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DEPARTMENT OF THE NAVY
JUSTIFICATION OF ESTIMATES
FY 1990/1991 BIENNIAL BUDGET

AD-A204 992



SUBMITTED TO CONGRESS JANUARY 1989

PROCUREMENT

AIRCRAFT PROCUREMENT, NAVY

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Department of the Navy
Aircraft Procurement, Navy
Justification of Estimates for Fiscal Year 1990 and Fiscal Year 1991

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AIRCRAFT PROCUREMENT, NAVY

For construction, procurement, production, modification, and modernization of aircraft, equipment, including ordnance, spare parts, and accessories therefor; specialized equipment; expansion of public and private plants, including the land necessary therefor, and such lands and interests therein, may be acquired, and construction prosecuted thereon prior to approval of title; and procurement and installation of equipment, appliances, and machine tools in public and private plants; reserve plant and Government of contractor-owned equipment layaway; \$10,784,300,000, of which \$34,086,000 shall be available only for Navy Reserve and Marine Corp Reserve, to become available for obligation on October 1, 1989 and to remain available for obligation until September 30, 1992. Further, for the foregoing purposes, \$11,368,000,000, of which \$40,135,000 shall be available only for Navy Reserve and Marine Corp Reserve, to become available for obligation on October 1, 1990 and to remain available for obligation until September 30, 1993. (10 U.S.C. 5013, 5063, 7201, 7341; Department of Defense Appropriation Act, 1989, as included in Public Law 100-463; additional authorizing legislation to be proposed.)

Financing

The FY 1990 budget plan of \$10,784,300,000 for the Aircraft Procurement, Navy appropriation is to be financed by new obligational authority. The FY 1991 budget plan of \$11,368,000,000 will also be financed by new obligational authority.

Aircraft Procurement, Navy
 Program and Financing (in thousands of dollars) FISCAL YEAR 1986

Budget Plan (amounts for PROCUREMENT actions programmed)

Identification code	1986 actual	1989 est.	1990 est.	1991 est.	1986 actual	1984 est.	1990 est.	1991 est.
Program by activities:								
Direct program:								
06.0101					113,070			
06.0201					11,055			
06.0301					11,427			
06.0401					130,001			
06.0501					10,626			
06.0701					24,388			
06.9101					370,178			
01.0101					9,976			
10.0001					370,194			
Financing:								
Offsetting collections from:								
11.0001					6,376			
12.0001					-2,187			
13.0001					15			
17.0001					-29,663			
21.0001					-325,220			
21.0002					-156,400			
21.0003					10,000			
22.0001					18,525			
25.0001					-156,400			
49.0017					156,400			

Aircraft Procurement, Navy
 Program and Financing (in thousands of dollars) FISCAL YEAR 1987

Identification code	Budget Plan (amounts for PROCUREMENT actions programmed)				Obligations	
	1988 actual	1989 est.	1990 est.	1991 est.	1989 est.	1991 est.
Program by activities:						
Direct program:						
00 0101					382,152	38,352
00 0201					7,004	906
00 0301					5,000	
00 0401					25,300	14,762
00 0501					343,827	41,403
00 0601					31,254	12,665
00 0701					69,466	23,200
00 9101					867,003	131,491
01 0101					13	5,946
10 0001					867,016	137,437
Total						
Financing:						
11 0001					767	
12 0001					-147	
14 0001					79	
17 0001					-9,616	
21 4002					-1,114,536	-137,437
21 4003					-264,900	-118,000
21 4007					-118,000	
22 4001					3,000	118,000
24 4002					118,000	
24 4003					137,437	
40 0017					118,000	
					-261,900	

Aircraft Procurement, Navy
 Program and Financing (in thousands of dollars) FISCAL YEAR 1988

Identification code	Budget plan (amounts for procurement actions programmed)				Obligations	
	1988 actual	1988 est.	1991 est.	1990 actual	1989 est.	1991 est.
Program by activities:						
00 0101	5,778,954	5,074,970		5,074,970	347,416	354,966
00 0201	368,310	384,643		384,643	2,715	752
00 0301	904,758	398,597		398,597	7,636	3,077
00 0401	1,431,708	732,642		732,642	119,083	52,170
00 0501	489,200	1,289,045		1,289,045	86,350	22,253
00 0701	9,370,088	419,387		419,387	21,100	488,249
00 9101		9,284,884		9,284,884	616,966	488,249
01 0101	3,571				3,571	
10 0001	9,373,670	9,284,884		9,284,884	620,537	488,249
Financing:						
11 0001	-3,280	-3,280		-3,280		
13 0001	-308	-308		-308		
14 0001	-3	-3		-3		
21 4001		-86,700			-1,088,786	-488,249
21 4002		86,700			86,700	
22 4001				1,088,786	469,249	
24 4002	86,700			86,700		
24 4003	9,458,799			9,458,799		
39 0001				9,522,299		
40 0001				-85,500		
41 0001				9,458,799		
43 0001						

Aircraft Procurement, Navy
 Program and Financing (in thousands of dollars) FISCAL YEAR 1989

Budget Plan (amounts for PROCUREMENT
 actions program)

Identification code	1988 actual	1989 est.	1990 est.	1991 est.	1992 actual	1993 est.
Program by activities:						
Direct program:						
00.0101		5,918,429			4,997,339	336,470
00.0301		413,315			392,008	12,217
00.0401		347,632			277,940	48,768
00.0401		331,908			745,194	130,732
00.0401		1,140,424			7,057,060	55,882
00.0701		561,997			451,928	10,849
00.9101		9,313,705			7,916,410	35,234
01.0101		1,591			1,591	465,765
10.0001		9,315,296			7,918,001	465,765
Total						
11.0001		-1,591			-1,591	
21.4002					1,397,295	-465,765
24.4002					9,313,705	
39.0001		9,313,705				
Budget authority:						
40.0001		9,415,311			9,415,311	
40.0004		-15,606			-15,606	
41.0001		-86,000			-86,000	
43.0001		9,313,705			9,313,705	

Aircraft Procurement, Navy
 Program and Financing (in thousands of dollars) FISCAL YEAR 1990

Identification code	Budget plan (amounts for PROCUREMENT actions programmed)				Obligations		
	1988 actual	1989 est.	1991 est.	1990 actual	1989 est.	1990 est.	1991 est.
Program by activities:							
00.0101	7,824,539			6,600,302			786,636
00.0201	429,137			387,038			25,087
00.0301	600,757			488,035			94,719
00.0401	1,373,207			1,266,299			94,907
00.0701	556,660			444,773			78,377
00.9101	10,784,300			9,166,417			1,078,590
01.0101	1,600			1,588			
10.0001	10,785,900			9,168,015			1,078,590
Financing:							
11.0001		-1,600		-1,600			-1,617,885
21.4002				1,617,885			539,295
24.4002				10,784,300			10,784,300
40.0001							

Aircraft Procurement, Navy
 Program and Financing (in thousands of dollars) FISCAL YEAR 1991

Identification code	Budget Plan (amounts for PROCUREMENT actions programed)				Obligations			
	1988 actual	1989 est.	1990 est.	1991 est.	1988 actual	1989 est.	1990 est.	1991 est.
Program by activities:								
Direct program:								
00.0101			7,966,844				6,708,200	
00.0301			603,565				574,304	
00.0501			753,351				561,530	
00.0601			1,452,950				1,345,364	
00.0701			591,890				473,644	
00.9101			11,368,600				9,663,072	
01.0101			1,600				1,598	
10.0001			11,370,200				9,664,670	
Total								
Financing:								
Offsetting collections from:								
11.0001			-1,600				-1,600	
24.4002							1,705,530	
40.0001			11,368,600				11,368,600	
Total								

Aircraft Procurement, Navy
Program and Financing (in thousands of dollars) SUMMARY

Budget Plan Amounts for this program
(all units program)

Identification code	1988 actual	1989 est.	1990 est.	1991 est.	1988 actual	1989 est.	1990 est.	1991 est.
Program by activities:								
00.0101 Direct program	5,776,954	5,918,429	7,824,539	7,966,844	5,570,392	5,363,109	7,539,888	7,831,306
00.0201 Aircraft	368,110	413,315	479,137	603,565	16,059	908	400,007	607,590
00.0301 Trainer aircraft	409,310	347,632	432,334	432,334	395,674	300,376	51,845	20,884
00.0401 Other aircraft	904,756	931,908	600,757	753,351	1,206,570	905,680	651,798	711,675
00.0501 Modification of aircraft	1,421,769	1,140,424	1,373,207	1,452,950	1,152,480	1,378,817	1,450,697	1,450,697
00.0601 Aircraft spares and repair parts	489,200	581,997	556,660	591,890	509,242	526,686	543,841	585,275
00.0701 Aircraft support equipment and facilities	9,370,099	9,313,705	10,784,300	11,368,000	9,462,867	10,568,196	11,207,427	11,207,427
01.0101 Total direct program	3,571	1,591	1,600	1,600	9,989	11,108	1,598	1,598
10.0001 Reimbursable program	9,373,870	9,315,298	10,785,900	11,370,200	9,472,054	8,615,975	10,567,794	11,209,025
10.0001 Total	-3,250	-1,591	-1,600	-1,600	5,883	-1,591	-1,600	-1,600
Financing:								
11.0001 Offsetting collections from:	-308	-3			-2,842	91		
13.0001 Federal funds(-)								
14.0001 Trust funds(-)								
17.0001 Non-Federal sources(-)								
21.4002 Recovery of prior year obligations								
21.4003 For completion of prior year budget plans								
21.4007 Available to finance new budget plans								
22.4001 Reprogramming from/prior year budget plans	-421,300	-204,700			-1,439,756	-1,226,223	-1,865,544	-2,003,850
22.4001 Unobligated balance transferred to other accounts	-146,325	204,700			-421,300	-204,700		
24.4002 Reobligation of prior year budget plans	13,000				13,000	204,700		
24.4003 Available to finance subsequent year budget plans	204,700				1,226,223	1,865,544	2,083,450	2,244,825
25.0001 Unobligated balance lapsing	18,525				18,525			
39.0001 Budget authority	9,038,499	9,313,705	10,784,300	11,368,000	9,038,499	9,313,705	10,784,300	11,368,600
Budget authority:								
40.0001 Appropriation	9,322,299	9,415,311	10,784,300	11,368,600	9,572,299	9,415,311	10,784,300	11,368,600
40.0004 Reduction pursuant to P.L. 100-453	-418,300	-15,606			-418,300	-15,606		
41.0001 Appropriation rescinded (unobligated balance)	-85,500	-86,000			-85,500	-86,000		
41.0001 Transferred to other accounts(-)								
43.0001 Appropriation (adjusted)	9,038,499	9,313,705	10,784,300	11,368,600	9,038,499	9,313,705	10,784,300	11,368,600
Relation of obligations to outlays:								
71.0001 Obligations incurred, net					9,475,385	9,674,384	10,568,194	11,207,425
72.4001 Obligations incurred, start of year					16,606,073	16,721,218	18,049,602	17,598,588
74.4001 Obligations incurred, end of year					-16,721,218	-16,049,602	-17,598,596	-18,164,321
77.0001 Adjustments in expired accounts					-114,439			
78.0001 Adjustments in unexpired accounts					-38,279			

Aircraft Procurement, Navy
 Program and Financing (in thousands of dollars) Summary

Identification Code	1988 actual	1989 est.	1990 est.	1991 est.
90 0001 Outlays	9,405,523	9,346,000	9,019,200	9,639,700

Aircraft Procurement, Navy
 Object Classification (in thousands of dollars) SUMMARY

Identification code	1988 actual	FY 1989	FY 1990	FY 1991
Direct obligations:				
Other services:				
125.002	41,014	38,539	42,357	49,710
126.001	1,277,548	1,260,733	1,382,036	1,505,311
131.001	8,093,507	7,385,495	8,141,803	8,852,916
199.001	9,462,065	8,664,867	10,566,196	11,207,427
Total Direct obligations				
231.001	9,989	11,108	1,598	1,598
Reimbursable obligations:				
299.001	9,989	11,108	1,598	1,598
Total Reimbursable obligations				
044 901	9,472,054	8,675,975	10,567,794	11,209,025

Budget Activity 1: Combat Aircraft

	(In Thousands)
FY 1991 Estimate	\$7,966,844
FY 1990 Estimate	\$7,824,539
FY 1989 Estimate	\$5,918,429
FY 1988 Actual	\$5,776,954

Purpose and Scope of Work

Navy and Marine Corps combat aircraft are procured and remanufactured under this budget activity. These aircraft include fixed-wing and rotary configurations and are grouped generally into the categories of attack, fighter, and anti-submarine warfare (ASW). In addition to these general categories, aircraft which directly support combat operations in specialized missions, such as aerial assault, command and control, search and rescue, reconnaissance, observation, electronic warfare, airborne mine countermeasures, vertical onboard delivery and early warning are also procured in this budget activity. Funds are budgeted to procure fully equipped aircraft, including engines and avionics equipment, special ground support and training equipment, and technical publications. Funds are also budgeted to remanufacture existing aircraft into new configurations.

Advance procurement funds are also included to finance long lead time effort, materials, and equipments for the following year program, as well as for multiyear procurement requirements for the F-18, SH-60B, SH-60F and E-2C airframes.

