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DEPARTMENT OF THE NAVY
AMENDED FY 1992/FY 1993 BIENNIAL BUDGET ESTIMATES



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JUSTIFICATION OF ESTIMATES
SUBMITTED TO CONGRESS JANUARY 1992

WEAPONS PROCUREMENT, NAVY

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DEPARTMENT OF THE NAVY
WEAPONS PROCUREMENT, NAVY

JUSTIFICATION OF ESTIMATES FOR FISCAL YEARS 1992 AND 1993

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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, \$1,204,166,000; Other Missile Programs, \$2,203,324,000; Torpedoes and Related Equipment, \$689,456,000; Other Weapons, \$130,123,000; Other Ordnance, \$227,573,000; Other, \$107,979,000; In all: \$4,562,621,000], \$3,718,950,000, to remain available for obligation until September 30, [1954]1995, of which \$76,000,000 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, 1992; additional authorizing legislation to be proposed.)

Summary of Requirements
(In Thousands of Dollars)

	<u>FY 1991 Actual</u>	<u>FY 1992 Estimate</u>	<u>FY 1993 Estimate</u>
Ballistic Missiles	1,514,697	1,204,166	989,469
Other Missiles	3,154,982	2,013,670	1,731,607
Torpedoes and Related Equipment	843,075	685,727	636,473
Other Weapons	211,906	137,903	102,916
Ammunition	630,644	265,602	172,813
Spares and Repair Parts	78,509	107,979	85,672
TOTAL DIRECT PROGRAM	6,433,813	4,415,047	3,718,950
Reimbursable Program	70,000	70,000	74,800
TOTAL PROGRAM REQUIREMENTS	6,503,813	4,485,047	3,793,750

Justification of Funds

The following paragraphs provide justification for the FY 1992 program and FY 1993 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 1993 Amended Estimate	-	\$	989,469
FY 1993 Change	-	\$	-281,629
FY 1993 Initial Estimate	-	\$	1,271,098
FY 1992 Estimate	-	\$	1,204,166
FY 1991 Actual	-	\$	1,514,697

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 1993 Amended Estimate	- \$ 987,920
FY 1993 Change	- \$ -280,116
FY 1993 Initial Estimate	- \$ 1,268,036
FY 1992 Estimate	- \$ 1,202,158
FY 1991 Actual	- \$ 1,512,294

The FY 1992 program and FY 1993 request include continuing procurement support for the Trident I (C-4) missile and for the Trident II D-5 missile, including advance procurement requirements.

Trident I (C-4) Missile

(\$ in Thousands)			
FY 1992		FY 1993	
Qty	Amount	Qty	Amount
Weapon System Cost	\$ 6,805		\$ 1,118
Initial Spares	1,300		1,300
Procurement Cost	\$ 8,105		\$ 2,418

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 unforeseeable enemy breakthroughs in Anti Submarine Warfare capabilities.

The FY 1992 program and FY 1993 Trident I missile request for \$6.8 and \$1.1 million, respectively, will provide for procurements essential to the continued support of the M-5 guidance and MK-4 reentry systems.

Trident II D-5 Missile

	(\$ in thousands)	
	FY 1992	FY 1993
	Qty	Amount
Procurement	28	\$ 977,353
Advance Procurement		218,000
Initial Spares		1,314
Procurement Cost	28	\$1,196,667
		21
		\$ 763,802
		223,000
		2,193
		\$ 988,995

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.

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 1993 based on lead-time away requirements.
- o SWFLANT installation, test, checkout and equipment/facility integration began in FY 1987.
- o First Performance Evaluation Missile (PEM) flight test - March 1989.
- o Began PEM missile processing at Strategic Weapons Facility, Atlantic (SWFLANT) - July 1988.
- o Trident II missile Initial Operational Capability (IOC) - March 1990.

The FY 1992 funding of \$977.4 million supports production of 28 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 SWFLANT's Trident II missile processing capability. The FY 1993 funding request of \$763.8 million will support production of an additional 21 Trident II missiles with associated guidance and flight test instrumentation systems; additional support required to maintain SWFLANT's Trident II missile processing capability.

