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DEPARTMENT OF THE AIR FORCE

JUSTIFICATION OF ESTIMATES FOR FISCAL YEARS 1990/1991
BIENNIAL BUDGET ESTIMATES
SUBMITTED TO CONGRESS JANUARY 1989

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Missile Procurement, Air Force

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DEPARTMENT OF THE AIR FORCE

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— MISSILE PROCUREMENT, AIR FORCE

For construction, procurement, and modification of missiles, spacecraft, rockets, and related equipment, including spare parts and accessories therefor, ground handling equipment, and training devices; expansion of public and private plants. Government-owned equipment and installation thereof in such plants, erection of structures, and acquisition of land, for the foregoing purposes, and such lands and interests therein, may be acquired and construction prosecuted thereon prior to approval of title; reserve plant and Government and contractor-owned equipment layaway; and other expenses necessary for the foregoing purposes including rents and transportation of things: [\$7,219,683,000] \$7,690,000,000 to remain available for obligation until September 30, [1991] 1992.

Further, for the foregoing purposes, \$10,371,900,000, to become available for obligation on October 1, 1990 and to remain available for obligation until September 30, 1993.

Further, for the foregoing purposes, only for multi-year procurement, \$1,307,837,000, to become available for obligation on October 1, 1991 and to remain available for obligation until September 30, 1994; \$699,356,000, to become available for obligation on October 1, 1992 and to remain available for obligation until September 30, 1995; and \$955,226,000 to become available for obligation on October 1, 1993 and to remain available for obligation until September 30, 1996. (10 U.S.C. 1905, 2271-79, 2363, 2386, 2653, 2672, 2672a, 8013, 8062, 9501-02, 9531-32, 9741-42; 50 U.S.C. 451, 453, 455; Department of Defense Appropriations Act, 1989; additional authorizing legislation to be proposed.)

Missile Procurement, Air Force
Program and Financing (in thousands of dollars)

Budget plan (amounts for PROCUREMENT actions programmed)

Obligations

Identification code	57-3020-0-1-051	1988 actual	1989 est.	1990 est.	1991 est.	1988 actual	1989 est.	1990 est.	1991 est.
Program by activities:									
Direct program:									
00 0101	Ballistic missiles	912,080	851,455	1,140,899	2,015,279	904,148	1,061,119	1,085,614	1,637,142
00 0201	Other missiles	1,916,387	1,469,201	1,566,268	2,233,106	2,078,803	1,626,557	1,448,489	1,901,553
00 0301	Modification of Inservice missiles	95,175	144,021	117,147	234,600	122,846	138,939	111,489	192,841
00 0401	Spares and repair parts	4,128,547	4,424,653	4,396,275	5,281,758	4,307,387	4,029,372	4,422,436	5,228,559
00 0501	Other support	7,206,337	7,120,396	7,690,000	10,371,900	7,852,632	7,081,810	7,471,450	9,450,930
00 9101	Total direct program	161,716	315,000	311,300	315,200	164,734	319,230	311,300	315,200
01 0101	Reimbursable program	7,368,053	7,435,396	8,001,300	10,687,100	7,817,366	7,401,040	7,732,750	9,766,130
10 0001	Total								
Financing:									
Offsetting collections from:									
11 0001	Federal funds(-)	-158,590	-309,689	-305,074	-308,897	-160,895	-309,689	-305,074	-308,897
13 0001	Trust funds(-)	-3,171	-5,311	-6,226	-6,303	-2,464	-5,311	-6,226	-6,303
14 0001	Non-federal sources(-)	-5							
17 0001	Recovery of prior year obligations					-78,148			
21 4002	Unobligated balance available, start of year:								
21 4003	For completion of prior year budget plans	-230,546	-103,000			-3,353,610	-2,721,274	-2,758,717	-3,027,267
21 4007	Available to finance new budget plans	-262,812	3,087			-230,546			
22 4001	Reprogramming from/to prior year budget plans	141,255	99,913			141,255	99,913		
22 4002	Unobligated balance transferred to other accounts								
24 4002	Unobligated balance available, end of year:								
24 4003	For completion of prior year budget plans	103,000				2,721,274	2,758,717	3,027,267	3,948,237
24 4003	Available to finance subsequent year budget plans	66,570				103,000			
25 0001	Unobligated balance lapsing					66,570			
39 0001	Budget authority	7,023,804	7,120,396	7,690,000	10,371,900	7,023,804	7,120,396	7,690,000	10,371,900
Budget authority:									
Appropriation									
40 0001	Reduction pursuant to P.L. 100-463	7,290,771	7,219,683	7,690,000	10,371,900	7,290,771	7,219,683	7,690,000	10,371,900
40 0017	Appropriation rescinded (unobligated balance)	-174,046	-3,002			-174,046			
41 0001	Transferred to other accounts(-)	-110,521	-96,285			-110,521	-96,285		
42 0001	Transferred from other accounts	17,600				17,600			
43 0001	Appropriation (adjusted)	7,023,804	7,120,396	7,690,000	10,371,900	7,023,804	7,120,396	7,690,000	10,371,900
Relation of obligations to outlays:									
71 0001	Obligation's incurred, net					7,654,008	7,086,040	7,471,450	9,450,930
72 4001	Obligated balance, start of year					9,637,070	11,317,589	11,096,429	11,238,479
74 4001	Obligated balance, end of year					-11,317,569	-11,096,429	-11,238,478	-13,192,709
77 0001	Adjustments in expired accounts					150,322			

78 0001 Adjustments in unexpired accounts

90 0001 Outlays

-78,148

6,945,663

7,307,200

7,279,400

7,496,700

Missile Procurement, Air Force
 Object Classification (in thousands of dollars)

