS-C)	662	637	611	633	638	681	691	Continuing	TBD

(U) A. **Mission Description and Budget Item Justification**

The JSS Connectivity provides improvements to Atmospheric Tactical Warning and Attack Assessment (ATW/AA), air sovereignty, and air defense command, control, and communications (C^3) by integrating new sensor data and enhancing communications capabilities.

(U) FY 1995 ($ in Thousands)
- (U) 244 Provided program office support.
- (U) 281 Provided system engineering support.
- (U) 137 Provided system integration support for AAMDS.
- (U) 662 Total

(U) FY 1996 ($ in Thousands)
- (U) 50 Provide program office support.
- (U) 89 Provide system engineering support for AAMDS.
- (U) 11 Provide system integration support for Enhanced Traffic Management System (ETMS) in support of AAMDS.
- (U) 280 R/SOCC Modernization System Engineering Support
- (U) 207 R/SOCC Modernization Program Office Management and Technical Support
- (U) 637 Total

(U) FY 1997 ($ in Thousands)
- (U) 611 R/SOCC Modernization Program Office Management and Technical Support
- (U) 611 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0102325F Joint Surveillance System
PROJECT NO. AND NAME 2976 Joint Surveillance System-Connectivity (JSS-C)	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	662	650	640	TBD
(U) Appropriated Value	662	650		
(U) Adjustments to Appropriated Value				
a. General Congressional Reduction		-13		
b. Below Threshold Reprogramming				
c. SBIR				
(U) Adjustments to Budget Years Since FY96 PB			-29	
(U) Current Budget Submit	662	637	611	TBD

(U) Change Summary Explanation:

Funding: None

Schedule: None

Technical: None

(U) **C. Other Program Funding Summary ($ in Thousands)**

Not Applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0102325F Joint Surveillance System

PROJECT NO. AND NAME: 2976 Joint Surveillance System-Connectivity (JSS-C)

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) ECP-5 (Config Record)												
(U) QOT&E	x											
(U) FOT&E		x										
(U) CONUS FOC			x									
(U) Automated Air Movement Data System IOC				x								
(U) Advanced Interface Control Unit FOC						x						
(U) R/SOCC Modernization Contract Award									x			

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0102325F Joint Surveillance System

PROJECT NO. AND NAME: 2976 Joint Surveillance System-Connectivity (JSS-C)

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) System Engineering Support (AICU)	418	100	0
(U) System Engineering Support (R/SOCC)	0	280	0
(U) Program Office Support (AICU)	244	50	0
(U) Program Office Support (R/SOCC)	0	207	611
(U) Total	662	637	611

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations	None									
Support and Management Organizations										
TEMS	Various Contracts	Ongoing	(AICU) (R/SOCC)		2,601	406	89 220	611	Continuing	TBD
Miscellaneous	Various Contracts	Ongoing	(AICU)		256	256	37		Continuing	TBD
MITRE	F19628-94-C-0001	Ongoing	(R/SOCC)				291	0		
Test and Evaluation Organizations	None									
Total Project					2,857	662	637	611	Continuing	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0102325F Joint Surveillance System

PROJECT NO. AND NAME: 2996 FAA/AF Radar Replacement (FARR)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2996 FAA/AF Radar Replacement (FARR)	1,999	3,945	12,628	15,191	19,289	14,901	4,167	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

The FAA/Air Force Radar Replacement (FARR) program will replace 40 existing JSS radars with solid-state, three dimensional ARSR-4 radars to improve mission performance and reduce operation and maintenance costs. This includes technical radar site surveys and interface engineering in preparation for system installation, test, and checkout.

(U) FY 1995 ($ in Thousands)
- (U) 435 Provided program office
- (U) 1,029 Contractor/Systems Engineering.
- (U) 535 Continued site preparation, radar production, installation, test and system checkout.
- (U) 1,999 Total

(U) FY 1996 ($ in Thousands)
- (U) 346 Provide program office support.
- (U) 1,252 Continue test support for FARR JPO.
- (U) 503 Continue radar production, installation, test and system checkout.
- (U) 1,844 Continue interoperability evaluations and commissioning support.
- (U) 3,945 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0102325F Joint Surveillance System
PROJECT NO. AND NAME 2996 FAA/AF Radar Replacement (FARR)	

(U) FY 1997 ($ in Thousands)

–	(U)	552	Provide program office support.
–	(U)	1,234	Continue test support for FARR Joint Program Office (JPO).
–	(U)	286	Continue radar production, installation, test and system checkout.
–	(U)	1,688	Continue interoperability evaluations and commissioning support.
–	(U)	1,176	R/SOCC Modernization System Engineering Support.
–	(U)	605	R/SOCC Modernization Program Office Management and Technical Support
–	(U)	650	R/SOCC Modernization Program Office Support
–	(U)	6,437	ROCC/SOCC Modernization Prime Contact.
–	(U)	12,628	Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	2,057	4,061	3,760	TBD
(U) Appropriated Value	2,108	4,061		
(U) Adjustments to Appropriated Value				
a. General Congressional reduction	-51			
b. Below Threshold Reprogramming	-1			
c. SBIR	-57			
d. General POM Reduction/increases		-116	368	
e. R/SOCC Modernization			8,500	
(U) Current Budget Submit	1,999	3,945	12,628	TBD

(U) Change Summary Explanation:

Funding:

(FY97) $8.5 million addition for R/SOCC modernization

Schedule: None

Technical: None

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0102325F Joint Surveillance System

PROJECT NO. AND NAME: 2996 FAA/AF Radar Replacement (FARR)

(U) C. Other Program Funding Summary ($ in Thousands) Not Applicable

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Factory Test Complete												
(U) Preliminary Acceptance 1st Test Site												
(U) Reliability Test 1st Test Site												
(U) Developmental Testing & Evaluation (DT&E)	x											
(U) Operational Testing & Evaluation (OT&E)	x											
(U) First Operational Readiness Date					x							
(U) Final Acceptance of Systems 21-26					x							
(U) Final Acceptance of Systems 27-33						x						
(U) Final Acceptance of Systems 34-40							x					
(U) FARR Operational Readiness Date												
(U) R/SOCC Modernization Contract Award									x			

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0102325F Joint Surveillance System

PROJECT NO. AND NAME: 2996 FAA/AF Radar Replacement (FARR)

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Systems Engineering	316	644	448
(U) Systems Engineering			1,176
(U) Contractor Engineering Support	713	1,200	1,240
(U) Installation/Tests	535	1,755	1,520
(U) Program Management support	435	346	552
(U) R/SOCC Modernization Program Management and Technical Support			605
(U) R/SOCC Modernization Program Office Support			650
(U) R/SOCC Modernization Prime Contract			6,437
(U) Total	1,999	3,945	12,628

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0102325F Joint Surveillance System

PROJECT NO. AND NAME: 2996 FAA/AF Radar Replacement (FARR)

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
ESC								6,437	Continuing	TBD
Support and Management Organizations										
MITRE	F19628-94-C-0001	Ongoing	(FARR) (R/SOCC)		2,612	356	644	448 991	Continuing	TBD
TEMS	Various	Ongoing	(FARR)		1,669				Continuing	TBD
Martin Marietta	MDA903-89-C-0059	Ongoing	(FARR)		3,475	723	1,200	1,240	Continuing	TBD
Miscellaneous	Various	Ongoing	(FARR) (R/SOCC)		507	334	346	737 650	Continuing	TBD
TEMS (R/SOCC)								605		
Test and Evaluation Organizations										
Various					2,246	586	1,755	1,520	Continuing	TBD
Subtotal Product Development					0	0	0	6,437	Continuing	TBD
Subtotal Support and Management					8,263	1,413	2,190	4,671	Continuing	TBD
Subtotal Test and Evaluation					2,246	586	1,755	1,520	Continuing	TBD
Total Project					10,509	1,999	3,945	12,628	Continuing	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0102411F Surveillance Radar Stations/Sites (SRS)

PROJECT NO. AND NAME: 2980 North Atlantic Defense Sys (NADS)

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2980 North Atlantic Defense Sys (NADS)	3,980	8,502	5,278	5,311	0	0	0	0	66,633

(U) **A. Mission Description and Budget Item Justification**

This program provides improvements to command, control, and communications (C3) and air surveillance capabilities in Iceland. The Control Reporting Center (CRC) and air surveillance radars support air defense requirements in the strategically important Greenland-Iceland-Norwegian gap. The program is a joint program with NATO funding infrastructure while the U.S. funds cryptographic capabilities, system engineering and integration activities. The program is in budget activity 7 since it supports improvements to these currently operational systems.

(U) FY 1995 ($ in Thousands)
- (U) 1,276 Provided Program Office Support.
- (U) 2,256 Provided systems engineering support for IADS.
- (U) 448 Completed in plant DT&E.
- (U) 3,980 Total*

(U) FY 1996 ($ in Thousands)
- (U) 2,358 Provide Program Office Support.
- (U) 3,880 Provide systems engineering support for IADS.
- (U) 2,264 Perform on island DT&E & OT&E.
- (U) 8,502 Total

(U) FY 1997 ($ in Thousands)
- (U) 1,670 Provide Program Office Support.
- (U) 2,774 Provide systems engineering support for IADS.
- (U) 834 Complete support for Operational Testing & Evaluation (OT&E).
- (U) 5,278 Total

* FY95 RDT&E total does not reflect $1.732 million in NATO funds to support Systems Engineering.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0102411F Surveillance Radar Stations/Sites (SRS)
PROJECT NO. AND NAME 2980 North Atlantic Defense Sys (NADS)	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget (FY1996)	3,852	9,351	5,532	67,847
(U) Appropriated Value	4,191	9,351		
(U) Adjustments to Appropriated Value				
a. Congressional General Reduction	-339	-393		
b. Below Threshold Reprogramming	210			
c. SBIR	-81	-299		
d. Omnibus and other Above Threshold Reprogrammings		-157		
(U) Adjustments to the Budget since FY96 PB	-1		-254	
(U) Current Budget Submit	3,980	8,502	5,278	66,633

(U) Change Summary Explanation:

Funding:

FY97 Inflation adjustment (-254)

Schedule: None

Technical: None

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0102411F Surveillance Radar Stations/Sites (SRS)
PROJECT NO. AND NAME 2980 North Atlantic Defense Sys (NADS)	

(U) C. **Other Program Funding Summary ($ in Thousands)**

(U) D. **Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) First Computer Software Config. Test												
(U) Ground-Air-Ground Radio Checkout												
(U) Control Reporting Center Building Complete												
(U) Tech Manual Validation			*									
(U) Inplant Test Complete				x								
(U) Initial Software Delivery				x								
(U) First Intercept Complete						x						
(U) Development Test & Evaluation Complete								x				
(U) Functional Configuration Audit (CA)/Physical CA								x				
(U) Begin Operator Training								x				
(U) Complete Operational Test & Evaluation												x
(U) System Acceptance												x

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0102411F Surveillance Radar Stations/Sites (SRS)
PROJECT NO. AND NAME 2980 North Atlantic Defense Sys (NADS)	

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Engineering Support	2,256	3,880	2,774
(U) Test and Evaluation Support	448	2,264	834
(U) Program Support	1,276	2,358	1,670
(U) Total	3,980	8,502	5,278

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0102411F Surveillance Radar Stations/Sites (SRS)
PROJECT NO. AND NAME 2980 North Atlantic Defense Sys (NADS)	

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
ESC									0	
Support and Management Organizations										
MITRE	F19628-94-C-0001	Oct 94			29,962	2,256	3,880	2,774	1,650	40,522
TEMS	Various Contracts	Jun 94			12,388	1,276	1,083	604	680	16,031
Miscellaneous	Various Contracts				1,202		1,275	1,066	2,481	6,024
Test and Evaluation Organizations										
Various					10	448	2,264	834	500	4,056
Subtotal Product Support					0	0	0	0	0	
Subtotal Support and Management					43,552	3,532	6,238	4,444	4,811	62,577
Subtotal Test and Evaluation					10	448	2,264	834	500	4,056
Total Project					43,562	3,980	8,502	5,278	5,311	66,633

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0102412F North Warning System

PROJECT NO. AND NAME: 2710 North Warning System (NWS)

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2710 North Warning System (NWS)	1,991	982	0	0	0	0	0	0	12,742

(U) A. Mission Description and Budget Item Justification

This program provides air surveillance capability and tactical warning of bomber or cruise missile attack against the North American continent through a Distant Early Warning (DEW) Line extending from Alaska to Labrador. This warning provides the National Command Authorities with time for decision making and survival actions, permitting the launch of strategic retaliatory and command and control aircraft for survival, as well as the ability to alert air defense fighters to intercept attacking aircraft. Due to its age (1957 initial deployment), the DEW Line is increasingly difficult and costly to operate and maintain. The North Warning System (NWS) program replaces the aging DEW Line and will eliminate low-altitude coverage gaps, improve radar performance, and reduce operation and maintenance costs. RDT&E funds provide for the deployment, installation, integration and testing of Unattended Radars (UARs) and Minimally Attended Radars (MARS) in order to provide tactical warning/attack assessment for northern air attack approaches to North America. RDT&E funds also support development kits to correct spectrum prototype as other residual activities. The continuing requirement for NWS coverage was revalidated by CINCNORAD in FY93. The NWS is a joint US/Canadian program. The program is funded in Budget Activity 7 as it supports upgrades to the currently operational system.

(U) FY 1995 ($ in Thousands)
- (U) 342 Continued program office, system and technical engineering support.
- (U) 148 Continued deployment/site integration.
- (U) 226 Supported post-deployment activities, residuals, and contract deficiencies.
- (U) 1,275 Spectrum Prototype
- (U) 1,991 Total

(U) FY 1996 ($ in Thousands)
- (U) 427 Continue program office technical engineering support.
- (U) 555 Support post deployment residuals (Spectrum).
- (U) 982 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0102412F North Warning System
PROJECT NO. AND NAME 2710 North Warning System (NWS)	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget (FY1997)	2,035	1,015	930	13,782
(U) Appropriated Value	2,068	1,015		
(U) Adjustments to Appropriated Value				
a. Congressional General Reduction	-33	-23		-56
b. Below Threshold Reprogramming	-1			-1
c. SBIR	-43	-10		-53
(U) Adjustments to Budget since FY96 PB			-930	-930
(U) Current Budget Submit/President's Budget	1,991	982	0	12,742

(U) Change Summary Explanation:

FY97-Completion of Program

Schedule: None

Technical: None

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0102412F North Warning System
PROJECT NO. AND NAME 2710 North Warning System (NWS)	

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Other Procurement, AF	0	0	5,048	578	095	0	0	0	5,721
(U) Budget Activity 3, WSC 83810	0	0	5048	578	095	0	0	0	5,721

NOTE: All Other Procurement, AF funds are for Comm Elec Mods - modifications to AN/FPS-117 Long Range Radar. Radar Modifications will take place in FY96/97.

(U) D. **Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) AN/FPS-124 Production (Complete)												
(U) Alaska (AK) Facilities Construction												
(U) System Testing (Less Antenna) (Complete)												
(U) Antenna Testing (Complete)												
(U) AK Communications												
(U) Deployment	*											
(U) AK Facilities Construction/Checkout	*											
(U) AK Comm Installed	x											
(U) AK Radars Installation & Checkout	x											
(U) AK Maintenance Control & Communications Center (MC^3) Construction (Complete)												
(U) AK MC^3 Equipment Install												
(U) Spare parts procurement						x	x	x	x	x	x	x
(U) RMS Testing/Evaluation/Studies							x	x	x	x	x	
(U) Spectrum Prototype Award			x									
(U) Spectrum Prototype Test							x					

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0102412F North Warning System
PROJECT NO. AND NAME 2710 North Warning System (NWS)	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Program Management Support	342	265	0
(U) Systems Engineering	0	214	0
(U) Contractor Engineering Support	0	503	0
(U) Spectrum Prototype	1,275	0	0
(U) Reliability, Maintainability,& Availability	374	0	0
(U) Total	1,991	982	0

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0102412F North Warning System

PROJECT NO. AND NAME: 2710 North Warning System (NWS)

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
UNISYS	FFP	Oct 90			577	1,275				1,852
ESC									0	
Support and Management Organizations										
MITRE	F19628-94-C-0001	Ongoing			4,246		214	0	0	4,460
TEMS	Various	Ongoing			4,104	301	503	0	0	4,908
Miscellaneous		Ongoing			842	415	265	0	0	1,522
Test and Evaluation Organizations										
None										
Subtotal Product Support					577	1,275	0	0	0	1,852
Subtotal Support and Management					9,192	716	982	0	0	10,890
Subtotal Test and Evaluation					0	0	0	0	0	
Total Project					9,769	1,991	982	0	0	12,742

(U) **Government Furnished Property:** Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207129F F-111 Squadrons

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	4,422	568	0	0	0	0	0	0	123,555
3079 Digital Flight Control System (DFCS)	4,236	568	0	0	0	0	0	0	75,484
1332 Back Injury Reduction Program (BIRP)	19	0	0	0	0	0	0	0	9,242
1930 Stores Management System (SMS)	167	0	0	0	0	0	0	0	38,829

(U) A. Mission Description and Budget Item Justification

(U) This program provides funds to develop improved systems for the F-111F/EF-111A aircraft. These improvements maintain the weapon system as a safe, reliable, and maintainable aircraft. The F-111F fleet will be retired in FY96. The EF-111A is programmed to be retired in FY98. Requested funds complete corrections to flight discrepancies on safety modifications and pay RDT&E related termination costs. This program is Operational System Development because it develops upgrades to an operational system.

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	4,667	597	0	127,684
(U) Appropriated Value	4,671	597		
(U) Adjustments to Appropriated Value	-249	-29		
a. Cong Gen Reductions	-52			
b. SBIR	-97	-12		
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogramming	-100	-17		
(U) Changes to Current Year Budget				
(U) Current Budget Submit/President's Budget	4,422	568	0	123,555

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207129F F-111 Squadrons

(U) Change Summary Explanation:

Funding: Of the $4.671 million appropriated in FY95 for the F/EF-111 program, $4.422 million was available after adjustments. Based on early Congressional language, $852,000 was initially placed on Air Force Withhold for safety modifications. Subsequent Congressional language stated $1.254 million would be unencumbered by any restrictions. That money was obligated on three projects within the F/EF-111 program. Currently, $3.169 million has been placed in Air Force Withhold to be used only for safety modifications for the F/EF-111 aircraft. These funds can be used only after justification is provided to Congress by the Secretary of the Air Force.

1) Back Injury Reduction Program (BIRP) was fully funded with FY94 dollars except $19,000 FY95 money used to support testing and conduct final briefings to ACC.

2) Stores Management System (SMS) program was terminated upon notification F-111F would be retired. Program termination actions resulted in decreased funding requirements.

3) Digital Flight Control funding increased initially as a result of changes required to resolve problems identified in DT&E. Money appropriated within the F/EF-111 program for SMS and BIRP was shifted to DFCS. Because of Congressional restrictions, the DFCS program in FY95 was adjusted to reflect the restrictions. $1.067 million has been obligated for DFCS in FY95. In addition, $3.169 million has been placed in Air Force Withhold pending requirement for safety modifications

Schedule: N/A

Technical: DFCS incorporates a hardware/software change which improves the Ground Collision Avoidance System characteristics in the F-111/EF-111. Additionally, there are several improvements to self-test and fault monitoring functions. Scope of this engineering change reduced to absolute minimum due to impending weapon system retirement.

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Aircraft Procurement (BP 1100)	200								

(U) D. Schedule Profile

	FY 1995				FY 1996						FY 1997
	2	3	4	1	2	3	4	1	2	3	4
(U) DFCS Flight Test Program	X	X	X	X	X	X					
(U) Back Injury Reduction Program	X	X	X								
(U) Stores Management System - N/A, program terminated											

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207129F F-111 Squadrons

PROJECT NO. AND NAME: 3079 Digital Flight Control System (DFCS)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3079 Digital Flight Control System (DFCS)	4,236	568	0	0	0	0	0	0	75,484

(U) **A. Mission Description and Budget Item Justification**

DFCS is a permanent safety modification that replaces the electronic portion of the F/EF-111A flight control system with a modern state-of-the-art digital computer and sensors. It improves the critical interfaces to the flight control system by incorporating the on-board autopilot, low altitude monitor, and terrain following radar systems.

(U) FY 1995 ($ in Thousands):
- (U) $1,067 ECP 3326 Kitproof and Initiate OT&E
- (U) $3,169 Congressionally Restricted, on withhold pending Congressional Approval to Use as Safety Modification
- (U) $4,236 Total

(U) FY 1996 ($ in Thousands):
- (U) $243 Complete ECP3326 flight test
- (U) $325 Incorporate flight test results in ECP3326
- (U) $568 Total

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	4,236	597		71,103
(U) Appropriated Value	4,236	597		71,103
(U) Adjustments to Appropriated Value	0	-29		
(U) Changes to Current Year Budget				
(U) Current Budget Submit/President's Budget	4,236	568		75,483

(U) Change Summary Explanation:

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207129F F-111 Squadrons
PROJECT NO. AND NAME 3079 Digital Flight Control System (DFCS)	

Funding: Digital Flight Control System (DFCS) funding increased as a result of changes required to resolve problems identified in DT&E. Of the $1.254 million FY95 money unencumbered by Congress, $1.067 million was programmed for DFCS. Funding request includes estimate of program termination costs.

Schedule: See below

Technical: Additionally, there are several improvements to self-test and fault monitoring functions. Scope of this engineering change reduced to absolute minimum due to impending weapon system retirement.

(U) C. Other Program Funding Summary ($ in Thousands):

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Aircraft Procurement (BP 1100)	200	0						0	55,100

(U) D. Schedule Profile:

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Flight Test	X	X			X							
(U) LFW DT&E Deficiency Analysis	X	X										
(U) LFW Proposal for Ch 1 to ECP 3326		X										
(U) ECP 3326 Kitproof		X										
(U) OFP Flight Test Complete						X						
(U) LFW Kits Delivered							X					
(U) Operational Installation of ECP3326							X	X	X	X		

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207129F F-111 Squadrons

PROJECT NO. AND NAME: 3079 Digital Flight Control System (DFCS)

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996
(U) Contractor Engineering Support	199	263
(U) Flight Test	309	133
(U) Travel	103	50
(U) Program Management Support	322	5
(U) Government Engineering Support	134	0
(U) Miscellaneous	0	117
(U) Contract and Program Termination	0	0
(U) Congressionally Restricted - Safety Modifications	3,169	0
(U) Total	4,236	568

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
(U) Lockheed FW	FFPI	23 Jan 86	35,481	35,481	35,481	0	0	0	0	35,481
Product Development Organizations										
(U) Lockheed FW	CET	FY 94/3	974	974	390	384	30	0	0	974

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207129F F-111 Squadrons

PROJECT NO. AND NAME: 3079 Digital Flight Control System (DFCS)

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
(U) Lockheed FW	FFPI	23 Jan 86	35,481	35,481	35,481	0	0	0	0	35,481
Support and Management Organizations										
(U) SM-ALC	Form 206	FY 94/4	35,834	35,834	35,424	700	375	0	0	4,967
Test and Evaluation Organizations										
(U) SM-ALC	Form 206	FY 94/4	2,239	2,239	1,849	1,067	133	0	0	4,227
(U)27FW(OT&E)	Form 616	FY 95/2	200	200	0	200	50	0	0	200

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property:

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
N/A									

Product Development Property: N/A

Support and Management Property: N/A

Test and Evaluation Property: N/A

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207129F F-111 Squadrons

PROJECT NO. AND NAME: 3079 Digital Flight Control System (DFCS)

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
N/A									
Subtotal Product Development				390	199	60			
Subtotal Support and Management				762	559	375			
Subtotal Test and Evaluation				791	309	162			
Congressionally Restricted				0	3169	0			
Total Project				1,943	4,236	567			75,484

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207129F F-111 Squadrons

PROJECT NO. AND NAME: 1332 Back Injury Reduction Program (BIRP)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
1332 Back Injury Reduction Program (BIRP)	19	0	0	0	0	0	0	0	9,242

(U) A. **Mission Description and Budget Item Justification:** Technical budget and scheduling risks forced termination of the larger F-111 Main Recovery Parachute Program in 1993. ACC directed an investigation into exploring other means of reducing F-111 aircrew ejection back injuries. This investigation includes studies investigating: crew module weight reduction, energy absorbing seats, improved impact attenuation bag, stability enhancements to the current 70' diameter recovery parachute, and the optimum combination of the above technologies in terms of back injury reduction and cost benefit.

(U) FY 1995 ($ in Thousands):
- (U) $19 Program support, to report program results to ACC.
- (U) $19 Total

(U) FY 1996 ($ in Thousands): N/A

(U) FY 1997 ($ in Thousands): N/A

(U) B. **Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	1,004	0	0	12,962
(U) Appropriated Value	1,004	0	0	12,962
(U) Adjustments to Appropriated Value	-985			-985
(U) Changes to Current Year Budget				
(U) Current Budget Submit/President's Budget	19	0	0	11,977

(U) Change Summary Explanation:

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207129F F-111 Squadrons
PROJECT NO. AND NAME 1332 Back Injury Reduction Program (BIRP)	

Funding: Program tasks were fully funded using FY94 funds with the exception of $19,000 FY95 funds being used for mission support to terminate program.

Schedule: N/A

Technical: N/A

(U) **C. Other Program Funding Summary ($ in Thousands):** Not Applicable

(U) **D. Schedule Profile**

	FY 1995				FY 1996			
	1	2	3	4	1	2	3	4
(U) F-111 BIRP	X	X	X	X				
(U) Issue Task to Lockheed Ft Worth								
(U) Issue Project Orders to Test Centers								
(U) Request/Evaluate Prototype Proposals								
(U) Conduct Parachute Testing	X	X						
(U) Impact Attenuation Bag Test			X	X				
(U) Conduct Energy Absorbing Seat Test	X	X						
(U) Crew Module Wt Reduction Study	X							
(U) Conduct Opt Combination Study	X	X	X	X				
(U) LFW Issue Final Report to SM-ALC				X				
(U) SM-ALC Brief Findings to ACC				X				

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207129F F-111 Squadrons

PROJECT NO. AND NAME: 1332 Back Injury Reduction Program (BIRP)

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996
(U) Contract Engineering Task (Lockheed Ft Worth)	0	0
(U) Travel	19	0
(U) NASA Testing	0	0
(U) Government Engineering	0	0
(U) Miscellaneous	0	0
(U) Total	19	0

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
(U) LFW	CET	14 Jun 94	1,415	1,415	1,415	0	0	0	0	1,415
(U) GD	CET	14 May 92	3,547	3,547	0	0	0	0	0	3,547
(U) Ervin Indstry	Service Contract	24 Feb 92	1,315	1,315	1,315	0	0	0	0	1,315
Support and Management Organizations										
(U)SM-ALC/LAF	TDY Orders	Various	95	95	75	19	0	0	0	94
Test and Evaluation Organizations										
(U) NASA Test	Project Order	14 Mar 91	843	843	843	0	0	0	0	843
(U) Wright Labs	Project Order	28 Jun 91	40	40	40	0	0	0	0	40
(U) China Lake	NAWCPO	27 Mar 91	1,801	1,801	1,801	0	0	0	0	1,801
(U) Holloman	Project Order	4 Jan 91	187	187	187	0	0	0	0	187

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207129F F-111 Squadrons
PROJECT NO. AND NAME 1332 Back Injury Reduction Program (BIRP)	

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property:

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Property: N/A									
Support and Management Property: N/A									
Test and Evaluation Property: N/A									
Subtotal Product Development				6,277	0	0		0	6,277
Subtotal Support and Management				75	19	0		0	95
Subtotal Test and Evaluation				2,871	0	0		0	2,871
Total Project				9,223	19	0		0	9,242

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207129F F-111 Squadrons

PROJECT NO. AND NAME: 1930 Stores Management System (SMS)

COST (*$ In Thousands*)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
1930 Stores Management System (SMS)	167	0	0	0	0	0	0	0	38,829

(U) A. Mission Description and Budget Item Justification: The decision to retire the F-111 has resulted in the termination of this program. The termination includes canceling sub-contracts, restoring some test equipment to original configuration, and eliminating the organic workforce.

(U) FY 1995 ($ in Thousands):
- (U) $167 Complete program termination
- (U) $167 Total

(U) FY 1996 ($ in Thousands): N/A

(U) FY 1997 ($ in Thousands): N/A

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Previous President's Budget	9,881	5,006	0
(U) Appropriated Value	9,881	0	0
(U) Adjustments to Appropriated Value	-9714	-5006	0
(U) Current Budget Submit/President's Budget	167	0	0

(U) Change Summary Explanation:

Funding: Decreased requirements in FY95, and FY96 are the result of program termination

Schedule: N/A

Technical: N/A

(U) C. Other Program Funding Summary ($ in Thousands): N/A

(U) D. Schedule Profile: N/A

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207129F F-111 Squadrons

PROJECT NO. AND NAME: 1930 Stores Management System (SMS)

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995
(U) Primary Hardware Reconfiguration	32
(U) Program Management Support	25
(U) Program Management Personnel	110
(U) Training Development	0
(U) Systems Engineering	0
(U) Software Development	0
(U) Tech Data	0
(U) Operational Test & Evaluation	0
(U) Total	167

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
(U) SM-ALC			31,575	31,575	31,575	0	0	0	0	31,575
(U) Various, <$1M each			3,281	3,281	2,916	32	0	0	0	2,948
(U) SM-ALC/TIS	PO	Oct 94	1,567	1,567	1,567	0	0	0	0	1,567
Support and Management Organizations										
(U) Various, <$1M each			1,095	1,095	960	135	0	0	0	1,095
Test and Evaluation Organizations										
(U) Various, <$1M each			1,644	1,644	1,644	0	0	0	0	1,644

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207129F F-111 Squadrons
PROJECT NO. AND NAME 1930 Stores Management System (SMS)	

(U) B. **Budget Acquisition History and Planning Information Continued ($ in Thousands)**

Government Furnished Property:

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
N/A									
Product Development Property: N/A									
Support and Management Property: N/A									
Test and Evaluation Property: N/A									
Subtotal Product Development				36,000	32	0		0	36,032
Subtotal Support and Management				1,018	135	0		0	1,153
Subtotal Test and Evaluation				1,644	0	0		0	1,644
Total Project				38,662	167	0		0	38,829

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207133F F-16 Squadrons

PROJECT NO. AND NAME: 2671 F-16 Squadrons

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2671 F-16 Squadrons	133,227	164,230	142,202	118,890	116,736	160,204	165,024	TBD	TBD

(U) A. **Mission Description and Budget Item Justification**

(U) The F-16 fighter aircraft program satisfies the need for modernization of the USAF and allied multimission tactical fighter forces. The F-16 is a single-engine, single-seat, multirole tactical fighter with full air-to-air and air-to-surface combat capabilities. The F-16 complements the F-15 in counter-air missions and as the primary aircraft in the surface attack role. The F-16C/D program develops, integrates, and qualifies systems to enhance the overall performance of the F-16 mission.

(U) The F-16 program also develops enhanced combat capability in both the air-to-ground and air-to-air role. Improvements (all within the FYDP) include completion of the Mid-Life Update (MLU) Program, the Modular Mission Computer (MMC), Block 30 GPS Integration, Smart Weapons Integration, and Pratt & Whitney 229 Engine design improvements. The planned program also develops Close Air Support (CAS) enhancements for 250 Block 40 C/D by integrating Night Vision lighting and Alternate VHF Antenna. The F-16C/D development efforts are complemented by comprehensive Operational Flight Program (OFP) upgrades.

(U) To meet the need beyond the turn of the century, a Mid-Life Update (MLU) of aircraft avionics is being conducted by our European partners. MLU involves various mods to European F-16A/B, including the Modular Mission Computer (MMC), which USAF Block 50s will eventually employ. The MMC will extend the cost effective life of the F-16 through replacement of three Line Replaceable Units and the addition of significant memory and processing growth provisions. The latest version of the F-16C/D has significantly improved display processors, enabling increased pilot situational awareness. Efforts are underway to upgrade the IDM data link capability on the Block 50 aircraft with the latest version of the High Speed Anti-Radiation Missile (HARM). The program includes enhancements to the HARM Targeting System to enable the F-16 Block 50 to better perform in the Suppression of Enemy Air Defenses role.

(U) The F-16, which received Milestone III approval in FY 1977, is an operational aircraft. Since the development activities in this PE support an operational aircraft, these development activities are funded in the Operational System Development budget activity seven.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207133F F-16 Squadrons
PROJECT NO. AND NAME 2671 F-16 Squadrons	

(U) FY 1995

–	(U) $15,700	Continued MLU EMD (Install MLU kits in trial verification installation aircraft)
–	(U) $25,800	Continued MMC Upgrade for Block 50
–	(U) $6,225	Continued (from FY 1993) MMC M2 Tape Upgrade
–	(U) $21,670	Started Block 40 Close Air Support (CAS) EMD effort
–	(U) $39,470	Started Flight Tests Developmental Test & Evaluation (DT&E)
–	(U) $14,742	Government Test/Support
–	(U) $9,620	Other (See R-3)
–	(U)	Total

$133,227

(U) FY 1996

–	(U) $17,274	Continue MLU EMD
–	(U) $29,984	Continue MMC computer upgrade
–	(U) $27,997	Continue F-16 Block 40 CAS EMD
–	(U) $12,906	Initiate Block 30 Global Positioning System
–	(U) $6,950	Initiate Smart Weapons integration
–	(U) $28,337	Continue Flight Tests DT&E
–	(U) $39,064	Continue (from FY95 Procurement) Operational Flight Program updates
–	(U) $1,718	Other (See R-3)
–	(U)	Total

$164,230

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207133F F-16 Squadrons
PROJECT NO. AND NAME 2671 F-16 Squadrons	

(U) **A. Mission Description and Budget Item Justification - Continued**

(U) FY 1997

- (U) $2,680 Complete Mid-Life Update Engineering and Manufacturing Development (EMD)
- (U) $16,700 Continue Modular Mission Computer
- (U) $16,538 Continue F-16 Close Air Support EMD
- (U) $7,940 Continue Block 30 Global Positioning System
- (U) $12,020 Continue Smart Weapons integration
- (U) $55,193 Continue Operational Flight Program
- (U) $26,700 Continue Flight Tests Developmental Test & Evaluation
- (U) $4,431 Other (See R-3)
- (U) Total

$142,202

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	134,236	175,600	152,785	TBD
(U) Appropriated Value	138,657	175,600		
(U) Adjustments to Appropriated Value				
a. Below Threshold Reprogrammings	-1,009			
b. General Congressional Reductions	-1,528	-3,439		
c. Small Business Innovative Research (SIBR)	-2,893	-4,221		
d. Bosnia Bill		-1,876		
e. Recission (F-16s to Jordan)		-1,834		
(U) Adjustments to Budget Since FY96 PB				
a. O&M Reduction			-761	
b. Electronic Combat Integrated Test Facility			-1,300	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207133F F-16 Squadrons
PROJECT NO. AND NAME 2671 F-16 Squadrons	

	FY 1995	FY 1996	FY 1997	Total Cost
c. Transfer to F-15 for Accelerating ALQ-135 Band 3			-4,200	
d. Inflation Adjustment			-4,322	
(U) Current Budget Submit/President's Budget	133,227	164,230	142,202	TBD

(U) B. Program Change Summary ($ in Thousands) - Continued

(U) Change Summary Explanation:

Funding: Reduces net of $27,383 RDT&E funds in FY94-97. This net decrease includes:

- $1,009 decrease in FY95 for Below Threshold Reprogrammings
- $1,876 decrease in FY 96 for Bosnia Bill
- $1,834 decrease for Omnibus/Other Above Threshold Reprogramming (Reprogramming for F-16s to Jordan)
- $4,322 decrease in FY 97 for Inflation Adjustment
- $4,967 decrease in FY 95-96 for General Congressional Reductions
- $2,061 decrease in FY97 for Other PBD/Budget Exercise Changes
- $4,200 decrease in FY97 for F-15 ALQ-135 Band 3 Acceleration (funds shifted to F-15 PE)
- $7,114 decrease in FY 95-96 for SIBR

Schedule: Some Block 30 CAS development tasks slipped to FY02 as directed by the user to fund higher priority programs.

- Support Equipment: Reduced maintenance capability as a result of not keeping test stands current with mods.
- Unit Training Devices (UTDs): The trainers will not be current with the latest software releases (i.e., 40T5 for Bk 40s). UDTs cut by 85% in 96.
- Flight Tests: Inability to handle "pop-up" tests such as Project Sure Strike
- Integrated Modular Avionics (IMA)/LINK 16: FICOP II funds for IMA (LINK 16) will be insufficient on a dollar-for-dollar basis with the cuts.

Technical: The Block 40 CAS development effort will not integrate a Laser Spot Tracker equipped Low Altitude Navigation and Targeting InfraRed for Night (LANTIRN) pod.

PE 0207133F, F-16 SQUADRONS, AIRCRAFT PROCUREMENT (APPN 3010), AF	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Aircraft Weapon Systems (BP1000)	79,719	153,991	105,500					TBD	TBD
(U) Aircraft Initial Spares (part of BP1600)	7,796	6,402	0	0	0	0	0	TBD	TBD
(U) Modifications (BP 1100)	113,300	117,090	118,278	230,291	255,898	245,903	234,087	TBD	TBD
(U) Post Production Support (BP1300)		122,326	81,562	19,736	28,687	16,634	13,822	TBD	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207133F F-16 Squadrons
PROJECT NO. AND NAME 2671 F-16 Squadrons	

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) ENGINEERING MILESTONES:												
Mid-Life Update (MLU) HdWr CDR												
Modular Mission Computer (MMC) PDR												
Blk 50T3 FCA/PCA	X											
Blk 50T4 SDR												
MLU CDR	X											
MMC Avionics CDR					X							
Blk 50T4 CDR	X											
Blk 25/30 Software (SW) Update SCU-2	X											
F-16 Close Air Support (CAS) SRR	X											
F-16A/B SW Update Z2 FCA/PCA					X							
Blk 50T5 and M2 Authorization							X					
Blk 40 CAS Airframe CDR					X							
Blk 40 CAS SW CDR						X						
Blk 25/30 SCU-3					X							
Blk 50T4 FCA/PCA									X			
Blk 50T5 CDR											X	
(U) T&E MILESTONES												
Flight Tests Dev Test & Eval (DT&E)	*											
Blk 40 CAS DT&E Start										*		
MLU DT&E Start				*								
MMC DT&E Start						*						
(U) CONTRACT MILESTONES												
Continue MLU												
Continue MMC												
Blk 40 CAS												

X=Effort Completed *=Effort Started

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207133F F-16 Squadrons
PROJECT NO. AND NAME 2671 F-16 Squadrons	

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Pratt & Whitney 229 Engine	3,000	1,100	993
(U Support Equipment			
(U) Unit Training Devices (UDTs)		500	3,377
(U) Government Test/Support	14,742	118	61
(U) Government Furnished Test Equipment	1,100		
(U) Quick Reaction Capability	3,500		
(U) Flight Tests Developmental Test & Evaluation	39,470	28,337	26,700
(U) Mid-Life Update	15,700	17,274	2,680
(U) Block 40 Close Air Support	21,670	27,997	16,538
(U) Modular Mission Computer (MMC)	25,800	29,984	16,700
(U) MMC Operational Flight Program (OFP) Development	6,225		
(U) OFP Upgrades		39,064	55,193
(U) Smart Weapons Integration		6,950	12,020
(U) Blk 30 Global Positioning System (GPS) Integration		12,906	7,940
(U) Blk 30 GPS Pre-Integration	970		
(U) Main Fuel Shutoff Valve			
(U) Mission Planning	900		
(U) APG-Fire Control	150		
(U) Total	133,227	164,230	142,202

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207133F F-16 Squadrons
PROJECT NO. AND NAME 2671 F-16 Squadrons	

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Mid-Life Update (MLU) Airframe Kit Development -- Lockheed-Martin Tactical Aircraft Systems (LMTAS)										
LMTAS (Au)	SS/CPIF	Jan 92	71,956	73,100	58,042	11,300	3,764	0	0	73,100
LMTAS (Unau)				12,768	0	1,228	11,500	40	0	12,768
MLU Radar Kit Development										
WEC (Au)	SS/CPIF	Mar 92	11,149	11,769	9,250	1,592	385	542	0	11,769
All Other MLU-Related Activities										
Misc Contractors					6,164	1,580	1,625	2,098	0	11,467
Modular Mission Computer (MMC)										
LMTAS	SS/CPIF	Jan 92	243,900	253,100	195,959	23,465	21,000	8,762	TBD	TBD
MMC Operational Flight Program Development (OFP)										
LMTAS	SS/CPIF	Sep 94	17,225	17,225	11,000	6,225				17,225
Other MMC-Related Activities					3,318	2,335	8,984	7,938	0	22,575
Main Fuel Shutoff Valve										
LMTAS	SS/FPIF	Mar 95	497	497						497
Government Furnished Equipment Loan Payback										
LMTAS	SS/FPIF	Sep 95	1,100	1,100		1,100				1,100
Propulsion										
P&W	SS/FFP	Dec 94	96,493	96,493	91,400	3,000	1,100	993	0	96,493
Quick Reaction Capability										
LMTAS	SS/FFP	Sep 95	3,500	3,500		3,500				3,500

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207133F F-16 Squadrons

PROJECT NO. AND NAME: 2671 F-16 Squadrons

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Comet/AISF										
TBD	TBD	2Q96			157,900	0	0	0	0	157,900
Unit Training Devices (UTDs)										
TBD	1Q96						500	3,377	TBD	TBD
Blk 40 Close Air Support (CAS)										
LMTAS	SS/T&M	Feb 95	25,318	25,318	3,648	21,670				25,318
LMTAS	SS/CPIF	Apr 96			0	0	27,997	20,860	TBD	TBD
OFP Updates										
LMTAS		Dec 95					39,064	55,193	TBD	TBD
Smart Weapons Integration										
TBD	TBD	3Q96					6,950	12,020	TBD	TBD
Avionics Upgrades										
LMTAS	SS/FFP				5,000					5,000
Multinational Staged Improvement Program (Phase IV)										
TBD	TBD	1Q98							TBD	TBD
Joint Helmet Mounted Cueing System										
TBD	TBD	1Q00							TBD	TBD
AIM-9X Integration (Blk 50/52)										
TBD	TBD	1Q01							TBD	TBD
BLK 30 Global Positioning System (GPS)										
TBD	TBD	2Q96					12,906	7,940	8,353	29,199
Blk 30 GPS Pre-Integration										
LMTAS	SS/FPIF	Sep 95	970	970		970				970
Other Complete Contracts										
					943,130					943,130

Support and Management Organizations

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207133F F-16 Squadrons

PROJECT NO. AND NAME: 2671 F-16 Squadrons

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
F-16 SPO (In-House Support)					162,574	13,448	0	8	TBD	TBD
Other AF/DoD/ Contractor Spt					87,306	2,344	118	53	TBD	TBD
Test and Evaluation Organizations										
Flight Tests										
Government	Proj Orders	Jan 95	195,531	195,531		29,057	19,337	13,378	TBD	TBD
Contractors										
LMTAS	SS/CPIF	Feb 95	63,000	63,000		10,413	9,000	9,000	TBD	TBD
Government Furnished Property:	**Not Applicable**									
Subtotal Product Development					1,485,302	135,775	119,763	TBD	TBD	
Subtotal Support and Management					249,880	118	61	TBD	TBD	
Subtotal Test and Evaluation						28,337	22,378	TBD	TBD	
Total Project					1,735,182	164,230	142,202	TBD	TBD	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207134F F-15E Squadrons

PROJECT NO. AND NAME: 0131 Total Program Element Cost

COST ($ In Thousands)	FY 1995 Actual	1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
0131 Total Program Element Cost	108,611	160,288	143,095	114,523	96,230	110,827	102,489	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

(U) The F-15E is the most versatile fighter in the world today. Configured with conformal fuel tanks (CFTs), the F-15E can deploy worldwide with minimal tanker support and arrive combat-ready. The F-15E retains air superiority capability and adds systems, such as Low Altitude Navigation Targeting Infrared for Night (LANTIRN), to meet the requirement for all-weather, deep penetration, and night/under-the-weather, air-to-surface attack. However, the threat includes a new generation of aircraft possessing all-weather detection and kill capabilities. The F-15E's avionics, armament, airframe, and engines must be improved to maintain its superiority against the threat into the next century. Avionics updates, exploiting proven technological advances, are being incorporated into the F-15E providing expanded capability and supporting an updated and fully integrated electronic warfare suite. As a result, this project develops enhanced offensive and defensive capability and survivability. Additionally, overall combat capability is increased by integration of a Very High Speed Integrated Circuit (VHSIC) Central Computer (CC). (The F-15E PE also funds RDT&E activities for PE # 0207130, F-15A-D). The F-15E, which received contract award approval in FY84, is an operational aircraft and therefore the development activities in the PE are included in Budget Activity 7, Operational Systems Development.

(U) FY 1995

- (U) $3,808 Continue development and testing of the improvements initiated in FY 1994 and prior.
- (U) $57,540 Continue development and testing of F-15 improvements including ECCM, GPS, APG-63 radar, and VHSIC.
- (U) $1,357 Continue R&D engineering efforts to support F-15E AISF.
- (U) $8,228 Provide program office support.
- (U) $29,488 Continue development and flight test of the OFP and flight testing of improvements initiated in prior years.
- (U) $2,220 Continued improvements to -229 engine.
- (U) $5,970 Software development, airframe component qualification, and flight test preparation for GE-129 engine.
- (U) $108,611 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207134F F-15E Squadrons
PROJECT NO. AND NAME 0131 Total Program Element Cost	

(U) FY 1996

–	(U) $83,514	Continue development and testing of F-15 improvements including GPS, ECCM, and APG-63 radar.
–	(U) $34,235	Continue OFP development efforts.
–	(U) $7,700	Continue development of improvements attributed to parts obsolescence.
–	(U) $0,827	Repair government furnished equipment used for R&D.
–	(U) $1,900	Continue development of -229 engine improvements.
–	(U) $17,883	Continue flight test of the OFP and flight testing of improvements initiated in prior years.
–	(U) $1,229	Complete software development, airframe component qualification, and flight test preparation for GE -129 engine.
–	(U) $13,000	Expand development of the Programmable Armament Control Set (PACS) Upgrade.
–	(U) $160,288	Total

(U) FY 1997

–	(U) $62,200	Continue development and testing of F-15 improvements including ECCM and APG-63 radar.
–	(U) $39,200	Continue OFP development efforts.
–	(U) $7,200	Continue improvements attributed to parts obsolescence.
–	(U) $1,044	Repair government furnished equipment used for R&D.
–	(U) $1,000	Continue development of -229 engine improvements.
–	(U) $20,451	Continue flight test of the OFP and flight testing of improvements initiated in prior years.
–	(U) $12,000	Continue Programmable Armament Control Set (PACS) Upgrade.
–	(U) $143,095	Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207134F F-15E Squadrons
PROJECT NO. AND NAME 0131 Total Program Element Cost	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	105,111	171,337	130,061	Continuing
(U) Appropriated Value	108,562	171,337		
(U) Adjustments to Appropriated Value				
a. BTR	-499			
b. General Congressional Reductions	-1,185	-3,355		
c. SBIR	-2,266	-4,074		
d. Omnibus and other ATR		-3,620		
(U) Adjustments to Budget since FY96 PB	3,999		17,383	
			-4,349	
(U) Current Budget Submit/President's Budget	108,611	160,288	143,095	

(U) Change Summary Explanation:

Funding: $17.383 million added in FY97 for flight test of OFP suites and other modifications. $3.999M added in FY95 for software development, airframe component qualification, and flight test preparation for GE-129 engine. $4.349 cut in FY97 due to inflation adjustment.

Schedule: No changes

Technical: No changes

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207134F F-15E Squadrons
PROJECT NO. AND NAME 0131 Total Program Element Cost	

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Aircraft Procurement BP10 (PE0207134F)	20,251	349,138	185,442	0	0	0	0	TBD	TBD
(U) Aircraft Procurement BP11(Mods)	183,245	87,285	179,318	242,181	245,568	251,095	239,620	TBD	TBD
(U) Aircraft Procurement BP13 (Post Prod Spt)	0	6,742	11,080	8,229	8,254	8,271	8,327	TBD	TBD
(U) Aircraft Procurement BP16 (Initial Spares)	26,806	52,572	16,235	39,684	39,762	38,181	31,422	TBD	TBD

(U) D. **Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) AF Mission Support System Training Completion						X						
(U) PACS CDR Complete								X				
(U) PACS DT&E Start												X
(U) ECCM OT&E Fight Test						X						
(U) OFP Suite 3												
(U) MSIP DT&E Start								X				
(U) E-Model DT&E Start								X				
(U) MSIP Release										X		
(U) E-Model Release												X
(U)APG-63 CDR							X					
(U)APG-63 Ground Integration Test Start											X	
(U) GE-129 Engine Qual Test Complete										X		

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207134F F-15E Squadrons

PROJECT NO. AND NAME: 0131 Total Program Element Cost

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Flight Test	28,131	17,883	21,876
(U) OFP	1,357	34,235	37,775
(U) ECCM	2,741	2,100	900
(U) Mission Support	8,228	0	0
(U) APG-63v1/Antenna Study	51,492	79,600	61,300
(U) AF Mission Support System (AFMSS)	3,291	0	0
(U) GPS	3,307	1,814	0
(U) GFE/GFP Repair	0	827	1,044
(U) Falcon -229	2,220	1,900	1,000
(U) Parts Obsolescence	0	7,700	7,200
(U) PACS Upgrade	0	13,000	12,000
(U) Development for GE -129 Engine	5,970	1,229	0
(U) Avionics Integrated Support Facility (AISF)	1.357	0	0
(U) Miscellaneous	517	0	0
(U) Total	108,611	160,288	143,095

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207134F F-15E Squadrons
PROJECT NO. AND NAME 0131 Total Program Element Cost	

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
McAir/Eglin/ Wright Labs			4,154	4,154	3,642	0,517				4,159
McAir (ECCM)	CPFF	Feb 94	9,850	9,850	4,109	2,741	2,100	0,900		9,850
McAir (AFMSS)	CPFF	Aug 92	14,791	14,791	11,500	3,291				14,791
McAir (SFDR)	CPFF	Jun 88			5,575					5,575
McAir (GPS)	FFP	Mar 94	7,707	7,707	2,300	3,307	1,814			7,421
P&W (-229 Eng)	CPAF	Sep 94	6,520	6,520	1,400	2,220	1,900	1,000		6,520
GE (-129 Eng)			7,199	7,199		5,970	1,229			7,199
McAir (GFE/GFP)	FFP	Dec 93	5,405	5,405	0,500	0	0,827	1,044	3,054	5,425
OFP Development			240,080	240,080	3,300	1,357	34,235	39,200	160,188	238,280
McAir APG63 (Feasibility Study)	CPFF	Feb 94	0,778	0,778	0,778					0,778
(Risk Reduction)	CPFF	Feb 94	9,892	9,892	9,892					9,892
(EMD)	CPAF	Sep 94	234,628	234,628	4,336	51,492	79,600	61,300	37,900	234,628
McAir (HMCS A-D)			14,400	14,400					14,400	14,400
PACS Upgrade		May 95	26,682	26,682			13,000	12,000	1,682	26,682
Wright Lab (Parts obsolescence)	MIPR/PRs	Sep 94	36,147	36,147	4,346	0	7,700	7,200	16,901	36,147
McAir (AIM9X)			14,200	14,200					14,200	14,200

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207134F F-15E Squadrons

PROJECT NO. AND NAME: 0131 Total Program Element Cost

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
JDAM			63,300	63,300					63,300	63,300
ADP(E)			5,617	5,617					5,617	5,617
MPDP(E)			18,400	18,400					18,400	18,400
Halon Rep (A-D)			5,000	5,000					5,000	5,000
Support and Management Organizations										
(Mission Support)	Misc.				8,480	8,228	0	0	0	16,708
Test and Evaluation Organizations										
McAir (Flt Test)	FFP	Oct 96			26,145	11,065	4,400	9,000	37,500	88,110
Loral (Flt Test)	FFP				1,400					1,400
Edwards (OFP)	PO	Oct 96			7,592	15,700	11,783	11,451	64,808	111,334
Eglin (Flt Test)	PO	Oct 96			1,546	2,723	1,700		6,500	12,469

(U) **B. Budget Acquisition History and Planning Information Continued ($ in Thousands)**

Government Furnished Property: Not Applicable

Subtotal Product Development	51,678	142,405	122,644	340,642	728,264
Subtotal Support and Management	8,480	0	0	0	16,708
Subtotal Test and Evaluation	36,683	17,883	20,451	108,808	213,313
Total Project	96,841	160,288	143,095	449,450	958,285

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207136F Manned Destructive Supression

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	36,233	10,354	12,384	11,914	2,365	473	380	380	Continuing	TBD
4375 F-15 Manned Destructive SEAD (MDS)	36,233	0	0	0	0	0	0	0	0	44,209
2671 F-16 HARM Targeting System (HTS) See Note	0	5,792	12,384	11,914	2,365	473	380	380	Continuing	TBD
4516 Light Defender	0	4,562	0	0	0	0	0	0	0	5,484

(U) **A. Mission Description and Budget Item Justification**

This program funds the development and procurement of the Air Force's Manned Destructive Suppression of Enemy Air Defenses (SEAD) capability. The AGM-88 High-Speed Anti-Radiation Missile (HARM) is the primary weapon for SEAD. The program allows certain F-16 aircraft to carry and employ the HARM. The Block 50 F-16C has been modified to carry the AN/ASQ-213 HARM Targeting System (HTS). This system allows real-time, "range known" HARM employment. This capability is necessary due to the phase out of the F-4G Wild Weasel. The F-15 was to be modified with the Precision Direction Finding (PDF) system, but this effort was terminated in the FY96 BES due to fiscal constraints and better than expected capability reports from units equipped with the fielded F-16 HTS. Also, the Air Force began studying the Preemptive Destruction of Enemy Air Defenses in Jan 94 under PE 0605808F, Development Planning. The Preemptive Destruction program evaluates weapons and decoys that aid in the destruction of enemy air defenses before they can engage friendly aircraft. The program is scheduled for a Milestone I/II review in 3Q FY97. Because this program element provides for the development of upgrades for the F-15 and F-16 (both are operational weapons systems that have received Milestone III approval) funding is included in the Budget Activity/Research Category Operational Systems Development.

(U) **B. Program Change Summary ($ in Thousands)**	FY 1995	FY 1996	FY 1997	Total
(U) Previous President's Budget	36,233	2,908	0	TBD
(U) Appropriated Value	37,422	10,908		
(U) Adjustments to Appropriated Value				
a. General Congressional Reductions:	(408)	(214)		
d. SBIR:	(781)	(231)		
c. Omnibus or Other Above Threshold Reprogramming				
d. Below Threshold Reprogramming		(109)		
(U) Adjustments to Budget Years Since FY96 PB			12,384	TBD
(U) Current Budget Submit/President's Budget	36,233	10,354	12,384	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207136F Manned Destructive Supression

(U) **B. Program Change Summary ($ in Thousands)** - (Continued)

(U) Change Summary Explanation:

Funding: The Air Force increased funding to upgrade the F-16's HARM Targeting System (HTS). Congress also increased the PE's appropriation by $8,000,000 during the FY96 Appropriations Conference: $5,000,000 for Light Defender and $3,000,000 for the HTS upgrade.

- HTS: The AF increased RDT&E funding $31,000,000 beginning in FY97 to upgrade the F-16 HTS. Congress approved an $11,100,000 transfer from the F-15 MDS project and added $3,000,000 to the AF's FY96 PB to allow the AF to begin the HTS upgrade in Feb 96. Estimated total RDT&E for the HTS upgrade is $45,000,000.
- Light Defender: Light Defender will be evaluated as a foreign comparative test under PE 0605130D. This project was initially funded in FY95 as part of the Preemptive Destruction project using funds from the terminated F-15 Manned Destructive Suppression project. Congress increased the FY96 PB $5,000,000 to expand the scope of the Light Defender foreign comparative test to include operational testing.

Schedule:

- AF began an HTS upgrade in Feb 96. AF linked the HTS upgrade to the F-16 Operational Flight Program (OFP) schedule to achieve HTS IOC in FY99.
- Light Defender test planning began in Sep 95, and testing is expected to continue through mid-late FY97.
- AF terminated the F-15 MDS production program in Jul 95. A restructured F-15 Dem/Val was awarded Mar 96 to provide risk reduction information for other suppression programs such as the Navy's competition for a Joint Emitter Targeting System. The restructured Dem/Val expects to complete in 4Q FY96

Technical: The AF completed the technical evaluation of HTS upgrade options in Jun 95 and began the HTS upgrade in Feb 96. The AF also returned the sustaining engineering costs mistakenly dropped during the 96 President's Budget to provide continued integration of HTS for minor HTS or F-16 software updates.

(U) **C. Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) HTS Aircraft Procurement, AF PE 0207136F	Note 1	3,142	108	9,192	397	202	197	Continuing	TBD
(U) HTS Ops & Maintenance, AF PE 0207136F	Note 1	4,693	4,789	5,183	4,769	3,192	2,881	Continuing	TBD
(U) Foreign Comparative Tests, OSD PE 0605130D	78	2,700						0	2778

Related RDT&E: PE 0207130F, F-15C Squadrons; PE 0207133F, F-16 Squadrons; PE 0605808F, Development Planning; PE 0207134F, F-15E Squadrons; PE 0605130D, Foreign Comparative Tests

Notes: FY95 and prior year HTS funding reported under a separate program element. The exceptions are $5,400,000 RDT&E reprogrammed into this PE from FY93 & FY94 and $11,100,000 FY95 RDT&E realigned to the HTS project in FY96.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207136F Manned Destructive Supression

U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997				FY 1998			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(U) F-15 PDF Demonstration/Validation								X								
(U) F-16 HTS R5 Software Development						X										
(U) F-16 HTS Upgrade Development						*										
(U) Light Defender FCT					*							X				

PDF = Precision Direction Finding
HTS = HARM Targeting System
FCT = Foreign Comparative Test

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207136F Manned Destructive Supression

PROJECT NO. AND NAME: 4375 F-15 Manned Destructive SEAD (MDS)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	Cost to Complete	Total Cost
4375 F-15 Manned Destructive SEAD (MDS)	36,233	0	0	0	0	0	0	0	0	44,209

(U) **A. Mission Description and Budget Item Justification**

The Manned Destructive Suppression (MDS) program provides funds for the development and procurement of the Air Force's planned systems to suppress enemy air defenses. The AGM-88 High-Speed Anti-Radiation Missile (HARM) is the primary weapon for MDS. This project provided the F-15 aircraft the capability to carry and employ the HARM. This capability was necessary due to the phase-out of the F-4G Wild Weasel. The F-15 was to be modified with a Precision Direction Finding (PDF) system to allow real-time HARM employment. This effort was terminated due to fiscal constraints and better than expected capability reports from units equipped with the fielded F-16 HARM Targeting System.

Project Type
New Start
X Termination
Not Applicable

(U) FY 1995

–	(U)	$14,565	Complete PDF Demonstration/Validation.
–	(U)	$ 7,000	Initiated Programmable Armament Control Set (PACS) upgrade portion of the HARM Integration project. Effort Completed in PE 0207134F
–	(U)	$1,896	Started PDF COEA but redirected efforts to F-16 alternatives studies and the Navy's Joint Emitter Targeting System COEA
–	(U)	$750	Mission Support.
–	(U)	$24,211	Project Subtotal
–	(U)	$922	Initiated Light Defender Foreign Comparative Test
–	(U)	$11,100	Realigned with HARM Targeting System to accelerate the HTS Upgrade.
–	(U)	$36,233	Total

(U) FY 1996: Not applicable (PACS Upgrade continues and is transferred to PE 0207134F, F-15E Squadrons)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207136F Manned Destructive Supression

PROJECT NO. AND NAME: 4375 F-15 Manned Destructive SEAD (MDS)

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget (FY96)	36,233	0	0	
(U) Appropriated Value	37,422			
(U) Adjustments to Appropriated Value				
a. General Congressional Reductions:	(408)			
b. SBIR:	(781)			
(U) Adjustments to Budget Years Since FY96 PB	(12,022)			
(U) Current Budget Submit/President's Budget	24,211	0	0	44,209

(U) Change Summary Explanation:

Funding: AF realigned $11,100,000 to HTS project due to the termination of F-15 MDS project. The PE retained funding to support the study of alternatives to F-15 MDS as well as to related suppression efforts such as Light Defender and the PACS upgrade. The PACS upgrade project transitioned to the F-15 PE 0207134F in FY96. $922,000 initiated in FY95 under this project for the Light Defender FCT supports the Preemptive Destruction project.

Schedule: Due to the termination of the production F-15 MDS program the F-15 Dem/Val was restructured to provide risk reduction information that will support other suppression programs such as the Navy's competition for a Joint Emitter Targeting System. The restructured Dem/Val expects to complete in 4Q FY96.

Technical: The restructured F-15 MDS Dem/Val limits the planned effort to a 9 sortie flight demonstration of low cost conformal antenna technology combined with two emitter location technologies to support the preemptive destruction mission.

(U) **C. Other Program Funding Summary ($ in Thousands)**

Related RDT&E: PE 0207130, F-15C Squadrons; PE 0207134, F-15E Squadrons; PE 0605808, Development Planning; PE 0605130D, Foreign Comparative Tests

(U) **D. Schedule Profile:** Restructure of the F-15 MDS Dem/Val delayed completion until 4Q FY96.

	FY 1995				FY 1996				FY 1997				FY 1998			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(U) F-15 PDF Demonstration/Validation				X												
(U) Flight Demonstration (Jul-Aug 96)			X													

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207136F Manned Destructive Supression
PROJECT NO. AND NAME 4375 F-15 Manned Destructive SEAD (MDS)	

(U) A. **Project Cost Breakdown ($0 in Thousands)**

		FY 1995	FY 1996
(U)	Precision Direction Finding (PDF):		Program Terminated
	Hardware Development	4,430	
	Software Development	8,575	
	Systems Engineering/Program Management	1,560	
(U)	Programmable Armament Control Set (PACS) Upgrade:		Project Transferred to F-15 PE 0207134F
	Hardware Development	2,300	
	Software Development	3,700	
	Systems Engineering/Program Management	800	
	Integrated Logistics Support	200	
(U)	Cost & Operational Effectiveness Analysis (COEA):		
	F-16 Alternative Studies	1,300	
	Navy Joint Emitter Targeting System Studies	225	
	Preliminary F-15 MDS Studies	371	
(U)	Mission Support	750	
(U)	Total	24,211	
(U)	Preemptive Destruction of Enemy Air Defenses Demos:		Transferred to Project 4615
	Light Defender Foreign Comparative Test	922	
(U)	Realigned to HARM Targeting System	11,100	Transferred to Project 2671

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207136F Manned Destructive Supression
PROJECT NO. AND NAME 4375 F-15 Manned Destructive SEAD (MDS)	

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
McDonnell Douglas Aerospace, St Louis	SS/CPAF				13,404	21,565	Program Terminated			34,969
Support and Management Organizations										
Air Force Materiel Command, ASC, F-15 Program Office					6,594	750	Program Terminated			7,344
Air Force Materiel Command, ASC, F-16 Program Office						1,300	Program Terminated			1,300
Air Force Air Materiel Command, ASC, Plans & Requirements						251	Program Terminated			251
Naval Air Systems Command						345	Program Redirected			345
Test and Evaluation Organizations										
Total Project					19,998	24,211	Program Terminated			44,209

(U) **Government Furnished Property:** Not Applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207136F Manned Destructive Supression

PROJECT NO. AND NAME: 2671 F-16 HARM Targeting System (HTS) See Note

COST *($0 In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	Cost to Complete	Total Cost
2671 F-16 HARM Targeting System (HTS) See Note	0	5,792	12,384	11,914	2,365	473	380	380	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

The program provides F-16 aircraft the capability to carry and employ the AGM-88 High-speed Anti-Radiation Missile (HARM). The Block 50 F-16C has been modified to carry the AN/ASQ-213 HARM Targeting System (HTS). This capability allows real-time, "range known" HARM employment. Because of the phase out of the F-4G Wild Weasel the F-16 has become the USAF's only platform for employing the HARM in the lethal SEAD mission. The HTS was fielded in FY94. This project develops performance upgrades and funds integration effort to remain compatible with the F-16C and associated support and training equipment.

Project Type
New Start
Termination
X Not Applicable

(U) FY 1995

–	(U)	$11,100	Realigned from F-15 MDS project 4375. Major effort reported under a classified Program Element.

(U) FY 1996

–	(U)	$432	Complete R5 software upgrade and the developmental flight test support (Mar 96)
–	(U)	$1,060	Develop HTS-specific Air Force Mission Support System (AFMSS) modifications
–	(U)	$3,000	Begin EMD on HTS Upgrade (Feb 96)
–	(U)	$1,300	Mission Support
–	(U)	$5,792	Total

(U) FY 1997

–	(U)	$11,084	Continue EMD of HTS Upgrade. (IOC Jul 99)
–	(U)	$1,300	Mission Support (cont.)
–	(U)	12,384	Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207136F Manned Destructive Supression

PROJECT NO. AND NAME: 2671 F-16 HARM Targeting System (HTS) See Note

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	Note	2,908	0	TBD
(U) Appropriated Value	Note	5,908		
(U) Adjustments to Appropriated Value				
a. General Congressional Reductions:		(116)		
b. SBIR:				
(U) Adjustments to Budget Years Since FY96 PB	11,100		12,384	
(U) Current Budget Submit/President's Budget		5,792	12,384	TBD

NOTE: FY95 and prior year HTS funding reported were under a separate program element. The exceptions are $5,400,000 RDT&E reprogrammed into this PE from FY93 & FY94 and $11,100,000 FY95 RDT&E realigned to the HTS project in FY96.

(U) Change Summary Explanation:

Funding: The AF programmed a F-16 HTS upgrade by adding $31,000,000 beginning in FY97during the FY97 BES. Congress supported an acceleration to FY96 by increasing the FY96 appropriation $3,000,000 to begin the HTS upgrade and approved the realignment of $11,100,000 from the terminated F-15 MDS project. This latest upgrade is estimated at $45,000,000 RDT&E. Future upgrades are TBD.

Schedule: The HTS upgrade began Feb 96 and will complete in FY99 based upon the current F-16 Operational Flight Program (OFP) schedule.

Technical: The AF accelerated the HTS upgrade based on options developed during the prototyping study completed in Jun 95.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207136F Manned Destructive Supression

PROJECT NO. AND NAME: 2671 F-16 HARM Targeting System (HTS) See Note

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Aircraft Procurement, AF PE 0207136F	Note	3,142	108	9,132	397	202	197	Continuing	TBD

NOTE: Prior to FY96 the HTS was funded under a separate PE. FY97-FY01 procurement funding includes interim contractor support (ICS), initial spares and replenishment spares. FY98 funds the procurement of the HTS upgrade.

(U) Operations & Maintenance	0	4,693	4,789	5,183	4,769	3,192	2,881	Continuing	TBD

NOTE: FY97-FY01 funding includes Air Force MSS (AFMSS) sustaining support, contractor sustaining support, depot repair, Field Reprogramming Equipment (FRE) maintenance, program office support (beginning in FY99) and other related support activities.

Related RDT&E: PE 0207133, F-16 Squadrons.

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997				FY 1998			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(U) F-16 HTS R5 SW Development		X														
(U) R5 Fielded (Mar 96)		X														
(U) F-16 HTS Upgrade EMD (Jul 99)		*														
(U) Flight Test (Jul 99)									*							

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207136F Manned Destructive Supression
PROJECT NO. AND NAME 2671 F-16 HARM Targeting System (HTS) See Note	

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) HTS R5 Software Upgrade	Note		
(U) Test & Evaluation		432	
		0	
(U) HTS Upgrade Project		0	
(U) HTS Pod Development	11,100	2,400	8,000
(U) Acft/System Integration	0	600	1,000
(U) Test & Evaluation	0	0	1,000
(U) Training & Support Equip Development		1,060	1,084
		0	0
(U) Mission Support	Note	1,300	1,300
			0
(U) Total	11,100	5,792	12,384

NOTE: FY95 and prior year HTS funding reported under a separate program element. The exceptions are $5,400,000 RDT&E reprogrammed into this PE from FY93 & FY94 and $11,100,000 FY95 RDT&E realigned to the HTS project in FY96.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207136F Manned Destructive Supression

PROJECT NO. AND NAME: 2671 F-16 HARM Targeting System (HTS) See Note

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Texas Instruments	SS/CPAF	Various	TBD	TBD	5,400		0	0		5,400
Texas Instruments	SS/CPAF	Jan 96	32,000	32,000	0	11,100	2,400	8,000	10,500	32,000
Lockheed Ft Worth	TBD	Various	TBD	4,500	0		600	1,000	2,900	4,500
ASC/YT (Trainers)		Various	TBD	TBD			1,000	500	TBD	TBD
AFMSS Classified			TBD	TBD			60	584	TBD	TBD
Support and Management Organizations										
Prog. Office Supt	Various	Various			0		1,300	1,300	TBD	TBD
Test and Evaluation Organizations										
Eglin	PO	Various			Note		432			432
Edwards	PO	Various						1,000	2,500	3,500
Total Project					5,400	11,100	5,792	12,384	TBD	TBD

NOTE: FY95 and prior year HTS funding reported under a separate program element, with the exception of $5,400,000 RDT&E reprogrammed into this PE from FY93 & FY94 and $11,100,000 FY95 RDT&E realigned to the HTS project in FY96.

Government Furnished Property: Not Applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207136F Manned Destructive Supression

PROJECT NO. AND NAME: 4516 Light Defender

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	Cost to Complete	Total Cost
4516 Light Defender	0	4,562	0	0	0	0	0	0	0	5,484

(U) **A. Mission Description and Budget Item Justification**

This program investigates options for the Air Force's preemptive destruction on enemy air defenses capability. The Light Defender program expands the scope of the system's Foreign Comparative Test (FCT) to provide initial operational evaluations (including flight tests) as an alternative system.

(U) FY 1996 ($ in Thousands):

- (U) 4,562 Light Defender Operational Testing
- (U) 4,562 Total

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget		0		
(U) Appropriated Value		5,000		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions		(98)		
b. SBIR		(231)		
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogramming		(109)		
(U) Adjustments to Budget Years Since FY 1996 PB	922			
(U) Current Budget Submit/President's Budget	922	4,562		5,484

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207136F Manned Destructive Supression

PROJECT NO. AND NAME: 4516 Light Defender

(U) Change Summary Explanation:

Funding: This project was initiated in FY95 under the OSD PE 0605130D, Foreign Comparative Test and supported with $922,000 of FY95 funds from the terminated F-15 MDS project. The OSD FCT PE funded the FY96 effort and Congress increased this project's appropriation $5,000,000 (in this PE) to expand the scope of the FCT to include operational evaluations.

Schedule: Test Planning has began in Sep 95, Flight test is scheduled for late 96 and mid 97.

Technical: The FCT proposal was approved in FY95 as the USAF's highest priority FCT.

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	To Compl	Total Cost
(U) Funds from F-15 PDF Project 4375	922								922	
(U) Foreign Comparative Tests OSD PE 0605130D	78	2,700							2,778	3,700

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997				FY 1998			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(U) Light Defender FCT					*							X				

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207136F Manned Destructive Supression

PROJECT NO. AND NAME: 4516 Light Defender

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Aircraft Integration	922	3,700	
(U) Test & Evaluation		700	
(U) Mission Support		162	
(U) Total	922	4,562	

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget FY 1998	Budget to Complete	Total Program
Product Development Organizations											
McDonnell Douglas	CPAF	Various		TBD		922	1,200			0	2,122
Israeli Military Industries		Various		TBD			2,500			0	2,500
Support and Management Organizations											
F-15 Sys Prog Off							50			0	50
Lethal SEAD SPO							62			0	62
Wright Labs							50			0	50
Test and Evaluation Organizations											
Eglin Test Center							700			0	700
Total							4,562			0	5,484

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207141F F-117A Squadrons

PROJECT NO. AND NAME: 3956 F-117A Stealth Fighter

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3956 F-117A Stealth Fighter	0	3,688	12,050	5,001	0	6,764	10,617	Continuing	Continuing

(U) A. **Mission Description and Budget Item Justification**

The F-117A is the world's only operational low-observable (LO) combat aircraft. Its combination of stealth and precision weapons delivery capability allows the United States Air Force to hold even the most highly defended targets at risk. This program provides funds to develop improved systems for the F-117A aircraft. These improvements will enhance combat capability while maintaining a safe, reliable, and supportable aircraft. The F-117A is currently planned to be in service at least through the year 2015. The major research budget activity category is operational systems development; in addition, some research being performed is engineering and manufacturing development (EMD). The final F-117A delivery to the Air Force (number 59) was July 1990. The program is well past production; currently the single operational F-117A unit is stationed at Holloman AFB. The program uses Aircraft Procurement Air Force (APAF) modification (BA-5) money for an extensive modification program to keep the F-117A current with operational system and reliability/maintainability upgrades. Some of the modification projects require development efforts before they are integrated into the fleet (RDT&E money). In addition, small amounts of F-117A RDT&E funding, support quick look integration, threat system, and technology quick look studies as required by the user. This program is in budget activity 7 - Operational System Development, because all aircraft have been delivered and program is now in its deployment phase.

This project currently provides research and development for multiple modifications for the F-117A weapons system. The first FY 97 RDT&E effort continues the development work for the MIL-STD-1760 Stores Management Processor. This modification will enable the platform to integrate advanced weapons such as the Joint Direct Attack Munition (JDAM) & the Wind Corrected Munitions Dispenser (WCMD). The second FY 97 RDT&E sub-project will continue development of new spray coating application techniques and panel access technologies to improve the reliability and maintainability of the weapon system. This modification will allow the weapon system to move towards a single configuration for all F-117 airframes. This sub project will also include efforts to move the weapon system towards a single configuration of leading edges compatible with the overall Low Observable aircraft system. The next modification will develop a new fuel tank inerting system which will conform to environmental standards. The current aircraft inerting system uses halon, an ozone layer depleting chemical which is being withdrawn from service.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207141F F-117A Squadrons
PROJECT NO. AND NAME 3956 F-117A Stealth Fighter	

(U) FY 1995 ($ in Thousands):
- (U) $ No FY95 funding is programmed, continuation of FY94 program
- (U) $0 Total

(U) FY 1996 ($ in Thousands):
- (U) $1,881 Development work on MIL-STD-1760
- (U) $1,607 Development work on new RAM recoating
- (U) $200 Miscellaneous
- (U) $3,688 Total

(U) FY 1997 ($ in Thousands):
- (U) $5,250 Continue MIL-STD-1760 work
- (U) $4,400 Continue RAM recoating work
- (U) $2,200 Development work on fuel tank inerting
- (U) $200 Miscellaneous
- (U) $12,050 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207141F F-117A Squadrons

PROJECT NO. AND NAME: 3956 F-117A Stealth Fighter

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	3,881	12,478	continuing
(U) Appropriated Value		3,881		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions		-82		
b. SBIR		-81		
c. Omnibus or Other Above Threshold Reprogram		-30		
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY 1996 PB			-428	
(U) Current Budget Submit/President's Budget	0	3,688	12,050	

(U) Change Summary Explanation:

Funding: FY97 changes reflect adjustment for inflation.