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

Advance Procurement

		(\$ in thousands)	
		FY 1992	FY 1993
<u>Amount</u>	<u>Qty</u>	<u>Amount</u>	<u>Qty</u>
		\$ 218,000	\$ 223,000
		Procurement Cost	

Funding in this line item provides for the advance procurement of various components, subassemblies and raw materials which are required to support the future production of Trident II (D-5) missiles, MK-6 guidance systems, D-5 special purpose flight test instrumentation, and reentry systems. Total advance procurement requirements comprise two major subsets of the commodity acquisition: traditional, or long lead, advance procurement, which includes those items having longer manufacturing leadtimes than the using D-5 end items; and production continuity advance procurement, which entails the purchase of certain critical components earlier than leadtimes 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 produced for the Trident II program.

SUPPORT EQUIPMENT AND FACILITIES:

(\$ in Thousands)

FY 1993 Amended Estimate	- \$ 1,549
FY 1993 Change	- \$ -1,513
FY 1993 Initial Estimate	- \$ 3,062
FY 1992 Estimate	- \$ 2,008
FY 1991 Actual	- \$ 2,403

The FY 1992 program and FY 1993 request includes continuing procurement support for capital maintenance projects at government-owned missile industrial facilities.

Missile Industrial Facilities

		(\$ in Thousands)	
		FY 1992	FY 1993
	Qty	Amount	Qty
Procurement Cost		\$ 2,008	\$ 1,549

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 1992 and FY 1993 include additions and modifications to, and rehabilitation of, non-serviceable equipment and real property. Among those projects included which are generated as a result of government mandated energy conservation and environmental protection laws and by safety and security considerations are the following: 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 1993 Amended Estimate	- \$ 1,731,607
FY 1993 Change	- \$ -590,060
FY 1993 Initial Estimate	- \$ 2,321,667
FY 1992 Estimate	- \$ 2,013,670
FY 1991 Actual	- \$ 3,154,982

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 1993 Amended Estimate	- \$ 1,093,963
FY 1993 Change	- \$ -447,047
FY 1993 Initial Estimate	- \$ 1,541,037
FY 1992 Estimate	- \$ 1,449,505
FY 1991 Actual	- \$ 2,677,087

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 1992	FY 1993		
	Qty	Amount	Qty	Amount
Procurement	176	\$411,187	200	\$404,194
Initial Spares		15,896		14,715
Procurement Cost	176	\$427,083	200	\$418,909

Tomahawk provides an attack capability against targets at sea (Anti-ship Tomahawk) and on land (Land Attack Tomahawk), and can be launched from both surface ships and submarines. The Land Attack version can be fitted with either conventional high explosive, nuclear warheads, or submunition dispenser. There are four Tomahawk variants (1) RGM/UGM-109A, Land Attack Nuclear; (2) RGM/UGM-109B, Antiship; (3) RGM/UGM-109C, Land Attack Conventional; and (4) RGM/UGM-109D, Land Attack Submunition Dispenser. Tomahawk is propelled by a small turbofan engine. The FY 1992 program of \$411.1 million procures 176 conventionally armed new production Land Attack missiles. The FY 1993 request of \$404.2 million will procure an additional 200 conventionally armed new production missiles. Commencing with procurement of the missiles expended in Operation Desert Storm (FY 1991), all conventionally armed Land Attack missiles will be produced to a Block III configuration. Additionally, a remanufacture program was initiated in FY 1992 to upgrade all previously procured conventionally armed Land Attack missiles to a Block III configuration. Tomahawk is competitively procured from General Dynamics/Convair and McDonnell Douglas.

AMRAAM Missile

	(\$ in Thousands)			
	FY 1992	FY 1993		
	Qty	Amount	Qty	Amount
Procurement	191	\$205,392	140	\$137,478
Initial Spares		9,318		1,022
Procurement Cost	191	\$214,710	159	\$138,500

The Advanced Medium Range Air-to-Air Missile (AMRAAM) 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 NATO aircraft. AMRAAM will enhance Navy war-fighting capability in the 1990's and beyond through significant improvements in operational utility and combat effectiveness. FY 1992 program and FY 1993 request will provide missiles required to meet additional activations within the Navy.

Harpoon Missile

	(\$ in Thousands)			
	FY 1992	FY 1993		
	Qty	Amount	Qty	Amount
Procurement	0	\$ 37,218	0	\$0
Initial Spares		0		0
Procurement Cost	0	\$ 37,218	0	\$0

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 1992 program procures Harpoon exercise sections to support fleet training and provides production support necessary to sustain final SLAM deliveries. No procurement is requested in FY 1993.

HARM Missile

	(\$ in Thousands)			
	FY 1992	FY 1993		
	Qty	Amount	Qty	Amount
Procurement	749	\$210,310		\$ 31,654
Initial Spares		7,357		0
Procurement Cost	749	\$217,667		\$ 31,654

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. Initial procurement commenced in FY 1981. The FY 1992 program represents the final procurement of HARM for the Navy. The FY 1993 request provides for procurement of Navy unique missile test equipment for joint USAF/USN depot.