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Identification code	57-3020-0-1-051	1988 actual	1989 est.	1990 est.	1991 est.
Direct obligations:					
131.001	Equipment	7,652,632	7,081,810	7,421,450	9,450,930
199.001	Total Direct obligations	7,652,632	7,081,810	7,421,450	9,450,930
Reimbursable obligations:					
231.001	Equipment	164,734	319,230	311,300	315,200
299.001	Total Reimbursable obligations	164,734	319,230	311,300	315,200
999.901	Total obligations	7,817,366	7,401,040	7,732,750	9,766,130

ACTIVITY: 1. Ballistic Missiles

(In Thousands of Dollars)

FY 1991 Estimate	\$2,015,279
FY 1990 Estimate	1,140,899
FY 1989 Estimate	851,455
FY 1988 Actual	912,080

SECTION I - PURPOSE AND SCOPE

This activity provides for complete operational intercontinental ballistic missiles, including the airframe structure and installed power units, communications guidance and control equipment, re-entry vehicle (excluding nuclear payloads), instruments and auxiliary equipment installed in the missiles, and penetration aids. It also provides for peculiar support equipment in direct support of operational ballistic missiles including ground guidance and control systems, equipment to maintain the operational status of the system, specialized ground handling equipment, and system trainers. The ground equipment is used to transport, assemble and disassemble, maintain, checkout, launch, and guide ballistic missiles. Specialized training equipment includes system trainers for proficiency training of maintenance and operator crews. This activity also provides for the modernization of the ballistic missile launch and launch control facilities and the integration of new equipment into the launch control center. It includes hardware, training equipment, data and site activation effort required to modernize ballistic missile facilities. Also included is replacement equipment for ballistic missile weapon systems. Replacement equipment requirements provide for peculiar support equipment for out-of-production systems, equipment common to several systems, and equipment required by specialized repair activities.

SECTION 11 - JUSTIFICATION OF FUNDS REQUESTED

PEACEKEEPER

(In Thousands of Dollars)

	<u>FY 1990</u>	<u>FY 1991</u>		
	<u>QTY</u>	<u>AMOUNT</u>	<u>QTY</u>	<u>AMOUNT</u>
	12	1,082,007	12	1,975,017

The Peacekeeper is a four-stage ICBM having multiple independently targetable warheads with much greater accuracy than previous ballistic missiles. The first 50 Peacekeeper missiles are deployed in Minuteman silos. Peacekeeper subsystems will provide the following improvements over existing Minuteman missiles: an advanced guidance set for improved accuracy; an advanced solid propellant; lightweight motor cases; advanced rocket motor nozzles. Funds are requested in both 1990 and 1991 for procurement of 12 missiles, and associated support equipment. The FY 1990 request includes advance procurement of basing kit materials to support deployment of missiles in rail garrisons subject to Congressional approval.

REPLACEMENT EQUIPMENT - STRATEGIC (BALLISTIC)

(In Thousands of Dollars)

	<u>FY 1990</u>	<u>FY 1991</u>		
	<u>QTY</u>	<u>AMOUNT</u>	<u>QTY</u>	<u>AMOUNT</u>
	-	58,892	-	40,262

Replacement equipment includes items to replace peculiar and common support equipment worn out or damaged beyond economical repair and common items required for new ballistic missile systems entering the inventory. It provides for the replacement of organizational and base level missile support equipment.

ACTIVITY: 2. Other Missiles

(In Thousands of Dollars)

FY 1991 Estimate	\$2,233,106
FY 1990 Estimate	1,566,268
FY 1989 Estimate	1,469,201
FY 1988 Actual	1,916,387

SECTION I - PURPOSE AND SCOPE

This activity provides funds for procurement of strategic air-to-ground cruise missiles, tactical ground-to-ground cruise missiles, tactical air-to-air, air-to-ground and ground-to-air missiles, target drones, missile replacement equipment and industrial facilities. Weapon system cost includes flyaway costs (airframe, propulsion equipment, electronics and armament), peculiar support equipment (PSE), system peculiar training equipment and publications, and technical data.

SECTION II - JUSTIFICATION OF FUNDS REQUESTED

The FY 1990/1991 budget request includes funds for the procurement of the Advanced Cruise Missile, Have Flag, Tacit Rainbow, Imaging Infrared (IIR) Maverick, HARM, target drones, Short Range Attack Missile II (SRAM II), Sidewinder and Advanced Medium Range Air-to-Air Missile (AMRAAM), HAVE NAP, missile replacement equipment, and industrial facilities.

Strategic Missiles

Advanced Cruise Missile - Information concerning this program is included in classified budget documentation material.

Have Flag - Information concerning this program is included in classified budget documentation material.

Tacit Rainbow

(In Thousands of Dollars)

FY 1990		FY 1991	
QTY	AMOUNT	QTY	AMOUNT
-	-	-	190,492

The Tacit Rainbow is a low-cost, programmable, loitering missile system to search out and attack emitting radars. This system provides the capability to defeat/suppress the enemy's ability to acquire and attack friendly forces. The 1991 request is for \$190.5 million. The quantity to be procured with this amount is provided in classified budget documentation.

SRAM II

(In Thousands of Dollars)

FY 1990		FY 1991	
QTY	AMOUNT	QTY	AMOUNT
-	10,791	25	79,345

The SRAM II is an improved nuclear air-to-surface missile developed to replace the SRAM A. The system will be capable of penetrating advanced defensive threats to strike hard and relocatable targets from standoff ranges. Primary carrier aircraft are the B-1B and B-2. The 1990 request supports a technology modernization project at the prime contractor's plant and funds advance procurement of long leadtime materials. The 1991 request begins low rate production of twenty-five missiles.

HAVE NAP

(In Thousands of Dollars)

FY 1990		FY 1991	
QTY	AMOUNT	QTY	AMOUNT
22	21,731	26	22,403

HAVE NAP is an air-to-ground, medium range, precision guided missile currently operational in the Israeli Air Force. The weapon system is planned to be employed on Strategic Air Command (SAC) B-52's as a standoff conventional weapon against designated high value point and defense suppression targets.

