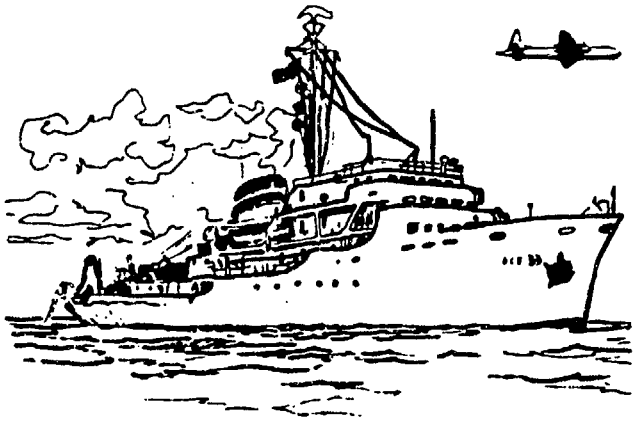
#4.



OCEANOGRAPHIC SURVEY SUPPORT PLANS

FY 84 - FY 89

SEPTEMBER 1983

PREPARED BY
COMMANDING OFFICER,
NAVAL OCEANOGRAPHIC OFFICE
BAY ST.LOUIS, NSTL, MS 39522

ENCLOSURE (4)

DEPARTMENT OF THE NAVY
U.S. NAVAL OCEANOGRAPHIC OFFICE
NSTL STATION
BAY ST. LOUIS, MISSISSIPPI 39522

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3142
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From: Commanding Officer, Naval Oceanographic Office
To: Distribution List

Subj: Oceanographic Survey Support Plans

Encl: (1) Oceanographic Survey Support Plans: FY84-FY89

1. Oceanographic survey plans in support of Navy oceanographic requirements for FY84 through FY89 are provided as enclosure (1). These plans address Fleet and shore command requirements validated for Naval Oceanographic Office action by the Chief of Naval Operations (OP-952) through the Commander, Naval Oceanography Command.

C. H. BASSETT

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CONTENTS

FIGURES

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OCEANOGRAPHIC SURVEY SUPPORT PLANS

I. INTRODUCTION

This document presents the Naval Oceanographic Office (NAVOCEANO) oceanographic survey operations planned through fiscal year 1989. In this context, "oceanographic survey" is defined as the study or examination of conditions in the ocean, including the ocean surface and the ocean bottom. It does not strictly encompass the meteorological or mapping, charting and geodesy (MC&G) disciplines, although shipboard meteorological observations are made routinely, and bathymetric and magnetic measurements are made while the ships are underway. NAVOCEANO has been given operating requirements by the Commander, Naval Oceanography Command (COMNAVOCEANCOM) after validation by the Chief of Naval Operations (CNO OP-952). To meet these requirements, NAVOCEANO conducts oceanographic surveys using the following survey platforms: Ships - USNS SILAS BENT, USNS KANE, USNS WILKES; Aircraft - Project OUTPOST BIRDSEYE, Project OUTPOST SEASCAN; contract ships; and minesweepers of U. S. and foreign navies. (NAVOCEANO personnel also participate in other at-sea operations aboard various Fleet assets, such as aircraft carriers and ASW patrol aircraft; however, these activities are not included in this plan.)

Survey operations, to be cost-effective, are tied to as many requirements as possible; and data collection programs are designed to meet as many parameter needs as possible. This effort includes utilization of ships across program element lines, whereby geophysical ships devoted primarily to the MC&G program are sometimes used to collect oceanographic

data, and oceanographic ships are used to collect certain MC&G data. As a consequence, data from all platforms are used in multiple product lines for both MC&G and oceanographic requirements. Bathymetric and magnetic data that address MC&G requirements as primary needs are used in oceanographic data bases to help satisfy certain validated requirements.

