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DEPARTMENT OF THE NAVY
JUSTIFICATION OF ESTIMATES
FY 1991 BUDGET ESTIMATES

AD-A219 525



SUBMITTED TO CONGRESS JANUARY 1990

PROCUREMENT

WEAPONS PROCUREMENT, NAVY

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DEPARTMENT OF THE NAVY
WEAPONS PROCUREMENT, NAVY

JUSTIFICATION OF ESTIMATES FOR FISCAL YEAR 1991

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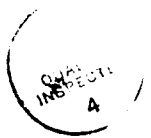
WEAPONS PROCUREMENT, NAVY

For construction, procurement, production, modification, and modernization of missiles, torpedoes, other weapons, other ordnance and ammunition, and related support equipment including spare parts, and accessories therefor; 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 and contractor-owned equipment layaway, [as follows: Ballistic Missile Programs, \$1,443,165,000; Other Missile Programs, \$2,831,852,000; MK-48 ADCAP Torpedo, \$438,642,000; MK-50 Torpedo, \$271,130,000; Sea Lance, \$1,799,000; ASW Targets, \$12,983,000; ASROC, \$9,282,000; Modification of Torpedoes, \$9,653,000; Torpedo Support Programs, \$39,002,000; ASW Range Support, \$24,205,000; Other Weapons, \$168,838,000; Spares and Repair Parts, \$111,341,000; Installation of Modernization Equipment \$30,420,000. In all: \$5,392,312,000.] \$6,161,400,000, to remain available for obligation until September 30, [1992]1993, of which \$8,600,000 shall be available only for the Navy Reserve and the Marine Corps Reserve. (10 U.S.C. 5013,5063, 7201; Department of Defense Appropriations Act, 1990; additional authorizing legislation to be proposed.)

Ballistic missile program
United States
ASW

STATEMENT "A" per Dianne Glaister
 Navy Budget Office/NCEIG-2
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Weapons Procurement, Navy
Program and Financing (in Thousands of dollars) SUMMARY

Identification code	Budget Plan (amounts for PROCUREMENT actions programed)				Obligations	
	1989 actual	1990 est.	1991 est.	1989 actual	1990 est.	1991 est.
Program by activities:						
Direct program:						
00.0101	1,870,263	1,442,660	1,540,001	2,159,924	1,426,654	1,397,763
00.0201	3,192,124	2,837,940	3,224,252	3,102,607	2,841,930	3,373,259
00.0301	844,468	803,621	841,318	973,809	774,073	784,142
00.0401	107,345	157,457	202,146	109,809	135,916	185,167
00.0501	77,308	111,302	275,174	110,180	108,793	227,038
00.0601		78,509				73,777
00.9101	6,091,508	5,352,980	6,161,400	6,456,329	5,287,366	6,041,146
01.0101	162,651	70,000	70,000	122,601	171,178	70,000
10.0001	6,254,159	5,422,980	6,231,400	6,578,930	5,458,544	6,111,146
Financing:						
Offsetting collections from:						
11.0001	-9,686	-30,766	-30,766	-9,150	-30,766	-30,766
13.0001	-131,396	-39,234	-39,234	-122,806	-39,234	-39,234
14.0001	-21,569			-21,611		
17.0001				-6,512		
Recovery of prior year obligations						
21.4002	-71,900	-1,739	-13,900	-1,791,170	-1,424,739	-1,397,175
21.4003	-39,088	8,000		-71,900	-1,739	-13,900
21.4009	93,100	-8,000		93,100	-8,000	
22.4001				1,424,739	1,397,175	1,517,429
24.4002	1,739	13,900		1,739	13,900	
24.4003	9,888			9,888		
25.0001						
39.0001	6,085,247	5,365,141	6,147,500	6,085,247	5,365,141	6,147,500
Budget authority:						
40.0001	6,154,032	5,392,312	6,161,400	6,154,032	5,392,312	6,161,400
40.0004	-5,062			-5,062		
40.0005		-5,932			-5,932	
41.0001	-63,723	-42,500	-13,900	-63,723	-42,500	-13,900
41.2201		-1,739			-1,739	
42.0001		23,000			23,000	
43.0001	6,085,247	5,365,141	6,147,500	6,085,247	5,365,141	6,147,500
Appropriation (adjusted)						

Weapons Procurement, Navy
Program and Financing (in Thousands of dollars) SUMMARY

Identification code	17-1507-0-1-051	1989 actual	1990 est.	1991 est.
Relation of obligations to outlays:				
71.0001	Obligations incurred, net	6,425,363	5,388,544	6,041,146
72.4001	Obligated balance, start of year	8,670,165	9,510,387	9,426,831
74.4001	Obligated balance, end of year	-9,510,387	-9,426,831	-9,929,977
77.0001	Adjustments in expired accounts (net)	-22,001		
78.0001	Adjustments in unexpired accounts	-6,512		
90.0001	Outlays	5,556,629	5,472,100	5,538,000

Weapons Procurement, Navy
Object Classification (in Thousands of dollars) SUMMARY

Identification code	17-1507-0-1-051	1989 actual	1990 est.	1991 est.
Direct obligations:				
Other services:				
125.003	Contracts	164,556	177,006	190,120
126.001	Supplies and materials	411,290	396,678	457,821
131.001	Equipment	5,880,483	4,713,682	5,393,205
199.001	Total Direct obligations	6,456,329	5,287,366	6,041,146
Reimbursable obligations:				
226.001	Supplies and materials	122,601	171,178	69,999
231.001	Equipment	122,601	171,178	70,000
299.001	Total Reimbursable obligations	245,202	342,356	140,000
999.901	Total obligations	6,578,930	5,458,544	6,111,146

Weapons Procurement, Navy
Program and Financing (in Thousands of dollars) FISCAL YEAR 1987

Identification code	17-1507-0-1-051	Budget Plan (amounts for PROCUREMENT actions programed)		Obligations		
		1989 actual	1990 est.		1989 actual	1990 est.
Program by activities:						
Direct program:						
00.0101					1,973	
					130,341	
00.0201					138,048	
00.0301					7,412	
00.0401					8,910	
00.0601						
00.9101					286,684	
01.0101					1,131	
10.0001					287,815	
Financing:						
Offsetting collections from:						
11.0001					-147	
13.0001					7,229	
17.0001					-6,500	
Recovery of prior year obligations						
21.4002					-308,684	
21.4003					-71,900	
21.4009						
22.4001					82,300	
25.0001					9,888	
39.0001						
Budget authority						

Weapons Procurement, Navy
Program and Financing (in Thousands of dollars) FISCAL YEAR 1988

Identification code	17-1507-0-1-051	Budget Plan (amounts for PROCUREMENT actions programed)			Obligations	
		1989 actual	1990 est.	1991 est.	1989 actual	1990 est.
Program by activities:						
Direct program:						
00.0101	Ballistic missiles				569,899	62,229
00.0201	Other missiles				316,722	183,886
00.0301	Torpedoes and related equipment				193,136	18,484
00.0401	Other weapons				18,498	7,305
00.0601	Spares and repair parts				37,587	1,952
00.9101	Total direct program				1,135,842	273,856
01.0101	Reimbursable program				26,960	33,037
10.0001	Total				1,162,802	306,893
Financing:						
Offsetting collections from:						
11.0001	Federal funds(-)				683	
13.0001	Trust funds(-)				1,361	
14.0001	Non-Federal sources(-)				-42	
17.0001	Recovery of prior year obligations				-12	
21.4002	Unobligated balance available, start of year:					
21.4009	For completion of prior year budget plans					
22.4001	Reprogramming from/to prior year budget plan					
	Unobligated balance transferred to other acc					
	Unobligated balance available, end of year:					
24.4002	For completion of prior year budget plans				-1,482,486	-306,893
39.0001	Budget authority				10,800	
					10,800	
					306,893	

Weapons Procurement, Navy
Program and Financing (in Thousands of dollars) FISCAL YEAR 1989

Identification code	17-1507-0-1-051	Budget Plan (amounts for PROCUREMENT actions programed)		Obligations	
		1989 actual	1991 est.	1989 actual	1991 est.
Program by activities:					
Direct program:					
00.0101	Ballistic missiles	1,870,263		1,588,052	199,077
00.0201	Other missiles	3,192,124		2,655,544	375,976
00.0301	Torpedoes and related equipment	844,468		642,625	147,007
00.0401	Other weapons	107,345		83,899	9,491
00.0601	Spares and repair parts	77,308		63,683	10,575
00.9101	Total direct program	6,091,508		5,033,803	745,126
01.0101	Reimbursable program	162,651		94,510	68,141
10.0001	Total	6,254,159		5,128,313	813,267
Financing:					
Offsetting collections from:					
11.0001	Federal funds(-)	-9,686		-9,686	
13.0001	Trust funds(-)	-131,396		-131,396	
14.0001	Non-Federal sources(-)	-21,569		-21,569	
21.4002	Unobligated balance available, start of year:				
21.4003	For completion of prior year budget plans		-1,739		-1,117,846
21.4009	Available to finance new budget plans	-8,000	8,000		-1,739
22.4001	Reprogramming from/tu prior year budget pla		-8,000		-8,000
24.4002	Unobligated balance transferred from other a				
24.4003	Unobligated balance available, end of year:				
	For completion of prior year budget plans	1,739		1,117,846	312,579
	Available to finance subsequent year budget			1,739	
39.0001	Budget authority	6,085,247	-1,739	6,085,247	-1,739
Budget authority:					
40.0001	Appropriation	6,154,032		6,154,032	
40.0004	Reduction pursuant to P.L. 100-463	-5,062		-5,062	
41.0001	Transferred to other accounts(-)	-63,723		-63,723	
41.2201	Transferred to other accounts (unob bals)		-1,739		-1,739
43.0001	Appropriation (adjusted)	6,085,247	-1,739	6,085,247	-1,739