Justification of Funds

Funds for procurement of eleven different combat aircraft models, including one attack, one fighter, one strike fighter, one vertical take off and landing light attack, three helicopters, one electronic warfare, one anti-submarine warfare, one vertical take off and landing support and one early warning type are budgeted in FY 1990 and FY 1991. Funds are also included in this budget request for advance procurement requirements for aircraft scheduled for procurement in FY 1991 and FY 1992 including continuation of multiyear procurements. The amounts shown below finance: (1) aircraft procurement; (2) advance procurement which is justified separately at the end of the budget activity; and (3) aircraft initial spares and repair parts which are budgeted and justified in budget activity 6.

ATA (Attack)

(Dollars in Millions)			
	FY 1990	FY 1991	
Qty	Amt	Qty	Amt
Details Classified			

The A-12 is a medium attack aircraft which will replace the A-6 Intruder beginning in the mid-1990's. Incorporating industry's newest technologies, the A-12 will exceed the A-6 in performance and survivability.

EA-6B/Remanufacture (Electronic Warfare) PROWLER

<u>(Dollars in Millions)</u>		
<u>Qty</u>	<u>FY 1990</u>	<u>FY 1991</u>
	<u>Amt</u>	<u>Qty Amt</u>
Procurement	105.0	3 308.5
Advance Procurement	24.9	34.8
Initial Spares	17.2	46.4

The carrier-based EA-6B is an advanced electronic warfare (EW) aircraft which provides protection to Navy strike aircraft by jamming enemy radar-controlled weapons. Beginning in FY 1991 an improved version, the Advanced Capability (ADVCAP), will be initiated through a remanufacture program. Under this program older EA-6B aircraft will be stricken from the inventory, stripped down to bare airframe and then rebuilt to the ADVCAP configuration. This process will benefit the Navy by making substantial use of the original investment in these aircraft while providing significantly improved capability. The ADVCAP configuration will feature a new receiver processor group to close frequency gaps, better integrate radar and communication countermeasures, and decrease reaction time. Other elements of ADVCAP include the J-52 P-409 engine for improved thrust, modified airfoil surfaces to improve stall margins and defensive maneuvering, and the inclusion of the Standard Attitude Heading Reference System and Global Positioning System (GPS).

The FY 1990 request of \$105.0 million will fund non-recurring effort associated with start of the ADVCAP remanufacture and continuation of fleet support, ECM pod and other ancillary equipment procurements. Funding of \$308.5 million is requested in FY 1991 to remanufacture the first three ADVCAP aircraft.

Classified Program

<u>(Dollars in Millions)</u>		
<u>Qty</u>	<u>FY 1990</u>	<u>FY 1991</u>
	<u>Amt</u>	<u>Qty Amt</u>
Details Classified		

AV-8B (V/STOL) HARRIER (MYP)

<u>(Dollars in Millions)</u>		
<u>Qty</u>	<u>FY 1990</u>	<u>FY 1991</u>
	<u>Amt</u>	<u>Qty Amt</u>
Procurement	461.2	24 454.9
Advance Procurement	20.9	-
Initial Spares	71.6	65.5

The AV-8B is an improved vectored thrust vertical/short take off and landing aircraft based on the AV-8A concept and the Pegasus II engine which has up to twice the range or payload of the older HARRIER. It combines aerodynamic improvements with a new stability augmentation system to reduce pilot workload and incorporates the Angle Rate Bombing System for increased weapon delivery accuracy and the Night Attack mission configuration, thus providing a more capable and reliable light attack aircraft. The AV-8B meets the Marine Corps' requirement for a light attack aircraft which can operate from austere forward sites in direct support of ground forces.

The FY 1990 request of \$461.2 million is for 24 aircraft to continue to build up the inventory level to support Marine air groups. This will be the second year of a three year multiyear contract for the AV-8B airframe. \$454.9 million is requested for the third and final year of the multiyear in FY 1991. A total savings of \$124.0 million is expected to result from this multiyear strategy.

F-14D/Remanufacture (Fighter) TOMCAT

(Dollars in Millions)			
	FY 1990	FY 1991	
	Qty	Amt	Qty Amt
Procurement	18	902.3	24 1,129.6
Advance Procurement		144.0	142.8
Initial Spares		91.6	75.2

The F-14 is a high performance, fleet air defense/air superiority fighter. It is a two place, tandem seat, variable sweep wing, supersonic, carrier-based airborne weapons system. The F-14 has visual attack and all-weather capability to deliver PHOENIX and SPARROW missiles. It also employs the M-61 gun and SIDEWINDER missile for close-in air-to-air combat.

The F-14D configuration includes the General Electric F-110 GE-400 engine, a new radar (APG-71) and upgraded avionics. The FY 1990 request of \$992.3 million will procure twelve new production aircraft and six additional aircraft which will be remanufactured to the 'D' configuration from existing F-14A airframes. The FY 1991 request of \$1,129.6 million will procure another twelve new production and twelve remanufactured F-14Ds to continue the Navy's fighter modernization program and maintain force levels.

F/A-18 (Strike Fighter) HORNET (MYP)

(Dollars in Millions)			
	FY 1990	FY 1991	
	Qty	Amt	Qty Amt
Procurement	72	1,997.4	72 1,709.7
Advance Procurement		579.2	369.1
Initial Spares		106.7	104.4

The F/A-18 Naval Strike Fighter is a twin-engine, mid-wing, multi-mission tactical aircraft. Designed to replace the F-4 PHANTOM and A-7 CORSAIR, the F/A-18 is employed in Navy and Marine Corps Strike fighter squadrons. Two-seat versions with a Night Attack/Austere All-Weather capability are being built as well as a version for tactical reconnaissance. The F/A-18 is missionized through selected use of external equipment to accomplish specific fighter or attack missions. This commonality offers the Operational Commander more flexibility in employing his tactical aircraft in changing scenarios. The primary design missions are fighter escort and interdiction with fleet air defense and close air support as additional roles.

On attack missions the same airframe, engine, flight control, and weapon systems are used as on fighter missions, thus excellent fighter and self defense capability is retained. The FY 1990 request of \$1,097.4 million will procure 72 aircraft under a new five year multiyear contract which will save an estimated \$372.3 million compared with annual procurements. FY 1991 funding of \$1,709.7 will procure 72 aircraft under the second year of the multiyear contract. These procurements are required to continue to provide aircraft to meet fleet inventory requirements.

CH/MH-53E (Helicopter) SUPER STALLION

(Dollars in Millions)			
	FY 1990	FY 1991	
	Qty	Amt	Qty Amt
Procurement	3	62.0	-
Advance Procurement			
Initial Spares		2.1	.8

The FY 1990 budget includes the final planned procurement of three CH/MH-53E helicopters, a shipboard compatible, heavy lift transport helicopter configured for both Marine and Navy missions. Funding is also provided for production line shutdown costs. Marine missions include amphibious/heliborne assault providing lift and movement of cargo and troops, and heavy lift shore operational requirements including tactical recovery of downed or damaged aircraft and equipment. Navy missions include vertical onboard delivery (VOD) and airborne mine countermeasures (AMCM).

V-22 (V/TOL) OSPREY

(Dollars in Millions)			
	FY 1990	FY 1991	
	Qty	Amt	Qty Amt
Procurement	12	1,146.4	24 1,369.2
Advance Procurement		120.2	170.5
Initial Spares		152.0	187.0

The V-22 OSPREY is a tilt-rotor, vertical take-off and landing aircraft developed for Joint Service application by the Department of the Navy. The V-22 program will provide an aircraft to meet the amphibious/vertical assault needs of the Marine Corps, the combat search and rescue (CSAR) needs of the Navy, and Air Force requirements associated with the Special Operations Forces mission. It will replace the CH-46E and CH-53A/D in the Marine Corps, the HH-3A in the Navy, and supplement the H-53, H-60, and C-130 in the Air Force. The V-22 will be capable of flying over 2,000 nautical miles without refueling, giving the services the advantage of a vertical takeoff and landing aircraft that can rapidly self deploy to any location in the world.

The FY 1990 request of \$1,146.4 million will procure the first twelve production aircraft which will be used for fleet readiness training as well as initial fleet operational requirements. The FY 1991 request of \$1,369.2 million will procure 24 aircraft to support inventory buildup.

SH-60B (Anti-Submarine Warfare Helicopter) SEAHAWK (MYP)

<u>(Dollars in Millions)</u>				
	<u>FY 1990</u>	<u>FY 1991</u>		
	<u>Qty</u>	<u>Amt</u>	<u>Qty</u>	<u>Amt</u>
Procurement	6	145.4	6	102.6
Advance Procurement		41.9		38.9
Initial Spares		11.1		17.3

The SH-60B SEAHAWK is the airborne component of the Light Airborne Multi-Purpose System (LAMPS) MK III ship/air weapon system. LAMPS MK III is a computer integrated ship/helicopter system that increases the effectiveness of combatants for Anti-Submarine Warfare (ASW). The helicopter provides a remote platform for deployment of sonobuoys and torpedoes, processing of acoustic and magnetic anomaly detection sensor information, and an elevated platform for radar and electronic warfare support measures. The ship provides sensor processing, command and control, integration of LAMPS information gained from other sensors, the landing and traversing system, visual landing aids, and maintenance and support facilities for the aircraft. SH-60B secondary missions include anti-ship surveillance and targeting, search and rescue, vertical replenishment, medical evacuation and communications relay. The SH-60B carries a crew of three. Approximately 2,000 lbs of mission avionics, and has provisions for sonobuoys and MK-46 torpedoes. The SH-60B has a mission gross take-off weight of about 20,000 lbs. A block upgrade is scheduled for incorporation in the FY 1990 production. Planned improvements include Penguin missile, MK 50 torpedo compatibility, 99 Channel Sonobuoy Receiver, and GPS. \$145.4 million in FY 1990 is requested for the procurement of six helicopters to continue to build up fleet inventory levels. Funding of \$102.6 million is requested in FY 1991 to procure six aircraft under the first year of a four year multiyear contract with Sikorsky. A total savings of \$24.7 million is expected from the multiyear contract

SH-60F (Helicopter) CV ASW HELO (MYP)

<u>(Dollars in Millions)</u>				
	<u>FY 1990</u>	<u>FY 1991</u>		
	<u>Qty</u>	<u>Amt</u>	<u>Qty</u>	<u>Amt</u>
Procurement	18	230.1	18	231.4
Advance Procurement		54.0		35.3
Initial Spares		29.5		4.9

The SH-60F CV ASW Helicopter provides carrier battle groups with inner zone ASW protection using manned helicopters with dipping sonar and an on-board sonobuoy processor. Secondary missions will include search and rescue, logistic support, medical evacuation and plane guard. The ultimate users are ASW helicopter squadrons and CV class ships. Funds totalling \$230.1 million in FY 1990 are requested to procure 18 aircraft carrier inner zone anti-submarine warfare helicopters which are needed to modernize aging carrier assets and upgrade the carrier battle groups' ASW capability. In FY 1991 \$231.4 million is requested to procure 18 aircraft under the joint SH-60B/F multiyear contract. A savings of \$55.6 million is expected to result from this procurement strategy.

(Dollars in Millions)

	FY 1990		FY 1991	
	Qty	Amt	Qty	Amt
Procurement	4	261.2	9	351.8
Advance Procurement		225.0		71.9
Initial Spares		34.6		28.7

The E-2C is a carrier-based airborne early warning/command and control system designed for fleet air defense. Additionally, it provides the battle group commander with a strike control and surveillance capability. The E-2C has the same airframe as earlier models but is equipped with new avionics equipment, including a new radar antenna and passive detection system. This equipment provides an improved capability, including overland detection of air targets. A major feature of the system is the greatly enhanced reliability over previous models. Four E-2C aircraft at a cost of \$261.2 million are requested for procurement in FY 1990. The FY 1991 request of \$351.8 million will procure nine aircraft under a new four year multiyear contract. This contract is anticipated to result in savings of \$204.2 million.

Advance Procurement

The FY 1990 budget includes \$1,403.3 million for advance procurement of material and effort for FY 1991. The FY 1991 budget includes \$1,171.6 million for advance procurement to support planned FY 1992 procurements. An itemization of the requirements follows:

Aircraft Model	FY 1991		FY 1992	
	A/C Qty	A. P. in FY 91	A/C Qty	A. P. in FY 91
ATA				
EA-6B	3	24.9	9	34.8
Classified Program				
AV-8B (MYP)	24	29.9		
F-14D	24	144.0	36	142.8
F/A-18 (MYP)	72	579.2	72	369.1
V-22	24	120.2	45	170.5
SH-60B (MYP)	6	41.9	12	38.9
SH-60F (MYP)	18	54.0	12	35.3
LRAACA			3	19.9
E-2C (MYP)	9	225.0	9	71.9

The advance procurement listed is required to ensure timely delivery of the planned FY 1990 and FY 1991 aircraft. The amounts budgeted for Contractor Furnished Equipment (CFE) items, engines and some major Government Furnished Equipment (GFE) items are required for long leadtime effort and material for the prime contractor and their vendors. This includes items such as castings, forgings, landing gear and production engineering requirements. For most GFE, requirements are calculated for each item of equipment, considering the planned aircraft quantity, production leadtime, and prime contractor installation leadtime (i.e., the amount of time the item is needed at the factory prior to aircraft delivery). Certain equipment, primarily avionics items, are budgeted as advance procurement to ensure meeting planned aircraft production schedules. The FY 1990 and FY 1991 advance procurement request also contains funding for economic order quantity procurements of long lead materials to support planned multiyear contracts for the F-18, SH-60B, SH-60F, and the E-2C.