Schedule:

Technical:

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Aircraft Procurement (BA-5):									
F-117 Modifications:	63,286	67,004	45,606	61,577	53,953	54,045	50,462	cont.	5,055,406
(U) Other Procurement (BA-5):									
F-117A Squadrons:	1,596	366	400	503	603	526	538	cont.	14,732
(U) Operations and Maintenance(BA-2):									
F-117A Squadrons:	219,833	226,549	226,848	229,610	230,665	235,687	250,386	cont.	2,987,916

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207141F F-117A Squadrons
PROJECT NO. AND NAME 3956 F-117A Stealth Fighter	

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) OCIP ; Retrofit in Progress Start: Jan 93 Finish: Mar 95			X									
F3 IRADS; (Retrofit Start Jan 94, Finish Sept 96)								X				
RNIP+; (RDT&E Start FY92/Retrofit Start Jun 96 Finish Jul 00)							X					
AP-102 Computer Upgrade; (Retrofit Start Oct 96, Finish Jul 00)									X			
Mil-Std-1760 Bus; (RDT&E Start FY96 Retrofit Start Oct 99 Finish Oct 02)							X					
RAM Recoat upgrade; (Retrofit Start Jan 99, Finish Dec 03)							X					
Ozone Depleting Chemical upgrade; (Retrofit Start Jan 99, Finish Oct 04)										X		

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207141F F-117A Squadrons

PROJECT NO. AND NAME: 3956 F-117A Stealth Fighter

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Developmental Testing		100	300
(U) Test Support Hardware/Equipment		300	600
(U) Software Development		1,300	3,100
(U) Research Studies and Technical Data		100	0
(U) Eng Chg Proposals/Engineering Support		200	250
(U) Travel/Security		88	200
(U) Flight Test		0	900
(U) Systems Engineering		400	1,700
(U) Engineering Design/development		1,200	5,000
(U) Total	0	3,688	12,050

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
F-117 Office, SM-ALC/QL, Sacramento Air Logistics Center, McClellan AFB, CA	Allot	1 Oct 95	contin.	contin.		0	100	150	contin.	contin.
RAM Recoat Modification										
Aeronautics Systems Center, Signature technology office	AF 616	Apr 96	100	100	0	0	100	0	0	100

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207141F F-117A Squadrons

PROJECT NO. AND NAME: 3956 F-117A Stealth Fighter

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Sandia Labs, Albuquerque NM	MIPR	May 96	300	300	0	0	100	200	0	300
Lockheed Martin Sandia	CPFF	May 96	3,200	3,200	0	0	300	2,900	0	3,200
Lockheed Martin Skunk Works (RAM), Palmdale CA	T&M	Jun 96	2,300	2,300	0	0	1,100	1,200	0	2,300
Ozone Depleting Modification										
Lockheed Martin Skunk Works (Ozone), Palmdale CA	CPFF	Jan 97	2,100	2,100	0	0	0	2,100	0	2,100
mil-std-1760 modification										
Lockheed Martin Skunk Works (1760), Palmdale CA	CPFF	Jul 96	11,800	11,800	0	0	1,700	5,100	5,000	11,800
Support and Management Organizations										
Development System Program Office, ASC/SD, Wright-Patterson AFB, OH	Allot	1 Oct 94	contin.	contin.			088	100		contin.
Miscellaneous							200	200		contin.
Test and Evaluation Organizations										
410 Flight Test Squadron/ Combined Test Force										

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207141F F-117A Squadrons
PROJECT NO. AND NAME 3956 F-117A Stealth Fighter	

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property: Not Applicable. No GFE funded.

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Property									
Support and Management Property									

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207160F Tri-Service Standoff Attack Missile (TSSAM)
PROJECT NO. AND NAME 1006 Tri-Service Standoff Attack Missile (TSSAM)	

COST *($ In Thousands)*	FY 1995 Actual	1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
1006 Tri-Service Standoff Attack Missile (TSSAM)	17,670	0	0	0	0	0	0	0	17,670

(U) **A. Mission Description and Budget Item Justification**

The Tri-Service Standoff Attack Missile (TSSAM) was a joint service program with the Air Force as the lead service. The program objective was to develop a family of highly survivable, conventional, stealthy cruise missiles to satisfy tri-service requirements to effectively engage a variety of high value land and sea targets. The technical approach to develop a modular stealth cruise missile which can employ several payloads and guidance systems to engage the required targets. All variants used a GPS aided inertial navigation system. The Navy and Air Force (unitary variant) missiles used an imaging infrared terminal sensor for autonomous recognition and homing on fixed land targets and sea targets. The other Air Force variant contained the Combined Effects Bomblet (CEB) submunition to attack land targets. Integration efforts were planned for the Air Force's B-52H, F-16C/D, B-1 and B-2 and the Navy's F/A-18C/D. On 9 Dec 94 SECDEF announced cancellation of the TSSAM program. DEPSECDEF Program Decision Memorandum (PDM) IV, 16 Dec 94, canceled the TSSAM and associated contracts. The terminated program is described herein.

NOTE: Program termination costs are ongoing.

NOTE: Many TSSAM program specifics remain SECRET -Special Access Required per the 31 March 1993 Program Security Guide. Separate justification will be provided to appropriately cleared individuals.

(U) FY 1995
- (U) $1,864 Completes funding of test sites
- (U) $10,707 Completes funding of associate/support contracts and program office support
- (U) $5,099 Funding for prime contracts
- (U) $17,670 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207160F Tri-Service Standoff Attack Missile (TSSAM)

PROJECT NO. AND NAME: 1006 Tri-Service Standoff Attack Missile (TSSAM)

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	135,600	0	0	135,600
(U) Appropriated Value	135,600			135,600
(U) Adjustments to Budget since FY96 PB				
a. General Congressional reduction	-113,102			-113,102
b. General Reductions	-1,998			-1,998
c. SBIR	-2,830			-2,830
(U) Adjustment to Budget Years Since FY 96 PB	0			0
(U) Current Budget Submit/President's Budget	17,670	0	0	17,670

(U) Change Summary Explanation:

Funding: The current budget reflects the program termination. All funding in FY 96 and out has been zeroed.

Schedule: Not Applicable

Technical: Not Applicable

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Complete	Total Cost
(U) Not Applicable									

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
Program close out ongoing												

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207160F Tri-Service Standoff Attack Missile (TSSAM)

PROJECT NO. AND NAME: 1006 Tri-Service Standoff Attack Missile (TSSAM)

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Major Contracts	5,099	N/A	N/A
(U) Associated Contracts	1,800		
(U) Support Contracts`	0		
(U) In-House	8,907		
(U) Test Support	1,864		
(U) Total	17,670		

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

NOTE: FY93 and prior years are classified Special Access Required

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Total Program
Product Development Organizations									
Northrop	FPIF	FY86			140,080	5,099			145,179
Boeing	FFP	FY85			24,020				24,020
Lockheed	FPIF	FY86			14,300				14,300
Misc Contracts	Misc	Various			14,570	1,800			16,370
Support and Management Organizations									
Support Contracts	Misc	Various			3,650				3,650
Program Office Support	N/A	N/A			4,696	8,580			13,276
ANSER Support					355	327			682

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207160F Tri-Service Standoff Attack Missile (TSSAM)

PROJECT NO. AND NAME: 1006 Tri-Service Standoff Attack Missile (TSSAM)

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Total Program
Product Development Organizations									
AFOTEC	Allot				1,000	15			1,015
AFFTC/EAFB	PO				16,200				16,200
Utah TR/Hill AFB	PO				14,600				14,600
Tonapah Range	MIPR				6,500				6,500
Eglin AFB	PO				8,400	1,078			9,478
Naval Air Warfare Center	MIPR				4,690				4,690
Misc	Misc				5,420	771			6,191

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property: Not Applicable

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Total Program
Subtotal Product Development				192,970				199,869
Subtotal Support and Management				8,701				17,608
Subtotal Test and Evaluation				56,810				58,674
Total Project				258,481				276,151

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207161F Tactical Aim Missile

PROJECT NO. AND NAME: 4132 AIM-9 Product Improvement

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4132 AIM-9 Product Improvement	0	18,982	36,382	65,220	81,051	61,191	27,398	10,398	300,622

NOTE: FY 1995 and prior year funding appropriated and consolidated with Navy funding in Defense Agencies Program Element #0603715D.

(U) **A. Mission Description and Budget Item Justification**

The AIM-9 Sidewinder short-range air-to-air missile (SRM) is a launch and leave, air combat munition that uses passive infrared (IR) energy for acquisition and tracking of enemy aircraft and complements the Advanced Medium Range Air-to-Air Missile. Air superiority in the SRM arena is essential and includes first shot, first kill opportunity against an enemy employing IR countermeasures. The AIM-9X is a long-term evolution to the AIM-9, a fielded system, qualifying this as research category operational systems development. Evolutionary improvements in missile seeker, fuze, and kinematics allow retrofit of components to current missiles to the maximum extent possible. Retrofitting of components will extend the operational effectiveness of existing inventories at an affordable cost while continuing evolution of the AIM-9 series. This program is in budget activity 7 - Operational System Development because it is an evolutionary improvement to a fielded missile system.

(U) FY 1995 ($ in Thousands):
- (U) $0 FY 95 funded in OSD PE 0603715D
- (U) $0 Total

(U) FY 1996 ($ in Thousands):
- (U) $11,389 Continue DEM/VAL for missile seeker prototype and other elements to support a Milestone II Engineering and Manufacturing Development (EMD) decision. Conduct Systems Design Review.
- (U) $7,593 Continue engineering support from China Lake and other agencies for the Demonstration and Validation program.
- (U) $0 Prepare Request for Proposal for AIM-9X EMD (Not Separately Priced-(NSP)).
- (U) $0 Begin preparation and analysis for Milestone II decision to enter Phase II, EMD (NSP).
- (U) $18,982 Total

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207161F Tactical Aim Missile
PROJECT NO. AND NAME 4132 AIM-9 Product Improvement	

(U) FY 1997 ($ in Thousands):
- (U) $32,610 Award Contract for EMD.
- (U) $3,772 Continue sustaining engineering support in-house and begin Development Test (DT-IIA).
- (U) $0 Start EMD captive flight testing with brassboard hardware (NSP).
- (U) $36,382 Total

(U) B. Program Change Summary ($ in Thousands)

	* FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	26,944	20,082	31,088	307,380
(U) Appropriated Value	0*	20,082		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions		-393		
b. SBIR		-291		
c. Omnibus or Other Above Threshold Reprogramming		-416		
(U) Adjustments to Budget Years Since FY 1996 PB			5,294	
(U) Current Budget Submit/President's Budget	0	18,982	36,382	300,622

* NOTE: FY 1995 and prior years appropriations were consolidated with Navy funds into the Defense Agencies Program Element #0603715D.

(U) Change Summary Explanation:

Funding: The OSD CAIG report dated November 1994 indicated that the joint program office underestimated contractor costs for AIM-9X Demonstration and Validation. This variance was due to significant differences between the CAIG and program office methodologies for estimating AIM-9X seeker costs. It was agreed that each service, Air Force and Navy, would increase their FY 97 program by $7 million each. Reductions for higher priority Air Force requirements (-$155,000) and inflation adjustments (-$1,551,000) resulted in a net increase of $5,294,000 in FY 97. FY 96 Reprogrammings include -$206,000 for Bosnia and -$210,000 for F-16s to Jordan.

Schedule: None

Technical: None

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207161F Tactical Aim Missile
PROJECT NO. AND NAME 4132 AIM-9 Product Improvement	

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Missile Procurement, Budget Activity 2, PE 0207161F, Program Title: AIM-9X Production							62,146	1,706,854	1,778,000
(U) Missile Procurement, Budget Activity 2, PE 0207590F, Program Title: SEEK EAGLE							6,705	Continuing	TBD
Related Activities: RDT&E, Navy; Budget Activity 7, PE 0207161N, Program title: Tactical Air Intercept * NOTE: FY 1995 RDT&E, Navy funding appropriated in Defense Agencies PE 0603715D	* 0	28,906	58,415	63,348	82,916	61,060	27,361	10,533	332,356
RDT&E, Defense Agencies, PE 0603715D, Program title AIM-9 Consolidated Program ** NOTE: Reflects Air Force share of funding including FY95 and prior years.	26,944	0	0	0	0	0	0	0	**57,100

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207141F F-117A Squadrons

PROJECT NO. AND NAME: 3956 F-117A Stealth Fighter

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Developmental Testing		100	300
(U) Test Support Hardware/Equipment		300	600
(U) Software Development		1,300	3,100
(U) Research Studies and Technical Data		100	0
(U) Eng Chg Proposals/Engineering Support		200	250
(U) Travel/Security		88	200
(U) Flight Test		0	900
(U) Systems Engineering		400	1,700
(U) Engineering Design/development		1,200	5,000
(U) Total	0	3,688	12,050

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
F-117 Office, SM-ALC/QL, Sacramento Air Logistics Center, McClellan AFB, CA	Allot	1 Oct 95	contin.	contin.		0	100	150	contin.	contin.
RAM Recoat Modification										
Aeronautics Systems Center, Signature technology office	AF 616	Apr 96	100	100	0	0	100	0	0	100

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207141F F-117A Squadrons

PROJECT NO. AND NAME: 3956 F-117A Stealth Fighter

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Sandia Labs, Albuquerque NM	MIPR	May 96	300	300	0	0	100	200	0	300
Lockheed Martin Sandia	CPFF	May 96	3,200	3,200	0	0	300	2,900	0	3,200
Lockheed Martin Skunk Works (RAM), Palmdale CA	T&M	Jun 96	2,300	2,300	0	0	1,100	1,200	0	2,300
Ozone Depleting Modification										
Lockheed Martin Skunk Works (Ozone), Palmdale CA	CPFF	Jan 97	2,100	2,100	0	0	0	2,100	0	2,100
mil-std-1760 modification										
Lockheed Martin Skunk Works (1760), Palmdale CA	CPFF	Jul 96	11,800	11,800	0	0	1,700	5,100	5,000	11,800
Support and Management Organizations										
Development System Program Office, ASC/SD, Wright-Patterson AFB, OH	Allot	1 Oct 94	contin.	contin.			088	100		contin.
Miscellaneous							200	200		contin.
Test and Evaluation Organizations										
410 Flight Test Squadron/ Combined Test Force										

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207141F F-117A Squadrons
PROJECT NO. AND NAME 3956 F-117A Stealth Fighter	

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property: Not Applicable. No GFE funded.

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Property									
Support and Management Property									

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207160F Tri-Service Standoff Attack Missile (TSSAM)
PROJECT NO. AND NAME 1006 Tri-Service Standoff Attack Missile (TSSAM)	

COST ($ In Thousands)	FY 1995 Actual	1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
1006 Tri-Service Standoff Attack Missile (TSSAM)	17,670	0	0	0	0	0	0	0	17,670

(U) A. Mission Description and Budget Item Justification

The Tri-Service Standoff Attack Missile (TSSAM) was a joint service program with the Air Force as the lead service. The program objective was to develop a family of highly survivable, conventional, stealthy cruise missiles to satisfy tri-service requirements to effectively engage a variety of high value land and sea targets. The technical approach to develop a modular stealth cruise missile which can employ several payloads and guidance systems to engage the required targets. All variants used a GPS aided inertial navigation system. The Navy and Air Force (unitary variant) missiles used an imaging infrared terminal sensor for autonomous recognition and homing on fixed land targets and sea targets. The other Air Force variant contained the Combined Effects Bomblet (CEB) submunition to attack land targets. Integration efforts were planned for the Air Force's B-52H, F-16C/D, B-1 and B-2 and the Navy's F/A-18C/D. On 9 Dec 94 SECDEF announced cancellation of the TSSAM program. DEPSECDEF Program Decision Memorandum (PDM) IV, 16 Dec 94, canceled the TSSAM and associated contracts. The terminated program is described herein.

NOTE: Program termination costs are ongoing.

NOTE: Many TSSAM program specifics remain SECRET -Special Access Required per the 31 March 1993 Program Security Guide. Separate justification will be provided to appropriately cleared individuals.

(U) FY 1995
- (U) $1,864 Completes funding of test sites
- (U) $10,707 Completes funding of associate/support contracts and program office support
- (U) $5,099 Funding for prime contracts
- (U) $17,670 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207160F Tri-Service Standoff Attack Missile (TSSAM)

PROJECT NO. AND NAME: 1006 Tri-Service Standoff Attack Missile (TSSAM)

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	135,600	0	0	135,600
(U) Appropriated Value	135,600			135,600
(U) Adjustments to Budget since FY96 PB				
a. General Congressional reduction	-113,102			-113,102
b. General Reductions	-1,998			-1,998
c. SBIR	-2,830			-2,830
(U) Adjustment to Budget Years Since FY 96 PB	0			0
(U) Current Budget Submit/President's Budget	17,670	0	0	17,670

(U) Change Summary Explanation:

Funding: The current budget reflects the program termination. All funding in FY 96 and out has been zeroed.

Schedule: Not Applicable

Technical: Not Applicable

(U) **C. Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Complete	Total Cost
(U) Not Applicable									

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
Program close out ongoing												

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207160F Tri-Service Standoff Attack Missile (TSSAM)

PROJECT NO. AND NAME: 1006 Tri-Service Standoff Attack Missile (TSSAM)

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Major Contracts	5,099	N/A	N/A
(U) Associated Contracts	1,800		
(U) Support Contracts	0		
(U) In-House	8,907		
(U) Test Support	1,864		
(U) Total	17,670		

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

NOTE: FY93 and prior years are classified Special Access Required

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Total Program
Product Development Organizations									
Northrop	FPIF	FY86			140,080	5,099			145,179
Boeing	FFP	FY85			24,020				24,020
Lockheed	FPIF	FY86			14,300				14,300
Misc Contracts	Misc	Various			14,570	1,800			16,370
Support and Management Organizations									
Support Contracts	Misc	Various			3,650				3,650
Program Office Support	N/A	N/A			4,696	8,580			13,276
ANSER Support					355	327			682

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207160F Tri-Service Standoff Attack Missile (TSSAM)

PROJECT NO. AND NAME: 1006 Tri-Service Standoff Attack Missile (TSSAM)

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Total Program
Product Development Organizations									
AFOTEC	Allot				1,000	15			1,015
AFFTC/EAFB	PO				16,200				16,200
Utah TR/Hill AFB	PO				14,600				14,600
Tonapah Range	MIPR				6,500				6,500
Eglin AFB	PO				8,400	1,078			9,478
Naval Air Warfare Center	MIPR				4,690				4,690
Misc	Misc				5,420	771			6,191

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property: Not Applicable

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Total Program
Subtotal Product Development				192,970				199,869
Subtotal Support and Management				8,701				17,608
Subtotal Test and Evaluation				56,810				58,674
Total Project				258,481				276,151

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207161F Tactical Aim Missile

PROJECT NO. AND NAME: 4132 AIM-9 Product Improvement

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4132 AIM-9 Product Improvement	0	18,982	36,382	65,220	81,051	61,191	27,398	10,398	300,622

NOTE: FY 1995 and prior year funding appropriated and consolidated with Navy funding in Defense Agencies Program Element #0603715D.

(U) **A. Mission Description and Budget Item Justification**

The AIM-9 Sidewinder short-range air-to-air missile (SRM) is a launch and leave, air combat munition that uses passive infrared (IR) energy for acquisition and tracking of enemy aircraft and complements the Advanced Medium Range Air-to-Air Missile. Air superiority in the SRM arena is essential and includes first shot, first kill opportunity against an enemy employing IR countermeasures. The AIM-9X is a long-term evolution to the AIM-9, a fielded system, qualifying this as research category operational systems development. Evolutionary improvements in missile seeker, fuze, and kinematics allow retrofit of components to current missiles to the maximum extent possible. Retrofitting of components will extend the operational effectiveness of existing inventories at an affordable cost while continuing evolution of the AIM-9 series. This program is in budget activity 7 - Operational System Development because it is an evolutionary improvement to a fielded missile system.

(U) FY 1995 ($ in Thousands):

- (U) $0 FY 95 funded in OSD PE 0603715D
- (U) $0 Total

(U) FY 1996 ($ in Thousands):

- (U) $11,389 Continue DEM/VAL for missile seeker prototype and other elements to support a Milestone II Engineering and Manufacturing Development (EMD) decision. Conduct Systems Design Review.
- (U) $7,593 Continue engineering support from China Lake and other agencies for the Demonstration and Validation program.
- (U) $0 Prepare Request for Proposal for AIM-9X EMD (Not Separately Priced-(NSP)).
- (U) $0 Begin preparation and analysis for Milestone II decision to enter Phase II, EMD (NSP).
- (U) $18,982 Total

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207161F Tactical Aim Missile
PROJECT NO. AND NAME 4132 AIM-9 Product Improvement	

(U) FY 1997 ($ in Thousands):
- (U) $32,610 Award Contract for EMD.
- (U) $3,772 Continue sustaining engineering support in-house and begin Development Test (DT-IIA).
- (U) $0 Start EMD captive flight testing with brassboard hardware (NSP).
- (U) $36,382 Total

(U) B. Program Change Summary ($ in Thousands)

	* FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	26,944	20,082	31,088	307,380
(U) Appropriated Value	0*	20,082		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions		-393		
b. SBIR		-291		
c. Omnibus or Other Above Threshold Reprogramming		-416		
(U) Adjustments to Budget Years Since FY 1996 PB			5,294	
(U) Current Budget Submit/President's Budget	0	18,982	36,382	300,622

* NOTE: FY 1995 and prior years appropriations were consolidated with Navy funds into the Defense Agencies Program Element #0603715D.

(U) Change Summary Explanation:

Funding: The OSD CAIG report dated November 1994 indicated that the joint program office underestimated contractor costs for AIM-9X Demonstration and Validation. This variance was due to significant differences between the CAIG and program office methodologies for estimating AIM-9X seeker costs. It was agreed that each service, Air Force and Navy, would increase their FY 97 program by $7 million each. Reductions for higher priority Air Force requirements (-$155,000) and inflation adjustments (-$1,551,000) resulted in a net increase of $5,294,000 in FY 97. FY 96 Reprogrammings include -$206,000 for Bosnia and -$210,000 for F-16s to Jordan.

Schedule: None

Technical: None

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207161F Tactical Aim Missile

PROJECT NO. AND NAME: 4132 AIM-9 Product Improvement

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Missile Procurement, Budget Activity 2, PE 0207161F, Program Title: AIM-9X Production							62,146	1,706,854	1,778,000
(U) Missile Procurement, Budget Activity 2, PE 0207590F, Program Title: SEEK EAGLE							6,705	Continuing	TBD
Related Activities: RDT&E, Navy; Budget Activity 7, PE 0207161N, Program title: Tactical Air Intercept * NOTE: FY 1995 RDT&E, Navy funding appropriated in Defense Agencies PE 0603715D	* 0	28,906	58,415	63,348	82,916	61,060	27,361	10,533	332,356
RDT&E, Defense Agencies, PE 0603715D, Program title AIM-9 Consolidated Program ** NOTE: Reflects Air Force share of funding including FY95 and prior years.	26,944	0	0	0	0	0	0	0	**57,100

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207161F Tactical Aim Missile

PROJECT NO. AND NAME: 4132 AIM-9 Product Improvement

(U) D. Schedule Profile

		FY 1995				FY 1996				FY 1997			
		1	2	3	4	1	2	3	4	1	2	3	4
(U) Acquisition Milestones													
MS IV/I		X											
MS II										X			
MS III	4Q/FY02												
(U) Engineering Milestones													
SRR				X									
SDR							X						
PDR													X
CDR	3Q/FY98												
TRR for TECHEVAL	2Q/FY00												
(U) Test and Evaluation Milestones													
DT-1			X										
Fly Brassboards						X							
DT-IIA											X		
Captive Carry											X		
DT-IIB (Safe Separation)	4Q/FY98												
DT-IIC (Guided Launches)	3Q/FY99												
DT-IID (TECHEVAL)	2Q/FY00												
OT-IIA (Guided Launches)	1Q/FY00												
OT-IIB (OPEVAL)	2Q/FY01												
(U) Contract Milestones													
DEMVAL		X											
RFP Release (EMD)							X						
EMD Award											X		
LRIP Award	4Q/FY01												
Production	1Q/FY03												

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207161F Tactical Aim Missile
PROJECT NO. AND NAME 4132 AIM-9 Product Improvement	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995*	FY 1996	FY 1997
(U) Project Cost Categories			
(U) a. Primary Hardware Development	0	11,389	32,610
(U) b. Government Engineering Support	0	4,894	2,143
(U) c. Contractor Engineering Support	0	181	130
(U) d. Miscellaneous	0	1,084	807
(U) e. Development Test and Evaluation	0	1,061	523
(U) f. Travel	0	374	169
(U) Total	0	18,982	36,382

* NOTE: FY 1995 and prior years appropriations were consolidated with Navy funds into the Defense Agencies Program Element #0603715D.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207161F Tactical Aim Missile
PROJECT NO. AND NAME 4132 AIM-9 Product Improvement	

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Hughes	C/CPIF	Dec 94	5,694	5,694	0	0	5,694	0	0	5,694
Raytheon	C/CPIF	Dec 94	5,695	5,695	0	0	5,695	0	0	5,695
Contract (EMD)	C/CPIF	Jan 97	TBD	197,143	0	0	0	32,610	164,533	197,143
McDon-Doug	C/CPIF	Jan 95	TBD	21,147	0	0	181	130	20,836	21,147
NAWC CL	WR	Oct 95	62,582	62,582	0	0	5,955	2,665	53,752	62,372
Misc In-house (Efforts <$1.0M)			6,105	6,105	0	0	898	789	4,418	6,105
Support and Management Organizations										
Various Contracts	FFP		2,466	2,466	0	0	559	188	1,719	2,466

Test and Evaluation Organizations (Included in Product Development)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207161F Tactical Aim Missile
PROJECT NO. AND NAME 4132 AIM-9 Product Improvement	

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property: (Not applicable)

	Total Prior to FY 1995	Budget FY 1995*	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Subtotal Product Development	0	18,423	36,194	243,539	298,156	
Subtotal Support and Management	0	559	188	1,719	2,466	
Subtotal Test and Evaluation	0	0	0	0	0	
Total Project	0	0	18,982	36,382	245,258	300,622

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207163F Advanced Medium Range Air-to-Air Missile

PROJECT NO. AND NAME: 3777 AMRAAM

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3777 AMRAAM	63,855	44,413	25,883	75,051	39,293	40,485	41,086	209,100	702,937

(U) **A. Mission Description and Budget Item Justification**

The Air Force and Navy developed the baseline AMRAAM as a high performance, all weather missile to counter existing air vehicle threats having advanced electronic countermeasures capabilities operating at high or low altitude. The AMRAAM Pre-Planned Product Improvement (P3I) program provides for a continuing, Joint Air Force/Navy research and development program allowing AMRAAM to: (1) be compatible with advanced fighters, (2) enhance AMRAAM capability and operational flexibility against mid-1990's and beyond threats, (3) incorporate high payoff technology developments, and (4) investigate new variants and/or alternate missions which may use many baseline missile attributes. This program is in budget activity 7 - Operational System Development, Research Category 6.6 providing upgrades to the AIM-120C missile now in production.

(U) FY 1995 ($ in Thousands):

- (U) $59,008 Continued P3I Phase 2 EMD for ECCM and weapons effectiveness improvements. Initiated kinematic improvements (+5 inch Rocket Motor) via modification of Phase 2 contract.
- (U) $4,847 Initiated Phase 3 risk reduction to enhance ECCM and guidance capabilities.
- (U) N/A Continued Navy participation in AMRAAM P3I Phase 1 & 2 program with emphasis on Navy unique requirements and aircraft integration compatibility (Funded by USN).
- (U) $63,855 Total

(U) FY 1996 ($ in Thousands):

- (U) $31,381 Continue Phase 2 EMD for ECCM, weapons effectiveness, and kinematic improvements.
- (U) $13,032 Continue Phase 3 risk reduction to enhance ECCM and guidance.
- (U) N/A Continue Navy participation in AMRAAM P3I Phase 2 program with emphasis on Navy unique requirements and aircraft integration compatibility (Funded by USN).
- (U) $44,413 Total

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PROJECT NO. AND NAME 3777 AMRAAM	

(U) FY 1997 ($ in Thousands):

- (U) $20,361 Continue Phase 2 EMD for ECCM, weapons effectiveness, and kinematic improvements.
- (U) $5,522 Continue Phase 3 risk reduction to enhance ECCM and guidance, and prepare for FY98 EMD.
- (U) N/A Continue Navy participation in AMRAAM P3I Phase 2 program with emphasis on Navy unique requirements and aircraft integration compatibility (Funded by USN)
- (U) $25,883 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	68,467	42,311	49,232	716,579
(U) Appropriated Value		47,311		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions		-926		
b. SBIR		-991		
c. Omnibus or Other Above Threshold Reprogram		-981		
d. Below Threshold Reprogramming	-4,612			
(U) Adjustments to Budget Years Since FY 1996 PB			-23,349	
(U) Current Budget Submit/President's Budget	63,855	44,413	25,883	702,937

(U) Change Summary Explanation:

Funding: FY96 Congressional appropriation increased FY96 (+$5,000) for Phase 3 risk reduction. In addition, FY96 funding was reprogrammed to support Bosnia (-$487) and F-16s to Jordan (-$494). Funds were realigned from FY97 (-$22,000) to FY98 (+$22,000) to align funding with program execution.. FY97 was also reduced by an inflation rate adjustment (-$1,104) and O&M Reductions (-$245).

Schedule: Phase 2 Tape 7A PDR/CDR and FCA(A) have been completed on schedule, and FCA(A) remains on schedule. Tape 7A will be introduced in AIM-120C production in Lot 9 (CY97 deliveries) and will be reprogrammed into Lot 8 AIM-120C missiles. Phase 2 Tape 7B PDR/CDR and FCA(B) have been rescheduled to allow for complete integration of the improved (+5 inch) rocket motor. Tape 7B PDR, originally scheduled for Nov 95, was completed in Feb 96; Tape 7B CDR has been rescheduled from Jun 96 to Oct 96; and FCA(B) has been rescheduled from Mar 98 to Sep 98. These dates still support production

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incorporation of the new warhead (lethality improvements) and new rocket motor (kinematic improvements) in AIM-120C Production Lot 12 (CY00 deliveries). The revised schedule also supports Tape 7B introduction into AIM-120C production Lot 11 and reprogramming into all Lot 8, 9, and 10 missiles. Phase 3 risk reduction efforts remain on track to support a 3rd quarter FY98 contract award for ECCM and guidance enhancements.

Technical: No change.

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Missile Procurement, Budget Activity: #2									
(U) BP20 AMRAAM	233,948	177,676	116,299	137,668	129,987	157,523	180,922	1,101,800	7,477,553
(U) BP25 Replen Spares	5,799	18,972	13,427	13,229	12,701	13,711	13,734	88,960	197,655
(U) BP26 Init Spares	7,413	7,762	3,869	2,655	2,733	2,822	2,803	20,100	96,443
(U) QTY	412	291	133	158	173	227	228	1,438	8,600

NOTE: Above funding does not include Interim Contractor Support (ICS). FY 95 was last year of ICS and funding was $1,808.

(U) Missile Procurement, Budget Activity: #2, Program Title: SEEK EAGLE (PE: 0207590)

(U) BP20	0	0	0	0	0	0	0	0	15,357
(U) QTY	0	0	0	0	0	0	0	0	36

** SEEK EAGLE requirement for one (1) missile was deleted in FY95. However, there was a SEEK EAGLE requirement for 18 Captive Air Training Missiles in FY95.

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(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) P3I Phase 2 Tape 7A PDR/CDR		X*		X								
(U) P3I Phase 2 FCA(A)									X			
(U) P3I Phase 2 Tape 7B PDR/CDR						X			X			
(U) P3I Phase 2 Flight Test (Includes ACE)		X*										

(U) P3I Phase 2 Flight Test Complete	4Q FY 98
(U) P3I Phase 2 FCA(B)	4Q FY 98
(U) P3I Phase 3 ECCM Contract Award	3Q FY 98
(U) P3I Phase 3 Kinematic Contract Award	2Q FY 01

* Actual dates
X Completion or Milestone

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207163F Advanced Medium Range Air-to-Air Missile

PROJECT NO. AND NAME: 3777 AMRAAM

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Project Cost Categories			
(U) a. Contract/COEA	46,056	34,647	18,037
(U) b. Government Costs (Test, Support)	13,825	6,932	4,884
(U) c. GFE	268	0	0
(U) d. Contractor Support	3,706	2,834	2,962
(U) Total	63,855	44,413	25,883

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
F08635-90-C-0201 Hughes	FFP	Aug 90	N/A	N/A	5,200					5,200
F08626-91-C-0034 Hughes	CPIF	Mar 91	91,704	93,506	93,506					93,506

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207163F Advanced Medium Range Air-to-Air Missile

PROJECT NO. AND NAME: 3777 AMRAAM

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
F08626-93-C-0044 (Phase 2) Hughes	CPAF	Jun 94	118,442	129,808	24,170	41,074	23,162	12,573	28,828	129,808
Phase 3 Risk Reduction Contract		Oct 95			0	4,001	10,764	5,040	3,045	22,850
Phase 3 ECCM EMD Contract		3QFY98							147,861	147,861
Phase 3 Kinematics Contract		2QFY01							130,311	130,311
Miscellaneous Contracts	FFP	Dec 95 - Mar 96	N/A	N/A	4,851	981	721	424	1,735	8,712
Support and Management Organizations										
COEA	PO/MIPR	Jan 94			3,358	0	0	0	0	3,358
Contractor Support	PR/REO	Oct 95 - Mar 96			3,508	3,706	2,834	2,962	32,133	45,143
JSPO Operations	REO/MIPR	Oct 95 - Sep 96			12,298	3,185	800	200	1,850	18,333
Test and Evaluation Organizations										
Gov't Test	PO/MIPR	Oct 95 - Sep 96			14,770	10,640	6,132	4,684	54,852	91,077

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207163F Advanced Medium Range Air-to-Air Missile
PROJECT NO. AND NAME 3777 AMRAAM	

(U) **B. Budget Acquisition History and Planning Information Continued ($ in Thousands)**

Government Furnished Property:

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Test and Evaluation Property									
TM/ECM Pods	MIPR/PO			2,110	268	0	0	4,400	6,778
Subtotal Product Development				127,728	46,056	34,647	18,037	311,780	538,248
Subtotal Support and Management				19,164	6,891	3,634	3,162	33,983	66,834
Subtotal Test and Evaluation				16,880	10,908	6,132	4,684	59,252	97,855
Total Project				163,772	63,855	44,413	25,883	405,015	702,937

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207217F Podded Reconnaissance System

PROJECT: 3652

COST (*In Thousands*)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate		Cost to Complete	Total Cost
3652 Joint Services Imagery Process System	0	0	6714	0	0	0	0		0	6714

(U) A. **Mission Description and Budget Item Justification**

(U) The Podded Reconnaissance System (PRS) provides a responsive "under-the-weather" reconnaissance capability to support intelligence and targeting requirements of military, multinational, and other government agency users. It will provide a dedicated, on-demand, day/under-the-weather, selective aspect, literal imagery collection capability. It is intended to fill the high-threat, under-the-weather niche that cannot be accomplished by existing collectors such as space systems, Unmanned Aerial Vehicles, and the U-2. The PRS supports Combat Air Force (CAF) Mission Need Statement 328-93, Theater Airborne Reconnaissance System.

(U) PRS will consist of 20 podded systems with embedded electro-optical (EO) sensor suites, five transportable Squadron Ground Stations, logistics support, and spares. Furthermore, this project includes tasks to develop and integrate the PRS on Air National Guard F-16C Block 30 aircraft. The PRS Initial Configuration Criteria (ICC) system will provide a single forward looking EO framing sensor, sensor control, second sensor window, data recording, and internal pod environmental control. The pod will interface with the F-16 cockpit Electronic Warfare Management System. The ICC system will also provide space and environmental control required to implement the Final Configuration Criteria (FCC) capabilities consisting of a second vertical/oblique EO sensor and provisions for a P3I (Pre-Planned Product Improvement) Common Data Link. FCC capability will be based on the integration of a Navy/Marine production Medium Altitude EO sensor.

(U) The PRS program is in Budget Activity 7, Operational System Development, because the development activities in this PE will integrate currently available low-risk technologies (commercial/government off-the-shelf sensors, pods, etc...) into operational platforms.

Project Type

X New Start
Termination
Not Applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207217F Podded Reconnaissance System
	PROJECT 3652

(U) **A. Mission Description and Budget Item Justification - Continued**

(U) FY 1995

- (U) $0 Total

(U) FY 1996

Note: As of the 1997 President's Budget, there are no funds in FY96 for the Podded Reconnaissance program. However, $3,000 (FY 1996, RDT&E) is planned to be reprogrammed to initiate the program.

- (U) $0 Total

(U) FY 1997

- (U) $1,546 Flight test reconnaissance pods
- (U) $556 Non-recurring engineering
- (U) $1,830 Procure hardware
- (U) $130 Perform testing and engineering
- (U) $167 Integrate hardware onto platforms
- (U) $625 Support equipment (flight line test sets)
- (U) $42 Data (flight line test set manuals)
- (U) $1,208 Associated contractor agreements
- (U) $278 Engineering change orders
- (U) $332 Mission support
- (U) $6,714 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207217F Podded Reconnaissance System PROJECT 3652

(U) **B. Project Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	0	0	0
(U) Appropriated Value	0	0		
(U) Adjustments to Appropriated Values				
a. Below Threshold Reprogrammings				
b. General Congressional Reductions				
c. Small Business Innovative Research				
(U) Adjustments to Budget Since FY96 PB				
a. Funds added for Podded Reconnaissance System			7,000	
b. Nonpay Purchases Inflation Adjustment			-286	
(U) Current Budget Submit/President's Budget	0	0	6,714	6,714

(U) Change Summary Explanation:

Funding: $7,000 FY97 RDT&E funds were added for Podded Reconnaissance System. Subsequently, the FY97 RDT&E estimate was reduced by $286 due to revised economic assumptions.

Schedule: N/A (new start)

Technical: N/A (new start)

(U) **C. Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
Appropriation 3010, Procurement	0	0*	0	0	0	0	0	0	0

* $33,700 (FY 1996, Procurement) is planned to be reprogrammed to the Podded Reconnaissance System Program Element.

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
Source Selection / Contract Award							X					

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207217F Podded Reconnaissance System PROJECT 3652

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
Flight test reconnaissance pods			1,546
Non-recurring engineering		*	556
Procure hardware		*	1,830
Perform testing and engineering		*	130
Integrate hardware onto platforms		*	167
Support equipment (flight line test sets)		*	625
Data (flight line test set manuals)		*	42
Associated contractor agreements		*	1,208
Engineering change orders		*	278
Mission support		*	332
Total			6,714

* The USAF plans to reprogram $3,000 FY 1996 RDT&E funds in order to perform the above project activities in FY 1996.

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations										
TBD	TBD	TBD	TBD	TBD	N/A (New Start)	0	0	TBD	0	TBD
Support and Management Organizations										
TBD	TBD	TBD	TBD	TBD	N/A (New Start)	0	0	TBD	0	TBD
Test and Evaluation Organizations										
TBD	TBD	TBD	TBD	TBD	N/A (New Start)	0	0	TBD	0	TBD

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207217F Podded Reconnaissance System PROJECT 3652

Government Furnished Property:

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Property									
TBD	TBD	TBD	TBD	N/A (New Start)	0	0	TBD	0	TBD
Support and Management Property									
TBD	TBD	TBD	TBD	N/A (New Start)	0	0	TBD	0	TBD
Test and Evaluation Property									
TBD	TBD	TBD	TBD	N/A (New Start)	0	0	TBD	0	TBD

	Total Prior to FY 1995	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Subtotal Product Development	N/A (New Start)	0	0	TBD	0	TBD
Subtotal Support and Management	N/A (New Start)	0	0	TBD	0	TBD
Subtotal Test and Evaluation	N/A (New Start)	0	0	TBD	0	TBD
Total Project	N/A (New Start)	0	0*	6,714	0	6,714

* The USAF plans to reprogram $3,000 FY 1996 RDT&E funds in order to initiate the Podded Reconnaissance program in FY96.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207247F Air Force TENCAP

PROJECT NO. AND NAME: 0001 Air ForceTENCAP

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
0001 Air ForceTENCAP	23,232	20,707	20,116	19,225	20,103	20,695	20,984	Continuing	Continuing

(U) **A. Mission Description and Budget Item Justification**

Air Force TENCAP is a Congressionally directed program to provide the Tactical Exploitation of National Capabilities (TENCAP). The objective of TENCAP is to improve warfighting capabilities and effectively leverage the billions invested in our national systems for the warfighter. TENCAP expedites improvements to Air Force combat capabilities by performing operational concept demonstrations with rapid prototyping. Therefore, TENCAP is not a developmental program per normal acquisition guidelines. However, TENCAP does support future operational systems development. To enhance combat effectiveness, TENCAP will focus in three areas:

(U) 1) Exploit existing national systems for the tactical warfighter (TENCAP will conceive and demonstrate capabilities to exploit national systems).
(U) 2) Educate warfighters about national systems capabilities (in the form of training, exercises, and readiness activities).
(U) 3) Influence the design and operation of new national systems for the warfighter by advocating tactical impacts of the new systems (in the form of analysis and integration of national systems into roadmaps and architectures for Air Force weapons/C^4I systems).

Since this effort supports fielded systems, it is in the budget activity #7 Operational Systems Development.

(U) FY 1995 ($ in Thousands):

- (U) $21,882 Exploited the tactical use of existing national systems for the warfighter in six Talon areas.
- --Talon Command (Support command and control)
- --Talon Ready (Support mission planning)
- --Talon Shooter (Support for weapons delivery)
- --Talon Knight (Support Special Operations)
- --Talon Touch (Disseminate TENCAP information)
- --Talon Vision (Integrate real-time national system information)
- (U) $300 Training, education, exercises and readiness of national systems
- (U) $1,050 Program support and related efforts to influence and impact of new national systems
- (U) $23,232 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207247F Air Force TENCAP
PROJECT NO. AND NAME 0001 Air ForceTENCAP	

(U) FY 1996 ($ in Thousands):

–	(U) $17,128	Exploit the tactical use of existing national systems for the warfighter
–		--Talon Warrior (Support for training, exercises, and TENCAP applications)
–		--Talon Ready (Support mission planning)
–		--Talon Shooter (Support for weapons delivery)
–		--Talon Knight (Support Special Operations)
–		--Talon Command (Support for Air Force C2 systems)
–		--Talon Vision (Support for emerging technologies and applications)
–	(U) $1,075	Transition of TENCAP Concept Demonstrations to field
–	(U) $2,504	Program support
–	(U) $20,707	Total

(U) FY 1997 ($ in Thousands):

–	(U) $16,334	Exploit the tactical use of existing national systems for the warfighter
–		--Talon Warrior (Support for training, exercises, and TENCAP applications)
–		--Talon Ready (Support mission planning)
–		--Talon Shooter (Support for weapons delivery)
–		--Talon Knight (Support Special Operations)
–		--Talon Command (Support for Air Force C2 systems)
–		--Talon Vision (Support for emerging technologies and applications)
–	(U) $640	Transition of TENCAP Concept Demonstrations to field
–	(U) $3,142	Program support
–	(U) $20,116	Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207247F Air Force TENCAP
PROJECT NO. AND NAME 0001 Air ForceTENCAP	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996*	FY 1997	Total Cost
(U) Previous President's Budget	20,464	21,966	21,079	Continuing
(U) Appropriated Value	21,183			
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-719	-482		
b. SBIR	-432	-459		
c. Omnibus or Other Above Threshold Reprogram		-318		
d. Below Threshold Reprogramming	3,200			
(U) Adjustments to Budget Years Since FY 1996 PB			-963**	
(U) Current Budget Submit/President's Budget	23,232	20,707	20,116	Continuing

(U) Change Summary Explanation: Not applicable

Funding: Multiple Below Threshold Reprogramming activities for FY96

* The FY96 PB amount does not reflect funding reductions that are reserved for other DoD reprogramming needs ($228)

** FY97 reductions include $858 in non-pay inflation and a $105 RDT&E O&M reduction.

Schedule: N/A

Technical: N/A

(U) **C. Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Other Procurement, BA 3, BPAC 2070	608	203	196	199	200	204	209	Cont	Cont

(U) **D. Schedule Profile:** Not applicable. TENCAP is not organized as an acquisition program.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 EXHIBIT)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207247F Air Force TENCAP
PROJECT NO. AND NAME 0001 Air ForceTENCAP	

(U) **A. Project Cost Breakdown ($ in Thousands):** Not applicable.

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations: None.										
Support and Management Organizations:										
Multiple	Various	Multiple			18,510	23,232				
Lockheed Martin	CPAF	Sep 95	Cont	Cont			20,707	20,116	Cont	Cont
Test and Evaluation Organizations: None.										

Government Furnished Property: Not applicable. No Government property furnished to non-Government entities.

Subtotal Product Development	0	0	0	0	0	0
Subtotal Support and Management	18,510	23,232	20,707	20,116	Cont	Cont
Subtotal Test and Evaluation	0	0	0	0	0	0
Total Project	18,510	23,232	20,707	20,116	Cont	Cont

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development*

PE NUMBER AND TITLE: 0207268F / 0604268F Acft Eng Component Improvement Pgm

PROJECT NO. AND NAME: 1012 Aircraft Engine CIP

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
1012 Aircraft Engine CIP	92,376	124,711	99,050	93,905	94,804	99,007	101,467	Continuing	Continuing

***0604268 in FY 95 in BA5**

(U) **A. Mission Description and Budget Item Justification**

CIP provides critical sustaining engineering support (only source) for in-service Air Force engines to maintain flight safety (highest priority), to correct service revealed deficiencies, to improve system Operational Readiness (OR) and Reliability and Maintainability (R&M), to reduce engine Life Cycle Cost (LCC), and to sustain engines beyond their estimated life. Historically, aircraft systems change missions, tactics, and environments to meet changing threats throughout their lives. Numerous new problems can develop in the engines through actual use during deployment, production, and service, and CIP provides the only funds to develop fixes for these field problems. CIP starts with delivery to the user of the first system (aircraft + engine) purchased with procurement funds and continues over the engine's life, gradually decreasing to a minimum level (safety/depot repairs) sufficient to keep older inventory engines operational. CIP addresses out-of-warranty usage and life and enables the Air Force to obtain additional warranties when manufacturers incorporate CIP improvements into production engines. Since operational and safety problems arise throughout a system's service life, CIP must be maintained at a level to provide the engineering support to make the changes essential for continued satisfactory system performance at affordable costs. CIP ensures continued improvements in engine R&M factors, which reduce outyear support costs. Historically, R&M related CIP efforts reduce outyear Operations and Maintenance (O&M) and spares costs by a ratio greater than 21 to 1. O&M and spares budgets assume a viable CIP effort is in place. Without the outyear cost avoidance provided by CIP, outyear support costs would have to be increased drastically. CIP funding is driven by field events and types/maturity of engines, not by the total engine quantity. This program is in budget activity 7 - Operational System Development, Research Category 6.6 beginning in FY97 because all efforts support fielded systems.

(U) FY 1995 ($ in Thousands):

- (U) Continued efforts to increase engine operability and supportability, reduce air aborts, aircraft safety incidents, non-mission capable rates, scheduled and unscheduled engine removals, maintenance man hours, and overall costs. Program included approximately 9181 test hours (8291 sea level, 890 altitude), to analyze, verify and qualify CIP tasks.
- (U) $92,376 675 CIP tasks (231 redesign tasks, 373 repair development tasks, 71 analysis tasks) generated $2.5 Billion in potential LCC savings/cost avoidance.
- (U) $92,376 Total

(U) FY 1996 ($ in Thousands):

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development*	PE NUMBER AND TITLE 0207268F / 0604268F Acft Eng Component Improvement Pgm
PROJECT NO. AND NAME 1012 Aircraft Engine CIP	

- (U) $ 95,225 Continue efforts to increase engine operability and supportability, reduce air aborts, aircraft safety incidents, non-mission capable rates, scheduled and unscheduled engine removals, maintenance man hours, and overall costs. Program will include approximately 8500 test hours (7100 sea level, 1300 altitude, 100 flight test), to analyze, verify and qualify CIP tasks; 540 CIP tasks (209 redesign tasks, 278 repair development tasks, 53 analysis tasks) generating $3.1 Billion in potential LCC savings/cost avoidance.
- (U) $ 29,486 Non-recurring engineering to support re-engining of the RC-135 fleet. These funds are being transferred via a reclassification reprogramming (DD-1415-3) to PE35154F, Defense Airborne Reconnaissance Program to support this Congressionally directed project. Current TF33 engines are becoming difficult and costly to support. GAO report number GAO/NSIAD-92-305, Aug 92, estimates cost savings of $1.7B over 25 years.
- (U) $124,711 Total

(U) FY 1997 ($ in Thousands): Change in PE in report title reflect change to Operational Systems Development Budget Activity

- (U) Continue effort to increase engine operability and supportability, reduce air aborts, aircraft safety incidents, non-mission capable rates, scheduled and unscheduled engine removals, maintenance man hours, and overall costs. To include approximately 600 CIP tasks (230 redesign tasks, 300 repair development tasks, 70 analysis tasks) and 7500 hours of testing, generating $2.6 Billion in potential Life Cycle Cost savings/cost avoidance.
- (U) $ 99,050 Total

(U) B. Program Change Summary ($ in Thousands) [FY95 and FY96 data from PE 0604268F supplied for continuity]

	[0604268F] FY 1995	[0604268F] FY 1996	FY 1997	Total Cost
(U) Previous President's Budget (FY96)	92,564	103,700	105,600	Continuing
(U) Appropriated Value	95,399	133,230		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-1,043	-2,608		
b. SBIR	-1,792	-3,138		
c. Omnibus or Other Above Threshold Reprogramming	0	-2,773		
d. Below Threshold Reprogramming	-130			
(U) Adjustments to Budget Years Since FY1996 PB	-58	0	-6,550	
(U) Current Budget Submit (FY97 BES)/President's Budget	92,376	124,711	99,050	Continuing

(U) Change Summary Explanation:

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development*	PE NUMBER AND TITLE 0207268F / 0604268F Acft Eng Component Improvement Pgm
PROJECT NO. AND NAME 1012 Aircraft Engine CIP	

Funding: FY96 Appropriation for CIP (under PE 0604268F) reduced to $101,730. The Congress disallowed the portion of the program intended for B-2 support, but without prejudice. Congress also added $31,500 in FY96 to conduct non-recurring engineering in support of RC-135 re-engining. The FY96 Above Threshold Reprogramming line includes $1.381M for Bosnia, and $1.392M for F-16s for Jordan.

Schedule: To accommodate funding cuts in FY95, lower priority tasks in FY95 were deferred to FY96 and will be prioritized with FY96 tasks. The Engine Advisory Group assesses the program and budget annually and reviews progress regularly to reconcile budget reductions, shifting priorities, and newly identified, urgent problems.

Technical: No change.

(U) C. Other Program Funding Summary ($ in Thousands): Not Applicable

(U) RELATED ACTIVITIES:

(U) - PE # 0603202F, Aircraft Propulsion Subsystem Integration, provides fan and low pressure turbine technology
(U) - PE # 0603216F, Advanced Turbine Engine Gas Generator, provides compressor, combustor, and high pressure turbine technology
(U) - PE # 0604218F, Engine Model Derivative Program, provides additional component and engine test data
(U) - PE # 0708011F, Industrial Preparedness Program, provides materials processing and component fabrication demonstration
(U) - PEs # 0604268A and #0604268N, Army/Navy Aircraft Engine CIPs for prior years
(U) - PEs # 0207268A and #0207268N, Army/Navy Aircraft Engine CIPs for FY96 and following years

(U) D. Schedule Profile: Not Applicable. CIP is a level of effort program that funds some 600 separate engineering tasks. Most are completed within two years.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development*	PE NUMBER AND TITLE 0207268F / 0604268F Acft Eng Component Improvement Pgm
PROJECT NO. AND NAME 1012 Aircraft Engine CIP	

(U) A. **Project Cost Breakdown ($ in Thousands):** A project cost breakdown is not applicable to this Program, because there are no individual projects, but several hundred independently managed tasks. The bulk of the funding goes to the major engine manufacturers. The FY96 costs are broken down as follows. Cost breakdown for follow-on years is expected to be of similar proportions.

	FY95	FY96	FY97
Contracted Tasks:	$ 83,316	$107,463	$ 83,296
AFFTC Flight Tests:	1,445	2,016	3,020
AEDC Altitude Tests:	4,492	9,568	4,904
Petroleum/Oil/Lubricants:	2,184	4,748	6,530
Mission Support:	939	916	1,300
PE TOTAL	92,376	124,711	99,050

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands):** CIP contracts are awarded on a calendar year basis; normally in January of each year. The contract to Boeing is for the re-engining of RC-135 RIVET JOINT aircraft.

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
GE-Evandale, OH	CPAF	Jan 96	NA	NA	0	$43,681	$35,539	$41,850	CONT	CONT
Pratt & Whitney	CPAF	Jan 96	NA	NA	0	33,389	35,645	35,637	CONT	CONT
GE-Lynn, MA	CPFF	Jan 96	NA	NA	0	2,266	2,500	2,551	CONT	CONT
Allison	CPFF	Jan 96	NA	NA	0	1,453	1,469	1,300	CONT	CONT
Teledyne	CPFF	Jan 96	NA	NA	0	800	790	733	CONT	CONT

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development*

PE NUMBER AND TITLE: 0207268F / 0604268F Acft Eng Component Improvement Pgm

PROJECT NO. AND NAME: 1012 Aircraft Engine CIP

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Allied Signal	CPFF	Jan 96	NA	NA	0	735	1,278	1,200	CONT	CONT
Garrett	CPFF	Jan 96	NA	NA	0	992	1,756	25	CONT	CONT
Boeing	FFP	Est Nov 96	$29,486	$29,486	0	0	$29,486	0	0	$29,486
Support and Management Organizations										
In-house Support						939	916	1,300	CONT	CONT
Petroleum/Oil Lubricants						2,184	4,748	6,530	CONT	CONT
Test and Evaluation Organizations										
Air Force Flight Test Center						1,445	2,016	3,020	CONT	CONT
Arnold Engineering Development Center						4,492	9,568	4,904	CONT	CONT
Government Furnished Property: None										
Subtotal Product Development						83,316	107,463	83,296		
Subtotal Support and Management						3,123	5,664	7,830		
Subtotal Test and Evaluation						5,937	11,584	7,924		
Total Project						$92,376	$124,711	$99,050		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207412F Theater Air Control System

PROJECT NO. AND NAME: 485L Ground Theater Air Control Sys (GTACS)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
485L Ground Theater Air Control Sys (GTACS)	6,555	242	622	723	802	826	836	Continuing	TBD

(U) A. **Mission Description and Budget Item Justification**

Ground Theater Air Control System (GTACS) provides the means through which the Air Component Commander exercises control of his forces to accomplish his assigned mission. This program provides for major improvements to the existing Tactical Air Control System (TACS) which was designed in the 1960s and is now unsupportable. The GTACS RDT&E program consists primarily of the Modular Control Equipment (MCE) Pre-Planned Product Improvements (P3I) program which replaces obsolete equipment (operator consoles, shelters, computers, radios, etc.) in the GTACS. The modernization upgrades C2 interoperability, flexibility, mobility, communications and worldwide operations. The P3I program is structured into multiple phases. Phase one consisted of the integration of secure anti-jam UHF radios, an upgrade to the weapons control and Joint Tactical Air Operations data link software (S/W), and development of a Chemical, Biological and Radiological protection capability. These improvements have already been incorporated into the MCE production line. The current R&D includes the integration of a Joint Tactical Information Distribution System (JTIDS)/Tactical Digital Information Link-J (TADIL-J) capability, the integration of an Automated Air Tasking Order (AATO) capability, integration of secure anti-jam VHF (SINCGARS) radios and upgrades to the Ground Mobile Forces/Satellite Communications digital communications interfaces. This program also includes production funding for JTIDS terminals, JTIDS Modules (JMs), JTIDS Interface Boxes (JIBs) and Operations Modules (OM) Interface Kits, all of which are required to integrate JTIDS/COMM into the MCE. The planned phase includes a software interoperability upgrade to the TADIL-J Reissue 2 baseline, which works towards a Theater Missile Defense capability and the implementation of the Interim JTIDS Message Specification. This program is in budget activity 7 - Operational System Development, Research Category 6.6 because the Ground Theater Air Control System (GTACS) is a fielded, operational system currently undergoing major modifications/upgrades

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207412F Theater Air Control System
PROJECT NO. AND NAME 485L Ground Theater Air Control Sys (GTACS)	

(U) FY 1995 ($ in Thousands)

–	(U)	720	Completed MCE P3I OM Interface Kit development.
–	(U)	580	Completed JIB development.
–	(U)	810	Continued JM development. Effort completed 1 QTR FY96.
–	(U)	2,354	Started development of interoperability upgrades to the MCE P3I system.
–	(U)	2,091	Continued program support, test, and other miscellaneous efforts.
–	(U)	6,555	Total

(U) FY 1996 ($ in Thousands)

–	(U)	152	Continue development of interoperability upgrades to the MCE P3I system.
–	(U)	90	Continue program support, test, and other miscellaneous efforts.
–	(U)	242	Total

(U) FY 1997 ($ in Thousands)

–	(U)	274	Continue development of interoperability upgrades to MCE P3I system.
–	(U)	348	Continue program support, test, and other miscellaneous efforts.
–	(U)	622	Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207412F Theater Air Control System

PROJECT NO. AND NAME: 485L Ground Theater Air Control Sys (GTACS)

B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget (FY1997)	6,922	290	651	TBD
(U) Appropriated Value	7,383	290		
(U) Adjustments to Appropriated Value				
a. General Congressional Reductions	-461	-6		
b. Below Threshold Reprogramming	-212			
c. SBIR	-146			
d. Omnibus / Other Above Threshold Reprogramming				
(U) Adjustments to Budget since FY96 PB	-9	-42	-29	
(U) Current Budget Submit/President's Budget	6,555	242	622	TBD

(U) Change Summary Explanation:

Funding: FY97 reduction (-29) is due to a revised inflation rate.

Schedule: None

Technical: None

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207412F Theater Air Control System

PROJECT NO. AND NAME: 485L Ground Theater Air Control Sys (GTACS)

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Other Procurement AF Total	54,121	18,197	10,007	28,357	24,724	21,190	20,063	Cont	TBD
Budget Activity 3, WSC 833040	47,955	7,472	4,011	22,847	22,897	20,649	20,063	Cont	TBD
Budget Activity 3, WSC 834010	0	0	0	0	0	0	0	0	TBD
Budget Activity 3, WSC 83790A	0	0	0	0	0	0	0	0	0
Budget Activity 4, WSC 84590A	6,166	0	0	0	0	0	0	0	6,166
Budget Activity 6, WSC 86190A	0	10,725	5,993	5,510	1,827	541	0	Cont	TBD

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) MCE P3I OM Interface Kit First Article Award	*											
(U) MCE P3I OM Interface Kit Development			*									
(U) MCE P3I OM Interface EMD DT&E				x								
(U) MCE P3I OM Interface Kit Follow-on Production Award					x							
(U) MCE P3I OM Interface Kit Article IOT&E											x	
(U) MCE P3I Initial Operational Capability (IOC)												x
(U) JIB Development Complete			x									
(U) JM Development Award												
(U) JM Development Complete							x					
(U) AATO Development Complete		x										
(U) AATO IOC		x										

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207412F Theater Air Control System
PROJECT NO. AND NAME 485L Ground Theater Air Control Sys (GTACS)	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Product Development	4,217	152	274
(U) Support and Management	1,618	90	148
(U) Test and Evaluation	720	0	200
(U) Total	6,555	242	622

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Not Applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207417F Air Borne Warning & Control Sys

PROJECT NO. AND NAME: 411L Airborne Warning & Control Sys

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
411L Airborne Warning & Control Sys	81,493	90,722	57,559	29,782	25,225	16,426	17,189	Continuing	TBD

(U) A. **Mission Description and Budget Item Justification**

This program develops and integrates system improvements which enable the E-3 AWACS to remain an effective, survivable airborne surveillance system for command and control of tactical forces and for strategic defense of the U.S. These improvements include Electronic Support Measures (ESM), Central Computer Memory Upgrade, Joint Tactical Information Distribution System (JTIDS) Class 2H/Tadil J and Navstar Global Positioning System (GPS) terminal integrations (collectively known as Block 30/35); the Radar System Improvement Program (RSIP); Extend Sentry effort; Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) Improvement efforts; and Have Quick A-Nets. RSIP will increase radar reliability and maintainability, restore required E-3 surveillance capability against the evolving threats posed by low radar cross section fighters and cruise missiles, improve electronic counter counter measures (ECCM), and enhance man-machine interface. Extend Sentry is a collection of 100+ projects that target investment in three areas. Extend Sentry prevents grounding of aircraft, buys back aircraft from maintenance downtime, and corrects deficiencies to meet operational requirements. C4ISR improvements include Link-16 data integration using improved display capabilities for AWACS Controller Consoles as part of the RSIP and Block 30/35 weapon systems modernization efforts, thereby expanding AWACS - to - shooter interoperability. C4ISR also provides for HF radio upgrade and Tactical Information Broadcast System (TIBS). Category of research: Operational Systems Development. AWACS is a fielded, operational system currently undergoing major modifications/block upgrades/continuing sustainment.

(U) **Acquisition Strategy:**

Block 30/35: ESM is joint development with NATO. Priced FPIF options with Boeing for ESM and 30/35 Group A hardware. CC-2E contract with LORAL Federal Systems with fixed price options. JTIDS and GPS acquired via respective program office-awarded contracts. RSIP is a joint development with NATO. Boeing is prime integrating contractor, Westinghouse is sub for radar equipment items. FFP contract planned sole source to Boeing for production. Extend Sentry acquisition strategy approved, contract vehicle awarded, and tasks continually being added.

(U) FY 1995 ($ in Thousands):

- (U) $12,661 Blk 30/35 includes completion of Full Rate Production Milestone, starting trial install of mod kit into operational aircraft, complete ESM PCA, begin upgrade of FIT and Mission Simulator #1, start upgrade of Avionics Integration Support Facility (AISF) to provide an ESM software maintenance capability.
- (U) $42,722 RSIP activities include completion of the Joint US/NATO DT flight tests, start of US Operational Test and Evaluation (OT&E) flight program, and depot maintenance program, FCA/PCA and continuation of the depot maintenance capability development.
- (U) $26,110 TS-3 aircraft support, program sustaining efforts.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207417F Air Borne Warning & Control Sys
PROJECT NO. AND NAME 411L Airborne Warning & Control Sys	

- (U) $81,493 Total

(U) FY 1996 ($ in Thousands):
- (U) $ 5,121 Blk 30/35 will complete EMD including Electronic Library File (ELF) restructure.
- (U) $30,912 RSIP activities include the completion of FCA/PCA and IOT&E.
- (U) $29,500 Extend Sentry efforts.
- (U) $25,089 TS-3 aircraft support, program sustaining efforts.
- (U) $90,722 Total

(U) FY 1997 ($ in Thousands):
- (U) $ 799 Blk 30/35 will closeout EMD contract actions.
- (U) $ 0 RSIP activities include EMD closeout actions.
- (U) $12,026 Extend Sentry efforts.
- (U) $18,000 C4ISR efforts
- (U) $26,734 TS-3 aircraft support, program sustaining efforts.
- (U) $57,559 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	82,208	96,696	38,753	TBD
(U) Appropriated Value	85,643	96,696		
(U) Adjustments to Appropriated Value				
a. Congressional General Reductions	(1,663)	(2,237)		
b. SBIR	(1,793)	(2,035)		
c. Omnibus & Other Above Threshold Reprogramming		(1,702)		
d. Below Threshold Reprogramming	(694)			
Adjustments to Budget Years			18,806	
(U) Current Budget Submit/President's Budget	81,493	90,722	57,559	TBD

(U) Change Summary Explanation:

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207417F Air Borne Warning & Control Sys
PROJECT NO. AND NAME 411L Airborne Warning & Control Sys	

Funding: FY97 reflects adjustments made during the PB formulation process.
Schedule: RSIP IOT&E Complete slips from FY96/2 to FY96/3 (while planned IOT&E tests have been completed, formal IOT&E will remain open pending corrective action and critical performance fix verification - planned to be complete by June 96). The FY97 budget request does not require any adjustment.
Technical: None

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Aircraft Procurement, AF,BA-5 AWACS Mod	223,618	289,675	125,906	100,329	81,097	82,900	TBD	TBD

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) RSIP DT & E Flight Test Complete		X										
(U) RSIP IOT & E Start			X									
(U) RSIP IOT & E Complete							X					
(U) RSIP PCA						X						
(U) RSIP LRIP Decision					X							
(U) RSIP Trial Install 3QTR98												
(U) RSIP RAA 1QTR00												
(U) RSIP IOC 1QTR00												
(U) BLK 30/35 Full Rate Prod Decision	X											
(U) ESM Full Rate Contract Award		X										
(U) ESM PCA				X								
(U) BLK 30/35 PCA Complete								X				
(U) BLK 30/35 Trial Install Complete							X					
(U) BLK 30/35 LRIP Kit Proof Complete (2)								X	X			
(U) BLK 30/35 Support capability- O Level									X			
(U) - I Level											X	
(U) - D Level 2QTR98												
(U) BLK 30/35 RAA											X	
(U) BLK 30/35 IOC											X	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207417F Air Borne Warning & Control Sys
PROJECT NO. AND NAME 411L Airborne Warning & Control Sys	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Contracts	62,639	66,033	54,214
(U) MITRE/TEMS	6,954	10,889	1,635
(U) GFE	7,301	8,273	100
(U) Travel	1,180	605	715
(U) Other	3,419	4,922	895
(U) Total	81,493	90,722	57,559

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
(U) Boeing(RSIP)	C/FPIF	9/89	88,500	82,400	101,252	2,257	0	0	0	103,609**
(U) WECO(RSIP)	C/FPIF	9/89	327,400	306,900	309,903	19,319	0	0	0	329,222**
(U) Boeing(Blk 30/35)	SS/FPIF	5/87	N/A	N/A	382,191	10,850	5,021	799	0	398,811**
(U)TBD (Extend Sentry)	TBD	N/A*	N/A	N/A	0	0	29,500	30,026	0	64,526
(U) Counter Offensive Air	Studies	N/A	N/A	N/A	1,623	13,953	7,654	10,481	26,148	70,338
(U) RSIP Other	P.O./MIPR	N/A	N/A	N/A	0	0	23,000	0	0	23,000

* N/A based on Extend Sentry Acquisition Strategy which includes multiple contracts with multiple organizations with overlapping and continuing performance periods.
** Total Program includes US and NATO funding and covers contract plus planned ECPs.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207417F Air Borne Warning & Control Sys

PROJECT NO. AND NAME: 411L Airborne Warning & Control Sys

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Support and Management Organizations										
(U) Support/TEMS MITRE/Other					359,611	8,925	10,044	2,845	Cont	TBD
Test and Evaluation Organizations										
(U) Test System-3 ADAPT Contract/ Other test Activities					67,073	16,360	11,482	13,408	Cont	TBD

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property: None

Subtotal Product Development	682,274	56,208	69,196	41,306	Cont	TBD
Subtotal Support and Management	359,611	8,925	10,044	2,845	Cont	TBD
Subtotal Test and Evaluation	67,073	16,360	11,482	13,408	Cont	TBD
Total Project	1,108,958	81,493	90,722	57,599	Cont	TBD

(U) C. Funding Profile ($ in Thousands)

Funds Profile	FY 1995 Obs	FY 1996 Obs	FY 1997 Obs	FY 1995 Exp	FY 1996 Exp	FY 1997 Exp
FY 1995 Q1	10,766			7,515		
FY 1995 Q2	28,453			12,194		
FY 1995 Q3	20,324			9,390		
FY 1995 Q4	15,771			9,633		
FY 1995 Total	75,315			38,732		

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207417F Air Borne Warning & Control Sys

PROJECT NO. AND NAME: 411L Airborne Warning & Control Sys

Funds Profile	FY 1995 Obs	FY 1996 Obs	FY 1997 Obs	FY 1995 Exp	FY 1996 Exp	FY 1997 Exp
FY 1996 Q1	6,178	11,174		6,992	7,526	
FY 1996 Q2		32,002		8,942	13,715	
FY 1996 Q3		22,859		11,381	10,561	
FY 1996 Q4		17,738		10,568	10,835	
FY 1996 Total	6,178	83,773		37,883	42,627	
FY 1997 Q1		6,949	7,483	4,878	7,863	5,180
FY 1997 Q2		0	20,146		10,058	8,634
FY 1997 Q3		0	14,390		12,801	6,648
FY 1997 Q4		0	11,166		11,887	6,821
FY 1997 Total	0	6,949	53,185	4,878	42,609	27,283
FY 1998 Q1			4,374		5,486	4,950
FY 1998 Q2						6,331
FY 1998 Q3						8,058
FY 1998 Q4						7,483
FY 1998 Total	0	0	4,374	0	5,486	26,822

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207419F Tactical Airborne Command & Control System

PROJECT NO. AND NAME: 4133 Airborne Battlefield Command Control Center Improvement

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4133 Airborne Battlefield Command Control Center Improvement	2,619	1,931	342	0	0	0	0	0	5,069

(U) A. Mission Description and Budget Item Justification

The Airborne Battlefield Command and Control Center (ABCCC) provides rapid worldwide Command, Control, Communications and Computer (C4) capabilities to the Joint Force Air Component Commander or Joint Task Force Commander. During combat or contingency operations, ABCCC extends ground based C4I capabilities and can function in a stand alone mode during the absence of ground based units. The primary mission of the ABCCC is to provide on-scene theater battle management for the Combat Air Forces. It receives target nominations from the Air Operations Center (AOC) or other C4I systems(Joint Surveillance Target Attack Radar System (JSTARS), Air Support Operations Center (ASOC), etc,) and directs attack from air, sea and/or land assets to targets in the theater of operations. It can also function as a direct extension of the AOC, and airborne ASOC, or the Air Component Commander's operations center. ABCCC supports functions across a broad spectrum of operations; from Forward Battle Coordination and coordination of Joint Forces, to Close Air Support, Air Drops, Search and Rescue and Crisis Management. Category of research: Operational Systems Development, ABCCC is a fielded, operational system currently undergoing pre-planned product improvements (P3I) which includes integration of the Joint Tactical Information Distribution System (JTIDS), integration of the Air Force Single Channel Ground and Airborne Radio System (SINCGARS), and upgrade of the Satellite Communications capabilities.

(U) FY 1995 ($ in Thousands)
- (U) 228 SINCGARS Source Selection efforts
- (U) 2,235 Start SINCGARS design effort
- (U) 156 Antenna location study
- (U) 2,619 Total

(U) FY 1996 ($ in Thousands)
- (U) 566 Complete SINCGARS design
- (U) 1,108 Complete documentation and acceptance of SINCGARS First Article
- (U) 257 Conduct SINCGARS system verification, validation and test
- (U) 1,931 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207419F Tactical Airborne Command & Control System
PROJECT NO. AND NAME 4133 Airborne Battlefield Command Control Center Improvement	

(U) FY 1997 ($ in Thousands)

- (U) 286 Conduct SATCOM study
- (U) 50 Pre-Planned product improvements cost estimates
- (U) 6 Travel
- (U) 342 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget (FY96)	2,779	2,093	358	5,071
(U) Appropriated Value	2,779	2,093		
(U) Adjustments to Appropriated Value				
a. General Congressional Reductions	(104)	(96)		
b. SBIR	(56)	(45)		
c. Ominibus and Other Above Threshold Reprogramming		(21)		
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY96 PB			(16)	
(U) Current Budget Submit/President's Budget	2,619	1,931	342	5,069

(U) Change Summary Explanation:

Funding: FY 1997 will be the final year of ABCCC RDT&E funding requirements.

Schedule:N/A

Technical:N/A

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207419F Tactical Airborne Command & Control System

PROJECT NO. AND NAME: 4133 Airborne Battlefield Command Control Center Improvement

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U)Aircraft Procurement Air Force, Budget Activity 5, C-130 Mods	4,081	7,110	47	50	516	54	54	0	13,008

Related RDT&E: None

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
SINCGARS EMD Contract Award (May 95)			X									
PDR (Sept 95)				X								
CDR (Apr 96)						X						
DT&E (Jun 96)							X					
Operational Capabilities Demonstration (Dec 96)								X				
First Article Delivery (April 97)											X	
Production (April-Sept 97)								X			X	X
Initial Operational Capability (Mar 97)										X		
Last Kit Delivery (Sept. 97)												X

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207419F Tactical Airborne Command & Control System
PROJECT NO. AND NAME 4133 Airborne Battlefield Command Control Center Improvement	

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
Development	590	136	
Systems Engineering	521	268	
Technical Data	0	181	
Test	306	307	
Engineering/ Management Support	1,042	1,022	
Travel	11	11	6
Research Personnel	141	0	286
Miscellaneous	8	6	50
Total	2,619	1,931	342

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands):** Not required.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207423F Advanced Communications Systems

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	444	1,842	1,822	3,146	3,084	3,173	3,218	Continuing	TBD
1013 Theater Deployable Communications (TDC)	0	1,626	1,622	2,944	2,861	2,944	2,986	Continuing	TBD
2982 Anti-Jam Radio Communications	444	216	200	202	223	229	232	Continuing	TBD

(U) A. Mission Descriptions and Budget Item Justification

The Advanced Communication Systems program procures commercially available ground communications equipment for deployment to theaters of operations and develops and procures jam resistant ultra high frequency (UHF) and very high frequency (VHF) frequency hopping tactical radios. The HAVE QUICK UHF radios provide the primary Air Force and DOD UHF Electronic Counter-Countermeasures (ECCM) voice communications. SINCGARS (Single Channel Ground and Airborne Radio System) provides anti-jam, VHF frequency hopping voice and data communications and is the primary means of ECCM communications between Air Force, Army, USMC aircraft and ground units involved in close air support and joint battlefield operations. RDT&E funds in this program element are used to examine appropriate emerging technologies; provide software development support for the fielded HAVE QUICK family of radios; and determine and resolve integration issues pertaining to commercial-off-the-shelf (COTS) equipment, making this program budget activity 7, Operational System Development. The Theater Deployable Communications (TDC) program provides funding for the research, development, test and evaluation for the modernization of operational deployable communications, and integration of COTS equipment that support tactical air operations in a combat environment. This includes the integration of deployable communications equipment for active duty, Air National Guard combat communications and Theater Air Control System units.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207423F Advanced Communications Systems

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Previous President's Budget (FY 1996)	454	1,934	1,908
(U) Appropriated Value	459		
(U) Adjustments to Appropriated Value			
a. General Congressional Reductions	(5)	(37)	
b. SBIR	(10)	(37)	
c. Ominibus and Other AboveThreshold Reprogramming*		(18)	
d. Below Threshold Reprogramming			
Adjustment to Budget Years Since FY 1996PB			(86)
(U) Current Budget Submit/President's Budget	444	1,842	1,822

(U) Change Summary Explanation:

Funding: Funding increase in FY 1996 is due to the transferring of Theater Deployable Communications production funds from PE 0207422F to PE 0207423F.

Schedule: N/A

Technical: N/A

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 EXHIBIT)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207423F Advanced Communications Systems

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Other Procurement AF, Budget Activity 3, Weapon System Code 837100, PE 0207422F	0	0	0	0	0	0	0	0	51,182
Other Procurement AF, Budget Activity 3, Weapon System Code 837100, PE 0207423F	23,616	26,628	26,345	33,135	32,044	31,935	31,744	Cont.	TBD
(U) Other Procurement AF, Budget Activity 3, Weapon System Code 837290, PE 0207423F	0	0	0	0	0	0	0	0	8,478
(U) Aircraft Procurement AF, Budget Activity 5, Weapon System Code OTHACF, PE 0207423F	1,556	1,921	352	0	0	0	0	0	22,227
(U) Operations and Maintenance AF, PE 0207422F	779	1,078	1,845	2,502	3,309	4,437	5,644	Cont.	
(U) Operational and Maintenance AF PE 0207423F	56								TBD

Other Advanced Communication Systems Programs

- PACER SPEAK Operate the Air Force Air Request Net (AFARN), which the principal means of communications through which theater forces plan, request, coordinate, and control immediate close air support (CAS), reconnaissance, and airlift requests. The AFARN is operated by the Tactical Air Control Parties (TACPs)
- HAVE QUICK Frequency-hopping UHF radio that provides jam-resistant voice and data communications.
- SINCGARS Secure, jam-resistant VHF frequency hopping voice and data communications system that can be configured in ground and airborne modes.
- Digital Communications Terminal (DCT) The DCT is used for message generation and transmission over the AFARN by land maneuver units.

Related RDT&E: N/A

(U) D. **Schedule Profile**: See individual projects

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207423F Advanced Communications Systems

PROJECT NO. AND NAME: 1013 Theater Deployable Communications (TDC)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
1013 Theater Deployable Communications (TDC)	0	1,626	1,622	2,944	2,861	2,944	2,986	Continuing	TBD

(U) **A. Mission Description and Budget Item Justification**

As clearly demonstrated during Desert Shield/Desert Storm (DS/DS), today's generation of deployable communications equipment is bulky, inflexible in design and does not meet today's projected airlift availability or interoperability standards. Air Force planning calls for initial communications assets to be in place prior to the arrival of flying forces. Deployment priorities for DS/DS did not allow timely arrival of communications assets. Funds for this program are to complete joint interoperability certification testing, begin development and implementation of integrated network management software, and to support field activities and conduct integration activities. This program will research COTS equipment that will, either augment existing assets or replace tactical communications packages. The resulting Theater Deployable Communications (TDC) packages will reduce airlift requirements and be designed to support a wide range of operational scenarios during deployment/employment, expansion and sustaining operations. Communications packages will be used by theater air control, combat communications, and special operations units as well as deployed air wings and mobility forces worldwide. Theater Deployable Communications (TDC) funds are accounted for in PE 0207422F in FY95 and PE 0207423F after FY95; therefore, this is not a new start program.

