NAVAL UNDERSEA WARFARE ENGINEERING STATION KEYPORT COMMAND HISTORIES, 1987–1989

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Command History

Calendar Year 1987

Naval Undersea Warfare Engineering Station
Keyport, Washington

Prepared March 1988

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I. HISTORICAL NARRATIVE

A. Statement of Command's Mission

The Naval Undersea Warfare Engineering Station (NUWES) Keyport, Washington, a field activity of the Naval Sea Systems Command (NAVSEA), is a highly capable engineering and industrial activity responsible for undersea weapons proofing and fleet support. In response to advances in undersea warfare technology during the past 15 years, NUWES has changed from a torpedo shop refurbishment facility to a diversified engineering test and evaluation organization with significant manufacturing and repair capability. As the U.S. Navy's sole overhaul depot for torpedoes and underwater mobile targets, NUWES is a major industrial and in-service engineering activity in support of sonar, underwater fire control and other undersea warfare systems including those aboard Trident missile submarines. In addition, Keyport is designated as NAVSEA'S Pacific Fleet anti-submarine warfare ship test agent.

Mission Statement

* Proof, test, and evaluate underwater weapons, weapons systems, and components.

* Exercise design cognizance of acoustic and tracking ranges and associated range equipment for underwater weapons systems.

* Provide engineering and technical support services including In-Service Engineering Agent (ISEA) responsibilities for designated Undersea Warfare (USW) programs.

* Provide material and logistics support for assigned weapons systems, weapons, or components.

B. Station Organization

NUWES workforce consists of approximately 3,300 civilians and 290 military personnel, and is organized into 16 departments. Also included in the

NUWES organization are four detachments located at Indian Island, Washington; Hawthorne, Nevada; Oahu and Kauai, Hawaii; and San Diego, California. Utilizing a comprehensive set of three-dimensional underwater tracking ranges in the Pacific Northwest, Hawaii, and Southern California, the Station continues to perform its original and primary function of underwater weapon proofing and testing.

The following list is comprised of key personnel in the NUWES organization.

CODE	DEPARTMENT	NAME
A	Commanding Officer	CAPT Robert W. Hoag II
B	Executive Officer	CDR E. B. McPhail
C	Technical Director	Roger Smith
D	Chaplain	LT J. H. Pangborn
E	EEO	Carol D. Blakley
F	Command Master Chief	MMCM Norman D. Garoutte
G	EODGRU ONE Det Keyport	LT William H. Carney
I	Internal Review	Carol J. Flin
T	Chief Engineer	Edward H. Lesinski
01	Administration/Security	Dallas D. Likens
02	Comptroller	Dirk Van Zanten
03	Data Processing	Robert F. Meade
04	Safety	Eugene F. Cook
05	Resources and Planning	Lewis A. Munson
06	Civilian Personnel	Lynford R. Coleman
07	Staff Civil Engineer	LCDR Lawrence S. Hirsch
11	Supply	LCDR James V. Rohrscheib
20	Weapons	Clyde E. Hudson
27	Indian Island/Bangor	LCDR Carroll D. Bernier
29	Hawthorne Detachment	LCDR Gary D. Grosz
30	Weapons Quality Engr Ctr	Donald H. Danielson
40	Quality Assurance	John A. Bogen
50	Proof, Test & Evaluation	Rodney L. Mash
57	San Diego Detachment	CDR Robert M. Stolarz
60	Program Coordination	G. Estes Grade
70	Research & Engineering	Robert L. Marimon
75	In-Service Engineering	A. Bryant Tennell
80	Technical Operations	CDR D. R. Hillier
90	Hawaii Detachment	CDR James E. Faivre

Organization Changes

This year established an IN-SERVICE ENGINEERING DEPARTMENT. The department's function is to direct and administer ISEA responsibilities for designated undersea warfare weapon systems. The department manages, plans, and coordinates delegated functions in support of the System/Technical Manager for the overall engineering, testing, maintenance, and logistics requirements incident to specific operational surface and submarine torpedoes, mobile targets, countermeasures, fire control systems/equipment, and sonar systems/units.

Key Personnel Changes

Key personnel changes at NUWES during 1987 were as follows:

Technical Director - Mr. Roger Smith was assigned to the Station in November of this year. Mr. Smith comes to Keyport after eight years in Washington, D.C., assigned to NAVSEA. His most recent position was the Technical Director for the Assistant Deputy Commander for Anti-Submarine Warfare and Undersea Warfare Systems. With Mr. Smith's arrival, Mr. Ed Lesinski, the previous Technical Director, assumed the duties as the Station's Chief Engineer.

Personnel Director - Mr. Lyn Coleman, was selected as Civilian Personnel Director (CPD) to replace the previous CPD who is on an overseas assignment. Lyn comes to NUWES after spending five years at the U. S. Naval Support Facility in Naples, Italy.

Technical Operations Chief Engineer - Andrea Medoff was selected as the Chief Engineer of the Technical Operations Department. At 29, she is the first woman to hold that position and is the second woman at Keyport to become a part of the Merit Pay System.

Chaplain - Lt. J. Henry Pangborn relieved CDR William E. Schumm on 29 September as NUWES Chaplain.

Officer In Charge of the Nevada Detachment - LCDR Gary D. Grosz relieved the retiring LCDR John C. Glynn, Jr. as Officer in Charge (OIC) on 31 July.

Officer In Charge of the Hawaii Detachment - CDR James E. Faivre relieved CDR E. L. Ploof as OIC on 1 July.

Officer In Charge of the Indian Island Detachment - LCDR Carroll D. Bernier relieved LCDR John H. Gonsalves as OIC on 29 May.

C. Mission Accomplishments

The Station successfully accomplished its assigned mission and major objectives, as is depicted by the following:

Undersea Weapons Systems

- Shipped 2289 MK 46 torpedoes and 538 MK 48 torpedoes to the fleet.
- Proofed and delivered five MK 48 ADCAP OPEVAL units.
- Conducted 1330 weapon and target test firings on Northwest ranges.

ASW Testing

- Completed 27 Defensive Weapons Systems support operations and torpedo loadouts of OHIO Class submarines.
- Provided 697 Mobile Target runs in support of fleet ASW training.
- Conducted 610 ASW tests on fleet ships worldwide.

Ranges

Installation of the communication upgrade in support of remote ranges allows transmission of data directly from the ranges to NUWES, Keyport. A UHF "secure voice" was installed on NUWES' ranges providing the capability to operate in "secure voice" with the fleet. Additionally, the control site for NUWES shallow water range off the Pacific Coast is now operated remotely from the U.S. Naval Facility at Pacific Beach, Washington.

Proof and Testing

During FY 87, NUWES supported range tests on 1,330 firings of torpedoes, mobile targets, countermeasures, mines and other test devices. A prototype pressure vessel was installed in an existing building which provides the

core of an initial low-pressure capability for land based production acceptance testing. This was a major milestone in improving the capability of the Navy to efficiently and thoroughly test and evaluate undersea weapons.

Mark 46 Program

NUWES successfully exceeded the assigned NAVSEA Class B maintenance program of 1,301 by 27 units. In the new production Mod 5 category, the NAVSEA goal of 900 was exceeded by 61 units. Total proofing of U.S. units also exceeded the schedule of 315 by 39 proofing exercises. Production of MK 85 Mod 6 Exercise Heads exceeded the assigned goal of 180 by five units. Except for the MK 85 Exercise Head production, all FY 87 results exceeded the FY 86 performance level.

Mark 48 Program

Three hundred ninety-three torpedoes were processed through the Warshot Depot Maintenance (WDM) program. This met the assigned NAVSEA schedule. In new production, 145 units were accepted and processed in accordance with the assigned target of 144 new units.

Mark 50 Program

Testing of new hardware is continuing at an accelerated pace. During the year, 39 in-water test runs were performed as compared with 23 in the previous year. Of the 39 test runs, 24 were done with the new 200A series units and the success rate was at 75 percent.

Mark 48 Advanced Capability (ADCAP) Program

The Station successfully completed in-water tests of all five of the "Early 5" ADCAP torpedoes and expedited the proofing process to meet an accelerated shipment date for the hardware for use in the East Coast TECHEVAL tests. The Station also provided support for the Argo-Tech (second source) afterbody and the new ADCAP software on a "piggy-back" basis.

process control methods were introduced in selected manufacturing operations i.e., flow soldering and MK 85 Mod 6 Exercise Head electronic assembly and test operations. Assisted Ships Parts Control Center by screening 1,400 vendor supplied cylinder barrels. This service permitted NUWES to attain a critical MK 46 Class B turnaround schedule. Material rejection rate of NUWES procured material was decreased from 14 to 11 percent. This was, in part, accomplished by developing a close relationship with vendors and quick follow-up on noted deficiencies.