Budget Activity 2: Airlift Aircraft

	(In Thousands)
FY 1991 Estimate	\$ -0-
FY 1990 Estimate	\$ -0-
FY 1989 Estimate	\$ -0-
FY 1988 Actual	\$ -0-

Purpose and Scope of Work

This budget activity provides for the procurement of fleet tactical support aircraft needed to fulfill the Navy's airlift support requirements.

Justification of Funds

No funds are requested in FY 1990 or FY 1991 for procurement of aircraft in this budget activity.

Budget Activity 3: Trainer Aircraft

(In Thousands)

FY 1991 Estimate	\$603,565
FY 1990 Estimate	\$429,137
FY 1989 Estimate	\$413,315
FY 1988 Actual	\$368,110

Purpose and Scope of Work

The Naval Air Training Command needs aircraft specifically designed for aircrew training in order to provide the Navy, Marine Corps, and Coast Guard with well trained and highly skilled pilots, navigators, and aircrew. Aircraft procured under Budget Activity 3 are used to train students in basic and advanced flying techniques, navigation, instrument flying and numerous other skills required before the transition to high performance fleet aircraft.

Justification of Funds

Funds totalling \$429.1 million are requested in FY 1990 for procurement of 24 T-43A aircraft and five T-44 aircraft. \$603.6 million is requested in FY 1991 to procure 48 T-45A aircraft.

T-45TS (Trainer) GOSHAWK

(Dollars in Millions)

	FY 1990	FY 1991
	Qty	Qty
Procurement	24	48
Advance Procurement	369.0	557.1
Spares	48.1	40.5
	29.2	40.1

The T-45 Training System (T-45TS) is comprised of aircraft, simulators, academics, a training integration system (TIS), and contractor logistic support. The T-45A GOSHAWK aircraft is a derivative of the British Aerospace HAWK aircraft. The HAWK is a tandem seat aircraft powered by a single F-405 (Rolls Royce Adour turbofan engine). The T-45A is being adapted to provide the capability for carrier catapult takeoffs and arrested landings. The simulator suite includes both Instrument Flight Trainers and Operational Flight Trainers. Academics include textbook materials, classroom aids and a computer assisted instruction system. The TIS utilizes existing hardware and software to provide planning, scheduling, and tracking of training events in order to achieve required training efficiency. In FY 1990, \$417.1 million is requested for 24 T-45A aircraft and advance procurement. In FY 1991 \$603.6 million is requested for procurement of 48 aircraft and advance procurement for the following year.

T-44A (Trainer)

(Dollars in Millions)			
	<u>FY 1990</u>	<u>FY 1991</u>	
	<u>Qty</u>	<u>Amt</u>	<u>Qty</u> <u>Amt</u>
Procurement	5	12.0	-
Advance Procurement			-
Spares			.3

The T-44A is a commercial FAA certified aircraft which is used by the Naval Air Training Command in the advanced multi-engine pilot training syllabus. The aircraft will be used at NAS, Corpus Christi to train student pilots for land based patrol and transport operations. Training functions include multi-engine operation, day/night familiarization, advance instrumentation, formation flight, and technical operation. The FY 1990 request of \$12.0 million will procure five aircraft to provide sufficient attrition assets to continue pilot training at planned levels prior to initiation of a follow-on multi-engine trainer aircraft to mid to late 1990s. In addition these aircraft will supplement the inventory during a planned Service Life Extension Program for the existing T-44 inventory.

Budget Activity 4: Other Aircraft

	(In Thousands)
FY 1991 Estimate	\$ -0-
FY 1990 Estimate	\$ -0-
FY 1989 Estimate	\$347,632
FY 1988 Actual	\$409,310

Purpose and Scope of Work

Aircraft other than those associated with combat, airlift, and training missions are procured under Budget Activity 4.

Justification of Funds

No funds are requested in FY 1990 or FY 1991 for procurement of aircraft in this budget activity.

Budget Activity 5: Modification of Aircraft

(In Thousands)

FY 1991 Estimate	\$ 753,351
FY 1990 Estimate	\$ 600,757
FY 1989 Estimate	\$ 931,908
FY 1988 Actual	\$ 904,756

Purpose and Scope of Work

The Aircraft Modification program provides for improvements to operational capability, maintainability, reliability, and safety and/or extends the service life of Navy and Marine Corps aircraft.

Justification of Funds

In order to fulfill inventory requirements, it has become mandatory to operate many older aircraft beyond their originally programmed service life and update their weapon systems so that they remain capable of continued effective operation in new threat environments. To accomplish these two objectives, the Navy pursues service life extension and weapons modernization programs. These modifications involve complex engineering changes which require a major production effort and are often accomplished at a contractor's facility, with aircraft inducted into an assembly line for the conversion/modernization programs. A substantial portion of the funds requested in FY 1990 and FY 1991 are for modifications in these categories.

The FY 1990 and the FY 1991 budget requests also include funds for incorporation of other modifications intended to enhance the operational capabilities of in-service aircraft, their safety-of-flight, reliability and maintainability. Only essential modifications or changes which are necessary to satisfy the most urgent operational requirements are included in this budget request. The installation cost of all modification programs is budgeted in the Operations and Maintenance, Navy appropriation. The sizable reduction in this budget request over previous years is in recognition of a significant backlog in installation of modifications. The requested funding for FY 1990 and FY 1991 balances the procurement of modifications to available installation funds.

The following narrative summary highlights modification requirements by aircraft series and model.

A-3 Series Modification

\$1.1 million is requested in both FY 1990 and FY 1991 to fund a variety of reliability and maintainability improvements. The funds requested are required to implement minor cost effective R&M changes to the A-3 weapon system.

A-4 Series Modification

\$6.3 million in FY 1990 and \$6.5 million in FY 1991 are requested for the A-4 aircraft. The only modifications planned are the TA-4J J52-P-6 Engine Safety and Readiness Improvement (\$4.4 million in FY 1990 and \$4.2 million in FY 1991) and the A-4M J52-P-408 Engine Safety & Readiness Improvement (\$1.9 million and \$2.3 million in FY 1990 and FY 1991, respectively). These modifications will improve engine availability rates.

A-6 Series Modification

A total of \$63.4 million in FY 1990 and \$66.4 million in FY 1991 is requested for various A-6 modifications. The principal modification is the J52-P-8 Safety and Readiness Improvement program which will substantially increase the availability of the P-8 engine. \$29.1 million and \$30.1 million in FY 1990 and FY 1991, respectively are requested.

\$1.2 million in FY 1990 and \$6.7 million in FY 1991 are requested for the A-6 Block Upgrade program. The funds requested in FY 1990 are for support while the funds requested in FY 1991 are for airframe kits and HARM avionics. Funds are requested in FY 1990 (\$3.6 million) and FY 1991 (\$6.8 million) for the Stand-off Air-to-Ground Weapons modification which provides enhanced Walleye II pods for the A-6E. \$3.7 million in FY 1990 and \$3.8 million in FY 1991 are requested for the Pylon Modification program which will correct a safety of flight problem by updating wiring in A-6E wing pylons.

Funds are requested in FY 1990 (\$2.0 million) and FY 1991 (\$1.3 million) for the Tactical Altitude Director System (TADS) Phase III program. This modification provides both flight crew members with a terrain detection/avoidance system that operates on a continuous basis and provides an aural tone warning of impending ground impact. The Cateye Night Vision Goggle (NVG) System will provide the A-6E with an enhanced low light navigation and attack capability in response to an emergent requirement for NVG night attack capability in the A-6. Funds in the amount of \$2.2 million and \$2.3 million in FY 1990 and FY 1991, respectively, are requested for this modification.

A-6 Series Modification (Cont'd)

The AN/AAS-33A Detection and Ranging Set (DRS) is a major component of the A-6E Target Recognition Acquisition Multisensor configuration. The DRS Upgrade modification will decrease life-cycle costs and maintenance actions through the use of state-of-the-art 'off-the-shelf' assemblies. \$10.4 million in FY 1990 and \$5.7 million are requested for this modification. Another program for which funds are requested in FY 1990 and FY 1991 (\$2.5 million and \$4.6 million, respectively) is the Command Eject modification. This safety improvement will allow either aircrew member to initiate sequenced ejection for an incapacitated crewman.

Finally, \$9.7 million in FY 1990 and \$6.1 million in FY 1991 are requested for the A-6 Block Upgrade II program. This program includes improvements or modifications to the constant speed drive/starter, weapons control system wiring enhancements, video tape recorder, and radar beacon forward air control target data communicator.

EA-6 Series Modification

\$26.0 million in FY 1990 and \$27.6 million in FY 1991 are requested for EA-6 modifications. The most significant modification planned is the ALQ-99 Pods program (\$13.2 million in FY 1990 and \$19.0 million in FY 1991). These funds will be used to procure jammer pod components peculiar to the Improved Capability (ICAP) II update.

Other modifications for the EA-6 include the Structural and Avionics Improvement modification (\$7.1 million in FY 1990 and \$5.9 million in FY 1991) which will correct structural deficiencies identified during fatigue testing and will modify some EA-6B peculiar avionics due to poor reliability or which are impacted by modifications to common avionics components. Also planned is the J52-P-408 Safety and Readiness Improvement (\$5.7 million in FY 1990 and \$2.7 million in FY 1991), which will vastly improve the availability rate of the engine.

A-7 Series Modification

The \$1.1 million requested in both FY 1990 and FY 1991 is to provide funding to implement various minor cost effective reliability and maintainability changes to the A-7 weapon system.

AV-8 Series Modification

The \$1.1 million in FY 1990 is requested to complete the Safety, Reliability, and Maintainability program which corrects deficiencies identified during operational testing. The \$1.1 million requested in FY 1991 is required to implement various minor cost effective reliability and maintainability changes to the AV-8 weapon system.

F-4 Series Modification

\$1 million in FY 1990 and \$1.1 million in FY 1991 are requested for the F-4 aircraft. The only modification planned is the continuation of the Follow-on Structural Fatigue modification which consists of fixing known problem areas which have been identified since completion of the F-4 conversion-in-lieu-of-procurement program.

RF-4 Series Modification

All of the \$1.1 million requested in both FY 1990 and FY 1991 is required to continue the Follow-on Structural Fatigue program which consists of correcting minor structural problem areas which have been identified.

F-14 Series Modification

\$10.0 million in FY 1990 and \$45.2 million in FY 1991 are requested for F-14 modification programs. Various deficiencies identified during aircraft fatigue tests will be corrected in the Structural Improvements Program. \$5.5 million and \$5.3 million in FY 1990 and FY 1991, respectively, are requested to continue this program. A communications enhancement which is required for installation on those F-14 aircraft which were not modified under the block upgrade in prior years is the AN/ABC-182 Radio. \$3.0 million in FY 1990 and \$3.1 million in FY 1991 are requested for this program.

Two other ongoing modifications budgeted within the F-14 are the MKU-011 Jettison Release program (\$2.3 million in FY 1990 and \$1.3 million in FY 1991) and the FLAP/SLAT System improvement \$5.2 million and \$1.2 million in FY 1990 and FY 1991, respectively. The MKU Jettison release modification will minimize the risk of cartridge blow out due to inadvertent firing of the MKU-011. The FLAP/SLAT System improvement will correct several deficiencies in the maneuvering FLAP/SLAT system which is experiencing unacceptably high failure rates.

In addition, funds are requested for two programs which begin procurement in FY 1991. First, the AN/ALR-07 radar receiving set, countermeasures warning and control system is a replacement for current AN/ALR-45 and AN/ALR-50 radar and missile warning equipment. \$31.0 million is requested to provision the aircraft for this system. The hardware for this program is budgeted in the Common ECM equipment program. Secondly, the Joint Tactical Information Distribution System (JTIDS) provides line of sight, crypto-secure, jam resistant digital data and voice communications. \$3.3 million is requested for this program.

F-5 Series Modification

Funding of \$1.1 million in both FY 1990 and FY 1991 is requested for the Structural Fatigue/Avionics Improvement program. This program will replace or correct known fatigue-sensitive structural components and incorporate avionics improvements such as the Structural Monitoring System and the AN/ALQ-3 System.

ES-3 Series Modification

A total of \$108.0 million in FY 1990 and \$5.0 million in FY 1991 is requested for the S-3A to ES-3A modification (Battle Group Passive Horizon Extension System (BGPHEs) Airborne Component). This modification will allow for commonality between the ES-3A Mission Avionics Suite (MAS) and the EP-3 conversion-in-lieu-of-procurement program. The ES-3 is the dedicated replacement for the very old EA-3B aircraft.

OV-10 Series Modification

\$10.9 million in FY 1990 and \$32.3 million in FY 1991 are requested for OV-10 aircraft modifications. The principal OV-10 modification is the Block Upgrade I (A to D) budgeted at \$9.9 million in FY 1990 and \$29.8 million in FY 1991. This upgrade will provide OV-10D configured aircraft with a Night Observation System capability to locate enemy troops, artillery positions, and armored units during periods of low visibility and at night.