Tactical Missiles
AIM-9M Sidewinder

(In Thousands of Dollars)

FY 1990		FY 1991	
QTY	AMOUNT	QTY	AMOUNT
-	452	-	361

Developed as a joint Navy/Air Force effort, the AIM-9M is the latest version of heat-seeking, infrared missiles forming the SIDEWINDER family. The AIM-9M is a short-range, air-to-air missile designated to retain all demonstrated guidance performance characteristics of the AIM-9L, while significantly reducing operational limitations of the AIM-9L when used against infrared countermeasures and clutter backgrounds. The 1990 and 1991 requests continue support of AIM-9M production program.

AGM-65D/G MAVERICK (MYP)

(In Thousands of Dollars)

FY 1990		FY 1991	
QTY	AMOUNT	QTY	AMOUNT
2,270	188,258	2020	175,003

The AGM-65D and G missiles are rocket-propelled, air-to-surface, precision-guided tactical missiles with a "stand-off" launch and leave capability. The missiles are guided by tracking signals developed from the naturally occurring thermal energy of the target. The AGM-65D has a (125 lb) conical shaped charge warhead, which is detonated by a contact fuze mechanism. The AGM-65G is essentially the same as the "D" version only it employs a larger (300 lb) high explosive warhead. Both the AGM-65D and G missiles incorporate imaging infrared (IIR) guidance compatible with all TV MAVERICK capable aircraft and target acquisition systems that are being planned for tactical aircraft. The FY 1990 request initiates a three year multiyear procurement of Air Force and Navy Maverick missiles on a winner take all basis. The Air Force will procure 2,270 missiles in 1990 and 2,020 missiles in 1991.

AGM-88A HARM

(In Thousands of Dollars)

	<u>FY 1990</u>	<u>FY 1991</u>		
	<u>QTY</u>	<u>AMOUNT</u>	<u>QTY</u>	<u>AMOUNT</u>
	326	79,339	200	45,303

The Advanced High-Speed Anti-Radiation Missile (HARM) is an air-to-surface missile that is guided to enemy radar sites by homing in on emitting signals. HARM characteristics include software flexibility, inflight retargeting, high speed, large launch envelope, wide band coverage in a single head, high sensitivity and compatibility with both Air Force and Navy tactical aircraft. The increased sophistication, concentration and lethality of enemy ground based, radar guided, missile and anti-aircraft artillery systems threaten the ability of tactical aviation to accomplish its mission and survive. HARM provides a lethal counter to this threat. An alternate guidance section, the low cost seeker, is in development. Once qualified, the seeker portion of the HARM will be competitively procured. In 1990 the Air Force will procure 326 missiles, of which 50 will be equipped with Low Cost Seekers. 200 missiles to be procured in 1991 will all be Low Cost Seeker-equipped HARMs.

Advanced Medium Range Air-to-Air Missile (AMRAAM)

(In Thousands of Dollars)

	<u>FY 1990</u>	<u>FY 1991</u>		
	<u>QTY</u>	<u>AMOUNT</u>	<u>QTY</u>	<u>AMOUNT</u>
	1,450	902,876	2,200	892,882

Developed jointly by the Air Force and Navy, the AMRAAM is an air-to-air missile with significant improvements in operational utility and combat effectiveness over the AIM-7F/M Sparrow missile. It is a radar guided, all-weather, all-environment, beyond-visual-range, air-to-air missile compatible with the F-14, F-15, F-16 and F-18. It will have a performance envelope significantly improved over the AIM-7F/M, increased missile velocity, a "launch and maneuver" employment capability, and the capability for multiple target attack during a single intercept. The 1990 request procures 1,450 AMRAAMs, with 2,200 to be procured in 1991.

Target Drones

(In Thousands of Dollars)

FY 1990		FY 1991	
QTY	AMOUNT	QTY	AMOUNT
49	22,497	49	22,821

Target drones are remotely piloted vehicles used to simulate threat aircraft during test and evaluation of air-to-air missiles. Both full-scale and subscale targets with associated augmentation, scoring and countermeasures devices are required. Funding in 1990 and 1991 procures 48 QF-106 full-scale drones and one subscale BQM-34A drone in each year.

Industrial Facilities

(In Thousands of Dollars)

FY 1990		FY 1991	
QTY	AMOUNT	QTY	AMOUNT
-	13,945	-	13,960

These requirements represent the Air Force's effort, in cooperation with industry, to ensure the defense industrial base is capable of producing peacetime weapon systems in a cost-effective and efficient manner. Industrial facilities includes the missile/space sector segment of an industrial base program that ensures the ability of the base to accelerate deliveries in times of national emergencies in order to meet sustainability requirements. It includes funding for a broad range of industrial acquisition tools that also dramatically impact peacetime procurement. Modernization, productivity, the operations at the 13 government owned-contractor operated plants and at hundreds of civilian contractor locations that all make up the defense industrial base are becoming a more and more essential ingredient to national deterrence. Studies by the Services and the Joint Chiefs of Staff have repeatedly proven that the industrial base will not support mobilization demands in a timely manner without some advance analysis and preparation. In 1990 and 1991, \$13.9 million is required each year to support facilities projects, industrial base planning, and industrial productivity and responsiveness.

Replacement Equipment

(In Thousands of Dollars)

<u>FY 1990</u>		<u>FY 1991</u>	
<u>QTY</u>	<u>AMOUNT</u>	<u>QTY</u>	<u>AMOUNT</u>
-	2,045	-	2,515

Requirements for replacement equipment provide for peculiar support equipment for weapon systems that are no longer in production, equipment common to several systems, and equipment required by specialized report activities. In FY 1990 and FY 1991 the funding is required to procure replacement equipment for the AIM-7 SPARROW, AIM-9 SIDBINDER, AGM-65A MAVERICK, AGM-69A SRAM, and ALCM.