Weapons Procurement, Navy
Program and Financing (in Thousands of dollars) FISCAL YEAR 1990

Identification code	17-1507-0-1-051	Budget Plan (amounts for PROCUREMENT actions programmed)			Obligations	
		1989 actual	1990 est.	1991 est.	1989 actual	1990 est.
Program by activities:						
Direct program:						
00.0101			1,442,660		1,165,348	143,673
			2,837,940		2,279,068	558,852
00.0201			803,621		608,582	86,229
00.0301			157,457		119,120	16,773
00.0401			111,302		96,266	7,920
00.0601						
00.9101			5,352,980		4,268,384	813,447
01.0101			70,000		70,000	
10.0001			5,422,980		4,338,384	813,447
Financing:						
Offsetting collections from:						
11.0001			-30,766		-30,766	
13.0001			-39,234		-39,234	
21.4002				-13,900		-1,084,596
21.4003						-13,900
24.4002			13,900		1,084,596	271,149
24.4003					13,900	
39.0001			5,366,880	-13,900	5,366,880	-13,900
Budget authority:						
Budget authority:						
40.0001			5,392,312		5,392,312	
40.0005			-5,932		-5,932	
41.0001			-42,500		-42,500	
41.2201				-13,900		-13,900
42.0001			23,000		23,000	
43.0001			5,366,880	-13,900	5,366,880	-13,900

Weapons Procurement, Navy
 Program and Financing (in Thousands of dollars) FISCAL YEAR 1991

Identification code	Budget Plan (amounts for PROCUREMENT actions programed)			Obligations	
	1989 actual	1990 est.	1991 est.	1989 actual	1991 est.
Program by activities:					
Direct program:					
00.0101			1,540,001		1,170,956
00.0201			3,224,252		2,656,803
00.0301			841,318		643,077
00.0401			202,146		154,439
00.0501			275,174		227,038
00.0601			78,509		62,807
00.9101			6,161,400		4,915,120
01.0101			70,000		70,000
10.0001			6,231,400		4,985,120
Financing:					
Offsetting collections from:					
11.0001			-30,766		-30,766
13.0001			-39,234		-39,234
24.4002					1,246,280
40.0001			6,161,400		6,161,400
Budget authority (Appropriation)					

Summary of Requirements
(In Thousands of Dollars)

	<u>FY 1989 Estimate</u>	<u>FY 1990 Estimate</u>	<u>FY 1991 Estimate</u>
Ballistic Missiles	1,870,263	1,442,660	1,540,001
Other Missiles	3,192,124	2,837,940	3,224,252
Torpedoes and Related Equipment	844,468	803,621	841,318
Other Weapons	107,345	157,457	202,146
Other Ordnance	-	-	275,174
Spares and Repair Parts	77,308	111,302	78,509
<hr/>			
TOTAL DIRECT PROGRAM	6,091,508	5,352,980	6,161,400
Reimbursable Program	162,651	70,000	70,000
<hr/>			
TOTAL PROGRAM REQUIREMENTS	6,254,159	5,422,980	6,231,400

Justification of Funds

The following paragraphs provide justification for the FY 1991 request for the Weapons Procurement, Navy (WPN) appropriation. Initial spare parts amounts are included for information under each system or line item but are budgeted separately in the spares and repair parts category of the Budget Activity 6 justification.

BUDGET ACTIVITY 1: BALLISTIC MISSILES

(\$ in Thousands)

FY 1991 Estimate - \$ 1,540,001
FY 1990 Estimate - \$ 1,442,660
FY 1989 Estimate - \$ 1,870,263

Purpose and Scope of Work

Funds budgeted under this activity finance the procurement of fleet ballistic missiles, ancillary checkout and test equipment, missile modifications, and support equipment and facilities required to outfit and support the submarines assigned to the sea-based strategic deterrent forces.

BALLISTIC MISSILES:

(\$ in Thousands)

FY 1991 Estimate - \$ 1,537,597
FY 1990 Estimate - \$ 1,440,330
FY 1989 Estimate - \$ 1,867,676

The FY 1991 request includes continuing procurement support for the Trident I C-4 missile and for the Trident II D-5 missile, including advance procurement requirements, as noted below.

Trident I C-4 Missile

(\$ in thousands)	
FY 1990	FY 1991
Qty	Qty
Amount	Amount
Weapon System Cost	\$ 1,196
Initial Spares	2,985
Procurement Cost	\$ 4,181
	\$ 1,252
	3,006
	\$ 4,258

The Trident mission is to provide an undersea missile system in order to ensure that the U.S. continues to maintain a credible deterrent independent of foreseeable threats in the 1990's and beyond. To accomplish this mission, the Trident I missile was developed to support two separate systems. The Trident I system is comprised of Continental United States based nuclear powered submarines equipped with long range Trident I strategic missiles and associated direct support shore facilities. The Trident I Backfit system provides Trident I missiles for backfit into existing POSEIDON submarines, thereby providing these submarines a greater range of patrol in order to insure their survivability in the event of unforseeable enemy breakthroughs in ASW capabilities.

The FY 1991 Trident I missile request for \$1.2 will provide for procurements essential to the continued support of the C-4 flight test program, including MK-5 guidance and MK-4 reentry system components, which will continue throughout the operational life of the weapon system.

Trident II D-5 Missile

(\$ in thousands)	
FY 1990	FY 1991
Qty	Qty
Amount	Amount
Procurement	42
Advance Procurement	\$1,223,078
Initial Spares	216,056
Procurement Cost	1,546
	\$1,440,680
	52
	\$1,343,780
	192,565
	1,595
	\$1,537,940

Trident II D-5 Missile

The Trident II missile will be carried on Trident Fleet Ballistic Missile submarines, ensuring that the United States will continue to maintain a highly survivable strategic deterrent for the 1990's and beyond. Deployment of the Trident II missile will (1) enhance Fleet Ballistic Missile submarine survivability by increasing sea launched ballistic missile range at full payload to exploit the total patrol area available to the Trident submarines, (2) minimize total weapon system costs by increasing sea launched ballistic missile payload to the level permitted by the size of the

Trident submarine launch tube, thereby allowing mission capability to be achieved with a lesser number of submarines, (3) balance the Triad by adding efficient hard target kill capability to the sea launched ballistic missile, and (4) enhance essential equivalence with the Soviets by increasing our warhead inventory, throw weight, and accuracy in the presence of increasing Soviet capabilities and force levels.

Funding in this line is required to support the procurement of an all new Trident II missile, initial production of which commenced in FY 1987 and to which the following key program milestones apply:

- o Equipment procurements in FY 1986 through FY 1991 based on lead-time away requirements
- o SWFLANT installation, test, checkout and equipment/facility integration began in FY 1987
- o Began PEM missile processing at Strategic Weapons Facility, Atlantic (SWFLANT) - July 1988
- o First Performance Evaluation Missile (PEM) flight test - March 1989
- o Trident II missile Initial Operational Capability (IOC) - March 1990

The FY 1990 funding of \$1,439.1 million supports production of an additional 42 Trident II missiles; production of associated guidance and flight test instrumentation systems; procurement of MK-4 and MK-5 reentry systems; and planning, activation and initial equipment outfitting required to establish a Trident II missile processing capability at the Strategic Weapons Facility, Pacific (SWFPAC). The FY 1991 funding request of \$1,536.3 million will support production of an additional 52 Trident II missiles; production of associated guidance and flight test instrumentation systems; procurement of MK-4 and MK-5 reentry systems; and support required to maintain the missile processing capability at SWFPAC.

Funding in both years includes reduced prices for the airframes, rocket motors and guidance systems based on participation by the United Kingdom (U.K.).