Security

Activated the Command Monitor and Dispatch Center which will provide a central automated response center for all Station emergency services, intrusion detection, etc. Established permanent Security Zones at the Indian Island Detachment and a threat detection system at the Keyport waterfront. Augmented military personnel to civilian/contractor security force. Three man-years were saved in the process, which are used to secure specific sensitive buildings. NUWES also installed "Secure" communications as one of the first four DOD sites to activate encrypted Defense Data Network mode. Also, installed card controlled TV monitors at pedestrian gates and two classified buildings eliminating requirements for guard labor.

II. SPECIAL TOPICS

A. Special Emphasis Programs

Navy Industrial Improvement Program (NIIP)

In a continuing effort to meet goals and objectives of NIIP, NUWES exceeded the FY 87 target of $12.8 million by achieving a total savings of over $22 million. Two examples of significant actions taken include: 1) Decreased Repair Turnaround Time for the MK 46 and MK 48 Torpedoes resulting in a total Navy inventory procurement cost savings in excess of $17 million; and 2) Reduced unit cost of the MK 46 Class B maintenance by 13%, saving $1.95 million through improved processes, automation and better provisioning of replacement parts.

Additionally during the past year NUWES exceeded cost savings and indirect staffing goals associated with the NIIP. Indirect staffing was reduced by 156 man-years in FY 87 for a cumulative reduction of 211 man-years compared to the FY 85 baseline. Overhead labor cost decreased by $4.8 million from FY 86.

Safety

NUWES maintained its reputation of unequaled excellence for both occupational and explosive safety in the NAVSEA ordnance community in 1987. In addition to being a candidate for the Secretary of the Navy (SECNAV) Activity Award for Safety Ashore, the Navy Inspector General personally commended the Station for outstanding performance during the 1987 Annual Navy Occupational Safety and Health (NAVOSH) Inspection. During the NAVOSH Program Inspection, 26 elements were evaluated and all were rated completely satisfactory. NUWES also received noteworthy comments from the NAVSEA Center Pacific and DOD Explosive Safety Board for the outstanding administration and attitude demonstrated in the explosives safety program.

Energy Management

NUWES submitted a nomination for the SECNAV Energy Conservation Award in October 1987. The Station expects to be very competitive based on projects completed, with a savings of 87,000 MBTU/year or $361K/year. Planned

energy conservation projects in progress will generate an additional 8% savings in energy usage or utilities cost reduction of $152K/year.

Equal Employment Opportunity

Following an audit conducted by the Equal Employment Opportunity (EEO) Commission, many local Commands were referred to NUWES as a model for their EEO programs. Numerous requests for on-site visits to observe NUWES programs in action were accommodated.

This year's efforts focused on the Handicap and Minority Programs. NUWES exceeded DOD's goal in hiring the physically handicapped, which currently comprises 10.6% of the workforce. Disabled veterans increased from 4% in FY 86 to the current 5.1%, surpassing DON and VA placement goals. Additionally, NUWES hired the first deaf DOD employee for the Apprentice Program.

Federal Women's Program (FWP) accomplishments include:

- Professionals increased by 10%.
- Engineers increased by 10.9%.
- Grades 9-11 increased by 23.1%.
- Wage Grade Leader positions increased by 50%.

NUWES has established an Unpaid Work Experience program which utilizes a combination of handicapped volunteers and volunteers from local high schools. During the hiring freeze, these personnel were extremely helpful in "short handed" support operations. They also saved the Station approximately $350,000 in labor costs. Twenty-five percent of these volunteers were eventually hired by the Station while many others found gainful employment in other government agencies and private industry.

Training

The first in a series of live broadcasts from Pennsylvania State University began on 22 September 1987. Penn State transmitted classes taught especially for NUWES employees directly to Keyport via satellite. This new concept was conceived by Mr. Ed Lesinski, (previous Technical Director), as a way to assure NUWES engineers were able to maintain up-to-date skills and knowledge.

NUWES has some of the Navy's newest and most sophisticated facilities, employing advanced technology and state-of-the-art equipment for diagnostics and repair. The use of robotics and a local area computer network are examples of technology in the work areas. The Station continues to expand the Advanced Technology Center, operating four primary laboratories devoted to skill enhancement in computers, microprocessors, fiber optics and robotics.

B. Personnel Resources

Civilian

At the end of 1987, the Station employed 3,217 permanents, 58 temporaries, and 2 Co-ops for a total of 3,277 civilian employees. A departmental civilian manpower breakdown follows:

Code	Department	Personnel On-Board
A0	Executive Office	13
01	Administration/Security	100
02	Comptroller	47
03	Data Processing	83
04	Safety	13
05	Resources and Planning	35
06	Civilian Personnel	45
07	Staff Civil Engineer	96
11	Supply	86
20	Weapons	1,629
30	Weapons Quality Engineering Center	144
40	Quality Assurance	147
50	Proof, Test and Evaluation	264
57	Southern California Detachment	58
60	Program Coordination	40
70	Research and Engineering	110
75	In-Service Engineering	150
80	Technical Operations	96
90	Hawaii Detachment	121
	Total	3,277

Military

The NUWES military manpower distribution as of 31 December 1987 is as follows:

	ENLISTED	OFFICERS
Keyport	264	17
Indian Island	35	2
Nanoose	3	1
Hawaii	0	1
Southern California	0	1
Nevada	0	1
EOD	9	2
Total	311	25

C. Command Problem Areas

The following is a chronological overview of problems experienced by NUWES over the past year.

January

Cylinder barrels, sea water batteries, and explosive bolts are in short supply. Parts shortages has reduced Class B Maintenance from a scheduled 135 units per month to 95 per month. Shortfall can be resolved in March or April with availability of parts.

Low production on the MK 85 Mod 6 Exercise Head is due to problems obtaining satisfactory castings from Naval Ocean Systems Center (NOSC). NOSC is considering obtaining a commercial source to resolve the problem. NUWES is exploring the possibility of having castings produced by Puget Sound Naval Shipyard (PSNS).

April

Proofing of the United Kingdom MK 40 Targets delayed due to target dynamic problems. Targets did not achieve the required turn rates when towing the spatial array. Naval Underwater Systems Centers and Rockwell International Corporation (prime contractor) are investigating (with support from NUWES).

May

NAVSEA has forwarded a letter to the Chief of Naval Operations reviewing the severe O&MN funding cuts to the target program for FY 88 citing NAVSEA's intention to terminate target services at two of the four target IMAs if funds are not restored. Target services will be terminated at Southern California ASW Range in the Pacific and either AUTEC/AFWTF. The constant turmoil in O&MN funding for Fleet ASW target support makes planning extremely difficult.

July

Warshot Depot Maintenance and new production shipments were less than scheduled, due to difficulties encountered in correcting deficiencies uncovered during the Torpedo MK 48 recertification.

August

New production of Torpedo MK 46 Mod 5 efforts have been slowed due to the discovery of corrosion on new afterbodies. Honeywell is in process of correcting the problem. NUWES shipped 300 torpedoes to the fleet, and will ship over 400 in September. The shortages of accessory bulkheads have become the lead item causing program delays. Additional bulkheads are scheduled for delivery in mid-to-late October.

October

Due to continuing resolutions and lack of O&MN funds in general from budget reductions, NUWES is having difficulty supporting Fleet Operational Readiness Accuracy (FORACS) and Surface Ship Radiated Noise Measurement (SSRNM) tests scheduled by the fleet. Although no tests have been cancelled, NUWES will be unable to continue to support scheduled test operations unless funding is provided.

November

Although Torpedo MK 48 Mod 4 proofing continued, no ready-for-issue units were shipped to the fleet due to the necessity to "screen" selected Gould hardware for two problems: 1) a suspect loose relay on a circuit card in the command control unit and 2) suspect loose alignment (keying) pins on several circuit cards throughout the torpedo electronics.

D. Facilities Development

The Station's assets include approximately 5,000 acres of land and over 400 buildings, with a current plant value of approximately $300 million. The Station's Five-Year Facility Plan, updated annually, provides the basis for orderly distribution of space to satisfy present and projected mission/workload requirements. The plan considers redistribution and consolidation of assets, as well as capital investments to improve productivity and readiness.

The following depicts projects undertaken during 1987:

- Preliminary submissions were prepared for Indian Island security upgrades and an Undersea Mobile Target Facility. The proposed

target facility gross space requirement is approximately 50,000 sq. ft. at an estimated cost of $6 million. All undersea mobile targets (MK 27, MK 30, and MK 40) and functions, i.e., depot, logistics, proof and test, and ISE, will be consolidated in one facility. The Indian Island security project primarily consists of approximately 14 miles of fencing.

- MILCON Project (P-293) for the ADCAP Program was completed.

- Construction started on a new 13,000 sq. ft. Flammable/Hazardous Materials Warehouse. Completion is expected early 1988. The facility will provide consolidated storage of hazardous materials stocked by Supply.