II. ENVIRONMENTAL SUPPORT REQUIREMENTS

Fleet and shore command requirements for oceanographic support are submitted through local chains of command to the Commander, Naval Oceanography Command in accordance with OPNAVINST 3160.18, "Submission of Oceanographic Requirements and Requests for Technical Guidance". The requirements are merged, prioritized and forwarded to the Chief of Naval Operations (CNO OP-952) for validation and tasking. Appendix A lists the reference documents of validated requirements tasked to NAVOCEANO for action. The oceanographic requirements tasked by COMNAVOCEANCOM to NAVOCEANO are assigned to the Oceanography Program (PE 35112N) and are then grouped according to their primary needs. Responsibility for completion of the scientific requirement or group of requirements is then placed in one of four following oceanographic Projects: INSHORE, OCEANOGRAPHY and GEOPHYSICS, ACOUSTICS and FLEET APPLICATIONS. To facilitate the technical, administrative and financial audit paths of all requirements, the Projects are further divided into Tasks. Appendix B lists the requirements, their source or sponsor, and the NAVOCEANO Project and Task to which they have been assigned for completion.

III. OCEANOGRAPHY PROGRAM (PE 35112N)

NAVOCEANO's oceanography program is organized to respond to the full spectrum of environmental support requirements.

Oceanographic support requirements in the coastal regime are addressed by the Inshore Project, which consists of two Tasks. The Mine Warfare Task responds to requirements established by the Commander, Mine Warfare Command; and the Naval Exercise Area Task addresses CNO requirements in nearshore submarine and surface ship exercise areas.

Deep water oceanographic requirements are the concern of the Oceanography and Geophysics Project. This Project is composed of three Tasks: Ocean Measurements Program, which provides environmental data in support of the SSBN Security Technology Program; SOSUS Support, which addresses Naval Electronics Systems Command surveillance requirements; and Environmental Descriptions, which supports many Fleet and shore command requirements for physical oceanographic data.

The Acoustics Project addresses requirements dealing with underwater and ocean bottom sound transmission, including ambient noise and reverberation. The Prediction Support Task directs its efforts in support of the Navy's Acoustic Performance Prediction program. The ASW/Surveillance Task addresses acoustic requirements to support passive and active surveillance sensors and ASW weapon systems.

The Fleet Applications Project engages in direct Fleet exercise support and applies oceanographic and acoustic principles to tactical consideration. The Project consists of three Tasks. Under the Tactical Analysis and Applications Task, NAVOCEANO personnel participate in at least four Fleet exercises each year. The On-Scene Environmental Systems Task is engaged in providing tactical acoustic predictions through the ICAPS and TESS computerized systems. The Fleet Liaison Task provides a dynamic interface between NAVOCEANO and Fleet Commands.

IV. OCEANOGRAPHIC PRODUCTS AND SERVICES

Products provided to users in response to requirements tasked to NAVOCEANO range in variety from hardcopy publications and reports to digital computer tapes. Appendix C lists the products and services completed by each Project and Task.

V. OCEANOGRAPHIC SHIP SURVEY PLANS

Survey plans have been drafted for the oceanographic survey ships and aircraft under NAVOCEANO's technical control. The plans cover the years FY84 through FY89 for AGS ships USNS SILAS BENT, USNS KANE and USNS WILKES, and for the VXN-8 aircraft BIRDSEYE and SEASCAN. These platforms address all the deep water and some of the shallow water support requirements tasked to NAVOCEANO. Shallow water mine warfare survey requirements are accomplished onboard U. S. Navy and foreign navy minesweepers, and contract ships.

The ship and aircraft survey plans shown in the following pages are constructed in accordance with NAVOCEANO's Project and Task structure, thus ensuring that all assigned requirements are addressed. The survey areas printed within the hatchered lines are keyed to the survey operating areas shown in Figure 1.

The plans include provision for ship maintenance. Upkeep periods are set at an interval of approximately one per quarter. Plans for mid-term overhauls (25 days) and Coast Guard recertification periods (30-45 days) are coordinated with the Military Sealift Command (MSC), which maintains operational control of the ships.

Photographs of the three ships are shown in Figure 2, and significant facts about their dimensions and capabilities are listed.