Standard Missiles (SM-2)

	(\$ in Thousands)	
	FY 1992	FY 1993
	Qty	Amount
Procurement	330	\$331,104
Initial Spares		9,278
Procurement Cost	300	\$340,382
		330
		\$256,783
		5,821
		\$262,604

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 1992 program provides for procurement of 300 SM-2 MR missiles for Aegis and 30 SM-2 missiles for Tartar ships. The FY 1993 request provides for procurement of 300 SM-2 MR missiles for Aegis ships and 30 SM-2 missiles for Tartar ships.

Hellfire Missile

	(\$ in Thousands)	
	FY 1992	FY 1993
	Qty	Amount
Procurement	0	\$0
Initial Spares		0
Procurement Cost	0	\$0
		1,000
		\$50,479
		556
		\$51,035

Hellfire, developed by the Army, provides the Marine Corps with an extremely effective anti-armor weapon for use on AH-1T/W helicopters. The FY 1993 request will procure 1,000 Hellfire Optimized Missile Systems (HOMS) under a sole-source procurement strategy with the Martin Marietta Corporation. The HOMS will contain an electro-optical countermeasure (EOCM) seeker to defend against optical countermeasures, a new digital autopilot, and an electronic fuze for the robust warhead.

Penguin Missile

	(\$ in Thousands)	
	FY 1992	FY 1993
Procurement	Qty 42	Qty 0
Advance Procurement	Amount \$ 44,204	Amount \$0
Initial Spares	0	0
Procurement Cost	1,833	0
	42	0
	\$ 46,037	\$0

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 1992 program provides for the final procurement of 42 Penguin missiles, resulting in a total procurement of 106 missiles.

TOW IIA

	(\$ in Thousands)	
	FY 1992	FY 1993
Procurement	Qty 0	Qty 938
	Amount \$0	Amount \$ 25,850

The TOW IIA (BGM-71E) missile is tube-launched, optically tracked, and wire guided. It is launched from the AH-1W helicopter and is one of the Marine Corps primary anti-armor weapons. Developed by the Army (executive service), the TOW IIA permits the continued use of this system through battlefield obscurants and at night with the incorporation of an infrared radiator and thermal beacon. The Navy version of this missile will be shipboard compatible with the incorporation of the safe and arming device for both the launch and flight motors. The FY 1993 request provides for 938 missiles and represents the initial procurement of air launched TOW IIA missiles for the Navy.

Aerial Targets

(\$ in Thousands)

	FY 1992			FY 1993				
	Qty	Amount	Spares	Total	Qty	Amount	Spares	Total
BQM-34S	100	\$60,901	\$ 210	\$61,111	75	\$ 43,451	520	\$ 43,971
AQM-37C	120	21,328	79	21,407	120	19,607	82	19,689
BQM-74C/E	195	48,940	187	49,127	195	50,337	358	50,695
Tow Targets		2,818	200	3,018		3,106	230	3,336
Other Targets		13,197	235	13,432		30,963	346	31,309
Misc Target Eq		26,158	425	26,583		22,735	410	23,145
Total		\$173,342	\$ 1,336	\$174,678		\$170,199	\$1,946	\$172,145

Aerial targets provide the representative threats needed to properly evaluate weapons systems and to provide for an effective Fleet Training program. The BQM-34E and BQM-74C are both recoverable, subsonic targets that are required for both surface-to-air and air-to-air missile and gunnery exercises. The AQM-37C is a non-recoverable, supersonic target, which replicates high altitude, high speed threats. The FY 1992 program and FY 1993 request provide for funding for the larger targets noted, as well as tow targets, modifications for the conversion of Talos missiles into MQM-8G ER (extended range) and older Standard Missiles (SM-1 ER) into MQM-67A supersonic full-scale targets, and target auxiliary/augmentation system (TAS) equipment required for target control, augmentation, and other target support costs.

Drones and Decoys

(\$ in Thousands)			
FY 1992		FY 1993	
Qty	Amount	Qty	Amount
0	\$10,000	0	\$0

Procurement

The Tactical Air Launched Decoy/Improved Tactical Air Launched Decoy (TALD/ITALD) is an expendable of similar size to a 500 pound general purpose bomb, and is similarly carried. After launch from strike aircraft, the TALD/ITALD uses radar signature augmentation and preprogrammed flight profiles to simulate manned aircraft. Its mission is to deceive and saturate hostile radar controlled air defenses, enhancing strike aircraft survivability. FY 1992 funding continues the ITALD program.