(U) FY 1996 ($ in Thousands)

- (U) 421 Communications architecture planning.
- (U) 534 Development of automation tools.
- (U) 671 Support field interoperability and integration activities
- (U) 1,626 Total

(U) FY 1997 ($ in Thousands)

- (U) 402 Communications architecture planning.
- (U) 518 Development of automation tools
- (U) 702 Field interoperablity and integration activities
- (U) 1,622 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207423F Advanced Communications Systems
PROJECT NO. AND NAME 1013 Theater Deployable Communications (TDC)	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Previous President's Budget		1,713	1,699
(U) Appropriated Value			
(U) Adjustments to Appropriated Value			
a. General Congressional Reductions		(33)	
b. SBIR		(37)	
c. Ominibus and Other Above Threshold Reprogramming		(17)	
d. Below Threshold Reprogramming			
(U) Adjustment to Budget Years Since FY 96PB			(77)
(U) Current Budget Submit/President's Budget (96)		1,626	1,622

(U) Change Summary Explanation:

Funding: N/A

Schedule: N/A

Technical: N/A

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207423F Advanced Communications Systems
PROJECT NO. AND NAME 1013 Theater Deployable Communications (TDC)	

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Other Procurement AF, Budget Activity 3, Weapon System Code 837100, PE 0207422F	25,395	0	0	0	0	0	0	0	51,182
(U) Other Procurement AF, Budget Activity 3, Weapon System Code 837100, PE 0207423F	0	24,183	24,075	31,648	31,478	31,657	31,641	Cont.	TBD
(U) Operations and Maintenance AF, PE 0207422F	779	1,078	1,845	2,502	3,309	4,437	5,644	Cont.	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207423F Advanced Communications Systems
PROJECT NO. AND NAME 1013 Theater Deployable Communications (TDC)	

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
1013 Theater Deployable Comm										II/III (LMST)		
(U) Acquisition Milestones												
(U) Contract Milestones												
(U) Production SATCOM Contract Award			X									
(U) Production SATCOM Deliveries Start							X					
(U) Production Contract for Integrated Communication Access Packages (ICAP) Award								X				
(U) Production of Integrated Comminucations Access Packages (ICAP) Deliveries Start												X
(U) Integrated Net Mgt. Contract Award												
• Communication Architecture Planning	X											
• Development of Automation Tool		X										
(U) Test and Evaluation Milestones												
(U) Complete SATCOM (OT) (TBD)									X			
(U) Complete ICAP (OT)												

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207423F Advanced Communications Systems
PROJECT NO. AND NAME 1013 Theater Deployable Communications (TDC)	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Software Support	0	534	518
(U) Engineering Support		404	402
(U) Integration Activities		601	645
(U) Travel		55	40
(U) Miscellaneous		32	17
(U) Total	0	1,626	1,622

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations: ESC/TG

Government Furnished Property: Not Applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207423F Advanced Communications Systems

PROJECT NO. AND NAME: 2982 Anti-Jam Radio Communications

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2982 Anti-Jam Radio Communications	444	216	200	202	223	229	232	Continuing	TBD

(U) **A. Mission Description and Budget Item Justification**

The fast paced development of new frequency hopping radio technologies by potentially hostile nations dictates that the U.S. maintains a technological lead. Ultra high frequency (UHF) frequency hopping voice radios are needed for jam resistant communications between tactical aircraft and airborne and ground control elements. The HAVE QUICK wave form used in these radios is the NATO standard for UHF anti-jam communications. The HAVE QUICK UHF radios provide the primary Air Force and DOD UHF Electronic Counter-Countermeasures (ECCM) voice communications. SINCGARS (Single Channel Ground and Airborne Radio System) provides anti jam,very high frquency (VHF) frequency hopping radios and data communications and is the primary means of ECCM communications between Air Force, Army, USMC aircraft and ground units involved in close air support and joint battlefield operations.

(U) FY 1995 ($ in Thousands)

- (U) 100 Continued software support for the HAVE QUICK II radios.
- (U) 259 Investigated improvements in anti-jam performance and other anti-jam techniques.
- (U) 85 Continued support of SINCGARS Phase II Qualification Testing and support platform integration analyses.
- (U) 444 Total

(U) FY 1996 ($ in Thousands)

- (U) 50 Continued software support for the HAVE QUICK II radios.
- (U) 106 Investigate improvements in anti-jam performance and other anti-jam techniques.
- (U) 60 Continue support of SINCGARS Phase II Qualification Testing and support platform integration analyses.
- (U) 216 Total

(U) FY 1997 ($ in Thousands)

- (U) 50 Continued software support for the HAVE QUICK II radios.
- (U) 100 Investigate improvements in anti-jam performance and other anti-jam techniques.
- (U) 50 Continue support of SINCGARS Phase II Qualification Testing and support platform integration analyses.
- (U) 200 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207423F Advanced Communications Systems
PROJECT NO. AND NAME 2982 Anti-Jam Radio Communications	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Previous President's Budget (FY 1996)	454	221	209
(U) Appropriated Value	459		
(U) Adjustments to Appropriated Value			
a. General Congressional Reductions	(5)	(4)	
b. SBIR	0		
c.OMINIBUS and Other AboveThreshold Reprogrammings	(10)	(1)	
d. Below Threshold Reprogramming			
(U) Adjustment to Budget Years Since FY96 PB	(15)		(9)
(U) Current Budget Submit/President's Budget	444	216	200

(U) Change Summary Explanation:

Funding: N/A

Schedule: N/A

Technical: N/A

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207423F Advanced Communications Systems

PROJECT NO. AND NAME: 2982 Anti-Jam Radio Communications

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Other Procurement AF, Budget Activity 3, Weapon System Code 837290, PE 0207423F	0	0	0	0	0	0	0	0	8,478
(U) Aircraft Procurement AF Budget Activity 5, Weapon System Code OTHACF, PE 0207423F	1,556	1,921	512	0	0	0	0	0	23,230

(U) D. **Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Software Support Efforts	X				X				X			
(U) Platform Integration analyses		X				X				X		
(U) Contract Milestones												
(U) SINCGARS Production Option				X								

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207431F Combat Air Intelligence System

PROJECT NO. AND NAME: 1004 Pegasus

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
1004 Pegasus	0	0	7,749	6,966	5,194	4,431	3,581	Continuing	TBD

(U) Note: Air Force will request reclassification of these funds into PE 0604321F.

(U) A. **Mission Description and Budget Item Justification**

(U) Combat Intelligence System (CIS) is the single, standard Air Force intelligence automation system optimizing both component and unit-level intelligence functions to provide warfighters with the most accurate and timely intelligence data available. CIS is the core capability for automating the receipt, correlation, and dissemination of intelligence information to a variety of intelligence and operational systems supporting combat planning and execution. It provides an automated capability at the component and unit levels to rapidly receive and process All-Source intelligence data to support Contingency Theater Automated Planning System (CTAPS) as the CIS builds and maintains in-theater situational awareness while deploying to the theater and provides indications and warning (I&W) support upon arrival. CIS provides the capability to receive all source intelligence near-real-time from national, theater, tactical reconnaissance, and intelligence functions. CIS is electronically interoperable and compatible with other intelligence systems to provide an integrated system capable of intelligence support to warfighters, decision makers, battle planners and mission planners.

(U) The preliminary intelligence portion of this program element is in PE 0604321F BA 5, Engineering and Manufacturing Development, because it is developing new and upgrading current capability as the intelligence segment to Theater Battle Management Core Systems (TBMCS).

(U) Acquisition Approach: Full and open competition leading to a cost plus award fee contract.

(U) FY 1997

- (U) $5,579 Continue software development under TBMCS.
- (U) $1,705 Implement results of studies into CIS software under TBMCS.
- (U) $ 465 Continue studies for CIS intelligence interoperability.
- (U) $7,749 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207431F Combat Air Intelligence System

PROJECT NO. AND NAME: 1004 Pegasus

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	0	7,749	TBD
(U) Appropriated Value *	0			
(U) Adjustments to Appropriated Value				
a. General Congressional Reductions	0	0		
b. SBIR	0	0		
c. Omnibus and Other Above Threshold Reprogrammings		0		
d. Below Threshold Reprogramming	0			
(U) Adjustments to Budget Year since PB96				
(U) Current Budget Submit/President's Budget	0	0	7,749	TBD

(U) Change Summary Explanation:

Funding: Air Force will request reclassification of these funds into PE 0604321F.

Schedule:

Technical:

(U) **C. Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Comp	Total Cost
(U) Other Procurement, PE 0207431F Combat Air Intelligence System (Sentinel Byte renamed CIS)	5,406	1,973	2,269	1,976	1,204	1,210	1,192	Cont	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207431F Combat Air Intelligence System

PROJECT NO. AND NAME: 1004 Pegasus

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Comp	Total Cost
(U) Other Procurement, PE 0207414F, Combat Intelligence System (Proc)	17,596	9,114	9,716	8,705	5,264	5,391	5,511	Cont	TBD
(U) RDT&E, PE 0604321F, Combat Intelligence System	8,313	3,617	1,943	1,625	995	1,024	1,038	Cont	

(U) **D. Schedule Profile**

	FY 1997			
	1	2	3	4
(U) Formal Request for Proposal				
(U) CIS 1.1 Release				
(U) Contract Award				
(U) Development Test & Evaluation (DT&E) Start				
(U) DT&E Complete for Software Increment (S/W) #1				
(U) Initial Operational Test & Evaluation (IOT&E) Start				
(U) IOT&E Complete for S/W #1	X			
(U) Version Release S/W #1	X			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207438F Theater Battle Management(TBM) C4I

	COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	28,476	27,844	30,915	14,980	12,411	12,484	11,133	Continuing	TBD
3330	Cmd Control Info Process Sys (C2IPS)*	6,631	5,701	5,779	0	0	0	0	0	18,111
4287	Contingency Theater Auto Plan Sys (CTAPS)	18,354	18,555	21,634	11,231	8,500	8,458	7,051	Continuing	TBD
4288	Wing C2 System (WCCS)	3,491	3,588	3,502	3,749	3,911	4,026	4,082	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

The Theater Battle Management Core Systems (TBMCS) develop force-level and wing-level command, control and intelligence systems which utilize the Air Force TBM C4I standards. Acquisition of these systems will allow the execution of TBM planning, intelligence, and operational functions of the Joint Force Air Component Commander (JFACC). Components included in this document/program element are Command & Control Information Processing System (C2IPS), Contingency Theater Automated Planning System (CTAPS), and Wing Command & Control System (WCCS). This program is Budget Activity 7, Operational Systems Development; and is a Post Milestone III effort.

(U) Acquisition Strategy:

Electronic Systems Center, Hanscom AFB, MA will manage the overall TBMCS program (CTAPS/WCCS) and C2IPS program. Loral C2 Systems was competitively selected and is performing the actual TBMCS software integration and, when directed by the government, develop individual applications consistent with the TBM Architecture. C2IPS efforts will continue under the current prime contractor, Computer Sciences Corporation (CSC).

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207438F Theater Battle Management(TBM) C4I

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget (FY 1996)	29,097	24,813	25,748	TBD
(U) Appropriated Value	29,957	29,813		
(U) Adjustments to Appropriated Value				
a. General Congressional Reductions	(860)	(1,036)		
b. SBIR	(614)	(634)		
c. Omnibus and other Above Threshold Reprogramming*		(299)		
d. Below Threshold Reprogramming	(7)			
(U) Adjustments to Budget Years Since FY96 PB				
a. Program Increase			6,487	
b. Non-Pay Inflation Reduction			(1,320)	
(U) Current Budget Submit/President's Budget	28,476	27,844	30,915	TBD

(U) **Change Summary Explanation:**

Funding: FY95: Below Threshold Reprogramming ($7K) for SAF/AQ computer support.
FY96: Additional $311,451 of appropriated amount earmarked for unidentified priorities.
FY97: $1 million added to C2IPS program, a general reduction and TBM fund realignment.

(U) **C. Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Other Procurement (3080)	31,562	58,172	48,502	32,432	23,137	23,534	23,884	TBD	TBD
(U) Operations and Maintenance (3400)	22,634	15,661	10,244	10,859	10,961	12,421	15,946	TBD	TBD

Related RDT&E:
See Individual Projects

(U) **D. Schedule Profile** - See Individual Project Schedules

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207438F Theater Battle Management(TBM) C4I

PROJECT NO. AND NAME: 3330 Cmd Control Info Process Sys (C2IPS)*

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3330 Cmd Control Info Process Sys (C2IPS)*	6,631	5,701	5,779	0	0	0	0	0	18,111

(U) A. **Mission Description and Budget Item Justification** The Command & Control Information Processing System (C2IPS) program develops communications and information processing hardware and software for all echelons of the Air Mobility Command (AMC). The integration of C2IPS computer resources and software with improved High Frequency (HF) equipment, new Ultra High Frequency (UHF) satellite networks, and other available communications media will result in a unified AMC C2 System. The C2IPS will be developed and installed in four increments. Increment 1 provides a digital data message handling capability at each IPS node and implement mission execution monitoring. Increment 2 will build on Increment 1 software to support mission planning and scheduling. Increments 3 & 4 will improve planning and scheduling capabilities and install Satellite Communications (SATCOM) interfaces and multi-level security. As a result of a broad area review, the Chief of Staff initiated improvements to theater C4I by coordinating and integrating on-going and planned computer systems. Air Force directed an incremental development and migration strategy to merge the best features of IPS into a design for a single wing-level C2 system. This is in Research Category 7, Operational Systems Development and is a Post Milestone III effort.

(U) FY 1995 ($ in Thousands)

- (U) 2,280 Complete Increment 2 software development.
- (U) 2,000 Continue Increment 3 software development.
  - -- Complete Increment 3 Preliminary Design Review (PDR).
  - -- Complete Increment 3 Critical Design Review (CDR).
- (U) 2,251 Continue implementation of force and unit level migration strategies.
- (U) 100 Initiate Increment 4 software development.
- (U) 6,631 Total

(U) FY 1996 ($ in Thousands)

- (U) 1,667 Complete Increment 3 software development.
- (U) 3,648 Continue Increment 4 software development.
- (U) 386 Continue implementation of force and unit level migration strategies.
- (U) 5,701 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207438F Theater Battle Management(TBM) C4I
PROJECT NO. AND NAME 3330 Cmd Control Info Process Sys (C2IPS)*	

(U) FY 1997 ($ in Thousands)

- (U) 800 Complete CDR for Increment 4.
- (U) 1,975 Complete Increment 4 software development.
- (U) 2,809 Complete force and unit level migration.
- (U) 217 Complete Operational Test & Evaluation (OT&E) force and unit level migration.
- (U) 5,779 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget (FY 1996)	6,631	5,991	5,051	17,673
(U) Appropriated Value	6,827			
(U) Adjustments to Appropriated Value				
a. General Congressional Reductions	(196)	(230)		
b. SBIR				
c. Omnibus and other Above Threshold Reprogramming		(60)		
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Year Since FY96 PB				
a. FY97 Program Adjustment			975	
b. Non-Pay Inflation Reduction			(247)	
(U) Current Budget Submit/President's Budget	6,631	5,701	5,779	18,111

(U) Change Summary Explanation:

Funding: FY97: $975 added to C2IPS program and a -$247,000 for revised inflation rates.

Schedule: N/A

Technical: N/A

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207438F Theater Battle Management(TBM) C4I

PROJECT NO. AND NAME: 3330 Cmd Control Info Process Sys (C2IPS)*

(U) C. Other Program Funding Summary ($ in Thousands)

	Prior To FY 1995	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	To Compl	Total Cost
(U) Other Procurement, AF, WSC 834070	4,863								4,863

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Increment 2												
(U) Test Readiness Review (TRR) 2C					X							
(U) Development Test & Evaluation (DT&E) Complete 2C						X						
(U) INC2.0D												
(U) TRR							X					
(U) DT&E									X			
(U) OT&E										X		
(U) Increment 3												
(U) INC 3.0A												
(U) Systems Requirement Review (SSR)									X			
(U) PDR										X		
(U) CDR										X		
(U) TRR											X	
(U) DT&E												X
(U) INC 3.0B												
(U) SSR											X	
(U) PDR												X
(U) TRR												
(U) DT&E												
(U) OT&E												
(U) Increment 4												

Increment 4.0, requirements are deleted and will be incorporated into TBMCS and will be reconciled in this venue.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207438F Theater Battle Management(TBM) C4I

PROJECT NO. AND NAME: 3330 Cmd Control Info Process Sys (C2IPS)*

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Major Contract	3,960	3,040	3,823
(U) Support Contract	1,953	1,861	1,565
(U) In-house Contract	718	800	391
(U) Total	6,631	5,701	5,779

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program	
Product Development Organizations										
CSC	Dec 88	67,847	77,077	43,823	4,250	3,040	3,823	0	54,936	
Support and Management Organizations										
MITRE Contract	Oct 94			18,685	1,471	1,431	1,565	0	23,152	
TEMS Contract				9,589	230	430	0	0	10,249	
In-House Contract				4,086	674	800	391	0	5,951	
Subtotal Product Development					43,823	4,250	3,132	3,102	0	54,307
Subtotal Support and Management					32,360	2,245	2,507	1,956	0	39,068
Subtotal Test and Evaluation					0	0	0	0	0	
Total Project				76,183	6,631	5,701	5,779	0	94,294	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207438F Theater Battle Management(TBM) C4I

PROJECT NO. AND NAME: 3330 Cmd Control Info Process Sys (C2IPS)*

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4287 Contingency Theater Auto Plan System (CTAPS)	18,354	18,555	21,634	11,231	8,500	8,458	7,051	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

The Contingency Theater Automated Planning System (CTAPS) program directly supports the Joint Forces Air Component Commander (JFACC) in the planning and execution of the theater air campaign down to the unit level. The system is designed to open systems standards promoting interoperability among USAF, Services, and Allied command and control systems. The air tasking order generation and dissemination capabilities of CTAPS are the standard for all DoD command and control systems. The program utilizes an evolutionary acquisition strategy that accommodates changes in user requirements and improvements in commercial technology through a series of planned incremental software releases. In FY95, this program began implementing force and unit level migration strategies to merge the best features of existing systems, eliminate redundancy, and improve interoperability. FY96 on-going efforts are migrating the current system to Global Command and Control System (GCCS) common operating environment (COE), ensuring compatibility and commonality among services. This program is in Research Category 7, Operational Systems Development and is a post-milestone III effort.

(U) FY 1995 ($ in Thousands)

- (U) 1,735 Complete and field CTAPS Version 5.1.
- (U) 6,600 Continue software CTAPS Version 5.2 development.
- (U) 2,344 Initiate TBMCS Version planning process.
- (U) 1,243 Continue Air Support Operations Center (ASOC) software and hardware development.
- (U) 1,630 Complete Battlefied Situation Display (BSD) software development.
- (U) 4,802 Systems engineering and support.
- (U) 18,354 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207438F Theater Battle Management(TBM) C4I
PROJECT NO. AND NAME 3330 Cmd Control Info Process Sys (C2IPS)*	

(U) FY 1996 ($ in Thousands)

– (U)	3,000	Complete/Field Version 5.2.
– (U)	5,545	Continue Version planning process, design and development for TBMCS Version 1.0, and initiate full Ops/Intel interoperability.
– (U)	500	Continue development and testing for a Battlefield Situational Awareness capability.
– (U)	2,200	Continue ASOC software development and complete ASOC EMD effort.
– (U)	215	Complete Rome Lab development of the Advanced Planning System (Transitioned to I&D Contractor).
– (U)	5,000	Initiate Air Battle Planning and Architecture modifications to support the new Air Tasking Order (ATO) format.
– (U)	775	Initiate Air Battle Operations and execution modifications to support the new ATO format.
– (U)	1,320	Systems engineering and support.
– (U)	18,555	Total

(U) FY 1997 ($ in Thousands)

– (U)	18,284	Continue version planning process, complete design/development of TBMCS version 1.0, and the full Ops/Intel interoperability.
– (U)	1,300	Complete ASOC software development.
– (U)	1,000	Initiate software development for TBMCS Version 2.
– (U)	1,050	Systems engineering and support.
– (U)	21,634	Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207438F Theater Battle Management(TBM) C4I
PROJECT NO. AND NAME 3330 Cmd Control Info Process Sys (C2IPS)*	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Previous President's Budget (FY 1997)	18,975	15,067	17,027
(U) Appropriated Value	19,538	20,067	
(U) Adjustments to Appropriated Value			
a. General Congressional Reductions	(577)	(675)	
b. SBIR	(600)	(634)	
c. Omnibus and other Above Threshold Reprogramming		(203)	
d. Below Threshold Reprogramming	(7)		
(U) Adjustments to Budget Years Since FY96 PB			
a. Program Realignment			5,530
b. Non-Pay Inflation Reduction			(923)
(U) Current Budget Submit/President's Budget	18,354	18,555	21,634

(U) Change Summary Explanation:

Funding: FY97: General Appropriation realignment.

Schedule: None.

Technical: None.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207438F Theater Battle Management(TBM) C4I
PROJECT NO. AND NAME 3330 Cmd Control Info Process Sys (C2IPS)*	

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Prior to FY 1995	FY 2000	FY 2001	To Compl	Total Cost
(U) Other Procurement, AF, WSC833040								25,490
(U) Other Procurement, AF, WSC820000		695						695
(U) Other Procurement, AF, WSC834520	15,717	41,011	32,614	22,323	12,882	13,168	TBD	TBD
(U) Other Procurement, AF, WSC83790A								308
(U) Other Procurement, AF, WSC84590A	126	72	49					247
(U) Other Procurement, AF, WSC86190A		4,145		740	248	114	TBD	TBD
(U) Operations and Maintenance, AF, PE27438F		14,244	8,595	8,930	9,420	11,335	TBD	TBD

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Begin TBMCS Source Selection	X											
(U) CTAPS Version 5.1 Release	X											
(U) CTAPS Version 5.2 Release								X				
(U) TBMCS Integration & Development Contract Award					X							
(U) TBMCS S/W Version 0.1											X	
(U) TBMCS S/W Version 1.0												

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207438F Theater Battle Management(TBM) C4I
PROJECT NO. AND NAME 4287 Contingency Theater Auto Plan Sys (CTAPS)	

4287 Contingency Theater Auto Plan Sys (CTAPS)	18,354	18,555	21,634	11,231	8,500	8,458	7,051	Continuing	TBD

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) System Integration and Development	13,643	17,235	20,584
(U) System Engineering	2,662	380	400
(U) TEMS	710	200	
(U) SPO Support	1,339	740	650
(U) Total	18,354	18,555	21,634

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations									
LORAL C2 Systems	Oct 95	N/A	N/A	0	1,169	10,760	19,285	Cont	31,200
SAIC (S/W INTEG) (Hampton VA)	Mar 94	N/A	N/A	1,900	9,185	3,000	0	0	14,085
SAIC (ASOC/BSD) (Hampton VA/Anchorage AK)	Feb 94	N/A	N/A	1,828	1,931	1,800	1,300	0	6,859
PARAMAX (APS) (St Paul MN)	Mar 94	N/A	N/A	1,007	200	0	0	0	1,207
INEL (ASOC) (Idaho Falls, ID)	Oct 94	N/A	N/A	0	1,243	900	0	0	2,143

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207438F Theater Battle Management(TBM) C4I

PROJECT NO. AND NAME: 4287 Contingency Theater Auto Plan Sys (CTAPS)

Contractor or Government Performing Activity	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Miscellaneous	Various	N/A	N/A	410	Unk	775	Unk	Unk	TBD
Support and Management Organizations									
MITRE	Oct 94			2,728	2,509	380	400	Cont	TBD
TEMS	Various			720	710	200		Cont	TBD
Misc Contracts	Various			930	1,407	740	650	Cont	TBD
Test and Evaluation Organizations									
Not Applicable									
Subtotal Product Development				5,145	13,728	17,235	20,584	Cont	TBD
Subtotal Support and Management				4,378	4,626	1,320	1,050	Cont	TBD
Subtotal Test and Evaluation				0	0	0	0	0	0
Total Project				9,523	18,354	18,555	21,634	Cont	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207438F Theater Battle Management(TBM) C4I

PROJECT NO. AND NAME: 4287 Contingency Theater Auto Plan Sys (CTAPS)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4288 Wing C2 System (WCCS)	3,491	3,588	3,502	3,749	3,911	4,026	4,082	Continuing	TBD

(U) A. **Mission Description and Budget Item Justification:** This program includes development of mission critical application software for WCCS operating on commercially available hardware and system software. Wing commanders require an accurate, composite picture of their wing's total resources to effectively command, control, and manage their forces in support of their combat sortie generation and reporting responsibilities. The introduction of increasingly sophisticated weapon systems, with their need for and ability to produce large amounts of data, require an automated C2 system to bring meaningful, consolidated information to the commander in near real-time. Today, this information is relayed over secure and unsecured telephones, radios, and other communications devices, as well as by runners to update multi-user status displays (grease boards) or hand written logs. These techniques, which have not changed substantially since World War II, are cumbersome, error prone, may compromise sensitive information, and involve duplication of effort. Disparate efforts have led to the proliferation of stovepipe systems which inherently do not provide interoperability and do not adequately meet the needs of today's air operations. The WCCS program will design, develop and implement an automated, standard wing level C2 system that will be tailored to meet unique MAJCOM and wing requirements, in order to provide interoperability and reduce training and development costs. Key functional areas (operations, maintenance, mission planning, intelligence, weather, etc.) use WCCS to support the wing commander in the mission execution and reporting process by exchanging critical command and control and intelligence information with functional counterparts located throughout the wing. This is in Research Category 7, Operational Systems Development. This program is a post Milestone III effort.

(U) FY 1995 ($ in Thousands)

- (U) 2,000 Complete software development for WCCS Version 1.1.
  - Enhance graphic user interfaces.
  - Continue to update unit/force level interfaces.
  - Update Databases.
  - Technical upgrades (Oracle 7, Ovation).
  - On-line help capability.
  - Release & Deploy WCCS Version 1.1.
  - Enhance system security.
  - Begin Force/Unit level migration.
- (U) 50 Begin software development budgeted for TBMCS Version 1.0.
- (U) 1,441 Systems engineering and support.
- (U) 3,491 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207438F Theater Battle Management(TBM) C4I
PROJECT NO. AND NAME 4287 Contingency Theater Auto Plan Sys (CTAPS)	

(U) FY 1996 ($ in Thousands)

- (U) 2,577 Initiate Version planning process, design and development for TBMCS Version 1.0.
  - (U) Continue graphical user interface standardization.
  - (U) Continue Decision Support System (DSS) Module.
  - (U) Initiate Scheduler.
  - (U) Continue first phase of security enhancement implementation.
  - (U) Continue unit/force level integration.
- (U) 1,011 Systems engineering and support.
- (U) 3,588 Total

(U) FY 1997 ($ in Thousands)

- (U) 2,442 Complete design/development of TBMCS version 1.0.
  - (U) Complete Scheduler.
  - (U) Phase II Decision Support System (DDS) Module.
  - (U) Continue first phase of security enhancement implementation.
  - (U) Include/modify unit/force level interfaces (Air Force Mission Support System (AFMSS), Automated Weather Distribution System (AWDS), Base Recovery Control System (BRCS), and Combat Ammunition System-Base (CAS-B).
  - (U) P3I efforts.
  - (U) Continue force/unit level migration.
- (U) 500 Initiate TBMCS software Version 2.0 development.
- (U) 560 Systems engineering and support.
- (U) 3,502 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207438F Theater Battle Management(TBM) C4I

PROJECT NO. AND NAME: 4287 Contingency Theater Auto Plan Sys (CTAPS)

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Previous President's Budget (FY 1996)	3,491	3,755	3,670
(U) Appropriated Value	3,592	3,755	
(U) Adjustments to Appropriated Value			
a. General Congressional Reductions	(101)	(131)	
b. SBIR			
c. Omnibus and other Above Threshold Reprogramming		(36)	
d. Below Threshold Reprogramming			
(U) Adjustments to Budget Years Since FY96 PB			
a. General FY97 Reduction			(18)
b. Non-Pay Inflation Reduction			(150)
(U) Current Budget Submit/President's Budget	3,491	3,588	3,502

(U) Change Summary Explanation:

Funding: FY96: Amount does not include an additional $39K reduction earmarked for unidentified priorities.
FY97: General reduction in FY97 A-POM.

Schedule: N/A

Technical: N/A

(U) **C. Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Prior to FY 1995	FY 2000	FY 2001	To Compl	Total Cost
(U) Other Procurement AF, WSC837100								21,356
(U) Other Procurement AF, WSC834070	15,719	10,474	15,352	9,369	10,404	10,602	Cont	Cont

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207438F Theater Battle Management(TBM) C4I
PROJECT NO. AND NAME 4287 Contingency Theater Auto Plan Sys (CTAPS)	

	FY 1995	FY 1996	FY 1997	Total Prior to FY 1995	FY 2000	FY 2001	To Compl	Total Cost
(U) Other Procurement AF, WSC86190A		1,775						
(U) Operations and Maintenance, AF	20,302	1,339	1,478	1,466	1,673	1,465	Cont	Cont

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Software release Version 1.1				X								
(U) Deployment Version 1.1				X								
(U) Begin TBMCS Source Selection	X											
(U) TBMCS Integration & Development Contract Award				X								
(U) TBMCS S/W Version 1												
(U) Version 1 Release												
(U) Version 1 OT&E												
(U) TBMCS S/W Version 2												

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207438F Theater Battle Management(TBM) C4I

PROJECT NO. AND NAME: 4288 Wing C2 System (WCCS)

4288 Wing C2 System (WCCS)	3,491	3,588	3,502	3,749	3,911	4,026	4,082	Continuing	TBD

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) System Integration and Development	2,050	2,577	2,942
(U) System Engineering	750	344	400
(U) TEMS	0	220	0
(U) SPO Support	691	447	160
(U) Total	3,491	3,588	3,502

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations									
SAIC	Jan 94	N/A	N/A	3,000	2,000				5,000
Loral C2 Systems	Oct 95	N/A	N/A		50	2,577	2,942	Cont	TBD
Support and Management Organizations									
MITRE	Oct 94	N/A	N/A		750	344	400	Cont	TBD
Miscellaneous	Various	N/A	N/A		591	642	135	Cont	TBD

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207438F Theater Battle Management(TBM) C4I
PROJECT NO. AND NAME 4288 Wing C2 System (WCCS)	

Government Furnished Property: Not Applicable.

Contractor or Government Performing Activity	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Production Development Property									
Local Purchase Orders*	Various			28	100	25	25	Cont	TBD
Test and Evaluation Organizations									
Not Applicable									
*Various small contracts/delivery orders based on requirements.									
Subtotal Product Development			3,028	2,050	2,577	2,942		Cont	TBD
Subtotal Support and Management				1,441	1,011	560		Cont	TBD
Subtotal Test and Evaluation									
Total Project			3,028	3,491	3,588	3,502		Cont	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207590F Seek Eagle

	COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	15,449	16,394	15,469	16,102	19,353	20,115	20,905	Continuing	TBD
2784	Armament Standardization/Control/Munitions Material Handling Equipment	0	1,152	1,181	1,154	1,208	1,242	1,272	Continuing	TBD
4037	SEEK EAGLE Certification	15,449	15,242	14,288	14,948	18,145	18,873	19,633	Continuing	TBD

(U) A. **Mission Description and Budget Item Justification**

The Air Force has a variety of combat aircraft and numerous stores (munitions, missiles, fuel tanks, electronic countermeasures pods, etc.). Aircraft carry these stores in countless different loading combinations determined by operational scenarios, missions, and tactics. Loading configurations change as operational plans and tactics change, and as new aircraft and stores are developed. Before operational use, the Air Force must certify these configurations for safe loading, carriage, and separation (jettison and normal release), and must verify ballistics accuracy under the user-certified carriage and employment parameters. Electronic Technical Orders (TO's) are developed through the Combat Stores Loading Software (CSLS) and Combat Weapons Delivery Software (CWDS). The Air Force SEEK EAGLE program completes these certifications through any combination of ground and flight testing, wind tunnel testing, and engineering analysis. Over 700 aircraft-store combinations exist to be certified, with new ones added on a regular basis. Depending upon the complexity, certification takes from months to years. The SEEK EAGLE program is also responsible for insertion of new and emerging technologies into the SEEK EAGLE process and providing resources for sustainment of a viable Air Force aircraft-store certification capability. The Armament Standardization/Control/Munitions Material Handling Equipment (MMHE), Project 2784, satisfies several USAF and Tri-service requirements for standardization of armament and support equipment and eliminates unnecessary duplication of MMHE. (Funding for Project 2784 for FY96 and beyond was transferred to SEEK EAGLE from PE 64602F, Armament/Ordnance Development.) The RDT&E Research Category/Budget Activity is Operational Systems Development because the PE supports fielded systems.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207590F Seek Eagle

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	15,982	17,390	18,059	TBD
(U) Appropriated Value	15,982	17,390		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-174	-340		
b. SBIR	-334	-296		
c. Omnibus or Other Above Threshold Reprogram		-360		
d. Below Threshold Reprogramming	-25			
(U) Adjustments to Budget Years Since FY 1996 PB			-2,590	
(U) Current Budget Submit/President's Budget	15,449	16,394	15,469	TBD

(U) Change Summary Explanation:

Funding: FY96 reductions were for SBIR, general Congressional Reductions, support for Bosnia operations, and reprogramming for F-16s for Jordan. FY97 changes resulted from AF general reductions and inflation.

Schedulel: N/A

Technical: N/A

(U) **C. Other Program Funding Summary ($ in Thousands)**

Appropriation:

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Missile Procurement	1,102	5,874	8,033	10,722	6,927	6,670	7,986	Cont.	TBD
(U) Procurement of Ammunition,AF	6,251								

(U) **D. Schedule Profile**

SEEK EAGLE program does not execute in accordance with (IAW) established acquisition program milestones. Each aircraft-store configuration requested by the user goes through the SEEK EAGLE process IAW the designated user priority.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207590F Seek Eagle

PROJECT NO. AND NAME: 2784 Armament Standardization/Control/Munitions Material Handling Equipment

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2784 Armament Standardization/Control/Munitions Material Handling Equipment	0	1,152	1,181	1,154	1,208	1,242	1,272	Continuing	TBD

(U) **A. Mission Description and Budget Item Justification**

Armament Standardization/Control/Munitions Handling Equipment (MMHE): This continuing project develops and improves the standardization and commonality of improved munitions handling and armament equipment to preclude duplication and proliferation. This project's efforts are limited to the study, design and development of MMHE and armament control systems. Any Procurement will be performed and funded by the applicable weapons system project. (Funding for Project 2784 for FY96 and beyond is transferred to PE 27590F, SEEK EAGLE from PE 64602F, Armament/Ordnance Development.)

(U) FY 1995 ($ in Thousands):

- FY95 funding and plans located in PE 64602F, Armament/Ordnance Development

(U) FY 1996 ($ in Thousands):

- (U) $ 252 Initiate/continue/complete design/development of various MMHE projects, including completing design of the B-2 Bomb Rack Assembly Cross-load Adapter, GBU Fin Rack, B-1 Nuclear Ram Assembly, and completing testing of the B-1B Preloading Adapter, F-22 Pylon Adapter, and T-Bar Adapter.
- (U) $ 500 Continue design and manufacture of the Robotic Advanced Technology Demonstrator
- (U) $ 150 Continue the design of MHU-110 Trailer Upgrades
- (U) $ 250 Continue design/prototype B-1/B-52/B-2 Rotary Launcher Load Adapter and B-52H Pylon Load Adapter
- (U) $ 1,152 Total

(U) FY 1997 ($ in Thousands):

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207590F Seek Eagle
PROJECT NO. AND NAME 2784 Armament Standardization/Control/Munitions Material Handling Equipment	

- (U) $ 481 Initiate/continue/complete design/development of various MMHE projects, including new development technology, Locally Manufactured Munitions Equipment (LMME), and completing design of the Rocket and Computer Control Group (CCG) Modules, 40-Foot Trailer Trolleys, Flare Rack, B-52 Air Launched Cruise Missile (ALCM) Pylon Adapter, and testing GBU Fin Rack, B-1 Nuclear Ram Assembly, and 40-Foot Trailer Rails.
- (U) $ 150 Complete design/prototype MHU-110 Trailer upgrades
- (U) $ 500 Complete construction and initiate evaluation of the Robotic Advanced Technology Demonstrator (ATD)
- (U) $ 50 Complete testing of B-1/B-52/B-2 Rotary Launcher Load Adapter
- (U) $ 1,181 Total

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	N/A	1,175	1,187	Cont.
(U) Appropriated Value	N/A	1,175		
(U) Adjustments to Appropriated Value	N/A			
a. Cong Gen Reductions		-23		
b. SBIR				
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY 1996 PB	N/A		-6	
(U) Current Budget Submit/President's Budget	N/A	1,152	1,181	Cont.

(U) Change Summary Explanation:
Funding: FY96 reductions were for general Congressional Reductions. FY97 change was from inflation adjustment.
Schedule: N/A
Technical: N/A

(U) **C. Other Program Funding Summary ($ in Thousands)**
Related Activities: These is no other unnecessary duplication of effort within the Air Force or Department of Defense.

(U) **D. Schedule Profile:** Not Applicable

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207590F Seek Eagle
PROJECT NO. AND NAME 2784 Armament Standardization/Control/Munitions Material Handling Equipment	

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U)Various MMHE Projects	N/A	252	481
(U) Robitics ATD	N/A	500	500
(U) MHU-110 Trailer Upgrade	N/A	150	150
(U) Rotary Launcher/Pylon Loading Adapters	N/A	250	50
(U) Total	N/A	1,152	1,181

NOTE: Projected costs for items listed as N/A in 1995 above can be found in PE 64602F, Armament/Ordnance Development

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207590F Seek Eagle

PROJECT NO. AND NAME: 2784 Armament Standardization/Control/Munitions Material Handling Equipment

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Naval Air Warfare Center	T&M	Sep 93	830	880	N/A	N/A	0	0	0	0
Dept of Energy/NASA	T&M	Mar 94	960	880	N/A	N/A	500	500	Continuing	TBD
Support and Management Organizations										
TEAS/TEAMS	CP	Oct 93	Continuing	Continuing	N/A	N/A	377	400	Continuing	TBD
AFDTC/FM	CP	Oct 93	Continuing	Continuing	N/A	N/A	130	130	Continuing	TBD
646SUPS/LGS	CP	Cont	Continuing	Continuing	N/A	N/A	13	13		
WL/MN	CP	Cont	Continuing	Continuing	N/A	N/A	100	100		
Other	CP	Oct 93	Continuing	Continuing	N/A	N/A	12	18	Continuing	TBD
Test and Evaluation Organizations										
46th Test Wing			Continuing	Continuing	N/A	N/A	20	20	Continuing	TBD
Government Furnished Property: Not Applicable										
Subtotal Product Development					N/A	500	500			
Subtotal Support and Management					N/A	632	661			
Subtotal Test and Evaluation					N/A	20	20			
Total Project					N/A	1,152	1,181	Continuing	TBD	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207590F Seek Eagle

PROJECT NO. AND NAME: 4037 SEEK EAGLE Certification

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4037 SEEK EAGLE Certification	15,449	15,242	14,288	14,948	18,145	18,873	19,633	Continuing	TBD

(U) **A. Mission Description and Budget Item Justification**

Air Force aircraft carry a variety of combat stores (munitions, missiles, fuel tanks, electronic countermeasures, pods, etc.) in countless different loading combinations determined by operational scenarios, missions, and tactics. Loading configurations change based on operational plans and tactics, and as new aircraft and stores are developed. Before operational use, the Air Force must certify these configurations for safe loading, carriage, and separation (jettison and normal release), and must verify ballistics accuracy under the user-specified carriage and employment parameters. The SEEK EAGLE program completes these certifications through any combination of ground and flight testing, wind tunnel testing, and engineering analysis. More than 700 aircraft-store configurations exist to be certified, with new ones added on a regular basis. Certification may take months to years to complete because of the diversity and interaction among systems being tested. The SEEK EAGLE program is also responsible for insertion of new and emerging technologies into the SEEK EAGLE process and providing resources to sustain a viable Air Force aircraft/store certification capability.

(U) FY 1995 ($ in Thousands):

- (U) $ 2,679 Complete certification of conventional weapons on bomber aircraft, including the CBU-87/89/97 on the B-1B
- (U) $ 1,131 Continue F-111 mixed load testing
- (U) $ 203 Develop and mange the Combat Stores Loading Software (CSLS) and standard configuration load builder for the Air Force's Combat Weapons Delivery Software. (CWDS)
- (U) $ 9,918 Initiate/continue/complete aircraft-stores certification on fighter aircraft, including beginning F-16 C/D Block 50/52D and AGM-88B/C (4 HARM)
- (U) $ 1,518 Maintain SEEK EAGLE Engineering Analysis Capability
- (U) $ 15,449 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207590F Seek Eagle
PROJECT NO. AND NAME 4037 SEEK EAGLE Certification	

(U) FY 1996 ($ in Thousands):

- (U) $ 193 Complete certification of F-16 C/D Block 50/52D and AGM-88 B/C (4 HARM)
- (U) $ 1,140 Initiate aircraft load/separation modeling capability using Applied Computational Fluid Dynamics (ACFD).
- (U) $ 10,409 Initiate/continue/complete various aircraft-store certification on fighter and bomber aircraft
- (U) $ 2,200 Initiate/continue/develop/complete various automated Technical Orders/mission planning tools using Combat Weapons Delivery Software (CWDS) and Combat Stores Loading Software (CSLS)
- (U) $ 1,300 Initiate certification of F-15 A/B/C/D/E, F-16 and AMRAAM P3I.
- (U) $ 15,242 Total

(U) FY 1997 ($ in Thousands):

- (U) $231 Initiate/design/develop F-22 models to use for follow-on certification
- (U) $ 1,157 Continue/complete aircraft load/separation prediction capability using Applied Computational Fluid Dynamics (ACFD)
- (U) $ 10,600 Initiate/continue/complete aircraft-store certification on fighter and bomber aircraft
- (U) $ 2,300 Initiate/continue/develop/complete various automated Technical Orders/mission planning tools using CWDS and CSLS
- (U) $14,288 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	15,982	16,215	16,872	TBD
(U) Appropriated Value	15,982	16,215		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-174	-317		
b. SBIR		-296		
c. Omnibus or Other Above Threshold Reprogram	-25	-360		
d. Below Threshold Reprogramming	-334			
(U) Adjustments to Budget Years Since FY 1996 PB			-2,548	
(U) Current Budget Submit/President's Budget	15,449	15,242	14,288	TBD

(U) B. Program Change Summary ($ in Thousands (continued)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207590F Seek Eagle
PROJECT NO. AND NAME 4037 SEEK EAGLE Certification	

(U) Change Summary Explanation:

Funding: FY96 reductions were for SBIR, general Congressional Reductions, support for Bosnia operations, and reprogramming for F-16s to Jordan. FY97 reductions result from general AF reductions and testing requirements for fighter and bomber aircraft.

Schedule: N/A

Technical: N/A

(U) C. Other Program Funding Summary ($ in Thousands)

Appropriation:

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Other Procurement									
(U) Missile Procurement	1,102	5,874	8,033	10,722	6,927	6,670	7,986	Continuing	TBD
(U) Procurement of AF Ammunition	6,251								

(Note: Procurement of Combined Effects Munitions and Gator Cluster Bomb Units submunitions was accelerated into FY95 and FY96 from FY97 to coincide with the termination of manufacturing capability.)

(U) D. Schedule Profile

SEEK EAGLE program does not execute in accordance with (IAW) established acquisition program milestones. Each aircraft-store configuration requested by the user goes through the SEEK EAGLE process IAW the designated user priority.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207590F Seek Eagle
PROJECT NO. AND NAME 4037 SEEK EAGLE Certification	

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Process Sustainment	1,082	1,100	1,050
(U) Engineering Analysis	1,543	1,772	2,452
(U) Flight Testing	5,868	5,431	4,861
(U) Wind Tunnel Testing	2,150	2,142	2,019
(U) Other	2,885	3,224	2,285
- Ballistic/ Safe Escape Analysis			
- Tech Order/P.C. Floppy Disk			
- Loading Process Development/Verification			
(U) Mission Support	1,921	1,573	1,621
(U) Total	15,449	15,242	14,288

(Note: FY96/97 Engineering Analysis increased due to historical unscheduled flight clearance requirements and the use of new technology insertion tools.)
(Note: FY96/97 Reduction in mission support is due to streamlining efforts.)

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207590F Seek Eagle
PROJECT NO. AND NAME 4037 SEEK EAGLE Certification	

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Support and Management Organizations										
Mission Support	PO	Continuous		Continuous	4,173	1,921	1,618	1,621	Continuing	9,333
Test and Evaluation Organizations										
46th Test Wing	PO	Continuous		Continuous	55,637	5,461	5,725	5,429	Continuing	72,252
		Continuous		Continuous	6,900	2,041	2,192	2,219	Continuing	13,352
		Continuous		Continuous	20,617	6,026	5,707	5,019	Continuing	37,369
Government Furnished Property:		Not Applicable								
Subtotal Product Development										
Subtotal Support and Management					4,173	1,921	1,618	1,621		9,333
Subtotal Test and Evaluation					83,154	13,528	13,624	12,667		122,973
Total Project					87,327	15,449	15,242	14,288		132,306

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207601F USAF Wargaming and Simulation

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	14,656	18,794	19,361	23,493	21,088	23,863	23,596	Continuing	Continuing
1008 National Air and Space Warfare Model (NASM)	14,656	6,298	17,323	14,137	10,212	11,197	9,792	Continuing	Continuing
1011 Joint Modeling & Simulation Integration Program (JMSIP)	0	0	2,038	4,051	5,414	7,047	8,037	Continuing	Continuing
2888 Theater Air Command & Control Sim Facility (TACCSF)	0	0	0	5,305	5,462	5,619	5,767	Continuing	Continuing
4474 Theater Air Defense Battle Management C4I (TAD BMC4I)	0	12,496	0	0	0	0	0	0	0

(U) **A. Mission Description and Budget Item Justification**

Initiated in FY 94, this program is in budget activity 7 - Operational System Development, because it provides RDT&E funding for Air Force and Joint wargaming architecture and model development, primarily in support of battlestaff training, education, and military operations. It also funds TAD BMC4I which fuses and expands on existing capabilities to support the theater CINCs. TAD BMC4I will move to new PE 65704F project 1010 in FY 96.
See individual R-2s for detailed year-by-year justification.

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget (FY 96)	13,306	19,762	25,624	Continuing
(U) Appropriated Value	14,110	19,762		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-517	-501		
b. SBIR	-287	-312		
c. Omnibus or Other Above Threshold Reprogram		-155		
d. Below Threshold Reprogramming	1,350			
(U) Adjustments to Budget Years Since FY 1996 PB			-6,263	
(U) Current Budget Submit/President's Budget	14,656	18,794	19,361	Continuing

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207601F USAF Wargaming and Simulation

(U) Change Summary Explanation:

Funding: FY 97: $19.062M reprogrammed from TAD BMC4I project 4744 into PE 65704 project 1010. See individual R-2s for project details.

Schedule: See individual R-2s attached

Technical: See individual R-2s attached

(U) C. Other Program Funding Summary ($ in Thousands)

The PE also includes O&M and Procurement funding for the operation of four Air Force wargaming and simulation centers -- the Warrior Preparation Center (WPC), Einsiedlerhof AS, Germany; the Air Force Wargaming Institute, Maxwell AFB, AL; the USAF Battlestaff Training School (BLUE FLAG), Hurlburt Field, FL; and the Theater Battle Arena (TBA), The Pentagon, DC. By centralizing O&M and Procurement funding, the Air Force more efficiently manages existing wargaming and simulation resources while ensuring developmental activities are responsive to evolving Air Force, Joint, and DoD Modeling and Simulation (M&S) requirements and capabilities.

Appropriation	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) O&M (AF 3400)	18,783	32,791	31,129	30,974	33,924	36,891	40,561	Contin	Contin
(U) Other Procurement, Air Force 834010 ADPE	664	664	663	688	706	722	738	Contin	Contin

(U) D. Schedule Profile See individual R-2s attached

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207601F USAF Wargaming and Simulation

PROJECT NO. AND NAME
1008 National Air and Space Warfare Model (NASM)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
1008 National Air and Space Warfare Model (NASM)	14,656	6,298	17,323	14,137	10,212	11,197	9,792	Continuing	Continuing

(U) A. **Mission Description and Budget Item Justification**

This program provides funds for Air Force and Joint wargaming architecture and model development, primarily in support of battlestaff training, education, and military operations. A new wargaming model, NASM, is being developed to replace the existing Air Force standard Air Warfare Simulation (AWSIM). NASM will expand the use and role of modeling and simulation (M&S) in support of operational and acquisition decision making, and increase the interoperability between Air Force and joint efforts. NASM includes an overall USAF M&S architecture and provides a reusable, portable, scaleable, robust distributed core for other simulations. It includes an air combat resolution model to meet the needs of USAF MAJCOMs and Unified/Specified Command air components to train Air Component Commanders and their battle staffs. Primary users will be the unified command air components, CINCs, JFACCs, and Service components, as supported by BLUE FLAG and WPC for use in joint exercises involving air, ground, and sea campaigns. NASM is the air component portion of the evolving DoD, Joint Staff and Services Joint Simulation System (JSIMS) initiative.

(U) FY 1995 ($ in Thousands):
- (U) $1,956 Continue rapid prototyping of M&S architecture elements
- (U) $3,372 Continue development of NASM prototypes and operate the program management office
- (U) $1,950 Continue to participate in Joint M&S architecture development activities
- (U) $2,000 Support the Joint Simulation System (JSIMS) Joint Program Office
- (U) $3,557 Continue to Re-engineer the Air Warfare Simulation into the final deliverable system
- (U) $ 471 Expand interfaces of M&S systems and real world C3 and C3I systems
- (U) $1,350 Develop an "exotic M&S demonstration" as directed by CSAF for the 95 Army-Air Force Warfighter talks
- (U) $14,656 Total

(U) FY 1996 ($ in Thousands):
- (U) $ 598 Begin development of specific air objects to support JSIMS architecture
- (U) $2,200 Begin NASM integration effort and operate the program management office
- (U) $1,500 Continue to participate in Joint M&S architecture development activities

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207601F USAF Wargaming and Simulation
PROJECT NO. AND NAME 1008 National Air and Space Warfare Model (NASM)	

- (U) $1,000 Support and configuration manage the Re-engineered AWSIM
- (U) $1,000 Expand interfaces of M&S systems and real world C3 and C3I systems
- (U) $6,298 Total

(U) FY 1997 ($ in Thousands):

- (U) $10,823 Continue development of specific air objects to support JSIMS architecture
- (U) $ 2,500 Continue NASM integration effort and operate the program management office
- (U) $ 1,500 Continue to participate in Joint M&S architecture development activities
- (U) $ 1,000 Support and configuration manage the Re-engineered AWSIM
- (U) $ 1,500 Expand interfaces of M&S systems and real world C3I systems
- (U) $17,323 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	13,306	6,700	6,562	Continuing
(U) Appropriated Value	14,110	6,700		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-517	-244		
b. SBIR	-287	-105		
c. Omnibus or Other Above Threshold Reprogram		-53		
d. Below Threshold Reprogramming	1,350			
(U) Adjustments to Budget Years Since FY 1996 PB			10,761	
(U) Current Budget Submit/President's Budget	14,656	6,298	17,323	Continuing

(U) Change Summary Explanation:

Funding:

FY95: $ 1.350M reprogrammed in to support Army-Air Force Warfighter Talks Demonstration

FY96: $ 3.4 is planned to be reprogrammed in to make NASM executable

FY97: $ 10.800M added to make NASM executable

- $ 3.943M taken to support Joint Modeling and Simulation System (JSIMS) core development

$ 4.500M added to enable NASM to achieve initial operational capability (IOC) in FY99

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207601F USAF Wargaming and Simulation
PROJECT NO. AND NAME 1008 National Air and Space Warfare Model (NASM)	

- $ 0.070M Air Force internal reprioritization
- $ 0.526M revised economic assumption

Schedule: No changes

Technical: Technical risk is increased if unable to perform several rapid prototypes

(U) C. **Other Program Funding Summary ($ in Thousands)** None

(U) D. **Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) AWSIM Re-engineering	-----	-----	-----	-----	-----	X	-----	-----	-----	-----	-----	-----
	-	-	-	-	-		-	-	-	-	-	-
(U) NASM Prototypes	-----	-----	-----	X								
	-	-	-									
(U) NASM Process Re-engineering	X	-----	-----	-----	-----	X						
		-	-	-	-							
(U) NASM Integration								X	-----	-----	-----	-----
									-	-	-	-

(U) Initial Op Capability (IOC) 4QFY99
(U) Full Op Capability (FOC) 4QFY03

Note: NASM development schedule coincides with the Joint Simulation System (JSIMS) schedule of IOC in FY99 and FOC in FY03.
AWSIM/R undergoes ALSP Confederation Testing in 2nd Qtr FY96 and is scheduled to be fielded in 3rd Qtr FY96.
NASM Process Re-Engineering expanded to include analysis of DoD HLA and other evolving M&S efforts.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207601F USAF Wargaming and Simulation
PROJECT NO. AND NAME 1008 National Air and Space Warfare Model (NASM)	

NASM Integration contract award pending approval on NASM ORD.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207601F USAF Wargaming and Simulation
PROJECT NO. AND NAME 1008 National Air and Space Warfare Model (NASM)	

(U) **A. Project Cost Breakdown ($ in Thousands)**

National Air & Space Warfare Model (NASM)	FY 1995	FY 1996	FY 1997
(U) Cost Categories:			
(U) a. Software development	9,540	2,982	12,006
(U) b. Contractor support	3,222	2,492	3,541
(U) c. Program Management support	1,794	724	1,676
(U) d. Travel	100	100	100
(U) Total	14,656	6,298	17,323

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Not Applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0207601F USAF Wargaming and Simulation

PROJECT NO. AND NAME: 1011 Joint Modeling & Simulation Integration Program (JMSIP)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
1011 Joint Modeling & Simulation Integration Program (JMSIP)	0	0	2,038	4,051	5,414	7,047	8,037	Continuing	Continuing

(U) **A. Mission Description and Budget Item Justification**

Numerous models currently exist and are being modified or developed for a broad range of areas including acquisition, analysis, test and evaluation, and training. JMSIP is a new start which funds the upgrades to R&D funded legacy models selected through a board process. The selection process allows the board to influence the direction of legacy model development and interaction for the entire modeling and simulation community. Emphasis is placed on joint applicability and acceptance.

(

U) FY 1997 ($ in Thousands):

- (U) $ 750 Fund missing air functional representation in current campaign level legacy models
- (U) $ 600 Develop space functional representation for current campaign level legacy models
- (U) $ 450 Migrate selected legacy models to joint standards definition
- (U) $ 238 Develop interoperability in selected campaign, mission, and engagement legacy models
- (U) $2,038 Total

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget (FY 1996)			0	0
(U) Appropriated Value				
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions				
b. SBIR				
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY 1996 PB			2,038	2,038
(U) Current Budget Submit/President's Budget			2,038	2,038

(U) Change Summary Explanation:

Funding: FY96: $ 0.500M is planned to be reprogrammed to JMSIP to support Air Force priority

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207601F USAF Wargaming and Simulation
PROJECT NO. AND NAME 1011 Joint Modeling & Simulation Integration Program (JMSIP)	

FY97: $ 2.100M added to JMSIP to support Air Force priority
- $ 0.062M revised economic assumptions

Schedule: New schedule being developed.

Technical: Not Applicable

(U) C. **Other Program Funding Summary ($ in Thousands)**

O&M funds support mainenance and upgrade of existing models and simulations under JMSIP.

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) O&M (AF 3400)			2,100	4,200	5,650	7,400	8,500	Cont	Cont

(U) D. **Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Define Evaluation Group/Procedures				X								
(U) Request Proposals						X						
(U) JMSIP Board meets							X					
(U) Fund start of multiple projects									X	-----	-----	-----
										-	-	-

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207601F USAF Wargaming and Simulation
PROJECT NO. AND NAME 1011 Joint Modeling & Simulation Integration Program (JMSIP)	

(U) **A. Project Cost Breakdown ($ in Thousands)**

Joint Modeling & Simulation Integration Program (JMSIP)	FY 1995	FY 1996	FY 1997
(U) Cost Categories:			
(U) a. Software Development			1,813
(U) b. Contractor Support			150
(U) c. Program Management Support			50
(U) d. Travel			25
(U) Total			2,038

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Not Applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0208006F Mission Planning Systems

PROJECT NO. AND NAME: 3858 Air Force Mission Support System (AFMSS)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3858 Air Force Mission Support System (AFMSS)	13,851	19,068	18,500	17,129	18,118	18,244	18,582	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

(U) The Mission Planning System program was established in 1990 to consolidate mission planning system development efforts into a single unit-level mission planning system. This program maintains and preserves combat capability on old existing "legacy" planning systems which will migrate into a USAF wide standard mission planning system known as the Air Force Mission Support System (AFMSS). AFMSS acquisition strategy leverages military and commercial software integrated on Commercial-Off-The-Shelf (COTS) hardware. AFMSS encompasses evolutionary software and hardware development in an open systems architecture with planned annual software releases. AFMSS is the single unit-level mission planning system supporting all current/future aircraft and associated weapons: A/OA-10, F-15, F-16, F-22, F/EF-111, F-117, JSTARS, AWACS, ABCCC, U-2, AGM-130/GBU-15, TSSAM, JDAM, JSOW, B-1, B-2, B-52, KC-10, KC/EC/RC-135, C-5, C-17, C-141, MH/AH-6, MH-47, MH-53, MH-60, and C/AC/EC/MC-130. AFMSS is currently being fielded by the USAF and is in daily use by the US Special Operations Command (USSOCOM). In addition, AFMSS has been selected by the US Army to form part of their core aviation mission planning software.

(U) Mission Planning Systems is budget activity 7. The Mission Planning Systems program currently supports deployed AFMSS systems, which includes transportables, non-deployable, and portable laptop workstations. AFMSS Block C1.0 software is currently being operationally fielded to the Combat Air Forces (CAF). Subsequent AFMSS Block C software releases and systems, including a desktop workstation, are in engineering and manufacturing development.

(U) The AFMSS program is managed by the Directorate for Mission Planning Systems, Electronic Systems Center, Hanscom AFB, Massachusetts. Contractor for the AFMSS project is Lockheed Sanders, Nashua, New Hampshire. In-house (Government) work is performed by Oklahoma City-Air Logistics Center (OC-ALC), Tinker AFB, Oklahoma; Sacramento Air Logistics Center (SM-ALC), McClellan AFB, Sacramento, California; Warner Robins Air Logistics Center, (WR-ALC), Warner Robins AFB, Georgia; and Ogden Air Logistics Center (OO-ALC), Hill AFB, Utah.

(U) FY 1995

- (U) $ 3,806 Rebaselined AFMSS Block C2.0/C2.0+ software development continues with release rescheduled for FY96.
- (U) $ 2,798 Continued integration of B-52, F-15A/B/C/D, F-16, F-111, C-5, C-141, AGM-130, and MH-60 planning modules. Began development of the Tri-Command (TRICOMS) to AFMSS interface. Completed module development for RC-135, MH/AH-6, and C-17 with Data Transfer Device (DTD). Began integration of MH/AH-6, MH-47, MH-60, F-117, and EF-111.
- (U) $ 800 Acquired and began deployment of Portable Mission Planning System (PMPS).

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0208006F Mission Planning Systems
PROJECT NO. AND NAME 3858 Air Force Mission Support System (AFMSS)	

–	(U) $ 500	Continued AFMSS Block C2.5+ design, to include: enhanced air drop and air refueling; expanded weapons and delivery tactics planning; initial interoperability with Navy mission planning systems; initial nuclear weapons delivery, added Common Low Observable Autorouter (CLOAR); added full Small Computer System Interface (SCSI-2) interface.
–	(U) $ 200	Continued B-52 unique planning efforts and Data Transfer Upload Cartridge (DTUC) capability.
–	(U) $ 2,647	Completed development of the Common Mapping Production System (CMPS).
–	(U) $ 2,600	Continued B-1B unique planning efforts and DTUC capability.
–	(U) $ 500	Began study for AFMSS software re-architecture.
–	(U) $ 13,851	Total

(U) FY 1996

–	(U) $ 9,705	AFMSS Block C2.0/C2.0+ software development continues with releases scheduled for Mar 96 and Jun 96, respectively.
–	(U) $ 5,380	AFMSS Block C2.2 software development effort plus testing results feedback incorporation.
–	(U) $ 3,000	Begin integration of F-16 and AGM-130. Continue integration of MH/AH-6, MH-47, MH-60, F-117, EF-111, A/OA-10, F-15, F-16, F-22, F-111, F-117, JSTARS, AWACS, ABCCC, AGM-130/GBU-15, TSSAM, JDAM, JSOW, B-1, B-2, B-52, KC-10, KC/EC/RC-135, C-5, C-17, C-141, MH-47, MH-53, MH-60, U-2, C/AC/EC/MC-130, WCMD, and SR-71.
–	(U) $ 983	Continue AFMSS 3.0 Software re-architecture effort
–	(U) $ 19,068	Total

(U) FY 1997

–	(U) $5,880	AFMSS Block C2.2 software development continues with release scheduled for late FY97.
–	(U) $2,000	Begin integration of B-2, JSTARS, and U-2. Continue integration of F-16 and AGM-130. Complete integration of MH/AH-6, MH-47, MH-60, F-117, and F/EF-111.
–	(U) $3,800	Continue AFMSS A/W/E support to A/OA-10, F-15, F-16, F-22, F/EF-111, F-117, JSTARS, AWACS, ABCCC, AGM-130/GBU-15, TSSAM, JDAM, JSOW, B-1, B-2, B-52, KC-10, KC/EC/RC-135, C-5, C-17, C-141, MH/AH-6, MH-47, MH-53, MH-60, U-2, and C/AC/EC/MC-130, WCMD, and SR-71.
–	(U) $6,820	Continue/finish AFMSS 3.0 re-architecture
–	(U) $18,500	Total

(U) **B. Program Change Summary ($ in Thousands)**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0208006F Mission Planning Systems

PROJECT NO. AND NAME: 3858 Air Force Mission Support System (AFMSS)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	14,170	20,585	19,386	TBD
(U) Appropriated Value	14,170			
(U) Adjustments to Appropriated Value (changes apply to prior and current year only)				
a. General Congressional Reductions		-654		
b. Small Business Innovative Research (SBIR)	-303	-439		
c. Omnibus and Other Above Threshold Reprogramming		-424		
(U) Adjustments to Budget Years Since FY96 PB	-16		-886	
(U) Current Budget Submit/President's Budget	13,851	19,068	18,500	TBD

(U) Change Summary Explanation:

(U) Funding: FY 97 Reduction for overhead reduction.

(U) Schedule: C1.0 software release rescheduled from Sep 94 to Jan 95 to fix testing deficiencies. This delay rippled the delivery schedule for C2.0/C2.0+ software. The C2.0/C2.0+ software releases have been rescheduled for delivery to the field in Feb 96 and May 96.

(U) Technical: AFMSS C1.0 software release has received Air Combat Command (ACC) and Air Mobility Command (AMC) approval for operational use by the B-52 and C-130. Other aircraft and weapons will integrate with AFMSS at approximately one aircraft/month through Aug 96.

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Other Procurement, AF, 28006F	22,007	18,153	18,385	17,933	18,381	17,652	18,151	Cont	TBD
AFMSS Procurement comes under BPAC 833040, Theater Air Control System Improvement (TACSI)									
(U) Operations & Maintenance, 28006F	21,000	19,451	23,162	25,261	21,070	21,510	23,311	Cont	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0208006F Mission Planning Systems

PROJECT NO. AND NAME: 3858 Air Force Mission Support System (AFMSS)

(U) O&M funds for PE 28006F support the software and hardware maintenance costs of AFMSS. These funds also support the maintenance of the following existing operational systems until replaced by AFMSS. Mission Support System II (MSS IIA) supports existing combat capability for the F-15, F-16, F/RF-4, and F-111 aircraft mission planning. Mission Data Preparation System (MDPS) supports conventional and nuclear mission planning, aircraft/weapons avionics loading, compatibility between evolving B-1B, B-52H avionics, their weapons systems, and USSTRATCOM. The conventional Mission Planning and Production System (CMPPS) was terminated this year. O&M funding supported approximately 240 older systems in FY94. By FY99, a similar amount of funding will support over 1500 mission planning systems world-wide.

(U) There are no other related RDT&E activities for unit level mission planning in the USAF. Over 40 individual aircraft and weapons programs develop their respective software that is used in conjunction with the AFMSS core software. The aircraft and weapons software is a complimentary, synergistic effort that provides specific aircraft and weapons information and functionality to the core AFMSS software. The combined software gives the warfighter the full spectrum of mission planning and combat capabilities for their aircraft or weapon including interoperability with planned Theater Battle Management (TBM) systems.

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) AFMSS Block C1.0 Software Release	X*											
(U) AFMSS Block C Workstation Deliveries	X	X	X	X	X	X	X	X*				
(U) Block C1.0 Safety of Flight Testing	X	X*										
(U) Block C1.0 Cleared for Operational Use			X*									
(U) AFMSS Block C1.0 OT&E			X	X*								
(U) AFMSS Block C2.0/C2.0+ Development	X	X	X	X*								
(U) AFMSS Block C2.0/C2.0+ Engineering Software Releases		X	X	X	X*							
(U) AFMSS Block C2.0/C2.0+ FQT			X	X	X*							
(U) AFMSS Block C2.0/C2.0+ Software Release					X	X	X*					
(U) AFMSS Portable Deliveries			X	X	X	X	X	X	X	X	X	X*
(U) AFMSS Block C2.0+ OT&E							X			X*		

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0208006F Mission Planning Systems

PROJECT NO. AND NAME: 3858 Air Force Mission Support System (AFMSS)

X	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) AFMSS Block C2.2 Software Development				X	X	X	X	X*				
(U) AFMSS Block C2.2 Engineering Software Releases							X	X			X*	
(U) AFMSS Block C2.2 FQT												X
(U) AFMSS Block C2.2 Software Release												X

* - completion

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0208006F Mission Planning Systems
PROJECT NO. AND NAME 3858 Air Force Mission Support System (AFMSS)	

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Primary Software Development	6,408	12,183	10,085
(U) Aircraft/Weapons/Electronics (A/W/E) Development Support	4,320	2,422	4,683
(U) Systems Engineering	1,368	2,559	1,939
(U) Program Management	684	1,029	969
(U) Miscellaneous	1,071	875	824
(U) Total	13,851	19,068	18,500

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)
Not applicable.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0208006F Mission Planning Systems

PROJECT NO. AND NAME: 3858 Air Force Mission Support System (AFMSS)

(U) C. **Funding Profile ($ in Thousands)**

Funds Profile	1994 Obs	1995 Obs	1996 Obs	1997 Obs	1994 Exp	1995 Exp	1996 Exp	1997 Exp
1994Q1	*4,200				*100			
1994Q2	*1,000				**800			
1994Q3	*7,600				**8,700			
1994Q4	*6,738				**7,231			
1994 Tot	*19,538				**16,831			
1995Q1	*890	*2,032			**279			
1995Q2	452	6,071			1,937	500		
1995Q3	2,000	3,196			2,263	8,500		
1995Q4	167	1,013			200	3,370		
1995 Tot	3,509	13,032			4,679	12,370		
1996Q1		172	*5,185		637	382	2,388	
1996Q2		98	7,301		500	250	3,012	
1996Q3		549	5,686		400	269	4,000	
1996Q4			612			399	2,785	
1996 Tot		819	18,784		1,537	1,300	12,185	
1997Q1				10,000		100	1,900	1,500
1997Q2				5,146		81	2,083	5,161
1997Q3			284	1,560			1,900	4,478
1997Q4				650			1,000	3,012
1997 Tot			284	17,356		181	6,883	14,151
1998Q1				1,144				2,115
1998Q2								2,234
1998Q3								
1998Q4								
1998 Tot				1,144				4,349

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0208021F Electronic Combat Support

PROJECT NO. AND NAME: 0374 Electronic Combat Support, C3 Protection/Multi-mission. Technology and Support

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
0374 Electronic Combat Support, C3 Protection/Multi-mission. Technology and Support	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	0	Continuing

(U) **A. Mission Description and Budget Item Justification** This program is in budget activity 7 - Operational System Development, Research Category 6.6 This program conducts advanced development research and demonstration/validation where existing technology is applied to field requirements. This program studies and develops IW/C2W prototypical systems to provide warning, self protection, and support to personnel and equipment against combat systems employed by enemy forces. It identifies existing military and commercial research and development efforts which can satisfy unfulfilled operational requirements as identified by the Unified Commands, and quickly bridge the gap between technology developments and meld the technology into the warfighter's operational requirements. The Secretary of Defense identified the need for this capability in 1983, and with unanimous approval of the services and the Unified Commands, JCS made this function a part of the Joint Command and Control Warfare Center (JC2WC) mission (formerly the Joint Electronic Warfare Center (JEWC). The Air Force as executive agent is responsible for the total funding of this effort.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0208021F Electronic Combat Support
PROJECT NO. AND NAME 0374 Electronic Combat Support, C3 Protection/Multi-mission. Technology and Support	

(S) FY 1995 ($ in Thousands):

- (S) [$] [ ]
- (U) [$] Awarded Delivery Order for small satellite tracking systems using low earth orbit satellites for transmission of tracking data form GPS based tracking beacons.
- (S) [$] Awarded Delivery order for the development of [ ] including the design and construction of an engineering model of the equipment based on a beam steered antenna concept. Additional requirements are the design and construction of test targets for use as simulated EA signal sources. (Piggybacked on[ ]training device development in FY94)
- (U) [5] Developed a small vehicle mounted Battlefield Surveillance Radar Warning Receiver for use by designated USACOM forces.
- (S-N/F)[$ 0] Investigated the feasibility of developing [ ]
- (U) [$] Begin demonstration planning of the C2W payloads for Joint Tactical Endurance UAV at U.S. Army Electronic Proving Grounds and Naval Air Warfare Center
- (U) [$] Began develop. of a multi-purpose EW/C2W platform capable of placing and maintaining it's payload over a programmed geographic area.
- (U) [$] Conducted a short term study to define the feasibility of the use of commercial direct broadcasting equipment for military operations.
- (U) [$] Conducted short term study to define the capabilities and constraints of a balloon based high frequency radio intercept system.
- (U) [$] Complete the All Services Combat Identification and Evaluation Test utilizing the SABER Beacons.
- (U) [$] Continue investigating the latest developments in Electro Optics and Infrared technologies and other warning systems.
- (U) [$] Development of a single channel beacon transmitter capable of validating GPS based check targets to enhance geo-location accuracy of terrestrial emitters and other battlefield targets.
- (S/NF)[$] [ ]

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0208021F Electronic Combat Support
PROJECT NO. AND NAME 0374 Electronic Combat Support, C3 Protection/Multi-mission. Technology and Support	

(U) FY 1996

- (S) [$] Demonstrate the capabilities of the previously developed [g]] System
- (U) [ ] Design baselining and prototyping of a multipurpose command and control warfare vehicle capable of carrying small payloads to a predefined altitude and operating for an extended period of time
- (U) [$] Integrate and demonstrate the C2W payloads developed for the Joint Tactical UAV on other UAV platforms. Demonstrations are expected to take place in several locations..
- (U) [$] Continue several quick reaction studies as tasked by Joint Staff and the Unified commands to investigate the evolving state of the art of C2W.
- (U) [$] Begin development of a C2W requirements tool to assist in the generation of the IPL, track current and future C2W capabilities and shortfalls.
- (S/NF) [$] [ ]

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0208021F Electronic Combat Support
PROJECT NO. AND NAME 0374 Electronic Combat Support, C3 Protection/Multi-mission. Technology and Support	

(U) FY 1997

- (S/NF)[$ 9] The Center will continue to bridge the gap between the lab, the operator, and business in order to introduce cutting edge technology to the field and fleet through rapid prototyping, briefings and demonstrations of state of the art equipment currently underdevelopment. The primary means to accomplish this will be through the sponsorship of symposia and use of electronic data transfer. Efforts will be directed at taking advantage of commercialization of products traditionally thought of as defense related, i.e. MMIC and ASIC chips currently being used in civilian applications (con't)

- (U) Work performed by: The Joint Command and Control Warfare Center at Kelly AFB TX performs independent studies and analysis leading to development of Pre-Milestone Zero prototypes for field demonstrations and operations. When technology is available in Service and Industry labs, the JC2WC arranges for the development of a prototype and field demonstration of the prototype. Laboratories include Phillips Lab at Hanscom AFB MA, and Kirtland AFB NM, The Naval Research Lab, Washington DC. When required technologies are not available within DoD, JC2WC manages contractual efforts to produce, test and demonstrate prototypes. The Center also facilitates the exchange of information between the operators in the fleet and field and the laboratories, industry and Service program managers. The JC2WC currently has an Engineering Support Contract with Southwest Research Institute (SwRI), San Antonio TX, to perform engineering analysis and design, studies, reports, systems integration, fabrication, and software development. The JC2WC also maintains Cooperative Research and Development Agreements (CRDAs) with Lockheed-Fort Worth, Lockheed-Sanders, and American Electronics Laboratories. Under JC2WC leadership the government and contractor labs work to deliver products that support the warfighting CINCs and address operational IW/C2W shortfalls

- (S/NF)[$] [ ]

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0208021F Electronic Combat Support

PROJECT NO. AND NAME: 0374 Electronic Combat Support, C3 Protection/Multi-mission. Technology and Support

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	TOTAL COST
(U) Previous President's Budget	[1]	[1]	[ ]	Cont
(U) Appropriated Value	[1]	[1]		Cont
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	[-]	[ ]		
b. SBIR	[-]	[ ]		
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogramming	[-]			
(U) Adjustments to Budget Years Since FY 1996 PB			[ ]	
(U) Current Budget Submit/President's Budget	[1]	[1]	[1]	

(U) Change Summary Explanation:

Funding: FY97: $40K reduciton for inflation, $7K for higher AF priorities

FY96: $10K for Bosnia I reduction, $27K for congressional general, e.g., Sec 8129. reductions

Schedule:

Technical:

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0208021F Electronic Combat Support
PROJECT NO. AND NAME 0374 Electronic Combat Support, C3 Protection/Multi-mission. Technology and Support	

(U) C. Other Program Funding Summary ($0 in Thousands)

JC2WC/OT programs support services and joint electronic combat (EC) program

(U) JC2WC/OT builds upon technologies demonstrated in PE 0604270F, EW Development, and other services related PE's

(U) Technology development is related to that being developed in the following PE's : PE 0603711A, Aircraft Survivability Equipment, PE 00603718A, Vulnerability Susceptibility; PE 0603755A, Tactical ECM Systems ands PE 0603214N, Tactical C3 Countermeasures.

(U) There is no unnecessary duplication of effort within the Air Force or Department of Defense

(U) Other Appropriations Funds ($ in Thousands) : not applicable.

(U) D. Schedule Profile

N/A

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0208060F Theater Missile Defense

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	26,215	24,230	22,285	45,134	45,713	46,763	48,696	0	Continuing
4478 Command, Control, Communications, Computers, and Intelligence Enhancements	12,691	12,059	13,374	26,713	27,086	27,534	28,672	0	Continuing
4479 Attack Operations Concept Development	13,524	12,171	8,911	18,421	18,627	19,229	20,024	TBD	Continuing

(U) A. **Mission Description and Budget Item Justification**

Air Force Theater Missile Defense (TMD) is focused in three areas: Command, Control, Communications, Computers, and Intelligence (C4I) enhancements; Improvements to existing Attack Operations systems; and the development of the Airborne Laser. PE028060F is primarily concerned with C4I and Attack Operations as part of the Air Force focus in TMD, but also addresses some initial low-level studies and analysis for the Airborne Laser (ABL) technology program. AF TMD concentrates on defining improvements to existing operational capabilities, developing and evaluating prototypes, demonstrating as well as simulating modifications during operational concept demonstrations, and coordinating the transition of these capabilities to operational systems. C4I improvements contribute greatly to the overall effectiveness of TMD systems developed by each of the Services and the Ballistic Missile Defense Organization (Patriot, THAAD, etc.). C4I enhancements improve our ability to assess, target, plan and task attackers to counter Theater Missile (TM) threats. The C4I program encompasses JTIDS TMD Upgrades (including, for example, TMD Message Set Integration and JTIDS Range Extension), Distributed Battle Management, Operations Decision Tools (Time Critical Target Aid (TCTA), Defensive Planning Module (DPM), Attack Operations Decision Aid (AODA), and Active Defense Decision Aid (ADDA)), Intel Support Systems (Intel Support Concept and Real Time Intel Tools) and integration of these systems within the Air Force and among the Services. Attack Operations focuses on improving the ability to locate, identify, target and destroy theater missiles and supporting infrastructure on the ground. Attack Operations is concerned with the theater missile threat from production through deployment, prior to and during launch, as well as soon after launch before critical mobile targets are able to egress to hide locations. The foundation for Attack Operations is improved C4I and automatic target cueing/recognition (ATC/R) upgrades to one or more airborne platforms (Joint STARS, F-15E, Rivet Joint, U-2). The Air Force program is based upon taking our defense against the growing theater missile threat to the enemy by making near-term modifications to existing theater assets. The TMD program is concerned with improving existing operational capability, evaluating and demonstrating prototypes, as well as simulating modifications during operational concept demonstrations.