Two other modifications within the OV-10 are the AN/AAR-47 Detection System (\$2.2 million in FY 1990 and \$3.3 million in FY 1991) and the AN/AVR-2/APR-39 Warning Receiver (\$8.8 million and \$2.2 million in FY 1990 and FY 1991, respectively). The funds requested are for provisions and support only. The hardware for these programs is budgeted in the Common ECM equipment program.

F-16 Series Modification

Funds requested in this budget are \$4.7 million in FY 1990 and \$3.3 million in FY 1991 to correct discrepancies identified during testing and by so doing update delivered F-16 aircraft with components in the present configuration of in-production aircraft.

H-46 Series Modification

\$3.9 million in FY 1990 and \$5.2 million in FY 1991 are requested for two H-46 modifications. The major program is the H-46 Block Upgrade. This program will provide additional fuel capacity to extend flight time, add a navigation capability, and improve aircraft flotation for emergency water landings. \$3.1 million and \$4.4 million in FY 1990 and FY 1991, respectively are requested for the continuation of this block upgrade program.

Also planned is the procurement of AN/AAR-47 Detection System provisions designed to protect the H-46 against surface-to-air and air-to-air missiles (\$8.8 million in FY 1990 and \$8.8 million in FY 1991). The AN/AAR-47 Detection System hardware is budgeted in the Common ECM equipment program.

H-53 Series Modification

A total of \$29.7 million in FY 1990 and \$30.9 million in FY 1991 is requested for H-53 modifications. Funds are requested to continue the CH-53E Block Upgrade which started in FY 1988. This modification will maintain a common CH-53E configuration while increasing safety, survivability, and maintainability by the addition of machine gun installations, inflight hydraulic fluid replenishment capability, improved chip detectors, composite tail rotor blade, main rotor pylon covers, and cabin egress lighting (\$5.0 million and \$4.4 million in FY 1990 and FY 1991, respectively).

Funds are requested for the AN/AAR-47 Detection System provisions (\$4.7 million in FY 1990 and \$4.6 million in FY 1991). This improvement will provide warning of attack by surface-to-air and air-to-air missiles. The AN/AAR-47 Detection System hardware is budgeted in the Common ECM equipment program.

Also planned is the continuation of the Crashworthy Fuel System improvement which is designed to contain fuel spillage during and following crash impact, thus improving crew safety. \$2.5 million in FY 1990 and \$2.2 million in FY 1991 are requested for this much needed improvement. The AN/ARC-182 Radio will provide state-of-the-art secure voice communication with other fleet aircraft. \$4.1 million is requested in FY 1991 for this radio upgrade.

The Night Vision Goggles program will enhance low level night operations by improving the ability of the crew to see the terrain during low visibility. \$8.0 million is requested in FY 1990 to procure cockpit lighting changes and AN/AVS-6 goggles.

Funds are requested in FY 1990 (\$6.0 million) to begin the Helicopter Night Vision System program. This improvement, which utilizes a Forward Looking Infrared Radar (FLIR) adopted from the Army's AH-64 Apache, will enable helicopters to maneuver and navigate at low altitudes, locate and land in landing zones, day or night, during periods of reduced visibility. In addition, FY 1990 and FY 1991 funds, \$7.5 million and \$19.0 million, respectively are requested for the MH-53E Engine Upgrade. This program will solve a safety problem by permitting the aircraft to recover from loss of one engine during towing operations on a hot day.

Finally, \$6 million is requested in FY 1991 to begin the AN/APR-39 Upgrade program. This vital improvement will increase survivability in hostile environments by providing warning and protection against radar threats. The hardware for this program is budgeted in the Common ECM equipment program.

SH-60 Series Modification

\$6 million in FY 1990 and \$34.6 million in FY 1991 are requested for three modifications to the SH-60 aircraft. Funds in the amount of \$6 million are requested in FY 1990 and \$6 million in FY 1991 for continuation of the Helicopter Emergency Egress Lighting (HEEL) program. This vital safety improvement will increase the chances of successful aircrew emergency evacuation.

The major program for which funds are requested in FY 1991 (\$33.6 million) is the SH-60B Block Upgrade. This program will upgrade previously delivered aircraft to the latest production configuration. The following mission enhancements are included in this program: Advanced Lightweight Torpedo, 99 Channel Sonobuoy Receiver, Global Positioning System, AN/ARC-182 radios, various maintainability/operability items, and a Powertrain Upgrade.

Lastly, FY 1991 funds in the amount of \$6 million are requested for the AN/APR-39A Radar Warning Receiver program for the HH-60H aircraft. This change will increase the survivability in hostile environments by providing warning and protection against laser and radar threats. The hardware for this program is budgeted in the Common ECM equipment program.

VH-60 Series Modification

\$5.9 million in FY 1990 and \$4.5 million in FY 1991 are requested for modifications to the VH-60 aircraft. First, \$1 million and \$3 million in FY 1990 and FY 1991, respectively are requested for the continuation of the Global Positioning System. This system will provide the VH-60 with three dimensional position, velocity and time information and will interface with communication and navigation equipment.

Also planned is the UHF (E/F) radio which provides a link from an airborne VH-60 through specific ground entry stations to a ground based communications network. This budget requests \$3.5 million in FY 1990 and \$2.2 million in FY 1991 for this program.

Finally, it is requested that \$2.2 million in FY 1990 be provided for procurement of the EDU-2/P thermal flash blindness protection goggle program. This program is currently the only means of providing flash blindness protection to the aircrew.

H-1 Series Modification

A total of \$48.1 million in FY 1990 and \$53.4 million in FY 1991 is requested for modifications to the H-1 series aircraft. The major modification planned is the AH-1 Block Upgrade. This change will provide improved power and armament capability to meet operational requirements in high altitude, hot temperature environments. Major improvements include incorporation of the T700 engine, the HELLFIRE Missile System, and an improved crashworthy fuel system. \$22.6 million in FY 1990 and \$9.7 million in FY 1991 are requested for this vital upgrade program.

Another improvement is the AH-1 Navigation System improvement utilizing the AN/APN-217 Doppler Navigation System and related cockpit instrumentation. This modification will enhance nighttime low level operational capabilities. \$12.2 million in FY 1990 and \$13.6 million in FY 1991 are requested for the continuation of this program.

Funds are requested for the AN/AAR-47 Detection System which will increase aircraft survivability by providing early detection of incoming enemy missiles permitting time for evasive maneuvering. \$4 million in FY 1990 and \$5 million in FY 1991 is requested to provision UH-1W aircraft, with an additional \$9 million in FY 1990 and \$6 million in FY 1991 requested for provisioning of the AH-1T/W aircraft. AN/AAR-47 Detection System hardware is budgeted in the Common ECM equipment program.

Additionally, \$11.6 million in FY 1990 and \$27.2 million in FY 1991 are requested for the AH-1 Night Targeting Program. This modification will provide a night/adverse weather TOW missile and autonomous HELLFIRE missile capability. Also included in this budget request is \$4 million in FY 1990 and \$1.8 million in FY 1991 for the AN/AVR-2 and AN/APR-30 Warning Receiver Systems program for the UH-1 aircraft. These systems are being incorporated to increase the survivability in hostile environments by providing warning and protection against laser and radar threats. The hardware for this program is budgeted in the Common ECM account.

H-2 Series Modification

The only program for which funding is requested in FY 1990 (\$24.1 million) and FY 1991 (\$29.8 million) is the SH-2F SLEP. Major modifications include extensive rework of dynamic component mounting structure, rework on severely corroded areas, modified webbing in the aircraft structure to alleviate cracking, and rewiring of the aircraft electrical system. The SLEP will also include a special mission kit consisting of UHF/VHF radio, missile warning set, jammer, forward looking infrared system and the Block Upgrade avionics equipment consisting of an acoustic processor, multi-purpose display, 99 channel sonobuoy receiver, interface control unit 1553 data bus, enhanced tactical navigation system (TACHNAV), TACHNAV to TACHNAV data transfer system, APN-217 doppler, and supporting integrated logistics support. This SLEP program will extend the service life of the aircraft to meet the requirement and maintain mission effectiveness against the projected threat of the mid-1990s and beyond.

H-3 Series Modification

\$10.3 million in FY 1990 and \$1.3 million in FY 1991 are requested to fund H-3 series modifications. The SH-3H/G/D Service Life Extension Program is designed to extend the service life of the SH-3 past the year 2000 to provide essential CV helo and station SAR mission capability. Funds in the amount of \$2.2 million in FY 1990 and \$1.3 million in FY 1991 are requested for support.

In addition, funds are requested for two VH-3 aircraft programs in FY 1990. First, the PLZT Goggle program will provide aircrews with thermal flash blindness protection by the procurement of EDU-2/P goggles. Funds in the amount of \$1.9 million are requested for this program. The second program is the VH-3D Collision Warning System. This system will provide collision threat detection, visual and aural aircrew warning, and recommended avoidance maneuvers during visual and instrument flight conditions. It is requested that \$6.2 million be provided for this program.

EP-3 Series Modification

A total of \$13.6 million in FY 1990 and \$21.7 million in FY 1991 is requested for the EP-3 Sensor Improvement program. This Congressionally directed program will provide the EP-3 with improved capability to deal with the increasingly complex and dense threat signal environment by improving system frequency coverage, applying state-of-the-art signal exploitation/processing/display techniques, expand direction finding coverage and accuracy, and increase intercept system sensitivity.

P-3 Series Modification

Included in the FY 1990 and FY 1991 budget requests are \$30.7 million and \$114.2 million, respectively for P-3 modifications. Continuation of the HF Simultaneous Operations (SIMOPS) program is requested with \$15.1 million programmed in FY 1991. Incorporation of two AN/ARC-207 radios will permit independent operation of the two HF radios which is not possible with the AN/ARC-161 radios currently used in P-3C aircraft. Another continuing program is the classified Special Project Aircraft effort budgeted at \$4 million in FY 1990 and \$6.2 million in FY 1991.

Retrofit of AN/ARC-182 and AN/ARC-187 radios into P-3C aircraft began in FY 1986 and completes in FY 1991. Both of these radio modifications are being funded under the UHF/VHF Communication Update program with \$5.0 million being requested in FY 1991.

P-3 Series Modification (Cont'd)

The Update III Block Upgrade (\$30.3 million in FY 1990 and \$20.3 million in FY 1991) improves the acoustic processing system utilizing the Navy Standard AM/UYS-1, the ARR-78 Receiver, and USQ-78 Display and Control. Associated upgrades are required to interface with the P-3 main computer systems. Also requested in FY 1991 is \$1.2 million for a variety of reliability and maintainability upgrades and \$.3 million for RP-3 modifications.

Lastly, \$66.1 million in FY 1991 is requested for the P-3C Update IV program. This modification provides for a new avionics suite which includes advanced radar and electronics surveillance measures systems, a data processing system integrated into a 1553B mux bus architecture, high resolution color monitors, an acoustic processing system and a satellite communications capability.

S-3 Series Modification

Modifications to the S-3 series aircraft require \$56.1 million in FY 1990 and \$79.6 million in FY 1991. The principal modification is the S-3 Block Upgrade for which \$51.9 million and \$74.8 million are budgeted in FY 1990 and FY 1991, respectively. The purpose of this program is to improve Anti-Submarine Warfare (ASW) capabilities of the acoustic, Electronic Sensor Monitor (ESM) and radar subsystems, add Electronic Countermeasures (ECM) and Harpoon missile capability and increase useful service life through a redesigned Communication Control Group.

Continuation of the Aerial Refueling Store (ARS) program is also requested. This program provides aircraft modifications to permit carriage and operation of an ARS power source with required wiring and structural strengthening. Procurement of this system requires \$1.2 million in FY 1990. In addition, \$3.0 million in FY 1990 and \$1.9 million in FY 1991 are required for continuation of the MK-46 Presetter Interface program which will modify the bomb bay decoder. Finally, \$2.9 million in FY 1991 is requested for incorporation of the MK-50 torpedo capability.

E-2 Series Modification

A total of \$71.7 million in FY 1990 and \$57.4 million in FY 1991 is requested to modify E-2 aircraft. The principal E-2 modification is the Structural Enhancement program for which \$34.9 million in FY 1990 and \$30.9 million in FY 1991 are requested. This program extends the operational life of the aircraft by replacing the wing center section and modifying other structural components. \$7.0 million and \$5.0 million in FY 1990 and FY 1991, respectively are requested to continue the Block Upgrade I program. This major improvement program includes a 10 KVA emergency generator set, microwave refractometer, various safety mods, pylon fixed fairings, a passive detection system, attitude gyro, vertical control surface replacement, TRAC-A radar antenna, cockpit electronic magnetic interference reduction, computer recorder reproducer, SPN-41 instrument landing system, and standard central air data computer.

E-2 Series Modification Cont'd)

In addition, \$1.4 million in FY 1990 is requested for the Aircrew Emergency Egress Survivability program. This program has been approved as an urgently needed safety modification. \$1.5 million in FY 1991 is requested for the Block Upgrade II program. This dynamic modification program consists of fourteen projects as follows: T56-A-427 Engine, Radar Group I and II, Tactical Command and Control System, Joint Tactical Information Distribution System (JTIDS), Standard Automatic Flight Control System, Carrier Aircraft Inertial Navigation System, Cockpit Instrument Lighting System, High Speed Processor, Global Positioning System, Standard Attitude and Heading Reference System, Enhanced Displays, and Improved Identification Friend or Foe System.