Other Missile Support

(\$ in Thousands)			
FY 1992		FY 1993	
Qty	Amount	Qty	Amount
	\$ 17,611		\$ 11,011

Procurement

The Other Missile Support Program procures Vertical Launching System (VLS) canisters and related fleet support material. VLS is a missile launching system for surface combatants, capable of launching missiles for all warfare areas and adaptable to current and future weapons control systems. The FY 1992 program and FY 1993 request procure Types I and II VLS canisters for Tomahawk and SM-2 missiles.

MODIFICATION OF MISSILES

(\$ in Thousands)

FY 1993 Amended Estimate	- \$ 188,014
FY 1993 Change	- \$ -110,568
FY 1993 Initial Estimate	- \$ 298,582
FY 1992 Estimate	- \$ 156,632
FY 1991 Actual	- \$ 97,778

The following paragraphs provide justification for the FY 1992 and FY 1993 request for missile modifications and associated installation costs.

Air-Launched Missiles

	(\$ in Thousands)	
	FY 1992	FY 1993
Sidewinder	\$ 0	\$ 15,304
Phoenix	18,155	9,163
Harpoon 1/ 2/	37,373	33,850
Tomahawk 2/	44,815	45,380
Sparrow 1/	29,844	56,853
Standard Missile	26,445	27,464
Total	\$156,632	\$188,014

Surface-Launched Missiles

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

The Sidewinder FY 1993 request provides for the Sidewinder AIM-9M-8/9 upgrade to existing missiles, improving infrared countermeasures capabilities.

The Phoenix FY 1992 program and FY 1993 request provide for expanded reprogrammable memory and composite fuze improvements to current AIM-54C inventory missiles.

The Harpoon FY 1992 program and FY 1993 request provide for continued replacement of improved seekers, miscellaneous minor upgrades and the new Improved Harpoon kits (extended range, reattack mode) for current missiles.

The Tomahawk FY 1992 program and FY 1993 request provide for the continued procurement of the MK-111 rocket motor assembly, which allows submarine launched missiles a greater thrust capacity, and the new lighter weight composite capsule launch system.

The Sparrow FY 1992 program procures low altitude fuze improvements (RIM-7P). The FY 1993 request initiates a delayed Missile Homing Improvement Program (MHIP) retrofit program for both air (AIM-7M) and surface launched (RIM-7M) versions.

The Standard Missile FY 1992 program and FY 1993 request provide for the MK-56 dual thrust rocket motor and sustainer section modifications, a low altitude and directional ordnance improvements on SM-1 Block VI and SM-2 Block II missiles currently in inventory. Additionally, the FY 1993 request initiates a delayed Missiles Homing Improvement Program (MHIP) for the SM-2 Aegis missile.

SUPPORT EQUIPMENT AND FACILITIES:

(\$ in Thousands)

FY 1993 Amended Estimate	- \$	449,630
FY 1993 Change	- \$	-32,418
FY 1993 Initial Estimate	- \$	482,048
FY 1992 Estimate	- \$	407,533
FY 1991 Actual	- \$	380,117

The following paragraphs provide justification for the FY 1992 program and FY 1993 request for support equipment and facilities. This group includes the Weapons Industrial Facilities, Fleet Satellite Communications programs, Arctic Satellite Communications, and the Ordnance Support Equipment programs.

Weapons Industrial Facilities

(\$ in Thousands)			
FY 1992		FY 1993	
Qty	Amount	Qty	Amount
	\$ 31,575		\$ 28,971

Procurement Costs

The FY 1992 program and FY 1993 request support nonrecurring capital maintenance costs incurred at the Naval Industrial Reserve Ordnance Plants (NIROPs), government-owned missile and weapons producing industrial facilities. These facilities support major weapon systems production, primarily missile and other ordnance systems, for all Military Departments. The FY 1992 program and FY 1993 request includes funding for environmental and emergent repairs, safety and fire protection and energy conservation and capital maintenance repairs.