- Construction was started and completed on a 3,200 sq. ft. mezzanine in Building 893. The additional area will provide storage and office space for Receipt Control personnel. This will aid in expediting the processing of incoming material to the Station. Additionally, construction began on a covered storage area consisting of 8,000 sq. ft. which will be used for incoming material. Expected completion early 1988.

- A Command Conference Center has been added to topside Building 82.

- A container refurbishment area (Building 5094) has been completed.

- Construction was completed on the Radio Hill communications tower. This project is expected to improve reception significantly.

- A Sonar Repair Facility has been completed providing 5,000 sq. ft. of space for electronic communications repair.

- Construction began on the MK 117 Facility providing 5,000 sq. ft. of space for electronic repair. Completion expected early 1988.

E. Accidents/Casualties

During 1987, there were no major accidents or casualties. There was a 56% reduction in days lost due to "minor accidents".

F. Hazardous Waste

The Station is committed to the DOD hazardous waste reduction efforts with a target of 80% reduction in the next five years. In this effort, a number of Station operations have been initiated to significantly reduce hazardous waste. Equipment has been procured for treating afterbody flush rinse water, reducing the quantity of waste by 50,000 gal/yr; plastic media blast equipment eliminates 80%.(576 tons) of the annually generated wet stripping wastes; project documentation has been submitted for a zero discharge chrome plating system which will result in annual saving of $36,000; and a study has been completed that identifies used oil and solvent elimination areas resulting in an annual waste reduction of 124,000 gallons.

G. Community Relations/Participation

NUWES community relation projects accomplished during 1987 include:

- Station employees organized a Second Annual High School Computer Programming Contest involving six local high schools. This contest has attracted considerably increased local attention.

- The NUWES Tutorial Program for "slow" learners in math and science established in North and Central Kitsap High Schools was expanded to elementary and junior high schools in the local area. Volunteer tutors from NUWES contributed 32 hours per week to this effort.

- NUWES conducted its 3rd annual "Shadowing Day", where students from local high schools spend a day with Station employees to gain information about occupations at NUWES.

- The Kitsap Advisory Committee to the Naval Undersea Museum Foundation kicked off a Kitsap County membership drive. Washington State Governor Booth Gardner and Secretary of State Ralph Munro were keynote speakers.

- Employees are involved in public services ranging from membership on the Bremerton City Council to various youth-oriented activities. Of special note, NUWES personnel make up the majority of the volunteer workforce in support of Kitsap County's Special Olympics Program.

NUWES 1988 COMMAND HISTORY

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I. HISTORICAL NARRATIVE

A. Statement of Command's Mission

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MISSION STATEMENT

PROVIDE QUALITY AND RESPONSIVE ENGINEERING, TECHNICAL, INDUSTRIAL, AND MATERIAL SUPPORT TO THE FLEET FOR COMBAT SUB-SYSTEMS, EQUIPMENT AND COMPONENTS.

- PROOF, TEST, AND EVALUATE ASW/USW WEAPONS, WEAPON SYSTEMS AND COMPONENTS
- CONDUCT UNDERSEA WEAPONS EXERCISES AND ASW TESTS AS THE NAVAL SEA SYSTEMS COMMAND'S PACIFIC FLEET ASW TEST AGENT
- EXERCISE DESIGN COGNIZANCE AND OPERATE ACOUSTIC AND 3-D UNDERWATER TRACKING RANGES
- PROVIDE DEPOT LEVEL SUPPORT FOR TORPEDOES, COMBAT WEAPON SYSTEMS, MINES AND ASW TARGETS
- PROVIDE IN-SERVICE ENGINEERING AGENT SERVICES FOR TORPEDOES, TARGETS, COUNTERMEASURES, SONAR SYSTEMS AND ASW/USW FIRE CONTROL SYSTEMS
- PROVIDE RETAIL AMMUNITION MANAGEMENT SERVICES AND INTERMEDIATE AND DEPOT LEVEL MAINTENANCE ON EXPENDABLE ORDNANCE
- PROVIDE TECHNICAL SUPPORT, CONSULTATION AND PLANNING SERVICES TO THE WEAPONS AND COMBAT SYSTEMS DIRECTORATE AND FIELD ACTIVITIES IN ROBOTICS, COMMUNICATION SYSTEMS AND LOCAL AREA NETWORKS
- DEVELOP AND OPERATE LAND BASED SIMULATION TEST FACILITIES FOR ASW/USW WEAPONS

B. Station Organization

NUWES is organized into 18 departments of which two are detachments located at San Diego, California and Lualualei, Hawaii. Two additional detachments, which are divisions of the Weapons Department, are located at Indian Island, Washington and Hawthorne, Nevada. NUWES workforce consists of approximately 3,200 civilians and 320 military personnel.

Utilizing a comprehensive set of three-dimensional underwater tracking ranges in the Pacific Northwest, Hawaii, and Southern California, the Station continues to perform its original and primary function of underwater weapon proofing and testing.

The following list is comprised of key personnel in the NUWES organization.

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11	Supply	LCDR B. A. Holland
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27	Indian Island/Bangor	LCDR Carroll D. Bernier
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30	Weapons Quality Engr Center	Donald H. Danielson
40	Quality Assurance	John R. Veatch
50	Proof, Test, & Evaluation	Rodney L. Mash
57	Southern California Detachment	CDR Stolarz B.
60	Program Coordination	G. Estes Grade
70	Research & Engineering	Alan L. Lindstrum
75	In-Service Engineering	A. Bryant Tennell
80	Technical Operations	CDR D. R. Hillier
90	Hawaii Detachment	CDR James E. Faivre

Organization Changes

During 1988, sixty-nine inspectors were transferred from the Quality Assurance Department to the Weapons Department. This action was to facilitate a structured approach to monitoring the production process.

Key Personnel Changes

Key personnel changes at NUWES during 1988 were as follows:

Head of Administration/Security - Ms. Dianne L. Dessert was selected to replace Mr. Dallas D. Likens. Ms. Dessert was the Business Specialist for the NAVSEA Technical Assessment Support Staff at NUWES. She is the first woman at NUWES to hold the position of Department Head.

Head of Safety Department - Mr. Earl F. Jones was welcomed aboard to replace the retiring Eugene Cook who had been the Safety Manager since 1984. Mr. Jones came from the Naval Ordnance Station Louisville prior to this assignment.

Head of Resources and Planning - Mr. Dallas D. Likens was selected to replace the retiring Lewis A. Munson. Mr. Likens was the Department Head of Administration/Security for 7 years prior to being selected for this position.

Technical Operations Chief Engineer - Jim Paull was selected as the Chief Engineer of the Technical Operations Department. Mr. Paull came from the Research and Engineering Department prior to accepting this position.

C. Mission Accomplishments

Major emphasis was placed on improvement in our product quality through implementation of a Total Quality Management Program. Employee teamwork, improved morale, and quality of life enhancement were the major emphasis.

As the Navy's only overhaul depot for torpedoes and underwater targets, NUWES met all production objectives ahead of schedule and under established costs. MK 46 torpedo production work was completed at a savings of over $1.5 million, for which the Station received special recognition from the Assistant Secretary of the Navy.

NUWES Significant accomplishments for FY 88 include:

Undersea Weapons Systems

- Shipped 2382 MK 46's to fleet
  - 1278 class "B" - 1104 new Mod 5
- Shipped 401 MK 48's to fleet
  - 292 WDM - (45 Depot Repair & PLV) - 64 New Mod 4
- Proofed and delivered ten ADCAP production units
- Conducted 39 ADCAP in water tests
  - 17 "Follower" Qual runs - 22 ISE runs
- Conducted 1090 runs on Northwest ranges
- Prepared 790 Mobile Targets for fleet training
  - 699 SOCAL and Hawaii - 91 Nanoose and Dabob

ASW Testing

- Completed 29 (DWS) support OPS for Trident submarines
- Acquired SESEF capability
  - Hawaii - Transition complete from PHNSY
  - SOCAL - Transition complete at Pt. Loma
  - Keyport - Transition in progress from PSNSY
- Conducted 717 ASW ship tests.

Locations		Types	
- Northwest	196	- Ships	288
- SOCAL	354	- Submarine	184
- Hawaii	167	- Aircraft	245

- Increased ASW ship tests 18% over 1987.
- Hawaii Detachment provided Post Operational Analysis Critique and Reviews (Pacer) for eight Surface ships participating in Surface Warfare Training Availability (SWTA-3).

Ranges

The Nanoose Range successfully supported high visibility special R&D operations using fleet assets, most notably, USS MISSOURI (BB 63), the first battleship to visit the range.

Four operations were conducted from the Pacific Beach control site at the Quinault Range in May, June, July, and August in support of the MK 50 OTIIA tests, ADCAP MK 48 OPTEVFOR tests, and MK 46 proofing tests.

A video microwave system between Ballenas Island and Winchelsea Island was installed to allow for the transmission of cinesextant data to be viewed in real-time at the range control site on Winchelsea Island.

