



DEPARTMENT OF THE NAVY

USS CANOPUS AS 34 ✓
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From: Commanding Officer, USS CANOPUS (AS 34)
To: Director, Naval History (OP-09B4), Washington Navy Yard
Washington, DC 20474

Subj: COMMAND HISTORY OF USS CANOPUS (AS 34), 1987; REPORT
SYMBOL 5750-1

Ref: (a) OPNAVINST 5750.12C

Encl: (1) Basic History

1. In accordance with reference (a), enclosure (1) is submitted as the
Command History for USS CANOPUS (AS 34) for calender year 1987.


T. J. O'BRIEN, JR.

BASIC HISTORY

COMMAND ORGANIZATION

USS CANOPUS (AS 34) is under the operational control of Commander, Submarine Group 6, Rear Admiral W. E. Owens. USS CANOPUS' primary mission is to conduct repair work for units assigned to Commander, Submarine Squadron 16 units at Replenishment Site VI, Kings Bay, Georgia. USS CANOPUS is the Command Ship for Commander, Submarine Squadron 16, Captain Albert H. Konetzni. Commanding Officer of CANOPUS is Captain Thomas J. O'Brien, Jr., and the Executive Officer is Commander James Struble. Key personnel changes which occurred during 1987 are as follows:

<u>Billet</u>	<u>Date</u>
Operations/Navigation Officer	January 1987
Weapons Repair Officer	November 1987
Medical Officer	August 1987
Supply Officer	October 1987
Engineer Officer	November 1987
First Lieutenant	August 1987
Ship's Boatswain	December 1987
Safety Officer	March 1987
Main Propulsion Assistant	September 1987

NARRATIVE

1. USS CANOPUS was moored and homeported at Naval Submarine Base, Kings Bay, Georgia.

2. REPAIR DEPARTMENT

During September and October the USS CANOPUS completed an extensive overhaul of a communication buoy system AN/BRA-8 that expended over 2800 man hours, a task normally accomplished by major shipyards during overhaul periods. The scope of the job required the combined efforts of six repair divisions to provide a hull cut for removal, overhaul and reinstallation of the mechanical and electrical components of the AN/BRA-8 systems. Additionally, the R-4 division provided emergent repair services in remote locations and electronic test equipment calibrations services for several local commands. The superior quality and professionalism of the R-4 division ensured the availability of tended units to support operational commitments. During 1987 the R-4 division electronic test equipment calibration laboratory was evaluated as the "Best electronic calibration laboratory in the Fleet" by the Metrology Engineering Center. The exceptional professionalism of the calibration laboratory in repairing nine cesium beam time standards resulted in a savings of over \$360,000 to the U.S Navy. Also noteworthy was the unique accomplishment of the R-4 division Communication Repair and Assistance Team to completely rebuild a buoy for the AN/BRA-8C communication system, a task normally assigned to a specialty unit.

a. Repair Administration Division (R-0) shops accomplished the following listed items during the calendar year 1987.

(1) The Print Shop installed a new typesetter and Graphic Camera, which increased output and at the same time cut back on turn around time. The Print Shop also processed 3800 print requests and 900 photoengraving requests for various units of SUBLANT, SURFLANT and local shore commands. The Photo Lab (39A) shifted workload from black and white printing to color. This has proven to be faster and provides excellent quality photography for the CANOPUS and tended units. The Lab also drafted and implemented a new SOP to conform with CNO Directives, which has also enabled the Lab to deliver better quality photography without taking away the services it provides. The work unit total for calendar year 1987 was 42,000.