Fleet Satellite Communications

(\$ in Thousands)			
FY 1992		FY 1993	
Qty	Amount	Qty	Amount
3	\$283,079	1	\$325,983

Procurement

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 1992 program and FY 1993 request provides for the procurement of four UHF Follow-on satellites (the seventh through the tenth in the total program), production support, launch services, and recurring efforts for four EHF packages. Additionally, the FY 1993 request primarily funds launch vehicle services payments for UHF Follow-on satellites. The basic requirement is for nine satellites in 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 two spares. Additionally, the FY 1992 program and FY 1993 request provide for the procurement of three leased satellites (LEASAT) currently in operational orbit, upon the expiration of their lease period.

Arctic Satellite Communications

(\$ in Thousands)			
FY 1992		FY 1993	
Qty	Amount	Qty	Amount
0	\$ 0	0	\$ 17,507

Procurement

The Arctic Satellite Communications program provides for the procurement of low earth orbiting satellites, launch services and ground support to replace currently deployed Arctic Satellites. These satellites will maintain a polar orbit, receive data from Arctic surface located transmitter devices and retransmit that data via a store and forward mode to surface non-Arctic located receivers. The FY 1993 request procures one satellite and its associated launch costs. Funding is also requested for program specific ground equipment.

Ordnance Support Equipment

(\$ in Thousands)			
FY 1992		FY 1993	
Qty	Amount	Qty	Amount
	\$92,879		\$ 77,169

Procurement Costs

Detail justification is classified and is provided separately.

BUDGET ACTIVITY 3: TORPEDOES AND RELATED EQUIPMENT

(\$ in Thousands)

FY 1993 Amended Estimate	- \$ 636,473
FY 1993 Change	- \$ -15,888
FY 1993 Initial Estimate	- \$ 652,361
FY 1992 Estimate	- \$ 685,727
FY 1991 Actual	- \$ 843,075

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 1993 Amended Estimate	- \$ 498,397
FY 1993 Change	- \$ -4,036
FY 1993 Initial Estimate	- \$ 502,433
FY 1992 Estimate	- \$ 578,812
FY 1991 Actual	- \$ 721,431

MK-48 Torpedo Advanced Capability (ADCAP)

	(\$ in Thousands)	
	FY 1992	FY 1993
	Qty	Amount
Procurement	108	\$218,963
Advance Procurement		74,490
Initial Spares		18,297
Procurement Cost	108	\$311,750
		Qty
		Amount
	108	\$188,580
		0
		4,314
	108	\$192,894

The MK-48 ADCAP (Advanced Capability) heavyweight torpedo was developed as an improvement to the MK-48 torpedo to counter enemy submarine threats through the 1990's and beyond. 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 and will allow the ADCAP to operate in several adverse environments. The FY 1992 program initiates a 3-year winner-take-all, multi-year contract. The FY 1993 request provides for second year funding under that multiyear contract.

MK-50 Advanced Lightweight Torpedo (ALWT)

		(\$ in Thousands)	
		FY 1992	FY 1993
		Qty	Amount
Procurement		218	\$261,200
Initial Spares			11,607
Procurement Cost		218	\$272,807
			212
			\$243,491
			14,189
			\$257,680

The MK-50 Advanced Lightweight Torpedo (ALWT) is a lightweight acoustic homing torpedo that is capable of countering present and forecasted submarine threats. It will gradually replace the MK 46 torpedo and will become the primary ASW weapon for approximately 540 aircraft and 160 ships. Platforms that will employ the MK 50 Torpedo consist of: (a) fixed-wing ASW aircraft, (b) ASW helicopters, (c) ASW surface ships equipped with Surface Vessel Torpedo Tubes (SVTTs). The FY 1992 program and FY 1993 request provides for competitive, dual source procurement under fixed price contracts.

ASW Targets

		(\$ in Thousands)	
		FY 1992	FY 1993
		Qty	Amount
Procurement			\$ 18,181
			\$ 26,179

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. The FY 1992 program provides three MK-30 Mobile Targets.

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 1992 program provides for 1,100 EMATT units while the FY 1993 request provides for 5,100 EMATT units.

ASROC

(\$ in Thousands)			
FY 1992		FY 1993	
<u>Qty</u>	<u>Amount</u>	<u>Qty</u>	<u>Amount</u>
	\$ 2,839		\$2,107

Procurement Cost

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 1992 program and FY 1993 request provide for procurement for ASROC components to replace those expenditures consumed during fleet training exercises.