1. COMPONENT USAF		FY 1990 FACILITY PROJECT DATA			2. DATE 12 Jul 88	
3. INSTALLATION AND LOCATION Air Force Plant 78 Brigham City UT			4. PROJECT TITLE MPC 7000 Environmental Solvent Reclamation			
5. PROGRAM ELEMENT 0708011F		6. CATEGORY CODE 222-222	7. PROJECT NUMBER N/A		8. PROJECT COST (\$000) \$660.00	
9. COST ESTIMATES						
ITEM			U/M	QUANTITY	UNIT COST	COST (\$000)
Solvent reclamation system and degreaser cover			L/S	-----	-----	\$660.00
10. DESCRIPTION OF PROPOSED CONSTRUCTION						
<p>A solvent reclamation system and degreaser cover are needed in Inert Parts Fabrication Building M-508.</p> <p><u>BASIS OF NEED:</u> A distillation recovery system is needed to reduce solvent usage and labor required to clean the degreaser. Personnel safety will be enhanced by reducing the handling required and eliminating the need to lower operators to the bottom of the degreaser for cleaning. All greases and soils will be conveyed to the still, allowing the degreaser to be back in service immediately after draining. The still/water removal process will make it possible to comply with EPA regulations concerning reduction of hazardous waste generation.</p> <p><u>IMPACT IF NOT PROVIDED:</u> With the existing system, methyl chloroform is not removed from the degreaser sumps until sample analyses indicate it is unfit for continued use. The waste solvent is then pumped into drums for off-site disposal. At least 16 hours are required to dry and clean the sump every time the degreaser is drained. High water levels accumulating in the degreaser solvent result in solvent rejection every four to six weeks. Excessive water causes flash rusting on the parts being degreased, which requires that the parts be grit blasted again or even rejected.</p>						

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1 COMPONENT USAF		FY 19 <u>90</u>		FACILITY PROJECT DATA		2 DATE 12 Jul 88	
3 INSTALLATION AND LOCATION Air Force Plant 78, Brigham City UT				4. PROJECT TITLE MPC 7000 Environmental, Close X-Ray Waste Discharge			
5 PROGRAM ELEMENT 0708011F		6 CATEGORY CODE 222-222		7 PROJECT NUMBER N/A		8. PROJECT COST (\$000) \$660.00	
9 COST ESTIMATES							
ITEM				U/M	QUANTITY	UNIT COST	COST (\$000)
Implement Closure Plan				L/S	-----	-----	\$660.00
10 DESCRIPTION OF PROPOSED CONSTRUCTION							
<p>Install 12 groundwater monitoring wells, remove and dispose contaminated soil, and install a final closure cap over the two sites.</p> <p><u>BASIS OF NEED:</u></p> <p>Closure of the X-ray waste water discharge sites at buildings M-508 and M-636 are required by Environmental Protection Agency's (EPA's) Resource Conservation and Recovery Act (RCRA) regulations. A detailed closure plan has been submitted to the Bureau of Solid and Hazardous Waste as required in the Stipulation and Consent Order, Case Numbers 8502162 and 8606402. This Consent Agreement has a decision matrix that defines the possible options for closure. The specific option will not be selected until additional data is obtained through a Soil Study Program. This plan is currently being reviewed by the Utah Department of Health.</p> <p><u>IMPACT IF NOT PROVIDED:</u></p> <p>Violation of the above mentioned regulations and consent agreement will lead to more aggressive measures by the state and EPA. These measures include litigation, fines and penalties.</p>							

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ACTIVITY: 3. Modification of In-service Missiles

(In Thousands of Dollars)

FY 1991 Estimate	\$234,600
FY 1990 Estimate	117,147
FY 1989 Estimate	144,021
FY 1988 Actual	95,175

SECTION I - PURPOSE AND SCOPE

This activity provides for modification of missile systems and drones, direct ground support equipment, missile training equipment, and components for this equipment. These costs include modification kits, revised handbooks, and engineering effort. These programs are designed to improve reliability, enhance performance, and increase maintainability by incorporating approved modifications resulting from technical advances, service use, and continuing test programs.

SECTION II - JUSTIFICATION OF FUNDS REQUESTED

The FY 1990 and FY 1991 missile modification program consists of Class IV modifications necessary for safety improvements, extension of service life or correction of material deficiencies, and Class V modifications that incorporate changes to enhance the operational capability of the fielded systems. Several Class III update modifications are also programmed to bring fielded missiles into line with production line configuration. Advances in technology and weapon system service life extensions necessitate the modification of in-service missile systems to enable strategic, tactical, and support forces to maintain superiority over hostile forces.

HAVE NAP

(In Thousands of Dollars)

<u>FY 1990</u>	<u>FY 1991</u>
\$997	-

The 1990 request of \$1.0 million provides for modification of the HAVE NAP missiles used in Initial Operational Test and Evaluation to comply with United States operational and safety standards.

LGM-30 Minuteman II/III Modification.

(In Thousands of Dollars)

<u>FY 1990</u>	<u>FY 1991</u>
\$92,680	\$217,457

The 1990 request initiates the Minuteman Reliability Program for \$70.0 million. The 1991 request continues this effort at \$77.0 million and starts the Rapid Execution and Combat Targeting (REACT) mod for \$75.0 million, 1990 also continues the splice case modification. The 1991 request sees the initiation of the Minuteman III guidance set upgrade, as well as the launch control facility emergency power upgrade.

AGM-65D Maverick.

(In Thousands of Dollars)

<u>FY 1990</u>	<u>FY 1991</u>
\$9,968	\$3,108

The 1990 request initiates a Class V modification for 825 AGM-65D missiles and depot support equipment for compatibility with the new digital autopilot and pneumatic actuation system. This modification updates operational capability for current pilot training.

AGM-88A. HARM Modification.