Advance Procurement

The FY 1990 request of \$216.1 million and FY 1991 request of \$192.6 million will provide for procurement of both long lead and production continuity components, subassemblies and raw materials required to support the manufacture in future years of TRIDENT II missiles, MK-6 guidance systems, and special purpose instrumentation used in the TRIDENT II flight test program. Total advance procurement requirements comprise two major subsets of commodity acquisition: traditional, or long

lead, advance procurement, which includes those items having longer manufacturing lead times than the using D-5 end items; and production continuity advance procurement, which entails the procurement of certain critical components earlier than lead-time alone would dictate in order to ensure their continuous production. These latter production continuity procurements encompass a broad range of components and materials which must be produced at minimum, uninterrupted rates on dedicated production lines, as well as life-of-type or one-time quantity buys of items required to support the total planned program. The quality and homogeneity obtained by these means are essential to assure the consistent performance reliability of the missiles to be procured for the Trident II program.

SUPPORT EQUIPMENT AND FACILITIES:

(\$ in Thousands)

FY 1991 Estimate - \$ 2,404
 FY 1990 Estimate - \$ 2,330
 FY 1989 Estimate - \$ 2,587

The FY 1991 request includes continuing procurement support for capital maintenance projects at government-owned missile industrial facilities.

Missile Industrial Facilities

	(\$ in thousands)	
	FY 1990	FY 1991
Procurement Cost	Qty Amount	Qty Amount
	\$ 2,330	\$ 2,404

Funding for missile industrial facilities provides for capital maintenance projects at Navy-owned Naval Industrial Reserve Ordnance Plants (NIROPs) at Sunnyvale and Santa Cruz, California, and Bacchus, Utah, in support of the Fleet Ballistic Missile program.

Projects planned in FY 1991 include additions and modifications to, and rehabilitation of, non-serviceable equipment and real property. The projects include: converting street lights to low pressure sodium, refurbishing fume ducts and vent fans, refurbishing fire sprinkler systems, and repairing and replacing perimeter fencing.

ACTIVITY 2: OTHER MISSILES

(\$ in Thousands)

FY 1991 Estimate - \$ 3,224,252
FY 1990 Estimate - \$ 2,837,940
FY 1989 Estimate - \$ 3,192,124

Purpose and Scope of Work

Funds budgeted under this activity finance the procurement and modification of strategic and tactical guided missiles, and aerial targets. In addition, funds provide for weapons industrial facilities and for the support of satellites, launches, and associated equipment for the Fleet Satellite Communications program.

Guided missiles are procured for operational inventory requirements to meet combat sustainability objectives, combat usage, quality assurance testing, and training purposes. Aerial targets are required to support training programs and to permit evaluation of missile performance. Procurement funds provide for: (1) the components that comprise the end-items, such as guidance, control, motors, warheads, and fuzes; (2) effort and hardware associated with the production and assembly of these items, such as production engineering, production proofing, tools and test equipment; and (3) special handling and test equipment, training materials and other specialized items required for operational fleet support of the item.

STRATEGIC & TACTICAL MISSILES:

(\$ in Thousands)

FY 1991 Estimate - \$ 2,752,813
FY 1990 Estimate - \$ 2,309,570
FY 1989 Estimate - \$ 2,657,297

Funds budgeted under this category finance the procurement of strategic and tactical air-, surface-, and submarine-launched missiles, other missile support, aerial targets, and drones and decoys.

Tomahawk Cruise Missile

	(\$ in Thousands)	
	FY 1990	FY 1991
	Qty	Qty
Procurement	400	600
Initial Spares		
Procurement Cost	\$571,960	\$808,733
	33,724	28,086
	\$605,684	\$836,819

The Tomahawk Cruise Missile provides four variants--nuclear, anti-ship, unitary warhead and conventional dispenser land attack--capable against targets at sea and on land. Tomahawk is capable of being launched from aircraft, ships, submarines, and ground launchers. The cruise missile can be fitted with either a conventional high explosive or nuclear warhead, and is propelled in flight by a small turbofan engine. The FY 1990 program of \$572.0 million procures 400 land attack missiles. The FY 1991 request of \$808.7 million will procure an additional 600 missiles. The Tomahawk missile is designed to be deployed in submarines and surface ships in a variety of launchers. This missile is competitively procured from General Dynamics and McDonnell Douglas.

The FY 1990 program and FY 1991 request are priced assuming the availability of Ground Launched Cruise Missile (GLCM) assets from the Air Force inventory which have been declared excess material not subject to the Intermediate Range Nuclear Forces (INF) Reduction Treaty. This has provided substantial cost savings.

AMRAAM Missile

	(\$ in Thousands)	
	FY 1990	FY 1991
	Qty	Qty
Procurement	85	550
Initial Spares		
Procurement Cost	\$107,885	\$421,916
	763	1,013
	\$108,648	\$422,929

The AMRAAM (Advanced Medium Range Air-to-Air Missile) is the successor to the Sparrow missile and is being jointly procured by the Air Force and the Navy. The Air Force serves as executive service. The missile will provide an all-weather, all-aspect, beyond-visual-range, air-to-air missile compatible with the F-14, F-15, F-16, F/A-18, and A-6E Upgrade aircraft. AMRAAM will enhance Navy war-fighting capability in the 1990's and beyond through significant improvements in operational utility and combat effectiveness. The FY 1990 program will provide for AMRAAM required for missile systems integration with the F-14D aircraft, with the balance of the procurement going into the Fleet inventory. All FY 1991 requested quantities are for Fleet inventory loadout.

Phoenix Missile

	(\$ in Thousands)	
	FY 1990	FY 1991
Procurement	Qty <u>420</u>	Qty <u> </u>
Initial Spares	Amount <u>\$323,344</u>	Amount <u> </u>
Procurement Cost	2,230	\$0
	420	\$0
	\$325,574	\$0

The Phoenix missile system is comprised of a long-range airborne weapon control system (AN/AVG-9) with multiple target-handling capabilities and long-range missiles utilizing semi-active mid-course and active terminal guidance. Its mission is to kill multiple air targets with conventional warheads. Six such missiles can be carried aboard the F-14 aircraft. Near simultaneous launch is possible against six targets in an all-weather and heavy-jamming environment. The improved Phoenix missile, the AIM-54C, provides improved lethality, stream raid discrimination, electronic counter countermeasure (ECCM) performance, high and low altitude performance, and improved reliability and maintainability. As a result of these improvements, the missile has greater capability to counter the projected threat aircraft and cruise missile threats. The Phoenix does not replace any other missile. Competitive procurement began in FY 1989 between Hughes Aircraft and Raytheon Company. The FY 1990 program will be the final procurement of the Phoenix missiles for the Navy.

Harpoon Missile

	(\$ in Thousands)	
	FY 1990	FY 1991
Procurement	Qty <u>190</u>	Qty <u>215</u>
Initial Spares	Amount <u>\$212,091</u>	Amount <u>\$241,086</u>
Procurement Cost	5,795	3,232
	190	215
	\$217,886	\$244,318

The Harpoon is an air-, surface-, and submarine-launched cruise missile which provides an attack capability against targets at sea and on land. It uses an active or passive seeker, radar altimeter, and attitude reference assembly in conjunction with a small digital computer for missile guidance and control. It is propelled by a turbojet sustainer engine augmented by a solid booster for ship and submarine launch. The missile has a standard 13.5 inch diameter with a weight of 1,100 pounds for air launch and 1,500 pounds for ship launch. It is compatible with the Tartar, Terrier,

and ASROC ship launchers as well as with aircraft and submarine launch systems. The missile is planned for use aboard the FF-1052, DDG and DD-963, CG, CGN, PHM, BB, and FFG class ships, the P-3, S-3, A-6, F/A-18, and B-52G aircraft and nuclear attack submarines. The FY 1990 program provides for 190 Harpoon SLAM missiles. The FY 1991 request provides for 215 Harpoon missiles. The FY 1990 and FY 1991 air-launched anti-ship missile procurement quantities, in conjunction with Foreign Military Sales and retrofit program, support economic production rates. These weapons are requested to ensure adequate availability of weapons as new platforms are made operational, and to offset missile expenditures due to training and test requirements.

HARM Missile

	FY 1990		FY 1991	
	Qty	Amount	Qty	Amount
Procurement	1,162	\$291,770	1,320	\$339,382
Initial Spares		3,691		1,567
Procurement Cost	1,162	\$295,461	1,320	\$340,949

The High Speed Anti-Radiation Missile (HARM) is a joint Navy and Air Force air-to-surface missile designed to suppress or destroy land- and sea-based radars supporting enemy air defense systems. HARM is a design evolution of anti-radiation missiles (ARM) such as Shrike and Standard ARM, and is replacing both missiles in the Navy inventory. HARM characteristics include: high speed, large-launch envelope, wide-band-frequency coverage in a single head, high sensitivity and compatibility with various naval aircraft. The HARM has evolved from known and predicted deficiencies in Shrike and Standard ARM missiles in defeating current and future enemy air defense systems. Initial procurement commenced in FY 1981. The FY 1990 program and FY 1991 request continues procurement of this antiradiation missile to fill the Navy requirement. In addition, the Air Force will be procuring 326 missiles in FY 1990 and 120 in FY 1991, providing for a more economic production rate.