Vertical Launched ASROC

(\$ in Thousands)			
FY 1992		FY 1993	
<u>Qty</u>	<u>Amount</u>	<u>Qty</u>	<u>Amount</u>
	\$ 3,139		\$38,040

Procurement Cost

Vertical Launched ASROC (VLA) is a replacement system for the older ASROC weapon system. It will provide a vertically launched weapon to a greater distance with equal accuracy utilizing the latest torpedo configuration. The FY 1992 program provides for production engineering to support the FY 1989 missile procurement through the delivery period. The FY 1993 request also funds production engineering and provides for the assembly of the remaining missiles which were funded in prior years.

MODIFICATION OF TORPEDOES AND RELATED EQUIPMENT:

(\$ in Thousands)

FY 1993 Amended Estimate	- \$ 58,669
FY 1993 Change	- \$ -2,674
FY 1993 Initial Estimate	- \$ 61,343
FY 1992 Estimate	- \$ 22,292
FY 1991 Actual	- \$ 27,511

MK-46 Torpedo Mods

	(\$ in Thousands)	
	FY 1992	FY 1993
	Qty	Amount
Procurement		\$ 9,873
Initial Spares		211
Procurement Cost		10,084
		Qty
		Amount
		\$ 48,573
		0
		48,573

The MK-46 torpedo is a lightweight torpedo launched from surface vessel torpedo tubes, ASROC, and fixed and rotary wing aircraft. The FY 1992 program procures block upgrade modifications, including an anti-tampering mechanism for the MK-46 Mod 5. The FY 1993 request initiates the procurement of Ordalt kits that will convert the MK 46 Mod 5 to the MK 46 Mod 7 configuration.

Quickstrike Mine

(\$ in Thousands)	
FY 1992	FY 1993
<u>Qty</u>	<u>Qty</u>
<u>Amount</u>	<u>Amount</u>
Procurement	\$ 8,801
Initial Spares	211
Procurement Cost	\$ 9,012

The Quickstrike Mine FY 1992 program and FY 1993 request 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) and associated safety and arming devices compatible with existing bomb cases. By combining the IDD with bomb cases, Quickstrike mines are created. This provides maximum flexibility for bombs which are carried on board the aircraft carriers to be used as either bombs or mines.

MK-60 Captor Mods

(\$ in Thousands)	
FY 1992	FY 1993
<u>Qty</u>	<u>Qty</u>
<u>Amount</u>	<u>Amount</u>
Procurement	\$ 1,295

The Captor Mods program provides for the conversion of additional MK-46 torpedoes required to support the maintenance and turnaround schedule requirements necessary to maintain the CAPTOR fleet stockpiles.

SUPPORT EQUIPMENT:

(\$ in Thousands)

FY 1993 Amended Estimate	- \$ 79,407
FY 1993 Change	- \$ -9,178
FY 1993 Initial Estimate	- \$ 88,585
FY 1992 Estimate	- \$ 84,623
FY 1991 Actual	- \$ 94,133

The following paragraphs provide justification for the FY 1992 program and the FY 1993 request for support equipment. This group includes the Torpedo Support Equipment, the ASW Range Support, and First Destination Transportation program.

Torpedo Support Equipment

(\$ in Thousands)	
FY 1992	FY 1993
<u>Qty</u>	<u>Qty</u>
<u>Amount</u>	<u>Amount</u>
\$ 47,978	\$ 43,526

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 expendable components as batteries, pressure cylinders, 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 requirement and the tempo of operations. The FY 1992 program and FY 1993 request procure 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 1992	FY 1993
	<u>Qty</u>	<u>Qty</u>
	<u>Amount</u>	<u>Amount</u>
Procurement	\$ 27,686	\$ 26,968
Initial Spares	856	896
Procurement Cost	\$ 28,542	\$ 27,864

The Anti-Submarine Warfare (ASW) 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 line item supports fleet exercises and torpedo firings and provides equipment to maintain ASW readiness.

First Destination Transportation

	(\$ in Thousands)	
	FY 1992	FY 1993
	<u>Qty</u>	<u>Qty</u>
	<u>Amount</u>	<u>Amount</u>
Procurement	\$ 8,959	\$ 8,913

The First Destination Transportation program 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.

BUDGET ACTIVITY 4: OTHER WEAPONS

(\$ in Thousands)

FY 1993 Amended Estimate - \$ 102,916
 FY 1993 Change - \$ -16,510
 FY 1993 Initial Estimate - \$ 119,426
 FY 1992 Estimate - \$ 137,903
 FY 1991 Actual - \$ 211,906

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.