Finally, \$28.4 million and \$20.0 million in FY 1990 and FY 1991, respectively are requested in this budget for the Outer Wing Panel (OWP) program. This effort will replace current OWPs which have demonstrated fatigue stress cracks and which are now limited to 2500 flight hours. In addition, a structural fatigue data collection system will be installed to provide more accurate structural load data which should result in extended aircraft life.

Trainer Aircraft Modification

\$2.3 million in FY 1990 and \$1.3 million in FY 1991 are requested for various modifications to trainer aircraft. The Trainer aircraft line includes modifications budgeted for the T-2, T-34, T-36, T-44, and TH-57 series aircraft. Within the account, \$2.7 million in FY 1990 and \$2.6 million in FY 1991 is requested for the T-34 Landing Gear Actuation System modification which will reduce landing gear linkage stress.

C/KC-130 Series Modification

The only funds requested for this program are \$3.1 million in FY 1990 and \$4.2 million in FY 1991 for the Avionics System Improvement Program (Phase III). Among the modifications included are the incorporation or modification of the solid state propeller synchronization system, compass system, HF secure voice capability, combined altitude radar altimeter, engine instruments, flight detector, addition of the safety-related Ground Proximity Warning System, and many other avionics equipments. Together, these changes will substantially increase safety, reliability and maintainability.

FEWSG Series Modification

The ability to accurately simulate the known and postulated electronic warfare characteristics and tactics of different threats for fleet training is a primary mission element of the Fleet Electronic Warfare Support Group (FEWSG) and its assigned aircraft and equipments. In support of this program, \$3 million in FY 1990 and \$10.2 million in FY 1991 are requested for FEWSG modifications. The one modification for which funds are requested in FY 1990 is the AN/ALE-43 Product Improvement program. This modification will replace the existing chaff cutter heads and is budgeted at \$3 million.

Funds are requested in FY 1991 (\$1.9 million) for the ASQ-191(V) Communications Jamming program. Installation of dedicated C²CM equipment capable of continuous high power jamming will greatly improve the tactical training, mission performance, and platform survivability.

In addition, \$8.3 million is requested in FY 1991 to initiate two new programs: the MKC-135 Re-Engine program (\$7.3 million) and the AN/ALT-40 Upgrade (\$1.0 million). The Re-Engine modification provides for the replacement of the presently installed water injected J57-43 engine with used JT3D-3B engines and the replacement of the external stores pylons. The AN/ALT-40 Upgrade will make improvements to the system in order to enable continued realistic threat emitter simulation.

Cargo and Transport Aircraft Modification

A total of \$1.6 million is requested in both FY 1990 and FY 1991 for the Cargo and Transport Modification line item which includes modifications budgeted for the C-131, C-9, UC-12, and CT-39 aircraft.

The major modification planned in this category is the continuation of the C-9 Service Standardization program. This modification provides standard TACAN, UHF/VHF radio, cargo door/floor changes, and other minor modifications to standardize the C-9 fleet. \$1.5 million in both FY 1990 and FY 1991 are requested for this program.

In addition, \$1 million in both FY 1990 and FY 1991 are requested for the continuation of the FAA configuration Update and the SLEP programs.

E-6A Series Modification

The only modification for which funding is requested in FY 1990 (\$7.5 million) and FY 1991 (\$5.2 million) is the Correction of Deficiencies program. These funds are required so that discrepancies which are discovered during follow-on testing can be immediately corrected in order to maintain necessary force levels.

Power Plant Changes

This program funds procurement of a large number of primarily small dollar engine modifications. For this purpose, \$5.9 million in FY 1990 and \$7.2 million in FY 1991 are requested.

Miscellaneous Flight Safety and Operational Necessity Changes

This budget request includes \$1.0 million in both FY 1990 and FY 1991 for safety related modifications. This program provides for the procurement of kits to correct flight safety and operational deficiencies which are revealed during fleet operations.

Common ECM Equipment

A total of \$46.8 million in FY 1990 and \$104.3 million in FY 1991 is requested for Common ECM equipment. The AN/AAR-47 Detection System provides warning of approaching missiles by radiation detection and initiates flare ejection. Aircraft supported by this system are the CH-53, CH-46, OV-10, AH-1, and UH-1 (\$24.2 million in FY 1990 and \$17.7 million in FY 1991).

In addition, \$3.7 million in FY 1990 and \$60.8 million in FY 1991 are requested for AN/ALR-67 hardware. The AN/ALR-67 provides detection and direction finding over the entire radio frequency spectrum of target tracking and missile control systems. This program provides for the procurement of this system for the F/A-18, A-6E and F-14 aircraft. \$10.0 million is requested in FY 1990 for completion of the AN/ALQ-162 countermeasures program. These funds are required for engineering change orders and support.

Funds are also requested for the AN/APR-39 and AN/AVR-2 hardware procurement. The aircraft supported by these systems are the OV-10, H-53, HH-60H, AH-1, and UH-1. \$8.9 million in FY 1990 and \$25.8 million in FY 1991 are requested for this program. The aircraft provisions for these systems are budgeted in the appropriate aircraft accounts.

Common Avionics Changes

\$1.4 million in FY 1990 and \$3.0 million in FY 1991 are requested for one avionics change, the Digital Air Data Converter. This equipment will provide a standardized air data computer for a number of Navy aircraft and will increase Mean Flight Hour Before Failure (MFHBF) for air data computers from 106 hours to 400 hours, thus improving aircraft readiness rates.

Budget Activity 6: Aircraft Spares and Repair Parts

(In Thousands)

FY 1991 Estimate	\$1,452,950
FY 1990 Estimate	\$1,373,207
FY 1989 Estimate	\$1,140,424
FY 1988 Actual	\$1,421,769

Purpose and Scope of Work

Budget Activity 6 funds the procurement of the spare equipment and repair parts necessary to support Navy and Marine Corps aircraft procurement and operating programs. The budgeted funds provide for: (1) initial outfitting and pipeline quantities of repairable spares and repair parts for new and modified aircraft; and (2) buyout of shore and afloat site outfitting Depot Level Repairable spares from the Department of the Navy Stock Fund (DONSF) by means of the aviation outfitting account in the year of delivery, and a small number of non-stock funded replenishment spares.

Justification of Funds

On 1 April 1985, the Navy transferred the financing of the procurement and repair of Aviation Depot Level Repairable (DLR) components to the Navy Stock Fund. Prior to that time, DLRs were funded in either Weapons Procurement, Navy (WPN), Other Procurement, Navy (OPN), or Aircraft Procurement, Navy (APN), while repair was funded in the Operation and Maintenance, Navy (O&M,N) appropriation. In the procurement accounts, release of these items from the supply system was on a "free issue" basis. Under stockfunding, a "buyer/seller" relationship is established and users of DLRs pay for what they requisition. Results have been extremely positive with readiness indicators showing strong improvement through FY 1988.

The following table depicts the funding profile for the spares account.

	(\$ in Millions)			
	FY 1988	FY 1989	FY 1990	FY 1991
Initial Spares and Repair Parts	\$ 523.4	\$ 399.4	\$ 833.6	\$ 829.7
Replenishment Spares and Repair Parts	898.4	741.0	539.6	623.3
Total Aircraft Spares and Repair Parts	\$1,421.8	\$1,140.4	\$1,373.2	\$1,453.0

Initial Spares:

The initial spares requirements reflect the number, type and deployment of aircraft being procured and entering the operating program.

The items being procured under the initial spares category include engines, spares for equipments and parts which have been recently introduced and for which there is not sufficient leadtime for the Stock Fund to field. Funding requirements for engines, major avionics, and other equipments which qualify as initial spares are calculated on an item-by-item basis predicated on usage data, failure rates, and engineering estimates to predict usage. Requirements for other initial spares and spare parts are determined on a statistical basis, using the same methodology used in calculating major spare equipment requirements.

The following table shows FY 1990 and FY 1991 Initial Spares and Repair Parts support requirements by aircraft model:

Aircraft Model	FY 1990										FY 1991			
	A/C Qty	Spare Engines	Contract Spares	PSE Spares	AOA Spares	Total Initial Spares		A/C Qty	Spare Engines	Contract Spares	PSE Spares	AOA Spares	Total Initial Spares	
						Initial	Spares						Initial	Spares
ATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A-6E	-	-	-	.9	-	.9	-	-	-	-	-	-	-	-
EA-6B	-	-	11.5	5.7	-	17.2	3	-	35.3	3.9	7.3	-	-	46.4
Class. Prgrm.			Details classified						Details classified					
AV-8B	24	19.6	42.9	8.3	.8	71.6	24	31.2	25.9	5.0	3.5	-	-	65.5
F-14D	18	49.4	41.3	.1	.9	91.6	24	6.3	65.1	-	3.8	-	-	75.2
F/A-18	72	11.9	71.4	17.2	6.2	106.7	72	7.3	66.3	7.6	23.2	-	-	104.4
CH/MH-53E	3	-	2.0	-	.1	2.1	-	-	.8	-	-	-	-	.8
V-22	12	11.2	115.0	25.7	-	152.0	24	22.2	122.2	42.5	-	-	-	187.0
SH-60B	6	.2	9.9	.1	.9	11.1	6	3.5	12.9	-	.9	-	-	17.3
SH-60F	18	5.9	21.0	-	2.6	29.5	18	2.2	.5	-	2.2	-	-	4.9
E-2C	4	4.8	29.0	.7	-	34.6	9	6.6	21.4	.7	-	-	-	28.7
T-44	5	-	.3	-	-	.3	-	-	-	-	-	-	-	-
T-45	24	8.1	19.7	1.4	-	29.2	48	15.5	24.6	-	-	-	-	40.1
E-6A	-	-	35.6	-	-	35.6	-	-	2.9	-	-	-	-	2.9
RH-60	-	1.2	-	-	-	1.2	-	-	-	-	-	-	-	-
Airborne Weapon Spares	-	-	6.3	-	-	6.3	-	-	2.7	-	-	-	-	2.7
Training Device Spares	-	-	35.0	-	-	35.0	-	-	20.9	-	-	-	-	20.9
CGSE Repair Parts ^{1/}	-	-	-	18.6	-	18.6	-	-	-	8.1	-	-	-	8.1
ATE/SE Parts	-	-	-	35.2	-	35.2	-	-	-	34.6	-	-	-	34.6
Mod Spares	-	-	-	-	-	85.4	-	-	-	-	-	-	-	85.4
TOTAL		112.3	510.5	113.9	11.5	833.6		94.9	498.9	102.2	40.9			829.7

Totals may not add due to rounding.

1/ Supports equipment procured in B.A. 7.

Initial spares and repair parts are categorized as follows:

(1) Government Furnished Spare Aircraft Engines - (FY 1990 - \$112.3 million; FY 1991 - \$94.9 million).

Spare aircraft engine requirements are calculated on an actuarial basis to support the aircraft operating program with a confidence level of 80% to 90% that a spare engine will be on site and ready for issue when required by combat aircraft. Requirements are determined by establishing flying hours for each type/model aircraft and applying to that program the engine repair and removal rates to determine total engine requirement. On hand and on order assets are deducted from this gross requirement to arrive at a net procurement requirement. Requirements are thus established for initial outfitting of shore and afloat sites and to fill maintenance repair/overhaul pipelines.

(2) Contractor Spares Support - (FY 1990 - \$510.5 million; FY 1991 - \$498.9 million)

Contractor furnished spares and repair parts are provided for support of new, sophisticated weapons systems or subsystems during their development and fleet introductory phases until the Material Support Date is reached, at which time the Navy supply system assumes responsibility for providing these spares and repair parts. Contractor support is designed to preclude procurement of unnecessary or unstable spare parts before usage data is available or aircraft equipment design is stabilized. Requirements are calculated by comparing the new weapon system with historical data for a similar/same aircraft and utilizing the Weapon System Planning Document which provides the site activation schedule.

(3) Peculiar Support Equipment (PSE) - (FY 1990 - \$113.9 million; FY 1991 - \$102.2 million)

The funding requested here provides for repair parts essential to the support (readiness) of PSE end items required for the ground testing, servicing, handling and maintenance of specific weapon systems and their sub-systems. These PSE end items require complete integrated logistic support, including repair parts, concurrent with delivery in order to adequately support the related weapon systems. PSE spares funding also provides for contractor augmented support. Requirements are determined by the initial quantity of PSE end items procured, the complexity/cost of the end items, the number of sites to be supported, the proximity/inter-support relationship of shore-based sites, and the period of time between equipment introduction and material support date.

(4) Aviation Outfitting Account Initial - (FY 1990 - \$11.5 million; FY 1991 - \$40.9 million)

The funding requested in this section procures spares from the Department of the Navy Stock Fund to field new weapons at ashore operating sites, using peacetime operating rates.

(5) Modification Spares - (FY 1990 - \$85.4 million; FY 1991 - \$92.8 million)

The investment program also includes procurement of initial repairable spares and repair parts. Support of the modification program is financed under Budget Activity 5. Requirements include new procurement and/or the modification of spares and repair parts already in the inventory. Requirements are based on the corresponding elements being procured for the aircraft modification program.