Initial procurement of the Low Cost Seeker, developed by the Naval Weapons Center, China Lake, and produced by Ford Aerospace, was initially appropriated in FY 1990 and is continued in FY 1991. Procurement begins in FY 1991 for the Block IV seeker units, produced by the prime contractor, Texas Instruments.

Standard Missiles

	(\$ in Thousands)	
	FY 1990	FY 1991
	Qty	Qty
Procurement	940	900
Initial Spares	\$390,214	\$607,762
Procurement Cost	4,435	5,982
	940	900
	\$394,649	\$613,744

The Standard Missile is a solid-propellant, tail-controlled, surface-to-air and surface-to-surface missile with mid-course and semi-active homing guidance, home-on jamming capability, and proximity and contact fusing. The SM-2 Medium Range (MR) Missile will be deployed on Tartar New Threat Upgrade ships, Aegis CG 47/51 Cruisers, and Aegis DDG-51 Destroyers. The SM-2 Extended Range (ER) Missile will be deployed on Terrier CG and New Threat Upgrade ships. The FY 1990 program provides for procurement of 940 missiles for Aegis and Terrier ships, completing Terrier requirements. The FY 1991 request provides for procurement of 600 SM-2 MR's for Aegis ships and the initial buy of 300 Aegis Extended Range missiles. The FY 1990 program initiated the procurement of the new MK-45 Mod 9 Target Detecting Device and the MK-125 warhead. The FY 1991 request initiates the MK-72 Aegis booster required for the extended range missile.

Rolling Airframe Missile

	(\$ in Thousands)	
	FY 1990	FY 1991
	Qty	Qty
Procurement	580	405
Initial Spares	\$90,191	\$70,383
Procurement Cost	886	680
	580	405
	\$91,077	\$71,063

The Rolling Airframe Missile (RAM) is a high-power, low-cost, lightweight, complementary self-defense system to engage anti-ship capable missiles. It will be fired from two launching systems: the NATO Sea Sparrow Surface Missile System (NSSMS), of which two cells of the NSSMS system will be modified to hold five (5) RAM rounds each; and a RAM stand-alone Command and Launch System that holds 21 missiles. Components of the missile will be procured competitively between General Dynamics and RAM Systems, a German contractor. The FY 1990 budget provides for the competitive procurement of 580 missiles and associated support costs, while the FY 1991 request provides for the procurement of 405 missiles.

Hellfire Missile

	(\$ in Thousands)	
	FY 1990	FY 1991
Procurement	Qty 1,098 Amount \$ 50,307	Qty 1,198 Amount \$ 42,076
Initial Spares	1,593	1,040
Procurement Cost	1,098 \$ 51,900	1,198 \$ 43,116

Hellfire, developed by the Army and currently competed by two producers, provides the Marine Corps with an extremely effective anti-armor weapon for use on AH-1T/J helicopters. The FY 1991 request will competitively procure 1,198 Hellfire missiles under an economic winner-take-all strategy. These missiles are required to build up the inventory to satisfy Marine Corps requirements.

Penguin Missile

	(\$ in Thousands)	
	FY 1990	FY 1991
Procurement	Qty 64 Amount \$ 62,612	Qty 65 Amount \$ 44,150
Advance Procurement	3,718	
Initial Spares	985	3,601
Procurement Cost	64 \$ 67,315	65 \$ 47,751

The Penguin missile is an autonomous short-range, air-to-surface weapon which is controlled by an infrared countermeasures-resistant seeker that is automatically activated when the missile reaches a preset range from the predicted position of the target. The missile is planned for use on the LAMPS MK III SH-60B helicopter as an anti-ship weapon. The MK 2 Mod 7 Penguin missile is a modification of the surface-launched MK 2 Mod 3 missile. The FY 1990 budget provides for the first procurement of 64 missiles and advance procurement to support FY 1992. The FY 1991 request provides for the procurement of 65 Penguin missiles.

Maverick Missiles

	FY 1990		FY 1991	
	Qty	Amount	Qty	Amount
Procurement	560	\$ 66,428		\$ 5,794
Initial Spares		1,447		6
Procurement Cost	560	\$ 67,875		\$ 5,800

The Maverick missiles program consists of the two variants employed with Navy and Marine Corps aircraft: the Imaging Infrared (IIR) Maverick (AGM-65F) and the Laser Maverick (AGM-65E). The IIR Maverick (AGM-65F) missile has been developed as a joint service program with the Air Force as executive service. The Navy version of the weapon utilizes an IIR guidance unit optimized for ship tracking, a 300-pound penetrating blast/fragment warhead with cockpit-selectable fusing, and a reduced-smoke rocket motor. The IIR Maverick missile will provide the Navy and Marine Corps with the capability to attack land and sea targets from a more survivable position below and outside of close-in air defense systems. The FY 1990 program is the final year of the IIR Maverick procurement for both the Navy and Air Force. The FY 1991 request provides for production support necessary to sustain the final IIR Maverick missile deliveries. FY 1988 was the last year for procurement of Laser Maverick procurement.

MODIFICATION OF MISSILES

(\$ in Thousands)

FY 1991 Estimate - \$101,330
FY 1990 Estimate - \$ 87,213
FY 1989 Estimate - \$ 90,872

The following paragraphs provide justification for the FY 1991 request for missile modifications.

	(\$ in Thousands)	
	FY 1990	FY 1991
<u>Air-Launched Missiles</u>		
Sidewinder	\$ -	\$ 7,076
Phoenix	-	3,809
Harpoon <u>1/ 2/</u>	12,814	18,263
<u>Surface-Launched Missiles</u>		
Tomahawk <u>2/</u>	3,329	26,726
Sparrow <u>1/</u>	28,937	30,009
Standard <u>Missile</u>	11,713	15,447
<u>Installation of Modernization Equip</u>	30,420	
Total	\$ 87,213	\$101,330

1/ Sparrow and Harpoon can both be air and surface launched.
2/ Harpoon and Tomahawk can both be submarine launched.

The FY 1991 Sidewinder request provides funds required for the initial tooling and special test equipment of the Sidewinder AIM-9R upgrade to existing missiles.

The FY 1991 Phoenix request provides for insensitive munitions improvements to current AIM-54C inventory missiles.

The FY 1991 Harpoon request provides for continued replacement of improved seekers, miscellaneous minor upgrades and the new Improved Harpoon kits (extended range, reattack mode) for current missiles.

The FY 1991 Tomahawk request provides for missile guidance flight set computers and the new MK-111 rocket booster which will provide submarine launched missiles with a greater thrust capacity.

The FY 1990 Installation of Modernization Equipment program provides for the installation of equipment to modernize weapon systems including missiles and other weapons. These installation cost were previously budgeted in the Operations and Maintenance, Navy (O&M,N) account prior to FY 1990. The FY 1991 Installation of Modernization Equipment costs are budgeted as part of their respective FY 1991 missile or weapon program in the missile modification and gun mount modifications programs.

The FY 1991 Sparrow requests provides for the Missile Homing Improvement Program (MHIP) retrofit program (surface launched version only).

The FY 1991 Standard missile request provides for the MK-56 rocket motor and sustainer section modifications, a low altitude and directional ordnance improvement on SM-1 Block VI and SM-2 Block II missile currently in inventory, and terminal homing improvements added to the SM-2 Aegis missile (Standard Missile MHIP).

SUPPORT EQUIPMENT AND FACILITIES:

(\$ in Thousands)

FY 1991 Estimate	-	\$370,109
FY 1990 Estimate	-	\$441,157
FY 1989 Estimate	-	\$443,955

The following paragraphs provide justification for the FY 1991 request for support equipment and facilities. This group includes the Weapons Industrial Facilities, the Defense Meteorological Satellite (completed in FY 1989) program, the Fleet Satellite Communications programs, and the Ordnance Support Equipment program.

Weapons Industrial Facilities

(\$ in Thousands)			
	FY 1990	FY 1991	
Qty	Amount	Qty	Amount
	\$ 16,828		\$ 24,986

Procurement Costs

The FY 1991 request provides industrial facilities, producing missile and other ordnance, with funds for capital maintenance, emergency repairs, fire protection improvements, and energy conservation. These funds provide for nonrecurring capital maintenance at government-owned missile and weapon producing industrial plants as well as emergency repairs and improvements designed to reduce fire and other safety hazards. FY 1991 initiates a major upgrade of the Navy's industrial facilities which support major weapon systems production.

Fleet Satellite Communications

(\$ in Thousands)			
	FY 1990	FY 1991	
Qty	Amount	Qty	Amount
2	\$161,747	3	\$249,599
2	150,949		
2	\$312,696	3	\$249,599

Procurement Advance Procurement Procurement Cost

The Fleet Satellite Communications (FLTSATCOM) system satisfies the Navy's urgent worldwide Ultra High Frequency (UHF) mobile user communication requirements. This includes protected fleet broadcast service to all Navy ships plus a command control with Anti-Submarine Warfare (ASW) platforms, Fleet Ballistic Missile (FBM) submarines, aircraft carriers, cruisers and other selected aircraft, ships and submarines. The system also satisfies the Air Force equatorial satellite communication requirements including presidential airborne command posts, Strategic Air Command and emergency mission support. Beginning in the early 1990's, UHF Follow-On satellites will replace the existing constellation as it reaches the end of its expected operational lifetime.