MK 46 Torpedo Program

NUWES met all of the NAVSEA assigned MK 46 Torpedo production goals for FY 88 and kept an on-Station inventory below the 450 goal.

MK 48/ADCAP Torpedo Program

The fiscal year goal of 292 Warshot Depot Maintenance (WDM) torpedoes were completed and shipped. The depot also completed six MK 48 torpedoes that were classified as damaged due to extensive salt and/or corrosion damage while being used as exercise assets at various fleet IMA's. All 64 of the new production MK 48 torpedoes completed proofing and were shipped to the fleet.

MK 50 Torpedo Program

A total of 12 MK 50 OTIIA test runs have been completed as of 30 September 1988. An additional eight runs are required to complete the OTIIA phase. Six firings were completed at BARSTUR (Hawaii) in early October. Full scale development testing continued with major emphasis on OTIIA testing and readiness for TECHEVAL. During the year, 66 in-water test runs were accomplished, with a success rate of 63%.

The steam plant facility is now operational for testing the MK 50 turbine gear box.

PMS 406 assigned responsibility to NUWES for Preproduction and Periodic Production Testing of the MK 50.

Combat Systems

The Station completed refurbishment on seven ship sets of Combat Control System (CCS) MK 1 consoles and seven ship sets of SONAR AN/BQQ-5 consoles. Developed the capability to repair modules for the CCS MK 1 program and added the refurbishment capability of AN/BQQ-5 LFR. Overall refurbishment costs in FY 88 have dropped in a continued effort to lower unit refurbishment costs without jeopardizing quality or timeliness.

Combat System Ship Qualification Trails (CSSQT)

Naval Ship Weapons Systems Engineering Station (NSWSES) Port Hueneme, California has favorably endorsed our initiative to perform the ASW portion of all scheduled CSSQTs on the West Coast. The SOCAL Detachment provided the first ASW expertise for a pre-CSSQT ship assist visit to USS STARK (FFG-31).

Surface Ship Torpedo Defense (SSTD)

NUWES supported a Surface Ship Torpedo Defense (SSTD) exercise involving USS NIMITZ at one of the Northwest Ranges.

Submarine Launched Mobile Mine (SLMM)

Due to a cutback in funding, 109 units of a planned 180 units were completed.

Detachments

Hawaii Detachment provided Post Operational Analysis Critique and Reviews (PACER) for eight Surface ships participating in Surface Warfare Training Availability (SWTA 88-3).

SOCAL and Hawaii Detachments supported forces from four nations (Canada, Australia, Japan, and United States), including 45 ships, 200 aircraft and 50,000 personnel participating in RimPac 88.

Indian Island Detachment hosted Joint Chiefs of Staff exercise - Freedom Banner 88-2. The Exercise involved loading/back loading equipment valued at nearly one billion dollars from maritime prepositioning ship PVT Dwayne T. Williams.

Indian Island Detachment successfully tested ammunition on-load/off-load capabilities in support of USS NIMITZ, which was the first aircraft to visit facility.

Miscellaneous

NUWES provided local and on-ice support for a highly successful series of Applied Research Lab (ARL)/Penn State University (PSU) ICEX guidance and control experiments. Experiments lead to a real time under ice navigation aid for submarines.

II. SPECIAL TOPICS

A. Special Emphasis Programs

Safety

NUWES continues to maintain an enviable reputation of excellence in both occupational and explosive safety programs. During the last NAVOSH inspection, 13-15 July 1987, NUWES was commended for outstanding performance with 26 elements evaluated and rated as completely satisfactory. The Station's outstanding results were attained during a 1988 NAVSEA Program Management Review of administration of the NAVOSH program at NUWES. Additionally, the Station conducted a 24-hour Safety Stand Down in May with the Safety Department conducting hourly classes, throughout the day, on ten safety topics. This all day event was intended to increase the Safety awareness for those working in the industrial area. Special emphasis was placed on explosive safety.

The Safety Office was involved in three inspections. No unfavorable findings were reported from NAVSEA Naval Support Center Pacific, Radiological Affairs Support Office (RASO) or Department of Defense Explosive Safety Board (DDESB).

Energy Management

NUWES met its FY 88 energy reduction goal by reducing consumption more than 1% (7,770 MBTUs/$33K) when compared to FY 87. Two projects in FY 88 (installation of new heat controls and a boiler plant upgrade) are projected to reduce consumption in future years another 1% (8,150 MBTUs/$32K). Plans have been drafted for the design and installation of an energy management system.

Equal Employment Opportunity

Seven female employees were nominated and selected for participation in the "Women's Executive Leadership Program" sponsored by the Office of Personnel Management. This particular program enables employees to successfully compete for supervisory and managerial opportunities.

NUWES' Federal Women's Program has continued to increase women's representation in the workforce: 18% increase of women at the GS-12 level, 50% increase of women Merit Pay members, a 25% increase of women wage grade supervisors and women held 32.7% of all trainee/upward mobility positions, and received 29.9% of all Station promotions, exceeding overall Station representation of 20.7%.

NUWES' military complement of approximately 320 personnel, includes 35 females. These women have varying degrees of responsibility including billets as Coxswain/Chief Engineers on Torpedo Retrievers, members of Firing Crews, Assistant Chief Master-at-Arms, shift supervisors, communication specialists and section leaders. In addition, for the first time, women have been assigned to tug operations at the Indian Island Detachment.

Currently, 12% of the total Station workforce is comprised of personnel placed through NUWES' award winning HANDIcapped/disABLED Veterans Program. This is a 1.4% increase over 1987.

NUWES sponsors an annual "Spotlight on Human Resources Week" which is dedicated to expanding knowledge and understanding of special interest and minority groups. During 1988, the lunch events included a Hawaiian luau, a Hispanic fiesta, and Afro-American musical demonstration, a Native American folklore and story telling presentation, and a highly competitive Wheelchair Basketball game. Additionally, throughout the year, special emphasis programs were highlighted through the "Spotlight" and FWP newsletters, and "30 minute" brown bag luncheon presentations.

Training

NUWES completed its first academic year of receiving job-related acoustics classes live, via satellite from Pennsylvania State University. The satellite receiver disk was also used to bring in other technical training to the Station. Utilizing this capability has enabled the Station to realize cost savings by alleviating typical travel expenses associated with off-Station training.

B. Personnel Resources

The Station's civilian population as of 31 December 1988 is as follows:

Civilian

Code	Department	Personnel On-Board
A0	Executive Office	10
01	Administration/Security	100
02	Comptroller	48
03	Data Processing	83
04	Safety	11
05	Resources and Planning	32
06	Civilian Personnel	47
07	Staff Civil Engineering	96
11	Supply	90
20	Weapons	1,556
30	Weapons Quality Engineering Center	135
40	Quality Assurance	73
50	Proof, Test, and Evaluation	257
57	Southern California Detachment	56
60	Program Coordination	37
70	Research and Engineering	112
75	In-Service Engineering	188
80	Technical Operations	93
90	Hawaii Detachment	115
	Total	3,149*

* Includes 10 WSMDP's

Military

The NUWES military manpower distribution as of 31 December 1988 is as follows:

	Enlisted	Officers
Keyport	254	14
Indian Island	32	1
Nanoose	3	1
Hawaii	0	1
Southern California	0	1
Nevada	0	1
EOD	9	2
Total	298	21

C. Command Problem Areas

The following is a chronological overview of problems experienced by NUWES over the past year.

January

Lack of seawater batteries limited our ability to complete the overhaul of fleet return torpedoes, to assemble new torpedoes to a warshot configuration or to meet commitments to deliver torpedoes purchased by Canada. This seawater battery shortage problem was forecasted and has been worked in conjunction with NAVSEA and SPCC. Our ISEA has worked with the manufacturer to resolve his production problems and recently MAGNEVOLT has delivered successful first articles. Our delivery expectations from a second source (YARDNEY) are also favorable. Hopefully, these two contractual deliveries will resolve this problem in the near future.

The Mobile Target Program faced the possibility of severe funding cutbacks. It looked as though target operations would have to be terminated at the SOCAL ASW Range by April. Scaled-back target operations at the BARSTUR Range (supported by the Hawaii Detachment) and significantly reduced depot support at Keyport would also result. The workload indicated that there would be a requirement for approximately $2M. However, the latest rounds of cuts indicated that NUWES would only receive $500K.

February

Due to preparation for the Anti-Terrorist Security Exercise ("Kennel Lance") in March, the Range capabilities were limited during the course of the event. Military were on call to "man their stations" in addition to performing operations at the range. Numerous steps were taken to minimize the impact on Station production, while attempting to get as much benefit from the exercise as possible.

March

A leak in the low pressure side of the MK 48 Torpedo hydraulic system was found in 5 of the 25 torpedoes processed in the Weapon Depot Maintenance (WDM) program. The problem was isolated to hydraulic tube assemblies provided to us on a Defense Logistics Agency (DLA) contract. A major effort was taken to locate the tube assemblies and determine the impact of the leakage problem.