Replenishment Spares:

Total funding requested for all replenishment spares programs is \$539.6 million in FY 1990 and \$623.3 million in FY 1991. The replenishment spares element of the budget is made up of: (a) the aviation outfitting support account which provides funding to procure outfitting spares from the Department of the Navy Stock Fund for afloat activities required to support the introduction of new or expanded populations of operating aircraft, (b) replenishment spares procured at the Naval Air Systems Command headquarters to support executive mission helicopters, interservice support requirements and miscellaneous aircraft systems, and (c) a small number of non-stock funded replenishment spares.

The following table shows the FY 1990 and FY 1991 replenishment spares funding levels by category:

	(\$ in Millions)	
	FY 1990	FY 1991
Aviation Outfitting Support	\$ 504.1	\$ 588.3
Inventory Control Point Support	7.4	8.3
Interservice Support	1.0	1.4
Executive Mission Helicopters	10.1	12.2
F-5/F-16M/T-38 Aircraft	14.7	10.5
Miscellaneous Headquarters	2.3	2.6
TOTAL	\$ 539.6	\$ 623.3

The replenishment spares are categorized as follows:

(1) Aviation Outfitting Support - (FY 1990 - \$504.1 million; FY 1991 - \$588.3 million)

This account funds the procurement for all afloat and shore activity outfittings required to support fleet operating aircraft. These requirements are procured by the Department of the Navy Stock Fund in advance and are subsequently "bought out" by this account. This approach has provided: a) improved material availability, b) improved asset management, and c) essential financial flexibility. The benefits are an improved logistics support posture and a corresponding improvement in aircraft readiness.

(2) Inventory Control Point (ICP) Support - (FY 1990 - \$7.4 million; FY 1991 - \$8.3 million)

Spare repairable components are managed by the Aviation Supply Office and the Ships Parts Control Center, which have been assigned program support responsibility for specific aircraft/weapon systems. Spares requirements are calculated by an individual line item stratification technique. The Uniform Inventory Control Point stratification requirements are computed utilizing DOD logistics guidance, Navy program planning data, and technical, procurement, and inventory data maintained by the ICP. During stratification, these components are evaluated in terms of inventory on hand and on order, demand experience, projected demand, and outfitting requirements.

(3) Interservice Support - (FY 1990 - \$1.0 million; FY 1991 - \$1.4 million)

Funds are required to reimburse the Army and Air Force for repairable material used during both in house (organic) and service administered commercial overhaul work of Navy aircraft engines, airframes and other repairable components. Material requirements are calculated by the Army and Air Force for the Navy's projected overhaul/rework program and are validated through negotiation between the Naval Air Logistics Center and Army/Air Force representatives.

(4) Executive Mission Helicopters - (FY 1990 - \$10.1 million; FY 1991 - \$12.2 million)

Replenishment spares support requirements for the VH-3D and VH-60A Executive Mission aircraft. The Executive mission provides a transportation and evacuation capability for the Chief Executive, Heads of State and other visiting dignitaries. Eleven VH-3D aircraft operate from one primary site and two auxiliary sites. Nine VH-60A aircraft were procured in FY 1986 to replace the VH-1N aircraft at the end of FY 1989. These helicopters operate for extended periods of time from numerous other locations necessitating selected item pickup kits of replenishment spares. Material support requirements are calculated based on inputs from the operating squadron, the aircraft contractor and those peculiar requirements set forth by the Executive Branch. Executive Mission helicopters must have 100% spares support for repairable components. These components are procured so that a spare will be on hand when the component reaches half its projected service life.

(5) F-5/F-16N/T-38 Aircraft - (FY 1990 - \$14.7 million; FY 1991 - \$10.5 million)

Funds are required for the procurement of repairable material support from the Air Force for eleven F-5E/F, 26 F-16N and six T-38A aircraft operating at four sites. Material requirements are developed by the weapon system manager and NAVAIR based on past spares usage, the projected flying hour program and the number of sites operating the aircraft.

(6) Miscellaneous NAVAIR Headquarters Support - (FY 1990 - \$2.3 million; FY 1991 - \$2.6 million)

This includes material support requirements for the Fleet Electronic Warfare Support Group (FEWSG), Project Beartrap, Special Project Mission Avionics and VH-3A aircraft support. Spares requirements for FEWSG, Project Beartrap and Special Project Mission Avionics requirements are developed by the Naval Avionics Center in conjunction with the operational activities, based on past usage and anticipated system changes. VH-3A spares requirements are developed by the fleet operational squadron and NAVAIR, using historical data to project future material requirements.

COMBAT AIRCRAFT 7: Aircraft Support Equipment and Facilities

<u>(In Thousands)</u>	
FY 1991 Estimate	\$ 591,890
FY 1990 Estimate	\$ 556,660
FY 1989 Estimate	\$ 561,997
FY 1988 Actual	\$ 489,200

Purpose and Scope of Work

The FY 1990 budget request of \$556.7 million and the FY 1991 request of \$591.9 million provide continuing vital effort in the following categories which support aircraft procurement programs:

- (1) Common Ground Equipment, which provides funds for the Consolidated Automated Support System (CASS) equipment, other Automatic Test Equipment (ATE), Avionics Support Equipment (ASE), various aircraft systems trainers and training aids, and other aircraft ground support equipment including Rapid Deployment Force requirements and Mobile Maintenance Facilities for Marine expeditionary forces.
- (2) Aircraft Industrial Facilities, which provides calibration equipment for Navy standards and calibration laboratories. It also provides for capital improvements, modernization, and maintenance of government-owned, but contractor-operated, aircraft-producing industrial plants.
- (3) War Consumables, which provides funds for auxiliary fuel tanks, air refueling stores, pylons, and ejector racks and for the modification of these equipments. The new procurement items are of a consumable nature and are related primarily to the number of sorties flown by combat and training aircraft.
- (4) Other Production Charges, which provides funds for miscellaneous production support and testing services, aircraft cameras, various equipment for United States Coast Guard aircraft, and aircraft pods and instrumentation packages supporting tactical aircrew combat training and mobile sea range systems.
- (5) Special Support Equipment, which provides funds in support of a classified program.

Justification of Funds

Funding requirements for FY 1990 and FY 1991 are outlined in the following table:

	(Dollars in Millions)	
	<u>FY 1990</u>	<u>FY 1991</u>
Common Ground Equipment	\$438.6	\$447.7
Aircraft Industrial Facilities	32.9	34.9
War Consumables	2.7	34.2
Other Production Charges	35.5	29.4
Special Support Equipment	<u>47.0</u>	<u>45.7</u>
Total B.A. 7	\$556.7	\$591.9

Common Ground Equipment

Funding for the various segments of this program is depicted below and described in subsequent paragraphs:

	(Dollars in Millions)	
	<u>FY 1990</u>	<u>FY 1991</u>
(a) Consolidated Automated Support Equipment (CASS)	\$169.0	\$171.6
(b) Training Equipment	42.0	41.7
(c) Automatic Test Equipment (ATE)	69.0	65.0
(d) Aircraft Common Support Equipment	51.3	51.6
(e) Mobile Maintenance Facilities	11.3	11.3
(f) Inventory Control Point (ICP) Managed SE	38.0	38.1
(g) Headquarters Managed PSE	13.5	19.7
(h) Gas Turbine Compressor Replacement	4.0	4.1
(i) Avionics Support Equipment	27.7	30.5
(j) Rapid Deployment Force/Maritime Prepositioned Ships	<u>12.8</u>	<u>14.1</u>
Total Common Ground Equipment	\$438.6	\$447.7

Consolidated Automated Support System (CASS) Equipment

The budget requests \$169.0 million in FY 1990 and \$171.6 million in FY 1991 for the initial procurement of newly designed, modularly constructed automatic test equipment with computer assisted, multi-functional capability based on standardized hardware and software elements. The CASS design incorporates easily reconfigurable modules which can address varying test requirements and will also allow modification to meet the demands of future technologies.

The CASS program will increase material readiness, reduce life cycle costs through standardization of equipment and all logistic elements, improve tester sustainability at depot and intermediate maintenance levels (including aircraft carriers), reduce the proliferation of unique test equipment, and provide Navy-wide test capabilities for existing and future avionic electronic support requirements. CASS will increase repair facility throughput capability, reduce spare parts and personnel training requirements and significantly reduce the space required for avionics testing aboard critically space-limited aircraft carriers.

Training Equipment

The budget requests \$42.0 million in FY 1990 and \$41.7 million in FY 1991. The Training Equipment sub-line item provides funds for acquisition of trainers, training equipment, training parts, GFE/GSE for training purposes, and modifications/changes relating to the above acquisitions. The procurements funded within the Training Equipment sub-line item are limited to: (1) training devices and equipment and related modifications for generalized training programs which provide skills common to more than one weapon system, (2) trainers for out-of-production aircraft, and (3) GFE in support of courses at the Navy Formal Schools. Training related to out-of-production aircraft is dependent upon these funds for all acquisitions, specific trainer-peculiar changes, modification/modernization, and user-generated changes and replacements. The Training Equipment sub-line item is broken into two major categories, General Training Equipment and Modification/Modernization of Trainers. The following tables display funding profiles within the Training Equipment sub-line item:

General Training Equipment

	(In Thousands)	
	FY 1990	FY 1991
Air Traffic Control Trainers	3,302	3,756
'A' School Trainers	2,500	1,026
Physiological Trainers	2,500	2,500
Total General Training Equipment	\$ 8,302	\$ 7,282

Modification/Modernization of trainers requirements, including GFE for out-of-production weapon systems

Program	(In Thousands)	
	FY 1990	FY 1991
A-6E	2,795	5,379
A-7	105	0
C-2A	905	350
E/K/C-130	917	311
F-14A	9,065	4,985
GFE for Formal Schools	855	870
H-1 Operational Flight Trainer (OFT)	0	16,525
H-2	4,290	0
H-3	745	0
P-3A/B	7,003	2,955
S-3A	7,050	3,001
Total Modification/Modernization of Trainers	\$33,730	\$34,376

ATE (Automatic Test Equipment)

The budget request includes \$69.0 million for FY 1990 and \$65.0 million for FY 1991. The ATE segment of the Common Ground Equipment budget line item was established to broaden this category of support equipment acquisition formerly limited to VAST (Versatile Avionics Shop Test). The ATE account has funded the procurement of the Tailored MINI-VAST, as well as a family of module testers.

The FY 1990 and 1991 requests for ATE includes funding for the Enhanced Comprehensive Management System (ECAMS), portable ground stations used to support maintenance scheduling by downloading engine and structure usage and fatigue data to ensure safety of flight. The budget request also includes funding for Test Program Set (TPS) Translation/Offload necessary to transition existing test equipment software to CASS as it becomes operational.

Aircraft Common Support Equipment

The Aircraft Common Support Equipment element under the Common Ground Equipment line item provides for the initial outfitting of Common Support Equipment under NAVAIR inventory and technical management. These Support Equipment (SE) end items are required for ground testing, servicing, handling, and maintenance of aircraft and their systems. SE items acquired under this budget line item include aircraft propulsion test systems, mobile air conditioners and generators, and aircraft handling equipment.

A comprehensive acquisition plan has been developed for each FY 1990/1991 SE item to: (1) ensure that the equipment is ready for procurement by the budget year; (2) to determine the type of procurement action to be initiated (multi-year, etc.); (3) verify the inventory objective, and; (4) ensure the consideration of required integrated logistic support elements.

The Support Equipment (SE) which will be procured are determined through one of the following processes:

1. The direct result of the SE RDT&E Program (these are items required to support advanced aircraft systems).
2. Reprourement of current SE required to respond to meet outfitting shortages.
3. Improved versions of current SE required to support expanded airborne equipment capabilities or advanced airborne equipment (electrical servicing equipment, ground air conditioners, etc).
4. Major modifications of existing SE.
5. Equipment developed to improve the capability of the Fleet and/or to improve safety (aircraft towing equipment, non-destructive inspection equipment, etc).

To meet requirements in a timely manner, \$51.3 million in FY 1990 and \$51.6 million in FY 1991 is requested.

Mobile Maintenance Facilities

Budget authority of \$11.3 million in both FY 1990 and FY 1991 for Mobile Maintenance Facilities is requested. This program provides for the acquisition of mobile facilities and related equipment to support Marine Corps Expeditionary Forces and Navy contingency/mobilization aircraft and weapon system maintenance operations. The concept is to provide rapid-response mobility by the use of relocatable maintenance shelters. Execution of the Marine Corps Aviation mission is dependent on a highly mobile and functionally independent aircraft maintenance support capability.

The basic equipments procured under this sub-line item are the container (Van), air conditioner, heat pump, 60-Hertz electric generator, running gear for ground transport and static converter (60 Hz to 400 Hz).

Inventory Control Point (ICP) Managed Support Equipment (SE)

ICP Managed SE funds the procurement of end items of Peculiar Support Equipment (PSE) for out-of-production weapon systems, and all Common Support Equipment (CSE) under the budget, procurement and inventory control of the Aviation Supply Office (ASO), Philadelphia, and the Ships Parts Control Center (SPCC), Mechanicsburg, PA. PSE and CSE end items are normally introduced into the Fleet through NAVAIR development and initial procurement. When design is completed and procurement packages become available, the items are sent to ASO or SPCC inventory management to be funded under this sub-line. Currently, ASO manages some 10,500 individual repairable SE end items whereas SPCC manages some 500 items, primarily cryogenic and armament equipment.