The FY 1990/91 program provides for the procurement of five satellites (the second through the sixth in the total program), production support, launch services, and non-recurring efforts for the first two EHF packages. The advance procurement funds in FY 1990 provide for the second increment of Advance Economic Order Quantity (AEOQ) components and materials. These funds also procure a life-of-type buy of critical components to support the production of EHF packages commencing in FY 1991. The basic requirement is for nine satellites on orbit. The fixed price prime contract with Hughes Aircraft Company was awarded in FY 1988 for the first satellite. The multiyear option was executed in FY 1989 and includes eight satellites plus an option for one spare.

Ordnance Support Equipment

(\$ in Thousands)			
FY 1990		FY 1991	
<u>Qty</u>	<u>Amount</u>	<u>Qty</u>	<u>Amount</u>
	\$111,633		\$ 95,524

Procurement Costs

Detail justification is classified and is provided separately.

BUDGET ACTIVITY 3: TORPEDOES AND RELATED EQUIPMENT

(\$ in Thousands)

FY 1991 Estimate - \$ 841,318
FY 1990 Estimate - \$ 803,621
FY 1989 Estimate - \$ 844,468

Purpose and Scope of Work

These funds provide for the procurement of anti-submarine and anti-ship weapons such as torpedoes, mines and underwater targets, torpedo and mine modifications, and associated support equipment items related to production, as well as acquisition of other equipment and support necessary to maintain fleet readiness.

TORPEDOES AND TARGETS:

(\$ in Thousands)

FY 1991 Estimate - \$ 725,122
FY 1990 Estimate - \$ 730,793
FY 1989 Estimate - \$ 782,858

The following paragraphs provide justification for the FY 1991 torpedoes, targets and related equipment request.

MK-48 Torpedo Advanced Capability (ADCAP)

	(\$ in Thousands)	
	FY 1990	FY 1991
Procurement	Qty 260	Qty 240
Initial Spares	Amount \$437,773	Amount \$350,291
Procurement Cost	260	240
		Amount 5,353
		\$355,644

The MK-48 ADCAP (Advanced Capability) torpedo was developed as an improvement to the MK-48 torpedo to counter enemy submarine threats through the 1990's. The improvements in the guidance and control systems will significantly improve the MK-48 torpedo's capability. Improvements in the propulsion system will allow the torpedo to go faster, deeper and farther than the current MK-48 torpedo. These improvements will allow the ADCAP torpedo to operate in several adverse environments. The FY 1990 program procures 260 ADCAP torpedoes under a dual source competition. The FY 1991 request provides for procurement of 240 torpedoes on an economic winner-take-all basis. This program also procures exercise sections, production support and ancillary equipment.

MK-50 Advanced Lightweight Torpedo (ALWT)

	(\$ in Thousands)	
	FY 1990	FY 1991
	Qty	Qty
Procurement	200	265
Initial Spares		
Procurement Cost	200	265
	Amount	Amount
	\$270,790	\$328,266
	3,200	5,176
	\$273,990	\$333,442

The MK-50 Advanced Lightweight Torpedo (ALWT) is the successor to the MK-46 lightweight torpedo. The MK-50 is an acoustic homing torpedo, which can be employed from either fixed-wing anti-submarine warfare (ASW) aircraft, ASW helicopters, and surface ships equipped with either torpedo tubes or Vertical Launched ASROC. The FY 1990 program procures 200 torpedoes from two sources. The FY 1991 request for 265 torpedoes maintains the competition between the two sources.

ASW Targets

	(\$ in Thousands)	
	FY 1990	FY 1991
	Qty	Qty
Procurement		
	Amount	Amount
	\$ 12,975	\$ 26,409

The ASW Targets program was established to provide training exercise capability for torpedo firings and ASW detection and tracking. This program procures two types of ASW targets, the heavyweight MK-30 Mobile Target and the lightweight, portable MK-39 Expendable Mobile ASW Training Target (EMATT).

The MK-30 Mobile Target provides air, surface and submarine ASW units with the means to conduct realistic exercise firings on three-dimensional underwater ranges. This target provides the basic training capability to exercise surface ship and submarine sonars, actively and passively fired torpedoes, and aircraft equipped with sonobuoys and Magnetic Anomaly Detection (MAD) gear. FY 1990/91 provides for production support with no new procurements.

The MK-39 EMATT is a small, self-propelled underwater vehicle in continuous operation and whose trajectory is programmable. EMATT is detectable and trackable by passive towed arrays, active and passive sonobuoys, active sonars, the MK-46 torpedo in an active mode, and MAD-equipped aircraft. The FY 1990 program provides for the initial procurement of 1,105 EMATT units as an option to a current development contract. The FY 1991 request for 3,000 units will be competitively procured.

ASROC Component Replacement

(\$ in Thousands)		
	FY 1990	FY 1991
Procurement Cost	Qty	Amount
		Qty
		Amount
		\$ 9,255
		\$ 20,156

The Anti-Submarine-Rocket (ASROC) is a weapon system designed around a range-controlled, unguided rocket missile which carries a torpedo or a depth charge as a payload. ASROC is utilized by most surface combatants to defend against high performance enemy submarines. The FY 1991 request provides for an increase in procurement to initiate a buy out for ASROC components, replacing those expenditures consumed during fleet training exercises. The principal element of cost in this program is the continued procurement of rocket motor and Ignition Separation Assemblies (MK-4 ISA). The ISA's are being procured in a new design which makes them safe from the hazards of accidental detonation caused by shipboard electromagnetic equipment (designated HERO: Hazards of Electromagnetic Radiation to Ordnance). Procurement of the HERO-safe MK-4 ISA is required in order to replenish inventories of the older non-HERO safe MK-3 ISAs depleted by training losses and will eventually replace the entire inventory of the older components.

MODIFICATION OF TORPEDOES AND RELATED EQUIPMENT:

(\$ in Thousands)

FY 1991 Estimate -	\$ 27,836
FY 1990 Estimate -	\$ 9,649
FY 1989 Estimate -	\$ 13,314

The following paragraphs provide justification for the FY 1991 request for torpedo modifications and related equipment.

MK-46 Torpedo Modifications

(\$ in Thousands)		
	FY 1990	FY 1991
Procurement	Qty	Amount
		Qty
		Amount
		\$ 8,678
		\$ 11,740

The MK-46 torpedo is a lightweight torpedo launched from surface vessel torpedo tubes, ASROC, and fixed and rotary wing aircraft. The FY 1991 request for \$11.7 million procures block upgrade modifications, including an anti-tampering mechanism.

Quickstrike Mine

(\$ in Thousands)	
FY 1990	FY 1991
<u>Qty</u>	<u>Qty</u>
<u>Amount</u>	<u>Amount</u>
	\$ 16,096

Procurement

The Quickstrike Mine request in FY 1991 provides for the procurement of the 2,000 pound MK-65 service and non-service mines to include the MK-58 Target Detecting Devices (TDD's) and associated safety and arming devices. Beginning in FY 1991 this program was transferred from the Other Procurement, Navy (OPN) appropriation to more properly align all munitions in the WPN account.

Swimmer Weapon System

(\$ in Thousands)	
FY 1990	FY 1991
<u>Qty</u>	<u>Qty</u>
<u>Amount</u>	<u>Amount</u>
	\$ 971
	38
	\$ 1,009

Procurement
Initial Spares
Procurement Cost

This program procures unique weapons and equipment required by the Navy Special Warfare Groups One and Two (SEAL teams) to carry out beach clearance, underwater and direct action missions. Currently, there are eight SEAL teams deployed within the Fleet. Current equipment includes the MK-32 standoff weapon assembly, consisting of the MK-31 standoff weapon and MK-5 weapon control system. Beginning in FY 1991, this program was transferred to Procurement, Defense Agencies (PDA) to consolidate all Special Operations Forces funding in a centrally managed account.

SUPPORT EQUIPMENT:

(\$ in Thousands)

FY 1991 Estimate - \$ 88,360
FY 1990 Estimate - \$ 63,179
FY 1989 Estimate - \$ 48,296

The following paragraphs provide justification for the FY 1991 request for torpedo support equipment. This group includes the Torpedo Support Equipment, the ASW Range Support, and First Destination Transportation charges programs.

Torpedo Support Equipment

(\$ in Thousands)	
FY 1990	FY 1991
<u>Qty</u>	<u>Qty</u>
<u>Amount</u>	<u>Amount</u>
\$ 38,984	\$ 55,278

Procurement Cost

The program procures components necessary to restore weapons used to conduct fleet training exercises (which involves the actual firing of torpedoes) back to a ready-for-issue warshot status. This request supports combat-ready deployment of anti-submarine warfare forces. The funds requested procure such expended components as batteries, propellant assemblies and various air-launch accessories; equipment and components worn out or lost during repeated service such as exercise heads and fuel tanks; and production support efforts associated with the above procurements. Procurement quantities of these items vary each year and are dependent upon fleet training requirements and the tempo of operations. The FY 1991 request procures material required to support fleet training exercises and operational inventories for the MK-46, MK-48/MK-48 ADCAP torpedoes and exercise turnaround kits for the MK-50 Advanced Lightweight Torpedo.