(U) **Acquisition Strategy:** HQ ASC will provide the program management for the concept exploration of TMD Attack Operations. ASC will conduct lab demonstrations with Wright Labs and support CONOPS development and requirements definition by analyzing and demonstrating measures of effectiveness for various sensor improvements and cueing schemes. HQ ESC will provide program management for the concept exploration of C4I enhancements. Prototypes and analysis of

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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0208060F Theater Missile Defense

improvements to existing C4I assets will compliment the Attack Operations effort with combined participation in Operational Concept Demonstrations. These Attack Operations and BMC4I analyses and demonstrations are specifically targeted against operational deficiencies identified in the TMD Mission Area Plan (MAP), are traceable to the AF and JROC Mission Need Statement (MNS) and are consistent with the ACC TMD Concept of Operations (CONOPS). Integration of TMD requirements and fielding of proposed material solutions will continue beyond concept exploration in the appropriate program element for a particular system. For example, the TMD demonstration and requirements analysis for Joint STARS ATR may transition into a Joint STARS P3I effort within the Joint STARS program element. Existing contracts will be used for those systems where engineering change proposals are appropriate. Systems Engineering and Technical Analysis (SETA) contracts will be used to support the requirements definition phase of TMD improvements. In those areas where new materiel solutions are necessary to correct a deficiency, the source selection process will be followed to establish a new contract.

***FY94 TMD tasks were funded in PE27411F and PE63617F.**

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) FY 1996 President's Budget	26434	25102	22986	TBD
(U) Appropriated Value	27302	25102		TBD
(U) Adjustments to Appropriated Value				
a. Congressional General Reductions	-298	-680		
b. Small Business Innovative Research (SBIR)	-570			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogramming	-219			
(U) Adjustments to Budget Years Since FY 1996 PB		-192	-701	
(U) Current Budget Submit/FY 1997 President's Budget	26215	24230	22285	

(U) Change Summary Explanation:

Funding: FY97 funding reduced due to administrative adjustment to Air Force programs (-114) and revised inflation (-587).

Schedule: No impact to milestones.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0208060F Theater Missile Defense

Technical: N/A

(U) C. **Other Program Funding Summary ($ in Thousands):** N/A

(U) D. **Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) ATC/R Demos (F-15E/Surveillance)									Srv (1)	F15 (3)		
(U) TPS-75 Expert Missile Tracker Prototype												
(U) Intel Support Systems: ISC updates; Syria, Iran, and Iraq, and automation of country studies				X				X				X
(U) TMD TACS systems requirements (JTIDS message upgrades; decision aids)								X				
(U) Ops Concept Demonstrations							X				X	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0208060F Theater Missile Defense

PROJECT NO. AND NAME: 4478 Command, Control, Communications, Computers, and Intelligence Enhancements

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4478 Command, Control, Communications, Computers, and Intelligence Enhancements	12,691	12,059	13,374	26,713	27,086	27,534	28,672	0	Continuing

(U) A. Mission Description and Budget Item Justification

C4I enhancements are needed to reduce the battle management and command & control timelines associated with the theater missile threat. The C4I program includes:

1) Operations and maintenance of the Tactical Air Command and Control Simulation Facility (TACCSF);

2) Procurement of four MCE/TPS-75 with expert missile tracker (EMT) capability;

3) Intel Support Systems which include the development and revision of the Intel Support Concept (ISC), automation of the country studies, and development of the Real Time Intel Tool for TMD IPB;

4) JTIDS TMD Upgrades which are the development and integration of TMD messages into JTIDS host platforms and the extension of JTIDS beyond line of sight;

5) Operations Decision Support Tools which include the integration of the Time Critical Target Aid into TBM Core Systems (TBMCS) architecture, the development and migration of the Defensive Planning Module into TBMCS, and initiating the development of the Attack Operations and Active Defense Decision Aids.

6) Distributed Battle Management (Airborne DBM prototype) concept, which enhances the forward execution capabilities of the TACS to counter the short timeline of time critical targets. This includes the development, integration and test of the DBM capability on an airborne platform. The program will leverage off the capabilities of the current ground Combat Integration Capability (CIC) program which integrates and fuses various intelligence and surveillance feeds to provide the CINCs with an effective battle management capability.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0208060F Theater Missile Defense
PROJECT NO. AND NAME 4478 Command, Control, Communications, Computers, and Intelligence Enhancements	

(U) FY 1995 ($ in Thousands):
- (U) 5500 Supported Theater Air Command and Control Simulation Facility (TACCSF) operations for C4I simulation and analysis
- (U) 6600 Continued missile tracker software upgrade and integration for the MCE/TPS-75
- (U) 591 Intel Support Systems - Drafted Intelligence Support Concept (ISC); completed Iran and started Iraq country study for IPB
- (U) 12691 Total

(U) FY 1996 ($ in Thousands):
- (U) 5200 Continue support for Theater Air Command and Control Simulation Facility (TACCSF) operations for C4I simulation and analysis
- (U) 3709 Continue missile tracker prototype acquisition for MCE/TPS-75
- (U) 650 Intel Support Systems--Develop processes and tools for automatic production of digitized TMD Intel Prep of the Battlefield (IPB) information.
- (U) 2500 TMD JTIDS message integration into CRC, Rivet Joint, and Cobra Ball; JTIDS Range Extension implementation; Development of TCTA and DPM and begin design for TBMCS integration; start DBM analysis and design.
- (U) 12059 Total

(U) FY 1997 ($ in Thousands):
- (U) 5884 Complete TACCSF operations support for C4I simulation and analysis
- (U) 3300 Complete MCE/TPS-75 missile tracker capability with final delivery.
- (U) 1950 Intel Support Systems - Update ISC; Continue tool development for automatic production of digitized TMD IPB information.
- (U) 2240 TMD JTIDS message integration into JSTARS and AOC; Begin JTIDS Range Extension development; Complete development of TCTA and DPM and integrate in TBMCS; continue DBM analysis/design and start simulation.
- (U) 13374 Total

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	12691	12590	13690	TBD
(U) Appropriated Value	12691	12590		TBD
(U) Adjustments to Appropriated Value				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0208060F Theater Missile Defense
PROJECT NO. AND NAME 4478 Command, Control, Communications, Computers, and Intelligence Enhancements	

	FY 1995	FY 1996	FY 1997	Total Cost
a. Congressional General Reductions	0	-435		
b. Small Business Innovative Research (SBIR)	0			
c. Omnibus or Other Above Threshold Reprogram		-96		
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY 1996 PB			-316	
(U) Current Budget Submit/President's Budget	12691	12059	13374	

(U) Change Summary Explanation:

Funding: FY97 funding reduced due to revised inflation.

Schedule: No impact to milestones.

Technical: N/A

(U) **C. Other Program Funding Summary ($ in Thousands):** N/A

(U) **D. Schedule Profile: See page 3.**

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0208060F Theater Missile Defense

PROJECT NO. AND NAME: 4478 Command, Control, Communications, Computers, and Intelligence Enhancements

(U) A. **Project Cost Breakdown ($0 in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) TACCSF	5500	5200	5884
(U) Intelligence Support Systems	591	650	1950
(U) MCE/TPS-75 Missile Tracking System	6600	3709	3300
(U) JTIDS TMD Upgrades & Ops Decision Tools	0	2500	2240
(U) Total	12691	12059	13374

(U) B. **Budget Acquisition History and Planning Information ($0 in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Martin Marietta	FFP	Oct 95		ACCDRA	4300	4800	4700	5478	TBD	TBD
Westinghouse	FFP	Oct 95		ESC/AVT		4600	2069	2750	TBD	TBD
Zeltech	T&M	Dec 95		ACC/INX	250	250	250	250	TBD	TBD
Logicon	T&M	Mar 96		ESC/XRS		0	500	500	TBD	TBD
E-Systems	T&M	Mar 96		ESC/XRS		0	631	615	TBD	TBD
Alphatech	T&M	Mar 96		ESC/XRS		0	500	500	TBD	TBD
NAIC	T&M	Feb 96		ESC/XRS		0	479	400	TBD	TBD
Motorola	T&M	Nov 97		ESC/XRS		0	500	500	TBD	TBD
Support and Management Organizations										
FFRDC					840	765	1395	1331	TBD	TBD

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0208060F Theater Missile Defense
PROJECT NO. AND NAME 4478 Command, Control, Communications, Computers, and Intelligence Enhancements	

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Non-FFRDC					1200	735	1035	1050	TBD	TBD
HQ ESC					710	1541	0	0	0	2251

Test and Evaluation Organizations
TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0208060F Theater Missile Defense

PROJECT NO. AND NAME: 4479 Attack Operations Concept Development

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4479 Attack Operations Concept Development	13,524	12,171	8,911	18,421	18,627	19,229	20,024	TBD	Continuing

(U) **A. Mission Description and Budget Item Justification**

Improvements in Attack Operations are based on the ability to locate, identify, and destroy theater missiles and associated infrastructure on the ground. In addition to the enhancements to C4I, Attack Operations project focuses on sensor capabilities and CONOPS and requirements development for TMD offensive counter-air and optimized integration with defensive systems. Automatic target cueing/recognition (ATC/R) upgrades to Joint STARS, F-15E, and potentially U-2, F-16 and UAVs are analyzed in demonstrations and simulation during Operational Concept Demonstrations and CINC experiments. A cost and operational effectiveness analysis of the Airborne Laser will be conducted in FY96, and its contribution to post-launch attack operations will be considered. The optimum set of sensor improvements will be proposed as P3I upgrades within existing program elements.

(U) FY 1995 ($ in Thousands):
- (U) $4800 Conducted prototype development of surveillance ATR.
- (U) $2598 Conducted Operational Concept Demonstrations with Roving Sands exercise.
- (U) $3171 Continued analysis of Attack Operations Sensor improvements.
- (U) $2955 Conducted prototype development of F-15E ATC/R demonstration.
- (U) $13524 Total

(U) FY 1996 ($ in Thousands):
- (U) $500 Prototype analysis of surveillance ATR demonstration.
- (U) $900 Conduct Operational Concept Demonstration with participation in CINC experiments.
- (U) $2604 Continue requirements definition and analysis of sensor prototypes and Attack Operations improvements
- (U) $3282 Conduct definition studies and analysis on Airborne Laser
- (U) $4885 F-15E ATC/R demonstration.
- (U) $12171 Total

(U) FY 1997 ($ in Thousands):
- (U) $1190 Conduct demonstration of surveillance ATR prototype.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0208060F Theater Missile Defense
PROJECT NO. AND NAME 4479 Attack Operations Concept Development	

- (U) $3511 Conduct Attack Operations Operational Concept Demonstration.
- (U) $2010 Continue Analysis of Sensor prototypes and Attack Operations demonstrations/simulations.
- (U) $2200 Conduct demonstration of F-15E ATC/R prototype.
- (U) $8911 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) FY 1996 President's Budget	13524	12512	9182	TBD
(U) Appropriated Value	13524	12512		TBD
(U) Adjustments to Appropriated Value				
a. Congressional General Reductions		-245		
b. SBIR				
c. Omnibus or Other Above Threshold Reprogram		-96		
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY 1996 PB			-271	
(U) Current Budget Submit/FY 1997 President's Budget	13524	12171	8911	

(U) Change Summary Explanation:

Funding: FY97 funding reduced due to revised inflation.

Schedule: No impact to milestones.

Technical: N/A

(U) D. Schedule Profile: See page 3.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0208060F Theater Missile Defense

PROJECT NO. AND NAME: 4479 Attack Operations Concept Development

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Definition Studies/Analysis Airborne Laser	0	3282	0
(U) Joint STARS ATR Demonstration	4800	500	1190
(U) Operational Concept Demonstration	2598	900	3511
(U) Sensor Applications	3171	2604	2010
(U) F-15 ATR Demonstrations	2955	4885	2200
(U) Total	13524	12171	8911

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Boeing	F3361594 C1436	Aug 94		HQ/ASC	391	781	0	0	TBD	TBD
Hughes	F3361594D1 4000004	Aug 94		HQ/ASC	500	484	2772	700	TBD	TBD
Geometric	F3361594C1 441	Mar 95		HQ/ASC	0	65	0	0	TBD	TBD
Hughes-FD	F3361594D1 420000004	Mar 95		HQ/ASC	0	750	2200	0	TBD	TBD

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0208060F Theater Missile Defense

PROJECT NO. AND NAME: 4479 Attack Operations Concept Development

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Norden	F3361592C1045	Sep 94		HQ/ASC	490	50	0	0	TBD	TBD
Veda	F3361594D14000006	Feb 95		HQ/ASC	0	200	400	0	TBD	TBD
Lincoln Lab	AF FM 616	Mar 95		HQ/ASC	0	100	0	0	TBD	TBD
Sverdrup	F3361594C1425	Mar 95		HQ/ASC	0	556	35	0	TBD	TBD
HSC/AL	AF FM 616	Aug 94		HQ/ASC	975	1495	715	985	TBD	TBD
Sandia Nat Labs	MIPR	Mar 95		HQ/ASC	3786	4800	500	1190	TBD	TBD
Lockheed Martin	AF FM 616	TBD		HQ/ASC	0	0	0	1518	TBD	TBD
Support and Management Organizations										
FFRDC				HQ/ASC	400	357	82	648	TBD	TBD
Non-FFRDC				HQ/ASC	191	280	0	355	TBD	TBD
HQ ASC					0	561	4332	2515	TBD	TBD
Test and Evaluation Organizations										
28 Test/TXT		Mar 95		HQ/ACC	16	0	900	0	TBD	TBD
AFSAA	AF FM 616	Feb 95		HQ/ACC	0	350	85	0	TBD	TBD
Eglin-46 Test Wing		May 94		HQ/ASC	2051	3245	150	1000	TBD	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0303110F Def Satellite Comm Sys (Space)

PROJECT NO. AND NAME: 2638 Defense Satellite Communications Sys

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2638 Defense Satellite Communications Sys	14,187	31,077	24,527	10,239	6,130	6,412	6,249	10,000	621,312

(U) **A. Mission Description and Budget Item Justification**

This program is in budget activity 7 - Operational System Development because DSCS is a production system consisting of a fully operational satellite constellation plus satellites awaiting launch as a part of the operational system. Any enhancements to the satellites not yet launched will be sole source contract awards. Efforts support fielded system, therefore, funding is appropriately in Operational Systems Development of Budget Activity Research Category.

DSCS is the backbone of the Government's satellite communications system, providing both secure voice and high data rate transmissions. DSCS provides unique and vital national security communications for worldwide military command and control, crisis management, relay of intelligence and early warning data, treaty monitoring and surveillance information, and diplomatic traffic. The communications relayed through DSCS support the National Command Authorities, Worldwide Military Command and Control System, Diplomatic Telecommunications Service, White House Communications Agency, the Navy, the Air Force Satellite Control Network, and ground mobile forces of all services.

(U) FY 1995 ($ in Thousands):

- (U) $3,087 Continued DSCS mission support activities
  - Supported program office operations
  - Conducted programmatic tradeoffs and analyses
  - Paid performance incentives for development satellites that were still on orbit and operational
- (U) $5,000 Conducted Service Life Extension Program (SLEP) risk reduction implementation study
- (U) $600 Investigated and developed other DSCS III performance enhancements
  - Upgraded GTS software to support operator training for current satellite configuration
- (U) $5,500 Identified for approved ATR and BTR reprogrammings
- (U) $14,187 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303110F Def Satellite Comm Sys (Space)
PROJECT NO. AND NAME 2638 Defense Satellite Communications Sys	

(U) FY 1996 ($ in Thousands):

- (U) $5,477 Continue DSCS mission support activities
  - Support program office operations
  - Conduct programmatic tradeoffs and analyses
  - Pay performance incentives for development satellites that are still on-orbit and operational
- (U) $23,700 Start SLEP modification
  - Parts characterization and qualification
  - Procure components to develop modifications for first article insertion
  - Complete system PDR and prepare for system CDR
- (U) $1,900 Investigate and develop other DSCS III performance enhancements
  - Develop low noise amplifier (LNA) upgrade to enhance performance and increase capacity for tactical users
  - Develop B6 satellite bandwidth modification to increase capacity level to that of satellites B8 - B14
- (U) $31,077 Total

(U) FY 1997 ($ in Thousands):

- (U) $5,527 Continue DSCS mission support activities
  - Support program office operations
  - Conduct programmatic tradeoffs and analyses
  - Pay performance incentives for development satellites that are still on-orbit and operational
- (U) $18,300 Continue SLEP modification
  - Complete system CDR
  - Fabricate and assemble components for first article insertion
- (U) $700 Investigate and develop DSCS III performance enhancements
  - Continue to develop LNA upgrade to enhance performance and increase capacity for tactical users
  - Continue development of B6 satellite bandwidth to increase capacity level to that of satellites B8 - B14
- (U) $24,527 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303110F Def Satellite Comm Sys (Space)
PROJECT NO. AND NAME 2638 Defense Satellite Communications Sys	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Previous President's Budget	14,187	32,555	26,693
(U) Appropriated Value	14,876		
(U) Adjustments to Appropriated Value			
a. Cong Gen Reductions	-379	-771	
b. SBIR	-306	-707	
c. Omnibus or Other Above Threshold Reprogram	(-5,500)		
d. Below Threshold Reprogramming	-4		
(U) Adjustments to Budget Years Since FY 1996 PB			-2,166
(U) Current Budget Submit/President's Budget	14,187*	31,007	24,527

(U) Change Summary Explanation:

Funding: * $5.0 million of DSCS FY95 RDT&E was reprogrammed for use in the Combat Survivor/Evader Locator (CSEL) Program through a Congressionally approved Above Threshold Reprogramming that is not reflected in the FY95 amounts above. A BTR for an additional $0.5 million reduction in FY95 funding is currently being processed which is not reflected in the amounts above.

$2.166 million reductions in FY97 include: AFMC reductions ($0.133 million), SETA and FFRDC reductions ($ 1.000 million), and overhead reductions ($1.033 million).

Technical: Based on the Space Architect's recommendation, SLEP is being restructured to include performance enhancements. The primary modifications include: upgrade channels 1-6 of the last four satellites with 50 watt traveling wave tube amplifiers, upgrade solar cells, refine gain step attenuation, and incorporate a routing switch mod that allows channel 5 and/or 6 to be configured to either the gimbal dish antenna or multi-beam antenna.

The new SLEP program will increase the overall system capacity by up to 200% and tactical warfighter capacity by up to 700%.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303110F Def Satellite Comm Sys (Space)
PROJECT NO. AND NAME 2638 Defense Satellite Communications Sys	

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost*
(U) Weapon Procurement	18,007	19,771	26,929	73,106	25,699	28,295	25,033	101,500	1,614,640

* Tracked back to FY76.

(U) D. **Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Launch DSCS/IABS 5 (Jul 95)				*								
(U) Launch DSCS/IABS 6 (Oct 97)												
(U) Launch DSCS/IABS 7 (Jul 99)												
(U) Launch DSCS/IABS 8 (May 00)												
(U) Launch DSCS/IABS 9 (May 02)												
(U) Launch DSCS/IABS 10 (May 03)												
(U) SLEP Implem Study (Mar 95 - Jan 96)		*	-----	-----	-----	*						
(U) SLEP Modification Program (Mar 96 - Aug 00)						X	-----	-----	-----	-----	-----	-----
(U) SLEP PDR (Jul 96)							X					
(U) SLEP CDR (Dec 96)									X			
(U) GTS Upgrade Completion (Oct 96)									X			

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0303110F Def Satellite Comm Sys (Space)

PROJECT NO. AND NAME: 2638 Defense Satellite Communications Sys

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Basic Program Activities	3,087	5,477	5,527
(U) SLEP Implementation Study	5,000	0	0
(U) SLEP	0	23,700	18,300
(U) Performance Enhancements	600	1,900	700
(U) Identified for approved ATR and BTR reprogrammings	5,500		
(U) Total	14,187	31,077	24,527

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Lockheed Martin	FFP/AF	Oct 84	437,500	437,500	370,900	5,700	28,877	22,127	20,430	448,034
Miscellaneous	Various	Various	N/A	N/A	123,691	1,287	0	0	0	124,978
Miscellaneous	Omnibus					5,500				5,500
Support and Management Organizations										
Aerospace Corp	PO	Various	N/A	N/A	11,200	700	1,000	1,000	5,100	19,000
Miscellaneous	Various	Various	N/A	N/A	6,700	1,000	1,200	1,400	13,500	23,800
Test and Evaluation Organizations										
None										

* Tracked back to FY86. All other prior year funds included in the Miscellaneous line for Product Development Organizations.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303110F Def Satellite Comm Sys (Space)
PROJECT NO. AND NAME 2638 Defense Satellite Communications Sys	

(U) B. **Budget Acquisition History and Planning Information Continued ($ in Thousands)**

Government Furnished Property:

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Property									
N/A									
Support and Management Property									
N/A									
Test and Evaluation Property									
N/A									
Subtotal Product Development				494,591	28,877	22,127		20,430	578,512
Subtotal Support and Management				17,900	2,200	2,400		18,600	42,800
Subtotal Test and Evaluation									
Total Project				512,491	31,077	24,527		39,030	621,312

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0303131F Minimum Essential Emer Comm Network (MEECN)

COST (*$ In Thousands*)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	28,661	14,895	21,902	11,334	1,914	1,969	1,998	Continuing	Continuing
2832 VLF/LF System Improvements	28,381	14,895	10,489	11,334	1,914	1,969	1,998	Continuing	Continuing
2834 Dual Frequency MEECN Receiver	280	0	0	0	0	0	0	0	264,346
4521 DIRECT	0	0	11,413	0	0	0	0	TBD	TBD

NOTE: Project 4521, DIRECT, was established in Jan 96 to consolidate efforts related to DIRECT currently being or planned for accomplishment in PE 0603851F, ICBM Modernization Dem/Val (Project 1024 ICBM C2 Applications), PE 0604851F, ICBM Modernization EMD (Project 13C4, Strategic C4 Program), PE 0101213F, Minuteman Squadrons, and 0303131F, MEECN (Project 2832, VLF/LF System Improvements). FY95 and FY96 DIRECT efforts are reported under Project 2832, VLF/LF System Improvements, in this PE.

(U) A. Mission Description and Budget Item Justification

(U) MEECN communications systems provide assured communications connectivity between the National Command Authority (NCA) and the strategic deterrence forces primarily in the Very Low Frequency (VLF) and Low Frequency (LF) bands. MEECN includes the Dual Frequency MEECN Receiver (DFMR) and several VLF/LF improvement projects. The VLF/LF projects include the Modified Miniature Receive Terminal (MMRT), the High Data Rate (HIDAR) transmission mode, and the Defense IEMATS Replacement Command and Control Terminals (DIRECT) which is the Improved Emergency Message Automated Transmission System (IEMATS) replacement program. This PE is identified in Budget Activity 7, an operational system development, because it supports work on a currently operating system.

(U) Acquisition Strategy:

(U) Satisfy both the Air Force and Navy requirements via a joint interest effort with the Air Force Electronics Systems Center, Hanscom AFB, MA as the lead agency. Modify existing Miniature Receive Terminals (MRT) beginning with an engineering and manufacturing development (EMD) program. Competitively award the EMD contract in FY96 (with Milestone II in 3QtrFY96) for all three platforms: the E-4B National Airborne Operations Center (NAOC); E-6B Take Charge and Move Out (TACAMO); and the ICBM Launch Control Centers (LCCs). Award production contract is planned for FY00. Complete deployment of both Air Force and Navy MMRT units by 2003.

(U) A Milestone 0 Acquisition Decision Memorandum (ADM) for DIRECT was signed on 26 Jul 95. Contract award is expected in July 96.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303131F Minimum Essential Emer Comm Network (MEECN)

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996*	FY 1997	Total Cost
(U) Previous President's Budget	33,803	15,777	12,937	Continuing
(U) Appropriated Value	34,195	15,777		
(U) Adjustments to Appropriated Value				
a. Congressional/General	-392	-309		
b. SBIR	-713	-355		
c. Below Threshold Reprogramming	-4,205			
d. Omnibus and other Above Threshold	-224	-218		
(U) Adjustments to Budget Years Since FY96 PB			8,965	
(U) Current Budget Submit/President's Budget	28,661	14,895	21,902	Continuing

(U) Change Summary Explanation:

Funding: See individual projects.
* The FY96 PB amount does not reflect funding reductions that are reserved for other DoD reprogramming needs ($165)

Schedule: See individual projects.

Technical: See individual projects.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303131F Minimum Essential Emer Comm Network (MEECN)

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Appropriation 3020, BA 03 Minuteman Modifications	0	0	0	0	0	0	0	0	52,400
(U) Appropriation 3010, BA 5 E-4B Class V Mods	21,400	0	0	10,300	500	1,500	0	0	33,700
(U) Appropriation 3600									
ICBM Modernization EMD (MMRT) (PE 0604851F)	0	0	2,817	TBD	TBD	TBD	TBD	TBD	TBD
ICBM Modernization Dem/Val (DIRECT) (PE 0603851F)	0	0	934	0	0	0	0	0	0

(U) D. **Schedule Profile:** See individual projects.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0303131F Minimum Essential Emer Comm Network (MEECN)

PROJECT NO. AND NAME: 2832 VLF/LF System Improvements

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2832 VLF/LF System Improvements	28,381	14,895	10,489	11,334	1,914	1,969	1,998	Continuing	Continuing

(U) A. **Mission Description and Budget Item Justification**

(U) The Modified Miniature Receive Terminal (MMRT) program will modify existing Modified Receive Terminals (MRTs) for installation in three platforms: The National Airborne Operations Center (NAOC), E-4B; E-6B, Take Charge and Move Out (TACAMO); and, ICBM Launch Control Centers (LCC) with the High Data Rate (HIDAR) capability. MRT is a Very Low Frequency/Low Frequency (VLF/LF) receiver already designed, developed and installed in the B-1 and B-52 bombers. This program will make VLF/LF receivers fully interoperable in all three platforms.

(U) HIDAR is a Joint Staff-directed effort to provide a fast and interoperable MEECN mode. This program will develop and test modifications required to retrofit current MEECN platforms with the HIDAR software and firmware.

(U) The Improved Emergency Message Automated Transmission System (IEMATS) replacement system, which has been named Defense IEMATS Replacement Command and Control Terminal (DIRECT), is a Strategic Nuclear Command and Control (C2) system directly supporting the Chairman, Joint Chief of Staff (CJCS) and the National Command Authorities (NCA). DIRECT will provide all current IEMATS requirements, including the build and release of Emergency Action Messages (EAM) to allow the warfighter to remain responsive to NCA directives. DIRECT will be compatible with the Defense Message System (DMS) when it supplants the automated digital network (AUTODIN).

(U) High Power Transmit Set (HPTS) was a joint Air Force and Navy program to provide the E-4 and the E-6 aircraft with an improved and supportable VLF transmission capability. HPTS completed development phase in 2QtrFY95.

(U) FY 1995

- (U) $2,200 HIDAR firmware and software development.
- (U) $17,043 MMRT modification.
- (U) $1,100 Survivable Low Frequency Communication System (SLFCS) re-engineering.
- (U) $2,500 IEMATS Replacement (i.e., DIRECT) Prototyping.
- (U) $4,200 DFMR termination liability.
- (U) $100 Contract termination for HPTS at convenience of the US Government
- (U) $1,238 Mission Support
- (U) $28,381 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303131F Minimum Essential Emer Comm Network (MEECN)
PROJECT NO. AND NAME 2832 VLF/LF System Improvements	

(U) FY 1996

- (U) $9,719 MMRT modification (A and B-Kits) for E-4B and E-6B, and HIDAR.
- (U) $1,400 MMRT modification (A-Kit) and integration for the LCCs.
- (U) $3,776 IEMATS replacement (i.e., DIRECT).
- (U) $14,895 Total

(U) FY 1997

- (U) $10,489 Continue MMRT development
- (U) $10,489 Total

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	32,810	15,777	12,937	Continuing
(U) Appropriated Value	33,915	15,777		
(U) Adjustments to Appropriated Value				
a. Congressional/General	-392	-309		
b. SBIR	-713	-355		
c. Below Threshold Reprogramming	-4,205			
d. Omnibus and other Above Threshold	-224	-218		
(U) Adjustments to Budget Years Since FY96 PB			-2,448	
(U) Current Budget Submit/President's Budget	28,381	14,895	10,489	Continuing

(U) Change Summary Explanation:

Funding: MMRT modification and integration into ICBM LCCs FY97 funding ($1,937) transferred to ICBM Modernization EMD Program (PE 0603851F), Strategic C4 Program (Project # 13C4). Other reductions are the result of general overhead reduction (-$64) and inflation adjustments (-$447).

Schedule: No significant impact.

Technical: Air Force will modify excess MRTs to include HIDAR for installation in the E-4B NAOC, E-6B TACAMO, and ICBM LCCs.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0303131F Minimum Essential Emer Comm Network (MEECN)

PROJECT NO. AND NAME: 2832 VLF/LF System Improvements

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Appropriation 3010, BA 5 E-4B Class V Mods	21,400	0	0	10,300	500	1,500	0	0	33,700
(U) Appropriation 3600 ICBM Modernization EMD (PE 0604851F)	0	0	2,817	TBD	TBD	TBD	TBD	TBD	TBD

(U) D. **Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) HPTS EMD Completion		X*										
(U) MMRT RFP Release							X					
(U) MMRT EMD								X	_____	_____	_____	_____
(U) MMRT EMD Completion												FY00
(U) DIRECT Contract Award								X				

* Complete

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0303131F Minimum Essential Emer Comm Network (MEECN)

PROJECT NO. AND NAME: 2832 VLF/LF System Improvements

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Primary Hardware Development	6,253	9,418	8,847
(U) Software Development	3,690	1,500	311
(U) Systems Engineering	2,785	1,107	425
(U) Developmental Support Systems Acquisition	1,668		
(U) Integrated Logistics Support	1,442		
(U) Technical Data	517		
(U) Developmental Test and Evaluation		725	
(U) Contractor Engineering Support	2,489	445	379
(U) Government Engineering Support	2,022	875	425
(U) Program Management Support	4,406		
(U) Travel	346	375	102
(U) Miscellaneous	2,763	450	
(U) Total	28,381	14,895	10,489

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303131F Minimum Essential Emer Comm Network (MEECN)
PROJECT NO. AND NAME 2832 VLF/LF System Improvements	

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Rockwell	CPAF	Aug 92	13,500	13,500	13,300	0	0	0	0	13,300
Various	Various	Various	N/A	N/A	N/A	28,381	0	0	0	28,381
TBD						0	14,895	10,489	Cont	Cont
Support and Management Organizations										
Not Applicable										
Test and Evaluation Organizations										
Not Applicable										
Subtotal Product Development					13,300	28,381	14,895	10,489	Cont	Cont
Subtotal Support and Management					0	0	0	0	0	0
Subtotal Test and Evaluation					0	0	0	0	0	0
Total Project					13,300	28,381	14,895	10,489	Cont	Cont

Government Furnished Property: Not Applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0303131F Minimum Essential Emer Comm Network (MEECN)

PROJECT NO. AND NAME: 2834 Dual Frequency MEECN Receiver

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2834 Dual Frequency MEECN Receiver	280	0	0	0	0	0	0	0	264,346

(U) **A. Mission Description and Budget Item Justification**

(U) Dual Frequency MEECN Receiver (DFMR), which was to provide a protected strategic communications link to Minuteman Launch Control Centers (LCC) and bomber dispersal bases, was terminated for the convenience of the US Government on 1 April 1994.

(U) FY 1995

- (U) $280 Contract termination for DFMR for convenience of the US Government.
- (U) $280 Total

(U) FY 1996 - Not applicable.

(U) FY 1997 - Not applicable.

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	280	0	0	264,346
(U) Appropriated Value	280	0	0	
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions				
(U) Current Budget Submit/President's Budget	280	0	0	264,346

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303131F Minimum Essential Emer Comm Network (MEECN)
PROJECT NO. AND NAME 2834 Dual Frequency MEECN Receiver	

(U) Change Summary Explanation:

Funding: Not applicable

Schedule: Not applicable

Technical: Not applicable

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Appropriation 3020, BA 03 Minuteman Modifications	0	0	0	0	0	0	0	0	52,400

(U) D. **Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Complete termination of DFMR						X*						

* Complete

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0303131F Minimum Essential Emer Comm Network (MEECN)

PROJECT NO. AND NAME: 2834 Dual Frequency MEECN Receiver

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Contractor Engineering Support	245	0	0
(U) Travel	35		
(U) Total	280	0	0

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Westinghouse	FPI	Sep 89	37,475	39,901	28,100	0	0	0	0	28,100
GTE	FFP	Oct 83	235,500	235,500	235,500	0	0	0	0	235,500
Support and Management Organizations										
Other Engineering Support		Oct 93	1,592	1,592	466	280	0	0	0	1,592
Test and Evaluation Organizations										
Not applicable										

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0303131F Minimum Essential Emer Comm Network (MEECN)

PROJECT NO. AND NAME: 2834 Dual Frequency MEECN Receiver

Government Furnished Property: Not applicable

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Subtotal Product Development					263,600					263,600
Subtotal Support and Management					466	280				1,592
Subtotal Test and Evaluation										
Total Project					264,066	280				264,346

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303131F Minimum Essential Emer Comm Network (MEECN)
PROJECT NO. AND NAME 4521 DIRECT	

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4521 DIRECT	0	0	11,413	0	0	0	0	TBD	TBD

NOTE: This project was established in Jan 96 to consolidate efforts related to DIRECT currently being or planned for accomplishment in PE 0603851F, ICBM Modernization Dem/Val (Project 1024 ICBM C2 Applications), PE 0604851F, ICBM Modernization EMD (Project 13C4, Strategic C4 Program), PE 0101213F, Minuteman Squadrons, and 0303131F, MEECN (Project 2832, VLF/LF System Improvements). FY95 and FY96 DIRECT efforts are reported under Project 2832, VLF/LF System Improvements, in this PE.

(U) **A. Mission Description and Budget Item Justification**

The Defense IEMATS Replacement Command and Control Terminals (DIRECT), which is the Improved Emergency Message Automated Transmission System (IEMATS) replacement program, is a Strategic Nuclear Command and Control (C2) system directly supporting the Chairman of The Joint Chief of Staff (CJCS). DIRECT will provide for all current IEMATS requirements, including the build, release, and transmission of Emergency Action Messages (EAM) to allow the CJCS and warfighters to remain responsive to National Command Authorities (NCA) directives. DIRECT will be compatible with the Defense Message System (DMS) when it supplants the Automated Digital Network (AUTODIN) and will interface with all other EAM distribution communications systems. An urgent and compelling need to field an IEMATS replacement system no later than second quarter FY99 has been established to insure the orderly closure of AUTODIN Switching Centers (ASC).

(U) FY 1995 ($ in Thousands):
- (U) $0 IEMATS Replacement (i.e., DIRECT) Prototyping (Funded in Project 2832)
- (U) $0 Total

(U) FY 1996 ($ in Thousands):
- (U) $0 IEMATS Replacement (i.e., DIRECT) (Funded in Project 2832)
- (U) $0 Total

(U) FY 1997 ($ in Thousands):
- (U) $11,413 DIRECT Engineering and Manufacturing Development
- (U) $11,413 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303131F Minimum Essential Emer Comm Network (MEECN)
PROJECT NO. AND NAME 4521 DIRECT	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995*	FY 1996*	FY 1997	Total Cost
(U) Previous President's Budget				
(U) Appropriated Value				
(U) Adjustments to Appropriated Value				
(U) Adjustments to Budget Years Since FY 1996 PB			11,413	
(U) Current Budget Submit/President's Budget			11,413	TBD

* Funded in VLF/LF System Improvements Project (BPAC 2832 this PE)

(U) Change Summary Explanation:

Funding: FY95 and FY96 for DIRECT funded in VLF/LF System Improvements (Project 2832, this PE). $11.9M added in FY97 and outyear funding to be identified in the FY98 POM. FY97 funding subsequently reduced by $487K for non-pay inflation.

Schedule: FY99 IOC

Technical: TBD

(U) **C. Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Appropriation 3600 ICBM Modernization Dem/Val	0	0	934	0	0	0	0	0	934

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) DIRECT contract award								X				
(U) DIRECT IOC											2QFY99	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303131F Minimum Essential Emer Comm Network (MEECN)
PROJECT NO. AND NAME 4521 DIRECT	

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995*	FY 1996*	FY 1997
(U) Primary Hardware Development			4,869
(U) Software Development			3,387
(U) Systems Engineering			1,525
(U) Technical Data			103
(U) Development Test and Engineering			147
(U) Government Engineering Support			300
(U) Program Management Support			983
(U) Travel			99
(U) Total			11,413

* Funded in VLF/LF System Improvements Project (BPAC 2832 this PE)

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303131F Minimum Essential Emer Comm Network (MEECN)
PROJECT NO. AND NAME 4521 DIRECT	

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995*	Budget FY 1995*	Budget FY 1996*	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
TBD								8,256	TBD	TBD
Support and Management Organizations										
TBD								3,010	TBD	TBD
Test and Evaluation Organizations										
TBD								147	TBD	TBD
Government Furnished Property: Not Applicable										
Subtotal Product Development								8,256	TBD	TBD
Subtotal Support and Management								3,010	TBD	TBD
Subtotal Test and Evaluation								147	TBD	TBD
Total Project								11,413	TBD	TBD

* Funded in VLF/LF System Improvements Project (BPAC 2832 this PE)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0303140F Information Systems Security Program

PROJECT NO. AND NAME: NM Computer Security RDT&E: Firestarter

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
NM Computer Security RDT&E: Firestarter	11,355	11,300	6,900	5,000	4,600	5,100	5,700	Continuing	TBD

(U) A. **Mission Description and Budget Item Justification**

The program directs Command Control Communications and Computer Intelligence (C4I) system security R&D with emphasis in multilevel computer security and providing secure voice transmission. The Air Force does not currently have the necessary mechanisms to provide adequate access control, integrity and assured service for today's sophisticated computer systems that host data at multiple levels of classification, and are simultaneously accessed by users with differing clearances and needs to know. With the emergence of the Information Super Highway as an integral DOD resource, it is imperative that adequate information protection mechanisms be developed to meet the national computer security requirements and standards. This program is in budget activity 7 - Operational System Development, Research Category 6.6 because it addresses the development and transition of multilevel information system security for use in new Air Force Information systems. However, research performed in this PE is similar to Research Category 6.4 engineering and manufacturing development efforts.

(U) FY 1995 ($ in Thousands)

- (U) $ 1,000 Completed the development of the prototype secure guard development.
- (U) $ 500 Continued joint evaluation and secure distributed computing experiments with Army/Navy/Air Force.
- (U) $ 1,600 Continued the technology transition efforts through the Air Force Electronic Systems Center.
- (U) $ 600 Completed the security policy and specification for secure data handling capability for the F-22 mission support system.
- (U) $ 700 Completed prototype of highly-configurable guard which can be ported/tailored to a multitude of target user environments and applications.
- (U) $ 700 Continued a fieldable version of an advanced TEMPEST signal analysis system.
- (U) $ 100 Completed the COMFY ASH program.
- (U) $ 400 Developed a prototype of signal collection processor with an order of magnitude improvement in performance.
- (U) $ 500 Completed the transition of the CYPRIS programmable cryptography system.
- (U) $ 400 Completed a real time demonstration capability for a secure multi-speaker conferencing system.
- (U) $ 550 Initiated development of narrowband secure video teleconferencing capability.
- (U) $ 500 Completed a prototype of a secure real time distributed computing environment.
- (U) $ 600 Continued development of multi-rate voice encoding systems to improve quality and performance over noisy channels.
- (U) $ 300 Continued development of mechanisms to simultaneously transmit in a secure manner both voice and data over dynamic channels.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303140F Information Systems Security Program
PROJECT NO. AND NAME NM Computer Security RDT&E: Firestarter	

- (U) $ 200 Continued Test & Evaluation Support for the development of Federal Standards.
- (U) $ 900 Completed development of prototype secure distributed DBMS.
- (U) $ 305 Continued development of high quality encoding schemes for secure transmission for use by F-22, Air Force Space Command (AFSPC) and as Federal Standard.
- (U) $ 1,500 Continued development of Trusted RUBIX (secure relational database) effort
- (U) $11,355 Total

(U) FY 1996 ($ in Thousands)

- (U) $ 450 Performe joint service evaluation of multilevel secure distributed processing and trusted systems.
- (U) $ 410 Continue developing secure data handling for Air Force Mission Support System.
- (U) $ 260 Demonstrate/transition Multilevel Secure DBMS techniques and secure guard technologies.
- (U) $ 225 Develop security mechanisms to support object oriented multi-media database management system.
- (U) $ 367 Examine the utility, viability and relevance of current COTS products/ technologies in computer communication security in support of AF C2 applications.
- (U) $ 882 Continue the extension of secure distributed computing environment to heterogeneous platforms and transition to operational use.
- (U) $ 580 Develop high quality 2400 bps encoding schemes for secure voice transmission for use by F-22, AFSPACECOM and submission as Federal Standard.
- (U) $ 200 Develop capability to perform secure voice transmission over failure prone channels.
- (U) $ 314 Continue development of narrowband secure video teleconferencing capability for STU-III applications.
- (U) $ 213 Continue development of communication system to simultaneously transmit secure voice and data over narrowband channels.
- (U) $ 256 Support development of digital speech test techniques and federal standards.
- (U) $ 468 Transition information security technology and products to ESC PRISM/Security Transistion Analysis Facility for test, evaluation and insertion into programs.
- (U) $ 300 Develop and implement plans to secure various interfaces to and between Theater Battle Management Core and related systems.
- (U) $ 450 Complete Computer Aided Signal Analysis System for emission security field use.
- (U) $ 125 Support information warfare INFOSEC policy requirements and transition FIRESTARTER sponsored products to IW Program Office.
- (U) $ 4,300 Air Force Electronic Key Management System.
- (U) $ 1,500 Continue development of Trusted Rubix.
- (U) $11,300 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303140F Information Systems Security Program
PROJECT NO. AND NAME NM Computer Security RDT&E: Firestarter	

(U) FY 1997

–	(U) $ 400	Continue prototype of secure object oriented DBMS.
–	(U) $ 416	Continue extension of software engineering environment to incorporate tools supporting multilevel information system security development.
–	(U) $ 214	Transition secure distributed computing environment to fieldable use.
–	(U) $ 590	Complete the development of narrowband secure video teleconferencing capability for STU III applications.
–	(U) $ 200	Complete the development of capability to adaptively manage both voice and data transmission over a dynamic/degraded channels.
–	(U) $ 300	Continue Test and Evaluation Support for the development of Federal Standards.
–	(U) $ 350	Perform joint service evaluation of multilevel secure distributed processing and trusted systems
–	(U) $ 1,180	Continue the extension of secure distributed computing environment to heterogeneous platforms and transition to operational use
–	(U) $ 350	Continue developing secure data handling for AFMSS
–	(U) $ 2,900	Air Force Electronic Key Management System
–	(U) $ 6,900	Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	10,293	11,261	8,980	TBD
(U) Appropriated Value	11,793	11,261		
(U) Adjustments to Appropriated Value				
a. General Congressional Reductions	(190)			
b. SBIR	(245)			
c. Omnibus and Other Above Threshold Reprogramming	(3)			TBD
d. Below Threhold Reprogramming				
(U) Adjustments to Budget Year since PB96		39	(2,080)	
(U) Current Budget Submit/President's Budget	11,355	11,300	6,900	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303140F Information Systems Security Program
PROJECT NO. AND NAME NM Computer Security RDT&E: Firestarter	

(U) Change Summary Explanation:

Funding:

FY96: $118 thousand general reduction.

FY97: $2 million reduction for other Air Force Requirements
$45 thousand reduction for overhead reduction

Schedule: Delays completion and start of numerous research efforts.

Technical: Planned Computer security and emission security and communications security efforts stop.

(U) C. Other Program Funding Summary ($ in Thousands)

(U) Related RDT&E:

(U) The research and development efforts pursued under Program Element (PE) 33140F are complementary to work being performed under PE 35167G which addresses the development of generic technology in the area of information security. Products from PE 33140F transition to other agencies through PE 64740F Computer Resource Management Technology Transition. There is no unnecessary duplication of effort within the Air Force of the Department of Defense.

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Requirements Review Board		X				X				X		
(U) Prototype secure guard		X										
(U) Secure data handling security policy and specification for F-22 MSS		X										
(U) Prototype highly-configurable guard			X									
(U) Field CAAS for emission security use						X						
(U) Complete transition of CYPRIS				X								
(U) Complete COMFY ASH program			X									
(U) Demo secure multi-speaker conf				X								
(U) Prototype secure real time DCE			X									

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0303140F Information Systems Security Program

PROJECT NO. AND NAME: NM Computer Security RDT&E: Firestarter

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Transition security technology to ESC's PRISM/STAF function				X				X				X
(U) Prototype secure distributed DBMS			X									
(U) High quality encoding schemes for secure transmission								X				
(U) Adaptive voice/data over degraded channels										X		
(U) Narrow band secure video tele-conferencing for STU-III applications											X	
(U) Secure distributed computing Environment to field												X

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0303144F Electromagnetic Compatibility Analysis Center

PROJECT NO. AND NAME: 649E Joint Spectrum Center (JSC)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
649E Joint Spectrum Center (JSC)	9,163	0	7,667	7,910	8,049	8,285	8,415	Continuing	Continuing

(U) A. Mission Description and Budget Item Justification (U) The Joint Spectrum Center (JSC) serves as the DoD focal point for electromagnetic (EM) spectrum management matters in support of the Unified Commands, Military Departments, and Defense Agencies in planning, acquisition, training, and operations. The JSC receives operational guidance from the Joint Staff (J6) and policy guidance from the Assistant Secretary of Defense for C3I (ASD(C3I)). The JSC is the responsible activity for DoD spectrum management and use automation for strategic, theater, and tactical operations. The JSC has the responsibility for architecture and standardization of DoD automated spectrum information and management systems. Specifically, the Center designs, develops, and maintains DoD automated spectrum management systems, evaluation tools, and databases employed by the Unified Commands, Military Departments, and Defense Agencies. The JSC databases are the prime sources of information for DoD use of the EM spectrum. The JSC provides guidance and assistance to OASD, Joint Staff, DoD activities and Unified Commands to ensure development and acquisition of electromagnetically compatible systems and for the effective deployment of these systems in military operations. This Center is the focal point for spectrum related support, Electromagnetic Environmental Effects (E3), and EM interference resolution assistance to operational units including deployable support to CINC Joint Task Forces. The JSC mission is integral to other vital activities such as Information Warfare (IW), Command and Control (C2) Protect and other defensive C3 warfare activities as directed by the Joint Staff. This program is in budget activity 7 - Operational System Development, because it involves efforts supporting operational systems development.

NOTE: FY95 RDT&E funding was budgeted within the Air Force under PE 0303144F, Electromagnetic Compatibility Analysis Center (ECAC) which was renamed the Joint Spectrum Center effective 28 Sep 94. For FY1996, Executive Agent responsibility and funds for JSC were transferred from the Air Force to Defense Information Systems Agency (DISA). For FY1997 and outyears, the JSC responsibility and funds return to the Air Force.

(U) FY 1995 ($ in Thousands):

- (U) 3,300 Supported JSC government staff
- (U) 300 Developed and tested phase 2 of the Tactical Environmental Generator Work Station (TEGEN/WS) and releases 3 and 4 of Equipment Characteristics/Space Consolidated Maintenance Center (CMC)
- (U) 2,000 Developed spectrum management software to support joint operations, spectrum certification, CD-ROM database products, and initial efforts to transition the Frequency Resource Record System (FRRS) from Defense Integrated Secure Network (DISNET1) to Secret Internet Protocol Router Network (SIPRNET)
- (U) 463 Initiated planning to migrate legacy spectrum management systems into Global Command and Control System (GCCS) and Defense Information Infrastructure (DII) architectures

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303144F Electromagnetic Compatibility Analysis Center
PROJECT NO. AND NAME 649E Joint Spectrum Center (JSC)	

- (U) 300 Supported OASD(C3I) on DoD spectrum reallocation efforts and developed spectrum planning and use database
- (U) 460 Modified Extended Air Defense Simulation (EADSIM) to reflect realistic scenarios
- (U) 100 Coordinated EMC/Vulnerability integration into DoD wide Modeling and Simulation architecture activities
- (U) 1,240 Improved JSC Cosite Analysis Model (COSAM)
- (U) 660 Developed techniques for analyzing propagation coupling on low observable airframe coatings, and analyzing 3-Dimensional aircraft geometrics
- (U) 175 Developed capabilities to evaluate interference to Ultra Wideband receivers
- (U) 165 Assessed EMC implications of advanced technologies (Monolithic Microwave Integrated Circuit (MMIC), non lethal weapons, high data rate UHF communications, next generation digital radios, etc.)
- (U) 9,163 Total

(U) FY 1996 ($ in Thousands): EFFORT ACCOMPLISHED AND FUNDED UNDER PE 0303153K, DISA
- (U) 0 Total

(U) FY 1997 ($ in Thousands):
- (U) 100 Develop software to incorporate new sources of spectrum related data
- (U) 1,626 Initiate development of a client server architecture for spectrum management Automated Data Processing (ADP) systems supporting sustaining base operations including on-line access to standard database products using World Wide Web technology
- (U) 1,261 Support the migration of tactical spectrum management to the Common Operating Environments of the GCCS and participate in Joint Warrior Interoperability Demonstration 97 (JWID97) using prototypes of the GCCS Spectrum Management Modules
- (U) 1,261 Provide support to OASD/C3I on issues expected to arise in preparation for the World Radio Conference 97, and on other issues regarding reallocation of Government spectrum to the civil sector
- (U) 200 Coordinate Electromagnetic Environment Effects (E3) requirements for application within DoD modeling and simulation architectures
- (U) 970 Improve the JSC Space-Earth EMC model graphics and user interface to more efficiently handle large EM environments
- (U) 873 Incorporate improved capabilities to analyze advanced/complex systems within COSAM Next Generation (NG) and improve JSC's existing airframe coupling model to include 3-Dimensional aircraft geometry coupling paths, advanced surface shading techniques, and an improved user interface
- (U) 200 Assess advanced technologies for EMC implication
- (U) 776 Develop draft DoD ordnance E3 Directives and operational guidance, verify ordnance data susceptibility and develop data base to support operational deployment
- (U) 400 Purchase monitoring equipment to support interference resolution of advanced frequency hopping systems

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303144F Electromagnetic Compatibility Analysis Center
PROJECT NO. AND NAME 649E Joint Spectrum Center (JSC)	

– (U) 7,667 Total

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	9,287	0	0	
(U) Appropriated Value	9,287			
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-124			
b. SBIR				
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY 1996 PB			7,667	Cont
(U) Current Budget Submit/President's Budget	9,163		7,667	Cont

(U) Change Summary Explanation:
Funding: Effective FY97, funding for JSC transferred from DISA to the Air Force

(U) **C. Other Program Funding Summary ($000 in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) O&M AF BA 1	6,460	0	11,916	12,447	12,736	12,713	12,783	Cont	Cont

FY96 O&M Funding provided by DISA under PE 0303153K. FY95 and FY96-01 O&M funding budgeted by the Air Force under PE 0303144F

(U) **D. Schedule Profile**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303144F Electromagnetic Compatibility Analysis Center
PROJECT NO. AND NAME 649E Joint Spectrum Center (JSC)	

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Contract Award			X									
(U) Decision on Exercise of Option											X	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303144F Electromagnetic Compatibility Analysis Center
PROJECT NO. AND NAME 649E Joint Spectrum Center (JSC)	

(U) **A. Project Cost Breakdown ($000 in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Program Management Personnel	2,593		
(U) Travel	284		
(U) Program Management support	423		
(U) Contractor Engineering Support	5,863		7,667
(U) Total	9,163		7,667

Note: Effective FY96, Program Management Personnel, Travel, and Support funded out of O&M Air Force appropriation.

(U) **B. Budget Acquisition History and Planning Information ($000 in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Support and Management Organizations										
Test and Evaluation Organizations										
IIT Research Institute, Annapolis MD	SS/CPAF/ MIPR	1Jul90 Award	34,854	34,854	30,500	4,354				34,854
IIT Research Institute, Annapolis MD	C/CPAF/ MIPR	17May95	34,471	34,471		1,504		7,667	25,300	34,471
JSC, Annapolis MD	N/A	N/A	N/A	N/A	N/A	3,305			Cont	Cont

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303144F Electromagnetic Compatibility Analysis Center
PROJECT NO. AND NAME 649E Joint Spectrum Center (JSC)	

(U) B. **Budget Acquisition History and Planning Information Continued ($000 in Thousands)**

Government Furnished Property:

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Property									
Support and Management Property									
Test and Evaluation Property									
GFP procured w/Program Element RDT&E funds under Contract identified above	SS/CPAF	1Jul90 - 30Jun95	1Jul90-30Jun95	35	5				40
Subtotal Product Development									
Subtotal Support and Management									
Subtotal Test and Evaluation				35	5			Cont	Cont
Total Project N/A									

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0303152F World-Wide Military Cmd and Control Sys

PROJECT NO. AND NAME: 4485 AF-Global Command and Control System (AF-GCCS)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4485 AF-Global Command and Control System (AF-GCCS)	1,900	0	7,481	7,296	7,196	7,192	7,080	TBD	TBD

(U) A. Mission Description and Budget Item Justification

(U) The Global Command and Control System (GCCS) has been designated the Command and Control migration system for DOD. It is an integrated Command, Control, Communications, Computer, and Intelligence (C4I) system capable of supporting all echelons of the US military command structure. GCCS solves C4I interoperability problems between Service components by establishing a Common Operating Environment (COE), as the first step to eliminating stovepipe systems. The AF is responsible for development of four of the modules that will make up this COE, and integration of AF unique applications with the COE. This effort is Budget Activity 7, Operational Systems Development, because the program develops and implements software for an operational computer network.

(U) FY 1995
- (U) 500 Enhancement of Operational Taskings and Priorities (OT&P) software, and integration with the adapted COMPES modules
- (U) 1,400 Operations Module (OPSMOD) enhancement to the OT&P system
- (U) 1,900 Total

(U) FY 1996
- (U) 0 Total

(U) FY 1997
- (U) 4,604 COE Development
- (U) 1,918 Crisis Action Planning Evolution
- (U) 959 Enhancement to OT&P to support user identified Functional Process Improvements
- (U) 7,481 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0303152F World-Wide Military Cmd and Control Sys

PROJECT NO. AND NAME: 4485 AF-Global Command and Control System (AF-GCCS)

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget (FY 1996)	N/A	N/A	N/A	N/A
(U) Appropriated Value	N/A	N/A	N/A	N/A
(U) Adjustments to Appropriated Value				
a. General Congressional Reduction	N/A	N/A	N/A	N/A
b. SBIR	N/A	N/A	N/A	N/A
c. Omnibus &Other Above Threshold Reprogramming	N/A	N/A	N/A	N/A
d. Below Threshold Reprogramming	1,900	N/A	N/A	1,900
(U) Adjustments to Budget Year since FY96 PB			+7,481	+7,481
(U) Current Budget Submit/President's Budget	1,900	N/A	7,481	9,381

(U) Change Summary Explanation:

Funding: FY 95 reprogramming initiated program; FY96 President's Budget was submitted before the requirement for RDT&E AF funds was identified, any FY96 COE development efforts are expected to be conducted with Global Command Support Systems COE funding or below threshold reprogramming; FY97 is first budget submission.

Schedule: Requirement for GCCS COE and initial schedule was established in FY95, schedule for future releases is being defined.

Technical: Technical responsibilities for COE development were initially established in FY95. Requirements evolve to solve C4I interoperability problems by supporting efficient migration and integration of C4I applications at all levels of command.

(U) C. Other Program Funding Summary ($ in Millions)

	FY1995	FY1996	FY1997	FY1998	FY1999	FY2000	FY2001	To Compl	Total Cost
(U) Other Procurement Air Force	18.4	5.1	10.2	7.4	6.0	6.1	6.1	TBD	TBD
(U) Military Personnel	4.6	2.9	1.0	1.0	1.0	1.1	1.1	TBD	TBD
(U) Operations and Maintenance Air Force	5.1	9.2	22.4	17.2	17.2	17.4	18.1	TBD	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303152F World-Wide Military Cmd and Control Sys
PROJECT NO. AND NAME 4485 AF-Global Command and Control System (AF-GCCS)	

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
1.) (U) Common Operating Environment (COE) Development												
• Developer's Toolkit		X								X		
• Distributed Computing Services										X		
• Office Automation		X								X		
• Data Interchange Services										X		
2.) (U) Crisis Action Planning Enhancement										X		

(U) COE update delivery schedule in FY 97 is still being defined.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0303152F World-Wide Military Cmd and Control Sys

PROJECT NO. AND NAME: 4485 AF-Global Command and Control System (AF-GCCS)

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Common Operating Environment (COE) Development	500		4,604
(U) Crisis Action Planning Evolution			1,918
(U) Operational Testing and Planning (OT&P) Enhancement	1,400		959
(U) Total	1,900		7,481

(U) B. Budget Acquisition History and Planning Information ($ in Millions)

Performing Organizations:

Product Development Organizations

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
(U) Rome Lab	FFP/FCA	Jun 95	N/A	N/A	0	0.25	0	0	TBD	TBD
(U) Material Systems Group		various	N/A	N/A	0	1.4	0	0	TBD	TBD
(U) Miscellaneous	various	various	N/A	N/A	0	0.085	0	0	TBD	TBD
(U) Electronic Systems Center	various	various	N/A	N/A	0	0	0	7.5	TBD	TBD
Support and Management Organizations										
(U)TEMS	OT&M	Jun 95	N/A	N/A	0	0.15	0	0	0	0.15
(U) Miscellaneous	various	various	N/A	N/A	0	0.015	0	0	0	0.015

Test and Evaluation Organizations

(U) Not Applicable

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303152F World-Wide Military Cmd and Control Sys
PROJECT NO. AND NAME 4485 AF-Global Command and Control System (AF-GCCS)	

Government Furnished Property:

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
(U) Not Applicable									

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0303601F Milstar Terminals Sys (Space)

PROJECT NO. AND NAME: 2487 MILSATCOM Terminals

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2487 MILSATCOM Terminals	17,664	40,969	26,962	19,225	12,628	11,703	11,837	16,800	1,951,335

Notes: FY95 and FY96 funding includes Milstar terminals. From FY97 on, funding includes Milstar terminals, SHF terminals and UHF SATCOM. FY95-FY96 funding for UHF SATCOM is in PE 0303606F (UHF Satellite Communications). Funding for SHF terminals (FY95 and prior) is in PE 0303605F. Prior funding for all programs is included in total costs.

(U) A. **Mission Description and Budget Item Justification**

Military Satellite Communications (MILSATCOM) provides worldwide communications to strategic and tactical warfighters. The MILSATCOM Terminals Program contains efforts to develop equipment for Air Force users to communicate over military satellites, including Milstar, Ultra High Frequency (UHF) satellites, and Defense Satellite Communication System (DSCS). Enhancements to the Milstar ground and airborne Command Post Terminals, which were procured in FY93 through two contractors, are continuing. The Air Force's Milstar tactical terminals, the Single Channel Anti-Jam Manportable (SCAMP) and the Secure, Mobile, Anti-Jam, Reliable, Tactical Terminal (SMART-T), are funded by the Air Force and procured by the Army. Increasing requirements for UHF satellite capacity coupled with limited channel capacity, led the Joint Staff to mandate new standards for UHF users that are designed to improve satellite access and efficiency by utilizing Demand Assigned Multiple Access (DAMA) techniques. Development efforts in the UHF SATCOM program are primarily focused on the design and implementation of the Network Control System (NCS), and ground and airborne DAMA terminals. DSCS terminal procurement efforts sustain and modernize the Ground Mobile Forces terminal and the Jam-Resistant Secure Communications (JRSC) subnet of DSCS. This effort is in budget activity 7 - Operational System Development because it has completed a Milestone III review and is in production.

(U) B. **Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996*	FY 1997
(U) Previous President's Budget	18,249	42,591	8,852
(U) Appropriated Value	18,249	42,591	
(U) Adjustments to Appropriated Value			
a. Congressional General Reductions	-199	-1,622	
b. SBIR	-381		
c. Omnibus and Other Above Threshold Reprogram			
d. Below Threshold Reprogramming	-5		
(U) Adjustments to Budget Years Since FY96PB			18,110
(U) Current Budget Submit/President's Budget	17,664	40,969	26,962

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303601F Milstar Terminals Sys (Space)
PROJECT NO. AND NAME 2487 MILSATCOM Terminals	

(U) Change Summary Explanation:

Funding: UHF SATCOM funding was moved into PE 0303601F in FY97 and funding was zero-balance transferred within PE to meet program requirements.

* The FY96 PB amount does not reflect funding reductions that are reserved for other DoD reprogramming needs ($445)

Schedule: None.

Technical: None.

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Aircraft Procurement, Air Force	6,560	992	262	598	810	753	463	Cont	Cont
(U) Other Procurement, Air Force	5,342	39,975	57,364	30,709	66,185	65,556	68,119	Cont	Cont

Note: FY95 procurement includes Milstar terminals. FY96 procurement includes Milstar and SHF terminals. From FY97 on, procurement includes Milstar and SHF terminals, and UHF SATCOM. Funding includes equipment and initial spares costs.

(U) A. **Mission Description and Budget Item Justification**

(U) FY 1995

- (U) $2,592 Continue basic activities required to support the Milstar Terminals program
- (U) $13,387 Develop Command Post Terminals (CPT), upgrades, and modifications
- (U) $874 Continue UHF terminal and AFSATCOM modifications
- (U) $50 AFSATCOM Payload Integration on Classified Host
- (U) $761 Support testing activities and conduct program studies and trades
- (U) $17,664 Total

(U) FY 1996

- (U) $4,028 Continue basic activities required to support the Milstar Terminals program
- (U) $29,297 Develop CPT upgrades and modifications
- (U) $5,070 Continue UHF terminal and AFSATCOM modifications
- (U) $1,870 Support testing activities
- (U) $704 AFSATCOM Payload Integration on Classified Host
- (U) $40,969 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303601F Milstar Terminals Sys (Space)
PROJECT NO. AND NAME 2487 MILSATCOM Terminals	

(U) FY 1997

- (U) $2,740 Continue basic activities required to support the MILSATCOM Terminals program
- (U) $13,762 Develop CPT upgrades and mods.
- (U) $589 Continue UHF terminal and AFSATCOM modifications
- (U) $1,850 Support Milstar testing activities
- (U) $1,407 Conduct world-wide system test on Network Control System
- (U) $6,614 Upgrade NCS for full operational use
- (U) $26,962 Total

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) CPT IOT&E Phase I	----	----	----	---x								
(U) CPT IOT&E Phase II								x---	----	---x		
(U) CPT IOC I									x			
(U) CPT Production Deliveries			x---	----	----	----	----	---x				
				-	-	-	-					
(U) SCAMP Production Begins						x						
(U) SCAMP Deliveries Begin												x
(U) SMART-T Low-Rate Initial Production Begins										x		
(U) Network Control System												
(U) Testing		x---	---	---	---	---	----	---x				
(U) Deliveries								x---	---x			
(U) World-Wide System Test										x---	---x	
(U) DAMA Modem Certification Testing	x---	---	---	---	---	---	---x					
(U) Airborne DAMA Terminal												
(U) Contract Award							x					
(U) Deliveries										x---	---	---
(U) Ground DAMA Terminal Deliveries								x---	---	---	---	---

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303601F Milstar Terminals Sys (Space)
PROJECT NO. AND NAME 2487 MILSATCOM Terminals	

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) CPT Upgrades	13,387	29,297	13,762
(U) UHF Upgrades	874	5,070	589
(U) Testing Support/Studies	761	1,870	1,850
(U) SPO Ops (PSA, TDY, Trng, Sup/Equip, Ktr Conv)	2,592	4,028	2,740
(U) AFSATCOM Payload Integration	50	704	
(U) Network Control System World Wide system test			1,407
(U) NCS Upgrade for Full Operational Use			6,614
(U) Total	17,664	40,969	26,962

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303601F Milstar Terminals Sys (Space)
PROJECT NO. AND NAME 2487 MILSATCOM Terminals	

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Raytheon Corp	FPIF/FFP	Jun 85	869,562	869,562	850,836	1,152	18,251	7,912	17,411	895,562
Rockwell	CPIF	Aug 93	43,068	43,068	43,068				0	43,068
Miscellaneous	Various	Various	N/A	N/A	642,459	1,338	5,967	350	0	650,114
ViaSat	C/FFP	Oct 95	14,895	14,895				3,146	11,749	14,895
Support and Management Organizations										
MITRE	Various	Various	N/A	N/A	75,157	9,296	8,505	8,323	21,047	122,328
SPT Contractors	Various	Various	N/A	N/A	142,529	4,444	5,012	3,807	8,244	164,036
Tecolote	Various	Various	N/A	N/A	200	498	682	684	2,949	5,013
Miscellaneous	Various	Various	N/A	N/A	15,205	807	1,338	2,740	10,793	30,883
Test and Evaluation Organizations										
Wright-Labs	Various	N/A	N/A	N/A	19,066		1,025		0	20,091
Miscellaneous	Various	Various	N/A	N/A	5,027	129	189		0	5,345

Notes: FY95 and FY96 funding includes Milstar terminals. From FY97 on, funding includes Milstar terminals, SHF terminals and UHF SATCOM. FY95-FY96 funding for UHF SATCOM is in PE 0303606F (UHF Satellite Communications). Funding for SHF terminals (FY95 and prior) is in PE 0303605F. Prior funding for all programs is included in total costs.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303601F Milstar Terminals Sys (Space)
PROJECT NO. AND NAME 2487 MILSATCOM Terminals	

(U) **B. Budget Acquisition History and Planning Information Continued ($ in Thousands)**

Government Furnished Property:

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Property	N/A								
Support and Management Property	N/A								
Test and Evaluation Property	N/A								
Subtotal Product Development				1,536,363	24,218	11,408	29,160	1,603,639	
Subtotal Support and Management				233,091	15,537	15,554	43,033	322,260	
Subtotal Test and Evaluation				24,093	1,214		0	25,436	
Total Project				1,793,547	40,969	26,962	72,193	1,951,335	

Notes: FY95 and FY96 funding includes Milstar terminals. From FY97 on, funding includes Milstar terminals, SHF terminals and UHF SATCOM. FY95-FY96 funding for UHF SATCOM is in PE 0303606F (UHF Satellite Communications). Funding for SHF terminals (FY95 and prior) is in PE 0303605F. Prior funding for all programs is included in total costs.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305110F Satellite Control Network (Space)

PROJECT NO. AND NAME: 3276 Satellite Control Network

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3276 Satellite Control Network	69,325	78,830	89,960	93,366	107,136	109,951	114,272	Continuing	Continuing

(U) A. **Mission Description and Budget Item Justification**

(U) The AF Satellite Control Network (AFSCN) is a global network of control centers, remote tracking stations, and communications links providing the earth-to-space connection required for operation of military satellites. The AFSCN provides satellite and payload command and control, and mission data relay using Mission Control Centers in California and Colorado and eight global Remote Tracking Stations (RTS). Since the AFSCN operations are continuous, system improvements occur in parallel with operations. This AFSCN project funds the development, acquisition, and engineering needed to continue the evolution of this highly reliable national satellite tracking, telemetry, commanding (TT&C), and data relay capability to meet the requirements of the growing inventory of operational and developmental DoD, National, Civil, and Allied satellite systems.

(U) Satellite systems require periodic contact with ground based command & control systems to operate. The AFSCN is the DoD common user satellite control network. The AFSCN is maintained, operated and upgraded using funding provided in three PE's. The AFSCN provides satellite state-of-health TT&C for the following operational satellite systems: DMSP, GPS, DSCS, DSP, FLTSAT, Milstar, GEOSAT, Skynet, NATO III/IV, and Classified Programs. It controls on-orbit spares and orbit repositioning for satellite programs with dedicated mission networks. It also supports these and other systems with mission data relay.

(U) The AFSCN conducts an Improvement & Modernization (I&M) program to reduce the cost of satellite operations in the future by operating more efficiently with fewer, lower skilled personnel and more reliable standardized equipment. The primary focus of the I&M program is upgrades to the Command and Control Segment (Network Operations Upgrade Program) and the Communications Segment (Range and Communications Development Program). Both are planned to be accomplished on a time phased approach exploiting commercially developed products through using an evolutionary acquisition strategy.

(U) The Network Operations Upgrade Program will move satellite command and control from a mainframe-based, centralized computer architecture to a workstation-based, open architecture using advanced high speed data links. When developed and fielded, this will facilitate a 30% reduction in O&M for the command and control segment. In addition, the AFSCN will have greater capability and capacity with increased standardization and interoperability. The Resource Management Segment scheduling system will be replaced with an automated system which includes integrated inter-range operations capability to enable more rapid and efficient use of network resources.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305110F Satellite Control Network (Space)
PROJECT NO. AND NAME 3276 Satellite Control Network	

(U) The Range and Communications Development Program will transition the current, costly point-to-point AFSCN communications network to a communications grid system that integrates government and commercial networks as technology becomes available. This new architecture will eliminate costly infrastructure, enable surge capability, and provide a minimum 25% savings in O&M costs over the current systems. This will improve capacity, reliability, data quality, and user access to the network.

(U) Research category is Operational Systems Development, since this effort supports a fielded system. Development of new satellite control capabilities is essential to the operational capability of current and new satellite systems. The project number for the entire Program Element is 3276.

(U) FY 1995

(U)		**Command and Control Segment (Network Operations Upgrade):**
(U)	$14,075	C^2 Upgrades: Continued development of system architecture, documentation, and lab demonstration equipment for workstation based, Simplified Satellite Operations System. Objectives: open architecture "plug-and-use," increased efficiency, reduced hardware/software maintenance costs, and reduced manpower. Completed development of functional requirements document and employment concept and identified system implementation alternatives. Began assessments of those satellite control products in the Demonstration Lab. Pursued a system development approach in cooperation with other government efforts. Scheduled program completion FY 01.
(U)	$8,800	**Development Support:** Developed and implemented user-requested, priority work group required modifications. Performed engineering analysis studies and cost estimates for future planned projects.
(U)		**Communications Segment**:
(U)	$16,000	Continued Communications Segment archival equipment upgrade by completing engineering, defining commercial-off-the-shelf (COTS) system hardware, and initiating procurement of standardized telemetry recorders. Initiated development of hardware and software for Wide Area Network Interface Units (WANIU) by developing first unit prototypes. Continued development of the Centralized Control and Monitoring (CCM) for network communications, including design and initial installation of laboratory equipment. Scheduled completion FY01.
(U)	$20,815	**Network Integration and Systems Engineering**: Continued system engineering and development of network hardware/software to meet evolving satellite program requirements at Onizuka AFB, Falcon AFB, and the RTS's.
(U)	$9,635	**Above Threshold Reprogramming for CSEL approved Dec 95**
(U)	$69,325	**Total**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305110F Satellite Control Network (Space)
PROJECT NO. AND NAME 3276 Satellite Control Network	

(U) FY 1996

– (U)	**Network Operations Upgrade Program:**
– (U) $30,700	Begin software development of Resource Scheduling and Inter-Range Operations. Begin modifications for the Standard Satellite Control System for integration into the first SOC. These upgrades are consistent with the US Space Command developed "Plug-and-Use" architecture. The four Satellite Operations Centers (SOC) to be modernized are: SOC 31A (GPS), SOC 31B (DSP & DMSP), SOC 33 (Comm Sats), and SOC 34 (Milstar). Scheduled completion FY01. Continue developing priority user-requested modifications to command and control systems.
– (U)	**Range and Communications Development Program:**
– (U) $35,000	Under the Range and Communications Development Contract, continue Communications Segment archival recorder system upgrades by procurement, installation, and test of standardized COTS telemetry recorders. Continue development of COTS based hardware and software for WANIU by developing first unit prototypes. Continue development of the Centralized Control and Monitoring (CCM) of network including design and initiating procurement of hardware and software. Begin solid state switch replacement engineering analysis. Scheduled completion FY01. Continue supporting development efforts with engineering analysis. Continue developing priority user-requested modifications.
– (U) $347	**Development Support:** Conduct engineering analyses to provide cost estimating support for future planned projects.
– (U) $12,783	**Network Integration and Systems Engineering:** Continue system engineering and integration of hardware/software to meet evolving satellite program requirements at Onizuka AFB, Falcon AFB, and the RTS's. Complete connectivity with Navy satellite control network.
– (U) $78,830	**Total**

(U) FY 1997

– (U)	**Network Operations Upgrade Program:**
– (U) $31,500	Continue software development of Resource Scheduling and Inter-Range Operations. Continue implementing plug-and-use architecture with modifications to the Standard Satellite Control System for integration into the first SOC. Scheduled completion FY01.
– (U)	**Range and Communications Development Program:**
– (U) $38,500	Continue supporting hardware and software installation of standardized COTS archival recorder units at Remote Tracking Stations (RTS). Complete development of WANIU and begin prototyping in AFSCN. Complete CC&M development and deliver baseline system. Continue Operational Traffic Switch System replacement efforts by initiating development efforts. Scheduled completion FY01. Continue supporting development efforts with engineering analysis. Continue developing user-requested modifications to the communications and range segment.
– (U) $1,060	**Development Support:** Funding to support engineering analysis and cost estimating support for future planned projects.
– (U)	**Network Integration and Systems Engineering:** Continue system engineering and integration of network hardware/software to meet evolving

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305110F Satellite Control Network (Space)
PROJECT NO. AND NAME 3276 Satellite Control Network	

$18,900	satellite program requirements at Onizuka AFB, Falcon AFB, and the RTS's.
– (U)	**Total**
$89,960	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305110F Satellite Control Network (Space)
PROJECT NO. AND NAME 3276 Satellite Control Network	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996*	FY 1997	Total Cost
(U) Previous President's Budget	79,232	89,717	95,435	Continuing
(U) Appropriated Value	83,000	84,617		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-2,213	-3,497		
b. SBIR	-1,534	-1,968		
c. Omnibus and Other Above Threshold Reprogram	-5,780**	-322		
d. Below Threshold Reprogramming	-4,148			
(U) Adjustments to Budget Years since FY 96 PB			-5,475	
(U) Current Budget Submit/President's Budget	69,325	78,830	89,960	Continuing

(U) Change Summary Explanation:
* The FY96 PB amount does not reflect funding reductions that are reserved for other DoD reprogramming needs ($884)
** Number does not reflect additional ATR approved in Dec 95 for CSEL ($9,635).
Funding: Reductions due to Omnibus reprogramming action and undistributed Congressional reductions. Adjusted FY95 for actuals, and outyear funding based on more definitive planning data.

Schedule: Adjusted schedule based on more definitive program planning data.

Technical: Not Applicable.

(U) **C. Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Other Procurement, Budget Activity: 83, Program Title: AFSCN, BPAC 83440	25,629	25,319	16,144	31,336	35,788	37,333	37,883	Continue	Continue

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305110F Satellite Control Network (Space)

PROJECT NO. AND NAME: 3276 Satellite Control Network

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
Related RDT&E:									
(U) Not Applicable.									

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Provide prototype common workstations/local area network (C2)					X							
(U) Prototype SSOP		X										
(U) Award Range and Communications Development Contract (RCDC)						X						
(U) Award Network Operations Upgrade Contract							X					
(U) Deliver standardized telemetry recorders							X					
(U) Begin installation of telemetry recorders at RTS								X				
(U) WANIU production on contract						X						
(U) Deliver CC&M demonstration prototype						X						
(U) Complete installation of baseline CC&Ms												X
(U) Complete specification development for distributed workstation architecture							X					
(U) Begin Solid State Switch replacement engineering analysis							X					

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305110F Satellite Control Network (Space)

PROJECT NO. AND NAME: 3276 Satellite Control Network

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Complete prototype of distributed workstation control architecture												X
(U) Complete installation of telemetry recorders in RTS (1Qtr/ FY99)												
(U) Begin WANIU installation (1 Qtr/FY98)												
(U) Begin Range Upgrade engineering analysis (1 Qtr/FY98)												
(U) Begin antenna upgrade analysis and preliminary design (2 Qtr/FY98)												
(U) Begin Enhanced Tracking Station analysis (1 Qtr/FY99)												
(U) Begin Global Grid Connectivity engineering analysis (1 Qtr/FY00)												

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305110F Satellite Control Network (Space)
PROJECT NO. AND NAME 3276 Satellite Control Network	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Command and Control Segment (Network Operations Upgrade)	14,075	30,700	31,500
(U) Range and Communications Development	16,000	35,000	38,500
(U) Development Support	8,800	347	1,060
(U) Network Integration and Systems Engineering	20,815	12,783	18,900
(U) Approved for Above Threshold Reprogramming for CSEL	9,635		
(U) Total	69,325	78,830	89,960

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

(U) Not Applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305111F Weather Service

PROJECT NO. AND NAME: 2738 Weather Service

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2738 Weather Service	19,268	5,360	5,126	9,347	8,728	12,053	12,341	Continuing	Continuing

NOTE: FY94 funding is in PE #604707F. Starting in FY95, PE #604707F RDT&E funds were assigned to PE #305111F to consolidate RDT&E, Procurement, and O&M funds for all weather support resources under PE #305111F.