(2) The Draft Shop (64D) processed 1400 work requests during the year. An average of 60 Engineering Logs was processed per tended unit.

b. The Hull Repair Division supported 21 submarine refits for COMSUBRON 16, 1 submarine refit for COMSUBRON 18, 3 Extended Refits of SSBNs in dry dock and 5 SSN availabilities.

c. Shipfitter Shop (11A) expended approximately 67,160 man hours and was noted as the "BEST SHIPFITTER SHOP INSPECTED" during the Proficiency and Readiness Evaluation. Noteworthy repairs included: Repair of 2 rudder cracks and installation of padeyes on 2 SSBN sternplanes for bearing inspections. Also repaired 2 potable water tanks, requiring extensive welding in extremely cramped positions. Repaired over 500 sound short discrepancies on 6 tended units. Renovated 2 AS 34 office spaces, replaced over 1200 zinc anodes on tended SSBNs, including all required underwater zincs. Replaced over 30 feet of safety track, replaced 2 thermal studs inside of missile tubes onboard SSBNs. Installed 8 difficult and hard to set missile muzzle hatch drift pin ShipAlts on one tended unit.

d. The Sheetmetal Shop (17A) expended approximately 17,520 man hours. Noteworthy repairs include: replacement of over 200 feet of ventilation onboard CANOPUS and tended units; replacement of 150 feet of stainless steel sheeting for the trash disposal units onboard SSBNs; manufacture of over 500 various size lockers and cabinets for tended units; replacement of 70 feet of missile loading hatch stainless steel sheeting; and renovation of 2 AS 34 office spaces.

e. The Weld Shop (26A) and Pipe and Copper Shop (56A) expended approximately 64,240 man hours. Noteworthy repairs included:

(1) Major repairs to a hydraulic system to correct misalignment.

(2) Replacement of 6 feet of 3,500 PSI air line which required extensive bending and welding.

(3) Performance of 2 sleeve installations which required 36 hours of welding, most of which was mirror welding due to physical location of joints.

(4) Replacement of piping and inserts for Tank Level Indicators which entailed welding of HY-80 on 2 units.

(5) Replacement of the Lithium Bromide cooling units on two units which required continuous welding to prevent moisture contamination of the systems.

(6) Replacement of over 800 feet of various size and types of pipe, welding and brazing of over 500 joints, replacement of 20 main and auxiliary sea water valves.

(7) Base metal repairs were completed on several pump shafts and 8 hatch weld repairs.

(8) Four ASW and ASW Condensers were hydroblasted.

(9) Poppet seats were replaced on 4 main engines and SSTG turbines.

(10) Welding and brazing repairs were completed on 130 miscellaneous system components.

f. The Flex Hose Shop (56C) expended approximately 5,840 man hours. Noteworthy repairs included manufacture of 247 critical and non-critical flex hoses, rebuilding of 57 EB critical and non-critical risics.

g. The Lagging Shop (57A) expended approximately 23,360 man hours. Noteworthy repairs included:

(1) Replacement of 10,000 feet of cold lagging, manufacture of 750 lagging pads, replacement of 200 Sq. feet of wallboard, rip-out and relag of 2 steam generators onboard SSBNs.

(2) Replacement of 140 feet of main steam lagging, greatly increasing the habitability of the engineering spaces onboard tended SSBNs.

(3) Performance of over 37 asbestos ripouts onboard tended units and CANOPUS.

In addition, the division supported a successful OPPE, RCPE and 3M Inspection. Personnel received 22 Letters of Commendation, 63 Letters of Appreciation, the Battle Efficiency "E" and Repair "R" for FY87, as well as two Navy Achievement Medals for superior performance. R-1 Division had 11 personnel of 15 who took the IMA Journeyman's Examination, passing satisfactorily and thereby earning either Pipefitter or Shipfitter Journeyman NECs.

h. The Machinery Repair Division's various shops completed 25 SSBN refits, five SSN availabilities and received numerous Letters of Appreciation, significantly contributing to CANOPUS receiving the Battle Efficiency "E" and Repair "R" for FY87.

(1) The CANOPUS Machine Shop designed and manufactured a multi-purpose hatch grinding tool, allowing the in-place machining of submarine hatches. This machine has already saved thousands of dollars in TAV funds for the Navy. The Machine Shop also machined and manufactured numerous stems, nuts, bolts, blank flanges and test fittings for 88 ASW and TD valves, 15 chill water pumps, 3 resin discharges, 45 RPFW flanges and over 350 assorted production jobs.