ASW Range Support

		(\$ in Thousands)	
	FY 1990	FY 1991	
	<u>Qty</u>	<u>Amount</u>	<u>Qty</u> <u>Amount</u>
Procurement		\$ 24,195	\$ 24,382
Initial Spares		248	479
Procurement Cost		\$ 24,443	\$ 24,861

The Anti-Submarine Warfare Range Support program provides for the procurement of range proofing and fleet support equipments required for use on the Navy's underwater ranges and for the fixed costs of on-range proofing services. This includes the procurement of pingers, transponders, MK-30 and MK-27 target exercise components and other related items. This program supports fleet exercises and torpedo firings and provides equipment to maintain ASW readiness.

First Destination Transportation

		(\$ in Thousands)	
	FY 1990	FY 1991	
	<u>Qty</u>	<u>Amount</u>	<u>Qty</u> <u>Amount</u>
Cost			\$ 8,700

The First Destination Transportation line provides for the movement of newly procured equipment and material from the contractor's plant to the initial point of receipt by the government for subsequent shipment to its final destination. Beginning in FY 1991 these funds have been transferred from Operations and Maintenance, Navy to more accurately reflect the full costs of equipment and weapons systems procurements.

BUDGET ACTIVITY 4: OTHER WEAPONS

(\$ in Thousands)

FY 1991 Estimate - \$ 202,146
FY 1990 Estimate - \$ 157,457
FY 1989 Estimate - \$ 107,345

Purpose and Scope of Work

Funds budgeted under this activity finance the procurement of guns and gun mounts for Navy and Coast Guard ships, as well as modifications and support equipment.

GUNS AND GUN MOUNTS:

(\$ in Thousands)

FY 1991 Estimate - \$ 84,709
FY 1990 Estimate - \$ 77,026
FY 1989 Estimate - \$ 38,068

Funds budgeted under this activity finance the procurement of guns and gun mounts for Navy and Coast Guard ships, as well as modifications and support equipment.

MK-15 Close-In-Weapon System (CIWS)

	(\$ in Thousands)	
	FY 1990	FY 1991
Procurement	Qty 18	Qty 17
Initial Spares	Amount \$ 59,868	Amount \$ 61,958
Procurement Cost	690	539
	18	17
	\$ 60,558	\$ 62,497

The MK-15 Close-in-Weapon System (CIWS) Phalanx is a fast reaction, terminal defense against low flying aircraft and anti-ship missiles penetrating other fleet defensive systems. The system is an automatic, self-contained unit consisting of search and track radar, a digital fire control system and a 20mm M61A1 gun which automatically detects, evaluates, tracks, engages, assesses kill and returns to search mode. The system will be installed in over 300 ships, both new construction and retrofit. The FY 1991 request continues procurement of CIWS for retrofit on existing ships.

MK-75 76mm Gun Mount

	(\$ in Thousands)	
	FY 1990	FY 1991
Procurement	Qty	Qty
Initial Spares	Amount	Amount
Procurement Cost	2	\$ 0
		\$ 2,725
		\$ 2,725

The FY 1990 MK-75 76mm gun program provides systems to be used as rotatable pool mounts (RPM's) to support the rework of 25 gun systems during U.S. Coast Guard ship overhauls.

MK-19 40mm Machine Gun

	(\$ in Thousands)	
	FY 1990	FY 1991
Procurement	Qty	Qty
	Amount	Amount
	\$0	\$ 538

The MK-19 Mod 3 40mm machine gun provides a more effective, safe and reliable grenade firing weapon for arming surface ships and small craft. The FY 1991 request procures 25 weapons to replace the Navy's older inventory of 40mm machine guns. New requirements include outfitting the 36-foot Seafox craft, construction battalions and special warfare units.

MK-38 25mm Gun System

	(\$ in Thousands)	
	FY 1990	FY 1991
Procurement	Qty	Qty
Initial Spares	Amount	Amount
Procurement Cost	22	\$ 9,609
		190
		\$ 9,809

The MK-38 25mm gun system is a single barrel, 25mm M242 automatic gun mounted on a manually operated MK-88 deck mount and is the planned replacement weapon for the MK-16 20mm machine gun. The MK-38 system serves as a short range defensive and offensive armament for surface ships and small craft. The FY 1991 request procures 55 systems.

Small Arms and Weapons

(\$ in Thousands)	
FY 1990	FY 1991
<u>Qty</u>	<u>Qty</u>
<u>Amount</u>	<u>Amount</u>
\$ 3,850	\$ 12,604

Procurement

This program procures a wide variety of small arms and weapons, including rifles, 9mm pistols, shotguns, .50 caliber machine guns, and 7.62mm machine guns. These small arms support security training, over 2,600 ship and shore activities, mobile construction battalion units, special warfare units, and crisis response teams throughout the Navy.

Small Arms and Weapons (SOF)

(\$ in Thousands)	
FY 1990	FY 1991
<u>Qty</u>	<u>Qty</u>
<u>Amount</u>	<u>Amount</u>
\$ 1,228	

Procurement

This program procures a wide variety of small arms and weapons, including rifles, 9mm pistols, shotguns, .50 caliber machine guns, and 7.62mm machine guns. These small arms support the Navy's Special Operations Forces (SOF) special warfare units. Beginning in FY 1991 funding has been transferred to Procurement, Defense Agencies to consolidate SOF resources for centralized management.

MODIFICATION OF GUNS AND GUN MOUNTS:

(\$ in Thousands)

FY 1991 Estimate -	\$ 112,174
FY 1990 Estimate -	\$ 76,005
FY 1989 Estimate -	\$ 68,591

Funds budgeted under this activity finance the procurement of gun and gun mount modifications.

MK-15 Close-In-Weapon System (CIWS) Modifications

(\$ in Thousands)	
FY 1990	FY 1991
Qty	Qty
Amount	Amount
\$ 56,457	\$ 81,292

Procurement Cost

The MK-15 Close-in-Weapon System (CIWS) modifications requested in FY 1991 provides for upgrading to the Baseline 2 configuration, and includes increased magazine capacity, search elevation angle, and various other modifications, such as reliability and maintainability improvements. Improvements are backfit into MK-15 CIWS systems procured prior to FY 1985, as well as trainers.

5"/54 Gun Mount Modifications

(\$ in Thousands)	
FY 1990	FY 1991
Qty	Qty
Amount	Amount
\$ 11,033	\$ 17,611
2,675	2,983
\$ 13,708	\$ 20,594

Procurement Cost
Initial Spares
Procurement Cost

This program procures hardware to improve the operability, reliability, maintainability and availability of all in-service 5 inch/54 caliber gun mounts.

3"/50 Gun Mount Modifications

(\$ in Thousands)	
FY 1990	FY 1991
Qty	Qty
Amount	Amount
\$ 276	\$ 885

Procurement Cost

This program procures hardware to improve the operability, reliability, maintainability and availability of all in-service 3 inch/50 caliber gun mounts.

MK-75 76mm Gun Mount Modifications

	(\$ in Thousands)	
	FY 1990	FY 1991
	Qty	Qty
Procurement Cost	Amount	Amount
Initial Spares	\$ 5,810	\$ 9,985
Procurement Cost	263	434
	\$ 6,073	\$ 10,419

This program procures hardware to improve the safety, operability, reliability, maintainability, survivability and shock and vibration capabilities for all in-service MK-75 76mm gun mounts.

Modifications Under \$2 Million

	(\$ in Thousands)	
	FY 1990	FY 1991
	Qty	Qty
Procurement Cost	Amount	Amount
	\$ 2,429	\$ 2,401

This program procures hardware to improve the safety, operability, reliability, maintainability and availability of all in-service 16 inch/.50 caliber and 5 inch/.38 caliber gun mounts.

SUPPORT EQUIPMENT:

	(\$ in Thousands)	
FY 1991 Estimate -	\$	5,263
FY 1990 Estimate -	\$	4,426
FY 1989 Estimate -	\$	686

The following paragraph provides justification for the FY 1991 request for gun support equipment.

Gun Support Equipment

	(\$ in Thousands)	
	FY 1990	FY 1991
	Qty	Qty
Procurement Cost	Amount	Amount
	\$ 4,426	\$ 5,263

This program procures match grade small arms, saluting mounts, and relining equipment for the 16 inch/.50 caliber gun barrels on the U.S.S. Iowa class battleships.