(U) **A. Mission Description and Budget Item Justification**

This program provides for the modification, sustainment, and acquisition of meteorological hardware and software needed to support the observing and forecasting needs of worldwide Air Force and Army operations. Efforts include: (a) Automated Weather Distribution System (AWDS) Pre-Planned Product Improvement (P3I); improves the timeliness of AWDS functions and ensures interoperability with customer command, control, communications, computers and information (C4I) systems; (b) Solar Electro-Optical Network Upgrade (SEON II); improves capability to detect hazardous solar activity for DoD space operations; (c) Combat Weather System (CWS); provides a small, tactical observing and forecasting capability with C4I connectivity for worldwide combat operations; (d) Cloud Depiction and Forecast System II (CDFS II); replaces logistically unsupportable mainframe computers at the Air Force's Global Weather Central (AFGWC) and upgrades satellite data processing, cloud depiction and forecasting, and classified weather support functions for operational commanders and national programs; (e) Global Theater Weather Analysis and Prediction System (GTWAPS); acquires theater weather models and associated hardware to improve AFGWC's theater support capabilities; (f) Tactical Weather Radar (TWR); provides lightweight, portable Doppler weather radar to support combat flight operations worldwide, (g) Space Weather Analysis and Forecast System (SWAFS) replaces aging 50th Weather Squadron (AFSPC) hardware and software to move to a more efficient computing environment, (h) studies associated with Air Force Combat Climatology Center Replacement (AFCCCR) which replaces aging hardware and software to enhance system supportability. This effort is in Budget Activity 7, Operational Systems Development, because it supports software development and system test associated with the upgrade and replacement of currently operational systems, systems already in production, and systems with approved production funds in the DoD budget.

(U) FY 1995

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305111F Weather Service
PROJECT NO. AND NAME 2738 Weather Service	

–	(U) $ 5,350	AWDS/P3I: Completed inter-AWDS capability; completed software development for meteorological satellite interface.
–	(U) $ 4,900	CWS: Completed TFS software upgrading and testing efforts.
–	(U) $ 255	SWAFS: Performed system requirements analysis.
–	(U) $ 255	AFCCR: Performed technical assessment of system requirements, developed preliminary architecture and associated cost estimates.
–	(U) $ 149	SEON II: Provided technical support during system evaluation.
–	(U) $ 859	GTWAPS: Monitored system design activities and system acquisition requirements and investigated existing contractual vehicles.
–	(U) $ 7,500	CDFS II: Began development of classified support functions and cloud depiction and forecast software.
–	(U)$19,268	Total

(U) FY 1996

–	(U) $4,904	CDFS II: Continue development of cloud depiction and forecast software.
–	(U) $ 382	GTWAPS: Complete trade-off studies and conduct Milestone I/II review.
–	(U) $ 57	SWAFS: Develop technical alternatives.
–	(U) $ 17	TWR: Begin trade-off studies.
–	(U) $5,360	Total

(U) FY 1997

–	(U) $3,269	CDFS II: Complete development of cloud depiction and forecast software; prepare for FY98 production/integration contract award.
–	(U) $1,357	GTWAPS: Initiate software development; prepare for FY98 hardware purchase/integration contract award.
–	(U) $ 250	SWAFS: Prepare for and conduct Milestone I/II/III review.
–	(U) $ 250	TWR: Complete trade-off studies; conduct Milestone I review.
–	(U) $5,126	Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305111F Weather Service

PROJECT NO. AND NAME: 2738 Weather Service

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996*	FY 1997	Total Cost
(U) Previous President's Budget	20,990	5,771	5,308	Cont
(U) Appropriated Value	20,990	5,771		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-280	-224		
b. SBIR	-437	-116		
c. Omnibus or Other Above Threshold Reprogram	-1,000	-71		
d. Below Threshold Reprogramming	-5			
(U) Adjustments to Budget Years Since FY96PB			-182	
(U) Current Budget Submit/President's Budget	19,268	5,360	5,126	Cont

(U) Change Summary Explanation:

Funding: * The FY96 PB amount does not reflect funding reductions that are reserved for other DoD reprogramming needs ($60)
Changes in 1997 due to inflation rate change (-$156) and overhead Reduction (-$26).

Schedule: Satellite Data Handling System (SDHS) II delayed because of interim improvements made to SDHS system. SWAFS efforts beginning earlier to minimize maintenance costs and improve capabilities at AFSPC's 50th Weather Squadron.

Technical: No changes.

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Other Procurement,Air Force,Weather Service	14,858	6,293	6,485	13,211	19,147	29,982	25,992	Cont	Cont

(Only includes procurement funds for investment programs described in this R-2 exhibit)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305111F Weather Service
PROJECT NO. AND NAME 2738 Weather Service	

Related RDT&E:

(U) PE #603707F, Weather Systems Advanced Development
(U) PE #305160F, Defense Meteorological Satellite Program
(U) PE #603434F, National Polar-orbiting Operational Environmental Satellite System
(U) PE #207438F, Theater Battle Management C4I
(U) PE #208006F, Air Force Mission Planning Systems

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) AWDS P3I Contract Award (ECPs)			X	X								
(U) CWS TFS Software Complete								X				
(U) SEON II Prototype Complete	X											
(U) CDFS II RFP Release/Contract Award		X	X									
(U) GTWAPS Milestone 1								X				
(U) SDHS II Milestone 1												X
(U) TWR Milestone 0/ Milestone 1/ Milestone 3			X					X				

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305111F Weather Service

PROJECT NO. AND NAME: 2738 Weather Service

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) 1st Article Development	4,021	0	0
(U) System Software Integration	3,875	0	214
(U) System Engineering Support	5,400	1,300	900
(U) Contractor Engineering Support	1,025	145	500
(U) Software Development	4,000	3,475	3,074
(U) Travel	350	150	97
(U) Program Management Support	597	290	341
(U) Laboratory Support	0	0	0
(U) Total	19,268	5,360	5,126

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Phillips Lab	MIPR	May 94	270	270	270	0	0	0	0	270
CalTech	LOE	Jun 94	TBD	TBD	1,087	85	0	0	0	1,172
CSC	LOE	Jan 94	TBD	TBD	603	1,524	0	0	0	2,127
GTE	FFP/PR	Oct 90	15,676	15,676	10,555	2,509	0	0	0	13,064
PRISM (Raytheon)	LOE	Jan 93	TBD	TBD	1,555	1,942	0	0	0	3,497
PRISM (Hughes)	LOE	Jan 93	TBD	TBD	2,517	604	0	0	0	3,121
Sterling	CPAF	Jun 95			0	3,900	4,054	2,419	4,400	14,773
Air Weather Svc (CDFS II related effort)	MIPR	4FY95	2,900	2,900	0	2,900	0	0	0	2,900

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305111F Weather Service

PROJECT NO. AND NAME: 2738 Weather Service

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Hughes		Sep 95	1,682	1,682	0	1,682	0	0	0	1,682
DNA	MIPR	Jan 95	100	100	0	100	0	0	0	100
SWAFS studies (TBD)							57	150		240
TWR studies (TBD)							17	150		280
GTWAPS (TBD)	CPIF/FP						300	807	6,052	7,259
Support and Management Organizations										
Electronic Systems Center (ESC)					632		150	348	Cont	Cont
Space and Missile Center (SMC)					0		250	250	Cont	Cont
MITRE/Aerospace/TEMS					1,009		532	1,002	Cont	Cont
Test and Evaluation Organizations										
Not Applicable.										
(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)										
Government Furnished Property:										
Not Applicable.										
Subtotal Product Development					7,550	15,246	4,428	3,526	Cont	Cont
Subtotal Support and Management					1,641	4,022	932	1,600	Cont	Cont
Subtotal Test and Evaluation									Cont	Cont
Project Total					9,191	19,268	5,360	5,126	Cont	Cont

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305114F Traffic Control, Approach, and Landing Systems

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	6,933	3,719	3,870	1,762	1,110	7,519	6,013	Continuing	TBD
2026 System Support	274	195	423	268	280	253	268	Continuing	TBD
3587 Precision Landing Development	6,659	3,524	3,447	1,494	830	7,266	5,745	Continuing	TBD

(U) **A. Mission Description and Budget Item Justification**

Project 2026 funds ongoing liaison and interagency cooperative studies, between the USAF ATCALS program office and various organizations to include other Services, the Federal Aviation Administration (FAA) and the ICAO. Project 3587 was originally established for development of Military Microwave Landing System Avionics (MMLSA) and acquisition of the commercially developed Commercial Microwave Landing System Avionics (CMLSA). Originally part of a twenty year program to transition Air Force operations from the use of Precision Approach Radar (PAR) and Instrument Landing System (ILS) to the Microwave Landing System (MLS) for precision approach and landing. Due to the emergence of the Global Positioning System (GPS) as more cost effective solution (available after 2000), the effort is now being redirected to develop replacement box for ILS avionics to sustain precision landing capability until GPS becomes available as the follow-on precision landing technology. Current Air Force receivers do not meet the new specification required by the International Civil Aviation Organization (ICAO) for protection from interference problems forecasted to occur after 1998. The CMLSA continues to be installed on C-130 aircraft to meet a specific short-term precision landing mission requirement for tactical airlift. This program is in budget activity 7 - Operational System Development because it is upgrading avionics in currently fielded weapon systems.

(U) **Acquisition Strategy:** Engineering Manufacturing Development, Fixed Price Incentive Fee (FPIF), Completion FY98, No NDI

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) FY 1996 President's Budget	7,103	3,968	4,007	TBD
(U) Appropriated Value	7,103	3,968		
(U) Adjustments to Appropriated Value	-170	-249		
a. Cong Gen Reductions		-138		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305114F Traffic Control, Approach, and Landing Systems

	FY 1995	FY 1996	FY 1997	Total Cost
b. Small Business Inovative Research	-150	-79		
c. Omnibus or Other Above Threshold Reprogram		-32		
d. Below Threshold Reprogramming	-20			
(U) Adjustments to Budget Years Since FY 1996 PB			-137	
(U) Current Budget Submit/President's Budget	6,933	3,719	3,870	TBD

(U) Change Summary Explanation:

Funding: FY 1996, FY 1997, and FY 1998 funding decreases in are due to other Air Force priorities, resulting in a reduction in the scope of planned RDT&E activities and a program restructure.

Schedule: N/A

Technical: N/A

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Aircraft Procurement AF Budget Activity 5, Weapon System Code 3587	3287	2465	154	151	158	5136	5141	cont	TBD

Related RDT&E: N/A

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305114F Traffic Control, Approach, and Landing Systems

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Acquisition Milestones:												
(U) Milestone III												
(U) Contract Milestones												
(U) Award Precision Landing ECO						X						
(U) Initial MMLS Delivery								X				
(U) Initial TRV Delivery												X
(U)												
(U) Test and Evaluation Milestones												
(U) TRV First Article Complete											X	
(U) TRV Operational Testing Complete												
(U) Other												
(U) MMLS IOC												
(U) CMLSA Depot Activation											X	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305114F Traffic Control, Approach, and Landing Systems

PROJECT NO. AND NAME: 2026 System Support

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2026 System Support	274	195	423	268	280	253	268	Continuing	TBD

(U) **A. Mission Description and Budget Item Justification**

This continuing effort funds ongoing liaison and interagency cooperative studies, as well as interoperability analyses between the USAF Air Traffic Control and Landing Systems (ATCALS) program office and various organizations which include the other services, the FAA and the ICAO. Continues mission support for the ATCALS programs including several joint efforts with the FAA. RDT&E funds are used to resolve or minimize technical interface problems associated with interoperabilty between existing or planned DOD/FAA ATCALS equipment and capabilities.

(U) FY 1997 ($ in Thousands):

- (U) 67 Continue support for all ATCALS projects.
- (U) 230 Continue interoperability and interface evaluations.
- (U) 126 Continue support for the portable precision landing system studies for the Joint Special Operations Command (JSOC)
- (U) 423 Total

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) FY 1996 President's Budget	274	373	436	TBD
(U) Appropriated Value	274	283		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions		-6		
b. Small Business Inovative Research		-79		
c. Omnibus or Other Above Threshold Reprogram		-3		
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY 1996 PB			-13	
(U) Current Budget Submit/FY 1997 President's Budget	274	195	423	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305114F Traffic Control, Approach, and Landing Systems
PROJECT NO. AND NAME 2026 System Support	

(U) Change Summary Explanation:

Funding: Programmatic adjustments.

Schedule: N/A

Technical: N/A

(U) C. Other Program Funding Summary ($ in Thousands) N/A

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Acquisition Milestones N/A												
(U) Contract Milestones												
(U) Initial TRV Delivery								X				X
(U) Test and Evaluation Milestones												
(U) First Article Testing Complete					X						X	
(U) Operational Testing Complete							X					

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305114F Traffic Control, Approach, and Landing Systems
PROJECT NO. AND NAME 2026 System Support	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) System Engineering	70	77	80
(U) Contractor Engineering	130	60	139
(U) Test and Evaluation Support	45	28	124
(U) Program Management Support	20	20	40
(U) Travel	9	10	40
(U) Total	274	195	423

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations: AFMC, ESC, Hanscom AFB, MA manages the overall ATCALS effort. Mitre Corporation, Bedford, MA, provides technical and engineering support.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305114F Traffic Control, Approach, and Landing Systems

PROJECT NO. AND NAME: 3587 Precision Landing Development

COST (*$ In Thousands*)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3587 Precision Landing Development	6,659	3,524	3,447	1,494	830	7,266	5,745	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

The Departments of Defense and Transportation have a goal to develop and acquire a common civil/military precision approach and landing system that is capable of operating with Category I, II, or III signal guidance accuracy. The International Civil Aviation Organization (ICAO) and NATO designated worldwide implementation of PLS for January 1988 with the Microwave Landing System (MLS) as the standard. Due to the emergence of the Global Positioning System (GPS), as a more cost effective solution, the Air Force's precision landing development has been redirected to develop a replacement box for ILS to support a precision landing capability until GPS becomes available. GPS is expected to be available in FY 2000. This replacement box capability will allow DOD to meet the ICAO requirements for FM frequency protection. This is especially critical in Europe where there is a high density of FM radio stations. The Air Force has a worldwide deployment commitments and large numbers of it's aircraft have a requirement for compliance with the ICAO Standards and recommended practices.

(U) FY 1995 ($ in Thousands):
- (U) 930 Identified technical approaches to upgrade the current ILS
- (U) 4,347 Began development of a precision landing capability
- (U) 552 Continued the National Precision Approach Strategy Study
- (U) 830 Performed platform integration and system engineering analyses
- (U) 6,659 Total

(U) FY 1996 ($ in Thousands):
- (U) 2,296 Continue development of a precision landing capability
- (U) 208 Continue the National Precision Approach Strategy Study
- (U) 635 Continue to perform platform integration and system engineering analyses
- (U) 385 Begin PLS flight certification
- (U) 3,524 Total

(U) FY 1997 ($ in Thousands):
- (U) 2,102 Continue development of a precision landing capability
- (U) 100 Continue the National Precision Approach Strategy Study

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305114F Traffic Control, Approach, and Landing Systems
PROJECT NO. AND NAME 3587 Precision Landing Development	

- (U) 520 Continue to perform platform integration and system engineering analyses
- (U) 725 Continue PLS flight certification
- (U) 3,447 Total

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	6,659	3,685	3,551	TBD
(U) Appropriated Value	6,659	3,685		
(U) Adjustments to Appropriated Value		-161		
a. Cong Gen Reductions		-132		
b. SBIR				
c. Omnibus or Other Above Threshold Reprogram		-29		
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY 1996 PB			-104	
(U) Current Budget Submit/President's Budget	6,659	3,524	3,447	TBD

(U) Change Summary Explanation:

Funding: Funding decreases in FY96 and FY97 are due to higher Air Force priorities which has resulted in a reduction in the scope of planned RDT&E activities and a program restructure.

Schedule: N/A

Technical: N/A

U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Aircraft Procurement AF Budget Activity 5, Weapon System Code 3587	3,287	2,465	154	151	158	5,136	5,141	cont	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305114F Traffic Control, Approach, and Landing Systems

PROJECT NO. AND NAME: 3587 Precision Landing Development

Related RDT&E: N/A

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Acquisition Milestones:												
(U) Milestone III												
(U) Contract Milestones												
(U) Award Precision Landing ECO						X						
(U) Initial MMLS Delivery								X				
(U) Test and Evaluation Milestones N/A												
(U) Other												
(U) MMLS IOC												
(U) CMLSA Depot Activation											X	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305114F Traffic Control, Approach, and Landing Systems
PROJECT NO. AND NAME 3587 Precision Landing Development	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Primary Hardware Development	4,347	2,529	2,152
(U) Test and Evaluation Support	208	215	725
(U) Engineering/Technical Support	454	540	240
(U) Avionics Integration Efforts	1,435	110	217
(U) Program Management Support	175	90	90
(U) Travel	40	40	23
(U) Total	6,659	3,524	3,447

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands):**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
GEC Marconi	FPIF	Jun 93	18.0	18.0	6.1	3.5	2.2	2.5	Continue	TBD

Support and Management Organizations
No contract or government effort in excess of $1.0 million.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305119F Medium Launch Vehicles (Space)

PROJECT NO. AND NAME: 624A Medium Launch Vehicle

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
624A Medium Launch Vehicle	19,717	20,683	13,683	13,073	22,993	33,155	33,369	22,426	528,623

(U) **A. Mission Description and Budget Item Justification**

National Security requirements dictate a continuing, highly reliable means of placing critical Department of Defense (DoD) satellites into required orbits. Assured access to space, directed by the President in the National Security Launch Strategy, will be accomplished through the use of a robust mix of Expendable Launch Vehicles (ELVs). The Medium Launch Vehicle (MLV) program provides sustainment, procurement and launch of DoD ELVs, including Atlas II and Delta II at Cape Canaveral AFS, FL and at Vandenberg AFB, CA. This program also provides for engineering support of active launch programs and post-flight assessment of DoD ELVs to maintain their high reliability. The preceding tasks require the funds to be in Operational Systems Development research category.

(U) FY 1995 ($ in Thousands):

- (U) $3,209 Completed Delta II range safety compliance vehicle upgrades
- (U) $1,822 Continued GPS IIR mission integration and complete site activation
- (U) $1,169 West Coast Atlas II activation continues
- (U) $2,368 Base support and environmental programs
- (U) $8,344 Sustaining engineering and mission support for MLV launch facilities, infrastructure, and launch operations includes space launch complexes 3, 17, and 36 and supporting facilities
- (U) $2,805 Continued austere improvements to MLV
- (U) $19,717 Total

(U) FY 1996 ($ in Thousands):

- (U) $4,806 Complete Delta II range safety required facility upgrades this year, first flight with new upgrades this year
- (U) $ 67 Continue STP (ARGOS) mission integration
- (U) $1,117 West Coast Atlas II activation continues
- (U) $ 702 Complete GPS IIR mission integration
- (U) $3,078 Base support and environmental programs
- (U) $10,913 Sustaining engineering and mission support for MLV launch facilities, infrastructure, and launch operations includes space launch complexes 3, 17, and 36 and supporting facilities
- (U) $20,683 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305119F Medium Launch Vehicles (Space)
PROJECT NO. AND NAME 624A Medium Launch Vehicle	

(U) FY 1997 ($ in Thousands):

- (U) $2,780 Base support and environmental programs
- (U) $1,688 West Coast Atlas II activation continues
- (U) $2,337 Delta II range required facilities upgrade
- (U) $6,563 Sustaining engineering and mission support for MLV launch facilities, infrastructure, and launch operations includes space launch complexes 3, 17, and 36 and supporting facilities
- (U) $13,368 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996*	FY 1997	Total Cost
(U) Previous President's Budget	20,097	21,898	16,323	
(U) Appropriated Value	21,042			
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	- 507	- 429		
b. SBIR	-433	- 786		
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogramming	-385			
(U) Adjustments to Budget Years Since FY 1995 PB			- 2,955	
(U) Current Budget Submit/President's Budget	19,717	20,683	13,368	528,623

(U) Change Summary Explanation:

Funding: FY97 includes a funding execution adjustment (-2,300), an adjustment due to inflation (-574) and an overhead adjustment (-81).

* The FY96 PB amount does not reflect funding adjustments that are reserved for other DoD reprogramming needs ($229)

Schedule: Not Applicable

Technical: Not Applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305119F Medium Launch Vehicles (Space)
PROJECT NO. AND NAME 624A Medium Launch Vehicle	

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Complete	Total Cost
(U) Missile Procurement, Air Force	131,594	178,352	175,599	235,672	272,343	340,000	294,676	290,295	3,514,400

Related RDT&E:

(U) Space & Missile Rocket Propulsion (PE #603302F)

(U) Evolved Expendable Launch Vehicle (EELV, PE #603853F)

(U) D. **Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Delta GPS Launch					X*	X*	X*	X*	X*	X*	X*	X*
(U) Delta STP Launch										X		
(U) Delta Mods for GPS Block IIR Satellites	X	X	X	X								
(U) Atlas Launches			X									
(U) Atlas West Coast Pad Activation	X	X	X	X	X	X	X	X	X	X	X	X
(U) MLV Improvements (ALII)	X	X	X	X								

*NOTE: Asterisk launches indicate a Launch-On-Need (LON) strategy

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305119F Medium Launch Vehicles (Space)

PROJECT NO. AND NAME: 624A Medium Launch Vehicle

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Primary Hardware Development	19,717	20,683	13,368
(U) Total	19,717	20,683	13,368

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Martin Marietta	FFP	Jun 88	N/A	N/A	69,873	944	110	1,078	12,033	84,038
McDonnell Douglas Aerospace	FFP	Sep 87	N/A	N/A	215,436	4,109	5,598	2,511	8,144	235,798
GSAC	Various	Various	N/A	N/A	2,549	0	772	1,031	8,342	12,694
Austere	Various	Various			7,679	2,805				10,484
Improvements										
DMSP Integration									24,418	24,418
Support/Management										
Mission Support	FPI	FY94	N/A	N/A	1,079	8,241	10,243	4,374	38,353	61,469
Various SMC	Various	FY94	N/A	N/A	48,716	317	219	642	17,229	67,123
Other Ktr Sup (EER & MCR)	FFP	FY94	N/A	N/A	140	317	106	118	794	1,475
Vandenberg Sup	Various	Various	N/A	N/A	1,045	700	685	766	0	3,195

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305119F Medium Launch Vehicles (Space)

PROJECT NO. AND NAME: 624A Medium Launch Vehicle

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Environment/ Safety	Various	Various	N/A	N/A	3,322	2,284	2,950	2,848	15,703	27,107

Test and Evaluation Organizations
Not Applicable

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property: Not Applicable

Contractor or Government Performing Activity	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Subtotal Product Development	295,537	7,858	6,480	4,620	52,937	367,432
Subtotal Support and Management	54,302	11,859	14,203	8,748	72,079	161,191
Subtotal Test and Evaluation	0	0	0	0	0	0
Total Project	349,839	19,717	20,683	13,368	125,016	528,623

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305128F Security and Investigative Activities (S&IA)

PROJECT NO. AND NAME: 1931 TECH SURVEILL COUNTERMEASURE EQPMT

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
1931 TECH SURVEILL COUNTERMEASURE EQPMT	0	290	289	334	271	291	299	Continuing	TBD

A. Mission Description and Budget Item Justification

The mission of the Air Force Office of Special Investigations (AFOSI) is to protect Air Force (AF) resources through specialized investigative support. This includes investigating criminal matters affecting AF personnel, contract fraud, and economic crimes involving AF weapons systems and spare parts, and the investigation of environmental and counterdrug crimes. This element supports Technical Surveillance Countermeasures (TSCM) and technical support to criminal and counterintelligence investigations and operations conducted by AFOSI. AFOSI's TSCM mission provides security assessments to both AF and DoD facilities and programs. While most research to meet operational requirements is Operational System Development, there is also research in the category of Engineering and Manufacturing Development due to a need for modifications to present technology.

The equipment required to conduct TSCMs and technical support to investigations is unique and complex. TSCM equipment must be continually updated to remain effective in countering the increasingly complex devices used to thwart AF and DoD security. In an era of advancing technology, reduced manning, and increasingly high level fraud and environmental crime investigations, technical support equipment must be continually updated to enable the most cost effective and lawful telephone, data, and voice interceptions as well as, capture actual criminal activity on video or still images. Additionally, the capability to track suspects engaged in espionage, terrorist, narcotics or other criminal activity must be continually updated to ensure special agents have the best possible chance of thwarting criminal acts. AFOSI currently lacks the capability to support the interception of digital audio or telephone transmissions. In addition, AFOSI does not have the capability to effectively integrate automated software and hardware suites in support of TSCM surveys, nor does it have an effective technological means for the tracking of audio and tagging type signals.

FY 1995 ($ in Thousands): N/A

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305128F Security and Investigative Activities (S&IA)
PROJECT NO. AND NAME 1931 TECH SURVEILL COUNTERMEASURE EQPMT	

(U) FY 1996 ($ in Thousands):

- $150 - TSCM Receiver/Software Suite
  - -- RDT&E of the incorporation of monolithic microwave integrated circuit (MMIC) technology into a receiver
  - -- RDT&E of software analysis tools for RF spectrum analysis and integration with receiver systems
  - -- RDT&E of the integration of data analysis tools with receiver hardware and suitable microprocessing systems
- $ 50 - Advanced Antenna systems development for use with TSCM systems
- $ 90 - Telephone Security Countermeasures. Demonstration and validation of countermeasure units for field applications
- $290 Total

(U) FY 1997 ($ in Thousands):

- $175 - Telephone Security Countermeasures. Demonstration and validation of countermeasure units for field applications
- $ 25 - Advanced Digital Audio Techniques. New developmental efforts for advancing current digital audio capability
- $ 89 - Link Analysis Computer Intrusion and Collections Analysis System (CICAS). Research into the application of Link Analysis tools to assist with tracking criminal investigations of computer intrusions and systems analysis
- $289 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305128F Security and Investigative Activities (S&IA)
PROJECT NO. AND NAME 1931 TECH SURVEILL COUNTERMEASURE EQPMT	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) FY1996 President's Budget		299	299	TBD
(U) Appropriated Value				
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions				
b. Small Business Innovative Research (SBIR)		-6		
c. Omnibus or Other Above Threshold Reprogram		-3		
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years			-10	
(U) Current Budget Submit/FY1997 President's Budget		290	289	TBD

(U) Change Summary Explanation:

Funding: Inflation adjustment for FY1997.
-3000 for Bosnia reprogramming in FY1996.

Schedule:

Technical:

(U) **C. Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) 3080 - Other Procurement -- AF	1864	992	1061	995	1091	2116	2162	Cont	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305128F Security and Investigative Activities (S&IA)
PROJECT NO. AND NAME 1931 TECH SURVEILL COUNTERMEASURE EQPMT	

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) TSCM Receiver/Software Suite						X	X					
(U) Audio/Telephone Intercept							X		X	X		
(U) GPS Tracking System												
(U) Speech Analysis Techniques												
(U) Link Analysis for Investigative Tracking and Accounting										X	X	
(U) Advanced Antenna Systems						X	X					
(U) Advanced Digital Audio Recorders									X			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305137F National Airspace System (NAS)

PROJECT NO. AND NAME: 4090 National Airspace System (NAS)

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4090 National Airspace System (NAS)	29,490	12,627	12,614	13,516	2,290	598	497	Continuing	Continuing

(U) A. Mission Description and Budget Item Justification

The DoD National Airspace System program will modernize the DoD ATC system in parallel with the Federal Aviation Administration (FAA) modernization. DoD will acquire, to the maximum extent practical, systems on contract or systems to be on contract with the FAA to reduce development costs and prevent duplication. The DoD NAS program provides systems and facilities compatible/interoperable with the FAA modernization, prevents DoD flight delays and cancellations, continues DoD's access into Special Use Airspace (SUA), provides transparent services to military and civil aircraft, replaces aging DoD ATC systems, and increases flight safety. The Military Airspace Management System (MAMS) will effectively schedule and manage SUA. DoD military ATC and fighting/flying readiness will be maintained. This program is a budget activity 7 - Operational System Development, because the DoD Air Traffic Control (ATC) system, is an operational system.

(U) FY 1995

- (U) 4,375 Continued Military Airspace Management System (MAMS) development
- (U) 3,969 Continued site surveys, facility/transition planning
- (U) 950 Completed the development of the NAS Integration Plan
- (U) 2,681 Continued NAS DoD subsystem analysis for each DoD site
- (U) 13,863 Continued Radar acquisition and test
- (U) 2,127 Continued Automation acquisition and test
- (U) 1,525 Continued Voice Switch acquisition and test
- (U) 29,490 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305137F National Airspace System (NAS)
PROJECT NO. AND NAME 4090 National Airspace System (NAS)	

(U) FY 1996

- (U) 3,500 Continue Military Airspace Management System (MAMS) development
- (U) 1,084 Continue site surveys, facility/transition planning
- (U) 1,709 Continue NAS DoD subsystem analysis for each DoD site
- (U) 2,850 Continue Radar acquisition and test
- (U) 1,697 Continue Automation acquisition and test
- (U) 1,787 Continue Voice Switch acquisition and test
- (U) 12,627 Total

(U) FY 1997

- (U) 3,500 Continue Military Airspace Management System (MAMS) development
- (U) 856 Continue site surveys, facility/transition planning
- (U) 883 Complete NAS DoD subsystem analysis for each DoD site
- (U) 1,000 Continue Radar acquisition and test
- (U) 6,075 Continue Automation acquisition and test
- (U) 300 Continue Voice Switch acquisition and test
- (U) 12,614 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget (FY 1996)	30,126	13,759	17,238	TBD
(U) Appropriated Value	30,980	13,759		
(U) Adjustments to Appropriated Value				
a. Congressional General Reductions	-854	-707		
b. SBIR	-636	-287		
c. Omnibus& Other Above Threshold Reprogramming		-138		
d. Adjustments to Budget Years Since FY 96 PB			-4,624	
(U) Current Budget Submit/President's Budget	29,490	12,627	12,614	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305137F National Airspace System (NAS)
PROJECT NO. AND NAME 4090 National Airspace System (NAS)	

(U) Change Summary Explanation:

Funding: Not applicable.

Schedule: To keep DoD and FAA acquisitions synchronized, the RFP release dates and planned contract award dates were shifted a few months and the funds realigned as indicated above. Previous plans were to accelerate the Milestone III decision and request its approval with the Milestone II decision. This was recognized as not feasible, and the plans were amended back to the previous position of separate Milestone II and III decision points.

Technical: None.

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Other Procurement, BA 16 Weapon system code 837100, PE0305137F	0	0	0	24,208	62,319	58,268	65,326	Cont.	Cont.
(U) Military Construction, BA 24 AF PE 0305137F	0	0	0	3,163	0	0	2,268	Cont.	Cont.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305137F National Airspace System (NAS)
PROJECT NO. AND NAME 4090 National Airspace System (NAS)	

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Acquisition Milestone												
(U) Milestone II				X								
(U) Contract Milestones												
(U) MAMS Contract Awarded					X							
(U) Radar												
RFP Release					X							
Contract Award							X					
(U) Automation												
RFP Release						X						
Contract Award								X				
(U) Voice Switch												
RFP Released												
Contract Award				X								
NAS IOC Apr 2000												
NAS FOC Apr 2006												

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305137F National Airspace System (NAS)

PROJECT NO. AND NAME: 4090 National Airspace System (NAS)

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Software Development	4,375	3,500	3,500
(U) Site Surveys	800	250	300
(U) Facility/Transition Planning	1,125	200	175
(U) Integration/Interface Planning	950	100	100
(U) System Engineering	2,700	1,414	835
(U) Contractor Engineering Support	600	300	0
(U) Primary Hardware and Test Evaluation	18,099	6,334	7,375
(U) Program Management Support	781	469	277
(U) Travel	60	60	52
(U) Total	29,490	12,627	12,614

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
a. Computer Based Systems	CPAF	Jun 94	N/A	10,000	2,500	1,000	0	0	0	3,500
b. Hughes Aircraft	CPFF	Nov 95	11,300	11,300	0	3,000	3,500	3,500	1,300	11,300
c. ESC					36,741	25,490	9,127	9,114	15,601	96,073

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305137F National Airspace System (NAS)

PROJECT NO. AND NAME: 4090 National Airspace System (NAS)

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Support and Management Organizations										
SM-ALC				0	0	0	0	0	2,200,000	2,200,000
Test and Evaluation Organizations										
AFOTEC (PE0207426F)					99	131	390	1,201	Cont.	TBD

NOTES:
- MAMS contract with CBSI terminated 31 Mar 95.
- ESC exercised option (in Nov 95) on SM-ALC contract with Advanced Technology Support Program (ATSP) for MAMS software development, replacing CBSI as the MAMS developer.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305138F Upper Stage Space Vehicles (Space)

PROJECT NO. AND NAME: 4053 Upper Stage Space Vehicles

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4053 Upper Stage Space Vehicles	3,547	3,359	3,154	3,365	3,401	3,501	3,553	9,600	44,895

(U) **A. Mission Description and Budget Item Justification**

(U) The Upper Stages Program provides consolidated acquisition of the Inertial Upper Stage (IUS) to support the DoD Mission Model. This effort includes flight operations at the Cape Canaveral Air Station, FL; support to flight operations at the Consolidated Space Test Center (CSTC); and reimbursable acquisition and operations support of upper stages for NASA as documented in MOA/MOU's between USAF and NASA. IUS supports the launch of Defense Support Program (DSP) satellites. IUS is the upper stage on a Titan IV (or it can be modified for Shuttle) and takes the DSP satellite to the required orbit. The program continuously evaluates and improves upper stage reliability, cost effectiveness, and responsiveness. It supports redesign of aging equipment and spares which are no longer manufactured or available; investigation of flight anomalies; and small studies to assist in defining future upper stages. The preceding tasks require funding in Budget Activity Research Category Operational Systems Development.

(U) FY 1995

(U) $2,624	Studied and designed corrective actions for anomalies and obsolete items
(U) $ 923	Program Management Support Activities
(U) $3,547	Total

(U) FY 1996

(U) $ 1,500	Study and design corrective actions for anomalies and obsolete items
(U) $ 955	Avionics Obsolescence Mitigation
(U) $ 904	Program Management Support Activities
(U) $3,359	Total

(U) FY 1997

(U) $1,200	Study and design corrective actions for anomalies and obsolete items
(U) $ 980	Avionics Obsolescence Mitigation
(U) $ 974	Program Management Support Activities
(U) $3,154	Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305138F Upper Stage Space Vehicles (Space)
PROJECT NO. AND NAME 4053 Upper Stage Space Vehicles	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996*	FY 1997	Total Cost
(U) Previous President's Budget	3,663	3,554	3,303	
(U) Appropriated Value	3,663			
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-39	-69		
b. SBIR	-76	-75		
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogramming (BTR)	-1	-51		
Adjustments to Budget Years Since FY 96 PB			-149	
(U) Current Budget Submit/President's Budget	3,547	3,359	3,154	44,895

(U) Change Summary Explanation:

Funding: FY97 is an adjustment for inflation of $133 and overhead reduction of $16.

* The FY96 PB amount does not reflect funding reductions that are reserved for other DoD reprogramming needs ($37)

Schedule: Not Applicable

Technical: Not Applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305138F Upper Stage Space Vehicles (Space)

PROJECT NO. AND NAME: 4053 Upper Stage Space Vehicles

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Complete	Total Cost
(U) Missile Procurement	102,791	55,714	52,500	54,640	55,070	57,203	57,875	185,600	859,600

Related RDT&E:

(U) PE 0305144F, Titan Vehicles

(U) PE 0102431F, Defense Support Program (DSP)

(U) Inertial Upper Stage (IUS) program supports the NASA Space Transportation System as the upper stage is used with the Space Shuttle

(U) D. **Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) USAF DSP Launch	X									X		
(U) Avionics Replacement*	X	X	X	X	X	X	X	X	X	X	X	X
(U) Integration, Launch Support, and Life Extension Modification*	X	X	X	X	X	X	X	X	X	X	X	X

* Activities are continuous throughout the year.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305138F Upper Stage Space Vehicles (Space)

PROJECT NO. AND NAME: 4053 Upper Stage Space Vehicles

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Avionics Obsolescence Mitigation	1,000	955	980
(U) Program Management Support	923	904	974
(U) Systems Engineering	1,624	1,500	1,200
(U) Total	3,547	3,359	3,154

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Boeing	FPI/AF	Jul 85	907,000	910,000	4,400	950	825	630	0	6,805
	FPI/AF	Mar 91	146,323	136,723	800	621	600	600	12,000	14,621
	CPAF/LOE	Sep 90	N/A	N/A	3,045	1,053	1,030	950	5,200	11,278
United Tech Corp/Pratt & Whitney	CPFF	Mar 95	N/A	N/A	855	0	0	0	0	855
Support and Management Organizations										
Space and Missile Systems Center, LAAFB	N/A	N/A	N/A	N/A	2,315	923	904	974	6,220	11,336

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305138F Upper Stage Space Vehicles (Space)
PROJECT NO. AND NAME 4053 Upper Stage Space Vehicles	

Test and Evaluation Organizations Not Applicable

(U) B. **Budget Acquisition History and Planning Information Continued ($ in Thousands)**

Government Furnished Property: Not Applicable

Contractor or Government Performing Activity	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Subtotal Product Development	9,100	2,624	2,455	2,180	17,200	33,559
Subtotal Support and Management	2,315	923	904	974	6,220	11,336
Subtotal Test and Evaluation						
Total Project	11,415	3,547	3,359	3,154	23,420	44,895

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305144F Titan Space Launch Vehicles (Space)
PROJECT NO. AND NAME 4135 Titan Space Launch Vehicles	

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4135 Titan Space Launch Vehicles	143,208	126,330	105,472	179,741	90,648	53,969	50,600	Continuing	Continuing

(U) A. Mission Description and Budget Item Justification

(U) National security requirements dictate a continuing, highly reliable means of placing critical DoD satellites into required orbits. The Titan IV program provides the capability to launch the largest of these satellites into near-earth or geosynchronous orbits from either the east or west coast launch facilities. This program provides several different configurations for the Titan IV [No Upper Stage (NUS), Inertial Upper Stage (IUS), and Centaur]. In addition, the Titan IV program has developed a new vehicle configuration, the Titan IVB, with solid rocket motor upgrade (SRMU), new avionics and ground support equipment to meet reliability and increased performance requirements. This program provides continuing integration support to the payload community as well as continuing engineering support to maintain system characterization and reliability.

(U) Beginning in FY94, this program element also included funding for engineering costs, payload integration, and Government costs for the Titan II space launch vehicle. This activity is included as operational systems development since both Titan II and Titan IV are operational launch vehicles.

(U) FY 1995

- (U) $32,543 Continued development of Titan sustainability upgrades and range safety-compliant systems
- (U) $14,577 Continued integration for the Defense Support Program (DSP) and Milstar
- (U) $12,536 Continued facility/ground equipment modifications and upgrades
- (U) $54,192 Continued design requalification for the Titan IVB vehicle configuration
- (U) $22,412 Continued Titan Booster support
- (U) $4,551 Continued environmental management
- (U) $2,397 Continued Titan II
- (U) $143,208 Total

(U) FY 1996

- (U) $16,743 Continue development of Titan sustainability upgrades and range safety-compliant systems
- (U) $13,552 Continue integration for the Defense Support Program (DSP) and Milstar

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305144F Titan Space Launch Vehicles (Space)
PROJECT NO. AND NAME 4135 Titan Space Launch Vehicles	

- (U) $13,715 Continue facility/ground equipment modifications and upgrades
- (U) $46,798 Continue design requalification for Titan IVB and follow-on procurement
- (U) $25,354 Continue Titan Booster support
- (U) $3,536 Continue environmental management
- (U) $6,632 Continue Titan II, including guidance replacement
- (U) $126,330 Total

(U) FY 1997

- (U) $13,973 Continue development of Titan sustainability upgrades and range safety compliant systems
- (U) $9,782 Continue integration for the Defense Support Program (DSP) and Milstar
- (U) $7,900 Continue facility/ground equipment modifications and upgrades
- (U) $42,980 Continue design requalification for Titan IVB and follow-on procurement
- (U) $25,946 Continue Titan Booster support
- (U) $2,340 Continue environmental management activity
- (U) $2,551 Continue Titan II
- (U) $105,472 Total

(U) **Acquisition Strategy:**

(U) This program is in the process of finalizing an acquisition strategy for USD(A&T) approval detailing the entire 46-vehicle program. The strategy addresses the transition from the current 41-vehicle development/production and payload integration contracts to new contracts designed to improve cost accountability, correct contract discrepancies, and establish an overall programmatic view for the effort to complete the program. The strategy combines Titan II and Titan IV production, storage, pad maintenance and deactivation, launch operations, anomaly resolution, development and hardware requalification, payload integration, and program studies to provide the greatest potential for cost savings by maximizing use of resources and eliminating duplicative processes.

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996**	FY 1997	Total Cost
(U) Previous President's Budget	147,660	140,514	148,656	Continuing
(U) Appropriated Value	153,396	135,514		
(U) Adjustments to Appropriated Value				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305144F Titan Space Launch Vehicles (Space)
PROJECT NO. AND NAME 4135 Titan Space Launch Vehicles	

	FY 1995	FY 1996**	FY 1997	Total Cost
a. Cong Gen Reductions	- 2,507	-3,114		
b. SBIR	-3,184	-3,070		
c. Omnibus or Other Above Threshold Reprogram	-1,700			
d. Below Threshold Reprogramming	-2,797			
(U) Adjustments to Budget Years Since FY96 PB		- 3,000	-43,184	
(U) Current Budget Submit/President's Budget	143,208*	126,330	105,472	Continuing

(U) Change Summary Explanation:

Funding: FY95 Omnibus and Below Threshold Reprogrammings reductions due to lower than expected budget execution. FY96 reductions result from decision to terminate effort to outfit the Centaur Processing Facility (CPF) at Cape Canaveral AS with enough ground equipment to provide a storage capability. FY97 reductions driven by lower than expected budget execution in FY95($25,000). Remaining FY97 reduction resulted from decision to terminate the entire Centaur processing and cryogenic tanking facility at Cape Canaveral AS due to the limited operational effectiveness given the heavy-lift payload transition to the Evolved Expendable Launch Vehicle ($13,000).

* Note: Additional reductions in FY95 not yet reflected in above FY95 totals ($1,253).

** The FY96 PB amount does not reflect funding reductions that are reserved for other DoD reprogramming needs ($6,187)

Schedule: FY96 and FY97 reductions result from deletion of the CPF Acquisition Program Baseline (APB) Initial Operational Capability (IOC) milestone in June 97.

Technical: FY96 and FY97 reductions result from termination of the off-pad Centaur upper stage processing , cryogenic tanking, and storage capability.

(U) **C. Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Missile Procurement, Budget Activity 5, Program Title: Space Boosters	348,558	427,237	489,606	532,541	573,486	406,205	348,893	Continue	Continue

Related RDT&E:

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305144F Titan Space Launch Vehicles (Space)
PROJECT NO. AND NAME 4135 Titan Space Launch Vehicles	

(U) Not Applicable.

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997				To Compl	Total Cost
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) Single Acquisition Management Plan (SAMP) to USD(A&T)						X								
(U) 41-Vehicle Production and Launch Operations Ltr. Contract Award					X									
U) 41-Vehicle Production and Launch Operations Contract Definitization							X							
(U) Titan IV-B (SRMU) Initial Operational Capability (IOC)								X						
(U) Titan Development (Hardware Requalification) Contract Award									X					
(U) Contact Award for Follow-on Buy Modification									X					

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305144F Titan Space Launch Vehicles (Space)
PROJECT NO. AND NAME 4135 Titan Space Launch Vehicles	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Titan IV			
(U) Contract Costs	112,763	86,929	73,875
(U) Facilities	5,636	7,415	3,100
(U) Other Government Costs	22,412	25,354	25,946
(U) Titan II			
(U) Contract Costs	1,477	6,497	2,300
(U) Other Government Costs	920	135	251
(U) Total	143,208	126,330	105,472

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC*	Project Office EAC*	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
LMC 85-C-0019	C/FPIF	1QFY85	11,195,465	11,343,400	2,083,707	98,186	79,874		Continues	Continues
LMC 85-C-0085	C/FPIF	1QFY85	638,600	638,600	84,444	1,477			Continues	Continues
LMC 92-C-0028	C/CPAF	3QFY92	629,502	632,400	68,770	14,577	13,552	9,782	Continues	Continues
LMC - New R&D Contracts								66,393	Continues	Continues
Facilities					81,000	5,636	7,415	3,100	Continues	Continues

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305144F Titan Space Launch Vehicles (Space)

PROJECT NO. AND NAME: 4135 Titan Space Launch Vehicles

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC*	Project Office EAC*	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Support and Management Organizations										
Space and Missile System Contractor					98,100	19,516	22,389	22,049	Continues	Continues
FFRDC Support					64,700	3,816	3,100	4,148	Continues	Continues
Test and Evaluation Organizations										
Not Applicable										
Subtotal Product Development					2,364,321	119,876	100,841	79,275	Continues	Continues
Subtotal Support and Management					162,800	23,332	25,489	26,197	Continues	Continues
Subtotal Test and Evaluation										
Total Project					2,478,721	143,208	126,330	105,472	Continues	Continues

* NOTE: EAC Includes all sources of funding

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305145F Arms Control Implementation

COST (*In Thousands*)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	2,653	954	26,786	10,997	11,115	11,142	11,251	Continuing	Continuing
4190 Treaty Prep/Verification Support	0	468	0	0	0	0	0	0	508
4283 Open Skies Treaty Systems Develop	2,653	486	0	0	0	0	0	0	8,749
4520 Comp Test Ban Treaty Data Ctr Dev	0	0	26,786	10,997	11,115	11,142	11,251	Continuing	Continuing

(U) **A. Mission Description and Budget Item Justification**

(U)This element directly supports implementation and planning for current and pending arms control agreements.

- (U) Treaty preparation/verification support activities encompass a wide range of projects necessary to prepare the United States for compliance with impending and future arms control treaties and negotiations.

- (U) Open Skies support includes development of Synthetic Aperture Radar (SAR), SAR media processing equipment, the Data Annotation and Recording Mapping System (DARMS), as well as systems integration, engineering, test, and evaluation. This includes:
  - (U) Aircraft systems integration, engineering, test, and evaluation
  - (U) Synthetic Aperture Radar (SAR) prototype development
  - (U) Data Annotation and Recording Mapping System (DARMS) prototype development
  - (U) Ground processing software development.

- (U) Comprehensive Test Ban Treaty (CTBT) Data Center Development and related CTBT technology development programs transfer from the Advanced Research Projects Agency (ARPA) to AF Arms Control in FY97. Work on seismic event identification techniques performed by Phillips Laboratory (Project 1010) and research on seismology in support of nuclear monitoring performed under the auspices of the AF Office of Scientific Research (Project 2309) were also transformed to AF Arms Control in FY97. These actions were taken to consolidate DoD funding and management of key treaty implementation activities and monitoring technologies into one program element.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305145F Arms Control Implementation

(U) PE belongs in BA # 7 since projects involve efforts that include modifications to operational systems, and production approval for all R&D activities have been approved.

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	6,456	998	1,728	Continuing
(U) Appropriated Value	3,456			
(U) Adjustments to Appropriated Value				
a. Congressional General Reductions	-38	-20		
b. SBIR	-72	-16		
c. Omnibus and Above Threshold		-8		
d. BTR	-693			
(U) Functional transfer from ARPA and Air Force science and technology programs			+25,058	
(U) Current Budget Submit/President's Budget	2,653	954	26,786	Continuing

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305145F Arms Control Implementation

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Cost To Compl	Total Cost
(U) Aircraft Procurement: C-135B	0	429	548	0	0	0	0	0	61,577
(U) Other Procurement: Items less than $2.0	38	38	40	41	43	44	46	Con't.	Cont.
(U) Other Procurement: Items Less that $2.0	2,441	0	0	0	0	0	0	0	2,441

(U) D. **Schedule Profile**

(U) See individual project schedules

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305145F Arms Control Implementation

PROJECT NO. AND NAME: 4190 Treaty Prep/Verification Support

COST (*In Thousands*)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4190 Treaty Prep/Verification Support	0	468	0	0	0	0	0	0	508

(U) A. Mission Description and Budget Item Justification

- (U) Treaty preparation/verification support activities encompass a wide range of projects necessary to prepare the United States for compliance with impending arms control treaties and negotiations. They include modifications and enhancements to the Arms Control Treaty Information Operating Network (ACTION) system, research and analysis activities associated with preparing the USAF to support immediate compliance with existing agreements and analysis of the implications of future agreements and negotiations.

(U) FY 1995
- (U) $0 Not Applicable.
- (U) $0 Total

(U) FY 1996
- (U) $468 Accomplishes research to model threats and analyze feasibility of AF's National Missile Defense strategy. Analyzes compliance with ABM treaty.
- (U) $468 Total

(U) FY 1997
- (U) $0 Follow-on requirements not defined and programmed beyond FY96.
- (U) $0 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	2,760	498	1,728	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305145F Arms Control Implementation

PROJECT NO. AND NAME: 4190 Treaty Prep/Verification Support

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Appropriated Value	0			
(U) Adjustments to Appropriated Value				
a. Congressional General Reduction		-10		
b. SBIR		-16		
c. Omnibus and Above Threshold		-4		
(U) Adjustments to Budget Years Since FY95 PB			-1,728	
(U) Current Budget Submit/President's Budget	0	468	0	508

(U) Change Summary Explanation:

(U) Funding: General Congressional reduction. Decreased funding due to reduction in treaty preparation activities associated with the START II, CWC and CTBT. Follow-on efforts not yet defined and programmed beyond FY96.

Schedule: Not Applicable

Technical: Not Applicable

(U) **C. Other Program Funding Summary ($ in Thousands)**: Not Applicable

(U) **D. Schedule Profile**:

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Analysis and Support					X			X				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305145F Arms Control Implementation
PROJECT NO. AND NAME 4283 Open Skies Treaty Systems Develop	

COST (*In Thousands*)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4283 Open Skies Treaty Systems Develop	2,653	486	0	0	0	0	0	0	8,749

(U) A. **Mission Description and Budget Item Justification**

- (U) Open Skies support includes development of Synthetic Aperture Radar (SAR), SAR media processing equipment, the Data Annotation and Recording Mapping System (DARMS), as well as systems integration, engineering, test, and evaluation. This includes:
  - (U) Aircraft systems integration, engineering, test, and evaluation
  - (U) Synthetic Aperture Radar (SAR) prototype development
  - (U) Data Annotation and Recording Mapping System (DARMS) prototype development
  - (U) Ground processing software development

(U) FY 1995

–	(U) $2,153	Continued the aircraft systems integration, engineering, test, and evaluation for the Open Skies OC-135B aircraft.
–	(U) $500	Provided for the software development associated with processing SAR and video magnetic media.
–	(U) $(72)	SBIR reduction not reflected in database
–	(U) $(693)	Reprogramming not reflected in database
–	(U) $2,653	Total

(U) FY 1996

–	(U) $486	Completes system integration and test & evaluation of the FOC trainer OC-135B aircraft.
–	(U) $486	Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305145F Arms Control Implementation
PROJECT NO. AND NAME 4283 Open Skies Treaty Systems Develop	

(U) FY 1997

- (U) $0 Project complete after FY96.
- (U) $0 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	3,696	500		8,696
(U) Appropriated Value	3,456			
(U) Adjustments to Appropriated Value				
a. Congressional General Reductions	-38	-10		
b. SBIR	-72			
c. Omnibus and Above Threshold		-4		
d. BTR	-693			
(U) Current Budget Submit/President's Budget	2,653	486	0	8,070

(U) Change Summary Explanation:

(U) Funding: Increased funding due to added costs associated with overall aircraft systems integration. General Congressional reduction in FY95. FY95 SBIR reduction and reprogramming action are not reflected in the database.

Schedule: Not Applicable

Technical: Not Applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305145F Arms Control Implementation

PROJECT NO. AND NAME: 4283 Open Skies Treaty Systems Develop

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Aircraft Procurement: C-135B	0	429	548	0	0	0	0	0	61,577
(U) Other Procurement: Items less than $2.0	38	38	40	41	43	44	46	Con't	TBD
(U) Other Procurement: Items Less that $2.0	2,441	0	0	0	0	0	0	0	2,441

(U) D. Schedule Profile

Includes all Program activities not just RDT&E

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Milestone II/III (Complete Mar 93)												
(U) Critical Design Complete (3010)												
(U) FOC Aircraft #1												
(U) Modifications (3010)	———	———	———	———	X							
(U) T&E (3600)					X	———	X					
(U) Delivery							X					
(U) FOC Aircraft #2												
(U) Modifications (3010)	X	———	———	———	———	———	X					
(U) T&E (3600)							X	———	X			
(U) Delivery									X			
(U) FOC Retrofit of IOC Aircraft												
(U) Modifications (3010)				X	———	———	———	———	X			
(U) T&E (3600)									X	———	X	
(U) Delivery											X	
(U) Ground Proc'ng Facility Enhancements			X						X			
(3600)			———	———	———	———	———	———				
(U) Engine Stage III Noise Abatement												
(U) Hush Kit Devel. & Procurement (3010)	———	———	———	———	———	———	———	———	———	———	X	
(U) Install Kits (1/98 - 4/99) (3010)												

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305145F Arms Control Implementation
PROJECT NO. AND NAME 4520 Comp Test Ban Treaty Data Ctr Dev	

COST (*In Thousands*)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4520 Comp Test Ban Treaty Data Ctr Dev	0	0	26,786	10,997	11,115	11,142	11,251	Continuing	Continuing

(U) A. Mission Description and Budget Item Justification

(U) The CTBT effort will encompass a multitude of activities in FY97 that enable the DoD to prepare for US treaty implementation and compliance. Prior to FY97, these activities were managed by AFTAC, ARPA, Phillips Labs, and the Office of Scientific Research. Activities include:

- (U) Development of National and International Data Centers ($16.3 million)
  - (U) automated systems development and integration
  - (U) automated signal processing and integration into operational system
  - (U) expansion from seismic-only processing to include hydroacoustic, infrasound, and radionuclide data
  - (U) complete integration of automated and interactive processing algorithms
  - (U) demonstrate atmospheric transport capability for radionuclide location
  - (U) prototype multi-technique data fusion and correlation system
  - (U) data authentication
  - (U) conclude testing of the integrated system
  - (U) initiation of transition of the IDC to CTBT Organization/Preparatory Commission
  - (U) automation integration of knowledge bases, multi-source cueing, and regional discrimination research
  - (U) display development of man-machine interface
- (U) Treaty Implementation and Technical Support ($4.593 million)
  - (U) definition of processes and techniques for treaty required data exchanges and notifications
  - (U) compliance and verification decision tools
  - (U) interface to other National Systems
  - (U) interface to the US research community
  - (U) support to Preparatory Commission activities
  - (U) provide capability to analyze, characterize and resolve events located in the US in order to minimize frivolous on-site inspection requests by foreign governments and the CTBT international organization

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305145F Arms Control Implementation
PROJECT NO. AND NAME 4520 Comp Test Ban Treaty Data Ctr Dev	

- (U) Research and development of nuclear monitoring techniques ($5.893 million)
  - (U) Seismic
    - (U) seismic and hydroacoustic array development
    - (U) event detection techniques
    - (U) location and discrimination of small events
    - (U) deliver model of Eurasion and Middle East crust & mantle structure
    - (U) calibration of standard networks
  - (U) Radionuclide
    - (U) development and testing of radionuclide detection techniques
    - (U) configure existing radionuclide data processing software to the UNIX platform
  - (U) Xenon
    - transition DOE xenon sampler prototype to production ready model

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305145F Arms Control Implementation
PROJECT NO. AND NAME 4520 Comp Test Ban Treaty Data Ctr Dev	

(U) Prior to FY97, ARPA, Phillips Labs, and OSR managed these activities under the following PEs:

(U) ARPA PE 0602301E, Project ST-23
(U) OSR PE 0601102F, Project 2309
(U) Phillips Labs PE 0602601F, Project 1010

(U) FY 1995
- (U) $0 N/A
- (U) $0 Total

(U) FY 1996
- (U) $0 N/A
- (U) $0 Total

(U) FY 1997
- (U) $26,786 Multiple
- (U) $26,786 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	0	0	
(U) Appropriated Value			0	
(U) Adjustments to Appropriated Value				
a. Reprogramming			+26,786	Continuing
(U) Current Budget Submit/President's Budget	0	0	26,786	Continuing

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305145F Arms Control Implementation
PROJECT NO. AND NAME 4520 Comp Test Ban Treaty Data Ctr Dev	

(U) Change Summary Explanation:

(U) Funding: Transfers funding from ARPA, Phillips Labs, and OSR for implementation preparation and key monitoring activities.
Schedule: Not Applicable
Technical: Not Applicable

(U) **C. Other Program Funding Summary ($ in Thousands):**

(U) Related Activities:

(U) PE 03XXXXXXF, Forest Green

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Prototype IDC Development									X			X
(U) NDC Development									X			X
(U) Monitoring Technologies Development									X			X
(U) Treaty Implementation & Technical Support									X			X

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305158F Constant Source

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	3,123	2,892	2,914	870	815	839	851	TBD	TBD
4071 Constant Source	3,123	0	0	0	0	0	0	0	10,554
4394 Combat Intelligence System	0	2,009	2,035	607	569	586	594	TBD	TBD
4395 Radio	0	883	879	263	246	253	257	TBD	TBD

Notes: - Beginning in FY96, funding for the Constant Source program is divided into two projects, Combat Intelligence System (CIS) and Radio. It is a continuing effort (no termination or new starts) within the PE. The change is in accounting only; no change in scope with creation of two BPACs.

(U) **A. Mission Description and Budget Item Justification**

(U) This program was established as part of the Air Force Tactical Exploitation of National Capabilities (TENCAP) normalization effort. Recently, the Constant Source Operator Terminal (CSOT) functionality was transformed into the Combat Intelligence System (CIS). This functionality processes the near-real-time threat information utilized by combat units/aircrews for mission planning and execution. The radio portion of this program enables the warfighter to access critical data provided by national and tactical intelligence sources. Currently over 130 ground systems are deployed. Air Force is jointly developing and procuring an airborne qualified radio called Multi-mission Advanced Tactical Terminal (MATT) with US Special Operations Command (SOCOM), Defense Support Program Office (DSPO), and the Navy. This Program Element is assigned in Budget Activity 7 Operational System Development because it involves post-Milestone III efforts and supports development of operational systems.

(U) **Acquisition Strategy:**

(U) Project 4071 - Integrate COTS software and hardware to reduce development, sustainment, and procurement costs. Sole source contract. Cost Plus Award Fee. Firm Fixed Price.

(U) Project 4394 - Full and open competition leading to a Cost Plus Award Fee contract.

(U) Project 4395 - Technology transfer from the Naval Research Laboratory to the contractor. Evolutionary acquisition strategy was implemented with a core capability procured during the first production option. Firm Fixed Price.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305158F Constant Source

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	3,191	3,089	3,054	Continuing
(U) Appropriated Value	3,191			
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-68	-107		
b. SBIR		-59		
c. Omnibus or Other Above Threshold Reprogram		-31		
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY 1996 PB			-140	
(U) Current Budget Submit/President's Budget	3,123	2,892	2,914	Continuing

(U) Change Summary Explanation:

Funding: - FY 1997 reduction (-$140,000) due to revised inflation rate.

Schedule: N/A

Technical: N/A

(U) **C. Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Other Procurement	11,054	5,101	7,6,06	10,755	6,564	7,366	10,020	Cont	Cont

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305158F Constant Source

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) **Combat Intelligence System (CIS)**												
(U) Formal Request for Proposal	X											
(U) CIS 1.1 Release		X										
(U) Contract Award				X								
(U) Development Test & Eval (DT&E) Start							X					
(U) DT&E Complete for Software (S/W) Increment #1								X				
(U) Initial Operational Test & Eval (IOT&E) Start								X				
(U) IOT&E Complete for S/W #1									X			
(U) Version Release S/W #1									X			
(U) Initial Operational Capability											X	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305158F Constant Source

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) **Multi-mission Advanced Tactical Terminal (MATT)**												
(U) FY94 Production Run/Deliveries Start		X										
(U) Delivery for Platform Start		X										
(U) Exercise FY95 Production Option		X										
(U) FY95 Production Run/Deliveries Start			X									
(U) Exercise FY96 Production Option					X							
(U) FY96 Production Run/Deliveries Start								X				
(U) Exercise FY97 Production Option									X			
(U) FY97 Production Run Start												X
(U) Delivery to Platform Start												X

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305158F Constant Source
PROJECT NO. AND NAME 4071 Constant Source	

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4071 Constant Source	3,123	0	0	0	0	0	0	0	10,554

Note: - Beginning in FY96, funding for the Constant Source program is divided into two projects, Combat Intelligence System (CIS) and Radio.

(U) A. Mission Description and Budget Item Justification

(U) FY 1995 ($ in Thousands):
- (U) $2,833 Updated software and executed ECPs for air/ground systems as required
- (U) $ 95 Planned and supported integrations on DoD aircraft and weapon systems
- (U) $ 100 Planned to retrofit existing systems with state-of-the-art components
- (U) $ 95 Integrated ground systems into CIS
- (U) $3,123 Total

(U) FY 1996 ($ in Thousands):
- (U) $ 0

(U) FY 1997 ($ in Thousands):
- (U) $ 0

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305158F Constant Source
PROJECT NO. AND NAME 4071 Constant Source	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	3,191	0	0	10,554
(U) Appropriated Value	3,259			
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-68			
b. SBIR	-67			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogramming	-1			
(U) Adjustments to Budget Years Since FY 1996 PB				
(U) Current Budget Submit/President's Budget	3,123	0	0	

(U) Change Summary Explanation:

Funding: Funds from Constant Source Operator Terminal (CSOT) were transferred to two new projects in this Program Element: Combat Intelligence System (CIS) and Radio.

Schedule: N/A

Technical: N/A

(U) **C. Other Program Funding Summary ($ in Thousands)**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305158F Constant Source
PROJECT NO. AND NAME 4071 Constant Source	

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) **Combat Intelligence System (CIS)**												
(U) Formal Request for Proposal	X											
(U) CIS 1.1 Release		X										
(U) Contract Award				X								
(U) **Multi-mission Advanced Tactical Terminal (MATT)**												
(U) FY94 Production Run/Deliveries Start		X										
(U) Delivery for Platform Start		X										
(U) Exercise FY95 Production Option		X										

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305158F Constant Source

PROJECT NO. AND NAME: 4071 Constant Source

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Software Development	1,921	0	0
(U) Program Management Support	207	0	0
(U) Government Engineering Support	286	0	0
(U) System Engineering Support	514	0	0
(U) Travel	101	0	0
(U) Miscellaneous	94	0	0
(U) Total	3,123		

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
BTG, Inc.	SS/CPAF	Sep 92			6,403	1,491				7,894
Synectics	CPFF	Mar 94	840	840		840				840
Support and Management Organizations										
MITRE		Ongoing			509	551				1,060
TEMS		Ongoing			451	241				692

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305158F Constant Source
PROJECT NO. AND NAME 4071 Constant Source	

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
					Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Test and Evaluation Organizations Not Applicable.										
Government Furnished Property: Not Applicable.										
Subtotal Product Development					6,403					8,734
Subtotal Support and Management					960					1,752
Subtotal Test and Evaluation										
Total Project					7,363					10,486

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305158F Constant Source

PROJECT NO. AND NAME: 4394 Combat Intelligence System

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4394 Combat Intelligence System	0	2,009	2,035	607	569	586	594	TBD	TBD

Note: Beginning in FY96, funding for the Constant Source program is divided into two projects, Combat Intelligence System (CIS) and Radio.

(U) **A. Mission Description and Budget Item Justification**

(U) FY 1996 ($ in Thousands):
- (U) $ 477 Complete SCI level correlation enhancements
- (U) $1,217 Auto Associator Enhancements under Theater Ballistic Management (TBM) Core Systems
- (U) $ 315 Conduct Studies for future CIS intelligence interoperabilities
- (U) $2,009 Total

(U) FY 1997 ($ in Thousands):
- (U) $ 245 Continue studies for CIS intelligence interoperabilities
- (U) $1,215 Continue CIS software development under TBM Core Systems
- (U) $ 575 Implement results of studies into CIS software under TBM Core Systems
- (U) $2,035 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305158F Constant Source
PROJECT NO. AND NAME 4394 Combat Intelligence System	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget		2,163	2,138	Continuing
(U) Appropriated Value				
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions		-73		
b. SBIR		-59		
c. Omnibus or Other Above Threshold Reprogram		-22		
(U) Adjustments to Budget Years Since FY 1996 PB			-103	
(U) Current Budget Submit/President's Budget	0	2,009	2,035	Continuing

(U) Change Summary Explanation:

Funding: Reflects a transfer of funds from the Constant Source Operator Terminal (CSOT) project to this project.

Schedule: N/A

Technical: N/A

(U) **C. Other Program Funding Summary ($ in Thousands)**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305158F Constant Source
PROJECT NO. AND NAME 4394 Combat Intelligence System	

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Combat Intelligence System (CIS)												
(U) Formal Request for Proposal	X											
(U) CIS 1.1 Release		X										
(U) Contract Award				X								
(U) Development Test & Eval (DT&E) Start							X					
(U) DT&E Complete for Software (S/W) Increment #1								X				
(U) Initial Operational Test & Eval (IOT&E) Start								X				
(U) IOT&E Complete for S/W #1									X			
(U) Version Release S/W #1									X			
(U) Initial Operational Capability											X	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305158F Constant Source

PROJECT NO. AND NAME: 4394 Combat Intelligence System

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Software Development	0	2,009	2,035
(U) Total	0	2,009	2,035

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Loral Command & Ctrl Systems F19628-95-C0143	SS/CPAF	Oct 95	TBD	TBD	0	0	2,009	2,035	Cont	Cont

Support and Management Organizations
None

Test and Evaluation Organizations
None

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305158F Constant Source
PROJECT NO. AND NAME 4394 Combat Intelligence System	

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property: N/A

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Property									
None									
Support and Management Property									
None									
Test and Evaluation Property									
None									
Subtotal Product Development				0	2,009	2,035	Cont	Cont	
Subtotal Support and Management									
Subtotal Test and Evaluation									
Total Project				0	2,009	2,035	Cont	Cont	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305158F Constant Source
PROJECT NO. AND NAME 4395 Radio	

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4395 Radio	0	883	879	263	246	253	257	TBD	TBD

(U) **A. Mission Description and Budget Item Justification**

(U) FY 1996 ($ in Thousands):
- (U) $ 150 Plan and support integration on DoD aircraft and weapon systems
- (U) $ 633 Support MATT radio P^3I development effort
- (U) $ 100 Support migration of MATT into next generation tactical terminal
- (U) $ 883 Total

(U) FY 1997 ($ in Thousands):
- (U) $ 150 Plan and support integration on DoD aircraft and weapon systems
- (U) $ 629 Support MATT radio P^3I development effort
- (U) $ 100 Support migration of MATT into next generation tactical terminal
- (U) $ 879 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305158F Constant Source
PROJECT NO. AND NAME 4395 Radio	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget		926	916	Continuing
(U) Appropriated Value		0		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions		-34		
b. SBIR				
c. Omnibus or Other Above Threshold Reprogram		-9		
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY 1996 PB			-37	
(U) Current Budget Submit/President's Budget	0	883	879	Continuing

(U) Change Summary Explanation:

Funding: FY97 funding reduction (-$37) due to inflation rate changes.

Schedule: N/A

Technical: N/A

(U) **C. Other Program Funding Summary ($ in Thousands)**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305158F Constant Source
PROJECT NO. AND NAME 4395 Radio	

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) FY95 Production Run/Deliveries Start			X									
(U) Exercise FY96 Production Option					X							
(U) FY96 Production Run/Deliveries Start								X				
(U) Exercise FY97 Production Option									X			
(U) FY97 Production Run Start												X
(U) Delivery to Platform Start												X

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305158F Constant Source
PROJECT NO. AND NAME 4395 Radio	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Software Development	0	142	192
(U) Program Management Support	0	240	230
(U) Travel	0	100	100
(U) Government Engineering Support	0	230	230
(U) System Engineering Support	0	171	127
(U) Total	0	883	879

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Allied Signal, Inc. MDA911-93-C008	FFP	Apr 93	TBD	TBD			543	549	Cont	Cont
Support and Management Organizations										
MITRE F19628-94-C0001		Ongoing					170	165	Cont	Cont

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305158F Constant Source

PROJECT NO. AND NAME: 4395 Radio

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
TEMS Various Contractors		Ongoing					185	183	Cont	Cont

Test and Evaluation Organizations
None

Government Furnished Property: N/A

Product Development Property
None

Support and Management Property
None

Test and Evaluation Property
None

Subtotal Product Development						543	549	Cont	Cont	
Subtotal Support and Management						340	330	Cont	Cont	
Subtotal Test and Evaluation										
Total Project						883	879	Cont	Cont	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305160F Def Meteorological Satellite Prog (Space)

PROJECT NO. AND NAME: 0001 DMSP

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
0001 DMSP	18,599	19,913	17,964	16,901	19,622	20,607	19,694	Continuing	Continuing

(U) A. **Mission Description and Budget Item Justification**

The Defense Meteorological Satellite Program (DMSP) is a fully operational Joint-Service program which supports all military services. Operational commanders require timely, quality weather information to effectively employ weapon systems and protect DoD resources. DMSP is the DoD's most important source of global weather data. It provides visible and infrared cloud cover imagery (1/3 nm constant resolution) and other meteorological, oceanographic, and solar-geophysical information. These data are required over the entire earth in support of strategic and tactical operations. At least two satellites are required in sun synchronous 450nm polar orbit at all times (sun synchronous means the satellites cross the equator at the same local sun time on each of their 14 orbits/day). DMSP operational systems development supports the current operational DMSP program.

(U) FY 1995

- (U) $15,292 Conducted system integration and test, calibration and validation, and related support activities.
- (U) $1,100 Supported Small Tactical Terminal (STT) IOT&E and started enhanced algorithm development.
- (U) $1,667 Initiated MARK IVB tactical weather terminal enhanced algorithm integration effort.
- (U) $540 Continued Titan integration effort
- (U) $18,599 Total

(U) FY 1996

- (U) $16,256 Continue system integration and test, calibration and validation, and related support activities.
- (U) $1,950 Continue enhanced STT algorithm development.
- (U) $300 Continue MARK IVB tactical weather terminal enhanced algorithm integration.
- (U) $238 Continue Titan integration effort.
- (U) $1,169 Support civilian/military command and control consolidation efforts.
- (U) $19,913 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305160F Def Meteorological Satellite Prog (Space)
PROJECT NO. AND NAME 0001 DMSP	

(U) FY 1997

- (U) $12,647 Continue system integration and test, calibration and validation, and related support activities.
- (U) $2,268 Complete MARK IVB and STT enhanced algorithm development and implementation.
- (U) $700 Continue Titan integration effort.
- (U) $2,349 Continue support of civilian/military command and control consolidation efforts.
- (U) $17,964 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Previous President's Budget	20,099	21,464	18,510
(U) Appropriated Value	21,135		
(U) Adjustments to Appropriated Value			
a. Cong Gen Reductions	- 598	-812	
b. SBIR	-433	-474	
c. Omnibus or Above Threshold Reprogramming	-1500	-265	
d. Below Threshold Reprogramming	-5		
(U) Adjustments to Budget Years Since FY96 PB			-546
(U) Current Budget Submit/President's Budget	18,599	19,913	17,964

(U) Change Summary Explanation:

Funding: $546 of FY97 Reductions for inflation savings. Additional FY97 $1.7M reduction approved to fund Miniature Sensor Technology Integration program not reflected in the amounts.

Schedule: Launches of F-12 and F-13 were successful. Launch of F-14 anticipated in 2FY98

Technical: No changes.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305160F Def Meteorological Satellite Prog (Space)
PROJECT NO. AND NAME 0001 DMSP	

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Missile Procurement	28,925	27,874	27,885	32,776	32,407	33,540	35,318	Cont	Cont
(U) Other Procurement	16,971	19,621	15,742	16,576	15,140	11,279	9,338	Cont	Cont

Related RDT&E:

(U) PE #603434F, National Polar Operational Environmental Satellite System (NPOESS)

(U) PE #305160N, DMSP (provides funds for Navy unique studies)

(U) D. **Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) MARK IVB Deliveries	X	X	X									
(U) Small Tactical Terminal First Delivery								X				
(U) Small Tactical terminal IOT&E			X									
(U) 5D-3 Spacecraft Delivery Schedule (S16-19)								X		X		X
(U) Planned 5D-2 Launches (F-14/S-15)												

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305160F Def Meteorological Satellite Prog (Space)

PROJECT NO. AND NAME: 0001 DMSP

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Launch Vehicle Transition	540	238	700
(U) Spacecraft Integration	4,465	4,658	4,631
(U) Calibration/Validation	325	295	348
(U) Algorithm Development	1,632	1,180	1,068
(U) On-Orbit Performance Incentives (primary sensor)	0	0	0
(U) MARK IVB/STT Enhancements	2,767	2,250	2,268
(U) Systems Engineering Support	5,547	4,696	3,455
(U) Block 6/Convergence Studies	0	0	0
(U) Program Management Support	3,323	5,427	3,145
(U) Command and Control Consolidation	0	1,169	2,349
(U) Total	18,599	19,913	17,964

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Martin-Marietta	SS/CPAF/PR	Apr 92	6,426	6,426	2,727	1,052	1,590	1,057	0	6,426
Westinghouse	SS/CPAF/PR	Apr 90	3,785	3,785	3,785	0	0	0	0	3,785
Westinghouse	SS/CPAF/PR	May 95	3,789	3,789	0	555	771	956	1,507	3,789
Lockheed	C/CPAF/PR	Oct 88	42,673	42,673	39,266	1,667	300	1,440	0	42,673
Harris	C/CPAF/PR	Jun 94	6,738	6,738	2,860	1,100	1,950	828	0	6,738

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305160F Def Meteorological Satellite Prog (Space)

PROJECT NO. AND NAME: 0001 DMSP

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Cont	SS/FPIF/PR	Oct 94			282	540	238	700	Cont	Cont
Aerojet	SS/CPAF/PR	May 92	2,809	2,809	787	778	639	605	0	2,809
Aerojet	C/CPAF/PR	Mar 89	36,111	36,111	35,886	103	122	0	0	36,111
Hughes	SS/CPFF/PR	May 91	1,297	1,297	1,082	108	107	0	0	1,297
Phillips Lab	MIPR/PD/PO	Oct 95			2,096	1,452	1,236	1,304	Cont	Cont
Martin-Marietta	C/CPAF/PR	Jul 91	7,026	7,026	7,026	0	0	0	0	7,026
Lockheed	C/CPAF/PR	Jul 91	6,893	6,893	6,893	0	0	0	0	6,893
NRL	MIPR/PD/PO	Oct 95			755	1,454	1,132	1,056	Cont	Cont
APL	MIPR/PD/PO	Oct 95			200	374	520	527	Cont	Cont
TBD	TBD	TBD	C2 Consolidation		0	0	645	2,349	0	2,994
Other	Various				1,603	546	540	542	Cont	Cont
Support and Management Organizations										
FFRDC	MORD	Oct 95			4,171	4,647	3,230	1,799	Cont	Cont
PRC	C/CPA/PR	Aug 95			0	900	1,466	1,656	Cont	Cont
Program Mgmt					2,359	2,721	4,227	3,145	Cont	Cont
Litigation Support					0	602	1,200	0		1,802
Other	Various	Jul 91 Conv Spt			1,958	0	0	0	0	1,958

Test and Evaluation Organizations

Not Applicable.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305160F Def Meteorological Satellite Prog (Space)
PROJECT NO. AND NAME 0001 DMSP	

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property: Not Applicable.

Subtotal Product Development	105,248	9,729	9,790	11,364	Cont	Cont
Subtotal Support and Management	8,488	8,870	10,123	6,600	Cont	Cont
Project Total	113,736	18,599	19,913	17,964	Cont	Cont

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305164F Navstar Global Pos Sys (User Eq) (Space)

PROJECT NO. AND NAME: 3028 Navstar GPS (User Equipment)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3028 Navstar GPS (User Equipment)	13,781	16,460	32,450	24,599	24,639	23,076	17,761	Continuing	Continuing

(U) A. **Mission Description and Budget Item Justification**

The Global Positioning System (GPS) is a space-based radio positioning, navigation, and time distribution system. GPS User Equipment (UE) consists of standardized receivers, antennas, antenna electronics, etc., grouped together to form sets which derive navigation and time information utilizing data transmitted by the satellites. These receivers are used by all the Services and DoD. RDT&E funds UE development and testing, studies and engineering to assist integration into aircraft, software upgrades, product improvement studies, testing and evaluation of commercial GPS UE, and mission support. UE passed DAB Milestone IIIB in January 92 and is therefore in the budget activity/research category of Operational Systems Development.