The budget requirements for this element are categorized as follows:

- a. Increased quantities of out-of-production aircraft PSE and CSE required for site outfittings.
- b. Replacement out-of-production aircraft PSE and CSE resulting from wear-out and attrition.
- c. Increased quantities of out-of-production aircraft PSE and CSE required for allowance augmentation.

Sample SE end items procured under this sub-line item include aircraft jacks, aircraft tow bars, hoisting slings, armament handling equipment and maintenance platforms.

To support this program, budget authority of \$38.0 million in FY 1990 and \$38.1 million in FY 1991 is requested.

Headquarters Managed Peculiar Support Equipment

This budget sub-line provides funds to replace certain in-use Peculiar Support Equipment (PSE) assets that are now only marginally effective due to obsolescence or to the unavailability of associated logistics support. Of late 1960 and early 1970 vintage, the applicable vendors no longer manufacture the PSE items or associated repair parts. Alternate sources are not available. As a consequence, a replacement item that is logistically supportable must be designed and produced. In addition, this sub-line provides completion of the design and initial production of (1) certain PSE items that for various reasons were not funded during the production phase of the weapon systems and (2) modification of PSE to extend its useful service life.

Budget authority of \$13.5 million in FY 1990 and \$19.7 million in FY 1991 is requested for this program.

Gas Turbine Compressor (GTC) Replacement

The budget requests \$4.0 million in FY 1990 and \$4.1 million in FY 1991 to finance the acquisition of new universal Jet Aircraft Start Units (JASU) capable of starting all Navy aircraft requiring a ground start power cart.

Avionics Support Equipment

The budget request of \$27.7 million in FY 1990 and \$30.5 million in FY 1991 will provide for the acquisition of several common avionics support equipment items: AN/USM-406(V) Countermeasures Test Set; Common Night Vision Goggles Test Set; MX 432 MOD 4 Torpedo Presetter Test Set; Pressure Temperature Test Set; and a Cable Tester.

The AN/USM-406(V) is an electronic warfare countermeasure test set used in organization-level maintenance support of a variety of EW equipment. The Common Night Vision Goggles Test Set is a new portable test set designed to fault isolate Navy/Marine Night Vision Goggles and will be used in both intermediate and organizational level of maintenance. The Torpedo Presetter Test Set will provide organizational level testing for verification of presetter functions and release mechanisms for all air and surface ASW torpedoes. The new portable Pressure/Temperature Test Set is designed for both flight line and intermediate maintenance in checking performance characteristics of aircraft airspeed, altimeter, and engine pressure ratio system. It will also provide temperature simulation and pressure data required by the Standard Central Air Data Computer. The Cable Tester will provide the necessary stimulus to exercise and verify cable performance at Navy/Marine Intermediate Level Maintenance activities in support of the Cable Repair Program.

Rapid Deployment Force/Maritime Prepositioned Ships

The budget request of \$12.8 million in FY 1990 and \$14.1 million in FY 1991 will procure additional Support Equipment for upgrading three Marine Amphibious Brigades. This support equipment (SE) will support aircraft configuration changes and replace/modernize outdated SE utilized in the RDF mission.

Aircraft Industrial Facilities

Funding is requested for the following categories of equipment:

	(Dollars in Millions)
	FY 1991
Calibration Equipment	\$25.2
Contractor Facilities	9.7
Total Aircraft Industrial Facilities	\$34.9

Calibration Equipment

The calibration program provides the fleet with a means to ensure that Support Equipment (SE) is operational and accurate. Calibration is the process of periodically comparing the performance of items of SE to that of equipment of known and greater accuracy. This accuracy must be traceable to the National Bureau of Standards. Calibration includes any adjustments to the SE that may be required.

Calibration funds are used to procure calibration standards and ancillary equipment required to support aviation SE. Approximately 100 fleet intermediate level calibration laboratories, 30 Navy Calibration Laboratories (Depot) and five Standards Laboratories are supported through these procurements. Standards are used to initiate capability, expand capabilities, improve efficiency of production, reduce manhours and to replace obsolete equipment.

Contractor Facilities

The contractor facilities program provides for capital maintenance, modernization, improvements, emergency repairs, and fire protection for government-owned, contractor-operated, aircraft-producing industrial plants and for replacement/restoration of government-owned production equipment in use on Navy programs at these plants. Facilities management contracts require that the government fund capital maintenance projects as required. These projects apply to Naval Weapons Industrial Reserve Plants (NWIRPs) at Bloomfield, Conn.; Dallas, Texas; Bethpage, New York; and Calverton, New York.

War Consumables

The budget request includes \$2.7 million in FY 1990 and \$34.2 million in FY 1991 for War Consumables. The War Consumables program funds procurement of those airborne equipments which can be suspended, released, or jettisoned from aircraft. Funding in this program provides for procurement of Aerial Refueling Stores and Launcher/Ejection Racks. Items are bought in this account to satisfy inventory objectives which are determined by such factors as the numbers and types of using aircraft, the mission of aircraft, and attrition and pipeline requirements. The FY 1991 request includes funding for a follow-on procurement of Aerial Refueling Stores which allow combat aircraft to perform aerial refueling missions in a carrier battle group environment.

Other Production Charges

The budget requests \$35.5 million in FY 1990 and \$29.4 million in FY 1991 to provide the following:

- (a) Government-Furnished Equipment (GFE) production support which includes testing services, production data reviews, technical publications, repair of damaged or defective GFE, and procurement of Navy Stock Fund items necessary for fleet installation of technical directives (i.e., minor modification kits and other hardware changes).
- (b) Procurement of certain Navy avionics equipment for installation in Coast Guard aircraft.
- (c) Procurement of reconnaissance and other aerial cameras.
- (d) Procurement of instrumentation packages used by aircraft participating in Mobile Sea Range exercises.
- (e) Procurement of pods for the Tactical Aircrew Combat Training System (TACTS).

Special Support Equipment

Funding requested in FY 1990 (\$47.0 million) and FY 1991 (\$45.7 million) will be used to support a classified program.

COMPARISON OF FY 1989 PROGRAM REQUIREMENTS AS REFLECTED IN FY 1988/89 AMENDED PRESIDENT'S BUDGET WITH FY 1989 PROGRAM REQUIREMENTS SHOWN IN FY 1990/91 PRESIDENT'S BUDGET

	(In Thousands of Dollars)		Increase (+) or Decrease (-)
	Total Program Requirements per 1988/89 Amended Budget	Total Program Requirements per 1990/91 Budget	
Combat Aircraft.....	\$ 5,619,933	\$ 5,918,429	+\$ 298,496
Airlift Aircraft.....	-	-	-
Trainer Aircraft.....	415,944	413,315	- 2,629
Other Aircraft.....	350,069	347,632	- 2,437
Modification of Aircraft.....	915,993	931,908	+ 15,915
Aircraft Spares and Repair Parts.....	1,162,606	1,140,424	- 22,182
Aircraft Support Equipment and Facilities	515,455	561,997	+ 46,542
Reimbursable Program.....	1,591	1,591	-
TOTAL FISCAL YEAR PROGRAM.....	\$ 8,981,591	\$ 9,315,296	+\$ 333,705

EXPLANATION BY BUDGET ACTIVITY

Combat Aircraft (+\$298.5 million)

The changes in this budget activity are primarily associated with the following Congressional action including specific net changes of +\$310.8 million and application of general support services and contractor travel reductions of \$3.2 million:

Program	Quantity	Amount	Program	Quantity	Amount
EA-6B		-\$ 6.3	C/WH-53E (MYP)		-\$12.2
EA-6B A.P.	+ 3	+ 6.0	C/WH-53E A.P.		+ 46.0
AV-8B (MYP)		- .3	AH-1W		+ 55.0

Modification of Aircraft (+\$15.9 million)

Congressional action resulted in a net increase of \$74.1 million in the following programs:

Program	Amount	Program	Amount
SH-60 Series	+\$ 4.0	S-3 Series	-\$.1
E-2 Series	+ 20.5	Common ECM	+ 50.0
			+\$ 74.4

Other changes include a prior approval reprogramming within the appropriation of \$56.0 million from the A-6 series to fund EA-68 requirements and a proposed inter-appropriation DD115 reprogramming from the following accounts based on lower inflation and support services requirements:

Program	Amount	Program	Amount
A-6 Series	-\$.7	H-46 Series	-\$.1
EA-6 Series	- .2	H-1 Series	.1
F-14 Series	- .2	H-2 Series	.1
ES-3 Series	- .8	H-3 Series	.2
OV-10 Series	- .2	EP-3 Series	.2

Additional changes are increases of \$2.3 million to the F-14 Series and \$.7 million to the P-3 Series primarily for the Main Landing Gear Structure modification and VXN-8 modifications respectively.

Aircraft Spares and Repair Parts (-\$22.2 million)

The change in this budget activity results from application of \$1.7 million of the general Congressional reduction and other decreases of \$20.5 million due mainly to realignments, projected installation slippages, and lower requirements for modification spares.

Aircraft Support Equipment and Facilities (+\$46.5 million)

A general reduction of \$.1 million based on Congressional action was applied to Common Ground Equipment and Congress also restored \$50.0 million to the Industrial Facilities program based on a policy change reinstating certain activities to industrial funding. Additional decreases of \$3.3 million from the various accounts based on revised economic assumptions and reduced contractor support which will be transferred from the appropriation and a minor decrease of \$.1 million due to repricing.

COMPARISON OF FY 1989 FINANCING AS REFLECTED IN FY 1988/89
 AMENDED PRESIDENT'S BUDGET WITH FY 1989 FINANCING AS SHOWN IN FY 1990/91 PRESIDENT'S BUDGET

	Financing per FY 1988/89 Amended Budget	Financing per FY 1990/91 Budget	Increase (+) or Decrease (-)
Program Requirements (Total).....	\$ 8,981,591	\$ 9,315,296	+\$ 333,705
Program Requirements (Service account).....	(8,980,000)	(9,313,705)	(+ 333,705)
Program Requirements (Reimbursable).....	(1,591)	(1,591)	(-)
Less:			
Anticipated Reimbursements.....	1,591	1,591	-
Reprogramming from prior year budget plans.....			
Unobligated balance available from prior year to finance new budget plans.....			
Transferred from other accounts.....			
Add:			
Reduction pursuant to P.L. 100-463.....		15,606	+ 15,606
Transferred to other accounts.....		86,000	+ 86,000
Appropriation.....	\$ 8,980,000	\$ 9,415,311	+\$ 435,311

EXPLANATION OF CHANGES IN FINANCING

The increase in program requirements is the result of Congressional additions of \$435,311,000 over the request to the amount appropriated including distribution of general Congressional reductions of \$15,606,000. Other financing changes include proposed DD415 Reprogramming Actions transferring \$86,000,000 to Operations and Maintenance, Navy for readiness and civilian pay and to Military Personnel, Navy for increases to overseas station allowance.

COMPARISON OF FY 1988 PROGRAM REQUIREMENTS AS REFLECTED IN FY 1988/89
 AMENDED PRESIDENT'S BUDGET WITH FY 1988 PROGRAM REQUIREMENTS SHOWN IN FY 1990/91 PRESIDENT'S BUDGET

	Total Program Requirements per 1988/89 Amended Budget	(In Thousands of Dollars)	Increase (+) or Decrease (-)
		Total Program Requirements per 1990/91 Budget	
Combat Aircraft.....	\$ 5,728,174	\$ 5,776,954	+\$ 48,780
Airlift Aircraft.....	-	-	-
Trainer Aircraft.....	368,110	368,110	-
Other Aircraft.....	401,918	409,310	+ 7,392
Modification of Aircraft.....	924,016	904,756	- 19,260
Aircraft Spares and Repair Parts.....	1,436,913	1,421,769	- 15,144
Aircraft Support Equipment and Facilities	559,168	489,200	- 69,968
Reimbursable Program.....	1,545	3,571	+ 2,026
TOTAL FISCAL YEAR PROGRAM.....	\$ 9,419,844	\$ 9,373,670	-\$ 46,174

EXPLANATION BY BUDGET ACTIVITY

Combat Aircraft (+\$48.8 million)

A DD1415 reprogramming action proposed the transfer of \$104.0 million for the A-6 program. Congress approved the transfer of \$25.0 million of this amount with the remaining \$79.0 million returned to the appropriation. Additionally, a transfer of funds out of the appropriation under Public Law 100-463 totalled \$44.2 million in budget activity 1 as indicated below:

Program	Amount
A-6E	-\$11.5
F-14A+/D	- 13.8
F/A-18	- 13.6

Program	Amount
C/MI-53E (MYP)	-\$.3
E-2C	- 5.0
	-\$44.2

Other decreases include the following: \$32.6 million from A-6 advance procurement due to follow-on program cancellation; \$5.0 million from the EA-6B program based on revised support requirements; \$26.8 million from the AV-8B due to delayed introduction of the planned engineering change for a weapons stores management system; \$4 million from the C/MH-53E program in minor pricing adjustments; and \$1.9 million and \$2.6 million from advance procurement for the SH-60B and SH-60F aircraft based on revised long lead requirements.