May

SURFPAC expressed concern over the reliability of the MK 27 Target for use on the SCORE Range in SOCAL for fleet exercises. The primary concern was that ships sonars cannot obtain continuous tracking of the target. Even when range and other platforms obtained a target fix the torpedo did not properly engage the target. Investigation revealed that target/torpedo compatibility problems exacerbated by the SOCAL acoustic environment, are causing the problem. Near-term resolution involves increasing the target size and speed and decreasing the operating depth to compensate for the MK 27 limitations. The planned long-term resolution was to replace the MK 27 Target with the MK 30 Target.

June

A NAVSEA letter was written to CNO (OP-05) requesting support for restoring FY 89 O&MN ASW Targets/Pingers funding. If funding was not restored, two target IMAs including the SOCAL Detachment would have to be shut down and only one-third of the fleet-requested target runs would be provided.

There was a severe shortage of MK 139 batteries and End-of-Run batteries for the MK 30 Mod 1 Targets. This problem was attributed to inadequate provisioning of battery cells, poor performance of battery cells procured from vendors and delivery delays from contractor.

November

Torpedo production for November consisted of 86 overhauls and 19 new Mod 5 torpedoes. We completed 231 torpedoes, with 162 shipped against an FY 89 yearly total of 1568. Processing of new Mod 5 torpedoes received from Honeywell was hampered due to their lack of delivery of course gyros with the torpedoes. We worked ahead on overhauls to compensate for the lack of gyros. By shifting work we stayed on schedule and are making up the new production work as gyros are delivered.

December

Restoration of $4 million of FY 89 O&MN funding for ASW Targets/Pingers, which was tentatively approved in June, has not occurred. A NAVSEA message is being prepared announcing that one East Coast IMA (AUTEC or AFWTF) and one West Coast IMA (SOCAL Hawaii) will have to be shutdown by fourth quarter FY 89 due to shortage of funds.

Deliveries are still delayed due to lack of solid state digital data recorders (DDR) from R. W. Electronics. They have been trying to solve a difficult noise problem which causes errors in the recording/playback. A meeting was scheduled with the company to negotiate a new delivery date and force a resolution.

D. Facilities Development

The Station's assets include approximately 5,000 acres of land and 668 buildings, utilities, and other structures, with a current plant value of approximately $350M. The Station's five-year plan and Facility Planning Board provide the basis for orderly distribution of space to satisfy present and projected mission/workload requirements. Minor construction projects completed in 1988 totaled $822K. These projects included a covered storage area, computer building, container refurbishment facility, hazardous material storage/processing facility, and an engine test facility. A 1988 GSA survey found that no property was excess to NUWES's needs.

Construction of the new Flammable/Hazardous Materials Warehouse was completed during the first quarter. This facility provides for the consolidated yet segregated storage of hazardous waste.

A 8000 square foot covered staging area was also completed during the first quarter. The facility provides protection and security for incoming material. Previously, material had to be staged outside exposed to weather and left unattended in after-hours situations.

A new excessing area was completed in the second quarter. The facility provides a 40,000 square foot secured staging area for the turn-in and control of excess material generated by the Station.

Construction was completed on the expanded office space at Indian Island during the fourth quarter. The expansion added an additional 200 square feet to the existing facility and provided adequate operating space for personnel working in shipping.

E. Accidents/Casualties

During 1988, the Station experienced a 46% increase in lost time days from minor injuries/illnesses, and 5 explosive mishaps.

F. Hazardous Waste

One of the original eight sites, found during the Initial Assessment Study (IAS), conducted prior to 1988, for Keyport and Indian Island, no longer presents a risk. The remaining seven sites will be included in a Redemptional/Feasibility Study (RI/FS). Due to potential health risks the Navy decided to conduct immediate studies at three of the remaining seven sites. Studies at these sites have been completed and results were submitted to the appropriate state and federal agencies.

A fact sheet has been prepared to inform the community about the Navy's Initial Responsibility Program (IRP).

The following Keyport sites are identified for an RI/FS:

1 - Landfill
2 - Van Meter Road Spill/Bldg 735 Contamination
3 - Otto Fuel Leak
5 - Sludge Disposal Area
8 - Chromate/Cyanide/Oil Spill Area
9 - Liberty Bay

G. Community Relations/Participation

The Station plays a key role in community affairs by sponsoring, hosting and participating in a variety of local and international events:

- During 1988, NUWES employees sponsored and participated in Special Olympics Track and Field events as coaches, field judges and officials. NUWES' Galley supported this event by providing meals for 250 athletes. Additionally, Station personnel organized and participated in a dance-a-thon to raise money for the Special Olympics.

- The 4th Annual Shadowing Day was conducted and offered students from three local school districts an opportunity to visit NUWES and observe employees at work in various occupations.

- Currently, 22 engineers and technicians from NUWES voluntarily provide tutorial services in physical science, math and computer science to 450 students in elementary, junior high and high school from two local school districts. In addition, tutors work with Native American students in the fields of Mathematics and English.

- One of the Station's most popular activities within the community is an annual Independence Day celebration. More than 15,000 people attended this day-long event in 1988.

- In May, NUWES hosted the 8th Annual Naval Undersea Museum Foundation meeting and reception for VADM Eli Reich (Ret) and Museum Trustees. Approximately 100 guests, including State and local government representatives, attended.

- NUWES personnel supported area Blood Banks by contributing 832 pints of blood during six Station sponsored drives.

- NUWES employees consistently exceed other Stations in donations to Navy Relief and the Combined Federal Campaign (CFC). CFC contributions in 1988 totaled $76,720, which was 118% of the Station goal of $65,000.

- The Station took an active role in supporting community celebrations including "Whaling Days" in Silverdale, Washington; "Viking Fest" in Poulsbo, Washington; and Armed Forces Day celebrations and parades in four states; and the Canadian World Championship Annual Bathtub Race.

- NUWES conducts weekly public affairs tours for junior high and high school students, State and U.S. government officials, foreign dignitaries, and civilian and military VIPs. The Station hosted over 700 NJROTC/NROTC visitors and 41 press visits in FY 88.

- NUWES Commanding Officer received the coveted "Chief Thunderbird Award" in 1988 for his outstanding participation and support in civilian communities.

MAJOR CONFERENCES

Long Range Planning

Formal Long Range Planning (LRP) is an integral part of the Station management process in which strategic objectives are established and major issues are addressed. The resulting efforts provide a baseline to initiate improvements in operations. The Station conducts LRP sessions on a biannual basis with the sessions in 1988 held on 19-21 April and 15-17 November. The primary emphasis was to review the long term Station impact based on schedules of the MK 50, ADCAP, and ASW Torpedoes. There is an increasing emphasis to review emerging technologies in an effort to find out how they could benefit existing and upcoming programs.

MAJOR AWARDS/CITATIONS

The Office of the Assistant Secretary of the Navy (Shipbuilding and Logistics) recognized NUWES with an Honorable Mention certificate for Outstanding Achievement in MK 46 Torpedo Class B maintenance area.

Forth-six NUWES employees were nominated for Secretary of Defense Productivity Excellence Award letters of commendation for their outstanding work on Acquisition Streamlining.

One of NUWES' employees (Don Morris, Code 07) received special recognition in 1988 from the Secretary of Navy (SECNAV) for management of NUWES' Natural Resource Conservation Program. The recognition was given for the effort directed toward developing a program that generates revenue from sales of shellfish. This revenue has fully funded NUWES' Natural Resources Management Program.

The Chief Engineer/Deputy Officer-in-Charge (James Sakata) of the Hawaii Detachment received an award for Technical Achievement in Undersea Warfare from the American Defense Preparedness Association.

The Station's Self Help Program included projects such as; building a cement foundation for the DSRV TRIESTE, completing an ambulance canopy at the medical dispensary, developing a nature trail, constructing a physical fitness course, building an Auto Hobby Shop, and remodeling the pilothouse on Torpedo Retriever, TRB-31.

NUWES has won the Golden Anchor Award for 1988. This year's submission outlined a stronger performance than NUWES' 1987 award winning submission. The retention statistics are: first term 60%, second term 65% and career 100%.

NUWES has been selected as NAVSEA's FY 88 nominee for the Ney Award competition.

NUWES 1989 COMMAND HISTORY

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I. HISTORICAL NARRATIVE

A. Statement of Command's Mission

The Naval Undersea Warfare Engineering Station (NUWES) Keyport, Washington, a field activity of the Naval Sea Systems Command (NAVSEA), is a highly capable engineering and industrial activity responsible for undersea weapons proofing and fleet support. In response to advances in undersea warfare technology during the past 16 years, NUWES has changed from a torpedo shop refurbishment facility to a diversified engineering test and evaluation organization with significant manufacturing and repair capability. NUWES is the U.S. Navy's sole overhaul depot for torpedoes and in-service engineering activity. This activity provides support for sonar, underwater fire control and other undersea systems including those aboard Trident missile submarines. Keyport is designated as NAVSEA's Pacific Fleet anti-submarine warfare ship test agent.