(In Thousands of Dollars)	
<u>FY 1990</u>	<u>FY 1991</u>
\$1,410	\$1,991

The FY 1990 program provides \$1.4 million to correct deficiencies revealed during operational testing and initial use. These corrections are incorporated into the production line at the earliest time, but systems that could not be corrected while in production must be corrected through the modification process. The FY 1991 request continues these modifications.

AGM-86A. Air Launched Cruise Missile Modification.

(In Thousands of Dollars)	
<u>FY 1990</u>	<u>FY 1991</u>
\$3,886	\$3,583

The 1990 request finishes various Class V support equipment mods and continues miscellaneous Class IV reliability/supportability updates. The FY 1991 request continues the Class IV modifications.

Peacekeeper Modifications.

(In Thousands of Dollars)	
<u>FY 1990</u>	<u>FY 1991</u>
\$3,362	\$3,359

The FY 1990 and FY 1991 programs provide \$3.4 million each year for miscellaneous Class IV reliability and maintainability modifications.

Other (Modifications Under \$2.0 Million).

(In Thousands of Dollars)	
<u>FY 1990</u>	<u>FY 1991</u>
\$247	\$275

The FY 1990 and FY 1991 programs provide \$2 million and \$.3 million, respectively, for miscellaneous Class IV modifications on the AIM-7F SPARROW, to improve reliability, maintainability and correct material deficiencies.

ACTIVITY: 4. Spares and Repair Parts

(in Thousands of Dollars)

FY 1991 Estimate	\$607,157
FY 1990 Estimate	469,411
FY 1989 Estimate	231,026
FY 1988 Actual	154,148

SECTION I - PURPOSE AND SCOPE

This activity provides for procurement of initial and replenishment spares and repair parts for ballistic missiles, other missiles, and target drones. Included are related provisioning documentation and spares for missile modification programs, peculiar support equipment and training equipment.

SECTION II - JUSTIFICATION OF FUNDS REQUESTED

The 1990 and 1991 funds are required for initial spares for weapon systems in production and for replenishment spares to maintain and test existing weapon systems. Initial spares funding requirements are determined by applying standard factors which are based on historical experience. The factors are applied in accordance with type of weapon system, category of support (e.g. air vehicle, support equipment), number of weapon systems in production, production leadtimes, and recurring flyaway costs. Initial spares requirements are validated in the weapon system provisioning process for a specified support period. Replenishment spares include components and repair parts required for the continued support of missiles, drones and related support equipment maintained in the operational inventory. Requirements for replenishment spares are based on a computational process which utilizes actual consumption, leadtime, on hand inventory, procurement cost, and weapon system program data. Through management review, the results are adjusted as appropriate to reflect any changes in support requirements. Included within replenishment spares are such items as replacement ballistic missile motors, ballistic missile reentry vehicles for operational testing and evaluation, tactical missile telemetry packs for weapon system evaluation, and guidance and control units for all categories of missiles.

TOTAL BUDGET ACTIVITY 4:

SPARES AND REPAIR PARTS

(In Thousands of Dollars)

	<u>FY 1990</u>	<u>FY 1991</u>
	469,411	607,157

	<u>FY 1990</u>	<u>FY 1991</u>
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INITIAL SPARES

LGM-30 F/G Minuteman II/IIII	\$ 875	\$ 23,445
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AIM-9M Sidewinder	11	12
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AIM-120 Advanced Medium	15,536	29,870
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Range Air-to-Air Missile (ANRAAM)	4,794	4,152
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AGM-65D Imaging Infrared (IIR) Maverick	4,533	-
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AGM-88A High Speed	-	3,883
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Anti Radiation Missile (HARM)	270,342	304,783
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SRAM II	114	-
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LGM-118A Peacekeeper	1,015	1,726
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Target Drones	1,296	-
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AGM-136 Tacit Rainbow	<u>9,371</u>	<u>19,248</u>
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HAVE NAP	307,887	387,119
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Classified Programs		
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Subtotal		
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MODIFICATION INITIAL SPARES

AIM-9 Sidewinder	262	268
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LGM-30 F/G MINUTEMAN II/IIII	311	266
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OTHER PROGRAMS	<u>1,634</u>	<u>2,029</u>
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Subtotal	<u>2,207</u>	<u>2,563</u>
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TOTAL INITIAL SPARES	310,094	389,682
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REPLENISHMENT SPARES

	<u>1990</u>	<u>1991</u>
AIM-7 Sparrow	2,446	5,828
AIM-9 Sidewinder	4,856	6,843
AIM-120 AMRAAM	162	140
AGM-45 Shrike	41	131
AGM-65D Maverick	33	58
AGM-69A SRAM	608	1899
AGM-84 Harpoon	629	1911
AGM-86 ALOM	3,132	4,620
AGM-88A HARM	1,224	1,474
RAPIER	16,004	21,281
LGM-30 Minuteman	108,469	119,404
LGM-118A Peacekeeper	20,786	52,012
GAR-2B	-	-
AGM/BOM-34 Firebee	-	-
target drones		
(MCM-107 and CF 100)	756	973
classified programs	<u>171</u>	<u>901</u>
Total Replenishment Spares	159,317	217,475

TOTAL BUDGET ACTIVITY 4:

SPARES AND REPAIR PARTS

469,411

607,157

ACTIVITY: 5. Other Support

(In Thousands of Dollars)

FY 1991 Estimate	\$5,281,758
FY 1990 Estimate	4,396,275
FY 1989 Estimate	4,424,693
FY 1988 Actual	4,128,547

SECTION I - PURPOSE AND SCOPE

This activity provides for space programs and special programs. Space programs provide launch vehicles, satellites, peculiar ground support equipment, and miscellaneous launch support requirements other than those chargeable to the Operations and Maintenance appropriation. Special programs are of a sensitive nature and require special access.

SECTION II - JUSTIFICATION OF FUNDS REQUESTED

The FY 1990 appropriation of \$4,396,275 thousand includes \$1,256,571 thousand for operational space programs and \$3,139,704 thousand for special programs. The FY 1991 request of \$5,281,758 thousand includes \$1,840,230 for operational space programs and \$3,441,528 thousand for special programs.