(2) The Fleet Mechanical Calibration Laboratory completely refurbished their work space to provide a laboratory environment rather than a shop space. A total of 17,092 pieces of equipment was calibrated.

(3) The Optical Shop removed, overhauled and re-installed 14 periscopes of the following types: 2D, 8B, 15D and 18D. In addition, they overhauled 76 pairs of binoculars and other navigational instruments.

i. The Office Machine Repair Shop was instrumental in saving the Navy over 36,000 dollars by cleaning and repairing XEROX copiers and over 300 typewriters. In addition, the shop set up and performed weekly PMS on 62 copiers onboard USS CANOPUS and other tended units.

j. The Electrical Repair Division (R-3) supported refits for COMSUBRON 16 Fleet Ballistic Missile Submarines, one surface unit and all yard craft at Site VI.

(1) In support of the above refits, 24 vent fans, 50 MG sets and 108 pump motors were repaired and balanced. Sound mounts, snubbers and DIM materials were also replaced, along with maintenance of 24 gyros, 6 CAMS units and 4 Sundstrand Ship's Entertainment Systems.

(2) Seven-hundred and thirty plaques and 510 rubber stamps were manufactured for various units. In addition, 1013 routine plastisol jobs, 4000 sq. ft. of plexiglass services, and 27 grout jobs were performed. Twenty-six exterior cable replacements for navigational lights and mast indicators were installed. The Electrical Division calibrated 800 portable meters and 500 inplace meters.

k. During 1987, the USS CANOPUS R-4 Division Mast and Antenna Shops provided electrical and mechanical repair, calibration and certification for 25 strategic submarine major upkeep periods and 5 attack submarine upkeep periods. Equipment supported includes ships communications, sonar, ESM, navigational systems and electronic calibration services.

m. The Radiological Controls Division (R-5) accomplished the following evolutions during the year:

- (1) Primary valve replacements/repairs
- (2) Portable effluent tank installations
- (3) Steam Generator Inspections in support of Norfolk Naval Shipyard
- (4) Primary filter media discharge and replacement
- (5) Repair of a primary to atmosphere leak
- (6) Support of Primary Relief Valve Testing

In addition, the division packed and shipped several drums of radioactive waste material and processed thousands of gallons of radioactive liquid waste for eventual at-sea disposal. The division also repaired or replaced many radioactive components in the Nuclear Support Facility, while continuing to monitor the environment at Site VI and in Port Canaveral, Florida. The radiac calibration facility calibrated over 3000 instruments, repaired over 100 radiacs, and was evaluated as one of the best radiac calibration facilities in the Fleet by the Certification Board. An unscheduled Radiological Controls

Practices Evaluation (RCPE) was conducted in June, with an overall grade of Above Average assigned by the CINCLANTFLT Nuclear Propulsion Examining Board.

n. Repair Services Division (R6) accomplished the following:

(1) 64A- Manufactured more than 1160 command plaques for tended units, installed more than 15,000 square feet of deck coverings, and more than 5,000 square feet of high pressure laminated bulkhead sheeting material.

(2) 72A- Performed rigging services for more than 520 individual IMA jobs, for a total handling weight of 104,000 pounds. In addition, the shop provided tended units with 2,033 man hours of rigging services, and installed and removed 32 sets of staging for tended units.

(3) 72B- Ship's Divers conducted more than 25,000 hours in the water, performing diving services, and 2,160 manhours of hyperbaric recompression treatments.

(4) 74A- Manufactured and installed more than 19,300 square yards of upholstery covering, and more than 4,500 square yards of draperies and curtains. In addition, the shop manufactured more than 3,000 square yards of awnings and containment coverings, and repaired more than 450 kapok life jackets.

(5) 81A- Manufactured and cast more than 675 individual patterns and castings, casting more than 15 tons of brass, lead, zinc, aluminum and steel. In addition, they manufactured 35 cable end sockets.

o. The Planning and Estimating Division (R-7) accomplished the following during 1987:

(1) The Planning and Estimating Workcenter (10C) prepared 1203 controlled work procedures, accomplished 91 ShipAlts and 81 A&I's on tended units and CANOPUS.