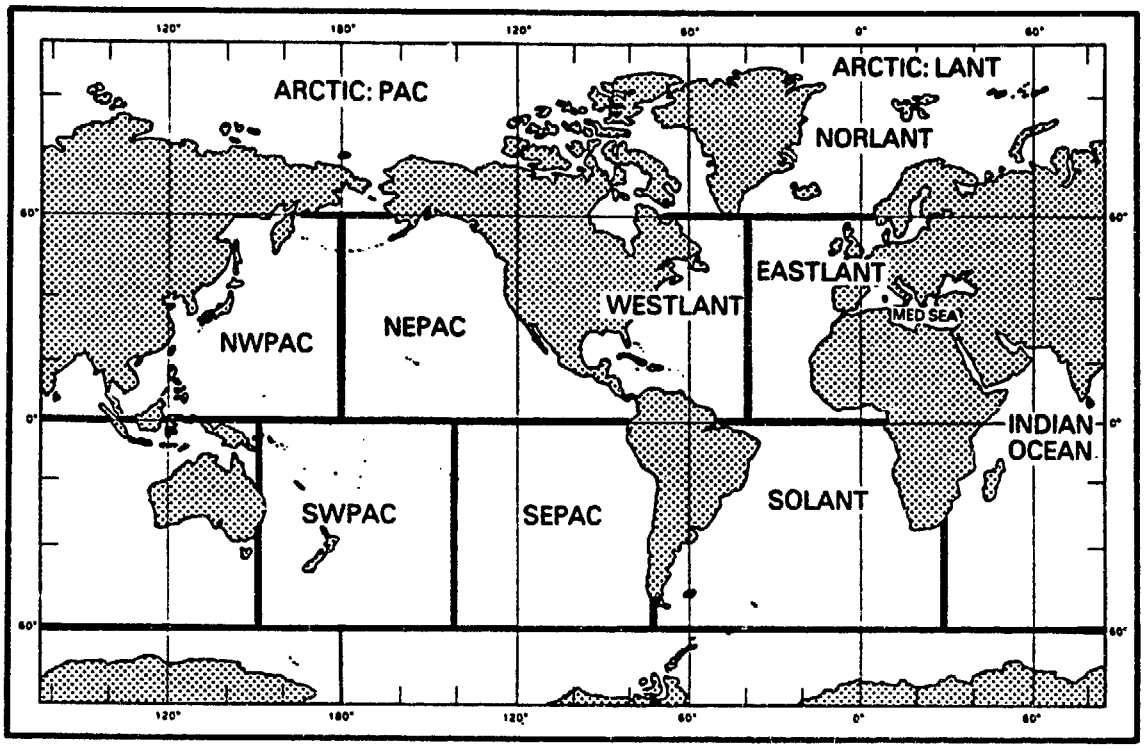
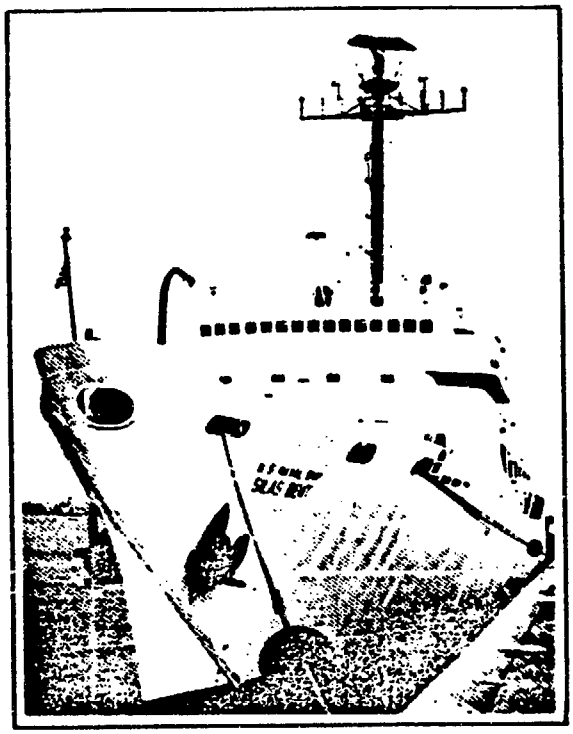
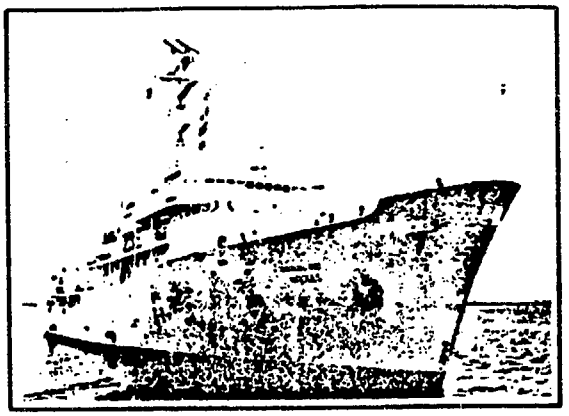
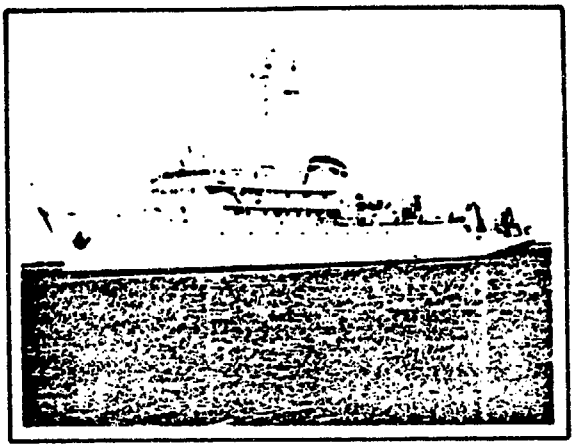