Communications Security (COMSEC)

(In Thousands of Dollars)

FY 1990		FY 1991	
QTY	AMOUNT	QTY	AMOUNT
-	20,540	-	7,315

This program provides communications security equipment for all critical spaceborne communications systems. Funds requested in this line procure COMSEC products for use in operational space programs. This program is an integral part of the national COMSEC program administered by the National Security Agency. FY 1990 and FY 1991 funds provide for the procurement of peculiar anti-jam, data and command authentication encryption/decryption, authentication anti-jam, and weapon system security communication equipment for space and satellite programs.

Navstar Global Positioning System (GPS) (MYP)

(In Thousands of Dollars)

	FY 1990		FY 1991	
	QTY	AMOUNT	QTY	AMOUNT
	-	70,291	-	200,752

The operational Navstar GPS system will consist of 18 satellites in six orbital planes and 3 on orbit spare satellites, a ground control station and approximately 20,000 sets of user equipment for all services. Users (military aircraft, ships, ground vehicles, and ground personnel) will be able to precisely determine position (to 16 meters spherical probable accuracy worldwide) and velocity (.1 meters per second), in three dimensions and unimpaird by weather anywhere in the world. GPS's positional accuracy will significantly improve the effectiveness of reconnaissance, weapons delivery, mine countermeasures and rapid deployment for all services. The FY 1990 request provides for modification of satellites and ground support equipment to use the medium launch vehicle. The FY 1991 request provides funds to support the existing GPS Block II satellites as well as advance procurement funds to start acquisition of twenty Block IIR replacement satellites on a multiyear basis.

Space Shuttle Operations

(In Thousands of Dollars)

	FY 1990		FY 1991	
	QTY	AMOUNT	QTY	AMOUNT
	-	46,087	-	38,423

The Space Shuttle Operations program provides funds to support Air Force operational space programs (excluding Special Missions) launched on the Space Shuttle. In FY 1990 funds are requested for Inertial Upper Stage (IUS) technical support, Payload Assist Module-DII (PAM-DII) integration, and support equipment for Shuttle Operations. FY 1991 funds continue these efforts.

Defense Meteorological Satellite Program (DMSP) (MYP)

(In Thousands of Dollars)

FY 1990		FY 1991	
QTY	AMOUNT	QTY	AMOUNT
1	137,380	1	150,138

DMSP is an advanced weather satellite system that provides timely, worldwide, high quality visible and infrared cloud imagery and other specialized meteorological, oceanographic and solar geophysical data to support DOD strategic missions. Worldwide data are provided to the Air Force Global Weather Central (Offutt AFB, Nebraska) and the Navy's Fleet Numerical Oceanography Center (Monterey, California). Local area cloud imagery data are transmitted for immediate use directly from the satellites to fixed and mobile Air Force and Navy tactical receiving terminals at key worldwide operating locations and onboard aircraft carriers at sea. The FY 1990 program provides for procurement of spacecraft S17 as part of the five spacecraft multiyear initiated in FY 1989. The FY 1990 request also includes funds for a Solar X-ray Image Sensor, which will fly on a NOAA Geostationary Operational Environmental Satellite (GOES). The FY 1991 request procures satellite S-18 and sensors for satellites S18-20.

Defense Support Program (DSP) (MYP)

(In Thousands of Dollars)

FY 1990		FY 1991	
QTY	AMOUNT	QTY	AMOUNT
1	371,630	1	542,764

DSP satellites contain sensors which provide near real-time data to the National Command Authority and other designated users. Funds in FY 1990 and FY 1991 continue the 5 satellite multiyear procurement started in FY 1987. One satellite will be procured in each year.

Defense Satellite Communications System (DSCS) (MYP)

(In Thousands of Dollars)

	FY 1990		FY 1991	
	QTY	AMOUNT	QTY	AMOUNT
	-	49,090	-	62,898

DSCS provides Super High Frequency (SHF) satellite communications for secure voice and high data rate transmissions. It satisfies unique and vital national security communications requirements for worldwide military command and control, crises management and relay of intelligence, early warning data, treaty monitoring and surveillance information and diplomatic traffic. The DSCS program consists of a space segment, which is an Air Force responsibility, a multi-user terminal segment for ground, airborne, and naval elements, and an operational control segment. The authorized DSCS space segment consists of five operational and two on-orbit spare satellites positioned in geosynchronous orbits to provide global (less polar) coverage. Existing DSCS II satellites will be replenished with DSCS III satellites. DSCS III provides increased capacity, flexibility, and counter-measure capability. DSCS III satellites will include an Air Force Satellite Communications System single channel transponder for Emergency Action Message dissemination. Funding in FY 1990 procures two Integrated Apogee Boost Subsystem assemblies (IABS) to enable launch of two DSCS III satellites on the Atlas II launch vehicles. FY 1990 also finances general engineering support, satellite storage, and modification to DSCS satellites to allow use of the Atlas II. FY 1991 funding finances two more IABS assemblies as well as general engineering support.

Space Boosters (MYP)

(In Thousands of Dollars)

	FY 1990		FY 1991	
	QTY	AMOUNT	QTY	AMOUNT
	3	247,481	2	236,084

The Space Boosters program provides access to space for critical DOD payloads. FY 1990 funds three Titan IV launch vehicles as part of the multiyear procurement begun in FY 1987. Also funded are the associated solid rocket motor upgrades (SRMUs) and aerospace ground equipment (AGE) at Vandenberg's Space Launch Complex 7 (SLC-7) and Cape Canaveral Air Force Station (CCAFS). FY 1991 funds two more Titan IVs, the associated SRMUs and AGE for SLC-7.