(2) Personnel assigned to Repair Technical Library (10E) completed 816 technical manual updates, 54,133 technical drawing updates, and performed 4 complete inventories of the ship's 20,234 technical manuals. Also updating 1,541 process instructions, 712 TRS's and 968 information handling services (VSMF Cartridges), the Technical Library also reproduced 83,781 print hard copies from microfiche.

p. The Quality Assurance Division (R-8) reviewed 1089 non-nuclear procedures and over 114 nuclear procedures.

(1) Over 25,000 of the following tests/examinations were performed: Visual, Dimensional, Liquid Penetrant Magnetic Particle, Eddy Current, Ultrasonic, Radiographic, Acid Spot Test, and Chemical Analysis.

(2) A COMSUBLANT Quality Assurance Audit was conducted with no significant reworks required on any job performed by this IMA.

(3) Classes were held and over 207 personnel were trained/qualified as: Controlled Material Petty Officers, Acid Spot Testers, Quality Assurance

Workers, Inspectors, or Supervisors, Cleanliness Inspectors, and Supply Controlled Material Petty Officers.

q. The Outside Machinery Division (R-9) completed the following work on tended and transient units:

(1) Shop 31D- Repaired 6 fire main valves, 1 boiler safety valve and overhauled the following equipment: 11 mast units; 8 TDU's; 5 diesel seawater valves; 48 auxiliary seawater valves; 13 ventilation valves; 8 plumbing valves; 1 salvage valve; 21 BFV valves; and 3 hovering system valves.

(2) Shop 31F- Overhauled 22 Marotta valves; 5 hydraulic accumulators; 6 oxygen valves; 8 high pressure air reducers; 9 missile gas valves; 4 hydraulic filter blocks; 7 mast hydraulic hoist cylinders; 5 steering and diving servo control valves; 6 snorkel head valves; 3 hydraulic pump mechanical seals; 24 hydraulic actuators and numerous relief valves and hydraulic control valves on tended and transient units.

(3) Shop 56B- The AC&R shop repaired 6 reefer pantry boxes and overhauled 12 packingless refrigerator valves. The shop also overhauled 2 three-cylinder refrigerator compressors, 1 six cylinder air conditioning compressor, 12 electronic cooling system valves and 4 ice machines. The shop also installed 4 ice cream machines and repaired 2 thermo-expansion valves.

(4) Shop 31E- Replaced 3 secondary propulsion motors, performed one 471 diesel and 1 Lister diesel overhaul. They also pop-tested numerous unit's injectors and calibrated fuel pumps. The shop overhauled two LPACs and three 2-K compressors, repaired 10 ventilation valves and replaced mechanical seals in 3 main lube oil pumps.

(5) Shop 38A- Outside machine shop overhauled 9 BRA-24's, 5 AC/ASW pumps, 2 main seawater pump mechanical seals, 8 ASW pumps, 1 AFW pump, 3 HP Brine pumps, 5 Trim and Drain pumps, 3 SSTG throttle valves, 2 MLO pumps, 8 main steam valves, 10 auxiliary steam valves, 48 missile tube window modifications, and performed 3 main engine throttle block repairs.

r. The Nuclear Planning/Repair Division (R-10) prepared procedures for and completed 114 nuclear repairs/alterations on tended units and the Nuclear Support Facility. In addition, Nuclear Planning functioned as the lead work center and provided material support and technical liaison for accomplishment of more than 48 alterations performed by the ship's force of tended units.