GUNS AND GUN MOUNTS:

(\$ in Thousands)

FY 1993 Amended Estimate - \$ 24,181
 FY 1993 Change - \$ -12,470
 FY 1993 Initial Estimate - \$ 36,651
 FY 1992 Estimate - \$ 45,668
 FY 1992 Actual - \$ 94,624

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

	(\$ in Thousands)	
	FY 1992	FY 1993
	Qty	Amount
Procurement	0	\$ 506
Initial Spares		0
Procurement Cost	0	\$ 506

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 1992 program provides for production support services for the prior year procurements until the guns are delivered.

MK-19 40mm Machine Gun

(\$ in Thousands)	
FY 1992	FY 1993
Qty	Qty
568	0
Amount	Amount
\$11,095	\$0

Procurement

The MK-19 Mod 3 40mm machine gun provides a more effective, safe and reliable grenade firing weapon for arming surface ships, small craft, construction battalions and special warfare units. The FY 1992 program completes the buy-out of the Navy's inventory.

MK-38 25mm Gun System

(\$ in Thousands)	
FY 1992	FY 1993
Qty	Qty
55	0
Amount	Amount
\$ 10,009	\$0
614	
\$ 10,623	

Procurement
Initial Spares
Procurement Cost

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 1992 program completes the buy-out of the Navy's inventory.

Small Arms and Weapons

(\$ in Thousands)	
FY 1992	FY 1993
Qty	Qty
Amount	Amount
\$ 24,058	\$ 24,181

Procurement

This program procures a wide variety of small arms and weapons, including rifles, 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.

MODIFICATION OF GUNS AND GUN MOUNTS:

(\$ in Thousands)

FY 1993 Amended Estimate	- \$	78,735
FY 1993 Change	- \$	-4,040
FY 1993 Initial Estimate	- \$	82,775
FY 1992 Estimate	- \$	92,235
FY 1991 Actual	- \$	117,282

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 1992	FY 1993
	Qty	Qty
Procurement	Amount	Amount
Initial Spares	\$ 56,649	\$ 58,527
Procurement Cost	\$ 0	\$ 5,718
	\$ 56,649	\$ 64,245

The FY 1992 MK-15 Close-in-Weapon System (CIWS) modifications program and the FY 1993 request provide for upgrading to the Baseline 2 configuration, and include 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 1992	FY 1993
	Qty	Qty
Procurement Cost	Amount	Amount
Initial Spares	\$ 25,451	\$ 11,087
Procurement Cost	4,824	7,809
	\$ 30,275	\$ 18,896

This program procures hardware to improve the operability, reliability, maintainability and availability of all in-service 5 inch/54 caliber gun mounts. The FY 1992 program includes a 5"/54" MK-45 Gun Mount replacement for CG-39 (USS Princeton), whose gun mount was damaged during Operation Desert Storm.

MK-75 76mm Gun Mount Modifications

		(\$ in Thousands)	
	FY 1992	FY 1993	
	Qty	Qty	Amount
Procurement Cost			\$ 7,889
Initial Spares			618
Procurement Cost			\$ 8,507

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 1992	FY 1993	
	Qty	Qty	Amount
Procurement Cost			\$ 2,482
			\$ 1,232

This program procures hardware to improve the safety, operability, reliability, maintainability and availability of all minor caliber gun mounts.

BUDGET ACTIVITY 5: OTHER ORDNANCE

(\$ in Thousands)

FY 1993 Amended Estimate	- \$ 172,813
FY 1993 Change	- \$ -121,514
FY 1993 Initial Estimate	- \$ 294,327
FY 1992 Estimate	- \$ 265,602
FY 1991 Actual	- \$ 630,644

Purpose and Scope of Work

These funds support procurement of air-delivered ordnance, ship gun ammunition, and other expendable ordnance required for the Navy forces and Marine Air Wings, except guided missiles.

AIR LAUNCHED ORDNANCE:

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

(\$ in Thousands)

FY 1993 Amended Estimate	- \$ 43,878
FY 1993 Change	- \$ -103,341
FY 1993 Initial Estimate	- \$ 147,219
FY 1992 Estimate	- \$ 137,756
FY 1991 Actual	- \$ 509,803

General Purpose Bombs

(\$ in Thousands)	
FY 1992	FY 1993
Qty	Qty
Procurement Cost	Amount
	\$ 83,661
	\$ 3,611

These funds will procure various components for the Navy's present MK-80 series general purpose bombs and fins. The FY 1992 program and FY 1993 request initiate procurement of the GBU-24 hard target penetrator bomb.