Medium Launch Vehicle (MLV)

(In Thousands of Dollars)

FY 1990		FY 1991	
QTY	AMOUNT	QTY	AMOUNT
4	199,386	5	220,147

This program provides for competitive procurement of medium launch vehicles (MLVs). The Delta II will be used to launch medium weight satellites, such as the NAVSTAR GPS into orbit. The FY 1990 request finances two Delta II launch vehicles to launch NAVSTAR Global Positioning System (GPS) satellites and two Atlas II launch vehicles to launch DSCS satellites. Three Delta IIs and two Atlas IIs are procured in FY 1991.

Nuclear Detonation Detection System (NDS)

(In Thousands of Dollars)

FY 1990		FY 1991	
QTY	AMOUNT	QTY	AMOUNT
-	-	-	32,811

NDS provides the capability to detect, locate, and report nuclear detonations on a global basis near real-time. NDS sensor packages are employed on NAVSTAR Global Positioning System (GPS) satellites. FY 1991 funding provides advance procurement to initiate the multiyear procurement of NDS sensor suites for the next twenty GPS satellites.

Forest Green

(In Thousands of Dollars)

FY 1990		FY 1991	
QTY	AMOUNT	QTY	AMOUNT
-	517	-	600

Information concerning this program is included in classified budget documentation material.

Special Programs

(In Thousands of Dollars)

	<u>FY 1990</u>	<u>FY 1991</u>		
	<u>QTY</u>	<u>AMOUNT</u>	<u>QTY</u>	<u>AMOUNT</u>
	-	3,139,705	-	3,441,530

Information concerning this program is included in classified budget documentation material.

Special Update Programs

(In Thousands of Dollars)

	<u>FY 1990</u>	<u>FY 1991</u>		
	<u>QTY</u>	<u>AMOUNT</u>	<u>QTY</u>	<u>AMOUNT</u>
	-	114,168	-	198,096

Information concerning this program is included in classified budget documentation material.

**COMPARISON OF FY 1989 PROGRAM REQUIREMENTS AS REFLECTED
IN FY 1988/1989 AMENDED BUDGET WITH FY 1989 PROGRAM REQUIREMENTS AS
SHOWN IN FY 1987/1991 BUDGET**

SUMMARY OF PROGRAM REQUIREMENTS

(In Thousands of Dollars)

	Program Requirements Per 1988/1989 Amended Budget	Program Requirements Per 1990/1991 Budget	Increase (+) Or Decrease (-)
BUDGET ACTIVITY			
1. Ballistic Missiles	\$ 863,701	\$ 851,455	\$ -12,246
2. Other Missiles	2,417,471	1,469,201	-948,270
3. Modification of In-Service Missiles	89,021	144,021	+55,000
4. Spares and Repair Parts	254,314	231,026	-23,288
5. Other Support	4,533,493	4,424,693	-108,800
Reimbursable Program	<u>39,000</u>	<u>315,000</u>	<u>-276,000</u>
Total Fiscal Year Program	\$8,197,000	\$7,435,396	\$ -761,604

EXPLANATION OF CHANGES BY BUDGET ACTIVITY

- Ballistic Missiles (-\$12,246).** Reflects reductions of: Contractor travel (-\$295 thousand), transfer for Special Operations Forces (-\$3,000 thousand), transfer to Military Personnel (-\$5,700 thousand, transfer to various DOD accounts (-\$3,251 thousand).
- Other Missiles (-\$948,270).** Congress made the following adjustments (totalling 891,703 thousand): AIM-7 (-\$2,129 thousand), AMRAAM (-\$26,567 thousand), and Classified Programs (-\$863,007 thousand). Also reflects reductions of -\$420 thousand for the Congressionally directed contractor travel reduction (Maverick -\$75 thousand, HARM -\$55 thousand, AMRAAM -\$290 thousand); -\$37,706 thousand for a reprogramming to Special Operations Forces (Tacit Rainbow -\$1,209 thousand, AIM-7 Sparrow -\$21,366 thousand, AIM-9 Sidewinder -\$11,100 thousand, Maverick -\$1,000 thousand, HARM -\$3,000 thousand); -\$12,700 thousand for a reprogramming to Military Personnel (AIM-7 Sparrow -\$7,480 thousand, Target Drones -\$200 thousand, and Classified programs -\$5,020 thousand); and -\$5,742 thousand due to transfer to various DOD accounts for the pay raise which was spread to each program in this budget activity.
- Modification of In-Service Missiles (+\$55,000).** Congress made the following adjustments (totalling +\$59,359: Classified mods (-\$2,441 thousand), GLOM mods (-\$3,200 thousand), Shrike G-Bias mod (+\$15,000 thousand), AIM-9 mod (+\$50,000 thousand). Also reflects reductions for transfer to various DOD accounts (-\$559 thousand), and transfer to Military Personnel (-\$3,800 thousand).
- Spares and Repair Parts (-\$23,288).** Congress reduced the FY 1989 Spares and Repair Parts by \$19,700 thousand. Also reflects adjustments for Contractor travel (-\$707 thousand), transfer to Military Personnel (-\$2,000 thousand), and transfer to various DOD accounts (-\$8,801 thousand).

5. Other Support (-\$108,800). The decrease is a result of Congressional actions (totaling -\$86,273 thousand) as follows: Space Shuttle Operation (-\$17,000 thousand), Space Boosters (-\$32,700 thousand), Medium Launch Vehicles (-\$16,300 thousand), Forest Green (-\$273 thousand), and Special Programs (-\$20,000 thousand). Also reflects reductions of -\$860 thousand for the Congressionally directed contractor travel reduction (DMSP -\$35 thousand, DSP -\$145 thousand, Space Boosters -\$105 thousand, and Special Update -\$500 thousand); -\$2,030 thousand for a reprogramming for Special Operations Forces (DMSP -\$400 thousand, DSCS -\$330 thousand, GPS -\$300 thousand, and Medium Launch Vehicle -\$1,000 thousand); -\$1,050 thousand for a reprogramming to Military Personnel (GPS -\$350 thousand, Medium Launch Vehicle -\$700 thousand); -\$720 thousand for a Congressionally directed cut for contract advisory services (GPS -\$150 thousand, DMSP -\$270 thousand, DSP -\$300 thousand); and transfer to various DOD accounts of -\$17,867 thousand which was spread to each line item in the budget activity.