3. SUPPLY DEPARTMENT

During Calendar Year 1987, the Supply Department made many major improvements which were instrumental in its ability to significantly enhance the support provided to all customers. In doing so, the department earned the FY 87 COMSUBLANT Supply Blue "E" for the second consecutive year. The Supply Department:

a. Continued to rank as the Number One Tender for COMSUBLANT in Calendar Year 1987 for financial and inventory management.

b. Continued to lead the force with lowest overage unmatched dollar value (C&H) listing.

c. Applied the first SSPO Quarterly Consolidated Operational Maintenance/Effectiveness Task (COMET) to implement range adds.

d. Processed in excess of 122,000 requisitions.

e. Offloaded over \$4 million of excess material, to continue management of Redistributable Assets On Board. Maintained standards well within TYCOM goals.

f. Fully implemented the Microcomputer Claims Processing System (MCPS) for processing travel claims.

g. Implemented a SNAP I upgrade, introducing additional terminals and Winchester Disks, increasing customer service.

h. Took possession of new Site VI Transit Shed. Increased indoor operating space by 50%.

i. Increased bulk stowage area in storerooms on board by 10%.

j. Established a Crew's Self Service Laundry facility.

k. Received the 1987 "Best Sales and Services Award" for Atlantic Fleet large afloat commands.

m. Renovated Crew's Barbershop.

n. Attained a ship's store stock turn of 2.43 for FY 87 (COMSUBLANT goal is 1.33).

o. Implemented Retail Operations Management (ROM) computer system for Sales Division.

p. Successfully completed all major command inspections with no major discrepancies noted. Especially worthy of note was an overall Above Average grade for the FY 87 Supply Management Inspection (SMI) in which half of all comments were commendatory.

q. Completed renovations and material condition improvements in Food Service, Retail Sales, SUBSAT/ROVSS and Stores Divisions.

4. ENGINEERING DEPARTMENT

a. CANOPUS successfully completed Operational Propulsion Plant Examination (OPPE) with an adjective grade of Above Average, the highest grade possible. The ship received recognition messages from Admiral Kelso, CINCLANTFLT and Vice Admiral Cooper, COMSUBLANT for this outstanding accomplishment.

b. Fireroom successfully completed Boiler Inspection. The SURFLANT inspector commented, "Boiler records are in outstanding condition and best looking Fireroom I've seen." Completed major refractory work and boiler tube repairs with minimum downtime.

c. Department successfully completed major change out of discharge piping of the CHT system, upgrading the pipes with 70-30 Level 1 piping.

d. Department successfully demonstrated graded full power run capabilities in 1987 for COMSUBRON SIXTEEN observer and for the President of the Board of Inspection and Survey (INSURV).

e. Engineering plant successfully completed INSURV. The President of the Board commented, "The plant is tight.. Not bad for a 15 year old ship" referring to the absence of steam leaks and overall excellent material condition and preventive maintenance of the 25-year-old CANOPUS.

f. Engineering Department commended on several occasions by visiting Flag Officers and civilian VIPs, including the Secretary of the Navy, for the material condition of the Main Engineering spaces. The Secretary's comments were "Best looking Fireroom and Engineroom I've seen."

g. CANOPUS has a force-wide reputation of having the most reliable Cryogenic (O₂N₂) plant in SUBLANT. During 1987, the plant operated for 42.6 days, accounting for 3068 manhours. In addition, CANOPUS has provided high pressure air charges and other general engineering services to COMSUBRON SIXTEEN units, utilizing 16,000 manhours.

h. Engineering Department successfully completed a Diesel Inspection and completed a generator aft journal bearing change out.

5. WEAPONS REPAIR DEPARTMENT

The Weapons Repair Department continued on-line operations through 1987. The Weapons White "E" for Excellence was awarded to the department by COMSUBLANT for the second consecutive year. Additionally, torpedo handling support was provided on seven occasions at Port Everglades, FL. and on one occasion at Roosevelt Roads, PR. by fly away teams.