BUDGET ACTIVITY 5: OTHER ORDNANCE

	(\$ in Thousands)
FY 1991 Estimate	\$275,174
FY 1990 Estimate	-
FY 1989 Estimate	-

Purpose and Scope of Work

These funds support procurement of all air-delivered ordnance, ship gun ammunition, and other expendable ordnance required for the Navy forces and Marine Air Wings, except guided missiles. This program has been transferred from the Other Procurement, Navy (OPN) appropriation beginning in FY 1991 to consolidate munitions funding in the Weapons Procurement, Navy appropriation.

AIR LAUNCHED ORDNANCE:

These funds support procurement of all air-delivered ordnance required for the Navy forces and Marine Air Wings.

(\$ in Thousands)

FY 1991 Estimate	- \$122,062
FY 1990 Estimate	- \$ -
FY 1990 Estimate	- \$ -

General Purpose Bombs

	(\$ in Thousands)	
FY 1990	Amount	FY 1991
<u>Qty</u>	<u>Amount</u>	<u>Qty</u>
		<u>Amount</u>
		\$ 48,018

Procurement Cost

These funds will procure various components for the Navy's present MK-80 series general purpose bombs, including fins and fuzes. The FY 1991 request provides for the procurement of 500-pound MK 82 thermally protected (TP) bombs and FMU-139 electronic fuzes.

2.75 Inch Rockets

(\$ in Thousands)			
	FY 1990	FY 1991	
Qty	Amount	Qty	Amount
			\$ 14,644

Procurement Cost

This program consists of the 2.75 Inch rocket system, an air-to-ground weapon consisting of a variety of warheads fired from a seven/nineteen type cylindrical launcher. This rocket system is cleared for use on the following USN and USMC aircraft: A4, A6, A7, F4, F/A-18, AH1, AV-8 and OV10. The FY 1991 request is for procurement of MK-66 rocket motors, M257 flares and product improvement efforts related principally to expanding insensitive munitions capabilities.

Machine Gun Ammunition

(\$ in Thousands)			
	FY 1990	FY 1991	
Qty	Amount	Qty	Amount
			\$ 12,450

Procurement Cost

This program includes procurement of 20mm and 25mm ammunition used with various aircraft (A-7E, F-14, F/A-18, AH-1, and AV-8B) gun systems. The FY 1991 request supports procurement of: improved series 20mm practice gun ammunition, used with various aircraft gun systems for fleet training to maintain pilot proficiency and war reserve; 25mm high explosive incendiary (HEI) ammunition for war reserve requirements for the AV-8B; production/engineering support for ammunition procurements, and associated gaging and integrated logistics support planning. Additionally, funding is required for product improvement efforts to increase the safety and reliability of the 25mm fuze, to satisfy 25mm incentive munitions requirements, to complete work on fragmentation and ricochet problems in 25mm TP ammunition, to incorporate a radiation-safe primer into the improved 20mm ammunition, and to assess the feasibility of using an aluminum cartridge case for the improved 20mm ammunition.

Practice Bombs

(\$ in Thousands)	
FY 1990	FY 1991
<u>Qty</u>	<u>Qty</u>
<u>Amount</u>	<u>Amount</u>
	\$ 38,039

Procurement Cost

This program will procure various practice bombs and components in support of Fleet training requirements. The FY 1991 request includes MK-76 and BDU-48 bombs used for training pilots in the delivery of unretarded MK-80 series bombs and in retarded and lay-down deliveries; practice Rockeye bombs; full-sized MK-80 series inert bombs, including the BDU-45 NTP (MK-80) and the MK-83 Inert NTP; and Laser Guided Training rounds. Additionally, FY 1991 procures CXU-3 and MK-4 signals, which provide smoke markings upon bomb impact; production engineering support, production engineering support, and product improvements including BDU trainer integrated logistics support planning.

BIGEYE Chemical Weapon

(\$ in Thousands)	
FY 1990	FY 1991
<u>Qty</u>	<u>Qty</u>
<u>Amount</u>	<u>Amount</u>
	\$ 8,911

Procurement Cost

The BIGEYE is an air-launched binary chemical bomb. It generates and delivers a lethal, persistent nerve agent created by combining two non-toxic chemicals. BIGEYE will provide enhanced reliability to the existing inventory of aging chemical weapons. The FY 1991 request provides for initial production of the BIGEYE bomb and for production engineering support.

SHIP ORDNANCE:

These funds support procurement of all ship gun ammunition required for the Navy forces, except guided missiles.

(\$ in Thousands)

FY 1991 Estimate -	\$116,612
FY 1990 Estimate -	\$ -
FY 1989 Estimate -	\$ -

Ship Gun Ammunition (P-1 Line Items 63 Through 71)

(\$ in Thousands)

FY 1990		FY 1991	
<u>Qty</u>	<u>Amount</u>	<u>Qty</u>	<u>Amount</u>
			\$116,612

Procurement Cost

The FY 1991 request provides for procurement of various types of Ship Gun Ammunition including 3 inch/50 ammunition (\$.5 million), 5 inch/38 ammunition (\$4.4 million), 5 inch/54 ammunition (\$11.9 million), 16 inch ammunition (\$33 million), 20mm ammunition for the Close-In Weapon-System (CIWS) (\$32.8 million), 76mm ammunition (\$1.1 million), and Other Ship Gun ammunition (\$32.9 million). The primary mission for the 76mm ammunition is used against air targets, but it is also used against surface and shore targets. The 16 inch ammunition is used by battleships against surface and shore targets. The 5 inch ammunition is the most common and is used by nearly all of the Navy's combatant ships. The 20mm ammunition for CIWS is used against low flying aircraft and anti-ship missiles penetrating other fleet defensive systems. Other ship gun ammunition provide for close in defense of ships.

OTHER ORDNANCE:

(\$ in Thousands)

FY 1991 Estimate - \$ 36,500
 FY 1990 Estimate - \$ -
 FY 1989 Estimate - \$ -

Other Ordnance (P-1 Line Items 72 & 73)

(\$ in Thousands)	
FY 1990	FY 1991
<u>Qty</u>	<u>Qty</u>
<u>Amount</u>	<u>Amount</u>
	\$ 36,500

Procurement Cost

The FY 1991 request includes procurement of Small Arms & Landing Party Ammunition, and Pyrotechnics and Demolition Materials. The Small Arms and Landing Party Ammo request (\$33.9 million) provides ammunition in support of active naval vessels, and for active and reserve special warfare forces, including replacement of Non-Combat Expenditure Requirements (NCER), initial allowance for all approved active and reserve forces, and a combat reserve and/or material pipeline of ammunition quantities based on a "Days of Support" analysis. The FY 1991 request for Pyrotechnics and Demolition Material (\$2.6 million) provides pyrotechnics and demolition materials for all active naval vessels, amphibious and mobile construction battalions, harbor clearance units, cargo handling and port groups.

BUDGET ACTIVITY 6: SPARE AND REPAIR PARTS

(\$ in Thousands)

FY 1991 Estimate - \$ 78,509
FY 1990 Estimate - \$ 111,302
FY 1989 Estimate - \$ 77,308

Purpose and Scope of Work

Funds budgeted under this activity finance the procurement of spare and repair parts for Weapons Procurement, Navy (WPN) weapons systems. These spare parts are required to maintain the weapon system prior to the Material Support Date (MSD) after which spares support is provided through the Navy Supply System.

Initial Spares

(\$ in Thousands)	
FY 1990	FY 1991
<u>Qty</u>	<u>Qty</u>
Amount	Amount
\$ 93,965	\$ 69,805

Procurement Cost

These funds provide initial spare and repair parts for missile, torpedo and weapon systems procured in this appropriation. Requirements are determined by detailed provisioning procedures that include a wide range of factors about end item usage, usage rate trends, engineering judgment and repairable item turnaround time.

Replenishment Spares

(\$ in Thousands)	
FY 1990	FY 1991
<u>Qty</u>	<u>Qty</u>
Amount	Amount
\$ 17,337	\$ 8,704

Procurement Cost

These funds provide replenishment spare and repair parts for missile, torpedo and weapon systems procured in this appropriation. Requirements are determined by stratification techniques which include the number of end items in the fleet, repair usage data, Ready-for-Issue (RFI) spares returning from rework/repair programs and equipment lead times.

Comparison of FY 1990 Program Requirements as Reflected
In Amended FY 1990/1991 Budget With FY 1990 Program Requirements as
Shown in FY 1991 Budget

Summary of Requirements (In Thousands of Dollars)

	<u>Total Program Requirements Per Amended FY 1990 Budget</u>	<u>Total Program Requirements Per FY 1991 Budget</u>	<u>Increase (+) or Decrease (-)</u>
Ballistic Missiles	1,818,165	1,442,660	-375,505
Other Missiles	2,783,337	2,837,940	+54,603
Torpedoes and Related Equipment	859,696	803,621	-56,075
Other Weapons	169,361	157,457	-11,904
Spares and Repair Parts	94,441	111,302	+16,861
Subtotal Direct Program	5,725,000	5,352,980	-372,020
Reimbursable Program	158,000	70,000	-88,000
Total Fiscal Year Program	5,883,000	5,422,980	-460,020

Explanation by Budget Activity

1. Ballistic Missiles (\$-375,505)

The net change is the result of Congressional reduction of 21 Trident D-5 missiles (\$-375,000) and a fair share of an undistributed Congressional reduction to contractor travel (\$-505).