MISSION STATEMENT

PROVIDE QUALITY AND RESPONSIVE ENGINEERING, TECHNICAL, INDUSTRIAL, AND MATERIAL SUPPORT TO THE FLEET FOR COMBAT SUB-SYSTEMS, EQUIPMENT AND COMPONENTS.

- PROOF, TEST AND EVALUATE ASW/USW WEAPONS, WEAPON SYSTEMS AND COMPONENTS

- CONDUCT UNDERSEA WEAPONS EXERCISES AND ASW TESTS AS THE NAVAL SEA SYSTEMS COMMAND'S PACIFIC FLEET ASW TEST AGENT

- EXERCISE DESIGN COGNIZANCE AND OPERATE ACOUSTIC AND 3-D UNDERWATER TRACKING RANGES

- PROVIDE DEPOT LEVEL SUPPORT FOR TORPEDO, COMBAT WEAPON SYSTEMS, MINES, AND ASW TARGETS

- PROVIDE IN-SERVICE ENGINEERING AGENT SERVICES FOR TORPEDOES, TARGETS, COUNTERMEASURES, SONAR SYSTEMS AND ASW/USW FIRE CONTROL SYSTEMS

- PROVIDE RETAIL AMMUNITION MANAGEMENT SERVICES AND INTERMEDIATE AND DEPOT LEVEL MAINTENANCE EXPENDABLE ORDNANCE

- PROVIDE TECHNICAL SUPPORT, CONSULTATION AND PLANNING SERVICES TO THE WEAPONS AND COMBAT SYSTEMS DIRECTORATE AND FIELD ACTIVITIES IN ROBOTICS, COMMUNICATION SYSTEMS AND LOCAL AREA NETWORKS

B. Station Organization

NUWES, organized into 17 departments of which one is a detachment located at Lualualei, Hawaii. One detachment, located at San Diego, California is organized within the Hawaii Detachment. Two additional detachments within the Weapons Department, are located at Indian Island, Washington and Hawthorne, Nevada. NUWES workforce consists of approximately 3,300 civilians and 300 military personnel.

A comprehensive set of three-dimensional underwater tracking ranges is used in the Pacific Northwest, Hawaii, and Southern California ranges. The Station continued to perform its original and primary function of underwater weapon proofing and testing.

The following list includes key personnel in the NUWES organization.

CODE	DEPARTMENT	NAME
A	Commanding Officer	CAPT Edward L. Segrist
B	Executive Officer	CDR Robert O. Lowell
C	Technical Director	G. Estes Grade
D	Chaplain	LT Joseph H. Pangborn
F	Command Master Chief	STCM John A. Stolhand
G	EODGRU ONE Det Keyport	LT Andy Don Eernisse
I	Internal Review	Carol J. Flin
01	Security/Administration	Dianne L. Dessert
02	Comptroller	Dirk Van Zanten
03	Data Processing	Robert F. Meade
04	Safety	Earl F. Jones
05	Resources and Planning	Dallas D. Likens
06	Civilian Personnel	Ron McFall
07	Staff Civil Engineer	LCDR Lawrence S. Hirsch
11	Supply	LCDR Benjamin A. Holland
20	Weapons	A. Bryant Tennell
27	Indian Island/Bangor	CDR Gary I. Cassat
29	Hawthorn Detachment	LCDR Bruce E. Palmer
30	Weapons Qual Engr Center	Donald H. Danielson
40	Quality Assurance	John R. Veatch
50	Proof, Test & Evaluation	Rodney L. Mash
60	Program Management	G. Estes Grade
70	Research & Engineering	Alan L. Lindstrum
75	In-Service Engineering	Ernest E. Varnum
80	Technical Operations	CDR William A. Dewey
90	Hawaii Detachment	CDR James E. Faivre
95	Southern California Det	LCDR Ronald W. Whitner

Organization Changes

During 1989, the NUWES Management Review Team (MRT) met to review the results of a comprehensive organization study. The study was an action item identified during the NUWES Long Range Planning (LRP) Conference of Spring '88. Resources and Planning Department (Code 05) conducted the study and presented the findings to the MRT. Following the initial series of meetings, a list of organizational changes were discussed and agreed upon by the members. Some changes required a clarification of functions to lessen overlapping areas. In addition to clarifying functions, some action required transferring personnel between departments.

The following is a list of completed actions associated with organizational changes in addition to changes involving more than one department:

The Museum and Conference Center Management was transferred from C/05 to C/01. Action required a transfer of personnel between departments.

An Environmental & Material Resource Management Branch was assigned to C/07 to handle Hazardous Waste Management. This effort was needed following the discovery that Hazardous Waste was being handled by both C/20 and C/07. This action required a change in staffing.

Contract Management functions were carried out by C/03, C/11, and C/60. The MRT agreed that the functions should be combined under C/60. Action required a transfer of personnel between departments.

Range System and Design Functions were transferred from C/80 to C/70 following a discussion about the lack of need for engineers in C/80. Action required a transfer of personnel between departments.

Other actions were rectified with either a change to the function or in a state of review at the time of this publication.

Key Personnel Changes

Key personnel changes at NUWES during 1989 were as follows:

Commanding Officer - This activity welcomed aboard CAPT Edward L. Segrist, Jr. to replace the departing CAPT Robert W. Hoag II.

Technical Director - Mr. G. Estes Grade* was selected to replace the departing Roger M. Smith who accepted a position at Naval Ordnance Station, Indian Head.

Chief Engineer - Mr. Edward H. Lesinski, with a most successful career with nearly 20 years at NUWES, retired and his position was abolished.

Head of Civilian Personnel - Ron L. McFall returned to his former position as Head of the department following his assignment in Italy. Lynford R. Coleman, who was the department Head in Mr. McFalls absence, accepted a position in London, England.

Head of Weapons Department - Mr. A. Bryant Tennell** was selected for as Program Coordination Department Head prior to being selected as Head of Weapons Department. Mr. Tennell replaced Mr. Grade who went on to become Technical Director. Preceding this action, Mr. Clyde E. Hudson retired as Head of Weapons Department.

Head of Program Management - Mr. William J. Ellis accepted this position vacated by Mr. Tennell** who went on to accept a position as Head of Weapons Department.

Head of In-Service Engineering - Mr. Ernest E. Varnum, previously the program manager for the MK 50 Torpedo, accepted this position vacated by Mr. Tennell**.

Head of Technical Operations - CDR William A. Dewey reports to Keyport from one of the neighboring commands, Trident Refit Facility to replace the retiring CDR Randy Hillier.

Head of San Diego Det. - LCDR Ronald W. Whitener relieved CDR. Robert M. Stolar as Officer in Charge.

Head of Indian Island Det. - CDR Gary I. Cassat relieved LCDR Carroll D. Bernier as Officer in Charge.

Head of Hawthorne Det. - LCDR Bruce E. Palmer relieved the retiring LCDR Gary D. Grosz as Officer in Charge.

* Mr. Grade made two position moves during 1989. The first one being from Head of Program Coordination Office to Head of Weapons Department. The second move was from Head of Weapons Department to Technical Director of NUWES.

** Mr. Tennell also had more than one position move during 1989. The first one was from Head of In-Service Engineering to Head of Program Coordination. The second move was from Head of Program Management to Head of Weapons Department.

C. Mission Accomplishments

During FY 89, NUWES embarked on a vigorous implementation of Total Quality Management (TQM). The activity chose the 14 points of Dr. W. Edward Deming as the basis for anticipated changes. Several "awareness sessions" were conducted with Command and Department Heads. All of senior management received a three day TQM training. Two sizable training teams, including seven senior managers, were trained on how to teach TQM to in-house employees. Fourteen personnel, in Resources and Planning Department (Code 05) and Quality Assurance Department (Code 40), were trained to facilitate and lead formal Process Improvement Teams. Some of these people will go on to lead Technical Applications Seminars (TAS) and Management Applications Seminars (MAS). The Resources and Planning Department (Code 05) administered over 1,000 Management Excellence Surveys and began focusing on helping the Station supervisors manage consistent with the Deming principles.

Two milestones were achieved in the implementation of Total Quality Management (TQM). The Station's "Total Quality Management Implementation Plan" was issued including reasons why changes are needed, a set of operating principles, and a long range schedule. Feedback to individual managers and supervisors began during extensive formal TQM training, which started 9 May, for the Command and Department Heads.

A team of 11 Station TQM trainers, including five Department Heads, received training from Mr. Don Brodie of the Paul Hertz Group to prepare them for teaching the TQM philosophy to all managers and supervisors at Keyport. The first Process Improvement Teams were convened led by members of the Quality Assurance Department.