6. ADMINISTRATIVE DEPARTMENT

Productivity and quantity has steadily increased throughout the year. The Administrative Department provided excellent Administrative/Personnel assistance in every area of responsibility. The Educational Services Office administered Navy-Wide Advancement in Rate examinations and provided crewmembers with Navy Correspondence Courses and arranged to administer local college courses on a recurring basis. The Legal Office handled Captain's Mast, Courts-Martial and Administrative Boards. The Command Chaplain continued Bible Study Groups; Outreach Ministries; Marriage Enrichment Sessions; Christian Film presentations; pastoral care and counselling and "after hours" visits. USS CANOPUS won the Commander Submarine Force, U.S.

Atlantic Fleet Silver Anchor Award for 1987, citing superior enlisted retention, and was runner-up for the CINCLANTFLT Golden Anchor. The CANOPUS also received the FY87 Battle Efficiency "E" Award for the best FBM tender in the Submarine Force, U.S. Atlantic Fleet for the second consecutive year.

7. OPERATIONS DEPARTMENT

The CANOPUS Operations Department, consisting of Communications, Electronics and Navigation Divisions, achieved the following during Calendar Year 1987:

a. The Communications Division:

(1) Was named as a Strategic Systems Top Performer for "best off-the-air TACAMO monitoring" for the fourth quarter of Fiscal Year 1986, and the first and second quarters of Fiscal Year 1987. These made seven consecutive quarters that CANOPUS received this honor.

(2) Received formal recognition from Commander, Submarine Squadron 16 for superior performance in maintaining AUTODIN statistics above a 99% reliability rate and a 0% error rate in CIMS, while expertly processing over 7,500 messages per month.

(3) Received recognition from COMSUBRON 16 for outstanding performance as documented in the ABNCP Connectivity Analysis of 1-30 April 1987.

(4) Consistently maintained superior reliability in submarine broadcast monitoring, promptly reporting outages to SUBLANT for timely restoral actions.

(5) In February 1987, received a Communications Material Security (CMS) Assist Visit by Naval Security Group, Mayport, Florida. The CMS account was evaluated as "Excellent" overall.

(6) Received formal recognition from NTC Breezy Point for our assistance in correcting an AUTODIN to LDMX interference problem that prevented certain types of formatted traffic from being processed by the LDMX without manual intervention. Correction of this problem has significantly reduced CIM rates by all users.

(7) Participated in the Enhanced Verdin System Pre-tech Evaluation, 16-18 April 1987 and Tech Evaluation 17-31 March 1987.

(8) Conducted HF termination training whenever operations permitted. Received formal recognition from NAVCOMUNIT Key West, Florida for excellent termination operations.

(9) Received the annual COMSUBLANT Communications Excellence Green "C" Award for FY 87. This was the second consecutive award.

b. The Electronics Division, in addition to outstanding maintenance support, accomplished the following:

- (1) Completed 45 arrival inspections on tended units
- (2) Repaired, overhauled and tested over 62 crypto equipments
- (3) On several occasions, CANOPUS' crypto technicians responded to emergent work requests with unparalleled success, directly resulting in the tended unit meeting operational commitments.

c. The Navigation Division conducted the following significant underway operations:

- (1) 9-13 January 1987 - Mutual Training with USS FAHRION (FFG 22)
- (2) 21 July 1987 - Conducted an Underway Material Inspection (UMI) with RADM Bulkeley embarked.
- (3) 28 August - 8 September 1987 - Port visit at Nassau, The Bahamas. Inport Bahamas 31 August to 4 September 1987.
- (4) 19-29 October 1987 - Port visit at Annapolis, Maryland for USNA Midshipman Submarine Force indoctrination. Conducted interactive training and VERTREP enroute with SSBN. Inport, 22-26 October 1987.
- (5) 20-24 November 1987 - Conducted OPPE Workup 20-22 November, anchored overnight off Cumberland Island and conducted OPPE 23-24 November 1987.