(U) FY 1995 ($ in Thousands)

- (U) $485 Continued integration studies.
- (U) $804 Continued to support development testing for aircraft integrations.
- (U) $1,437 Continued developing software block upgrade for 5-channel GPS airborne receiver.
- (U) $918 Conducted GPS receiver product improvement studies.
- (U) $220 Continued development and product improvement testing for user equipment.
- (U) $175 Began NAVWAR Advanced Concept Technology Demonstration (ACTD).
- (U) $2,333 Continued support contracts.
- (U) $1,714 Continued In-House support.
- (U) $15 Continued Combat Survivor Evader Locator (CSEL).
- (U) $150 Began Hands-On Threat Demonstration.
- (U) $4,365 Accelerated Selected Availability Anti-Spoof Module (SAASM) and CSEL study efforts. Does not reflect +$1,135 Above Threshold Reprogramming approved by Congress
- (U) $1,165 Continued SAASM development.
- (U) $13,781 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305164F Navstar Global Pos Sys (User Eq) (Space)
PROJECT NO. AND NAME 3028 Navstar GPS (User Equipment)	

(U) FY 1996 ($ in Thousands)

– (U)	$452	Continue integration studies.
– (U)	$667	Continue to support development testing for aircraft integrations.
– (U)	$235	Continue developing software block upgrade for 5-channel GPS airborne receiver.
– (U)	$1,709	Conduct GPS receiver product improvement studies.
– (U)	$612	Continue development and product improvement testing for user equipment.
– (U)	$2,692	Continue NAVWAR Advanced Concept Technology Demonstration.
– (U)	$400	Continue commercial GPS receiver evaluation and certification program.
– (U)	$3,948	Continue support contracts.
– (U)	$1,924	Continue in-house support.
– (U)	$800	Complete Hands-On Threat Demonstration.
– (U)	$3,021	Continue Selective Availability Anti-Spoof Module development.
– (U)	$16,460	Total

(U) FY 1997 ($ in Thousands)

– (U)	$200	Continue integration studies.
– (U)	$869	Continue to support development testing for aircraft integrations.
– (U)	$193	Continue developing software block upgrade for 5-channel GPS airborne receiver.
– (U)	$750	Conduct GPS receiver product improvement studies.
– (U)	$970	Continue development and product improvement testing for user equipment.
– (U)	$850	Continue commercial GPS receiver evaluation and certification program.
– (U)	$3,450	Continue Advanced Concept Technology Demonstration.
– (U)	$4,027	Continue support contracts.
– (U)	$3,028	Continue in-house support.
– (U)	$3,480	Continue Selective Availability Anti-Spoof Module (SAASM) development.
– (U)	$14,633	Investigate GPS signal prevention/protection development options consistent with GPS NAVWAR program.
– (U)	$32,450	Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305164F Navstar Global Pos Sys (User Eq) (Space)

PROJECT NO. AND NAME: 3028 Navstar GPS (User Equipment)

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996*	FY 1997
(U) Previous President's Budget	9,871	17,371	14,891
(U) Appropriated Value	9,621	17,371	
(U) Adjustments to Appropriated Value			
a. Cong Gen Reductions		-345	
b. SBIR	- 203	-354	
c. Omnibus or Other Above Threshold Reprogram		-212	
d. Below Threshold Reprogramming	+ 4,363		
(U) Adjustments to Budget Years Since FY96 PB			+ 17,559
(U) Current Budget Submit/President's Budget	13,781	16,460	32,450

(U) Change Summary Explanation:

Funding: FY95 "Below Threshold Reprogramming" reflects an increase for accelerating SAASM and CSEL study efforts. "Omnibus or Other Above Threshold Reprogramming" for FY95 does not yet reflect Congressionally approved ATR for SAASM and CSEL acceleration ($1,135). FY96 amount ($-212) addresses Bosnia reductions. "Adjustment to Budget Years since FY96 PB" in FY97 reflects increased funding for Advanced Concept Technology Development (ACTD) and NAVWAR prevention/protection efforts and decreases associated with the Non-Pay Inflation reduction.

* The FY96 PB amount does not reflect funding reductions that are reserved for other DoD reprogramming needs ($181)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305164F Navstar Global Pos Sys (User Eq) (Space)
PROJECT NO. AND NAME 3028 Navstar GPS (User Equipment)	

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Operations and Maintenance	949	1,790	979	1019	1064	1092	1107	Cont	Cont
(U) Aircraft Procurement (BP16)	1,782	803	200	990	1,274	1,343	1,112	Cont	Cont
(U) Aircraft Procurement (BP19)	70,137	41,707	42,831	40,658	47,975	53,432	61,265	Cont	Cont
(U) Other Procurement (BA 83/86)	3,749	1,012	3,360	3,176	4,140	4,026	4,070	Cont	Cont
(U) OSD RDT&E (ACTD Funding: PE 63750D)		6,669	4,500	3,900	900				

Related RDT&E:

(U) PE #305165F, Navstar GPS (Space/Grd Segments)
(U) PE #604480F, GPS Block IIF
(U) PE#305176F, Combat Survivor/Evader Locator

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305164F Navstar Global Pos Sys (User Eq) (Space)
PROJECT NO. AND NAME 3028 Navstar GPS (User Equipment)	

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Advanced Receiver Technology												
(U) Brassboard Delivery							x					
(U) Anti-Jam Development (MCM)												
(U) Prototypes			x									
(U) Qual Test				x								
(U) Integration Complete							x					
(U) Testing Complete								x				
(U) Broadband Anti-Jam Contract Start						x						
(U) MAGR ECP Development												
(U) Increased Anti-Jam								x				
(U) CLS Integration Studies Complete	x											
(U) F-16 Study Complete									x			
(U) SAASM												
(U) Brassboard Test	x											
(U) Multichip Module (MCM) Testing Start								x				
(U) Development Test Start										x		
(U) OTE											x	
(U) MAGRU/3AU (Receiver Upgrades)												
(U) Spec Development						x						
(U) Design & Build Prototype												x

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305164F Navstar Global Pos Sys (User Eq) (Space)
PROJECT NO. AND NAME 3028 Navstar GPS (User Equipment)	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Integration Studies	485	452	200
(U) Technical Support for Aircraft Integrations	804	486	869
(U) Independent Verification and Validation			
(U) Signal Data Converter			
(U) Selected Availability Anti-spoofing Module (SAASM)	1,165	3,021	3,480
(U) Accelerate SAASM into Combat Survivor/Evader Locator	*4,365		
(U) Advanced Concept Technology Demonstration	175	2,692	3,450
(U) Software Upgrade	187	235	193
(U) Product Improvement Studies	918	1,709	750
(U) Development & Product Improvement Testing	220	612	970
(U) Civilian Receiver Evaluation Program (CREP) / Advanced Civilian Receiver Evaluation Program (ACREP)		400	850
(U) Support Contracts	2,333	3,948	4,027
(U) In-House Support	1,714	1,924	3,028
(U) CSEL Program	15		
(U) Hands-On Threat Demonstration	150	800	
(U) Selective Availability database update.	1,250		
(U) Signal Denial /Protection			14,633
(U) OSD Withhold		181	
(U) Total	*13,781	16,460	32,450

* Does not reflect Above Threshold Reprogramming ($1,135) approved by Congress

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305164F Navstar Global Pos Sys (User Eq) (Space)
PROJECT NO. AND NAME 3028 Navstar GPS (User Equipment)	

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Rockwell (MAGR)	FPIF/FFP/ CPAF	Various	Cont	Cont	18,871	187	235	193	Cont	Cont
DOE-Sandia (SAASM)	MIPR	Feb 96	Cont	Cont	1,035	150	1,351	630	Cont	Cont
NAWC (SAASM)	MIPR	Various	4,265	4,265	0	930	1,155	2,180	0	4,265
Honeywell Inc (F-15 Study)	Unknown	n/a	2,000	2,000	2,000	0	0	0	0	2,000
General Dynamics	Unknown	Jan 96	1,810	1,810	873	485	452	0	0	1,810
OO-ALC (F-16 Study)	Project Order	n/a	327	327	327	0	0	0	0	327
Various (ACTD/Protection/ Prevention)	Various	Various	Cont	Cont	0	175	2,654	18,490	Cont	Cont
Miscellaneous	Various	Various	Cont	Cont	6,163	7,587	3,541	1,682	Cont	Cont
Support and Management Organizations										
Overlook Sys (OASD/C3I)	C/CPFF	Dec 95	Cont	Cont	8,076	1,200	1,300	1,300	Cont	Cont
Aerospace Corp (Technical Supt)	Unknown	Various	Cont	Cont	0	0	1,305	1,344	Cont	Cont

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305164F Navstar Global Pos Sys (User Eq) (Space)

PROJECT NO. AND NAME: 3028 Navstar GPS (User Equipment)

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
SMC/FMB	Various	Various	Cont	Cont	650	1,034	0	2,000	Cont	Cont
(Shared Prg Cost)										
PRC	Unknown	Dec 95	Cont	Cont	0	0	714	735	Cont	Cont
(Technical Supt)										
Miscellaneous	Various	Various	Cont	Cont	2,961	1,813	2,553	1,676	Cont	Cont
Test and Evaluation Organizations										
46th TG (SAASM/Test)	Project Order	Dec 95	Cont	Cont	31,445	220	612	970	Cont	Cont
46th TG (CREP/ ACREP/CRCP)	Project Order	Dec 95	Cont	Cont	0	0	188	850	Cont	Cont
46th TG (ACTD)	Project Order	Jan 96	800	800	0	0	400	400	0	800

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property:

(U) Not Applicable.

Subtotal Product Development	29,269	9,514	9,388	23,175	Cont	Cont
Subtotal Support and Management	11,687	4,047	5,872	7,055	Cont	Cont
Subtotal Test and Evaluation	31,445	220	1,200	2,220	Cont	Cont
Total Project	72,401	13,781	16,460	32,450	Cont	Cont

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305165F NAVSTAR GPS (Space/Grd Segments) (Space)

PROJECT NO. AND NAME: 3030 NAVSTAR GPS (Space/Ground)

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3030 NAVSTAR GPS (Space/Ground)	35,258	28,023	42,243	31,684	24,198	11,489	9,436	Continuing	Continuing

(U) **A. Mission Description and Budget Item Justification**

This program element funds Research and Development for the NAVSTAR Global Positioning System (GPS) space and control segments of the overall GPS program. This includes: satellite development, procurement, and deployment; training simulators; Mission Operation Support Center (MOSC); and operation of the ground control segment, including sustaining engineering, upgrades to the space and ground segments, and R&D efforts to support deployment of the entire GPS system. As a post-Milestone 3 program, we are classified as Budget Activity Research Category 7, Operational Systems Development.

(U) FY 1995 ($ in Thousands)

- (U) $6,838 Continued system engineering including configuration management.
- (U) $21,494 Continued initial Block IIR software development and delivery to AFSPACECOM.
- (U) $431 Completed upgrade of ES9000.
- (U) $5,077 Awarded Operational Control Segment (OCS) consolidated contract for Consolidated Operator Support Environment (COSE), OCS Architectural Implementation and Block IIR Full Functionality.
- (U) $1,418 Continued Joint Program Office support.
- (U) $35,258 Total

(U) FY 1996 ($ in Thousands)

- (U) $3,000 Begin development of Training Simulator.
- (U) $2,200 Develop data storage and retrieval system software required for launch and on-orbit operations.
- (U) $4,900 Continue system engineering including configuration management.
- (U) $1,302 Continue GPS Joint Program Office support.
- (U) $13,621 Continue OCS consolidated contract for COSE, OCS Architectural Implementation, and Block IIR full functionality.
- (U) $3,000 Initiate Sensor to Shooter accuracy improvement effort
- (U) $28,023 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305165F NAVSTAR GPS (Space/Grd Segments) (Space)
PROJECT NO. AND NAME 3030 NAVSTAR GPS (Space/Ground)	

(U) FY 1997 ($ in Thousands)

- (U) $4,300 Continue system engineering including configuration management.
- (U) $3,700 Continue development of training simulator.
- (U) $1,304 Continue GPS Joint Program Office Support.
- (U) $12,439 Continue OCS Consolidated Contract for COSE, OCS Architectural Implementation, and Block IIR Full Functionality.
- (U) $4,000 Investigate space/control segment solutions as part of GPS Navigation Warfare (NAVWAR) program.
- (U) $16,500 Continue Sensor to Shooter accuracy improvement effort
- (U) $42,243 Total

(U) Acquisition Strategy:

The acquisition strategy is to procure Block IIR and Block IIF satellites to sustain the GPS constellation.

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996*	FY 1997
(U) Previous President's Budget	51,125	26,921	31,434
(U) Appropriated Value	36,425	25,921	
(U) Adjustments to Appropriated Value			
a. Cong Gen Reductions	- 398	- 507	
b. SBIR	- 760	- 72	
c. Omnibus or Other Above Threshold Reprogram		- 319	
d. Below Threshold Reprogramming	- 9		
(U) Adjustments to Budget Years Since FY96 PB		+ 3,000	+ 10,809
(U) Current Budget Submit/President's Budget	35,258	28,023	42,243

(U) Change Summary Explanation:

Funding: * The FY96 PB amount does not reflect funding reductions that are reserved for other DoD reprogramming needs ($271)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305165F NAVSTAR GPS (Space/Grd Segments) (Space)
PROJECT NO. AND NAME 3030 NAVSTAR GPS (Space/Ground)	

FY96 appropriated amount reflects Congressional reduction. "Omnibus or Other Above Threshold Reprogramming" amount adjusted in FY96 (-319) reflects Bosnia reductions. "Adjustments to Budget Years Since FY96 PB" in FY96 (+3000) reflects an increase for Sensor to Shooter accuracy improvements. "Adjustments to Budget Years Since FY96 PB" in FY97 (+10,809) reflects decreases for the DBOF Rate Offset, Non-Pay Inflation, overhead reductions, and savings associated with the Operational Control Segment contract consolidation and reduced Block IIA/IIR software maintenance efforts; it also reflects increases for Sensor to Shooter accuracy improvements and Navigation Warfare (NAVWAR) denial/protection efforts.

Schedule: No change.

Technical: No change.

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Operations and Maintenance	19,124	33,290	28,089	24,789	21,235	22,616	25,921	Cont	Cont
(U) Weapons Procurement	209,623	154,153	198,636	174,700	172,570	295,474	281,151	Cont	Cont
(U) Other Procurement	5,220	6,857	9,737	2645	2,313	559	693	Cont	Cont

Related RDT&E:

(U) PE #0305164F, NAVSTAR GPS (User Equipment)
(U) PE #0101221N, Fleet Ballistic Missile System
(U) PE #0301357F and 0305913F (formerly 0102433F), Nuclear Detonation Detection System (NDS)
(U) PE #0305119F Space Boosters, funds launch services (Delta II)
(U) PE #0604480F, GPS Block IIF

(U) D. **Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Continue Block IIR software development	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	----x
(U) Delivery of Block IIR software to AFSPC				x								
(U) Continue upgrade of ES9000	--------	--------	--------	x								

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305165F NAVSTAR GPS (Space/Grd Segments) (Space)
PROJECT NO. AND NAME 3030 NAVSTAR GPS (Space/Ground)	

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Continue Joint Program Office Support	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	----x
(U) Development of Training Simulator					x	--------	--------	--------	--------	--------	--------	----x
(U) Investigate GPS NAVWAR system mods									x	--------	--------	----x
(U) Continue OCS Consolidated Contract	x----	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	----x

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305165F NAVSTAR GPS (Space/Grd Segments) (Space)

PROJECT NO. AND NAME: 3030 NAVSTAR GPS (Space/Ground)

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Block IIR Data Storage/Retrieval System Development		2,200	
(U) Operational Control Segment (OCS) Development/Sustainment	27,002	13,621	12,439
(U) Training Simulator Development		3,000	3,700
(U) Sensor to Shooter		3,000	16,500
(U) Program Office Support	1,418	1,302	1,304
(U) System Engineering including Configuration Management	6,838	4,900	4,300
(U) GPS NAVWAR system mods investigation			4,000
(U) Total	35,258	28,023	42,243

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Lockheed Martin *	FPIF/AF	Jun 89	139,900	140,900	110,738					110,738
Loral Fed Systems	CPAF	Jun 90	119,253	119,253	94,945	21,643	2,306	359		119,253
Loral Fed Systems	CPAF/FFP	Jul 95	100,000	100,000	n/a	5,359	17,315	32,280	45,046	100,000

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305165F NAVSTAR GPS (Space/Grd Segments) (Space)

PROJECT NO. AND NAME: 3030 NAVSTAR GPS (Space/Ground)

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Support and Management Organizations										
System Engineering	Various	Various	n/a	n/a	1,361	6,838	7,100	4,300	Cont	Cont
Mission Support	Various	n/a	n/a	n/a	2,598	1,418	1,302	1,304	Cont	Cont
GPS NAVWAR	TBD	TBD						4,000		4,000
Test and Evaluation Organizations										
Not Applicable.										
Subtotal Product Development					205,683	27,002	19,621	32,639	45,046	329,991
Subtotal Support and Management					3,959	8,256	8,402	9,604	Cont	Cont
Subtotal Test and Evaluation										
Total Project					209,642	35,258	28,023	42,243	Cont	Cont

* Program total represents total program element liability. This effort is also funded by other program elements; total government liability is $135,906. EAC exceeds this amount because project is firm fixed price and has overrun.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305182F Eastern Space Launch Facility (Space)

PROJECT NO. AND NAME: 4137 Range Standardization and Automation (RSA) Program

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4137 Range Standardization and Automation (RSA) Program	38,492	48,279	35,704	36,410	38,466	39,682	40,930	Continuing	Continuing

(U) **A. Mission Description and Budget Item Justification**

The Eastern and Western Ranges provide tracking, telemetry, communications, command/control and other support capabilities necessary to safely and successfully conduct civil, commercial, and national security spacelift operations, ballistic missile test and evaluation (T&E), and a variety of aeronautical and guided weapons T&E. Range assets are based on 1950s/1960s designs and technology, and are arrayed in a highly inefficient, manpower intensive architecture. Range instrumentation reliability is deteriorating and over 40% of the components are obsolete with no sources of support. The ranges do not provide the responsiveness and flexibility critical to affordably support the nation's spacelift needs. Replacement of the aging systems is a necessity. Range Standardization and Automation (RSA) will completely overhaul and modernize both the Eastern Range (ER) and the Western Range (WR), treating the two as a single integrated range system with an Eastern and Western segment. RSA will develop the integrated range system, using remote control and automation techniques to reduce the number of required operators, sites and facilities, and to produce improved responsiveness. The result will be a range system reconfigurable from one major operation to another in less than 4 hours versus 2-3 days, capable of being operated for 20% less than current ranges, and supportable through existing Air Force logistics infrastructure and standard practices. RSA is critical to the future of the spacelift ranges; performance and cost goals cannot be achieved without RSA. Categorized as Budget Activity Research Category, Operations Systems Development because it upgrades existing operational capabilities with new systems.

(U) FY 1995

- (U) $25,785 Continued RSA Phase I Contract: Development of consolidated instrumentation system including Consolidated Instrumentation Facility (CIF) and Unified Tracking Antenna (UTA) for Antigua and Ascension tracking sites; design, development, and acquisition of communications upgrades at Cape Canaveral Air Station (CCAS); design, development and acquisition of a satellite communications network to link downrange stations at Antigua and Ascension with Range Operations Control Center (ROCC) at CCAS; design, development and acquisition of a Central Telemetry Processing System applicable to both the Eastern and Western Ranges.
- (U) $8,734 Completed OT&E of ROCC; Initial operational capability declared March 95. Continued Engineering Services Contract to facilitate transition of the facility to operational users.
- (U) $3,973 Program support included System Program Office and Air Logistics Center support.
- (U) $38,492 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305182F Eastern Space Launch Facility (Space)
PROJECT NO. AND NAME 4137 Range Standardization and Automation (RSA) Program	

(U) FY 1996

–	(U) $31,779	Continue RSA Phase I Contract: Complete design, begin integration of CIF for Antigua; complete design, begin integration of CCAS communications network; complete design, begin integration of Consolidated Telemetry Processing System (CTPS).
–	(U) $9,800	Awarded RSA Phase IIA Contract in Nov 95: Initiate range architecture design, including instrumentation, weather, surveillance, Western Range Operations Control Center (WROCC) systems, centralized data processing, and optical systems for both ranges. Contract will continue through 2006.
–	(U) $2,800	Continue ROCC Engineering Services Contract.
–	(U) $3,900	Program support includes System Program Office, Air Logistics Center support, and Aerospace support.
–	(U) $48,279	Total

(U) FY 1997

–	(U) $11,004	Continue RSA Phase I Contract: Integrate and begin test of Consolidated Instrumentation Facility (CIF); integrate and begin test of communications network; integrate and begin test of CTPS.
–	(U) $20,500	Continue RSA Phase IIA Contract: Complete range architecture design; develop weather, optical instrumentation, Control & Display basic infrastructure, and begin integration and test of first delivery increment.
–	(U) $4,200	Program support includes System Program Office, Air Logistics Center support, and Aerospace support.
–	(U) $35,704	Total

(U) Acquisition Strategy:

The RSA Phase I Contract now underway will provide Consolidated Instrumentation Facilities (CIF) at Antigua and Ascension, satellite communications from these sites to the Eastern Range Operations Control Center, a Central Telemetry Processing System for both ranges, and Cape Canaveral Air Station communications network upgrades. An FY96 RSA Phase IIA contract was awarded to provide design and integration of the complete range architecture, and also procure a Western Range Operations Control Center, imaging systems, communications systems, mobile metric, telemetry and command assets, surveillance systems, weather data collection and prediction systems, debris tracking systems, planning and scheduling systems and data processing/display systems. An FY99 follow-on equipment contract will provide the primary telemetry receiving, radar, and command systems. Funding for RSA design and integration for both Eastern and Western Ranges is consolidated in this Eastern Range program element to reflect the standard range being developed for both ranges. A parallel sustaining improvement and modernization activity for existing range systems is separately funded with procurement funds.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305182F Eastern Space Launch Facility (Space)

PROJECT NO. AND NAME: 4137 Range Standardization and Automation (RSA) Program

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996*	FY 1997**	Total Cost
(U) Previous President's Budget	42,710	52,272	37,893	Continuing
(U) Appropriated Value	42,710	52,272		
(U) Adjustments to Appropriated Value				
a. Congressional/General	- 466	-1,023		
b. SBIR	-891	-1,225		
c. Omnibus and other Above Threshold	-2,500	-745		
d. Adjustments to Budget Years			-2,189	
e. Below Threshold Reprogramming	-361	-1,000		
(U) Current Budget Submit/President's Budget	38,492	48,279	35,704	Continuing

(U) Change Summary Explanation:

Funding:

* The FY96 PB amount does not reflect funding reductions that are reserved for other DoD reprogramming needs ($546)

**-$189 for RDT&E O&M Reduction, FY97 BES; -$2,000 for Non-pay Inflation

Schedule: RSA Phase IIA contract awarded Nov 95.

Technical: None.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305182F Eastern Space Launch Facility (Space)

PROJECT NO. AND NAME: 4137 Range Standardization and Automation (RSA) Program

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Complete	Total Cost
(U) Other Procurement *	88,688	80,723	72,404	85,849	76,686	59,646	59,147	Continuing	Continuing
(U) MILCON **	1,750			27,200					

Related RDT&E:

(U) Not Applicable.

* In addition to RSA, includes funds required for ongoing Eastern Range sustaining improvement and modernization (I&M) program. Western Range I&M is included in PE #35181F.

** PE #305182F MILCON funds are associated with non-RSA facilities. FY98 MILCON funds are in PE 35181F, for Western Range Operations Control Center (WR OCC) to house WR OCC RSA systems.

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) ROCC Operational Test & Evaluation Completion	X											
(U) RSA Phase I System Design Review	X											
(U) ROCC Turnover		X										
(U) RSA Phase I Prelim Design Review					X							
(U) Software Maintenance Facility Compl					X							
(U) RSA Phase IIA Contract Award					X							
(U) RSA Phase I Critical Design Review								X				
(U) RSA Phase IIA System Reqmt Review								X				
(U) RSA Phase IIA System Design Review									X			
(U) RSA Phase I Developmental T&E												X
(U) RSA Phase IIA Integration & Test First Delivery												X

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305182F Eastern Space Launch Facility (Space)
PROJECT NO. AND NAME 4137 Range Standardization and Automation (RSA) Program	

(U) Other Events Beyond BY+1	
(U) RSA Phase I Antigua Installation	1st Qtr FY99
(U) RSA Phase I Cape FO Network Inst'l	4th Qtr FY98
(U) RSA Phase I SATCOM Installation	4th Qtr FY98
(U) RSA Phase I Ascension Installation	1st Qtr FY99
(U) RSA Phase IIA Integration & Test Second Delivery	4th Qtr FY99
(U) RSA Phase I WR CTPS Installation	2nd Qtr FY99
(U) RSA Phase I Operational T&E	3rd Qtr FY99
(U) RSA Phase I System Turnover	3rd Qtr FY99
(U) RSA Follow-on Equipment Contract	2nd Qtr FY99

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305182F Eastern Space Launch Facility (Space)

PROJECT NO. AND NAME: 4137 Range Standardization and Automation (RSA) Program

(U) A. Project Cost Breakdown ($000 in Thousands)

	FY 1995	FY 1996	FY 1997
(U) RSA Phase I Contract	25,785	31,779	11,004
(U) RSA Phase IIA Contract		9,800	20,500
(U) ROCC Engineering Services	8,734	2,800	
(U) Program Support	3,973	3,900	4,200
(U) Other RSA			
(U) Dual Use Launch Facility Grant Program			
(U) Total	38,492	48,279	35,704

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Total Program
Product Development Organizations									
Harris Corp /Loral (RSA Phase I)	CPAF	Jun 93	119,600	134,332	19,371	25,785	31,779	11,004	134,332
Loral Corp (RSA Phase IIA)	CPAF	Nov 95	161,305	161,305	0	0	9,800	20,500	161,305
Harris Corp. (ROCC Eng'r Services)	CPAF	Apr 94	24,270	24,345	12,811	8,734	2,800	0	24,345
Various (Other RSA)	Various	Various	N/A	N/A	2,913	0	0	0	2,913

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305182F Eastern Space Launch Facility (Space)
PROJECT NO. AND NAME 4137 Range Standardization and Automation (RSA) Program	

(U) **B. Budget Acquisition History and Planning Information Continued ($ in Thousands)**

Various (Dual Use Launch Grants)	Grants	Various	N/A	N/A	10,000	0	0	0	10,000
Support /Management Mission Support	Various	Various	N/A	N/A	4,757	3,973	3,900	4,200	Cont.
Test and Evaluation Organizations TBD	TBD	1998	N/A	N/A	0	0	0	0	TBD

Government Furnished Property: RSA Phase IIA contract awarded Nov 95; process underway to identify GFE

Contractor or Government Performing Activity	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Subtotal Product Development	45,095	34,519	44,379	31,504	Continuing	Continuing
Subtotal Support and Management	Cont.	3,973	3,900	4,200	Continuing	Continuing
Subtotal Test and Evaluation	N/A	N/A	N/A	N/A	TBD	TBD
Total Project	Cont.	38,492	48,279	35,704	Continuing	Continuing

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305906F NCMC-TW/AA Systems

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	127,446	63,554	31,692	7,623	5,291	4,498	4,600	Continuing	Continuing
3880 CMU	81,190	46,947	21,375	608	122	0	0	0	1,311,250
3881 Integrated TW/AA	13,756	8,861	5,562	5,375	4,115	4,498	4,600	Continuing	Continuing
4409 Legacy Interfaces	32,500	7,746	4,755	1,640	1,054	0	0	0	47,695

(U) A. Mission Description and Budget Item Justification

This program element funds the replacement systems for the Cheyenne Mountain Complex (CMC) which provides the Command, Control, Communications and Computers (C4) in support of the Integrated Tactical Warning/Attack Assessment (Integrated TW/AA) system. This program incrementally upgrades and replaces the current operational systems without loss of attack warning capability during the phased transition. The CMC supports the Commander-in-Chief (CINC) North American Aerospace Defense Command (NORAD)/CINC US Space Command in providing the National Command Authorities, USSTRATCOM and other forward users with early warning (missile, air, and space) and assessment of attack on North America or its allies.

This program element has three related projects: The first project, Cheyenne Mountain Upgrade (CMU), is six acquisitions that are supported by both the second and third project. The second project, Integrated TW/AA System Engineering, provides interface analysis and disconnect resolution between CMU and over twenty other Integrated TW/AA systems and program upgrades and supports the development of the Cheyenne Mountain Training System (CMTS). The third project, Legacy Interfaces, provides software development upgrades to post-IOC CMU subsystems and direct mission software support to meet operational needs.

This program element is research category/budget activity code 7 (Operational System Development) because it involves post-Milestone Three efforts, and the projects in this program element support development acquisition programs or upgrades.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305906F NCMC-TW/AA Systems

(U) **Acquisition Strategy:**

The CMU program was restructured in FY 1994 to implement an acquisition strategy that tests and delivers four phases of user capability. Phase 1 implemented the complete missile warning capability in Sep 1995. Phases 2/3/4 will test and implement CMU capabilities in annual blocks (with O&M version releases) and incorporate upgrades and changes to meet evolving user requirements.

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996*	FY 1997
(U) Previous President's Budget	100,520	60,897	27,895
(U) Appropriated Value	133,020	68,797	
(U) Adjustments to Appropriated Value			
a. Cong Reductions	-2,793	-2,717	
b. SBIR	-2,748	-1,532	
c. Omnibus or Other Above Threshold Reprogram		-994	
d. Below Threshold Reprogramming	-33		
(U) Adjustments to Budget Years Since FY96 PB			3,797
(U) Current Budget Submit/President's Budget	127,446	63,554	31,692

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305906F NCMC-TW/AA Systems

(U) Change Summary Explanation:

Funding: FY 96 amount does not reflect the funding used for Below Threshold reprogrammings MSTI (PE 64441F - $575). FY95 appropriated value is $32,500 greater than PB request due to a Congressional transfer of $41,500 in O&M funds to RDT&E, and a Congressional reduction of $9,000 in RDT&E. FY 96 appropriated value is $7,900 greater than PB due to Congressional transfer of O&M funds to RDT&E for software development. Adjustments to Budget Years Since FY96 PB include -$139 in FY97 due to an O&M Reduction and an FY 97 reduction of -$964 for inflation rate adjustment as well as an increase ($4,900 in FY97) transferred from O&M for software development work being accomplished in the Space & Warning Systems Center (SWSC).

* The FY96 PB amount does not reflect funding reductions that are reserved for other DoD reprogramming (-$719)

Schedule: Phase 1 (complete missile warning) was implemented in Sep 1995, two months ahead of schedule. Acquisition approach tests and implements Phase 2 (survivable communications) and accomplishes IOT&E by Aug 1996. Phases 3 and 4 (development of subsystem capability and software upgrades) are tied to annual O&M version releases.

Technical: No change.

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Other Procurement *	5,710	9,164	5,321	3,244	1,228	1,816	1,857	Cont	Cont
(U) Operations & Maintenance	42,600	103,000	97,400	94,600	85,700	84,800	87,100	Cont	Cont

* Includes spares for CMU and CINC Mobile Alternate Headquarters (CMAH).

Related RDT&E:

(U) #604441F, Space-Based Infrared System
(U) #305910F, Spacetrack
(U) #305911F, Defense Support Program

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305906F NCMC-TW/AA Systems

(U) **D. Schedule Profile**

	FY96				FY97			
	1	2	3	4	1	2	3	4
(U) CMU Phase 1 Operational Acceptance								
(U) Missile Warning IOT&E				x				
(U) CMU Phase 2 Operational Acceptance				x				
(U) Air Warning Mission Operational Acceptance							x	
(U) CMU Phase 3 Operational Acceptance								x
(U) Space Control Mission Operational Acceptance (Jun 98)								
(U) CMU Phase 4 Operational Acceptance (Aug 98)								
(U) CMU Integrated Mission IOT&E (Mar 99)								

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305906F NCMC-TW/AA Systems

PROJECT NO. AND NAME: 3880 CMU

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3880 CMU	81,190	46,947	21,375	608	122	0	0	0	1,311,250

(U) **A. Mission Description and Budget Item Justification**

The CMU program must meet Joint Chiefs of Staff (JCS) requirements to provide the National Command Authorities with timely, reliable, and unambiguous Integrated TW/AA data for force survival or retaliatory decisions in the face of air, space, or ballistic missile threats. The program will provide: 1) survivable communications access for missile attack warning; 2) integrated warning of ballistic missile, atmospheric, and space threats; 3) standard user displays and warning processing systems at selected command centers; 4) an austere alternate facility capable of early/trans-attack warning and peacetime backup to the Missile Warning Center at Cheyenne Mountain. The CMU program implements an acquisition strategy that tests and delivers four phases of user capability. Phase 1 implemented the missile warning capability in Sept 1995. Phases 2/3/4 will test and implement CMU capabilities in annual blocks completing all planned capabilities by Aug 1998, with CMU Integrated Mission IOT&E completed by Mar 1999.

(U) FY 1995

- (U) Completed Phase 1 (scheduled for Nov 95) in Sep 95, to include:
- (U) $1,329 SCIS Mini-Net (5 Sep 95)
- (U) $11,616 SPADOC 4C version 2 achieved Operational Acceptance (OA) at Cheyenne Mountain using CSS on 19 Jul 95
- (U) $17,519 Dual node missile warning at APCC (Sept 95)
- (U) Initiate Phase 2, to include:
- (U) $11,616 SPADOC 4C version 2 with CSSR
- (U) $16,480 SCIS I4 (Sensor Summary Processing)
- (U) $3,738 Automatic Tracking and Monitoring System (ATAMS) Phase 1 for CSSR
- (U) Initiate Phase 3, to include:
- (U) $2,024 Missile Warning Remoting Capability
- (U) $16,912 Granite Sentry (Air Warning) at Cheyenne Mountain
- (U) $-44 misalignment with Project 3881, Integrated TW/AA, this PE
- (U) $81,190 Total according to Data Bse records **(True program total = $81,234)**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305906F NCMC-TW/AA Systems
PROJECT NO. AND NAME 3880 CMU	

(U) FY 1996

–	(U) $15,739	Complete CMU Phase 2 (Aug 96) after Missile Warning IOT&E; deliver Survivable Secure Communications Network Phase 2 (Aug 96) and SCIS (I4)/Processing and Display System (May 96)
–	(U) $2,167	ATAMS Phase 1 (Sep 96)
–	(U)	Continue CMU Phase 3 to include:
–	(U) $2,443	Missile Warning remote from APCC and SSCN Phase 3
–	(U) $10,756	Granite Sentry (Air Warning) at Cheyenne Mountain
–	(U)	Initiate Phase 4 to include:
–	(U) $14,712	SPADOC 4C version 2 interface development and testing with CSSR
–	(U) $1,130	$1,130 realignment in work to project 3881 for ICD development
–	(U) $46,947	Total according to Data Base **(True program total = $45,817)**

(U) FY 1997

–	(U) $8,459	Complete Phase 3 (Aug 97) with operational acceptance of Granite Sentry, completion of SSCN Phase 3 and Missile Warning remote capability:
–	(U)	Continue Phase 4, to include:
–	(U) $6,950	CMU interoperability testing with CSSR
–	(U) $5,966	SPADOC 4C version 2 interface development with CSSR
–	(U) $21,375	Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305906F NCMC-TW/AA Systems
PROJECT NO. AND NAME 3880 CMU	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Previous President's Budget	86,808	51,446	22,135
(U) Appropriated Value	77,808	51,446	
(U) Adjustments to Appropriated Value			
a. Cong Reductions	- 2,793	-1,973	
b. SBIR	- 2,748	-1,532	
c. Project Realignment	+ 9,000	-1,130	
d. BPAC Misalignment	-44	1,130	
e. Below Threshold Reprogramming	- 33		
f. Omnibus or Other Above Threshold Reprogram		-994	
(U) Adjustments to Budget Years Since FY96 PB			-760
(U) Current Budget Submit/President's Budget	*81,190	*46,947	21,375

(U) Change Summary Explanation:

*Funding: FY95 appropriated value is $9,000 less than President's Budget request due to a Congressional reduction for Air Warning processor at APCC. Project Realignment reflects a transfer of $9,000 from project 4409 to project 3880 and misalignment with 3881 of ($44) in FY95, and $1,130 from 3880 to 3881 in FY96 for Congressionally directed Interface Control System development. Adjustments to Budget Years Since FY96 PB include a decrease (-$110) due to an O&M Reduction and (-$650) due to non-pay inflation in FY97.

Schedule: Phase 1 completed (missile warning) Sep 1995. Acquisition approach tests and implements Phases 2, 3 and 4 (development of subsystem capability and software upgrades) are tied to annual O&M version releases.

Technical: Includes Missile Warning remote from APCC and development of ATAMS.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305906F NCMC-TW/AA Systems
PROJECT NO. AND NAME 3880 CMU	

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Other Procurement *	5,710	9,164	5,321	3,244	1,228	1,816	1,857	Cont	Cont
(U) Operations & Maintenance	42,600	103,000	97,400	94,600	85,700	84,800	87,100	Cont	Cont

* Includes spares for CMU and CINC Mobile Alternate Headquarters (CMAH).

(U) D. **Schedule Profile**

	FY1995				FY1996				FY1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) CMU Phase 1 Operational Acceptance				x								
(U) Missile Warning IOT&E								x				
(U) CMU Phase 2 Operational Acceptance								x				
(U) Air Warning Mission Operational Acceptance											x	
(U) CMU Phase 3 Operational Acceptance												x
(U) Space Control Mission Operational Acceptance (Jun 98)												
(U) CMU Integrated Mission IOT&E (Mar 99)												

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305906F NCMC-TW/AA Systems
PROJECT NO. AND NAME 3880 CMU	

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Major Contract Incremental Funding	38,987	11,264	1,732
(U) Award/Performance Fee	3,284	2,242	409
(U) Target To Ceiling/Overrun	0	1,296	345
(U) ECPs/Correction of Deficiencies/Incomp	6,955	3,592	3,004
(U) Interoperability/Test Support	6,832	6,441	5,480
(U) Pre-Operational Support/SWSC Maintenance	0	0	
(U) Type I Training/TDY	665	100	
(U) SSCN/SCIS Fallback/Secure Voice Tell Network	1,231	1,221	
(U) Tech Manuals	38	10	3
(U) Missile Warning Remote Display	1,874	304	200
(U) SPO Support			
(U) MITRE	10,951	9,091	5,255
(U) TEMS/SDAS/WSI/SAIC/NSR	7,122	7,040	3,368
(U) Program Support	3,056	2,941	1,579
(U) Other Support	239	275	0
(U) Adjustment for BPAC misalignment	-44	1,130	
(U) Data Base Total for CMU Project (See R-2 for actuals)	81,190	46,947	21,375

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305906F NCMC-TW/AA Systems
PROJECT NO. AND NAME 3880 CMU	

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands)**
Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Loral Aerospace CO Springs CO	C/CPIF/AF	Oct 91	69,300	69,300	258,081	9,525	4,054	3,920	353	275,933
E-Systems St Petersburg FL		Aug 86	107,000	106,500	88,642	11,934	7,529	0	0	108,105
TRW, Inc Carson CA	C/FPI/AF	Jun 87	168,022	167,850	201,203	10,337	2,163	0	0	213,703
GTE Needham Hgts MA	C/CPIF/AF	Jan 92	16,500	16,500	224,754	11,908	5,759	3,277	0	245,698
Martin-Marietta CO Springs CA	SS/CPIF/AF	Mar 93	38,400	40,200	101,248	12,354	5,330	3,773	0	122,705
DISA (Govt) Reston VA	PO	Oct 93	9,871	9,871	7,419	1,231	1,221	0	0	9,871
KAMAN Sciences CO Springs, CO	AF616/C	Aug 95	2,378	2,378	0	1,874	304	200	0	2,378
Support and Management Organizations										
MITRE	SS/PR	Oct 95	N/A	N/A	142,990	10,951	9,091	5,255	177	168,464
TEMS	C/PR	Oct 95	N/A	N/A	55,189	7,122	7,040	3,368	84	72,803
Program Support	Various	Nov 95	N/A	N/A	82,568	3,998	3,326	1,582	116	91,590

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305906F NCMC-TW/AA Systems
PROJECT NO. AND NAME 3880 CMU	

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Test and Evaluation Organizations N/A										

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property: Not Applicable.

Subtotal Product Development	881,347	59,163	26,360	11,170	353	978,393
Subtotal Support and Management	280,747	22,071	19,457	10,205	377	332,857
Subtotal Test and Evaluation						
Adjustment for BPAC misalignment		-44	1,130			
Total Project (See R-2 for actuals)	1,162,094	81,190	46,947	21,375	730	*1,311,250

*Total is actual program total NOT summation of this row which reflects Data Base records

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305906F NCMC-TW/AA Systems

PROJECT NO. AND NAME: 3881 Integrated TW/AA

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3881 Integrated TW/AA	13,756	8,861	5,562	5,375	4,115	4,498	4,600	Continuing	Continuing

(U) A. **Mission Description and Budget Item Justification**

This project was set up in 1989 when Air Force recognized the phased transition of CMU program into the Integrated TW/AA network could only be achieved through rigorous system-of-systems design and engineering analysis of all interfaces and relationships among the twenty-six systems of the network. This project provides for the efficient integration of CMU through interface analysis, schedule management and disconnect resolution between CMU and over twenty other Integrated TW/AA systems and program upgrades as required to support the Integrated TW/AA network's continually evolving system-of-systems (e.g., Space-Based Infrared System) and changes driven by new missions/threats.

(U) FY 1995

(U) $4,517	Systems Engineering Integration and Test (SEIT): Provide operation integration of CMU Phase 1 installation, check-out, test and assessment; maintain program schedule; identify, track and resolve CMU disconnects
(U) $3,111	Technical Performance Evaluation (TPE): Maintain CMU technical baseline; evaluate CMU performance and track to prescribed requirements; provide system engineering for CMU Phase 1
(U) $5,457	Cheyenne Mountain Training System (CMTS): Continue to support CMTS program currently funded by multiple PEs
(U) $627	Interface Control System development
(U) $44	misalignment with Project 3881, Integrated TW/AA, this PE
(U) $13,756	Total according to data base records **(Actual Program Total = $13,712)**

(U) FY 1996

(U) $4,796	SEIT: Provide operation integration of CMU Phase 2 installation, check-out, test and assessment; maintain program schedule; identify, track and resolve CMU disconnects
(U) $1,922	TPE: Maintain CMU technical baseline; evaluate CMU performance and track to prescribed requirements; provide system engineering for CMU Phase 2
(U) $2,143	CMTS: Continue to support CMTS program
(U) $1,130	Interface Control System Development
(U) $-1,130	realignment in work to project 3881 for ICD development
(U) $8,8611	Total according to data base records **(Actual Program Total = $9,991)**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305906F NCMC-TW/AA Systems
PROJECT NO. AND NAME 3881 Integrated TW/AA	

(U) FY 1997

(U) $4,430 SEIT: Provide operation integration of CMU Phase 3 installation, check-out, test and assessment; maintain program schedule; identify, track and resolve CMU disconnects

(U) $1,132 TPE: Maintain CMU technical baseline; evaluate performance and track to prescribed requirements; provide system engineering for Phase 3

(U) $5,562 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Previous President's Budget	13,712	9,451	5,760
(U) Appropriated Value	13,712	9,451	
(U) Adjustments to Appropriated Value			
a. Cong Reductions		-590	
b. Project realignment		+1,130	
c. BPAC misalignment	44	-1,130	
d. Omnibus or Other Above Threshold Reprogram			
e. Below Threshold Reprogramming			
(U) Adjustments to Budget Years Since FY96 PB			- 198
(U) Current Budget Submit/President's Budget	13,756	8,861	5,562

(U) Change Summary Explanation:

Funding: Adjustments include FY95 BPAC misalignment ($44), a realignment (ZBT) of $1,130 in FY96 from Project 3880 (CMU) to 3881 (ITW/AA) for Congressionally directed Interface Control System development and decreases ($29) due to O&M Reduction and $169 for non-pay inflation in FY97.

Schedule: No change.

Technical: No change.

(U) C. Other Program Funding Summary ($ in Thousands)

(U) Not Applicable.

(U) D. Schedule Profile

(U) Not Applicable. This is a sustaining engineering effort that supports project 3880 with no distinct milestones.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305906F NCMC-TW/AA Systems

PROJECT NO. AND NAME: 3881 Integrated TW/AA

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Major Contract Incremental Funding	100	0	0
(U) Award/Performance Fee	227	258	0
(U) CMTS Systems Integration	4,197	1,885	0
(U) Interface Control System Development	627	1,130	
(U) SPO Support			
(U) MITRE	4,659	4,403	2,672
(U) TEMS/WSI	3,714	2,302	2,638
(U) Program Support	188	13	252
(U) Adjustment for BPAC misalignments	*44*	*-1,130*	
(U) Total ITW/AA Project	13,756	8,861	5,562

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
DISA	MIPR	Arp 96	1,130	1,130			1,130			1,130
LORAL Aerospace CO Springs, CO	C/CPIF/AF	Jun 95*	6,444	6,444		4,257	2,143			6,400
Support and Management Organizations										
MITRE	SS/PR	Oct 95	N/A	N/A	34,654	4,659	4,403	2,672	Cont	46,388

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305906F NCMC-TW/AA Systems
PROJECT NO. AND NAME 3881 Integrated TW/AA	

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
DISA	MIPR	Arp 96	1,130	1,130			1,130			1,130
LORAL Aerospace CO Springs, CO	C/CPIF/AF	Jun 95*	6,444	6,444		4,257	2,143			6,400
TEMS	C/PR	Oct 95	N/A	N/A	20,374	4,341	2,302	2,638	Cont	Cont
Program Support	N/A	Nov 95	N/A	N/A	6,537	188	13	252	Cont	Cont
Prime Contractors	(Various)				545	267	0	0	TBD	TBD
Test and Evaluation Organizations N/A										
Subtotal Product Development						4,257	3,273			7,530
Subtotal Support and Management					62,110	9,455	6,718	5,562		Cont
Subtotal Test and Evaluation										
Adjustments for BPAC misalignment						*44*	*-1,130*			
Total Project					62,110	13,756	8,861	5,562		Cont

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property:
Not Applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305906F NCMC-TW/AA Systems

PROJECT NO. AND NAME: 4409 Legacy Interfaces

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4409 Legacy Interfaces	32,500	7,746	4,755	1,640	1,054	0	0	0	47,695

(U) A. **Mission Description and Budget Item Justification**

The FY95 Appropriations Conference Committee transferred $41.5M from the O&M Critical Space Contract Operations Line to the RDT&E R-1 line in this program element. Congress realigned these funds from O&M to RDT&E to identify the costs associated with CMU software development upgrades to the CMU program. To clearly account for this funding, this project, Legacy Interfaces, was established. This project provides funding for software development upgrades to the CMU program and for direct mission software support to meet operational needs.

(U) FY 1995

(U) $7,271	Provide SPADOC software maintenance support
(U) $1,880	Provide SCIS software maintenance support
(U) $12,453	Provide Cheyenne Mountain Air Station (CMAS) software support
(U) $8,139	Provide warning systems software support/upgrades
(U) $2,757	Provide CMAS software upgrades
(U) $32,500	Total

(U) FY 1996

(U) $1,582	Provide SPADOC software support/upgrades
(U) $3,176	Provide Cheyenne Mountain software support/upgrades
(U) $2,988	Provide Warning Systems software support/upgrades
(U) $7,746	Total

(U) FY 1997

(U) $2,759	Provide warning system software upgrades for space, communications, and missile warning systems at Cheyenne Mountain
(U) $1,996	Provide Cheyenne Mountain complex test support to include scenario development and development network software engineering
(U) $ 4,755	Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305906F NCMC-TW/AA Systems
PROJECT NO. AND NAME 4409 Legacy Interfaces	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Previous President's Budget	0	0	0
(U) Appropriated Value	41,500	7,900	
(U) Adjustments to Appropriated Value			
a. Cong Reductions		-154	
b. SBIR			
c. Project Realignment	- 9,000		
d. Below Threshold Reprogramming			
(U) Adjustment to budget years since FY96 PB			4,755
(U) Project Total	32,500	7,746	4,755

(U) Change Summary Explanation:

Funding: FY95 funding was provided by Congressional transfer. Project Realignment reflects a transfer of $9,000 to project 3880. Funding increase in FY96 (+7,900) was Congressional transfer from O&M for software development. Funding increases in FY97 (+$4,900), FY98 (+$1,700), and FY99 (+$1,100) is in response to FY95 and FY96 Congressional transfer from O&M for software development work being accomplished in the SWSC. Funding decreases in FY97 (-$145), FY 98 (-$60) and FY 99 (-$46) due to non-pay inflation.

Schedule: No change.

Technical: No change.

(U) **C. Other Program Funding Summary ($ in Thousands)**

(U) Not Applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305906F NCMC-TW/AA Systems
PROJECT NO. AND NAME 4409 Legacy Interfaces	

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) SPADOC software support/upgrades	x-------	--------	--------	--------	--------	--------	-------	-------x				
(U) SCIS software support	x-------	--------	--------	-------x								
(U) CMAS software support	x-------	--------	--------	--------	--------	--------	--------	-------x				
(U) Warning systems software support/upgrades					--------	--------	--------	--------	--------	--------	--------	------x
(U) CMC Test Support									x------	-------	-------	------x
(U) CMAS software upgrades					x------	--------	--------	--------	--------	--------	--------	-------x

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305906F NCMC-TW/AA Systems
PROJECT NO. AND NAME 4409 Legacy Interfaces	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Major Contract Incremental Funding	29,548	7,096	4,280
(U) Award/Performance Fee	2,952	650	475
(U) Total Legacy Interfaces Project	32,500	7,746	4,755

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Loral Aerospace CO Springs CO	C/AF	Oct 94	8,853	8,853	0	7,271	1,582			8,853
E-Systems St Petersburg FL	C/AF	Oct 94	1,880	1,880	0	1,880				1,880
Kaman Sciences CO Springs CO	C/AF	Oct 94	15,629	15,629	0	12,453	3,176			15,629
Kaman Sciences CO Springs CO	C/AF	Oct 94	12,437	12,437	0	8,139	2,988	1,310		12,437
Navy/NISE	MIPR	Sep 95	2,757	2,757	0	2,757				2,757
TBD	C/AF	Oct 96	N/A	6,139	0			3,445	2,694	6,139
Support and Management Organizations										

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305906F NCMC-TW/AA Systems
PROJECT NO. AND NAME 4409 Legacy Interfaces	

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Test and Evaluation Organizations N/A										
(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)										
Government Furnished Property: Not Applicable.										
Subtotal Product Development						32,500	7,746	4,755	2,694	47,695
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project						32,500	7,746	4,755	2,694	47,695

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305910F Spacetrack (Space)

	COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	40,724	54,705	18,867	0	0	0	0	0	Continuing
2295	Space Surveil Net Improvement Pgm (SSNIP)*	8,680	7,909	0	0	0	0	0	0	Continuing
4239	Air Force Maui Optical Station*	5,454	6,132	0	0	0	0	0	0	Continuing
4241	Advanced Electro Optical System	17,500	16,886	13,427	0	0	0	0	TBD	TBD
4279	Have Stare Radar**	9,090	23,778	5,440	0	0	0	0	TBD	TBD

* Note: These sustainment efforts were not terminated but will continue in the Operations & Maintenance (O&M 3400 Appropriation) from FY97 and on.

** Note: The rephasing and additional funding in FY 97/99 needed to complete this project remain to be determined subsequent to pending overseas siting decision.

(U) A. **Mission Description and Budget Item Justification**

The SPACETRACK program element represents a worldwide space surveillance network (SSN) of dedicated, collateral, and contributing electro-optical, passive radio frequency (RF) and radar sensors. The SSN is tasked to provide space object cataloging and identification, satellite attack warning, timely notification to U.S. forces of satellite fly-over, space treaty monitoring, and scientific and technical intelligence gathering. The continued increase in satellite and orbital debris populations, as well as the increasing diversity in launch trajectories, non-standard orbits, and geosynchronous altitudes, necessitates continued modernization of the SSN to meet existing and future requirements and ensure their cost-effective supportability. SPACETRACK also developed the systems interfaces necessary for the command and control, targeting, and damage assessment of a potential future U.S. Anti-satellite (ASAT) system. The Image Information Processing Center and Supercomputing facility for the Air Force Maui Optical Station (AMOS), were transferred to PE 62601F in FY92. The resources and responsibility for completing the HAVE STARE Radar System development were transferred to SPACETRACK from an intelligence program per Congressional direction in FY93. All of these projects are Budget Activity/Research Category Operational Systems Development because they involve development of or modifications to operational sensor network sites.

(U) **Acquisition Strategy:**

Except for the Congressionally-directed Maui Space Surveillance Site facilities expansion project, AEOS, and the HAVE STARE radar acquisition, the other projects in this Program Element are sustaining engineering infrastructure support operations and maintenance efforts.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305910F Spacetrack (Space)

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996*	FY 1997	Total Cost
(U) Previous President's Budget	49,874	35,583	12,139	Continuing
(U) Appropriated Value	54,896	58,383		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	- 1,072	- 1,525		
b. SBIR	- 1,136	- 1,305		
c. Omnibus or Other Above Threshold Reprogram	- 7,119	- 848		
d. Below Threshold Reprogramming	- 5,045			
e. Adjustment to BTR not accounted for	200			
(U) Adjustments to Budget Years Since FY96 PB			6,728	
(U) Current Budget Submit/President's Budget	40,724	54,705	18,867	Continuing

(U) Change Summary Explanation:

Funding: FY95 Appropriated Value reflects a Congressional addition of $17,500 for AEOS project and $3,000 for HAVE STARE project. FY95 BTR reflects a reprogramming of funds to PE 0207247F, PE 0301315F and PE 0305164F. Adjustments to Budget Years Since FY95 PB reflects funding transfer of level-of-effort engineering sustainment support to Operations & Maintenance account, reduction to Command, Control and Communications (C3) programs and reductions for inflation. Projects 2295 and 4239 have evolved into sustainment efforts and so have been transferred to the Operations & Maintenance (O&M 3400 Appropriation) from FY 97 and on. Rephasing and additional funding needed to complete the HAVE STARE project is yet to be determined subsequent to the pending overseas siting decision. Air Force budget increase for AEOS project continuation was the largest change in FY 97.

* The FY96 PB amount does not reflect funding reductions that are reserved for other DoD reprogramming needs ($610)

Schedule: HAVE STARE IOC is delayed to FY98/99 due to delay in overseas site selection.

Technical: None.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305910F Spacetrack (Space)

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Other Procurement Space Mods with Initial Spares	16,501	18,953	14,983	4,267	9,019	6,855	5,150	Cont	Cont

Related RDT&E:
(U) Program Element #0305906F, NORAD Cheyenne Mountain Complex Tactical Warning/Attack Assessment System of Systems.

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) GEODSS Telescopes O&M Mods												
(U) Implementation & sustainment								x				
(U) ASAT BMC3												
(U) Administrative Contract Close-Out		x										
(U) AEOS telescope/facility												
(U) Factory acceptance/occupancy				x					x			
(U) HAVE STARE radar												
(U) Overseas site selection decision						x						

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305910F Spacetrack (Space)

PROJECT NO. AND NAME: 2295 Space Surveil Net Improvement Pgm (SSNIP)*

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2295 Space Surveil Net Improvement Pgm (SSNIP)*	8,680	7,909	0	0	0	0	0	0	Continuing

(U) A. Mission Description and Budget Item Justification

Space surveillance includes space object cataloging and identification and supports the Space Defense missions of weapons support, attack warning for U.S. satellites, maintenance of space order of battle, cover-up alerts, and identification/assessment of space objects. The Space Surveillance Network Improvement Program (SSNIP) provides the sustaining engineering to correct identified deficiencies in support of those mission requirements. SSNIP also implements modifications required to reduce supportability/maintainability O&M costs. SSNIP efforts currently include reducing uncorrelated target (UCT) errors, orbital debris measurement and research, communications/data link optimization, system architecture analyses and changes to the Ground-based Electro-Optical Deep space Surveillance System (GEODSS). This activity will continue as part of normalized sustaining engineering support services in the 3400 O&M appropriation account from FY 97 and on. This project is an Operational Systems Development Budget Activity because it involves a level-of-effort for sustained engineering support for development of, or modifications to, an operational SPACETRACK network site.

(U) FY 1995

- (U) $2,008 Continued GEODSS telescopes and Eglin FPS-85 radar O&M cost reduction modifications.
- (U) $386 Continued astrodynamic standards, star catalog maintenance and deep space anomaly detection efforts to improve the accuracy of orbital element data, to improve consistency between sensors and to correct basic inadequacies of existing models for non-standard orbits.
- (U) $6,286 Continued systems engineering level-of-effort to define and support required sensor investment programs for FY96 implementation..
- (U) $8,680 Total

(U) FY 1996

- (U) $4,700 Continue level-of-effort support to GEODSS and Eglin O&M cost reduction modifications.
- (U) $2,109 Continue systems engineering level-of-effort to define, analyze and model operating and maintenance sustainment efforts for FY 97 and on.
- (U) $1,100 Continue astrodynamic standards, star catalog maintenance and deep space anomaly detection efforts to improve the accuracy of orbital element data, to improve consistency between sensors and to correct basic inadequacies of existing models for non-standard orbits.
- (U) $7,909 Total

(U) FY 1997

- (U) $0 Not Applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305910F Spacetrack (Space)
PROJECT NO. AND NAME 2295 Space Surveil Net Improvement Pgm (SSNIP)*	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	9,343	9,822	3,642	Continuing
(U) Appropriated Value	9,343			
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions		- 465		
b. SBIR	- 663	- 1,305		
c. Omnibus or Other Above Threshold Reprogram		- 143		
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY96 PB			- 3,642	
(U) Current Budget Submit/President's Budget	8,680	7,909	0	Continuing

(U) Change Summary Explanation:

Funding: Reflects transition to the sustainment phase funded via the O&M 3400 appropriation account.

Schedule: None.

Technical: None.

(U) **C. Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Other Procurement									
(U) Space Mods with Initial Spares	16,501	18,953	14,983	4,267	9,019	6,855	5,150	Cont	Cont

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305910F Spacetrack (Space)
PROJECT NO. AND NAME 2295 Space Surveil Net Improvement Pgm (SSNIP)*	

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) GEODSS cost savings mods												
(U) Implementation and sustainment									x			

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305910F Spacetrack (Space)
PROJECT NO. AND NAME 2295 Space Surveil Net Improvement Pgm (SSNIP)*	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Sustaining Engineering Level-of-Effort	8,680	7,909	0
(U) Total	8,680	7,909	0

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Not Applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305910F Spacetrack (Space)

PROJECT NO. AND NAME: 4239 Air Force Maui Optical Station*

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4239 Air Force Maui Optical Station*	5,454	6,132	0	0	0	0	0	0	Continuing

(U) A. Mission Description and Budget Item Justification

AMOS serves as a national R&D testbed for electro-optics and imaging technology supporting government and academic communities. It also provides operational data to AFSPC: infrared signature data and compensated imaging data used for space object identification and mission/payload assessment. Other government labs, national science foundations and other scientific agencies use of this facility are funded via other sources. This project is an Operational Systems Development Budget Activity Research Category because it involves a level-of-effort for sustained engineering support for development of, or modifications to, an operational SPACETRACK network site.

(U) FY 1995

- (U) $4,454 Continued basic AMOS facility operations, maintenance and support of upgrade integration efforts.
- (U) $800 Continued development of an observatory control system in support of AEOS, MHPCC supercomputer and Hi-Class Lidar projects.
- (U) $200 Continued development of sensors for daylight imaging and geosynchronous SOI.
- (U) $5,454 Total

(U) FY 1996

- (U) $3,132 Continue basic AMOS facility operations, maintenance and support of upgrade integration efforts.
- (U) $2,000 Continue development of an observatory control system in support of AEOS, MHPCC supercomputer and Hi-Class Lidar projects.
- (U) $1,000 Continue development of sensors for daylight imaging and geosynchronous SOI.
- (U) $6,132 Total

(U) FY 1997

- (U) $0 Not Applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305910F Spacetrack (Space)
PROJECT NO. AND NAME 4239 Air Force Maui Optical Station*	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	5,024	1,061	2,997	Cont
(U) Appropriated Value	5,872	6,361		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	- 768	- 135		
b. SBIR				
c. Omnibus or Other Above Threshold Reprogram		- 94		
d. Below Threshold Reprogramming	+ 350			
(U) Adjustments to Budget Years Since FY96 PB			-2,997	
(U) Current Budget Submit/President's Budget	5,454	6,132	0	Cont

(U) Change Summary Explanation:

Funding: Adjustments to Budget Years Since FY96 PB reflects funding realignments to the O&M appropriation budget account beginning in FY96. This activity will continue as part of normalized sustaining engineering support services in the 3400 O&M appropriation account from FY 97 and on. This consolidation is consistent with the current business plan for the next five year infrastructure support services contract and the fact that the Maui Space Surveillance Site shares a single operations crew and consolidated maintenance functions which will help further leverage scarce resources.

Schedule: None.

Technical: None.

(U) **C. Other Program Funding Summary ($ in Thousands)**
Not Applicable.

(U) **D. Schedule Profile**
Not Applicable.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305910F Spacetrack (Space)
PROJECT NO. AND NAME 4239 Air Force Maui Optical Station*	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Operations and maintenance support level of effort	5,454	6,132	0
(U) Total	5,454	6,132	0

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Not Applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305910F Spacetrack (Space)

PROJECT NO. AND NAME: 4241 Advanced Electro Optical System

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4241 Advanced Electro Optical System	17,500	16,886	13,427	0	0	0	0	TBD	TBD

(U) A. Mission Description and Budget Item Justification

The Advanced Electro-Optical System (AEOS) is a 3.67 meter telescope addition to the Air Force Maui Optical Station (AMOS). The AEOS program was initiated in FY91 per Congressional direction. Congress has continued to appropriate funding to continue this project in FY93, FY94, FY95, and FY96. This project is an Operational Systems Development Budget Activity Research Category because it involves a level-of-effort for sustained engineering support for development of, or modifications to, an operational SPACETRACK network site.

(U) FY 1995

- (U) $7,300 Continued telescope development incremental funding.
- (U) $5,200 Continued sensor instrumentation acquisitions.
- (U) $4,800 Continued lab support.
- (U) $200 Adjustment not yet in data base
- (U) $17,500 Total

(U) FY 1996

- (U) $9,386 Continue telescope development incremental funding.
- (U) $6,500 Continue sensor instrumentation acquisitions.
- (U) $1,000 Continue lab support.
- (U) $16,886 Total

(U) FY 1997:

- (U) $13,427 Continue telescope development incremental funding.
- (U) $13,427 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305910F Spacetrack (Space)

PROJECT NO. AND NAME: 4241 Advanced Electro Optical System

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	0	0	TBD
(U) Appropriated Value	17,500	17,500		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions		- 361		
b. SBIR				
c. Omnibus or Other Above Threshold Reprogram	0	- 253		
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY96 PB			13,427	
(U) Current Budget Submit/President's Budget	17,500	16,886	13,427	TBD

(U) Change Summary Explanation:

Funding: Congress added $17,500 in FY95 for continuation of this project. Of this amount, OSD has $200 earmarked for an independent assessment of this project by NASA and instead identified it as an Omnibus source candidate. Congress has added another $17,500 in FY 96 for continuation of this project. Air Force will budget for project continuation in FY 97. Funding was added in FY97 to complete the project.

Schedule: None.

Technical: None.

(U) **C. Other Program Funding Summary ($ in Thousands)**

Not Applicable.

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Factory acceptance/occupancy				x					x			

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305910F Spacetrack (Space)
PROJECT NO. AND NAME 4241 Advanced Electro Optical System	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Directed level of effort for AEOS Maui facilities expansion	17,300	16,886	13,427
(U) Adjustment for the NASA study not yet in data base	200		
(U) Total	17,500	16,886	13,427

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Not Applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305910F Spacetrack (Space)

PROJECT NO. AND NAME: 4279 Have Stare Radar**

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4279 Have Stare Radar**	9,090	23,778	5,440	0	0	0	0	TBD	TBD

(U) A. **Mission Description and Budget Item Justification**

The HAVE STARE (HS) radar was transferred from the intelligence budget in FY93 at the direction of Congress. The Air Force has identified a requirement for the HS system and has programmed funding in this program element to complete development and to deploy the system. HS is a high resolution X-band tracking and imaging radar with a 27 meter mechanical dish antenna. HS will be deployed as a dedicated space surveillance sensor to support the mission of space object catalog maintenance of deep space objects and mission payload assessment. HS will retain its original design features and their inherent potential to support other missions. Operational site location deployment has not been determined. HS will provide both an improvement in capability and a reduction in overall SPACETRACK O&M costs. This system is currently in the EMD phase leading to an IOC in FY99. This project is an Operational Systems Development Budget Activity because it involves a level-of-effort for sustained engineering support for development of, or modifications to, an operational SPACETRACK network site.

(U) FY 1995

- (U) $8,890 Continued in-CONUS developmental and integration testing and evaluation at Vandenberg AFB, CA.
- (U) $200 Completed technical analysis demonstrating HS will be able to meet space surveillance requirements at original mission site.
- (U) $9,090 Total

(U) FY 1996

- (U) $3,778 Continue in-CONUS developmental and integration testing and evaluation at Vandenberg AFB, CA.
- (U) $9,000 Continue incorporation of functionality and connectivity modifications required for integration with the Space Surveillance Network.
- (U) $11,000 Begin site preparation at operational deployment location.
- (U) $23,778 Total

(U) FY 1997

- (U) $4,000 Continue in-CONUS developmental and integration testing and evaluation at Vandenberg AFB, CA.
- (U) $1,440 Continue site preparation at operational deployment location.
- (U) $5,440 Total *

* Note: Rephasing and additional funding needed to complete this project to be determined subsequent to pending overseas siting decision.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305910F Spacetrack (Space)

PROJECT NO. AND NAME: 4279 Have Stare Radar**

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	16,063	24,700	5,500	TBD
(U) Appropriated Value	19,063	24,700		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	- 253	- 564		
b. SBIR	- 473			
c. Omnibus or Other Above Threshold Reprogram	- 6,919	- 358		
d. Below Threshold Reprogramming	- 2,328			
(U) Adjustments to Budget Years Since FY96PB			- 60	
(U) Current Budget Submit/President's Budget	9,090	23,778	5,440	TBD

(U) Change Summary Explanation:

Funding: Congress added $3,000 in FY95 to accelerate the project but because of a delay in the overseas siting decision, funds were not required. Excess funds have been reprogrammed to other higher priority requirements via Congressional and Below Threshold Reprogramming actions.
Schedule: Project delayed due to delay in overseas site selection and withheld funding.
Technical: Development delayed due to withheld funding based on delayed siting decision.

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Prior year GDIP and OSD funding levels are classified.									

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) HAVE STARE Radar Siting Decision						x						

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305910F Spacetrack (Space)
PROJECT NO. AND NAME 4279 Have Stare Radar**	

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Prime Contract	3,000	20,778	2,500
(U) SPO Support	6,090	3,000	2,940
(U) Total	9,090	23,778	5,440

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305911F Defense Support Program (Space)

COST (*In Thousands*)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	60,628	34,870	29,397	36,715	36,022	34,079	35,866	Continuing	Continuing
3615 Talon Shield/Alert*	12,500	5,100	912	9,185	8,685	5,160	4,292	Continuing	Continuing
3624 Defense Support Program	48,128	29,770	28,485	27,530	27,337	28,919	31,574	Continuing	Continuing

(U) **A. Mission Description and Budget Item Justification**

The Defense Support Program (DSP) is a system of satellites in geostationary orbits, fixed and mobile ground processing stations, one multi-purpose facility, and a ground communications network (GCN). DSP's primary mission is to provide tactical warning and limited attack assessment of a ballistic missile attack. The Talon Shield/ALERT (Attack and Launch Early Reporting to Theater) is an upgrade to ground station mission processing which exploits inherent satellite capability to provide theater missile warning and cueing. DSP is an operational system and is therefore included in the Budget Activity Research Category Operational Systems Support.

(U) **Acquisition Strategy:**

The Defense Support Program (DSP) is currently sustaining production of the remaining satellites, 18 through 23. This sustainment includes post production storage, testing, preparation for launch and on orbit testing. Current contract efforts are required to stretch the support of launch centers to 12 months from the originally contracted 6 month launch centers. Satellite 23 will be the last of the DSP satellites to be procured. The follow-on to DSP, Space Based Infrared Systems satellites, will replace DSP starting in FY02. The ALERT squadron was activated on 1 Oct 94 with an ALERT IOC reached on 10 Mar 95. Further Talon Shield RDT&E efforts will be required to meet the AFSPC FOC requirements and for use as the path finder for the first increment of the ground consolidation.

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget (FY96)	64,712	43,672	38,819	Continuing
(U) Appropriated Value	67,359	37,441		
(U) Adjustments to Appropriated Value				
a. Congressional General Reductions	- 1,235	-1,272		
b. SBIR/Other	- 1,395	-839		
c. Omnibus or Other Above Threshold Reprogram		-460		
d. Below Threshold Reprogramming	-4,101			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305911F Defense Support Program (Space)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Adjustments to Budget Years Since FY96 PB			-12,638	
(U) Current Budget Submit/President's Budget	60,628	34,870	29,397	Continuing

(U) Change Summary Explanation:

Funding: FY97 reductions - $11.400M from program office support and $1.238M for inflation rate adjustment.

* The FY96 PB amount does not reflect funding reductions that are reserved for other DoD reprogramming needs ($391).

Schedule: None.

Technical: None.

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Missile Procurement	354,171	64,729	70,967	174,142	115,810	158,482	177,816	Continue	Continue
(U) Other Procurement	23,051	38,455	450	0	0	0	0	Continue	Continue
Related RDT&E:									
(U) PE #603441F - SBIRS Dem/Val	115,418	250,663	120,151	122,212	131,254	85,889	85,961	Continue	Continue
(U) PE #604441F - SBIRS EMD	112,981	162,276	173,290	300,155	540,530	631,291	656,151	Continue	Continue

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Satellite Deliveries			XX	X		X						
(U) MPF Transition to AFMC												
(U) LCS Termination												
(U) SRSU IOT&E First String												

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305911F Defense Support Program (Space)

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) SRSU IOT&E Second String	X											
(U) Fixed Site Computer Award												
(U) Transition MCS Award		X										
(U) ALERT LOC Contract Award (Jul 93)												
(U) Hardware Install Complete												
(U) System Test Complete												
(U) ALERT IOC Contract Award												
(U) IOC		X										
(U) Complete Training		X										
(U) Start Blue Suit Maintenance					X							
(U) Final Hardware Installation							X					
(U) Talon Shield II Contract Award				X								
(U) ALERT FOC/Grnd Consolidation (FY99)												
(U) Satellite launches	X								X			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305911F Defense Support Program (Space)

PROJECT NO. AND NAME: 3615 Talon Shield/Alert*

COST (*In Thousands*)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3615 Talon Shield/Alert*	12,500	5,100	912	9,185	8,685	5,160	4,292	Continuing	Continuing

(U) **A. Mission Description and Budget Item Justification**

The Talon Shield project identified changes to existing DSP processing to enhance theater missile defense warning capabilities. These enhancements will facilitate more timely and accurate detection, identification, location and tracking of theater missile threats. This data supports attack operations/counterforce operations by providing accurate, timely launch prediction. In addition, this data will support active and passive defense forces by providing target cueing data and precise impact point prediction. The Air Force will transition these enhancements to an operational system, ALERT, to provide continuous real-time warning to the warfighter.

(U) FY 1995

- (U) Combined Air Force and BMDO funded project.
- (U) Continue Talon Shield hardware and software development.
- (U) $3,800 Initiate Pre-Operational software development support.
- (U) $1,600 Continue Operations and Maintenance Training Plan development and begin implementation.
- (U) $8,800 Begin hardware and software data package.
- (U) $1,699 FFRDC and office support.
- (U) $100 Initiate Initial Operational Test & Evaluation.
- (U) $500 Initiate Independent Verification and Validation.
- (U) $-3,999 Funds to be moved from BPAC 3624 to 3615 within this PE
- (U) $12,500 Total

(U) FY 1996

- (U) Continue Talon Shield development (BMDO funded).
- (U) $7,086 Continue development to achieve ALERT full operational capability.
- (U) $300 Continue Operations and Maintenance Training Plan development and implementation.
- (U) $1,778 FFRDC and office support.
- (U) $-4,064 Funds to be moved from BPAC 3624 to 3615 within this PE
- (U) $5,100 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305911F Defense Support Program (Space)
PROJECT NO. AND NAME 3615 Talon Shield/Alert*	

(U) FY 1997

- (U) Continue Talon Shield development (BMDO funded).
- (U) $7,781 Continue software development to achieve ALERT full operational capability.
- (U) $1,578 FFRDC and office support.
- (U) $-8,447 Funds to be moved from BPAC 3624 to 3615 within this PE
- (U) $912 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget (FY96)	12,500	5,399	3,649	Continuing
(U) Appropriated Value	12,500	5,399	3,649	
(U) Adjustments to Appropriated Value	0		8,719	
a. Congressional General Reductions		-299	-11,456	
b. SBIR				
c. Omnibus or Other Above Threshold Reprogramming				
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY96 PB	(3,999)	(4,064)	(8,447)	
(U) Current Budget Submit/President's Budget	12,500	5,100	9,359	Continuing

(U) Change Summary Explanation:

Funding: Funding realignment required to properly locate Talon Shield II funding in the Talon Shield/ALERT BPAC.

Schedule: None.

Technical: None.

(U) C. Other Program Funding Summary ($ in Thousands)

FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305911F Defense Support Program (Space)

PROJECT NO. AND NAME: 3615 Talon Shield/Alert*

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Missile Procurement	354,171	64,729	70,967	174,142	115,810	158,482	177,816	Cont	Cont
(U) Other Procurement	23,051	38,455	450	0	0	0	0	Cont	Cont
Related RDT&E:									
(U) DSP (Project 3624)	48,128	29,770	28,485	27,530	27,337	28,919	31,574	Cont	Cont
(U) PE #603441F - SBIRS Dem/Val	115,418	199,663	120,151	122,212	131,254	85,889	85,961	Cont	Cont
(U) PE #604441F - SBIRS EMD	112,981	162,276	173,290	300,155	540,530	631,291	656,151	Cont	Cont

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) ALERT LOC Contract Award (Jul 93)												
(U) Hardware Install Complete												
(U) System Test Complete												
(U) ALERT IOC Contract Award												
(U) IOC		X										
(U) Complete Training		X										
(U) Start Blue Suit Maintenance					X							
(U) Final Hardware Installation							X					
(U) ALERT FOC Certification (Oct 96)									X			

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305911F Defense Support Program (Space)
PROJECT NO. AND NAME 3615 Talon Shield/Alert*	

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Developmental Support Equipment Acquisition	0	0	0
(U) Software Development	2,100	100	3,471
(U) Program Management Support	1,295	1,599	0
(U) Training Development	1,590	0	0
(U) Engineering Analysis	0	0	0
(U) Technical Data	8,791	5803	4,310
(U) Travel	158	158	50
(U) Research Personnel	2,565	1,540	1,528
(U) Adjustments	-3,999	-4,064	-8,447
(U) Total	12,500	5,100	912

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Aerojet	CPAF	Aug 92	TBD	TBD	0	8,970	0	0	Continue	Continue
SPARTA	CPAF	Aug 94				487	0	0		487
Lincoln Lab	PO	Mar 95				288	0	0		288
Aerojet (FO)	CPAF	Oct 95					7,086	7,781		Continue
Support and Management Organizations										
SMC					0	3,528	1,778	1,578	Continue	Continue

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305911F Defense Support Program (Space)
PROJECT NO. AND NAME 3615 Talon Shield/Alert*	

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Dept Air Force	AF616					3,226	300	0		3,526

Test and Evaluation Organizations
Not Applicable.