The Office of the Secretary of Defense (Assistant Secretary for Production and Logistics) in a 9 March 1989 letter, issued the following statement regarding a system design developed by the ISE Department: "The MK 50 Torpedo is a lead program in the use of CALS aimed at digital technical data for a variety of logistic applications. A complete electronic network is being established to connect design, maintenance, spare, and Reliability and Maintainability (R&M) data between contractor and government."

NUWES hosted a NAVSEA Command (IG) Inspection 24-28 April with final results showing improvement over the last inspection in 1986.

NUWES hosted the Joint Ordnance Commanders Group meeting 30-31 August. The interchange of ideas between participants proved to be professionally valuable to the ordnance community.

On 29 March, NUWES conducted a security exercise as part of SUBASE Bangor's Trojan Horse III security drill. The NUWES experience involved a team of "Terrorists" from the Special Forces unit at Ft. Lewis, WA. The would be terrorists attacked four selected targets including the main gate. Difficulty experienced by the aggressors was due to the extremely strong security presented by the ASF/Police Force when THREATCON "CHARLIE" was established. The exercise was terminated early due to the inability of the "terrorists" to reach targets. By conducting the drill after normal working hours (1600-2400) and involving only military and on-shift civilian (security) personnel, no additional NIF overhead costs were incurred.

Telephone communication cost savings were over $250K. The savings resulted from installing two "800 lines" for official business incoming calls and purchasing telephone equipment instead of leasing. Also the Station took over the Local Area Network (LAN) cabling system from the telephone company.

NUWES Significant accomplishments for FY 89 include:

<u>Undersea Weapons Systems</u>

- Shipped 1676 MK 46's to fleet
  - 1116 class "B" - 560 new Mod 5

- Shipped 384 MK 48's to fleet
  - 240 WDM -(4 Depot repair & 30 ply)
  - 110 WARSHOT VERIFICATION TURNAROUNDS

- Proofed and delivered 18 ADCAP production units

- Conducted 99 ADCAP in water tests
  - 9 Warhead Evaluation runs
  - 63 WES Engineering runs

- Conducted 756 runs on northwest ranges

- Prepared 754 Mobile Targets for fleet training
  - 612 SOCAL & Hawaii - 142 Nanoose & Dabob

ASW Testing

- Conducted 1029 ASW ship tests.

Locations		Types	
- Northwest	282	- Ships	502
- SOCAL	510	- Submarines	226
- Hawaii	237	- Aircraft	296

- Increased ASW ship tests 43% over 1988.

FY 89 DEPOT REPAIRABLES

Production increased by 9% over FY 88.

PROGRAM	ELECTRICAL	MECHANICAL
Torpedo MK 37	101	2
Torpedo MK 46	479,103	4,909
Torpedo MK 48	7,124	12,887
MRP/SONAR	8,228	3,270
MOSS	137	243
Target	2,790	1,048
Total	27,483	22,359

Total Depot Repair	(FY 89)	49,842
	(FY 88)	45,625

Ranges

Acceptance testing was completed at NUWES for our Special Purpose Vehicle (SPV). It is a smaller version of our tethered free-swimming underwater recovery vehicles. The SPV is designed for special underwater inspections, search, and small object recovery.

Installation of secure communications at the Nanoose Range was completed. All Northwest ranges now conduct operations using secure voice radio communications. This has been a major accomplishment in upgrading the security of operations.

MK 46 Program

According to customer schedule, 1,116 MK 46's were overhauled. 560 new production torpedoes were proofed. Conducted 386 proofing runs including 21 at the Shallow Water Range. Eighteen torpedoes were used in deep water proofing operations on the BARSTUR range. The Station completed the qualification phase of the Block Upgrade Program.

NUWES expanded the use of Computer Torque Stations (CTS) in the shop and the first ever CTS pilot program into a fleet IMA (at North Island). The concept was positively accepted by the IMA.

Manufacture of MK 85 Mod 6 Exercise Heads for the MK 46 Exercise Torpedo, was resumed after a one-year shutdown due to lack of solid state digital data recorders. Completed 15 Exercise Heads and expect to continue shipments in FY 90 at a rate of 15 per month.

Manufacture of MK 432 Mod 4 Test Sets began and will run through FY 95. This test is used in the testing of MK 46 Torpedoes prior to firing from both ship and air platforms.

MK 48/ADCAP TORPEDO Program

MK 48 - 240 Warshot Depot Maintenance torpedoes were overhauled in according to customer schedule. 110 Warshot Verification (WSV) turnarounds were performed.

NUWES hosted the annual MK 48 IMA Management Meeting of 15-16 February. Representatives from NAVSEA, NUSC, SPCC, SUBPAC, SUBLANT, and all IMAs were present. SUBPAC was pleased with our efforts to reduce IMA costs and our swift turnaround of warshot verifications. One action item of significance to NUWES was the assignment to eliminate the Not For Fleet Use (NFFU) hardware from fleet warshot torpedoes.

ADCAP - The Research and Development Department produced 23 R&D runs during the year. The type runs include; a) several torpedoes ranged against the Fast Deep Prototype target-- the last run being successful in locating the target; b) G&C Block Upgrade Program for development and testing of ADCAP torpedoes software testing requirements prior to fleet deployment; c) NUWES designed, tested, and delivered two Special Configured ADCAP Torpedoes (SCAT) to the East Coast for special open ocean tests in June.

64 in-water runs were completed in support of development and test of the HAC/Honeywell Warhead Electronic System (WES). The Early Development Model (EDM) Program was completed on schedule. The contractor Evaluation Program is on schedule. Targets for ranging

included Coast Guard cutters, DD/FFs, barges, and 12 impact runs against a NUWES developed Warhead Electronic System Evaluation Device (WESED) target. Four WES shots were fired against the ex-SAILFISH as the final Contractor Technical Evaluation (CTE) in-water tests. Three of the units ran as programmed. The WES program will now enter the TECHEVAL phase.

MK 50 Program

Analyzed and reported 107 runs for PMS406 in support of Developmental Testing (DT), OT-IIA, 200B Prototype proofing, and TECHEVAL.

Reviewed the LRIP II Contract proposals from both Honeywell and WECO as part of the NAVSEA Technical Review Teams. Provided inputs to NAVSEA for Fact Finding Phase on Final Acceptance, contractor's proofing support, incentive provisions, etc.

NUWES established a TECHEVAL Transition Team. The IMA was transitioned to NUWES control and operation in May.

The MK 50 OPEVAL support team continued its analytical, reporting, and test conduct support to COMOPTEVFOR with its submission of the OT-IIA Quick-look and final reports. OT-IIA was completed with 20 torpedo firings being conducted from fleet platforms at Nanoose, Quinalt, and BARSTUR test ranges. Acting as Trusted Agent, the team prepared and issued OT-IIA run plans, acted as observers on all exercises, and analyzed all data. The team was also significantly involved in validation of the NOSC Hybird Simulator using the MK 50 Torpedo.

Submarine Launched Mobile Mine (SLMM)

NUWES has completed the proofing of all SLMM mines now destined for the fleet. The Station is now in a status of producing spare mine main assemblies for release to the fleet on a as needed basis.

Targets

An upgrade to the MK 28 warshot target was developed. It will be used with the ADCAP and MK 50 Torpedoes. It replaces the present expanded metal impact panels with extruded aluminum helo landing mat. The design was completed and is undergoing certification impact testing at NSWC White Oak. The MK 50 portion of the impact tests was completed with preliminary analysis indicating that in worst case scenarios the panels meet the MK 50 requirements. Acoustic testing was shown improved beam patterns over the MK 28 Mod 2.

Detachments

Demonstration of MK 27 Mobile ASW Target open ocean operations with surface ships in SOCAL area commenced, and Phase I was completed successfully. USS ANTIETAM (CG 54), with a deployed HSL-47 LAMPS MK III Helo; and USS FLETCHER (DD 992), with a deployed HSL-45 LAMPS MK III Helo, successfully completed Phases I and IIA. Full program completion is scheduled for second quarter FY 90.

On 8-10 May the NUWES SOCAL Detachment successfully completed TOTEM certification review. The review was conducted by CMP-TAMSCO and NUSC.

II. SPECIAL TOPICS

A. Special Emphasis Programs

Safety

The Executive Officer and Safety Director co-chaired a study initiated by NUWES to closely review the local hazardous materials/waste management program. The resulting effort provided recommendations for improvement at Keyport, and the detachments. Weak areas were defined and steps to assure the proper handling, storage, disposal, and accountability of materials, in addition to personnel responsibilities in federal, state, and county safety and environmental requirements.

During the week of 21 August, a Station Safety StandDown was conducted. Events and presentations were telecast via the Station's Local Area Network.

Equal Employment Opportunity

Eleven percent of the total Station workforce was comprised of personnel placed through NUWES' award winning Handicapped/Disabled Veterans Programs during 1989.

NUWES selected one of the Station's blind employees as Disabled Employee of the Year. He is a machinist and works with a digital voice box that tells him the dimension for the parts he cuts.