Reimbursable Program. Increase is due to additional customer orders.

COMPARISON OF FY 1989 FINANCING AS REFLECTED
IN FY 1988/1989 AMENDED BUDGET WITH FY 1989 FINANCING AS
SHOWN IN FY 1990/1991 BUDGET

	(In Thousands of Dollars)		
	Financing Per FY 1988/89 Amended	FY 1990/1991 Budget	Increase (+) or Decrease (-)
Program Requirements	\$8,197,000	\$7,435,396	\$ -761,604
Program Requirements (Service Account)	(8,158,000)	(7,120,396)	(+1,037,604)
Program Requirements (Reimbursable)	(39,000)	(315,000)	(+276,000)
Less:			
Anticipated Reimbursements Reduction due to P.L. 100-463	39,000	315,000	+276,000
Add:			
Transfer to Other Accounts	-	-96,285	-96,285
Appropriation	\$8,158,000	\$7,219,683	\$ -938,317

EXPLANATION OF CHANGES IN FINANCING

The FY 1989 program has decreased \$761,604 thousand since submission of the FY 1988/1989 Amended Budget. Adjustments by category of financing are explained below:

1. Anticipated Reimbursements. An increase of \$276,000 thousand is due to an increase in anticipated customer orders.
2. Reduction due to Public Law 100-463. A decrease for contractor travel/contract assistance service.
3. Transfer to Other Accounts. Reflects transfer for Military Personnel, Special Operations Forces, and various DoD appropriations.

COMPARISON OF FY 1988 PROGRAM REQUIREMENTS AS REFLECTED
IN FY 1988/1989 AMENDED BUDGET WITH FY 1988 PROGRAM REQUIREMENTS AS
SHOWN IN FY 1990/1991 BUDGET

SUMMARY OF PROGRAM REQUIREMENTS

	(In Thousands of Dollars)		
<u>BUDGET ACTIVITY</u>	Program Requirements Per 1988/1989 Amended Budget	Program Requirements Per 1990/1991 Budget	Increase (+) or Decrease (-)
1. Ballistic Missiles	\$ 913,150	\$ 912,080	\$ -1,070
2. Other Missiles	1,973,627	1,916,387	-57,240
3. Modification of In-Service Missiles	95,175	95,175	-
4. Spares and Repair Parts	164,248	154,148	-10,100
5. Other Support	4,203,871	4,128,547	-75,324
Reimbursable Program	<u>124,000</u>	<u>161,716</u>	<u>+37,716</u>
Total Fiscal Year Program	\$ 7,474,071	\$ 7,368,053	\$ -106,018

EXPLANATION BY BUDGET ACTIVITY

1. Ballistic Missiles (-\$1,070). Reflects a transfer of \$1,070 thousand to Military Personnel.
 2. Other Missiles (-\$57,240). The reduction is a net result of the following adjustment: Transfer for civilian pay and flying hours (-\$48,500 thousand), transfer to Military Personnel (-\$6,200 thousand), transfer for classified reprogramming (-\$2,500 thousand), and below threshold reprogramming to Other Support (\$40 thousand).
 3. Modification of In-Service Missiles. No change occurred to this budget activity.
 4. Spares and Repair Parts (-\$9,868). Reflects transfers out of \$1,200 thousand to Air Force claims and \$8,900 thousand to Military Personnel.
 5. Other Support (-\$75,324). Program reflects transfers out for the Intermediate Nuclear Forces Treaty (-\$18,900 thousand), OAMFUS (-\$3,700 thousand), various classified requirements (-\$35,643 thousand) and various adjustments to the Space Launch Recovery reprogramming totalling (-\$17,081 thousand).
- Reimbursable Program (+\$37,716). Program reflects change in requirements to support classified user.

COMPARISON OF FY 1988 FINANCING AS REFLECTED
IN FY 1988/1989 AMENDED BUDGET WITH FY 1988 FINANCING AS
SHOWN IN FY 1990/1991 BUDGET

	(In Thousands of Dollars)		
	Financing Per FY 1988/89 Budget	FY 1990/1991 Budget	Increase (+) or Decrease (-)
Program Requirements	\$ 7,474,071	\$ 7,368,053	\$ -106,018
Program Requirements (Service Account)	(7,350,071)	(7,206,337)	(-143,734)
Program Requirements (Reimbursable)	(124,000)	(161,716)	(+37,716)
Less:			
Anticipated Reimbursements	124,000	161,716	+37,716
Transfer from Other Accounts	26,100	23,000	-3,100
Unobligated Balance from Other Accounts	33,200	-	-33,200
Reprogramming from prior Budget Plans	-	3,087	+3,087
Add:			
Transfer to Other Accounts	-	110,521	+110,521
Appropriation	\$ 7,290,771	\$ 7,290,771	\$ -

EXPLANATION OF CHANGES IN FINANCING

The FY 1988 program has decreased \$106,018 thousand since submission of the FY 1988 Budget. Adjustments by category are explained below:

1. Anticipated Reimbursements. An increase of \$37,716 thousand is due to in anticipated customer orders.
2. Transferred from Other Accounts. A decrease of \$3,100 thousand as a result of the partial denial of the Space Launch Recovery Reprogramming.
3. Unobligated to Finance Subsequent Budget Years. Decrease to financing as Space Launch Recovery Financing already reflected in program.
4. Reprogramming from Prior Budget Plans. Reflects resourcing of Space Launch Recovery efforts.
4. Transferred to Other Accounts. Various transfers totalling \$110,521 thousand were made to other DoD Appropriations.