(U) B. **Budget Acquisition History and Planning Information Continued ($ in Thousands)**

Government Furnished Property:

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Property									
GF Hardware			Aug 94	427	0	0	0	0	427
Support and Management Property									
Test and Evaluation Property									
Subtotal Product Development				427	9,745	7,086	7,781	Continue	Continue
Subtotal Support and Management					6,754	2,078	1,578	Continue	Continue
Subtotal Test and Evaluation					-3,999	-4,064	-8,447	Continue	Continue
Adjustments									
Total Project				427	12,500	5,100	912	Continue	Continue

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305911F Defense Support Program (Space)

PROJECT NO. AND NAME: 3624 Defense Support Program

COST (*In Thousands*)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3624 Defense Support Program	48,128	29,770	28,485	27,530	27,337	28,919	31,574	Continuing	Continuing

Note: FY94 available funds is actually $36,898M due to $10M being place on withhold as a source for the FY95 Omnibus.

(U) **A. Mission Description and Budget Item Justification**

The DSP system provides a space-based surveillance system to detect and report missile and space launches and nuclear detonations in near real time during pre-, trans-, and post-attack periods. The DSP system consists of a constellation of satellites in geostationary orbits, fixed and mobile ground processing stations, one multi-purpose facility, and a ground communications network (GCN). DSP's primary mission is to provide tactical warning and limited attack assessment of a ballistic missile attack. DSP also detects and reports nuclear detonation events and provides information for theater warning and exploitation. This program element provides funding for development to modernize ground stations to ensure continued operability, integration of satellites to launch vehicles, procurement of satellites and ground station hardware, and operation of the DSP ground stations.

(U) FY 1995

- (U) $600 Continue software upgrade to program analysis tool.
- (U) $400 Contractor claims.
- (U) $2,500 Begin special studies to support DSP satellite manufacturing, production, test and launch activities as required.
- (U) $7,000 Complete integration of DSP mobile ground terminal and Milstar Mobile communication vehicle.
- (U) $3,100 Continue development to replace unsupportable satellite readout equipment at the fixed ground stations. Complete installation and checkout for the overseas ground station.
- (U) $7,300 Continue orbital constellation support software development and anomaly resolution.
- (U) $3,800 FFRDC.
- (U) $10,029 Program office support (TDYs, supplies, computer support, ECO risk, etc).
- (U) $7,100 Continue yearly software development facility support to program activities for ground station operations.
- (U) $1,100 Continue development to replace unsupportable RADEC Data Units at the fixed ground stations.
- (U) $1,200 Continue development and sustaining capabilities for acquisition logistics engineering support.
- (U) $3,999 Funds to be moved from BPAC 3624 to 3615 within this PE
- (U) $48,128 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305911F Defense Support Program (Space)
PROJECT NO. AND NAME 3624 Defense Support Program	

(U) FY 1996

– (U) $2,200	Continue special studies to support DSP satellite manufacturing, production, test, and launch activities as required.
– (U) $7,900	Continue orbital constellation support software development and anomaly resolution.
– (U) $1,000	Continue independent verification and validation.
– (U) $2,696	FFRDC.
– (U) $7,410	Program office support (TDYs, supplies, ECO risk, etc.).
– (U) $2,900	Continue yearly software development facility support to ground station operations activities.
– (U) $300	Continue development to replace unsupportable RADEC Data Units at the fixed ground stations.
– (U) $1,300	Continue development and sustaining capabilities for acquisition logistics engineering.
– (U) $4,064	Funds to be moved from BPAC 3624 to 3615 within this PE
– (U) $29,770	Total

(U) FY 1997

– (U) $2,000	Continue special studies to support DSP satellite manufacturing, production, test, and launch activities as required.
– (U) $6,000	Continue orbital constellation support software development and anomaly resolution.
– (U) $400	Continue independent verification and validation.
– (U) $3,000	FFRDC.
– (U) $100	Continue yearly software development facility support for ground station operations program activities.
– (U) $1,300	Continue development and sustaining capabilities for acquisition logistics engineering.
– (U) $7,238	Program office support (TDYs, supplies, ECO risk, etc.).
– (U) $8,447	Funds to be moved from BPAC 3624 to 3615 within this PE
– (U) $28,485	Total

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget (FY96)	53,616	38,273	35,170	Continuing
(U) Appropriated Value	54,859	38,273		
(U) Adjustments to Appropriated Value		-6,231		
a. Congressional General Reductions	- 1,337	-1,433	-1,375	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305911F Defense Support Program (Space)
PROJECT NO. AND NAME 3624 Defense Support Program	

	FY 1995	FY 1996	FY 1997	Total Cost
b. SBIR/Other	- 1,395	-839		
c. Omnibus or Other Above Threshold Reprogramming				
d. Below Threshold Reprogramming	-3,999			
e. Realignment between BPACs, same PE (ZBT)			-5,310	
(U) Adjustments to Budget Years Since FY96 PB	(-3,999)	(-4,064)	(-8,447)	
(U) Current Budget Submit/President's Budget	48,128	29,770	28,485	Continuing

(U) Change Summary Explanation:

Funding: Funding realignment required to properly locate Talon Shield II funding in the Talon Shield/ALERT BPAC.

Schedule: None.

Technical: None.

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Complete	Total Cost
(U) Missile Procurement	354,171	64,729	70,967	174,142	115,810	158,482	177,816	Continuing	Continuing
(U) Other Procurement	23,051	38,455	450	0	0	0	0	Continuing	Continuing
Related RDT&E:									
(U) Talon Shield/ALERT (Project 3615)	12,500	5,100	912	9,185	8,685	5,160	4,292	Continuing	Continuing
(U) PE #603441F - SBIRS Dem/Val	115,418	199,663	120,151	122,212	131,254	85,889	85,961	Continuing	Continuing
(U) PE #604441F - SBIRS EMD	112,981	162,276	173,290	300,155	540,530	631,291	656,151	Continuing	Continuing

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305911F Defense Support Program (Space)
PROJECT NO. AND NAME 3624 Defense Support Program	

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Satellite Deliveries			XX	X		X						
(U) MPF Transition to AFMC												
(U) LCS Termination												
(U) SRSU IOT&E First String												
(U) SRSU IOT&E Second String	X											
(U) Fixed Site Computer Award												
(U) Transition MCS Award		X										
(U) Satellite launches	X								X			

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305911F Defense Support Program (Space)
PROJECT NO. AND NAME 3624 Defense Support Program	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Systems Engineering	1,200	1,000	400
(U) Software Development	5,100	10,800	6,100
(U) Program Management Support	12,300	4,652	6,491
(U) Development Support Equipment Acquisition	15,700	6,160	3,962
(U) Travel	1,000	1,000	1,000
(U) Miscellaneous	8,829	2,074	2,085
(U) Adjustments	3,999	4,064	8,447
(U) Total	48,128	29,770	28,485

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Aerojet	CPAF	Oct 93	54,835	54,835	11,645	7,137	7,208	6,369	Continue	87,194
Aerojet	CPAF	Sep 93	TBD	TBD	9,606	350	0	0	0	9,956
Loral	FPIF/AF	Apr 94	106,884	110,918	34,379	3,250	0	0	0	148,547
Loral	CPAF	Oct 93	71,189	62,577	14,972	7,226	2,910	120	Continue	87,805
DOE	P.O.				2,000	1,100	250	0	0	3,350
Dept of Air Force	AF616				2,197	6,036	2,847	1,137	Continue	12,217
Phillips Lab	P.O.	Mar 94			300	0	0	0	0	300
NRC	FPIF	Apr 94	700	700	700	1,248	1,246	1,303	Continue	5,197

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305911F Defense Support Program (Space)

PROJECT NO. AND NAME: 3624 Defense Support Program

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
SPARTA	CPAF	Aug 94			650	0	0	0	0	650
Program Off Supt					7,055	9,688	5,581	5,849	Continue	28,173
ECO Risk						0	32	0	Continue	32
Support and Management Organizations										
	MIPR				824	0	0	0	0	824
Loral	FPIF/AF/CP				565	0	0	0	0	565
Dept of Defense	MIPR				500	0	0	0	0	500
Aerospace Corp	MORD				4,170	3,760	2,696	3,000	Continue	13,626
Dept of Navy	MIPR				85	40	0	0	0	125
Dept of Air Force	MIPR				665	353	0	0	0	1,018
Aerojet	FPI/AF/FF		430,502	430,502	0	500	0	500	Continue	431,502
Aerojet	CPFF/LOE		12,116	12,116	8,741	650	252	0	Continue	21,759
TRW	FPI/CPFF		640,039	640,239	7,417	1,750	500	500	Continue	650,406
Aerojet	CPFF		510,363	502,743	1,294	200	0	500	Continue	504,737
TRW	CPFF				12,660	0	752	0	Continue	13,412
TRW	FPI		558,216	505,797	0	500	500	500	Continue	507,297
ASEC					509	341	932	260	Continue	2,042

Test and Evaluation Organizations

Not Applicable.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305911F Defense Support Program (Space)
PROJECT NO. AND NAME 3624 Defense Support Program	

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property:

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Property									
SRSU	FFIF/CPAF	1989		9,629	0	0	0	0	9,629
Support and Management Property									
Test and Evaluation Property									
Subtotal Product Development				93,133		20,074	14,778	Continue	Continue
Subtotal Support and Management				37,430		5,632	5,260	Continue	Continue
Subtotal Test and Evaluation									
Adjustment						4,064	8,447	Continue	Continue
Project Total				130,563		27,770	28,485	Continue	Continue

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305913F Nudet Detection System (Space)

PROJECT NO. AND NAME: 2808 Nuc Detonation Det Sys (Sensors)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2808 Nuc Detonation Det Sys (Sensors)	9,815	12,154	13,623	9,869	6,144	1,610	1,863	Continuing	Continuing

(U) **A. Mission Description and Budget Item Justification**

The Nuclear Detonation (NUDET) Detection System (NDS) consists of space, control, and user equipment segments. The space segment consists of NUDET detection sensors on the GPS/NDS satellites. The control segment consists of ground control software and is known as the Integrated Correlation and Display System (ICADS). The user equipment segment consists of the Ground NDS Terminals (GNT). The NDS provides a worldwide, highly survivable capability to detect, locate, and report any nuclear detonations in the earth's atmosphere or in near space in near-real time. The NDS supports NUDET detection requirements for AFSPC (Integrated Tactical Warning and Attack Assessment [ITWAA]), USSTRATCOM (Nuclear Force Management), and AFTAC (Treaty Monitoring). NDS is classified Budget Activity Research Category Operational Systems Development because it is a post-Milestone 3 program.

(U) FY 1995

(U) $924	Continued development integration and test of GNTs
(U) $7,372	Continued ICADS development and software upgrades
(U) $235	Continued development of GNT software common to ICADS
(U) $960	Continued system engineering and program management for ICADS, GNT, and ADRU
(U) $324	Continued mission support
(U) $9,815	Total

(U) FY 1996

(U) $8,109	Continue ICADS and GNT development
(U) $877	Continue NDS EMP Sensor on-orbit qualification
(U) $1,910	Continue GNT development integration and test of GNTs
(U) $989	Continue system engineering and program management for ICADS, GNT and ARDU
(U) $269	Continue mission support requirements
(U) $12,154	Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305913F Nudet Detection System (Space)
PROJECT NO. AND NAME 2808 Nuc Detonation Det Sys (Sensors)	

(U) FY 1997

(U) $11,215	Continue ICADS and GNT development
(U) $1,046	Continue EMP sensor on-orbit qualification
(U) $1,013	Continue system engineering and program management for ICADS, GNT and ARDU
(U) $349	Continue mission support requirements
(U) $13,623	Total

(U) Acquisition Strategy:

The NDS Acquisition Strategy is to sustain the NDS capability for IIR and IIF satellites.

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996*	FY 1997	Total Cost
(U) Previous President's Budget	10,140	16,277	21,283	Continuing
(U) Appropriated Value	10,140	13,277		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-110	- 260		
b. SBIR	- 212	- 728		
c. Omnibus or Other Above Threshold Reprogram	- 3	- 135		
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY96 PB			- 7,660	
(U) Current Budget Submit/President's Budget	9,815	12,154	13,623	Continuing

(U) Change Summary Explanation:

Funding: A reduction (-$3,000) was taken in the FY96 appropriation as a result of the Appropriation Conference and HAC Marks. FY96 "Omnibus or Other Above Threshold Reprogramming" decrease (-$135) reflects the Bosnia reduction. FY97 reduction in the "Adjustments to Budget Years Since the FY96 PB" (-$7,660) reflects the NDS AF/AFTAC Laser Facility reduction, overhead reductions, and the Non-Pay Inflation reduction.

* The FY96 PB amount does not reflect funding reductions that are reserved for other DoD reprogramming needs ($139)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0305913F Nudet Detection System (Space)
PROJECT NO. AND NAME 2808 Nuc Detonation Det Sys (Sensors)	

Schedule: No Changes

Technical: No Changes

(U) **C. Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Operations & Maintenance	2,003	5,577	5,590	5,772	6,007	6,211	6,420	Cont	Cont
(U) Missile Procurement	45,201	18,502	4,112	4,233	3,614	3,599	2,401	Cont	Cont
(U) Other Procurement	0	5,580	2,085	4,308	1,324	1,317	1,213	Cont	Cont

Related RDT&E:

(U) PE #305165F, NAVSTAR GPS (Space/Ground Segment)
(U) PE #604480F, GPS Block IIF
(U) PE #305911F, Defense Support Program

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) **ICADS Milestones & Program Events**												
(U) Build 5 Start		x										
(U) Build 4 Critical Design Review (CDR)				x								
(U) Build 5 Systems Req Review (SRR)						x						
(U) Build 5 SDR								x				
(U) Build 5 Preliminary Design Review (PDR)									x			
(U) Build 6 (Block IIF Upgrade) Start												x
(U) Build 5 CDR												x
(U) Build 4B Acceptance test (AT)												x

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305913F Nudet Detection System (Space)

PROJECT NO. AND NAME: 2808 Nuc Detonation Det Sys (Sensors)

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) **GNT Milestones & Program Events**												
(U) Phase I Deliveries to AFSPC/USSTRATCOM			x									
(U) Phase I Initial Operational Capability (IOC)				x								
(U) Phase II CDR/PSR					x							
(U) Phase III PDR									x			
(U) Phase III CDR												x

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305913F Nudet Detection System (Space)

PROJECT NO. AND NAME: 2808 Nuc Detonation Det Sys (Sensors)

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Systems Engineering	960	989	1,013
(U) Software Development	4,379	6,106	7,077
(U) Software Upgrade	2,400	2,700	3,000
(U) Miscellaneous	1,155	1,247	1,387
(U) Technical Data	72	98	92
(U) Development Test & Evaluation	623	767	791
(U) Program Management Support	226	247	263
(U) Total	9,815	12,154	13,623

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
ICADS:										
Sandia Labs	SS/Cost/MIPR	Jan 96	Cont	Cont	9,069	7,372	8,109	11,215	Cont	Cont
SAIC	C/CPAF/PR	Dec 95	Cont	Cont	4,458	320	331	339	Cont	Cont
GNT:										
Sandia Labs	SS/Cost/MIPR	Jan 96	Cont	Cont	18,370	1,159	1,910	0	Cont	Cont
Intermetrics	C/CPAF/PR	Dec 93	1,262	1,262	1,262	0	0	0	0	1262
SAIC	C/CPAF/PR	Dec 95	Cont	Cont	0	320	329	337	Cont	Cont

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0305913F Nudet Detection System (Space)

PROJECT NO. AND NAME: 2808 Nuc Detonation Det Sys (Sensors)

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
ARDU:										
SAIC	C/CPAF/PR	Dec 95	Cont	Cont	0	320	329	337	Cont	Cont
AALF:										
SAIC	C/CPAF/PR	Dec 94	198	198	198	0	0	0	0	198
W-Sensor Support:										
SRI	CPFF	Aug 94	253	253	253	0	0	0	0	253
Los Alamos	SS/FFP/MIPR	Jan 96	Cont	Cont	1,862	0	877	1,046	Cont	Cont
Mission	Multiple	N/A	Cont	Cont	2,231	324	269	349	Cont	Cont
Sandia Labs	SS/FFP/MIPR	Oct 94	4,780	4,780	4,780	0	0	0	0	4,780
Support and Management Organizations										
Not Applicable.										
Test and Evaluation Organizations										
Not Applicable.										
Subtotal Product Development					42,201	9,815	12,154	13,623	Cont	Cont
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project					42,201	9,815	12,154	13,623	Cont	Cont

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 EXHIBIT)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0401119F C-5 Airlift Squadrons

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	5,000	1,153	3,533	1,831	0	0	0	11,517
4377 Real-Time In The Cockpit (RTIC)	0	0	672	0	0	0	0	0	672
4495 AWFCS Reliability Improvement Program	0	0	481	3,533	1,831	0	0	0	5,845
4523 CRAF Enhancement Study	0	5,000	0	0	0	0	0	0	5,000

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401119F C-5 Airlift Squadrons

(U) A. Mission Description and Budget Item Justification

4377: Real-Time Information in the Cockpit (RTIC): The AMC Airlift and Air Refueling Mission Area Plans identify a system deficiency to protect aircraft from hostilities during combat operations. RTIC addresses this deficiency and increases aircrew survivability by providing aircrews with portable, on-aircraft, mission equipment to receive and display critical, real-time intelligence information. Strategic mobility aircrews often fly extended missions or transit enroute stations without full intelligence information capability. Information provided prior to mission departure is often outdated or incomplete upon arrival in theater. RTIC provides increased threat situational awareness and enables aircrews to make mission modifications to avoid enemy threats under rapidly changing combat conditions. To limit system implementation costs, it is envisioned that RTIC will be "snapped-on" to any AMC mobility fleet aircraft as needed. These systems are intended to be interchangeable between KC-135, KC-10, C-141, C-5, and C-17 aircraft, as required. This project is a FY97 new start modifying previously developed intelligence communication and display equipment to meet AMC requirements. This project is a low technical risk effort supporting fielded weapons systems and, therefore, is assigned to Budget Activity, Operational Systems Development.

4495: AWFCS Reliability Improvement Program: The C-5 All-Weather Flight Control System (AWFCS) Reliability Improvement Program replaces low reliability Line Replaceable Units (LRUs) in the automatic flight control system and replaces aging mechanical instruments in the engine and flight systems. Current trends indicate some components will be unsupportable within five years. This modification redesigns the architecture of the avionics.

4523: CRAF Enhancement Study: Following the C-17 DAB, USD(A&T) chartered a study effort to "Examine ways to strengthen the Civil Reserve Air Fleet (CRAF)" by exploring options such as lengthening contracts and considering ways to encourage CRAF providers to use more militarily capable aircraft. A new project was established in the C-5 Airlift Squadron program element to accomplish this study. $5M was put in this PE and BPAC in the Air Force database in anticipation of the above-threshold reprogramming, but the CRAF study will be completed within existing resources. Therefore, the funds were sourced for modifying Air Force Plant 3, Tulsa, OK as authorized by section 23-7 of the Defense Authorization Act. The data will be corrected at the next available opportunity.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401119F C-5 Airlift Squadrons

(U) **Acquisition Strategies:**

4377: Real-Time Information in the Cockpit (RTIC): The intended acquisition strategy is to reutilize software and non-developmental hardware already prototyped in a competitive, fixed-price, contract award environment.

4495: AWFCS Reliability Improvement Program: The acquisition strategy is to employ a competitive, fixed-price contract award to establish a single integrating contractor. The integrating contractor will be responsible for the following actions: 1) modifying and qualifying Commercial Off-The-Shelf (COTS) software and LRUs to meet C-5 performance requirements; 2) updating existing C-5 engineering and technical data; 3) developing interface control specifications based on performance requirements; 4) prototyping the system; and 5) supplying ground and flight test support.

4523: CRAF Enhancement Study: No acquisition strategy required since study accomplished using in-house AF resources.

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	0	793	793
(U) Appropriated Value	0	0		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions				
b. SBIR				
c. Omnibus or Other Above Threshold Reprogram		5,000*		
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY96 PB			360	5,724
(U) Current Budget Submit/President's Budget	0	5,000*	1,153	6,517

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401119F C-5 Airlift Squadrons

(U) Change Summary Explanation:

Funding: * FY96 Funds were added to the C-5 program line in anticipation of an above-threshold reprogramming (see project description above). AFWCS project was added as a FY97 new program start ($496). Adjustments for updated OSD inflation rates reduced costs for RTIC and AWFCS by $121 and $15, respectively.

Schedule: New program starts.

Technical: N/A

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) PE# 040119F/C-5 Squadrons									
Aircraft Procurement, AF, BA-7, RTIC	0	0	0	1,551	1,582	1,618	1,654	1,712	8,117
Other Production Charges, RTIC	0	0	0	0	0	0	0	0	0
Aircraft Procurement, AF, BA-7,C-5 Mods, AWFCS	0	0	0	0	0	0	0	0	0
Other Production Charges, C-5 Mods, AWFCS	0	0	0	0	0	41,191	37,900	180,785	259,876
(U) PE# 0401218F/KC-135 Squadrons									
RDT&E, AF, BA-7	0	0	757	0	0	0	0	0	757
Aircraft Procurement, AF, BA-7	0	0	0	1,551	1,582	1,618	1,653	1,711	8,115
Operations & Maintenance, AF, BA-2	0	0	0	1,000	1,019	1,050	1,071	TBD	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401119F C-5 Airlift Squadrons

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Real-Time Information in the Cockpit												
(U) AWFCS Reliability Improvement Program												

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0401119F C-5 Airlift Squadrons

PROJECT NO. AND NAME: 4377 Real-Time In The Cockpit (RTIC)

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4377 Real-Time In The Cockpit (RTIC)	0	0	672	0	0	0	0	0	672

(U) A. **Mission Description and Budget Item Justification:**

The AMC Airlift and Air Refueling Mission Area Plans identify a deficiency in ability to protect aircraft from hostilities during combat operations. RTIC resolves this deficiency and increases aircrew survivability by providing aircrews with portable, on-aircraft, mission equipment to receive and display critical, real-time intelligence information. Strategic mobility aircrews often fly extended missions or transit enroute stations without full intelligence update capability. Information provided prior to mission departure is often outdated or incomplete upon arrival in theater. RTIC provides increased threat situational awareness and enables aircrews to make mission modifications to avoid enemy threats under rapidly changing combat conditions. To limit system implementation costs, it is envisioned that RTIC will be "snapped-on" to any AMC mobility fleet aircraft as needed. These systems are intended to be interchangeable between KC-135, KC-10, C-141, C-5, and C-17 aircraft, as required. This project is a FY97 new start modifying previously developed intelligence communication and display equipment to meet AMC requirements. This project is a low technical risk effort supporting fielded weapons systems and, therefore, is assigned to Budget Activity, Operational Systems Development.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401119F C-5 Airlift Squadrons
PROJECT NO. AND NAME 4377 Real-Time In The Cockpit (RTIC)	

(U) FY 1995

- (U) N/A
- (U) $0 Total

(U) FY 1996

- (U) N/A
- (U) $0 Total

(U) FY 1997

- (U) $50 Cost and Operational Effectiveness Analysis (COEA)
- (U) $50 Engineering studies
- (U) $224 Develop equipment for demonstration of new capabilities
- (U) $195 Retrofit current prototypes to final configuration
- (U) $88 Qualification/certification testing
- (U) $65 Mission support
- (U) $672 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401119F C-5 Airlift Squadrons
PROJECT NO. AND NAME 4377 Real-Time In The Cockpit (RTIC)	

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	0	793	793
(U) Appropriated Value	0	0	0	0
(U) Adjustments to Appropriated Value	0	0	0	0
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions				
b. SBIR				
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY96 PB			-121	-121
(U) Current Budget Submit/President's Budget	0	0	672	672

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401119F C-5 Airlift Squadrons
PROJECT NO. AND NAME 4377 Real-Time In The Cockpit (RTIC)	

(U) Change Summary Explanation:

Funding: Adjustment for updated OSD inflation rates.

Schedule: New program start

Technical: N/A

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	Total Prior to FY 1995	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) PE# 040119F/C-5 Squadrons								
Aircraft Procurement, AF, BA-7	0	0	0	1,582	1,618	1,654	1,712	8,117
Other Production Charges	0	0	0	0	0	0	0	0
(U) PE# 0401218F/KC-135 Squadrons								
RDT&E, AF, BA-7	0	0	757	0	0	0	0	757
Aircraft Procurement, AF, BA-7	0	0	0	1,582	1,618	1,653	1,711	8,115
Operations & Maintenance, AF, BA-2	0	0	0	1,019	1,050	1,071	TBD	TBD

(U) D. Schedule Profile

	FY 1995	FY 1996				FY 1997							
		1	2	3	4	1	2	3	4	1	2	3	4
(U) Program Start											X		

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401119F C-5 Airlift Squadrons
PROJECT NO. AND NAME 4377 Real-Time In The Cockpit (RTIC)	

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Cost and Operational Effectiveness Analysis (COEA)			50
(U) Retrofit current prototypes to final configuration			195
(U) Develop prototypes for demonstration of new capabilities			224
(U) Engineering studies			50
(U) Qualification/Certification testing			88
(U) Mission support			65
(U) Total			672

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations: Contracting office (SPO) and contractor not yet selected.

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
ESC										
Support and Management Organizations										
TBD										
Test and Evaluation Organizations										
AFOTEC										

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0401119F C-5 Airlift Squadrons

PROJECT NO. AND NAME: 4495 AWFCS Reliability Improvement Program

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4495 AWFCS Reliability Improvement Program	0	0	481	3,533	1,831	0	0	0	5,845

(U) A. **Mission Description and Budget Item Justification:**

The C-5 All Weather Flight Control System (AWFCS) Reliability Improvement Program replaces low reliability Line Replaceable Units (LRUs) in the automatic flight control system and replaces aging mechanical instruments in the engine and flight systems. Current trends indicate some components will be unsupportable within five years. The modification acquisition strategy for the program is to establish a single integrating contractor to modify and qualify individual Commercial Off-The-Shelf (COTS) LRUs and software to meet C-5 performance requirements, update existing C-5 engineering and technical data, develop interface control specifications based on performance requirements, prototype the new system, and support ground and flight testing.

(U) FY 1995
- (U) $ N/A
- (U) $0 Total

(U) FY 1996
- (U) $ N/A
- (U) $0 Total

(U) FY 1997
- (U) $446 Contractor technical support
- (U) $35 Mission support
- (U) $481 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401119F C-5 Airlift Squadrons
PROJECT NO. AND NAME 4495 AWFCS Reliability Improvement Program	

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	0	0	0
(U) Appropriated Value	0	0	0	0
(U) Adjustments to Appropriated Value	0	0	0	0
(U) Adjustments to Appropriated Value	0	0	0	0
a. Congressional/General Reductions	0	0	0	0
b. SBIR	0	0	0	0
c. Omnibus or Other Above Threshold Reprogram	0	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
(U) Adjustments to Budget Years Since FY96 PB	0	0	481	5845
(U) Current Budget Submit/President's Budget	0	0	481	5845

(U) Change Summary Explanation:

Funding: New program start ($496) less $15 adjustment for updated OSD inflation rates.

Schedule: New program start

Technical: N/A

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401119F C-5 Airlift Squadrons
PROJECT NO. AND NAME 4495 AWFCS Reliability Improvement Program	

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	Total Prior to FY 1995	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) PE# 040119F/C-5 Squadrons								
Aircraft Procurement, AF, BA-7	0	0	0	0	0	0	0	0
Other Production Charges	0	0	0	0	43,500	40,900	172,700	257,100

(U) D. Schedule Profile

	FY 1995			FY 1996				FY 1997						
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Acquisition Strategy										X		
(U) Draft RFP											X	
(U) Final RFP												X
(U) Installation Start (FY02/3)												
(U) Installation Complete (FY08/2)												

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401119F C-5 Airlift Squadrons
PROJECT NO. AND NAME 4495 AWFCS Reliability Improvement Program	

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Contractor technical support			446
(U) Mission support			35
(U) Total			481

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
TBD										
Product Development Organizations										
SA-ALC/LA										
Support and Management Organizations										
SA-ALC/LA										
Test and Evaluation Organizations										
AFOTEC										

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401119F C-5 Airlift Squadrons
PROJECT NO. AND NAME 4495 AWFCS Reliability Improvement Program	

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property:

Item Description	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Property								
N/A								
Support and Management Property								

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401119F C-5 Airlift Squadrons
PROJECT NO. AND NAME 4523 CRAF Enhancement Study	

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4523 CRAF Enhancement Study	0	5,000	0	0	0	0	0	0	5,000

(U) A. **Mission Description and Budget Item Justification:**

Following the C-17 DAB, USD(A&T) chartered a study effort to "Examine ways to strengthen the Civil Reserve Air Fleet (CRAF)" by exploring options such as lengthening contracts and considering ways to encourage CRAF providers to use more militarily capable aircraft. A new project was established in the C-5 Airlift Squadron program element to accomplish this study. $5M was put in this PE and BPAC in the Air Force database in anticipation of the above-threshold reprogramming, but the CRAF study will be completed within existing resources. Therefore, funds were sourced for modifying Air Force Plant 3, Tulsa, OK as authorized by section 2307 of the Defense Authorization Act. The database will be corrected at the next available opportunity.

(U) FY 1995 ($ in Thousands):
- (U) $ N/A
- (U) $0 Total

(U) FY 1996 ($ in Thousands):
- (U) $ N/A
- (U) $5,000 Total

(U) FY 1997 ($ in Thousands):
- (U) $ N/A
- (U) $0 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0401214F Air Cargo Materiel Handling (463L)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	0	3,212	8,420	841	529	0	0	54,879
5120 60K Pound Capacity Aircraft Loader	0	0	592	404	314	0	0	0	43,187
5150 Small High Reach Aircraft Loader	0	0	2,620	8,016	527	529	0	0	11,692

(U) A. **Mission Description and Budget Item Justification**

This Program Element contains two projects integral to the Air Force's ability to mobilize forces and equipment worldwide. The two projects involve testing, developing, and fielding of two aircraft cargo loader types which will eliminate critical existing loader deficiencies and will provide the Air Force with a flexible balance of large and small loader capability for the future. The 60K will replace the 40K loader as the strategic aerial port workhorse servicing all cargo military aircraft and Civil Reserve Aircraft Fleet (CRAF) and more importantly will have the enhanced capability to reach and directly interface with wide body aircraft (WBA) which the 40K does not possess. The small high reach loader with WBA capability complements the 60K capability by providing greater deployability and cargo handling capacity at a number of smaller, but vital, peacetime and contingency airfields. The fielding of the 60K and small high reach loaders will also eliminate the requirement for a fleet of Wide Body Elevator Loaders (WBEL), a stationary transfer platform currently used in conjunction with 40K and 25K loaders to service WBA. Starting in FY97, the 60K RDT&E funding has been realigned from PE 0604704F, Common Support Equipment Development, into this Program Element which also contains the 60K procurement funding. The RDT&E efforts of the small high reach loader have also been aligned to this Program Element which likewise includes the procurement funding of production units. This PE is in Budget Activity 7, Operational System Development since it involves the acquisition of two items to support fielded mobility aircraft; neither requires significant additional development.

(U) **Acquisition Strategy:**

The 60K loader program incorporated an approach whereas two manufacturers built two prototypes with a "drive-off" competition, operational assessment and a down select production contract awarded to one manufacturer. The 60K program aligns into this Program Element after IOT&E with minimal further development anticipated. Program office is currently in the process of developing the definitive acquisition plan for the Small High Reach Loader program.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401214F Air Cargo Materiel Handling (463L)

(U) B. **Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget				
(U) Appropriated Value				
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions				
b. SBIR				
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogramming			3,212	
(U) Adjustments to Budget Years Since FY 1996 PB				
(U) Current Budget Submit/President's Budget			3,212	

(U) Change Summary Explanation:

Funding: The Small High Reach Loader is a new start in FY97. The 60K Loader realigned from PE 0604704F beginning in FY97.

Schedule: No impact to programs

Technical: No impact to programs

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) OTHER PROCUREMENT, AF/VEH EQUIP	29,475	42,336	40,296	50,517	89,761	91,379	63,454	TBD	TBD
(U) OPERATIONS & MAINTENANCE							312	TBD	TBD

(U) D. **Schedule Profile : See each Project**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0401214F Air Cargo Materiel Handling (463L)

PROJECT NO. AND NAME: 5120 60K Pound Capacity Aircraft Loader

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
5120 60K Pound Capacity Aircraft Loader	0	0	592	404	314	0	0	0	43,187

(U) A. **Mission Description and Budget Item Justification**

Project 653852, 60,000 (60K) Pound Capacity Aircraft Transporter Loader: This project completes the development of the 60,000 pound capacity aircraft transporter/loader to fulfill the requirement of Air Mobility Command's (AMC's) Operational Requirements Document (ORD) 002-89-1. The project provides a single, unique loader to on/off load various aircraft like the C-17, C-5, C-141, C-130, C-27, KC-10, and Civil Reserve Air Fleet (CRAF) aircraft while combining the capabilities of the 40K, wide-body elevator, and lower lobe loaders. The 60K loader will be driven on/off of the C-17, C-5, and C-141 aircraft without shoring and will be the only loading vehicle capable of moving a type V airdrop platform carrying a full 60,000 pounds required by the US Army. The 60K loader will be significantly more reliable with a 100 hours mean time between failure (MTBF) versus the 40K loader's 18 hours MTBF. Major reductions from 30 man-hours to 3 man-hours in deployment preparation times will be made.

(U) FY 1995 ($ in Thousands): Not Applicable*

(U) FY 1996 ($ in Thousands): Not Applicable*

(U) FY 1997 ($ in Thousands):
- (U) $44 Research ECPs
- (U) $548 Continue contracted advisory and assistance services and program management support
- (U) $592 Total

* FY 94/95/96 efforts were funded in PE 0604704F, Common Support Equipment Dev

(U) B. **Program Change Summary ($ in Thousands)**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401214F Air Cargo Materiel Handling (463L)
PROJECT NO. AND NAME 5120 60K Pound Capacity Aircraft Loader	

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget				
(U) Appropriated Value				
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions				
b. SBIR				
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogramming			+592	
(U) Adjustments to Budget Years Since FY 1996 PB				
(U) Current Budget Submit/President's Budget			592	

(U) Change Summary Explanation:

Funding: The FY97 funds are a result of realignment of the 60K loader project from PE 0604704F, Common Support Equip Dev, into this PE which contains Other Procurement funding for the 60K loader.

Schedule: No impact to progam

Technical: No impact to program

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) OTHER PROCUREMENT - AF	29,475	42,336	40,296	50,517	59,660	60,562	31,652	TBD	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401214F Air Cargo Materiel Handling (463L)
PROJECT NO. AND NAME 5120 60K Pound Capacity Aircraft Loader	

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Complete Dedicated IOT&E					X							
(U) DAC Full Rate Production Decision						X						
(U) IOC							X					

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401214F Air Cargo Materiel Handling (463L)
PROJECT NO. AND NAME 5120 60K Pound Capacity Aircraft Loader	

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Research ECPs			44
(U) Advisory and assistance services and program mgmt spt			548
(U) Total			592

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Product Development Organizations - AFMC

Support and Management Organizations - AMC

Test and Evaluation Organizations - AFOTEC

(U) B. **Budget Acquisition History and Planning Information Continued ($ in Thousands)**

Government Furnished Property: NOT APPLICABLE

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0401214F Air Cargo Materiel Handling (463L)

PROJECT NO. AND NAME: 5150 Small High Reach Aircraft Loader

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
5150 Small High Reach Aircraft Loader	0	0	2,620	8,016	527	529	0	0	11,692

(U) A. **Mission Description and Budget Item Justification**

This small loader (25-35K capacity) program supports the acquisition and delivery of a loader that will eventually, along with the 60K loader, form the backbone of the Global Reach airlift 463L system. The small loader program, procuring 300 units, will likewise contribute to the modernization of the 463L system.

The critical shortcoming of the current Air Force cargo handling system is the lack of sufficient vertical reach of both the large (40K) and small (25K) capacity loaders to directly interface with KC-10 and commercial wide-body aircraft (WBA), such as the B-747, DC-10, and B-767. Increased reliance on USAF and Civil Reserve Air Fleet WBA makes these shortcomings critical. A separate elevator/transfer platform is currently necessary to allow the existing loader fleet to service WBA, which is not an effective nor efficient load operation and results in a very timely, cumbersome, and costly method of deployment to meet worldwide contingencies/relief missions. Compounding the ineffectiveness of the current mix of aircraft cargo loader fleet is the overage condition, low reliability, and high cost to maintain. Upgrading the fleet with this new small loader with WBA capability to complement the 60K loader will correct critical high reach shortcomings and result in a well-balanced, flexible loader fleet to ensure the Air Force's ability to meet global mobility commitments.

Program office is currently in the process of developing the definitive acquisition plan for the small loader.

(U) FY 1995 ($ in Thousands): Not Applicable

(U) FY 1996 ($ in Thousands): Not Applicable

(U) FY 1997 ($ in Thousands):

- (U) $2,400 Acquire test articles
- (U) $220 Provide program management support
- (U) $2,620 Total

(U) B. **Program Change Summary ($ in Thousands)**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0401214F Air Cargo Materiel Handling (463L)

PROJECT NO. AND NAME: 5150 Small High Reach Aircraft Loader

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	0		
(U) Appropriated Value	0	0		
(U) Adjustments to Appropriated Value	0	0		
a. Cong Gen Reductions				
b. SBIR				
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogramming			+2,620	
(U) Adjustments to Budget Years Since FY 1996 PB				
(U) Current Budget Submit/President's Budget			2,620	

(U) Change Summary Explanation:

Funding: New Start in FY97

Schedule: No impact to program

Technical: No impact to program

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	F 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) OTHER PROCUREMENT, VEHICLES	0	0	0	0	30,101	30,817	31,802	TBD	TBD
(U) OPERATIONS & MAINTENANCE							312	TBD	TBD

(U) D. **Schedule Profile**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401214F Air Cargo Materiel Handling (463L)
PROJECT NO. AND NAME 5150 Small High Reach Aircraft Loader	

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Contract Award					X							
(U) Tests						X						

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401214F Air Cargo Materiel Handling (463L)
PROJECT NO. AND NAME 5150 Small High Reach Aircraft Loader	

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Acquire test articles			2,400
(U) Provide management support			220
(U) Total			2,620

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
TBD	TBD	Nov/Dec 96				0	0	2620	TBD	TBD

Product Development Organizations - AFMC

Support and Management Organizations - AMC

Test and Evaluation Organizations - AFOTEC

(U) B. **Budget Acquisition History and Planning Information Continued ($ in Thousands)**

Government Furnished Property: NOT APPLICABLE

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0401218F KC-135 Squadrons

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	19,749	12,056	757	0	0	959	0	0	33,521
2214 Improved Aerial Refueling Systems (IARS)	4,958	0	0	0	0	0	0	0	4,958
4285 Receptacle Modification	176	0	0	0	0	0	0	0	176
4286 Multipoint Modification	14,615	12,056	0	0	0	0	0	0	26,671
4403 Real-Time Information in the Cockpit (RTIC)	0	0	757	0	0	0	0	0	757
4494 KC-135 Economic Life Study	0	0	0	0	0	959	0	0	959

(U) A. **Mission Description and Budget Item Justification**

2214: Improved Air Refueling System (IARS): The IARS program funds research and development to improve the KC-135 aerial refueling fleet. This program, established by SAC Statement of Need (SON) 001-87, identifies and investigates KC-135 refueling system deficiencies. The IARS activity also supports the aging aircraft corrosion and fatigue project--CORAL REACH. CORAL REACH results provide accurate data for the KC-135 Economic Life Study (Project 4494) planned for FY00. Operational users prioritize each year's activities so the most serious deficiencies are addressed. This project is comprised of low technical risk efforts supporting a fielded weapon system and, therefore, is assigned to Budget Activity, Operational Systems Development.

4285: Receptacle Modification: The Receptacle Modification requirement was eliminated by the using command. The majority of FY95 funds were sourced in the FY95 Omnibus reprogramming. The remainder of the FY95 funds were used for contractor support.

4286: Multipoint Modification: Multipoint enhances interoperability with the Navy, the Marines, NATO, and other Allied nations. It permits simultaneous and independent refueling of two, probe-equipped, receiver aircraft. These systems provide enhanced reliability and efficiency for probe/drogue refueling and permits refueling of probe-equipped and receptacle-equipped receiver aircraft during a single mission (not simultaneously). This requirement was established by Air Mobility Command (AMC) Mission Need Statement 003-92 and AMC Operational Requirements Document 003-92-I/II. The project is a low technical risk effort supporting a fielded weapon system and, therefore, is assigned to Budget Activity, Operational Systems Development.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401218F KC-135 Squadrons

4403: Real-Time Information in the Cockpit (RTIC): The AMC Airlift and Air Refueling Mission Area Plans identify a deficiency in ability to protect aircraft from hostilities during combat operations. RTIC addresses this deficiency and increases air crew survivability by providing aircrews with portable, on-aircraft, mission equipment to receive and display critical, real-time intelligence information. Strategic mobility aircrews often fly extended missions or transit enroute stations without full intelligence information capability. Information provided prior to mission departure is often outdated or incomplete upon arrival in theater. RTIC provides increased threat situational awareness thus enabling aircrews to make mission modifications to avoid enemy threats under rapidly changing combat conditions. To limit system implementation costs, it is envisioned that RTIC will be "snapped-on" to any AMC mobility fleet aircraft when this capability is needed. These systems are intended to be transformed between KC-135, KC-10, C-141, C-5, and C-17 operational wings, as required. This project is a FY97 new start to modify and integrate on the KC-135 previously developed intelligence communication and display equipment to meet AMC requirements. This endeavor consists of low technical risk efforts supporting fielded weapons systems and, therefore, is assigned to Budget Activity, Operational Systems Development.

4494: KC-135 Economic Life Study: The KC-135 Economic Service Life Study consists of studies for structure, systems, and component support as well as cost benefit analyses to support a Cost and Operational Effectiveness Analysis (COEA). The COEA addresses replacement schedules for the KC-135 based on economic decision points. The study will include the effects of aircraft aging, to include corrosion, fatigue, and stress corrosion cracking resulting from the CORAL REACH Aging Aircraft Project. This effort is a low technical risk effort supporting a fielded weapon system and, therefore is assigned to Budget Activity, Operational Systems Development.

(U) Acquisition Strategy:

2214: Improved Air Refueling System (IARS): The acquisition strategy for IARS consists primarily of separate task orders (with separate statements of work) ranging from fixed price to cost plus contracts. These task orders address a myriad of individual deficiencies against existing contract vehicles, such as the SPO-managed KC-135 Fleet Support Contract and Design Engineering Program contracts managed through the Air Logistics Centers.

4286: Multipoint Modification: The acquisition strategy for the Multipoint Modification employed open competition for a fixed price, Multipoint wing pod procurement. The Air Force is currently evaluating the Navy's refueling requirement to determine final procurement quantity.

4403: Real-Time Information in the Cockpit (RTIC): The intended acquisition strategy for RTIC is to reutilize software and non-developmental hardware already prototyped in a competitive, fixed-price, contract award environment.

4494: KC-135 Economic Life Study: The acquisition strategy for the KC-135 Economic Life Study is not available at this time--it is a new program start in FY00.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401218F KC-135 Squadrons

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	23,006	12,727	793	cont
(U) Appropriated Value	23,260	12,727		
(U) Adjustments to Appropriated Value				
a. Cong/Gen Reduction	-254	-247		
b. SBIR	-485	-294		
c. Omnibus or Other Above Threshold Reprogram	-2,570	-130		
d. Below Threshold Reprogram	-202			
(U) Adjustments to Budget Years Since FY96 PB	0	0	-36	
(U) Current Budget Submit/President's Budget	19,749	12,056	757	cont

(U) Change Summary Explanation:

Funding: FY97 funds for RTIC have been reduced $36K for RDT&E reduction, O&M reduction, and non-pay inflation activities. FY96 reductions of $671K due to SBIR, Economic and Overhead/Improved Management Reductions, and Bosnia I bills. FY96 PB eliminated funding for IARS in FY96/97. Remaining FY97 funds are for RTIC, an FY97 new program start. The following changes are not incorporated into the database: FY95 funding for IARS increased by $2,511K via reprogramming from Open Skies.

Schedule: Receptacle/multipoint execution delayed until 4QFY95 due to a Congressional restriction on obligation of funds and evolving Air Force priorities. This restriction was deleted in FY95. Multipoint request for proposal released 2QFY95. Contract awarded 28 Sep 95. RDT&E phase scheduled to complete 4QFY97.

Technical: N/A

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0401218F KC-135 Squadrons

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) PE# 0401218F/KC-135 Squadrons									
(U) Aircraft Procurement, AF, BA-7									
KC-135 Mods, Multipoint	0	12,200	21,600	22,300	20,300	40,300	40,800	17,200	177,900
(U) Aircraft Procurement, AF, BA-7									
Other Production Charges, RTIC	0	0	0	1,551	1,582	1,618	1,653	1,711	8,115
(U) Operations & Maintenance, AF, BA-2									
Mobilization, RTIC	0	0	0	1,000	1,019	1,050	1,071	TBD	TBD
(U) PE# 0401119F/C-5 Squadrons									
Aircraft Procurement, AF, BA-7									
Other Production Charges, RTIC	0	0	0	1,551	1,582	1,618	1,654	1,712	8,117
Related RDT&E:									
(U) PE# 0401119F/C-5 Squadrons	0	0	672	0	0	0	0	0	672
RDT&E, AF, BA-7									
Operational Systems Development, RTIC									

(U) D. **Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Improved Air Refueling System (IARS)												
(U) Receptacle Modification												
(U) Multipoint Modification												
(U) Real-Time Information in the Cockpit												
(U) KC-135 Economic Life Study												

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0401218F KC-135 Squadrons

PROJECT NO. AND NAME: 2214 Improved Aerial Refueling Systems (IARS)

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2214 Improved Aerial Refueling Systems (IARS)	4,958	0	0	0	0	0	0	0	4,958

(U) A. **Mission Description and Budget Item Justification ($ in Thousands)**

The Improved Aerial Refueling Systems (IARS) program funds research and development to improve the KC-135 aerial refueling fleet. The IARS program, established by SAC Statement of Need (SON) 001-87, identifies and investigates system refueling deficiencies to improve refueling capability and procedures. The IARS activity includes support for the aging aircraft corrosion and fatigue project--CORAL REACH. CORAL REACH results provide accurate data for the KC-135 Economic Life Study (Project 4494) planned for FY00. Operational users prioritize each year's activities so the most serious deficiencies are addressed. This project is comprised of low technical risk efforts supporting a fielded weapon system and, therefore, is assigned to Budget Activity, Operational Systems Development.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401218F KC-135 Squadrons
PROJECT NO. AND NAME 2214 Improved Aerial Refueling Systems (IARS)	

	(U) FY 1995	
–	(U) $1,827	Project CORAL REACH - Aging aircraft corrosion, fatigue, and supportability investigations
–	(U)	-- Corrosion growth rate testing
–	(U)	-- Development/testing of external corrosion preventative compound
–	(U)	-- Methodology to quantify effects of corrosion for C/KC-135
–	(U)	-- Integrity testing of aging C/KC-135 aircraft functional systems
–	(U) $2,309	PACER CRAG (Compass, Radar, And GPS) support activities
–	(U)	-- Crew station evaluation of 2-man crew flying SIOP missions
–	(U)	-- Dedicated PACER CRAG support
–	(U)	-- Dedicated radar upgrade support
–	(U)	-- Life-cycle cost study
–	(U)	-- Avionics/crew systems supportability and replacement requirements development and evaluations
–	(U) $125	Improved boom nozzle prototype units for operational test on KC-135
–	(U) $120	Interphone trade study/cost analysis
–	(U) $517	Mission support
–	(U) $60	Miscellaneous
–	(U) $4,958	Total
	(U) FY 1996	
–	(U) $0	Total
	(U) FY 1997	
–	(U) $0	Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401218F KC-135 Squadrons
PROJECT NO. AND NAME 2214 Improved Aerial Refueling Systems (IARS)	

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	5,160	0	0	5,160
(U) Appropriated Value	5,160			
(U) Adjustments to Appropriated Value				
a. Cong/Gen Reduction	0			
b. SBIR	0			
c. Omnibus or Other Above Threshold Reprogram	0			
d. Below Threshold Reprogram	-202			
(U) Adjustments to Budget Years Since FY96 PB	0	0	0	
(U) Current Budget Submit/President's Budget	4,958	0	0	4,958

(U) Change Summary Explanation:

Funding: IARS not funded beyond FY95. IARS will be replaced by specific user projects and AMC initiatives identified during development of the FY98 POM. The following change is not incorporated into the database: FY95 IARS increased by $2,511K reprogramming from Open Skies.

Schedule: Numerous projects in parallel, based on priority determination.

Technical: N/A

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401218F KC-135 Squadrons
PROJECT NO. AND NAME 2214 Improved Aerial Refueling Systems (IARS)	

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) N/A									

Related RDT&E:
(U) N/A

(U) D. Schedule Profile

	FY 1995	FY 1996				FY 1997							
		1	2	3	4	1	2	3	4	1	2	3	4
(U) Improved Air Refueling System (IARS)	Program Ends 4QFY96												

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0401218F KC-135 Squadrons

PROJECT NO. AND NAME: 2214 Improved Aerial Refueling Systems (IARS)

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Project CORAL REACH	1,827		
(U) PACER CRAG Support Activities	2,309		
(U) Improved Boom Nozzle	125		
(U) Interphone Study	120		
(U) Mission Support	517		
(U) Miscellaneous	60		
(U) Total	4,958		

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Boeing	Existing Fleet Support		KC-135 SPO		0	1,760	Project ends	4QFY96	0	1,760
Miscellaneous					2,061	2,182	Project ends	4QFY96	0	4,243
Support and Management Organizations										
Miscellaneous					849	891	Project ends	4QFY96	0	1,740
Test and Evaluation Organizations										
Miscellaneous					150	125	Project ends	4QFY96	0	275

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401218F KC-135 Squadrons
PROJECT NO. AND NAME 2214 Improved Aerial Refueling Systems (IARS)	

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property:

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Property									
N/A									
Support and Management Property									
N/A									
Test and Evaluation Property									
N/A									
Subtotal Product Development									
Subtotal Support and Management									
Subtotal Test and Evaluation									
Total Project									

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0401218F KC-135 Squadrons

PROJECT NO. AND NAME: 4285 Receptacle Modification

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4285 Receptacle Modification	176	0	0	0	0	0	0	0	176

(U) A. **Mission Description and Budget Item Justification ($ in Thousands)**

The Receptacle Modification requirement was eliminated by the using command. The majority of FY95 funds were sourced in the FY95 Omnibus reprogramming. The remainder of the FY95 funds were used for contractor support.

(U) FY 1995
- (U) $176 Contractor support
- (U) $176 Total

(U) FY 1996
- (U) $0 Total

(U) FY 1997
- (U) $0 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401218F KC-135 Squadrons
PROJECT NO. AND NAME 4285 Receptacle Modification	

(U) B. **Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	2,746	0	0	2,746
(U) Appropriated Value	3,000			
(U) Adjustments to Appropriated Value				
a. Cong/Gen Reduction	-254			
b. SBIR	0			
c. Omnibus or Other Above Threshold Reprogram	-2,570			
d. Below Threshold Reprogram	0			
(U) Adjustments to Budget Years Since FY96 PB				
(U) Current Budget Submit/President's Budget	176	0	0	176

(U) Change Summary Explanation:

Funding: The majority of FY95 receptacle funds were sourced in the FY95 Omnibus reprogramming.

Schedule: N/A

Technical: N/A

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) N/A									

Related RDT&E:

(U) N/A

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401218F KC-135 Squadrons
PROJECT NO. AND NAME 4285 Receptacle Modification	

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Program terminated												

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401218F KC-135 Squadrons
PROJECT NO. AND NAME 4285 Receptacle Modification	

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Contractor support	176		
(U) Total	176		

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
N/A										
Product Development Organizations										
N/A										
Support and Management Organizations										
N/A										
Test and Evaluation Organizations										
N/A										

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401218F KC-135 Squadrons
PROJECT NO. AND NAME 4285 Receptacle Modification	

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property:

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Property									
N/A									
Support and Management Property									
N/A									
Test and Evaluation Property									
N/A									
Subtotal Product Development									
Subtotal Support and Management									
Subtotal Test and Evaluation									
Total Project									

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401218F KC-135 Squadrons
PROJECT NO. AND NAME 4286 Multipoint Modification	

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4286 Multipoint Modification	14,615	12,056	0	0	0	0	0	0	26,671

(U) **A. Mission Description and Budget Item Justification ($ in Thousands)**

The Multipoint Refueling System (MPRS) enhances interoperability with the Navy, the Marines, NATO, and other Allied nations. It permits simultaneous and independent refueling of two, probe-equipped, receiver aircraft. This system provides enhanced reliability and efficiency for probe/drogue refueling and permits refueling of probe-equipped and receptacle-equipped receiver aircraft during a single mission (not simultaneously). This requirement was established by Air Mobility Command (AMC) Mission Need Statement 003-92 and AMC Operational Requirements Document 003-92-I/II. This project is a low technical risk effort supporting a fielded weapon system and, therefore, is assigned to Budget Activity, Operational Systems Development. The Air Force is currently evaluating the Navy's refueling requirement to determine final procurement quantity.

(U) FY 1995

- (U) $13,378 Engineering design, procurement, assembly & installation of MPRS Group-A; pod & pylon procurement of Group B
- (U) $686 Data
- (U) $167 Mission support
- (U) $384 Aircraft maintenance
- (U) $14,615 Total

(U) FY 1996

- (U) $6,143 Engineering design, procurement, assembly & installation of MPRS Group-A; pod & pylon procurement of Group B
- (U) $1,967 Test planning and support
- (U) $350 System Engineering and Technical Assistance (SETA) support
- (U) $1,259 ECO
- (U) $1,062 Mission support
- (U) $500 Aircraft maintenance
- (U) $775 GFP (MILSTRIP, GFE, fuel, and miscellaneous)
- (U) $12,056 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401218F KC-135 Squadrons
PROJECT NO. AND NAME 4286 Multipoint Modification	

(U) FY 1997
– (U) $0 Total

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	15,100	12,727	0	27,827
(U) Appropriated Value	15,100	12,727		15,100
(U) Adjustments to Appropriated Value				
a. Cong/Gen Reduction	0	-247		
b. SBIR	-485	-294		
c. Omnibus or Other Above Threshold Reprogram	0	-130		
d. Below Threshold Reprogram	0			
(U) Adjustments to Budget Years Since FY96 PB				
(U) Current Budget Submit/President's Budget	14,615	12,056	0	26,671

(U) Change Summary Explanation:

Funding: FY96 reductions of $671K due to SBIR, Economic and Overhead/Improved Management Reductions, and Bosnia I bills.

Schedule: Multipoint execution delayed until 4QFY95 due to a Congressional restriction on obligation of funds and evolving Air Force priorities. This restriction was deleted in FY95. Multipoint request for proposal released 2QFY95. Contract awarded 28 Sep 95. RDT&E phase scheduled to complete 4QFY97.

Technical: N/A

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0401218F KC-135 Squadrons

PROJECT NO. AND NAME: 4286 Multipoint Modification

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Aircraft Procurement, AF, BA-5 KC-135 Mods, MN-KC4231	0	12,200	21,600	22,300	20,300	40,300	40,800	17,200	177,900

Related RDT&E:
(U) N/A

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Round Table/Acquisition Panel	X*											
(U) Draft RFP		X*										
(U) Final RFP			X*									
(U) Source Selection			X*									
(U) Contract Award				X*								
(U) Design/Build/Install				X	X	X	X	X	X	X		
(U) Ground Test Complete										X		
(U) Flight Test Complete											X	
(U) Production Option Award							X		X			
(U) IOC (FY02/4)												

* Denotes milestone completion

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0401218F KC-135 Squadrons

PROJECT NO. AND NAME: 4286 Multipoint Modification

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Group A + Group B	13,378	6,143	0
(U) Test planning and support	0	1,967	0
(U) Data	686	0	0
(U) SETA support	0	350	0
(U) ECO	0	1,259	0
(U) Mission support	167	1,062	0
(U) Aircraft maintenance	384	500	0
(U) GFP (MILSTRIP, GFE, fuel, and miscellaneous)	0	775	0
(U) Total	14,615	12,056	0

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Boeing	FFP	28 Sep 95	ASC/LCA		5,749	14,448	8,169	0	0	28,365
Product Development Organizations										
ASC/LCA					0	167	1,062	0	0	2,005
Support and Management Organizations										
SETA Contractors					209	0	350	0	0	559
Test and Evaluation Organizations										
Edwards AFB					0	0	900	0	0	900
Pax River NAS					0	0	800	0	0	800

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401218F KC-135 Squadrons
PROJECT NO. AND NAME 4286 Multipoint Modification	

(U) B. **Budget Acquisition History and Planning Information Continued ($ in Thousands)**

Government Furnished Property:

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Property									
Shipping, Misc				0	0	150	0	0	150
Support and Management Property									
MILSTRIP				0	0	500	0	0	500
Test and Evaluation Property									
KC-135 Fuel				0	0	125	0	0	125
Subtotal Product Development				0	167	1212	0	0	1379
Subtotal Support and Management				209	0	850	0	0	1059
Subtotal Test and Evaluation				0	0	0	0	0	1825
Total Project				209	167	3887	0	775	4263

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0401218F KC-135 Squadrons

PROJECT NO. AND NAME: 4403 Real-Time Information in the Cockpit (RTIC)

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4403 Real-Time Information in the Cockpit (RTIC)	0	0	757	0	0	0	0	0	757

(U) A. Mission Description and Budget Item Justification ($ in Thousands)

The Air Mobility Command (AMC) Airlift and Air Refueling Mission Area Plans identify a deficiency in ability to protect aircraft from hostilities during combat operations. RTIC addresses this deficiency and increases aircrew survivability by providing aircrews with portable, on-aircraft, mission equipment to receive and display critical, real-time intelligence information. Strategic mobility aircrews often fly extended missions or transit enroute stations without full intelligence information capability. Information provided prior to mission departure is often outdated or incomplete upon arrival in theater. RTIC provides increased threat situational awareness and enables aircrews to make mission modifications to avoid enemy threats under rapidly changing combat conditions. To limit system implementation costs, RTIC will "snap-on" to any AMC mobility fleet aircraft when this capability is needed. These systems are intended to be transformed between KC-135, KC-10, C-141, C-5, and C-17 operational wings, as required. This project is an FY97 new start to modify and integrate on the KC-135 previously developed intelligence communication and display equipment to meet AMC requirements. This project is comprised of low technical risk efforts supporting fielded weapons systems and, therefore, is assigned to Budget Activity, Operational Systems Development.

(U) FY 1995

- (U) N/A
- (U) $0 Total

(U) FY 1996

- (U) N/A
- (U) $0 Total

(U) FY 1997

- (U) $645 Engineering study/analysis; prototype development, modification, retrofit, and qualification/certification testing
- (U) $50 C/KC-135 aging aircraft activities
- (U) $62 Mission support
- (U) $757 Total

(U) B. Program Change Summary ($ in Thousands)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0401218F KC-135 Squadrons

PROJECT NO. AND NAME: 4403 Real-Time Information in the Cockpit (RTIC)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	0	793	793
(U) Appropriated Value	0			0
(U) Adjustments to Appropriated Value				
a. Cong/Gen Reduction				
b. SBIR				
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram				
(U) Adjustments to Budget Years Since FY96 PB	0	0	-36	
(U) Current Budget Submit/President's Budget	0	0	757	757

(U) Change Summary Explanation:

Funding: New program start. FY97 funds have been reduced by $36K. FY97 Real-Time Information in the Cockpit total project cost after reduction is $757K.

Schedule: New program start

Technical: N/A

(U) C. **Other Program Funding Summary ($ in Thousands)**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0401218F KC-135 Squadrons

PROJECT NO. AND NAME: 4403 Real-Time Information in the Cockpit (RTIC)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) PE# 0401218F/KC-135 Squadrons									
Aircraft Procurement, AF, BA-7									
Other Production Charges	0	0	0	1,551	1,582	1,618	1,653	1,711	8,115
(U) Operations & Maintenance, AF, BA-2									
Mobilization	0	0	0	1,000	1,019	1,050	1,071	TBD	TBD
(U) PE# 0401119F/C-5 Squadrons									
RDT&E, AF, BA-7									
Operational Systems Development	0	0	672	0	0	0	0	0	672
(U) Aircraft Procurement, AF, BA-7									
Other Production Charges	0	0	0	1,551	1,582	1,618	1,654	1,712	8,117

(U) D. Schedule Profile

	FY 1995	FY 1996				FY 1997							
		1	2	3	4	1	2	3	4	1	2	3	4
(U) Program Start											X		

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401218F KC-135 Squadrons
PROJECT NO. AND NAME 4403 Real-Time Information in the Cockpit (RTIC)	

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Engineering study/analysis; prototype ... testing	0	0	645
(U) C/KC-135 aging aircraft activities			50
(U) Mission support			62
(U) Total			757

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations: Contracting office will be Electronic Systems Command (ESC)/ICY for a planned competitive award.

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program

Product Development Organizations: TBD

Support and Management Organizations: TBD

Test and Evaluation Organizations: TBD

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401218F KC-135 Squadrons
PROJECT NO. AND NAME 4403 Real-Time Information in the Cockpit (RTIC)	

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property:

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Property									
N/A									
Support and Management Property									
N/A									
Test and Evaluation Property									
N/A									
Subtotal Product Development									
Subtotal Support and Management									
Subtotal Test and Evaluation									
Total Project									

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0401218F KC-135 Squadrons

PROJECT NO. AND NAME: 4494 KC-135 Economic Life Study

COST *($ In Thousands)*	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
4494 KC-135 Economic Life Study	0	0	0	0	0	959	0	0	959

(U) A. **Mission Description and Budget Item Justification ($ in Thousands)**

The KC-135 Economic Service Life Study consists of structure, systems, and component support studies, along with cost benefit analyses. This information is required to support a Cost and Operational Effectiveness Analysis to address replacement schedules for the KC-135 based on economic decision points. The study will include the effects of aircraft aging, corrosion, fatigue, and stress corrosion cracking resulting from the CORAL REACH Aging Aircraft Project. This project is a low technical risk effort supporting a fielded weapon system and, therefore, is assigned to Budget Activity, Operational Systems Development. This project is an FY00 new start.

(U) FY 1995

– (U) $0 Total

(U) FY 1996

– (U) $0 Total

(U) FY 1997

– (U) $0 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401218F KC-135 Squadrons
PROJECT NO. AND NAME 4494 KC-135 Economic Life Study	

(U) **B. Program Change Summary ($ in Thousands):** N/A - No funds prior to FY00. FY00 funds have been reduced by $41K.

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget				
(U) Appropriated Value				
(U) Adjustments to Appropriated Value				
a. Cong/Gen Reduction				
b. SBIR				
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram				
(U) Adjustments to Budget Years Since FY96 PB				
(U) Current Budget Submit/President's Budget				

(U) **C. Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) N/A									

(U) **D. Schedule Profile:** N/A - Not available at this time; new program start in FY00.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0401218F KC-135 Squadrons
PROJECT NO. AND NAME 4494 KC-135 Economic Life Study	

(U) A. Project Cost Breakdown ($ in Thousands): N/A - No costs prior to FY00

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0404102F Aerospace Rescue And Recovery

PROJECT NO. AND NAME: 1325 HH-60G

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
1325 HH-60G	0	5,109	3,322	0	0	0	0	0	8,431

(U) **A. Mission Description and Budget Item Justification**

The mission of the HH-60G is search and rescue in hostile environments. To operate on the future battlefield, rescue forces must be capable of communicating with command, control, and supporting forces. Also, defensive systems are a necessity in today's increased air threat environment. These funds will be used to engineer (1) the installation of long-range communications, a missile jamming receiver, and flare and chaff dispensers; and (2) control all communication radios, transponders, and navigation radios on to the current MIL STD-1553 data bus and aircraft control display software. This program also integrates the AAR-47 missile warning receiver, ALE-47 flare/chaff dispensers, and APR-39a(v)1 controls on to the MIL STD-1553 data bus and into aircraft control display unit software to provide both manual and automatic threat identification and countermeasure dispensing. This program is a new start in FY96 and is Research Category/Budget Activity Operational Systems Development because the project supports a currently operational system.

(U) FY 1995

- (U) $0 Not Applicable

(U) FY 1996

- (U) $2,250 Engineering integration and control of all avionics.
- (U) $2,895 Engineering and integration of Infrared Countermeasures (IRCM) and Missile Warning Receiver (MWR).
- (U) $5,145 Total

(U) FY 1997

- (U) $1,421 Avionics Operational Test and Evaluation.
- (U) $1,901 Infrared Countermeasures (IRCM) and Missile Warning Receiver (MWR) Operational Test and Evaluation.
- (U) $3,322 Total

(U) **Acquisition Strategy:** The strategy is to use proven, off-the-shelf equipment and technology. The plan is to use an existing Basic Ordering Agreement (BOA) with the HH-60G manufacturer. Both the avionics and the electronic warfare efforts will be placed on contract using the existing BOA.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0404102F Aerospace Rescue And Recovery
PROJECT NO. AND NAME 1325 HH-60G	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	5,369	3,481	8,850
(U) Appropriated Value		5,369		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions		-104		
b. SBIR		-114		
c. Omnibus or Other Above Threshold Reprogram		-042		
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years			-159	
(U) Current Budget Submit/President's Budget	0	5,109	3,322	8,431

(U) Change Summary Explanation:

Funding: FY97 includes changes due to revised inflation rates.

Schedule: Not Applicable

Technical: Not Applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0404102F Aerospace Rescue And Recovery

PROJECT NO. AND NAME: 1325 HH-60G

(U) C. Other Program Funding Summary ($ in Thousands)

Information below is based on the upgrade of battlefield rescue communications and defense systems capability on HH-60G.

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) BP1000 HH-60									
(U) Aircraft Procurement - AF Attrition Reserve aircraft	0	0	107,900					0	107,900
(U) BP1100									
(U) Aircraft Modifications - AF			239	6,913	9,885	11,658	11,495		40,190

Related RDT&E:

(U) None

(U) D. Schedule Profile

Fiscal Year actual and planned events by quarter.

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Contract Milestones												
(U) Contract Award								X				
(U) T&E Milestones												
(U) IOT&E										X		
(U) FOT&E											X	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0404102F Aerospace Rescue And Recovery
PROJECT NO. AND NAME 1325 HH-60G	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Avionics Upgrade			
(U) Systems Engineering	0	950	0
(U) Program Management Support	0	450	0
(U) Configuration Management	0	235	0
(U) Technical Data	0	235	0
(U) Integrated Logistics Support	0	350	0
(U) Operational Test & Evaluation	0	0	1,421
(U) Travel	0	30	0
(U) Integration of Infrared Countermeasures (IRCM) and Missile Warning Receiver (MWR)			
(U) System Engineering	0	950	0
(U) Program Management Support	0	700	0
(U) Configuration Management	0	235	0
(U) Technical Data	0	235	0
(U) Integrated Logistics Support	0	700	0
(U) Operational Test & Evaluation	0	0	1,901
(U) Travel	0	39	0
(U) Total	0	5,109	3,322

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0404102F Aerospace Rescue And Recovery

PROJECT NO. AND NAME: 1325 HH-60G

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Contract Winner	SS/C	9/96	N/A	N/A	0	0	5,049	0	0	5,049
Support and Management Organizations										
WR-ALC/LU	Allot	1/96	N/A	N/A	0	0	60	40	0	100
Test and Evaluation Organizations										
ACC & AFOTEC	PO	3/97	N/A	N/A	0	0	0	3,282	0	3,282

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property: Not Applicable

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Property									
Support and Management Property									
Test and Evaluation Property									

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0404102F Aerospace Rescue And Recovery
PROJECT NO. AND NAME 1325 HH-60G	

Subtotal Product Development	0	0	5,049	0	0	5,309
Subtotal Support and Management	0	0	60	40	0	100
Subtotal Test and Evaluation	0	0	0	3,282	0	3,424
Total Project	0	0	5,109	3,322	0	8,833

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development*

PE NUMBER AND TITLE: 0604231F / 0401130F C-17 Program

PROJECT NO. AND NAME: 2569 C-X Program Carrier

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2569 C-X Program Carrier	184,419	69,968	87,486	107,114	178,538	173,816	168,979	181,400	6,628,995

***PE 64231 FY95 and FY96 funding is Budget Activity 5, EMD**

(U) **A. Mission Description and Budget Item Justification ($ in Thousands)**

Airlift provides essential flexibility when responding to contingencies on short notice anywhere in the world. It is a major element of America's national security strategy and constitutes the most responsive means of meeting U.S. mobility requirements. Additional airlift capability is needed for rapid deployment of combat forces in support of national objectives. The Congressionally-mandated Mobility Requirements Study (MRS), initially forwarded to Congress on 23 Jan 92 and updated on 28 Mar 95, validated the need for the C-17 aircraft. Specific tasks associated with the airlift mission include deployment, employment (airland and airdrop), sustaining support, retrograde, and combat redeployment. The C-17 is capable of performing the entire spectrum of airlift missions and is specifically designed to operate effectively and efficiently in both the strategic and theater environments. The vast increase in overall airlift capability provided by the C-17 is needed to replace the capabilities being lost as the C-141 retires from the Air Force inventory. The C-17 is capable of performing the airlift mission well into the 21st century. This program element is budgeted in Budget Activity, Operational System Development because the program has completed Milestone III and is currently continuing operational developmental efforts to support full-rate production and modification programs.

(U) FY 1995

- (U) $800 Completed LFT program: 30 Sep 95
- (U) $24,622 Completed DT&E flight test program: 16 Dec 94
- (U) $5,900 Completed reliability, maintainability & availability (RM&A) evaluation: 5 Aug 95
- (U) $68,797 Continue development effort
- (U) $54,300 Funding provided by OSD per USD(A&T) and MDA settlement agreement
- (U) $7,100 Begin 3rd life durability testing
- (U) $22,900 Product improvement development & testing
- (U) $184,419 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development*	PE NUMBER AND TITLE 0604231F / 0401130F C-17 Program
PROJECT NO. AND NAME 2569 C-X Program Carrier	

(U) FY 1996
- (U) $10,100 3rd life durability test
- (U) $38,800 Continue product improvement development & testing
- (U) $6,800 T-1 refurbishment
- (U) $14,268 Producibility Enhancement/Performance Improvement (PE/PI) Government flight test
- (U) $69,968 Total

(U) FY 1997 - The change in PE in the report title reflects the end of EMD and beginning of operational system development
- (U) $69,086 Continue product improvement development & testing
- (U) $8,000 3rd life durability test
- (U) $10,400 PE/PI Government flight test
- (U) $87,486 Total

(U) **Acquisition Strategy:**

The C-17 Acquisition Strategy is based on five separate contracts to support the entire scope of the C-17 weapon system. These five contracts are: 1) a multi-year production (MYP) aircraft contract (to economically purchase the full complement of production aircraft); 2) a Producibility Enhancement and Performance Improvement (PE/PI) contract (to develop cost reduction changes, capability enhancements, and design fixes to service-revealed problems); 3) a field support contract (to support the current and future fielded aircraft); 4) a MYP engine contract (for Government Furnished Equipment [GFE] engines); and 5) an aircrew training systems (ATS) contract (for aircrew training).

Two C-17 Defense Acquisition Board (DAB) decisions, contained in the 3 Nov 95 and 1 Feb 96 USD(A&T) Acquisition Decision Memoranda (ADMs), directed the Air Force to proceed with a 120-aircraft production program and pursue a multi-year procurement for the last 80 aircraft. Upon enactment of implementing legislation, the Air Force will proceed with a MYP program of 80 aircraft (along with engines to support them) to buy 120 aircraft at the maximum affordable rate (FY97-03: 8-9-13-15-15-15-5) beginning with the economic order quantity (EOQ) for FY96. The current C-17 acquisition strategy supports these decisions.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development*	PE NUMBER AND TITLE 0604231F / 0401130F C-17 Program
PROJECT NO. AND NAME 2569 C-X Program Carrier	

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Previous President's Budget (FY96)	188,077	85,753	15,695
(U) Appropriated Value	190,154	73,803	
(U) Adjustments to Appropriated Value			
a. Congressional/General Reductions	-2077	-1,465	
b. SBIR	-3572	-1,268	
c. Omnibus and Other Above Threshold Reprogrammings	-199	-1,302	
d. Below Threshold Reprogramming	113	200	
(U) Adjustments to Budget Years Since FY96 PB			71,791
(U) Current Budget Submission	184,419	69,968	87,486

(U) Change Summary Explanation:

Funding: FY95 changes include congressional/general reductions (-2,077), SBIR (-3572) and a below threshold reprogramming (-86). FY96 changes include: congressional/general reductions (-986 for improved overhead savings, -444 for economic assumptions, & -35 for ADP savings), SBIR (-1,268), Omnibus and other above threshold reprogrammings (-554 for Bosnia I & -748 for F-16s to Jordan). FY97 changes include: adjustments to budget year since FY96 PB (14,217 budget transfer between C-17 PEs, -5,209 for inflation & other reductions, and +77,000 in a Zero Base Transfer [ZBT] in accordance with DAB decision to procure additional 80 aircraft).

Schedule: As a result of the November 1995 and February 1996 DAB decisions, the total program has changed from 40 to 120 aircraft and Full Operational Capability (FOC) from FY98 to FY05.

Technical: No changes.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development*

PE NUMBER AND TITLE: 0604231F / 0401130F C-17 Program

PROJECT NO. AND NAME: 2569 C-X Program Carrier

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Prior to FY 1995	FY 2000	FY 2001	To Compl	Total Cost
(U) APAF Budget Activity 02	2,305,923	2,492,242	2,142,805	2,376,581	3,269,055	3,252,562	4,456,000	32,550,992
(Aircraft Quantity)	(6)	(8)	(8)	(9)	(15)	(15)	(20)	(120)
(U) APAF Budget Activity 06 (Spares)	94,090	77,291	61,386	133,505	192,730	203,988	804,300	2,199,269
(U) APAF Budget Activity 05 (Mods)	15,185	21,017	41,973	41,479	78,650	198,789	813,000	1,278,627
(U) MilCon Budget Activity N/A	0	6,900	80,905	9,700	0	0	0	335,000

Related RDT&E:

(U) None

(U) D. Schedule Profile

	FY 1995			FY 1996				FY 1997			
	1	2	3	1	2	3	4	1	2	3	4
(U) Acquisition Milestones:											
IOC		X*									
RM&A											
Milestone III				X*							
(U) Engineering Milestones:											
Static Article Test Complete											
Durability Article Test (1st Lifetime)											
Durability Article Test (2nd Lifetime)											
Durability Article Test (3rd Lifetime)								X			
DT&E	X*										
DIOT&E			X*								
Live Fire Test Comp (final rpt, 26 Sep 95)		X*									

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development*

PE NUMBER AND TITLE: 0604231F / 0401130F C-17 Program

PROJECT NO. AND NAME: 2569 C-X Program Carrier

	FY 1995				FY 1996				FY 1997			
	1	2	3	1	2	3	4	1	2	3	4
(U) Contract Milestones:												
Lot VII Adv Proc (6 a/c)												
Lot VI (6 a/c)												
Lot VII (6 a/c)												
Lot VIII Adv Proc (8 a/c)		X*										
Lot VIII (8 a/c)					X*							
Lot IX Adv Proc (8 a/c)					X							
Lot IX (8a/c)								X				
Lot X Adv Proc (9 a/c)									X			

Other Program Milestones: N/A

* Denotes milestone completion

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development*

PE NUMBER AND TITLE: 0604231F / 0401130F C-17 Program

PROJECT NO. AND NAME: 2569 C-X Program Carrier

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
(U) Contractor Furnished Equipment	121,330	51,700	77,100
(U) Training Other Gov't Contractor (OGC)	0	0	0
(U) Test OGC	31,670	14,268	10,386
(U) Mission Support OGC	17,594	3,900	0
(U) Engine Data/Refurb OGC	12,500	0	0
(U) Site Activation OGC	500	100	0
(U) Miscellaneous	825	0	0
(U) Total	184,419	69,968	87,486

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Douglas Aircraft F33657-81-C-2108	C,FPI/FP	8/31/81	5,198,038	5,198,038	5,100,108	97,530	500	0	0	5,198,138
Douglas Aircraft F33657-95-D-2026	CPFF	7/13/95	922,847	922,847	0	23,800	51,200	77,100	770,747	922,847
Pratt & Whitney F33657-89-C-0032	C,FP	5/24/91	25,356	25,356	12,856	12,500	0	0	0	25,356

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development*

PE NUMBER AND TITLE: 0604231F / 0401130F C-17 Program

PROJECT NO. AND NAME: 2569 C-X Program Carrier

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
(U) B. Budget Acquisition History and Planning Information, Continued ($ in Thousands)										
Douglas Aircraft F33657-89-C-0018	C,FPI	4/14/89	83,885	83,885	83,885	0	0	0	0	83,885
Support and Management Organizations										
Mission Support OGC	PO		0	0	79,720	17,594	3,900	0	0	101,214
Site Activation OGC	PO		0	0	2,280	500	100	0	0	2,880
Miscellaneous	PO		0	0	36,524	825	0	0	0	37,349
Test and Evaluation Organizations										
Combined Test Force	PO		0	0	149,490	27,000	14,268	10,386	39,100	240,244
Live Fire Test	PO		0	0	9,452	800	0	0	0	10,252
Other	PO		0	0	2,960	3,870	0	0	0	6,830
Subtotal Product Development					5,196,849	51,700	77,100	770,747	6,230,226	
Subtotal Support and Management					118,524	4,000	0	0	141,443	
Subtotal Test and Evaluation					161,902	14,268	10,386	39,100	257,326	
Total Project					5,477.275	69,968	87,486	809,847	6,628,995	

Government Furnished Property: Not Applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604240F B-2 Advanced Technology Bomber

PROJECT NO. AND NAME: 3843 B-2 (Advanced Technology Bomber)

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3843 B-2 (Advanced Technology Bomber)	365,511	582,649	528,454	346,611	221,997	133,487	11,685	0	24,629,516

(U) A. Mission Description and Budget Item Justification

The B-2 Advanced Technology Bomber is America's most advanced long-range, land-based strike aircraft. This all-wing, two crew member aircraft has twin weapons bays of over 20,000 pounds capacity each and employs a wide array of signature reduction technologies to greatly enhance both its ability to penetrate enemy defenses and its ability to survive in a highly defended target environment. The B-2 provides global force projection capability and the ability to influence an enemy with insensitivity to the location of enemy assets or the availability of forward basing. This program is in budget activity 7 - Operational System Development, Research Category 6.6 because of the concurrency in developing, testing, producing, and deploying the B-2.