NUWES' handicap coordinator was presented with the Special Recognition Award by the Federal Executive Board during the Employee of the Year Awards ceremony. His continued efforts

with the Special Olympics and the Student Volunteer Program have helped to support the high standing with the community.

The annual Wheelchair Basketball game between members of the Advisory Committee for Employees with Disabilities, and members of NUWES management was even more exciting than last year. The game was dedicated to the memory of one of the Advisory Committee members who passed away one week after last year's game.

Seven NUWES employees participated in the Women in Trades Fair held at the Seattle Center. NUWES's booth was sponsored by the Federal Women's Committee. Participants share information regarding employment and training opportunities with students and others interested in the skilled crafts and trades.

Training

NUWES now offers master level courses from a number of Universities including the University of Massachusetts, Colorado, and Penn State. The classes come via videotape and allow for credits to be applied toward a Master's Degree in Engineering.

A satellite brings interactive training from Fort Lee, Va. The training consists of Department of Defense courses on a varity of subjects. There is no cost to DoD employees and a minimal cost of $200 to contractor employees. The first class held was the Defense Small Purchase course.

The Station has a Marine cadre on board teaching anti-terrorism tactics to NUWES enlisted personnel and civilian DoD officers. The Auxillary Security Force (ASF) at NUWES received a two week course on anti-terrorism tactics and physical security methods.

One of NUWES' employees was selected to begin a 10-month encounter with one of NUWES' contractors under a program called "Navy's Experience with Industry." The program is sponsored by Naval Supply Systems Command, and allows GS-12 through GS/GM employees to gain insight into the corporate structure.

A program called Unpaid Work Experience was responsible for saving the Station over $700K in labor costs while at the same time prepareing disabled persons for placement into positions on Station.

B. Personnel Resources

The Station's civilian DoD population as of 31 Dec 89 is as follows:

Civilian

Code	Department	Personnel On-Board
A0	Executive Office	10
01	Administration/Security	105
02	Comptroller	47
03	Data Processing	69
04	Safety	15
05	Resources and Planning	30
06	Civilian Personnel	43
07	Staff Civil Engineering	109
11	Supply	91
20	Weapons	1,602
30	Weapons Quality Engineering Center	150
40	Quality Assurance	85
50	Proof, Test and Evaluation	222
60	Program Coordination	41
70	Research and Engineering	131
75	In-Service Engineering	313
80	Technical Operations	100
90	Hawaii Detachment	126
95	Southern California Detachment	56
	Total	3,345 *

* Includes 7 WSMDP's

Military

The NUWES military manpower distribution as of 31 December 1989 is as follows:

	ENLISTED	OFFICERS
Keyport	253	14
Indian Island	26	2
Nanoose	3	1
Hawaii	0	1
Southern California	0	1
Nevada	1	1
EOD	9	2
Total	292	22

C. Command Problem Areas

The following is a chronological overview of problems experienced by NUWES over the past year.

January

The processing of Mod 5 Torpedoes from Honeywell has been virtually stopped as "Course Gyros" were not being delivered with new torpedoes. We received word that the delivery of gyros would not start until March. The delay meant that installation of gyros into the computers would not start until April.

PMS407 informed us that Submarine Launched Mobile Mine (SLMM) production funds for the third quarter must be approved by an Armed Services Appropriation Committee hearing. Therefore, the likelihood of the funds being approved, was not very good.

As part of our efforts to improve our hazardous waste disposal capabilities, a successful test burn of solid waste materials, which were contaminated with solvents, were conducted at the Western Area DEMIL Facility (WADF) Hawthorne, Nevada on 26 January. The incinerator facility is being activated to develop a back-up DoD in-house capability to dispose of Otto fuel wastes.

April

On 26 April, the first reworked lot of solid state digital data recorders for the MK 85 Exercise Head were received. Lack of these recorders had been the cause of shutdown of MK 85 Mod 6 Exercise Head production.

U.S. Senator Harry Reid and Nevada Secretary of State Frankie Sue Del Papa visited the Hawthorne Detachment. Primary interests were concentrated in the areas of Otto fuel waste, MK 50 boiler demilitarization, and the Combat Systems Logistics Support Center. Senator Reid is very interested in assuring that the Army supports all of the Detachments' efforts, especially those which may result in more jobs in Hawthorne and Mineral County, Nevada.

May

The first Fast Deep Prototype Target (FDPT) system shot versus MK 48 ADCAP was attempted in late May at the Nanoose Range. The FDPT could not be launched due to an A-cable leak problem followed by subsequent pre-launch failures. A decision was made to return the FDPT to Dabob Bay for added confidence testing prior to trying another MK 48 or MK 50 systems shot at Nanoose.

June

Scheduled production of the MK 46 Torpedo was impacted by a lack of enough quantities of igniters and Mod 5 gyros. Due to decreased asset availability, it was necessary to carry-over a significant portion of the scheduled MK 46 production.

On 5 June NAVOTTSA advised suspension of all shipments not specifically authorized to the People's Republic of China (PRC). The Station compiled and staged all completed material at the bonded FMS warehouse.

On 14 June, while loading a commercial truck, a unitized stack of three containerized, banded missiles (Standard RIM) were dropped. The accident was a result of both operator error and material failure. Weapon Station Earle proceeded to review loading procedures, and investigated the MK 199 containers for structural and design reliability.

July

A FDPT was launched at Nanoose and shut down about 8 minutes into a 30-minute run. A MK ADCAP Torpedo was launched against the target and successfully completed its run. At approximately 2 hours 25 minutes after FDPT shutdown, while rigging for the tow to Ranch Point, the FDPT exploded. The forebody and afterbody were recovered and returned to NUWES. A JAG and technical investigation followed.

August

Due to delays in Mod 5 gyros and igniter deliveries for the MK 46 Program, the scheduled FY 89 quantity of 1270 overhauls was been reduced to 1116. The carryover of 154 overhauls is expected to be completed the first quarter of FY 90.

September

Recent announcement came that NUWES was designated to the National Priority (Superfund) List. The Station was initially nominated in May of 1986. The investigation phase of the process and feasibility study are expected to be completed by the summer of 1991. There are no indications that past practices have led to increased risks to personnel health or the environment.

November

Nine of eleven new production MK 30 Mod 1 Targets were received for proofing. The most prevalent problem identified in proofing was in passive acoustics. NUWES personnel met with the personnel from the NAVSEA program office in December to discuss the problems. NUSC (TDA) and LORAL (vendor) are expected to be tasked with the review of these problems and take appropriate corrective action.

D. Facilities Development

The Station's assets include approximately 5,000 acres of land and 699 buildings, utilities, and other structures, with a current plant value of approximately $377M. The Station's five-year plan and Facility Planning Board provide the basis for orderly distribution of space to satisfy present and projected mission/workload requirements.

Congress included in the FY 90 Budget Military Construction Projects (MILCONS) P-292, Undersea Warefare Engineering Center, and P-752, BEQ Modernization. MILCON will provide a 75,000 square foot, physically secure, work space for the testing, evaluation, and engineering of undersea warfare weapons systems. MILCON P-752 will alter the second floor of barracks to provide semi-private rooms for enlisted personnel and meet OPNAV habitability criteria. The project will also provide seismic strengthening and fire protection for the entire structure.

A new Auto Hobby Shop opened at Keyport. The shop will be used for general servicing, tire changing, and brake repair.

Minor construction projects completed in 1989 totaled $1.4 million.

E. Accidents/Casualties

During 1989, the Station experienced a 33% decrease in lost time cases. There were 7 explosive mishaps during 1989.

F. Hazardous Waste

The Environmental Protection Agency (EPA) announced that NUWES Keyport was placed on the National Priorities List (NPL).

As part of the study, the Station investigated the four sites identified by the EPA, which is the basis of the Remedial Investigation/Feasibility Study. Results of the earlier studies were reviewed by federal, state, county and local environmental officials.

Soil and ground water sampling began in November as part of the Remedial Investigation/Feasibility Study phase of the Navy's Installation Restoration Program. The program is the military equivalent of Superfund cleanup.

Measurements of pollutants, made so far have not exceeded federal guidelines.

G. Community Relations/Participation

NUWES plays a key role in community affairs by sponsoring, hosting and participating in a variety of local and international events:

- During 1989, 118 NUWES employees sponsored and participated in Special Olympics Track and Field events as coaches, field judges and officials. NUWES' Galley supported this event by providing meals. Seventy-three athletes participated and 47 of them qualified for the State meet held on 2, 3, and 4 June at Fort Lewis.

- The 4th of July Diamond Anniversary Firework Display was enjoyed by the local community in addition to the day long celebration. Attractions ranged from Model Airplane and Classic Car Display to Suquamish Indian Dancers and Retriever Boat Rides.

- NUWES exceeded its assigned Combined Federal Campaign goal of $64,500, with $71,199 being pledged from military and civilian personnel.