2.75 Inch Rockets

(\$ in Thousands)	
FY 1992	FY 1993
<u>Qty</u>	<u>Qty</u>
<u>Amount</u>	<u>Amount</u>
\$ 12,238	\$ 15,011

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 719 type cylindrical launcher. This rocket system is cleared for use on the following USN and USMC aircraft: A-4, A-7, F-4, F/A-18, AH-1, AV-8, and OV-10. The FY 1992 program and FY 1993 request procures MK-66 rocket motors, M257 flares, thermal barriers for launchers, and product improvement efforts related principally to insensitive munitions.

Machine Gun Ammunition

(\$ in Thousands)	
FY 1992	FY 1993
<u>Qty</u>	<u>Qty</u>
<u>Amount</u>	<u>Amount</u>
\$ 31,635	\$ 1,003

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 1992 program and FY 1993 request support 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 gauging and integrated logistics support planning. Additionally, funding is required for product improvement efforts to increase safety and reliability.

Practice Bombs

(\$ in Thousands)	
FY 1992	FY 1993
<u>Qty</u>	<u>Qty</u>
<u>Amount</u>	<u>Amount</u>
\$10,222	\$ 5,441

Procurement Cost

This program will procure various practice bombs and components in support of fleet training requirements. The FY 1992 program and FY 1993 request include 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; full-sized MK-80 series inert bombs, including the BDU-45 (MK-80) and the MK-83 Inert NTP. Additionally, FY 1992 program and FY 1993 request procure CXU-3 and MK-4 signals, which provide smoke markings upon bomb impact; production engineering support, production engineering support, and product improvements.

Gator

(\$ in Thousands)	
FY 1992	FY 1993
<u>Qty</u>	<u>Qty</u>
<u>Amount</u>	<u>Amount</u>
\$0	\$ 18,812

Procurement Cost

Gator (CBU-78) is an air delivered scatterable anti-tank and anti-personnel land mine dispersal weapon. Delivered from high performance aircraft, these bombs are required to delay, deny, attrite, and disrupt the use of movement of enemy armor/mechanized forces. The dispenser contains 60 mines (45 anti-tank and 15 anti-personnel).

SHIP ORDNANCE:

These funds support procurement of all ship gun ammunition required for the Navy forces.

(\$ in Thousands)

FY 1993 Amended Estimate -	\$ 105,609
FY 1993 Change	- \$ 17,152
FY 1993 Initial Estimate -	\$ 122,761
FY 1992 Estimate	- \$ 99,701
FY 1991 Actual	- \$ 84,349

Ship Gun Ammunition (P-1 Line Items 58 through 61)

(\$ in Thousands)	
FY 1992	FY 1993
Qty	Amount
	Qty
	Amount
	\$ 97,701
	\$105,609

Procurement Cost

The FY 1992 program and 1993 request provide for procurement of various types of Ship Gun Ammunition including:

	(\$ In Thousands)	
	FY 1992	FY 1993
5 Inch/54 Caliber Ammunition	\$ 36,337	\$ 68,481
CIWS Ammunition	22,023	917
76mm Ammunition	8,941	10,734
Other Ship Gun Ammunition	32,400	25,477
Total	\$ 97,701	\$ 105,609

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. The 76mm ammunition is used against air targets. Other ship gun ammunition provide for close-in defense of ships.

OTHER ORDNANCE:

(\$ in Thousands)

FY 1993 Amended Estimate	- \$ 23,326
FY 1993 Change	- \$ -1,021
FY 1993 Initial Estimate	- \$ 24,347
FY 1992 Estimate	- \$ 28,145
FY 1992 Actual	- \$ 36,492

Other Ordnance

	(\$ in Thousands)	
	FY 1992	FY 1993
	Amount	Amount
Small Arms and Landing Party Ammunition Procurement	\$ 13,492	\$ 3,409
Pyrotechnics and Demolition Materials Procurement	14,653	19,917

The FY 1992 program and FY 1993 request include procurement of Small Arms & Landing Party Ammunition, and Pyrotechnics and Demolition Materials. The Small Arms and Landing Party Ammo request 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. Pyrotechnics and Demolition Material 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 1993 Amended Estimate	- \$ 85,672
FY 1993 Change	- \$ -10,049
FY 1993 Initial Estimate	- \$ 95,721
FY 1992 Estimate	- \$ 107,979
FY 1991 Actual	- \$ 78,509

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 1992	FY 1993
Qty	Amount	Qty	Amount
	\$ 85,717		\$ 61,308
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 1992	FY 1993
Qty	Amount	Qty	Amount
	\$ 22,262		\$ 24,364
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.