8. DECK DEPARTMENT

The Deck Department provided support for Submarine Squadron 16 and tended units as well as maintaining the superior material condition of CANOPUS. Among their significant accomplishments during 1987:

- a. Efficiently managed \$468,000 in OPTAR funds.
- b. Safely accomplished 14 site moorings, one pierside mooring, and three anchoring evolutions.
- c. Operated liberty boats in support of daily liberty party of approximately 500 persons while on port visits to Nassau, Bahamas and Annapolis, Maryland.
- d. Received compliments from local dignitaries and British and U.S. Embassy officials on cleanliness and preservation of the ship's decks and hull during port visit to Nassau, Bahamas.
- e. Successfully conducted feasibility tests of the VERTREP capabilities between a Submarine Tender and SSBN.
- f. Manufactured 68 cargo slings, 234 taglines, 290 lifelines, and 8 mooring lines for the ship, drydock USS OAK RIDGE (ARDM-1) and numerous tended units.

g. Trained and qualified 62 crane safety observers, 40 crane signalmen, and 38 crane operators.

h. Safely accomplished approximately 4,800 torpedo/cargo crane lifts and approximately 5,400 boat/missile crane lifts.

i. Accomplished several navigational and recreational runs in and around Cumberland Sound waters in support of Submarine Navigation Teams and VIP personnel.

j. Completed a \$32,000 refurbishment of the Deck Department Office.

k. Spray-painted approximately 50 ship's spaces and issued paint and supplies for divisional painting of approximately 80 additional spaces.

m. Assembled and issued 40 paint packs to alongside tended units.

n. The ship's crane received annual certification as follows:

Stbd B&M	22 May 87
Port B&M	03 Jun 87
#1 TC	09 Jul 87
#2 TC	15 Jul 87
#3 TC	09 Jul 87
#4 TC	15 Jul 87

o. Successfully completed NTPI and INSURV inspections with zero major discrepancies. The INSURV inspector also commented that Deck Department Crane Repair is performing excellent maintenance and repair on all cranes.

9. DENTAL DEPARTMENT

The CANOPUS Dental Department serves nearly 1,5000 personnel, not including tended units, in a fast-paced submarine refit environment. Specific accomplishments for 1987 include:

a. Improvement in the Submarine Liaison Program, with more stringent screening of records and more hands-on training of the submarine independent duty corpsman.

b. Mandatory duplication of PANOREX X-rays for all personnel was completed in March 1987, seven months prior to the mandatory completion date.

c. Major equipment installation included:

(1) Panoral Model A3, Panoramic X-ray machine

(2) Automatic Radiographics Film Processor, Model AT 2000, with panograph processing capability

(3) Computerized Jelenko Flagship Porcelain Oven

(4) Baldor Lathe

(5) Autoclaveable Midwest Tradition Highspeed Handpieces (two per operator) were installed to provide greater infection control.

(6) Ultrasonic cleaners for each operator were installed for more efficient and safer instrument cleaning

d. Equipment identified for future purchase includes:

(1) A Central Suction System and three dental chairs with units have been approved and ordered, for compliance with current infection control standards. Installation is scheduled during upcoming DSRA (February/March 1989)

e. SUBLANT Dental Administrative Inspection in March 1987 was completed with overall grade of Outstanding. This placed CANOPUS among the top three submarine tenders in the Atlantic Fleet.

f. INSURV Inspection completed in June 1987 with no Dental Department discrepancies noted and an overall grade of Outstanding.

10. MEDICAL DEPARTMENT

The CANOPUS Medical Department provides on-site medical care for nearly 1,500 personnel, as well as conducting training and providing medical assistance for independent duty corpsmen assigned to tended units. Significant accomplishments during Calendar Year 1987 include:

a. Passed Medical Readiness Inspection (MRI) conducted by SUBLANT with overall grade of Above Average, showing steady trend toward improvement.

b. Received overall grade of Excellent on two semi-annual external Radiation Health audits.

c. Received comment of "Excellent" for Radiation Health Program during one scheduled Radiological Controls Practices Evaluation (RCPE) and one unscheduled RCPE.

d. Achieved Above Average grade on Nuclear Technical Proficiency Inspection (NTPI).

e. Implemented new, stringent weight control program, and produced extensive computer program to monitor same.

f. Awarded COMSUBLANT Yellow Medical "M" for Medical Excellence in 1987.