Explanation by Budget Activity

2. Other Missiles (\$+54,603)

The net change results from Congressional actions including AMRAAM (\$-21,685), Phoenix (\$-53,000), HARM (\$+13,900), Standard Missiles (\$+79,800), Drones and Decoys (\$+25,000), Weapon Industrial Facilities (\$+4,500), and for the Installation of Modernization Equipment (\$+30,420). Others changes include: reductions for Contractor Assistance Advisory Services (CAAS) (\$-2,919); contractor travel (\$-1,013), transfers supporting Military Personnel, Navy from Drones and Decoys (\$-25,000) and Weapons Industrial Facilities (\$-4,500) and deferrals (HARM (\$-13,900). Additionally, transfer to the Penguin missile program (\$+23,000) to cover revised cost estimates has been reflected.

3. Torpedoes and Related Equipment (\$-56,075)

The net change results from Congressional actions totalling to MK-48 ADCAP (\$-55,000) and the MK-50 ALWT (\$+2,000). Other changes included reductions for contractor travel (\$-283), CAAS (\$-993), and the termination of the Sea Lance program (\$-1,799), which will be transferred to Military Personnel, Marine Corps.

4. Other Weapons (\$-11,904)

The net change results from a Congressional reduction to the MK-19 40MM Machine Gun program (\$-523), as well as reductions to the Small Arms and Weapons (\$-5,700) and Close-In-Weapons System (CIWS) modifications (\$-5,501) applied to finance Military Personnel, Marine Corps. Other changes include reductions for contractor travel (\$-47) and CAAS (\$-133).

5. Spare and Repair Parts (\$+16,861)

The net change results from Congressional actions including an increase for MK-46 Torpedo initial spares (\$+18,000), offset by a reduction for AMRAAM initial spares (\$-1,100). Others changes include a reduction for contractor travel (\$-39).

Comparison of FY 1990 Financing As Reflected
In Amended FY 1990/1991 Budget With FY 1990 Financing As
Shown in FY 1991 Budget

(In Thousands of Dollars)

	Financing Per Amended FY 1990/1991 Budget	Financing Per FY 1991 Budget	Increase (+) or Decrease (-)
Program Requirements (Total)	5,883,000	5,422,980	<u>-460,020</u>
Program Requirements (Service Account)	5,725,000	5,352,980	-372,020
Program Requirements (Reimbursable)	158,000	70,000	-88,000
Less:			
Anticipated Reimbursements	158,000	70,000	-88,000
Plus:			
Unobligated balance available, end of year available to finance subsequent year budgets		13,900	+13,900
Budget Authority:			
Appropriation	5,725,000	5,392,312	-332,688
Reduction pursuant to P.L. 101-165		-5,932	-5,932
Transferred to other accounts		-42,500	-42,500
Transferred from other accounts		23,000	23,000
Appropriation (Adjusted)	5,725,000	5,366,880	-358,120

Explanation of Changes in Financing

1. Program Requirements (TOTAL)

The decrease reflects a net of Congressional actions, inter-appropriation reprogrammings and inter-agency transfers.

2. Program Requirements (Service Account)

The net change is the result of reductions from Congressional actions (\$-332,688), contractor travel (\$-1,887), and CAAS (\$-4,045) and proposed transfers to Military Personnel, Navy and Military Personnel, Marine Corps requirements (\$-56,400), offset by a reprogramming increase to the Penguin missile program (\$+23,000).

3. Program Requirements (Reimbursable)

Last year reimbursable requirements were increased to cover WPN budget authority for the Rolling Airframe Missile (RAM) program. The decrease reflects a reduction in authority based on the direct citation of RAM reimbursable requirements.

4. Anticipated Reimbursements

As noted above, previously anticipated reimbursable orders were reduced based on the use of direct cite authority for RAM funding requirements for FMS sales.

5. Unobligated Balance Available End of Year

This increase reflects an amount available to finance the subsequent year budget.

6. Appropriation

The decrease reflect approved Congressional FY 1990 authorization and appropriation actions.

7. Reduction pursuant to P.L. 101-165

This net decrease reduces amounts budgeted for Consultant Assistance Advisory Services (\$-4,045) and contractor travel (\$-1,887) in accordance with Congressional direction.

Explanation of Changes in Financing

8. Transferred to Other Accounts

The decrease reflects reprogramming actions for Military Personnel, Navy (\$-29,500) and Military Personnel, Marine Corps (\$-13,000), and Nicaraguan Democratic Resistance (\$-1,739).

9. Transferred from Other Accounts

The increase reflects a reprogramming action for continued production of the Penguin missile (\$+23,000).

10. Appropriation Adjusted

The net of adjustments to the WPN appropriation since approval by the Congress.

Comparison of FY 1989 Program Requirements as Reflected
 In Amended FY 1990/1991 Budget With FY 1989 Program Requirements as
 Shown in FY 1991 Budget

Summary of Requirements (In Thousands of Dollars)

	<u>Total Program Requirements Per Amended FY 1990/91 Budget</u>	<u>Total Program Requirements Per FY 1991 Budget</u>	<u>Increase (+) or Decrease (-)</u>
Ballistic Missiles	1,870,263	1,870,263	-
Other Missiles	3,202,486	3,192,124	-10,362
Torpedoes and Related Equipment	841,868	844,468	+2,600
Other Weapons	105,045	107,345	+2,300
Spares and Repair Parts	73,308	77,308	+4,000
Subtotal Direct Program	6,092,970	6,091,508	-1,462
Reimbursable Program	279,000	162,651	-116,349
Total Fiscal Year Program	6,371,970	6,254,159	-117,811

Explanation by Budget Activity

1. Ballistic Missiles

No change.

Explanation by Budget Activity

2. Other Missiles (\$-10,362)

The net change is the result of reprogramming reductions for aid for the Nicaraguan Democratic Resistance (\$-1,739), for Operations and Maintenance, Navy (O&MN) requirements for various shortfalls (\$-4,200) and for the civilian pay raise (\$-12,423), offset by a reprogramming increase to the to the MK-67 SLMM missile program (\$+8,000).

3. Torpedoes and Related Equipment (\$+2,600)

The increase results from the restoral of funds previously cited for a reprogramming reduction from the Torpedo Support Equipment program based on revised requirements to support O&MN.

4. Other Weapons (\$+2,300)

The increase results from the restoral of funds previously cited for a reprogramming reduction from the MK-15 CIWS program based on revised requirements to support O&MN.

5. Spares and Repair Parts (\$+4,000)

The increase results from the restoral of funds previously cited for a reprogramming reduction from the Torpedo Initial Spares program based on revised requirements to support O&MN.

Comparison of FY 1989 Financing As Reflected
In Amended FY 1990/1991 Budget With FY 1989 Financing As
Shown in FY 1991 Budget

(In Thousands of Dollars)		Increase (+) or Decrease (-)
Program Requirements (Total)	Financing Per Amended FY 1990/91 Budget	Financing Per FY 1991 Budget
Program Requirements (Total)	6,371,970	6,254,159
Program Requirements (Service Account)	6,092,970	6,091,508
Program Requirements (Reimbursable)	279,000	162,651
Less:		
Reimbursements	279,000	162,651
Plus:		
Unobligated balance available, start of year Reprogramming from prior year budget plans		-8,000
Unobligated balance available, end of year Available to finance subsequent year budget		+1,739
Budget Authority:		
Appropriation	6,154,032	6,154,032
Reduction pursuant to P.L. 100-463	-5,062	-5,062
Transferred to other accounts	-56,000	-63,723
Appropriation (adjusted)	6,092,970	6,085,247

Explanation of Changes in Financing

1. Program Requirements (TOTAL)

The decrease reflects a net of congressional actions, inter-appropriation reprogrammings and inter-agency transfers.

Explanation of Changes in Financing

2. Program Requirements (Service Account)

The net change reflects reprogramming and transfer actions to the

3. Program Requirements (Reimbursable)

The decrease reflects actual reimbursable orders recieved.

4. Anticipated Reimbursements

Same as above.

5. Unobligated balance, start of the year

The decrease reflects a reprogramming from prior year budget plans.

6. Unobligated balance, end of the year

The increase reflects an amount available to finance the subsequent year budget.

7. Appropriation

No change.

8. Reduction pursuant to P.L. 100-463

No change.

9. Transferred to Other Accounts

The net change reflects reprogramming and transfer actions to the Operation and Maintenance, Navy program for Operation and Maintenance, Navy (O&MN) (\$-12,423) for the civilian pay raise and for various shortfalls (\$-4,200), offset by restorals for previously cited reprogramming sources totalling \$8,900.

10. Appropriation Adjusted

Reflects net adjustments for transfers to other accounts.