Increases accomplished through below threshold reprogrammings include \$5.0 million and \$4.8 million to the AH-1W and SH-60F programs respectively for increased cost at contract finalization and \$8.4 million for the SH-60B for finalization of the airframe contract (\$1.9 million) and procurement of Mid-East Force equipment (\$6.5 million); \$54.5 million to the F/A-18 program for support equipment and other logistics items; \$3.8 million to the F-14 for increased support of the F-14 aircraft A+ deliveries; and \$5.0 million, \$1.3 million, and \$4 million to the advance procurement accounts of the EA-6B, F/A-18, and the C/MH-53E respectively to finalize long lead airframe and GPE requirements.

Other Aircraft (+\$7.4 million)

The increase in this budget activity reflects a requirement in the E-6A program for Advanced Verdin Processors.

Modification of Aircraft (-\$19.3 million)

Transfer of funds under Public Law 100-463 totalled \$15.1 million in this budget activity as follows:

Program	Amount	Program	Amount
EA-6 Series	-\$.9	EP-3 Series	-\$.4
F-14 Series	- 1.3	S-3 Series	- 5.5
H-53 Series	- 2.0	F-16 Series	- 5.0
			<u>-\$15.1</u>

Below threshold reprogramming increases include the following: \$1 million to the A-3 Series for COM/ICS Update validation testing; \$2.5 million to the A-7 Series for the TA-7C to EA-7L conversion; \$4 million to the RF-4 Series for increased requirements for fatigue kits; \$1 million to the F/A-18 Series for an engine change; \$5.3 million to the H-53 Series for Night Vision Goggles; \$2.2 million to the H-2 Series for cost increases on both the H-2 Block Upgrade and the Emergency Upgrade; \$8.4 million to the S-3 Series for trainer requirements on the Block Upgrade; \$2.4 million net increase to the E-2 Series for the emergent requirement for Outer Wing Panels; \$4 million to the Power Plant Changes program for increased support of the Central Kitting Facility; and \$8.2 million to the Flight Safety program for emergent safety changes to various aircraft.

Offsetting the above were the following decreases: \$2.7 million from the EA-6 Series because of replacing of the A1Q-99 Parts procurement and the Structural Improvement; \$1.1 million each from the F-1 Series, the F-5 Series, and the Trainer Aircraft Series due to deferred requirements and delayed executions; \$4.1 million from the F-14 Series due primarily to the completion of the Weapons Rails Improvement earlier than originally anticipated; \$3.9 million from the H-16 Series resulting from earlier execution of the Block Upgrade; \$3.8 million from the SH-60B Series due to cost savings on the Emergency Upgrade; \$3.3 million from the H-1 Series due largely to rephasing of the AH-1 Detection System Provisions; \$4.7 million from the H-3 Series after assessment and deferring requirements for the VU-3D/E Cockpit and Avionics Update; \$6.0 million from the P-3 Series because of lower than anticipated price of the UHF/VHF Communications Update; \$7.4 million from the EC-130 Series because of cancellation of FY 88 requirements for the AFSATCOM/MILSTAR Terminal Update; \$6 million from Cargo and Transport Aircraft Mods due to miscellaneous savings and rephasings of several changes; and \$4.4 million from the Common ECM program due to reduced cost of AN/AAR-17 hardware.

Aircraft Spares and Repair Parts (-\$15.1 million)

Changes in this budget activity include increases to initial spares (\$19.9 million) primarily for the AH-1W and F-14A aircraft and for training devices. These increases were offset by reductions to the Aviation Outfitting Account (\$35.0 million).

Aircraft Support Equipment and Facilities (-\$70.0 million)

Transfers of funds under Public Law 100-463 totalled \$2.4 million in this budget activity (from Common Ground Equipment). Additionally, DD1415 Reprogramming Actions transferred \$65.5 million from the appropriation (\$15.5 million from Common Ground Equipment and \$50.0 million from Special Support Equipment). Other changes include decreases to Industrial Facilities of \$2.1 million and Common Ground Equipment of \$12.4 million due to Calibration Equipment realignments and repricing, reduced Automatic Test Equipment requirements; and increases to War Consumables (\$6.0 million) for additional improved Multiple Ejector Rack and Triple Ejector Rack requirements and to Other Production Charges (\$6.4 million) primarily for increased CPE production and technical support.

Reimbursable Program (+\$2.0 million)

The increase in the reimbursable program reflects actual orders received of \$2.0 million more than originally budgeted.

COMPARISON OF FY 1988 FINANCING AS REFLECTED IN FY 1988/89
AMENDED PRESIDENT'S BUDGET WITH FY 1988 FINANCING AS SHOWN IN FY 1990/91 PRESIDENT'S BUDGET

	Financing per FY 1988/89 Amended Budget	Financing per FY 1990/91 Budget	Increase (+) or Decrease (-)
Program Requirements (Total).....	\$ 9,419,844	\$ 9,373,670	-\$ 46,171
Program Requirements (Service account).....	(9,418,299)	(9,370,099)	(- 48,200)
Program Requirements (Reimbursable).....	(1,545)	(3,571)	(+ 2,026)
Less:			
Anticipated Reimbursements.....	1,545	3,571	- 2,026
Reprogramming from prior year budget plans.....			
Unobligated balance available from prior year to finance new budget plans.....			
Transferred from other accounts.....			
Add:			
Unobligated balance available to finance subsequent year budget plans.....		86,700	+ 86,700
Transferred to other accounts.....	104,000		- 104,000
Appropriation.....	\$ 9,522,299	\$ 9,456,799	-\$ 65,500

EXPLANATION OF CHANGES IN FINANCING

The decrease in financing of \$65,500,000 reflects DD1415 Reprogramming Actions of \$50,000,000 for CHAMPUS and \$15,500,000 for the INF Treaty. This amount is the net result of withdrawal of a DD1415 Reprogramming Action of \$104,000,000 proposed a year ago and \$86,700,000 of unobligated balances carried forward in anticipation of transfer from the appropriation for other reprogramming actions and reductions pursuant to P.L. 100-463. Another change in financing is an increase of \$2,026,000 due to higher actual reimbursements than originally anticipated.

Status of Aircraft Modification Programs
 FY 1989 Modification of Aircraft
 Programs as of 30 November 1988
 (Thousands of Dollars)

Program	Appropriated	Reprogramming	Total Program Value	Total Obligations	Total Expenditures
A-3 Series	822	(3)	819	0	0
A-4 Series	2,294	(13)	2,281	0	0
A-6 Series	178,346	(56,762)	121,584	0	0
EA-6 Series	36,784	(154)	36,630	0	0
AV-8 Series	942	(4)	938	0	0
ES-3 Series	155,275	(767)	154,508	0	0
F-14 Series	33,174	2,147	35,321	899	0
F-5 Series	62	0	62	0	0
OV-10 Series	32,825	(176)	32,649	0	0
F-18 Series	94	0	94	0	0
H-46 Series	21,064	(111)	20,953	0	0
H-53 Series	14,388	(60)	14,328	0	0
SH-60 Series	4,501	(19)	4,482	0	0
VH-60 Series	1,187	(5)	1,182	0	0
H-1 Series	28,961	40	28,824	0	0
H-2 Series	5,679	(61)	5,618	0	0
H-3 Series	31,609	(172)	31,437	0	0
EP-3 Series	26,498	(157)	26,341	527	0
P-3 Series	131,932	(465)	131,467	1,392	0
S-3 Series	135,567	(957)	134,610	300	0
E-2 Series	40,675	(171)	40,504	0	0
Trainer A/C	532	(29)	503	0	0
Cargo & Transport A/C	1,709	(15)	1,694	0	0
EC-130 Series	12,735	(53)	12,682	0	0
C/MC-130 Series	2,095	(9)	2,086	0	0
FEWSG	1,817	(8)	1,809	0	0
Various	1,025	(4)	1,021	0	0
Power Plant Changes	2,022	(8)	2,014	0	0
Misc. Safety Changes	97	0	97	0	0
Common ECM Equipment	85,335	(410)	84,925	16,215	0
Common Avionics Changes	447	(2)	445	0	0
TOTAL B. A. 5	990,493	(158,585)	831,908	19,393	0

Status of Aircraft Modification Programs
 FY 1988 Modification of Aircraft
 Programs as of 30 November 1988
 (Thousands of Dollars)

Program	Appropriated	Reprogrammed	Total Program Value	Total Obligations	Total Expenditures
A-3 Series	969	97	1,056	921	181
A-4 Series	6,149	(17)	6,132	5,841	0
A-6 Series	219,478	0	219,478	188,049	7,603
EA-6 Series	21,274	(3,563)	17,711	8,161	742
A-7 Series	97	2,500	2,597	2,597	9
AV-8 Series	97	142)	55	55	0
F-4 Series	97	(97)	0	0	0
MF-4 Series	97	356	453	356	0
F-14 Series	83,334	(5,401)	77,933	73,417	26,848
F-5 Series	97	(50)	47	3	0
OV-10 Series	1,974	(35)	1,939	1,435	233
F-16B Series	5,000	(5,000)	0	0	0
F-16 Series	1,995	105	2,100	1,828	0
H-46 Series	29,801	(3,925)	25,876	21,658	1
H-53 Series	22,737	3,300	26,037	11,757	321
SH-60 Series	14,058	(3,838)	10,222	5,345	983
H-1 Series	6,826	(248)	6,578	1,530	135
H-2 Series	55,000	2,174	57,174	41,175	7,008
H-3 Series	26,229	(4,735)	21,494	16,407	2,392
EP-3 Series	47,003	(400)	46,603	39,066	17,579
P-3 Series	136,865	3,900	140,765	130,834	10,326
S-3 Series	74,772	3,100	77,872	64,700	7,470
ES-3	80,000	0	80,000	73,855	14,693
E-2 Series	39,639	1,200	40,839	40,570	249
Trainer A/C	1,635	(83)	1,552	1,089	153
EC-130 Series	7,367	(7,367)	0	0	0
FEMSG	4,550	0	4,550	1,309	88
Cargo & Transport A/C	3,380	0	3,380	3,217	310
Various	2,163	(615)	1,548	869	10
Power Plant Changes	1,004	(18)	986	912	44
Misc. Safety Changes	3,163	450	3,613	1,572	554
Common ECM Equipment	823	8,245	9,068	7,002	209
Common Avionics Changes	16,708	(375)	16,333	14,035	1,328
	765	0	765	729	33
TOTAL B. A. 5	915,146	(10,390)	904,756	760,294	99,592

Status of Aircraft Modification Programs
 FY 1987 Modification of Aircraft
 Programs as of 30 November 1988
 (Thousands of Dollars)

Program	Appropriated 1/	Reprogramming	Total Program Value	Total Obligations	Total Expenditures
A-3 Series	1,470	3,129	4,599	4,598	3,466
A-4 Series	14,569	(2,267)	12,302	12,289	990
A-6 Series	373,200	(2,519)	370,681	369,525	137,001
EA-6 Series	38,578	(237)	38,341	35,989	8,680
A-7 Series	908	(793)	115	115	97
AV-8 Series	1,459	(171)	1,288	491	49
F-4 Series	4,779	(4,647)	132	131	79
RF-4 Series	1,365	490	1,855	1,817	504
F-14 Series	183,454	(12,452)	171,002	170,685	126,453
F-8 Series	93	(93)	0	0	0
F-5 Series	954	(941)	13	12	0
OV-10 Series	57,400	2,730	60,130	50,600	3,440
F-16 Series	5,745	(1,509)	4,236	4,065	1,802
H-46 Series	47,993	(11,066)	36,927	36,252	5,855
H-53 Series	22,176	(8,739)	13,437	13,086	2,943
H-1 Series	44,915	7,046	51,961	43,106	6,586
H-2 Series	35,736	9,922	45,658	45,501	12,045
H-3 Series	37,773	(8,390)	29,383	28,956	11,632
EP-3 Series	46,553	(1,834)	44,719	44,183	21,329
F-3 Series	37,568	(9,923)	27,645	26,683	11,440
S-3 Series	200,099	(8,101)	191,998	182,979	51,420
E-2 Series	40,508	9,166	49,674	47,843	2,115
SH-60 Series	3,275	7,080	10,355	6,312	2,784
Cargo & Transport A/C	4,989	(994)	3,995	3,718	1,454
Trainer A/C	6,606	(2,877)	3,729	3,651	1,453
EC-130 Series	12,891	(11,966)	925	925	857
C/KC-130 Series	6,715	1,558	8,273	7,417	3,237
FWMSG	16,860	4,591	21,451	21,377	8,749
Various	3,708	(2,764)	944	943	404
Power Plant Changes	2,686	1,354	4,040	3,398	493
Misc. Safety Changes	928	4,292	5,220	5,135	1,815
Common ECM Equipment	69,549	2,545	72,094	72,037	3,881
Common Avionics Changes	27,033	(13,099)	13,934	13,366	3,138
360 RADAR	45,000	(12,000)	33,000	32,726	7,968
TOTAL B. A. 5	1,397,535	(63,479)	1,334,056	1,289,909	444,177

1/ Includes distribution of undistributed reductions.