(U) FY 1995 ($ in Thousands):
- $204,056 Continued developmental test and evaluation
- $ 68,259 Continued development and support acquisition
- $ 93,196 Continued primary hardware development
- $365,511 Total

(U) FY 1996 ($ in Thousands):
- $146,313 Continued developmental test and evaluation
- $74,814 Continued development and support acquisition
- $361,522 Continued primary hardware development
- $582,649 Total

(U) FY 1997 ($ in Thousands):
- $116,571 Continued developmental test and evaluation
- $60,214 Continued development and support acquisition
- $351,669 Continued primary hardware development
- $528,454 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604240F B-2 Advanced Technology Bomber
PROJECT NO. AND NAME 3843 B-2 (Advanced Technology Bomber)	

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	384,080	623,616	446,225	24,815,402
(U) Appropriated Value	388,543	623,616		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	(4,463)	(12,423)		
b. SBIR	(7,294)	(15,628)		
c. Omnibus or Other Above Threshold Reprogram		(12,916)		
d. Below Threshold Reprogramming	(11,275)			
(U) Adjustments to Budget Years Since FY 1995 PB			82,229	-185,886
(U) Current Budget Submit/President's Budget	365,511	582,649	528,454	24,629,516

(U) Change Summary Explanation:

Funding:
FY 95: Reflects a SBIR reduction of $7.3 million and Below Threshold Reprogramming reductions of $11.275 million.
FY 97: Air Force restored $51.5 million to realign FY97 funding with program content, less general AF reductions of $18.4 million. In addition, $49 million was added to FY 97 based on funding misphasing, additional growth in software development and flight test impacts, and to restore shortfalls from earlier POM requests.

Schedule:
Envelope Expansion: Completion of envelope expansion has moved from 4th Qtr FY95 to 2nd Qtr FY96 to allow time to complete the remaining 1% of test points needed to support Block 20 capability in 4th Qtr FY96. This delay minimizes costs by integrating tests into the available flight test opportunities and maximizes flight test efficiencies while still meeting Block 20 delivery.
Complete GPS Testing: Completion of GPS testing has moved from 4th Qtr FY95 to 2nd Qtr FY96, based on the need to assure sufficient analysis of flight test data. The time between test flights has been extended to accommodate data processing/analysis. The schedule still supports Block 20 delivery.

Technical: N/A

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE: 0604240F B-2 Advanced Technology Bomber

PROJECT NO. AND NAME: 3843 B-2 (Advanced Technology Bomber)

(U) C. Other Program Funding Summary ($ in Thousands)

	FY1995/P	FY1996	FY1997	FY1998	FY1999	FY2000	FY2001	To Complete	Total Cost
A/C Proc, AF, Combat A/C/BA01/B-2A	16,613,678	270,432	105,089	242,873	176,923	207,424	31,401	201,900	17,849,720
A/C Proc, AF, Combat A/C/BA01/B-2A Advanced Procurement		476,264							476,264
A/C Proc, AF, Modifications/BA05/B-2A	87,769	16,783	6,106	5,837	6,572	7,862	7,142	24,400	162,471
A/C Proc, AF, Cmn Spt Eq/BA07/Items<$2M	13,648	538	471	497	497	497	497	cont	
A/C Proc, AF, A/C Replen Spares/BA06/B-2A	2,409	5,722	4,297	7,787	8,077	8,241	8,392	cont	
A/C Proc, AF, A/C Intital Spares/BA06/B-2A	872,321	58,890	44,989	80,583	92,385	110,417	95,774	133,000	1,488,359
Proc (Other), AF/BA 02,03, 04/B-2A	148,142	55,699	19,716	16,797	10,758	11,625	11,879	cont	
Military Construction/BA01	501,900	24,600	0	23,200	0	0	0	0	549,700
A/C Proc, AF, A/C Spt Eqpt & Fac/BA07/ Bomber, Industrial Base Support	123,399	0	0	0	0	0	0	0	123,399
A/C Proc, AF, A/C Spt Eqpt & Fac/BA07/ Industrial Preparedness/PE708011F	3,333	13,576	3,615	3,740	3,294	3,381	0	0	30,939
Missile Proc, AF, Oth Missiles/BA42/ GPS Aided Munition/PE28030F	24,823	0	0	0	0	0	0	0	24,823
Related RDT&E	None								

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
Complete Envelope Expansion						X						
Complete GPS Testing Block 20						X						
Complete Arctic & Tropic Testing								X				
Complete GATS Testing								X				
Flight Test Complete							X					
Block 30												X
												X

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604240F B-2 Advanced Technology Bomber
PROJECT NO. AND NAME 3843 B-2 (Advanced Technology Bomber)	

(U) A. Project Cost Breakdown ($ in Thousands)

	FY 1995	FY 1996	FY 1997
Equipment Development & Evaluation	267,689	492,099	454,674
Government Test	55,368	50,850	45,335
Other Government Costs (OGC)	20,382	1,578	627
Other - Direct Release	22,072	38,122	27,818
Total Project	365,511	582,649	528,454

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
Air Vehicle - NG	CPIF/AF	Nov 81	20,970,757	21,299,861	19,584,088	230,764	445,435	414,055	619,003	21,293,345
Aircrew Training	CPIF	Jul 85	557,613	561,145	558,878	2,267	0	0	0	561,145
Mission Planning	Multiple	Multiple	337,905	337,905	194,008	23,538	35,114	31,769	53,476	337,905
Support and Management Organizations										
Other Govt Costs	N/A	N/A	N/A	579,929	556,727	20,382	1,578	627	615	579,929
Direct Release	N/A	N/A	N/A	369,425	256,769	22,072	38,122	27,818	24,644	369,425
Test and Evaluation Organizations										
Govt Test	N/A	N/A	N/A	793,461	625,866	55,368	50,850	45,335	16,042	793,461

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604240F B-2 Advanced Technology Bomber
PROJECT NO. AND NAME 3843 B-2 (Advanced Technology Bomber)	

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property:

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Property									
Engines - G.E.	Multiple	Multiple	N/A	550,055	6,924	7,350	4,900	0	569,229
AARL - Boeing	FPIF	Jun 88	N/A	112,730	4,196	4,200	3,950	0	125,076
Support and Management Property									
None									
Test and Evaluation Property									
None									
Subtotal Product Development				20,999,759	492,099	454,674	672,479	22,886,700	
Subtotal Support and Management				813,496	39,700	28,445	25,259	949,354	
Subtotal Test and Evaluation				625,866	50,850	45,335	16,042	793,461	
Total Project				22,439,121	582,649	528,454	713,780	24,629,515	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0702207F Depot Maintenance (Non-If)

PROJECT NO. AND NAME: 3326 Precision Measurement & Calibration

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3326 Precision Measurement & Calibration	2,032	1,423	1,444	1,494	1,543	1,581	1,618	Continuing	TBD

(U) A. **Mission Description and Budget Item Justification**

This program develops, tests, and evaluates national and Air Force measurement standards and calibration equipment in support of all Air Force programs and activities, including over 150 base Precision Measurement Equipment Laboratories (PMELs) worldwide. Metrology research and development provides technology to support systems in all phases of development and acquisition, as well as Air Force R&D laboratories, test ranges, ground test facilities, and operational weapons systems support. Rapidly changing technology requires continuing research and development of measurement standards and calibration equipment to ensure modern weapon systems meet Air Force readiness objectives. This program addresses all metrology disciplines and includes the technology areas of laser, infrared, microwave, millimeter wave, mechanical, electrical, electronic, and ionizing radiation measurements. It is in Budget Activity 7 as it supports operational systems.

Metrology is a technical discipline devoted to the science of measurements and to the study and improvement of measurement technology. Measurements are the foundation of military system development, quality assurance, hardware conformance testing and system readiness tests. The integrity of these tests is assured through calibration and traceability assurance schemes. The capability to measure and calibrate must parallel the emergence of new technology, new ranges, and new capabilities of military systems. Lack of new measurement capability impedes or blocks the successful exploitation of new technologies, especially in the movement from development laboratory to production to deployment. R&D efforts are essential within the DoD to pace these requirements, otherwise, these same new systems will suffer time delays, excessive cost, and increased risk due to unreliable test results in all phases of development, production, deployment and operation.

(U) FY 1995 ($ in Thousands):

- (U) $515 Completed development of IR reflectance standards; continued development of IR transmittance and laser detector standards for IR / laser weapon systems.
- (U) $377 Completed development of an improved IR source; continued development of improved IR & visible detector standards for electro-optical weapon systems.
- (U) $290 Continued development of measurement capabilities to support low radar observables and of standards for radar and communications systems.
- (U) $325 Continued development of microwave noise figure and power standards used to support radar and communication receivers.
- (U) $310 Completed development of step gages and continued developing techniques for measuring flatness and roundness of precision aircraft components.
- (U) $155 Continued development of standards for electrical pulse measurements and DC voltage transfer standards to support electronic test equipment.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0702207F Depot Maintenance (Non-If)
PROJECT NO. AND NAME 3326 Precision Measurement & Calibration	

- (U) $60 Continued development work to support ionizing radiation hazard instrumentation.
- (U) $2032 Total

(U) FY 1996 ($ in Thousands):
- (U) $130 Complete development of IR transmittance standards for IR weapon systems.
- (U) $380 Continue development of visible and IR detector standards for electro-optical weapon systems, and radiometer system calibration methods.
- (U) $291 Continue development of microwave standards and measurements for radar support instruments to provide NIST traceability for DoD test equipment.
- (U) $230 Continue development of power standards for microwave communication and radar systems.
- (U) $203 Continue development of efficient calibration methodologies for coordinate measuring machines (CMMs) used in calibration support equipment.
- (U) $143 Complete development of DC voltage standards and continue to develop standards for electrical measurements for high accuracy electronic test equipment.
- (U) $46 Continue development work to support ionizing radiation hazard instrumentation.
- (U) $1423 Total

(U) FY 1997 ($ in Thousands):
- (U) $673 Continue development of improved electro-optical standards to support low observables and electro-optic guided weapon systems.
- (U) $388 Continue development of standards and measurements for radar support instrumentation and RF communications systems.
- (U) $194 Continue development of efficient methodologies for CMMs used in calibration support equipment.
- (U) $144 Continue development of standards for electrical measurements to support high accuracy electronic test equipment.
- (U) $45 Continue development work to support ionizing radiation hazard instrumentation.
- (U) $1444 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0702207F Depot Maintenance (Non-If)

PROJECT NO. AND NAME: 3326 Precision Measurement & Calibration

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	2032	1464	1488	
(U) Appropriated Value	2076			
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-44	-29		
b. SBIR				
c. Omnibus or Other Above Threshold Reprogram		-12		
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY 1994 PB			-44	
(U) Current Budget Submit/President's Budget	2032	1423	1444	

(U) Change Summary Explanation: None
Funding: None
Schedule: None
Technical: None

(U) **C. Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U)									

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U)												

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0702207F Depot Maintenance (Non-If)

PROJECT NO. AND NAME: 3326 Precision Measurement & Calibration

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Develop Measurement Standards & Calibration Support	1968	1401	1422
(U) Travel	20	22	22
(U) Reductions to Appropriation (SBIR)	44		
(U) Total	2032	1423	1444

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Organizations										
National Institute of Standards & Technology	Funds Transfer (SF 1080)	1st QTR	TBD	TBD	7592	1968	1401	1422	Continue	TBD
AFMC	In House	Various	TBD	TBD	57	20	22	24	Continue	TBD
Support and Management Organizations										
Test and Evaluation Organizations										

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0702207F Depot Maintenance (Non-lf)
PROJECT NO. AND NAME 3326 Precision Measurement & Calibration	

(U) B. Budget Acquisition History and Planning Information Continued ($ in Thousands)

Government Furnished Property: Not Applicable

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1995	Budget FY 1995	Budget FY 1996	Budget FY 1997	Budget to Complete	Total Program
Product Development Property									
Support and Management Property									
Test and Evaluation Property									
Subtotal Product Development				7649	1423	1444	Continue	TBD	
Subtotal Support and Management									
Subtotal Test and Evaluation									
Total Project				7649	1423	1444	Continue	TBD	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0708011F Industrial Preparedness

PROJECT NO. AND NAME: 3600 Industrial Preparedness - Manufacturing Technology

COST (*$ In Thousands*)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3600 Industrial Preparedness - Manufacturing Technology	0	57,945	49,969	51,851	51,811	54,081	55,603	0	Continuing

(U) **A. Mission Description and Budget Item Justification**

This program is in budget activity 7 - Operational System Development, Research Category 6.6 because it provides support to systems in production and/or an operational use. The Manufacturing Technology (MANTECH) Program is a corporate Air Force program that establishes and demonstrates advancements in manufacturing process technologies, manufacturing engineering systems, and industrial practices and transitions these advancements into weapon system design, development, acquisition, and/or sustainment. The Program strives to make superior mission enabling technologies an affordable reality by expanding access to a capable, responsive, multi-use industrial base with efficiencies comparable to world-class enterprises. Program efforts accelerate shop floor manufacturing process maturation, at every stage of development, through increased emphasis on cost, time, and quality risks in transition. Best processes are evaluated and adapted for application. Where mature processes are not available, laboratory-developed initial process capabilities are matured and inserted into weapon system programs. The MANTECH Program goes beyond factory floor manufacturing processes to encompass every activity within an industrial enterprise, ranging from above the shop floor activities [including tools for integrated product process development (IPPD)] to supplier base interactions and performance. The strategies and best practices of world-class enterprises are analyzed and the performance of defense suppliers benchmarked. The world's best industrial practices are adapted and validated in multiple pilot projects and deployed in defense applications. Project efforts address and target all industry levels, from large prime contractors to small material and parts vendors. In the FY96 PB, the MANTECH was submitted as PE63771F. The program has been reestablished as part of PE78011F, Industrial Preparedness, to respond to Congressional direction provided in the FY96 Authorization & Appropriation Acts.

(U) FY 1996 ($ in Thousands):

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0708011F Industrial Preparedness
PROJECT NO. AND NAME 3600 Industrial Preparedness - Manufacturing Technology	

– (U) $14,936 Demonstrate integrated product/process development tools capable of affecting reduced cost and accelerated cycle time in the design and manufacture of defense systems. Establish and demonstrate electronic data exchange concepts and tools and their application in affecting networked enterprise relationships, product producibility, manufacturing systems interoperability, and technology affordability.
-(U) Continue effort to establish and demonstrate the methodologies and tools for the capture of tester-independent test requirements to reduce the warfighter's systems life cycle cost burden.
-(U) Continue effort to demonstrate a product definition management system which spans bills of material in multiple production environment.

– (U) $7,506 Facilitate process maturation and standardization for military unique modules, sensors, arrays, solar cells, automatic test systems, and devices to enable the low-risk, affordable utilization of mission enabling technologies. Establish and demonstrate process modeling and statistical process control metrics for electronics systems components, materials, test, and inspection techniques.
-(U) Continue effort to establish a manufacturing process to produce affordable tactical grade fiber optic gyroscopes.
-(U) Demonstrate electronic manufacturing process improvements for low-cost ferrite circulators and for maintenance-free batteries.
-(U) Initiate manufacturing efforts on multi-bandgap solar cells for spacecraft to complement Phillips Laboratory development effort.

– (U) $9,813 Establish and demonstrate advanced processes for metal material manufacturing. Facilitate process maturation to accelerate affordable, low-risk exploitation of mission enabling technologies. Establish process control and improvement aimed at reducing product variability with special emphasis placed on process considerations in the design phase. Achieve industrial base risk reduction by promulgating critical process technologies.
-(U) Establish manufacturing capacity for large welded titanium assemblies for fighter aircraft.
-(U) Demonstrate thin-wall casting manufacturing process for turbine engines leading to product validation.

– (U) $7,205 Establish integrated process/product capabilities for the design and manufacture of mission enabling, low-cost composite structures. Facilitate process maturation to accelerate expanded composites utilization. Demonstrate in situ process control and closed-loop improvement capabilities. Achieve industrial base risk reduction by facilitating enhanced composites affordability.
-(U) Demonstrate rapid manufacture of thermoplastic radomes spare parts for special purpose aircraft.
-(U) Validate reproducible and affordable processes for the manufacture of multi-functional structures for fighter aircraft.

– (U) $18,485 Benchmark world-class enterprise processes and practices aimed at identifying capabilities and/or approaches for reducing cycle time and at eliminating waste and inefficiencies. Conduct pathfinder and pilot efforts in high-payoff endeavors aimed at validating potential benefits accrued from flexible manufacturing, commercial military integration, quality processing, supplier improvements, and integrated product/process development.
-(U) Continue pilot efforts to demonstrate manufacture of military electronics components on a commercial line.
-(U) Continue effort to implement Lean Aircraft Initiative findings in support of fighter and tactical missile Air Force needs.

– (U) $57,945 Total

(U) FY 1997 ($ in Thousands):

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0708011F Industrial Preparedness
PROJECT NO. AND NAME 3600 Industrial Preparedness - Manufacturing Technology	

–	(U) $8,279	Demonstrate integrated product/process development tools capable of affecting reduced cost and accelerated cycle time in the design and manufacture of defense systems. Establish and demonstrate electronic data exchange concepts and tools and their application in affecting networked enterprise relationships, product producibility, manufacturing systems interoperability, and technology affordability. -(U) Complete effort to provide Air Logistics Centers with the tools needed to prepare spare parts procurement packages. -(U) Initiate pathfinder activity to productionize results from industry/university research initiative.
–	(U) $6,083	Facilitate process maturation and standardization for military unique modules, sensors, arrays, solar cells, automatic test systems, and devices to enable the low-risk, affordable utilization of mission enabling technologies. Establish and demonstrate process modeling and statistical process control metrics for electronic systems components, materials, test, and inspection techniques. -(U) Bring on line processes capable of producing affordable tactical grade fiber optic gyroscopes in support of air launch missiles. -(U) Initiate effort to enable the affordable manufacture of ballistic wind sensors for use in munitions targeting and/or wind shear detection systems.
–	(U) $8,211	Establish and demonstrate advanced processes for metal material manufacturing. Facilitate process maturation to accelerate affordable, low-risk exploitation of mission enabling technologies. Establish process control and improvement aimed at reducing product variability with special emphasis placed on process considerations in the design phase. Achieve industrial base risk reduction by promulgating critical process technologies. -(U) Continue effort to reduce investment casting manufacturing costs by 50%, focusing on the gas turbine engine supplier base. -(U) Establish metal forming simulation remanufacturing processes for logistics centers to generate standardized replacement structures.
–	(U) $3,660	Establish integrated process/product capabilities for the design and manufacture of mission enabling, low-cost composite structures. Facilitate process maturation to accelerate expanded composites utilization. Demonstrate in situ process control and closed-loop improvement capabilities. Achieve industrial base risk reduction by facilitating enhanced composites affordability. -(U) Initiate effort to validate revolutionary approaches for manufacture of "all composite" air vehicles at costs of 50% of alternative structures. -(U) Complete effort for affordable production of multifunctional radome structures for fighters, achieving a 30% manufacturing cost reduction.
–	(U) $23,736	Benchmark world-class enterprise processes and practices aimed at identifying capabilities and/or approaches for reducing cycle time and at eliminating waste and inefficiencies. Conduct pathfinder and pilot efforts in high-payoff endeavors aimed at validating potential benefits accrued from flexible manufacturing, commercial military integration, quality processing, supplier improvements, and integrated product/process development. -(U) Expand aircraft industry benchmarking efforts to identify the best 1) performing industrial activities/enterprises, 2) practices and operations, and 3) opportunities for improving additional industry sectors and continue Lean Implementation Initiative efforts. -(U) Continue effort to transform the aerospace depot maintenance support infrastructure into a world-class enterprise.
–	(U) $49,969	Total

(U) B. Program Change Summary ($ in Thousands)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0708011F Industrial Preparedness

PROJECT NO. AND NAME: 3600 Industrial Preparedness - Manufacturing Technology

*** In the FY96 PB, the MANTECH was submitted as PE63771F. The program has been reestablished as part of PE78011F, Industrial Preparedness, to respond to Congressional direction provided in the FY96 Authorization & Appropriation Acts.

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	53,300	0	
(U) Appropriated Value	0	60,932	0	
(U) Adjustments to Appropriated Value	0			
a. Cong Gen Reductions	0	-1,181		
b. SBIR	0	-1,150		
c. Omnibus or Other Above Threshold Reprogram	0	-656		
d. Below Threshold Reprogramming	0			
(U) Adjustments to Budget Years Since FY 1996 PB	0		49,969	
(U) Current Budget Submit/President's Budget	0	57,945	49,969	

(U) Change Summary Explanation:

Funding: Manufacturing Technology has been functionally transferred from Budget Activity 3 to Budget Activity 7.

Schedule: Not Applicable

Technical: Not Applicable

(U) **C. Other Program Funding Summary ($ in Thousands)**

Not Applicable

(U) **D. Schedule Profile**

Not Applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0708026F Product/Reliable/Avail/Maintain Prog

PROJECT NO. AND NAME: 2146 Productivity, Reliability, Availability, Maintainability (PRAM)*

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
2146 Productivity, Reliability, Availability, Maintainability (PRAM)*	6,527	14,290	13,564	14,240	14,899	15,401	16,815	Continuing	Continuing

* FY 96 and outyear total includes funding formerly in PE 0604609F, Reliability and Maintainability Technology Insertion Program (RAMTIP). RAMTIP efforts terminated in FY 96 and all remaining funds were transferred to PRAM.

(U) A. **Mission Description and Budget Item Justification**

PRAM addresses acute reliability and maintainability (R&M) deficiencies by funding prototypes of developing and mature, commercial off-the-shelf technologies that can be incorporated into existing AF weapon systems and subsystems. The objective of this program is to emphasize the rapid incorporation of R&M technology "fixes" that will improve the operational capability of weapon systems and equipment at a significantly lower cost. Average project length is twenty-seven months. This program constitutes one of the most cost effective programs within the Air Force, with a proven return on investment for the entire program averaging 5:1. PRAM, a level-of-effort program, is dependent upon MAJCOMS and field support to adapt technology once the initial investment is completed. Listed below are projects being pursued as identified by the Air Force Materiel Command (AFMC) Technology Master Process (TMP). The objective of the TMP is to strategically focus technology application/insertion for the Air Force's future needs. A periodic review for all projects is held to ascertain the opportunity for success of those currently underway and to select new projects. This program in budget activity 7, Operational Systems Development, because projects are being engineered for already operational weapon systems.

(U) FY 1995

- (U) 3,616 Completed work on B-1B Oxygen Analyzer, Low cost Titanium Casting, Automated Vehicle Data Acquisition, Miniature RF Blind-mated Connector, Repair Technologies for CRT High Voltage Power Supply, Electronic Board and Tester Simulation Software, Fatigue Resistant Bulkheads, Compressor Blade Monitor, Mini Zone Marker, Improved Fighter Aircraft Doors, Cooling Tower Fan Hydraulic Drive, Repair Technology For CRT Displays, Next Generations Munitions Handler, Recore of Heat Exchangers, MAJCOM Combined Paint Project.
- (U) 750 Continued incremental funding on Nickel-hydrogen Battery, and Reusable Software for Spacecraft. and Combustor Rework Cell
- (U) 780 Completed work on FY95 Quick Reaction Projects, including High Load Bearing Surface Enhancement, Flame Spray Powder Coating, Superplastic Foaming, Periodic Inspection Maintenance Stands, USM-464 Display, Operational Manual for Plastic Media Blasting, Liquid Crystal Frequency Displays, Brake Control/Anti-Skid Device, Oil Analysis Program, Fuel Cell Lighting System, Main Landing Gear Model, Multi-Service Oil Analysis Program.
- (U) 1,381 Started Fiber Optic Attitude Sensor.
- (U) 6,527 Total

(U) FY 1996

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0708026F Product/Reliable/Avail/Maintain Prog
PROJECT NO. AND NAME 2146 Productivity, Reliability, Availability, Maintainability (PRAM)*	

–	(U)	6,650	Continue incremental funding on Nickel-Hydrogen Battery, Reusable Software for Spacecraft, C-141 Electric Starlifter, Next Generation Munitions Handler, Planar Optics Display, and Digital Map System.
–	(U)	400	Start Durability Patch.
–	(U)	300	Start Combination Generator Air Compressor.
–	(U)	300	Start Composite Mobile Maintenance Stands.
–	(U)	500	Start and Complete Munitions Facility Siting Aid.
–	(U)	700	Start and Complete Advanced Technology Insertion Module.
–	(U)	250	Start and Complete AP-101C Avionics Control Unit.
–	(U)	2,200	Start and Complete the following Quick Response Projects: Cable Wrap Tester, Jig Borer to Jig Grinder, Sloping Longeron, Real-Time Multiple Signal Processor, Composite Engine Cowl Doors, USM - 601, Heat Exchanger Replacement, and Robot Eyes.
–	(U)	200	Complete Advanced Magnetic Azimuth Detector.
–	(U)	100	Complete Thin Dense Chrome Bearings.
–	(U)	55	Complete Compressor and Turbine Balancing.
–	(U)	1,100	Complete Advanced Hybrid Oxygen System.
–	(U)	400	Complete Testable and Monitorable Modular Mission Computer.
–	(U)	700	Complete Fiber Optic Rate Gyro.
–	(U)	350	Complete Laser Ultrasonic Inspection System.
–	(U)	85	Complete Combustor Rework Cell.
–	(U)	14,290	Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0708026F Product/Reliable/Avail/Maintain Prog
PROJECT NO. AND NAME 2146 Productivity, Reliability, Availability, Maintainability (PRAM)*	

(U) FY 1997

– (U)	800	Complete activity on Reusable Software for Spacecraft, Combination Generator Air Conditioner.
– (U)	11,012	The TMP will review needs and funding during 2nd Qtr FY96 to consider future projects. The TMP will identify potential projects with the highest payback in terms of operational capability, reliability and maintainability improvement, and cost for execution. Quick response projects will be started immediately and continuously throughout FY 97 as needs evolve.
– (U)	50	Continue Nickel-Hydrogen Battery
– (U)	700	Continue Durability Patch
– (U)	2	C-141 Electric Starlifter
– (U)	500	Planar Optics Display
– (U)	500	Start H-1 Heater Replacement Project.
– (U)	13,564	Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget (FY 1996)	6,527	15,719	15,340	Continuing
(U) Appropriated Value	6,527	15,719		
(U) Adjustments to Appropriated Value				
a. Small Business Innovative Research (SBIR)		-236		
b. Congressional General Reductions		-721		
c. Omnibus and Other Above Threshold Reprogrammings		-433		
(U) Adjustments to Budget Years		-39	-1,776	
(U) Current Budget Submit/President's Budget	6,527	14,290	13,564	Continuing

(U) Change Summary Explanation:

Funding: FY 97 reduction for inflation rate adjustment ($76 thousand) and to fund higher priority Air Force programs ($1.7 million).

Schedule: None.

Technical: None.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0708026F Product/Reliable/Avail/Maintain Prog
PROJECT NO. AND NAME 2146 Productivity, Reliability, Availability, Maintainability (PRAM)*	

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
Related RDT&E:									
(U) PE 0604609F, Reliability and Maintainability Technology Insertion Program (RAMTIP)	8,569	0	0	0	0	0	0	0	Cont

(U) D. **Schedule Profile**

Not applicable.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0708026F Product/Reliable/Avail/Maintain Prog
PROJECT NO. AND NAME 2146 Productivity, Reliability, Availability, Maintainability (PRAM)*	

(U) A. **Project Cost Breakdown ($ in Thousands)**
Not applicable

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands)**
Not applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0708611F Support Systems Development

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	5,613	5,405	5,687	5,817	5,979	6,071	0	Continuing
3090 Embedded Computer Resources Support Improvement Program (ESIP)*	0	3,106	2,975	3,226	3,413	3,512	3,570	Continuing	Continuing
3318 Product Data Systems Modernization (PDSM)**	0	2,044	1,974	1,972	1,889	1,939	1,968	Continuing	Continuing
3759 Air Force Support Equipment Management (AFSEM)***	0	463	456	489	515	528	533	Continuing	Continuing

* FY 95 efforts funded within PE 0708012F, Project 3090, ESIP.

** FY 95 efforts funded within PE 0708012F, Project 3317, Air Force Digital Specifications and Standards, and PE 0604740F, Project 3315, Digital Information Technology Transition. Amount shown represents sum of both PEs.

*** FY 95 efforts funded within PE 0604704F, Project 3759., AFSEM.

(U) A. **Mission Description and Budget Item Justification**

This program improves support of embedded computer system software, automates and standardizes weapon system support processes, establishes advanced support methodologies, provides automated tools and infrastructure environments, and improves readiness support to facilitate rapid software turnaround in response to changing mission and/or threat requirements. It conducts research and development to update Air Force digital data standards to commercial industry standards that support the Continuous Acquisition and Life-Cycle Support (CALS) concept. It funds the Air Force support equipment (SE) management objective to develop, support, distribute, and maintain products that improve Air Force SE acquisition. It supports the Air Force Automatic Test Systems (ATS) Product Master Plan and Air Force ATS Database to identify and evaluate all Air Force ATS for both long and short-term planning. This program is in budget activity 7 - Operational System Development, because projects are being engineered to support already operational weapon systems.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0708611F Support Systems Development

(U) **Acquisition Strategy:**
Not applicable.

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget (FY 1996)	8,699	5,906	5,634	Continuing
(U) Appropriated Value	8,699	5,906		
(U) Adjustments to Appropriated Value				
a. Small Business Innovative Research (SBIR)		-119		
b. Congressional General Reductions		-116		
c. Omnibus and Other Above Threshold Reprogrammings		-58		
(U) Adjustments to Budget Years			-229	
(U) Current Budget Submit/President's Budget	8,699	5,613	5,405	Continuing

(U) Change Summary Explanation:

Funding: Funds were transferred into PE 0708611F starting in FY96 from PE 0708012F for Project 3090, Embedded Computer Resources Support Improvement Program and Project 3318, Product Data Systems Modernization, PE 0604704F for Project 3759, Air Force Support Equipment Management, and PE 0604740 for Project 3318, Product Data Systems Modernization.

Schedule: Not applicable.

Technical: Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0708611F Support Systems Development

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) O&M- AF (Project 3090, ESIP)	0[1]	14,362	17,018	18,288	14,687	15,126	15,439	Cont	Cont
(U) Other Procurement - AF (Project 3090 ESIP)	2,793	1,777	1,645	2,257	2,851	2,371	2,424	Cont	Cont
(U) O&M - AF (IMDS)[2]				977	973	1,933	1,918	Cont	Cont
(U) Other Procurement - AF (IMDS)[2]		2,044	1,975	1,972	1,889	1,940	1,969	Cont	Cont
Related RDT&E:									
(U) PE 0603108F, Integrated Data Systems (IDS)	8,339	14,404	18,232	20,433	22,073	23,020	20,782	Cont	Cont

[1] FY 95 efforts funded within PE 0708012F, Project 3090, ESIP.
[2] RDT&E funds located within PE 0603108F, Project 4427, Integrated Maintenance Data Systems (IMDS).

(U) D. **Schedule Profile:**
See individual projects.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0708611F Support Systems Development

PROJECT NO. AND NAME: 3090 Embedded Computer Resources Support Improvement Program (ESIP)*

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3090 Embedded Computer Resources Support Improvement Program (ESIP)*	0	3,106	2,975	3,226	3,413	3,512	3,570	Continuing	Continuing

(U) A. **Mission Description and Budget Item Justification**

This project conducts research to improve support of embedded computer system software. It encompasses automation and standardization of support processes, advanced support methodologies, tools and environments, and readiness support to facilitate rapid turnaround of software in response to changing mission and/or changing threat requirements. It is a Budget Activity 7, Operational Systems Development, because projects are being engineered to support already operational weapon systems.

(U) FY 1995*

* FY 95 efforts funded within PE 0708012F, Project 3090, ESIP. Funding transferred into PE 0708611F starting in FY 96.

(U) FY 1996

- (U) 200 Demonstrate real-time fault tolerant software techniques.
- (U) 600 Demonstrate virtual hypermedia-based support environment.
- (U) 270 Demonstrate automated testing for Diverse Avionics Scenarios.
- (U) 761 Develop virtual simulator module switching unit.
- (U) 470 Transition Radio Frequency (RF) testing techniques to Air Logistics Centers (ALCs).
- (U) 270 Reengineering of JOVIAL code to well-engineered Ada..
- (U) 535 Develop Avionics Validation and Verification Static Analysis Capability
- (U) 3,106 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0708611F Support Systems Development
PROJECT NO. AND NAME 3090 Embedded Computer Resources Support Improvement Program (ESIP)*	

(U) FY 1997

– (U)	1,070	Test and demonstrate virtual simulator module switching unit.
– (U)	470	Develop JOVIAL prototype verification and validation (V&V) system.
– (U)	270	Demonstrate advanced V&V of cockpit displays..
– (U)	70	Demonstrate initial Automated Visualization Capability.
– (U)	25	Final Real-Time Fault-Tolerant Software demonstration.
– (U)	470	Enhanced Ada Re-engineering demonstration
– (U)	600	Final demonstration of Radio Frequency (RF) Test Techniques.
– (U)	2,975	Total

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget (FY 1996)		3,268	3,101	Continuing
(U) Appropriated Value		3,268		
(U) Adjustments to Appropriated Value				
a. Small Business Innovative Research		-65		
b. Congressional General Reductions		-64		
c. Omnibus and Other Above Threshold Reprogrammings		-33		
(U) Adjustments to Budget Years			-126	
(U) Current Budget Submit/President's Budget		3,106	2,975	Continuing

(U) Change Summary Explanation:

Funding: FY 95 efforts funded within PE 0708012F, Project 3090, Embedded Computer Resources Support Improvement Program. Funding transferred into PE 0708611F starting in FY96.

Schedule: Not applicable.

Technical: Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0708611F Support Systems Development
PROJECT NO. AND NAME 3090 Embedded Computer Resources Support Improvement Program (ESIP)*	

(U) C. Other Program Funding Summary ($ in Thousands):

See page 3, C., Other Program Funding Summary.

(U) D. Schedule Profile

	FY 1995*				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Demonstrate real-time fault tolerant software techniques.					X							
(U) Demonstrate virtual hypermedia-based support environment.					X							
(U) Demonstrate automated testing for diverse avionics scenarios.					X							
(U) Develop virtual simulator module switching unit.						X						
(U) Transition RF testing techniques to Air Logistics Centers (ALCs).						X						
(U) Re-engineering of JOVIAL code to well-engineered Ada.							X					
(U) Develop avionics verification and validation (V&V) static analysis capability								X				
(U) Test and demonstrate virtual simulator module switching unit.									X			
(U) Develop JOVIAL prototype V&V system.									X			
(U) Demonstrate advanced V&V of cockpit displays.											X	
(U) Demonstrate initial automated visualization capability.										X		
(U) Final real-time fault-tolerant software demonstration.										X		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0708611F Support Systems Development
PROJECT NO. AND NAME 3090 Embedded Computer Resources Support Improvement Program (ESIP)*	

	FY 1995*				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Enhanced Ada re-engineering demonstration												X
(U) Final demonstration of Radio Frequency (RF) test techniques.												X

* FY 95 efforts funded within PE 0708012F, Project 3090, ESIP. Funding transferred into PE 0708611F starting in FY 96.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0708611F Support Systems Development
PROJECT NO. AND NAME 3090 Embedded Computer Resources Support Improvement Program (ESIP)*	

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995*	FY 1996	FY 1997
(U) Demonstrate real-time fault tolerant software techniques.		200	
(U) Demonstrate virtual hypermedia-based support environment.		600	
(U) Demonstrate automated testing for diverse avionics scenarios.		270	
(U) Develop virtual simulator module switching unit.		761	
(U) Transition Radio Frequency (RF) testing techniques to Air Logistic Centers (ALCs).		470	
(U) Re-engineering of JOVIAL code to well-engineered Ada.		270	
(U) Develop avionics verification and validation (V&V) static analysis capability.		535	
(U) Test and demonstrate virtual simulator module switching unit.			1,070
(U) Develop JOVIAL prototype V&V system.			470
(U) Demonstrate advanced V&V of cockpit displays.			270
(U) Demonstrate initial automated visualization capability.			70
(U) Final real-time fault-tolerant software demonstration.			25
(U) Enhanced Ada re-engineering demonstration			470
(U) Final demonstration of Radio Frequency (RF) test techniques.			600
(U) Total		3,106	2,975

* FY 95 efforts funded within PE 0708012F, Project 3090, ESIP. Funding transferred into PE 0708611F starting in FY 96.

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands)**

Not applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0708611F Support Systems Development

PROJECT NO. AND NAME: 3318 Product Data Systems Modernization (PDSM)**

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3318 Product Data Systems Modernization (PDSM)**	0	2,044	1,974	1,972	1,889	1,939	1,968	Continuing	Continuing

(U) A. **Mission Description and Budget Item Justification**

This project implements digital product data management within the Air Force Integrated Weapon System Management infrastructure and ensures uninterrupted transition of functional capabilities of legacy systems to the new joint systems. It is Budget Activity 7, Operational Systems Development because projects are being engineered to support already operational weapon systems.

(U) FY 1995

** Efforts funded within PE 0708012F, Project 3317, Air Force Digital Specifications and Standards and PE 0604740F, Project 3315, Digital Information Technology Transition. Funds were transferred into PE 0708611F starting in FY 96.

(U) FY 1996

– (U)	553	Manage AF legacy technical data conversion.
– (U)	286	Plan/participate/activate AF JEDMICS sites.
– (U)	202	Complete digital data templates for use in JCALS (DT&E/IOT&E).
– (U)	599	Plan/participate in JCALS to ensure AF requirements and schedules are met.
– (U)	134	Begin to activate AF JCALS sites to ensure timely and accurate data is available and useable.
– (U)	202	Test digital data specifications/standards and represent AF at international standards activities.
– (U)	68	Provide direct support to weapon systems, Logistics and Product Centers, and Major Commands (MAJCOMS).
– (U)	2,044	Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0708611F Support Systems Development

PROJECT NO. AND NAME: 3318 Product Data Systems Modernization (PDSM)**

(U) FY 1997

- (U) 661 Manage AF technical data conversion.
- (U) 209 Plan/participate/activate JEDMICS sites
- (U) 213 Develop and maintain digital data templates for new acquisition technical orders.
- (U) 322 Plan/participate in JCALS to ensure AF requirements and schedules are met.
- (U) 284 Activate AF JCALS sites to ensure timely and accurate data is available and useable.
- (U) 215 Test digital data specifications/standards and represent AF international standards activities.
- (U) 70 Provide direct support to weapon systems, Logistics and Product Centers, and MAJCOMS.
- (U) 1,974 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget (FY 1996)		2,149	2,058	Continuing
(U) Appropriated Value		2,149		
(U) Adjustments to Appropriated Value				
a. Small Business Innovative Research (SBIR)		-43		
b. Congressional General Reductions		-42		
c. Omnibus and Other Above Threshold Reprogrammings		-20		
(U) Adjustments to Budget Years			-84	
(U) Current Budget Submit/President's Budget		2,044	1,974	Continuing

(U) Change Summary Explanation:

Funding: Funds were transferred into PE 0708611F starting in FY96 from PE 0708012F and PE 0604740.

Schedule: Not applicable.

Technical: Not applicable.

(U) C. Other Program Funding Summary ($ in Thousands)

Not applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0708611F Support Systems Development
PROJECT NO. AND NAME 3318 Product Data Systems Modernization (PDSM)**	

(U) **D. Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Manage AF legacy technical data conversion.					X							
(U) Plan/participate/activate AF JEDMICS sites.					X							
(U) Develop digital data templates for use in JCALS DT&E/IOT&E.								X				
(U) Plan/participate in JCALS.					X							
(U) Begin to activate JCALS sites.						X						
(U) Develop digital data templates for new acquisition technical orders.									X			

** Efforts funded within PE 0708012F, Project 3317, Air Force Digital Specifications and Standards and PE 0604740F, Project 3315, Digital Information Technology Transition. Funds were transferred into PE 0708611F starting in FY 96.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0708611F Support Systems Development
PROJECT NO. AND NAME 3318 Product Data Systems Modernization (PDSM)**	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Develop digital data templates for new acquisition technical orders			213
(U) Manage AF legacy technical data conversion.		553	661
(U) Develop and test digital data specifications/standards and represent AF at international standards activities.		202	215
(U) Plan/participate/activate JEDMICS sites.		286	209
(U) Complete digital data templates for use in JCALS DT&E/IOT&E.		202	
(U Plan/participate in JCALS to ensure AF requirements and schedules are met.		599	322
(U) Activate AF JCALS sites to ensure timely and accurate data is available and useable.		134	284
(U) Provide direct support to weapon systems (C-17, Titan IV, VCX, T-1A, F-22, etc.), Logistics and Product Centers, and Major Commands (MAJCOMS).		68	70
(U) Total		2,044	1,974

** Efforts funded within PE 0708012F, Project 3317, Air Force Digital Specifications and Standards and PE 0604740F, Project 3315, Digital Information Technology Transition. Funds were transferred into PE 0708611F starting in FY 96.

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**

Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0708611F Support Systems Development

PROJECT NO. AND NAME: 3759 Air Force Support Equipment Management (AFSEM)***

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
3759 Air Force Support Equipment Management (AFSEM)***	0	463	456	489	515	528	533	Continuing	Continuing

(U) A. **Mission Description and Budget Item Justification**

The category of research being performed in this PE is The Automatic Test Systems (ATS) Product Group Manager (PGM) Product Master Plan (PMP) and ATS Database development effort is designed to give the ATS Product Group Manager (PGM) the tools to track and plan Air Force ATS direction. The PMP will support standardization and ATS PGM long-term planning by capturing essential data on all Air Force ATS. The Database will include all ATS identified in the PMP and be used to interface with Integrated Weapon System Master Plans. The ATS Database will also include the ATS Parametric Database. It will provide ATS users and managers the capability to match new test requirements to existing test capabilities and ATS developments. The ATS Database will be made available remotely to ATS PGM customers via Ethernet Local Area Network and accessible on the World Wide Web. Additionally, A Broad Based Environment for Test (ABBET) provides support in this long term Air Force ATS planning and standardization effort. Cooperative standards development with industry to standardize ATS hardware and software interfaces used will reduce development, acquisition, and sustainment costs for ATS. It is Budget Activity 7, Operational Systems Development, because projects are being engineered to support already operational weapon systems.

(U) FY 1995*

* FY 95 efforts funded within PE 0604704F, Project 3759, Air Force Support Equipment Management. Funds transferred into PE 0708611F starting in FY 96.

(U) FY 1996

- (U) 362 Develop detailed Product Line Master Plans.
- (U) 20 Continue Automatic Test Systems (ATS) Product Master Plan (PMP) data maintenance.
- (U) 20 Program upgrades to the ATS Database.
- (U) 9 Update and maintain ATS Parametric Database.
- (U) 14 Upgrade Database hardware/software.
- (U) 38 Program Management Support.
- (U) 463 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0708611F Support Systems Development
PROJECT NO. AND NAME 3759 Air Force Support Equipment Management (AFSEM)***	

(U) FY 1997

- (U) 384 Develop detailed Product Line Master Plans.
- (U) 20 Program upgrades to the ATS Database.
- (U) 16 Update and maintain ATS Parametric Database.
- (U) 36 Program Management Support.
- (U) 456 Total

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget (FY 1996)		489	475	Continuing
(U) Appropriated Value		489		
(U) Adjustments to Appropriated Value				
a. Small Business Innovative Research (SBIR)		-11		
b. Congressional General Reductions		-10		
c. Omnibus and Other Above Threshold Reprogrammings		-5		
(U) Adjustments to Budget Years			-19	
(U) Current Budget Submit/President's Budget		463	456	Continuing

(U) Change Summary Explanation:

Funding: FY 95 efforts funded within PE 0604704F, Project 3759, Air Force Support Equipment Management. Funds transferred into PE 0708611F starting in FY96.

Schedule: Not applicable.

Technical: Not applicable.

(U) C. Other Program Funding Summary ($ in Thousands)

Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0708611F Support Systems Development
PROJECT NO. AND NAME 3759 Air Force Support Equipment Management (AFSEM)***	

(U) **D. Schedule Profile**

	FY 1995*				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Program Management support							X				X	
(U) Program upgrades to the ATS Database							X		X			
(U) Update and maintain ATS Parametric Database								X			X	
(U) Develop detailed Product Line Master Plans					X							
(U) Upgrade Database hardware and software.							X					

* FY 95 efforts funded within PE 0604704F, Project 3759, Air Force Support Equipment Management. Funds transfer into PE 0708611F starting in FY 96.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0708611F Support Systems Development
PROJECT NO. AND NAME 3759 Air Force Support Equipment Management (AFSEM)***	

(U) **A. Project Cost Breakdown ($ in Thousands)**

	FY 1995*	FY 1996	FY 1997
(U) Develop Product Line Master Plan		362	384
(U) Update ATS Parametric Database		9	16
(U) Update ATS Database		20	20
(U) ATS Product Master Plan (PMP) data maintenance		34	
(U) Program Management Support		38	36
(U) Total		463	456

* FY 95 efforts funded within PE 0604704F, Project 3759, Air Force Support Equipment Management. Funds transferred into PE 0708611F starting in FY 96.

(U) **B. Budget Acquisition History and Planning Information ($ in Thousands)**
Not applicable.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0804734F CRYPTO/SIGINT Related Skill Tng

PROJECT NO. AND NAME: 1005 SENTINEL BRIGHT PHASE II/SENTINEL II

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
1005 SENTINEL BRIGHT PHASE II/SENTINEL II	1,441	1,017	1,887	1,438	0	0	0	4,342	7,668

(U) A. Mission Description and Budget Item Justification: Provides funding required for the SENTINEL II (SII) Integration Program which is designed to complete the software development begun under SENTINEL BRIGHT II (SBII) and to automate and integrate the commercial off-the-shelf hardware and software purchased for SBII and SENTINEL ASPEN II (SAII) systems. SBII supports cryptologic analysts and maintenance personnel; SAII supports general military intelligence analysts. SII integrates SBII and SAII with common software on like hardware providing computer aided/computer managed instruction for intelligence personnel. This program parallels the fielding of modernized operational intelligence systems and corrects long-standing deficiencies in training "mission ready" intelligence professionals.

(U) FY 1995 ($ in Thousands):
- (U) $157 SENTINEL II Contract
- (U) $208 Courseware Development
- (U) $1076 Program Office
- (U) $1,441 Total

(U) FY 1996 ($ in Thousands):
- (U) $233 SENTINEL II Contract
- (U) $784 Program Office
- (U) $1,017 Total

(U) FY 1997 ($ in Thousands):
- (U) $834 SENTINEL II Contract
- (U) $332 Courseware Development
- (U) $721 Program Office
- (U) $1,887 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0804734F CRYPTO/SIGINT Related Skill Tng

PROJECT NO. AND NAME: 1005 SENTINEL BRIGHT PHASE II/SENTINEL II

(U) B. Program Change Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	1,472	1,139	1,954	7,900
(U) Appropriated Value	1,526			
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions	-54	-94		
b. SBIR	-31	-19		
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogramming		-9		
(U) Adjustments to Budget Years Since FY 1995 PB			-67	
(U) Current Budget Submit/President's Budget	1,441	1,017	1,887	7,668

(U) Change Summary Explanation:

Funding: Changes due to Congressional reductions and budget constraints.

Schedule:

Technical:

(U) C. Other Program Funding Summary ($ in Thousands)

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) RDT&E in PE35885G, Tactical Crypto Program (National Security Agency)	2,008	2,567	0	0	0	0	0	2,567	6,723

(U) D. Schedule Profile

Not Applicable

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0804734F CRYPTO/SIGINT Related Skill Tng
PROJECT NO. AND NAME 1005 SENTINEL BRIGHT PHASE II/SENTINEL II	

(U) A. **Project Cost Breakdown ($ in Thousands)**

	FY 1995	FY 1996	FY 1997
(U) Software Development	365	233	1,166
(U) System Engineering Development	853	600	459
(U) Configuration Management	081	065	070
(U) Travel	034	045	107
(U) Program Office Support	108	074	085
(U) Total	1,441	1,017	1,887

(U) B. **Budget Acquisition History and Planning Information ($ in Thousands)**

Not Applicable

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 0901218F Civilian Compensation Program

PROJECT NO. AND NAME: 1 Civilian Compensation Program

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
1 Civilian Compensation Program	5,817	5,714	5,917	6,146	6,401	6,593	6,791	Continuing	Continuing

(U) **A. Mission Description and Budget Item Justification**

This program element provides for payment of civilian compensation benefits for disability due to personal injury sustained while in the performance of duty or due to employment-related disease according to the Federal Employees Compensation Act (FECA) under Title 5 U.S.C. Chapter 81. The Department of Labor (DOL) administers this program and charges the Department of the Air Force for its employee costs; therefore, this is a MUST PAY bill for Air Force. The PE excludes manpower authorizations and costs.

(U) FY 1995 ($ in Millions):
- (U) $5,817 Funded and paid disability compensation of personnel assigned to RDT&E activities for injuries and/or illnesses in the performance of duties or due to employment-related disease.
- (U) $5,817 Total

(U) FY 1996 ($ in Millions):
- (U) $6,024 Required to continue a level of effort program to compensate employees assigned to RDT&E facilities for work-related injury or disease.
- (U) $6,024 Total

(U) FY 1997 ($ in Thousands):
- (U) $6,260 Required to continue a level of effort program to compensate employees assigned to RDT&E facilities for work-related injury or disease.
- (U) $6,260 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0901218F Civilian Compensation Program
PROJECT NO. AND NAME 1 Civilian Compensation Program	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	5,655	5,860	5,951	
(U) Appropriated Value				
(U) Adjustments to Appropriated Value (Not Applicable)				
a. Cong Gen Reductions				
b. SBIR				
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY 1995 PB	+162	+164	+309	
(U) Current Budget Submit/President's Budget	5,817	6,024	6,260	

(U) Change Summary Explanation:

Funding: Increases in FY95 (+$162), FY96 (+$164), and FY97 (+$309) for civilian injury and unemployment compensation costs are due to medical inflation increases and Consumer Price Index (CPI) increases. This information was provided by the Department of Labor (DOL) based on their analysis of FY95 Federal Employees Compensation Act (FECA) Chargeback costs. DOL administers this program and charges the Air Force for its employee's compensation costs; therefore, both programs are MUST PAY bills mandated by law (5 USC, Chapter 81). DOL bills the Air Force two years in advance for civilian injury compensation benefits, e.g. FY93 bill due in FY95. DOL bills the Air Force for unemployment compensation paid Air Force employees quarterly on costs paid by state employment offices, bills must be paid in 30 days.

Schedule:

Technical:

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0901218F Civilian Compensation Program
PROJECT NO. AND NAME 1 Civilian Compensation Program	

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) Operation and Maintenance	20,642	23,814	21,283	21,562	22,355	22,679	23,528	Cont'd	Cont'd

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 1001004F International Activities

PROJECT NO. AND NAME: 00AH Shape Tech Center, AGARD, AFIPSA, ICRD&A, AFMC Support

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
00AH Shape Tech Center, AGARD, AFIPSA, ICRD&A, AFMC Support	1,849	3,606	3,633	3,745	3,862	3,950	4,032	Continuing	TBD

(U) A. **Mission Description and Budget Item Justification**

The mission of this budget activity is to gain access to the world's best defense technologies, eliminate costly duplication of research and development efforts, accelerate availability of defense systems, and to deploy and sustain common or interoperable USAF and Allied equipment through international cooperative research and development.

The USAF is party to multiple international cooperative agreements to solve common US and Allied military scientific and technological problems and to develop materiel solutions to harmonize coalition requirements. This budget activity funds the Department of the Air Force to support, develop, process, negotiate, implement, and manage these international cooperative agreements and projects in compliance with statutory reporting provisions and exacting legal statutes, fiscal constraints, technology transfer controls, intellectual property rights, third party transfer provisions, quid-pro-quo criteria, industrial base factors, and political-military interests. Included in this budget are domestic and international technology assessment teams; specialized working groups; long-term technology project developments; support for cooperative opportunity assessments; developing, processing, and negotiating international agreements; oversight of international cooperative research and development (R&D) projects; overseas R&D liaison and coordination offices; bilateral and multilateral staff talks; and exchanges of scientist and engineers. Funds NATO Air Force Armaments Group (NAFAG), and NATO Advisory Group for Aerospace Research and Development (AGARD).

Justification for Budget Activity Assignment

This program element funds general R&D management for all USAF international cooperative R&D. This includes management support and execution of projects in (1) Basic Research (2) Concept Exploration (3) Demonstration and Validation (4) Engineering and Manufacturing Development and (5) Production.

(U) **FY 1995 Accomplishments:**

- (U) $ 80 **SHAPE Technical Center (STC)** - Funded US R&D coordination office and administrative support to eight US professionals assigned to the STC.
- (U) $249 **Von Karman Institute (VKI)**- Funded US share of the VKI budget as approved by US Mission NATO.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 1001004F International Activities
PROJECT NO. AND NAME 00AH Shape Tech Center, AGARD, AFIPSA, ICRD&A, AFMC Support	

–	(U) $500	**Advisory Group for Aerospace R&D (AGARD)** - Funded US national-level representation at HQ AGARD Delegates Board. Funded the 1995 AGARD National Delegates Board Meeting in the US as the host nation. Funded technical experts from Air Force field-level and US industry/university-level to support 7 technical panels, 21 working groups, 4 study groups, and 1 study committee sponsored by NATO AGARD. Funded technical reports and exchanges in 12 areas as follows: (1) Limitations and Enhancement in Situational Awareness, (2) Aerodynamics of Stores Integration and Separation, (3) Loss Mechanisms and Unsteady Flow in Turbomachinery, (4) Advanced Aeroservoelastic Testing and Data Analysis, (5) Widespread Fatigue Damage in Military Aircraft, (6) Neurological Limitations of Aircraft Operations: Human Performance Implications, (7) Progress and Challenges in Computational Fluid Dynamics Methods and Algorithms, (8) Advanced Aero-Engine Concepts and Controls, (9) Practical Implications of Thermal Mechanical Fatigue in the Performance of Military Aircraft Engines, (10) Design, Qualification, and Maintenance of Vibration-Free Landing Gear, (11) Enhancing the Survivability of Military Transport Aircraft, and (12) Use of Commercial Satellites for Military Applications. Expanded Partnership for Peace initiative through AGARD outreach program incorporating Eastern Europe and Former Soviet Union (FSU) scientific and technical groups.
–	(U) $219	**Air Force International Programs Support Agency (AFIPSA)** - Funded USAF management of International Cooperative R&D Agreements. The following agreements were signed in FY95: **Australia**: (1) Aircraft and Stores Compatibility Testing; **Canada**: (1) Weapons Separation Prediction, (2) Air Breathing Propulsion T&E, (3) Unmanned Aerial Vehicle, (4) Air Base Operability, (5) Digital Communications Equipment; **Four-Powers** (Germany, France, UK, and US): (1) Electro-Optic Technology Demonstration; **France**: (1) Image/Information Reformatter, (2) High Speed Tires; **Germany**: (1) Master Research and Technology Project Agreement; **Israel**: (1) Electronic Warfare, (2) Biodynamics and Human Factors Engineering; **Poland**: (1) Master Information Exchange Agreement; **The Netherlands**: (1) Unmanned Aerial Vehicles; **NATO**: (1) NATO AWACS Radar System Improvement; **United Kingdom**: (1) Master Technology Research and Development Agreement, (2) Conventional Air Launched Munitions, (3) Master Information Exchange Agreement, (4) Joint Advanced Strike Technology. In addition preliminary work for potential FY96 agreements was started.
–	(U) $801	**International Cooperative Research, Development and Acquisition (ICRD&A)** - Funded Air Force Materiel Command and HQ Air Force ICRD&A activities to identify, assess, and develop support packages for new Air Force international cooperative projects culminating in the approval of the above listed international agreements and processing of new candidate agreements. Funded USAF leadership initiatives as the new Chair of the NATO Air Force Armaments Group (NAFAG). Funded USAF headquarters and field-level representation at the US-Japan Systems and Technology Forum, NATO Four-Power Council, NAFAG and its 6 Subgroups to promote harmonization of requirements, standardization, and development of international cooperative R&D programs. Supported engineer and scientists exchanges with 14 nations. Funded USAF overseas R&D liaison offices. Funded management support and oversight of USAF Foreign Comparative Test (FCT) Program and NATO Cooperative R&D Program. Partially funded deployment of the Joint STARS to promote it as part of the solution to the NATO Alliance Ground Surveillance requirement. Funded acquisition and assessment of technology from the newly independent states of the FSU.
–	(U) $1,849	Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 1001004F International Activities
PROJECT NO. AND NAME 00AH Shape Tech Center, AGARD, AFIPSA, ICRD&A, AFMC Support	

(U) FY 1996

- (U) $100 **STC** - Fully fund US R&D coordination office and administrative support to US professionals assigned to the STC.
- (U) $575 **VKI** - Fund the US share of the VKI budget as approved by US Mission NATO and award two USAF VKI fellowships.
- (U) $500 **AGARD** - Fully fund US national-level representation at HQ AGARD Delegates Board. Fund technical experts from Air Force field-level and US industry/university-level to support 7 technical panels, 21 working groups, 3 study groups, and 1 study committee sponsored by NATO AGARD. Fund technical reports and exchanges in 13 areas as follows: (1) Minimizing Collateral Damage During Peace Support Operations, (2) Radar Cross-Section Analysis and Imaging of Military Targets, (3) Remote Sensing, (4) Space Systems Contributions to NATO Defense Strategy, (5) Advanced Architectures for Mission Avionics, (6) Characterization and Modification of Wakes from Lifting Vehicles in Fluids, (7) Aerodynamics of Wind Tunnel Circuits and their Components, (8) Aging Combat Aircraft Fleets - Long Term Implications, (9) Smart Structures and Materials - Implications for Military Aircraft of a New Generation, (10) Medical Complications and Screening for Sustained High-G and Positive Pressure Breathing, (11) Service-Life of Solid Rocket Propellants, (12) Acute Visual and Cognitive Incapacitation of Aircrews: Protection Management and Cockpit Integration, and (13) Aircraft Fire Safety. Continue the Partnership for Peace initiative through AGARD outreach program incorporating additional Eastern Europe and Former Soviet Union scientific and technical groups.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 1001004F International Activities
PROJECT NO. AND NAME 00AH Shape Tech Center, AGARD, AFIPSA, ICRD&A, AFMC Support	

– (U) $250

AFIPSA - Fully fund AFIPSA and USAF to clear a growing backlog of proposals for International Cooperative R&D Agreements. The following is a list of proposed candidate agreements for signature in FY96: **Australia**: (1) Adaptive Flexible Structures, (2) Structural Integrity of Aging Aircraft; **Brazil**: (1) Ionospheric Experiments, (2) Engineer and Scientist Exchange Agreement; **Canada**: (1) Crew Technology for Military Aircraft, (2) Command and Control, (3) High-powered Microwaves, (4) Master Technology Research & Development Agreement, (5) Regional/Sector Operational Control Center Modernization Program; **Egypt**: (1) Seismic Monitoring Station; **Four-Powers** (Germany, France, UK, and US): (1) High Powered Microwaves, (2) Aircraft Survivability Technologies, (3) Non-Destructive Evaluation, (4) Post 2020 Armament Concepts and Technologies, (5) Aircraft Armament Avionics Agility, (6) Insensitive High Explosive for Penetrators, (7) Tactical Laser Hardened Material, (8) Future Multiband, Multiwaveform Modular Tactical Radio; **France**: (1) Reliability of Electronic Components, (2) Techniques and Technologies for Aerial Reconnaissance and Geographic Data, (3) Optical Properties of the Environment, (4) Military Satellite Communications Technology, (5) Oxygen/Idide Laser Radiation and Material Interaction Tests, (6) The Effects of the Ionosphere on Communications and Surveillance Systems, (7) Subminiature Data Acquisition and Telemetry System, (8) Very High Resolution Imaging by Interferometry; **Germany**: (1) Software Technology, (2) Trans-Atlantic Research into Air Combat Engagement, (3) Free Piston Shock Tunnel, (4) Observations and Modeling for Space Weather; **Israel**: (1) Photonics Technology, (2) Unmanned Aerial Vehicles, (3) External Composite Concrete Reinforcing for Enhanced Structural Survivability; (4) Master Research and Technology Project; **Japan**: (1) FS-X Production; **Korea**: (1) Seismic Monitoring Station; **Multilateral**: (1) Master Advanced Medium Range Air-To-Air Missile (AMRAAM) Users' Group Agreement, (2) Command Control Communications and Intelligence (C3I) Interoperability; **The Netherlands**: (1) Advanced ECM Transmitter; (2) Measurement and Analysis of the Infrared Celestial Background; **Pakistan**: (1) Seismic Monitoring Station; **Russia**: (1) Seismic Monitoring Station; **Sweden**: (1) Electromagnetic Effects Measurement and Analysis Techniques, (2) Electromagnetic Effects Experiments and Applications; **Turkey**: (1) Seismic Monitoring Station; **United Kingdom**: (1) Joint Tactical Information Distribution System, (2) Experimental Air Operations Center, (3) Ramburner, (4) Effects of the Ionosphere on C3I Systems, (5) Vista Warrior, (6) Non Acoustic Technologies, (7) Single Mode Fibers for Array Imaging, (8) Joint Air-to-Surface Standoff Missile/Conventionally Armed Standoff Missile, (9) Short Range Air-to-Surface Missile Technologies, (10) Structural Integrity of Aging Aircraft, (11) Advanced Flooding Agent, (12) Dense Metal Case Penetrating Weapon, (13) Aftbody/Nozzle Aeroacoustic Program, (14) Programmable Integrated Ordnance Suite. In addition preliminary work for FY97 agreements will be started.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 1001004F International Activities
PROJECT NO. AND NAME 00AH Shape Tech Center, AGARD, AFIPSA, ICRD&A, AFMC Support	

– (U) $1,091 **ICRD&A** - Fund USAF overseas R&D liaison offices. Fund management support and oversight of USAF Foreign Comparative Test Program and NATO Cooperative R&D Program. Fund USAF participation at the NATO Four-power Council, NAFAG, and its six subgroups to promote NATO harmonization of requirements, standardization, and new cooperative R&D programs. Fund USAF participation at the US-Japan Systems and Technology Forum and cooperative opportunities with the FSX program. Fund expanded technology acquisition contacts and follow-on cooperative opportunities with Russia, Ukraine, and Eastern Europe. Partially fund technical assessments and international agreements negotiation start-up costs associated with promising cooperative R&D programs. This PE will also fund all preliminary and negotiation costs associated with USAF NATO cooperative R&D funded programs. Funds support for the NATO Board of Directors, and the Technology Booth at international forums.

– (U) $1,090 **AFMC** - Fully fund Air Force Material Command activities to identify, assess, and develop support packages and project arrangements as required by statute for the above cited new candidate agreements. Fund Material Command initiatives and technical support to the Chair of the NAFAG. Support Material Command activities for engineer and scientist exchanges, USAF Foreign Comparative Test, and NATO Cooperative R&D Programs. Fund USAF participation in panel meetings of the Technical Cooperation Program, Air Standardization Coordinating Committee, Standard NATO Agreements Working Groups, and NATO Alliance Ground Surveillance Program Office. Fund exploratory visits to France, Germany, Israel, United Kingdom and other countries on new technology exchange projects. Fund the International Focal Point Officers at Centers and Laboratories to assist program officers and project engineers identify, create and staff new international cooperative agreements. This program will, in addition, fund the support, management and documentation of these ICR&D efforts.

– (U) $3,606 Total

(U) **FY 1997**

– (U) $100 **STC** - Fund US R&D coordination office and administrative support to US professionals assigned to the STC.

– (U) $245 **ESEP** -Will fund the execution and the management oversight of the Engineer and Scientist Exchange Program (ESEP).

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 1001004F International Activities
PROJECT NO. AND NAME 00AH Shape Tech Center, AGARD, AFIPSA, ICRD&A, AFMC Support	

- (U) $250 **AFIPSA** - Fully fund AFIPSA to continue clearing the backlog of proposals for International Cooperative R&D Agreements. The following is a sample list of candidate agreements for signature in FY97: **Australia**: (1) Software Engineering; **Canada**: (1) Infrared Spectral Imaging of Low Observable Signatures, (2) Structural Integrity of Aging Aircraft; **Four-Powers** (Germany, France, UK, and US): (1) Human Effects of Lasers and Protection, (2) Aircraft Battle Damage Repair, (3) Distributed Simulation Technologies, (4) Tactical Missiles Propellants; **France**: (1) Advanced Training Technologies for Aircraft Maintenance, (2) Characterization of the Optical Properties of the Environment, (3) Non-Thermal, Electronic Beam Processing of Space Structures, (4) Space Based Focal Plane Arrays; **Germany**: (1) Harmonization of Safety Regulations for Defense Material; (2) Flight and Ground Test Methodologies and Support for Aircraft; **Italy**: (1) Optics Technology; **Japan**: (1) Infrared Search and Track, (2) Crew Escape System, (3) Digital Beam Forming Radar; **Kazakhstan**: (1) Seismic Monitoring Agreement: **Korea**: (1) Hard Target Penetration; **NATO**: (1) NATO Alliance Ground Surveillance Project; (2) NATO AWACS Mid-Term Moderization Program, (3) US-NAPMO AWACS Mid-Term Moderization Program; **Norway**: (1) Air Battle Management and C3I; **Peoples Republic of China**: (1) Seismic Monitoring Station; **Russia**: (1) Master Data Exchange Agreement; **Sweden**: (1) Master Technology Research and Development Agreement, (2) Pilot Performance and Mental Workload; **Trilateral** (Australia, Canada, US): (1) C-130 Continuous Acquisition and Lifecycle Support Project; **United Kingdom**: (1) Joint Airborne Navigation and Attack (UK and France), (2) Pentration, Target, Acquisition and Attack Technology, (3) Space Communications Protocol Standards, (4) Effects of Cosmic Radiation on Avionics Systems. In addition preliminary work for FY98 agreements will be started.
- (U) $500 **AGARD** - Fully fund US national-level representation at HQ AGARD Delegates Board. Fund technical experts from Air Force field-level and US industry/university-level to support 7 technical panels, 21 working groups, 3 study groups, and 1 study committee sponsored by NATO AGARD. Fund technical reports and exchanges documented in the AGARD FY97 Program of Work as endorsed by US National Delegates and approved by the HQ AGARD National Delegates Board and NATO Military Committee. Continue Partnership for Peace initiative through the AGARD outreach program incorporating new scientist and engineers from Central Europe.
- (U) $1,333 **ICRD&A** - Fund USAF overseas R&D liaison offices. Fund management support and oversight of USAF Foreign Comparative Test Program and NATO Cooperative R&D Program. Fund USAF participation at the NATO Four-power Council, NAFAG, and its six subgroups to promote NATO harmonization of requirements, standardization, and new cooperative R&D programs. Fund USAF participation at the US-Japan Systems and Technology Forum and cooperative opportunities with the FSX program. Fund expanded technology acquisition contracts and follow-on cooperative opportunities with Russia, Ukraine, and Eastern Europe. Partially fund technical assessments and international agreements negotiation start-up costs associated with promising cooperative R&D programs. This PE will also fund all preliminary and negotiation costs associated with USAF NATO cooperative R&D funded programs. Funds support for the NATO Board of Directors, and the Technology Booth at international forums.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 1001004F International Activities
PROJECT NO. AND NAME 00AH Shape Tech Center, AGARD, AFIPSA, ICRD&A, AFMC Support	

– (U) $1,205 **AFMC** - Fully fund Air Force Material Command activities to identify, assess, and develop support packages and project arrangements as required by statute for new and existing candidate agreements. Support Materiel Command activities for engineer and scientist exchanges, USAF Foreign Comparative Test, and NATO Cooperative R&D Programs. Fund USAF participation in panel meetings of the Technical Cooperation Program, Air standardization Coordinating Committee, Standard NATO Agreements Working Groups, and other NATO forums. Fund periodic bilateral meetings to define new areas of possible cooperation, then fund exploratory visits to France, Germany, Israel, United Kingdom, Canada, and other countries on new technology exchange projects. Fund the International Focal Point Officers at Centers and Laboratories to assist program officers and project engineers in identifying, creating and staffing new international cooperative agreements. Fund HQ staff to support and promote international research and development cooperation throughout AFMC. Fund small contracts in support of technology initiatives. This program will, in addition, fund the support, management and documentation of these ICR&D efforts.

– (U) $3,633 Total

(U) Acquisition Strategy:

This program element is the only source of USAF funds to pursue opportunities for international armament's cooperation to (a) deploy and support common or interoperable equipment with our allies; (b) leverage USAF resources with our allies through cost sharing and economies of scale; and (c) exploit the best US and allied technologies for equipping coalition forces. We obtain these benefits only after international cooperative opportunities are identified, explored, developed, assessed and after the international agreements are negotiated and concluded. This program element provides funds to execute up front armaments cooperation responsibilities, rationalize cooperative opportunities, assess allied technologies, and generate sound, cost-effective cooperative programs between the USAF and our international partners. Once these initiatives and programs are started as international efforts they are transferred to the appropriate technology or systems program office and are funded in their own program elements.

(U) B. Program Change Summary ($ in Thousands)

	FY1995	FY1996	FY1997	Total Cost
(U) Previous President's Budget	1,915	3,713	3,762	
(U) Appropriated Value	1,910			
(U) Adjustments to Appropriated Value	.	.		
a. Cong General Reductions	-21	-76	.	
b. SBIR	-40	-2		
c. Omnibus or other above reprogramming threshold		-29		
d. Below threshold reprogramming				
(U) Adjustments to budget years since FY96 PB			-129	
(U) Current Budget Submit/President's Budget	1,849	3,606	3,633	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 1001004F International Activities
PROJECT NO. AND NAME 00AH Shape Tech Center, AGARD, AFIPSA, ICRD&A, AFMC Support	

(U) Change Summary Explanation:

Funding: In FY97 responsibility for funding Von Karmin Institute (VKI) will transfer to the Air Force Office of Scientific Research (AFOSR), AFOSR/NI will be responsible for funding this program. This PE will assume the funding execution as well as the management oversight of the Engineer and Scientist Exchange Program (ESEP). No transfer of funding is involved.

Schedule: N/A

Technical: N/A

(U) C. Other Program Funding

Related RDT&E:

(U) This program provides for USAF management of NATO Cooperative R&D funded by DoD (PE0603790D) and USAF (PE0603790F) and DoD funded Foreign Comparative Test (FCT) (PE 0605130D) programs. It also provides international agreement support for 6.1 through 6.3 programs for USAF Laboratories and for 6.4 through 6.5 programs for USAF Product and Logistics Centers.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 1001004F International Activities

PROJECT NO. AND NAME: 00AH Shape Tech Center, AGARD, AFIPSA, ICRD&A, AFMC Support

(U) D. Schedule Profile

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U)												
-VKI Board of Directors	X	X			X	X						
-SHAPE Technical Center Program Review	X		X		X		X		X		X	
-AGARD Delegate Board		X		X		X		X		X		X
-Aerospace Applications Studies Committee	X				X				X			
-Bilateral Technology R&D Projects MOUs	X				X				X			
-Cooperative R&D Projects	X	X	X	X	X	X	X	X	X	X	X	X
-Foreign Comparative Testing Prioritization Board			X				X				X	
-NATO Cooperative R&D Prioritization Board		X					X				X	
-R&D Loans of Defense Equipment	X	X	X	X	X	X	X	X	X	X	X	X
-Systems & Technology Forum (JA)		X		X		X		X		X		X
-Other Bilateral forums (CA, BZ)	X		X		X		X		X		X	
-Data/Information Exchange Annexes	X	X	X	X	X	X	X	X	X	X	X	X
-Engineer and Scientist Exchanges	X	X	X	X	X	X	X	X	X	X	X	X
-NATO Air Force Armaments Group		X	X			X		X		X	X	
-Four-Power Air Senior National			X		X		X	X			X	
-Four-Power Long-Term Technology			X	X		X		X		X		X

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: March 1996

BUDGET ACTIVITY: 7 - Operational System Development

PE NUMBER AND TITLE: 1001018F NATO JSTARS

PROJECT NO. AND NAME: 0002 NATO JSTARS

COST ($ In Thousands)	FY 1995 Actual	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
0002 NATO JSTARS	0	4,500	0	0	0	0	0	0	0

(U) **A. Mission Description and Budget Item Justification**

This program initiates a U.S.Government effort to provide for NATO, from airborne platforms, near-real time surveillance and targeting information on moving and stationary ground targets (growth to maritime operations), slow moving rotary and fixed wing aircraft, and rotating antennas. This information would enable operational and tactical commanders to make and execute battle decisions. To meet these needs, NATO initiated the Alliance Ground Surveillance (AGS) program. The US government has recommended Joint Surveillance Target Radar System (Joint STARS) as a candidate to fulfill the AGS requirement. The Air Force and Army effort currently defines an AGS system within the NATO architecture based on JSTARS. The Air Force is lead service. A NATO AGS system based on Joint STARS will be capable of providing target information for paring direct attack aircraft and standoff weapons against selected targets. The system will be capable of being cued by other reconnaissance, surveillance, and target acquisition systems; able to respond rapidly to worldwide contingencies: and provide surveillance and attack information in all light and near-all-weather conditions. The operational utility of the system was effectively demonstrated by the outstanding performance of the two developmental aircraft in support of combat operations during Desert Storm and Bosnia. This program is in budget activity 7 - Operational System Development because the US version of the program is a fielded operational system; it is expected that the NATO AGS version of the program would utilize major elements of the US program, requiring only minor changes to meet the NATO requirement.

(U) FY 1995 ($ in Thousands):
- (U) 1,876 System Definition for Interoperability with NATO Contingency Operations
- (U) 74 TEMS and other support
- (U) 1,950 Total*

(U) FY 1996 ($ in Thousands):
- (U) 3,575 Phase II NATO Study
- (U) 80 Embryonic Program Office
- (U) 745 ESC/JPO Support Cost
- (U) 100 Travel
- (U) 4,500 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 1001018F NATO JSTARS
PROJECT NO. AND NAME 0002 NATO JSTARS	

(U) **B. Program Change Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	Total Cost
(U) Previous President's Budget	0	0	0	
(U) Appropriated Value	1,950*	4,500		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions				
b. SBIR		#		
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogramming				
(U) Adjustments to Budget Years Since FY 1996 PB				
(U) Current Budget Submit/President's Budget	1,950*	4,500	0	

* FY95 funds were identified in PE 64770F in support of the initial NATO AGS effort. FY96 Appropriations Act added $6,450 for the NATO AGS effort into Joint STARS PE; this approval ($6,450) includes the authority to obligate FY95 funds ($1,950).

Due to the reclassification of funds the amount of $190K in SBIR reductions were paid out of PE64770F. These reductions are not reflected in the current data base.

(U) Change Summary Explanation:

Funding:

Schedule:

Technical:

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE March 1996
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 1001018F NATO JSTARS
PROJECT NO. AND NAME 0002 NATO JSTARS	

(U) C. **Other Program Funding Summary ($ in Thousands)**

	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
(U) JSTARS			**6,300						

**FY97 funds identified in PE 64770F to support the NATO AGS effort.

(U) D. **Schedule Profile**

	FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Program Definition Study					***							X

***Program Study Start