FIGURE 1. Oceanographic Survey Operating Areas







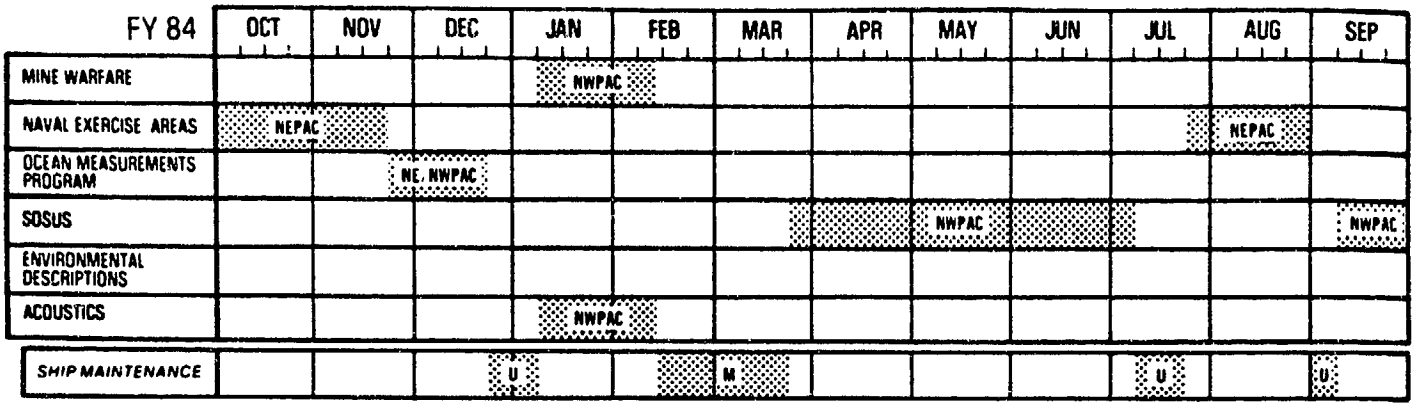
	USNS SILAS BENT (T-AGS 26)	USNS KANE (T-AGS 27)	USNS WILKES (T-AGS 33)
SHIP DIMENSIONS			
Length:	285.3 ft	285.3 ft	286.7 ft
Max Beam:	48.0 ft	48.0 ft	48.1 ft
Height:	110.0 ft	109.0 ft	110.3 ft
Gross Tonnage:	2463	2616	2616
Displacement:	2580 tons	2489 tons	2596 tons
Draught:	19.0 ft	19.0 ft	19.0 ft
Cruise Speed:	13.5 kts	14.5 kts	15.4 kts
Range:	12000 nm	12000 nm	7200 nm
Max Speed:	15.8 kts	16.0 kts	16.1 kts
Min Speed:	2.0 kts	2.0 kts	2.0 kts
PERSONNEL			
Scientific Complement:	25	24	26
Number of Officers:	13	13	13
Number in Crew:	36	36	36
EQUIPMENT			
Bow Thruster:	Retractable	Retractable	Tunnel
Deep Anchor:	18000 ft	18000 ft	18000 ft
(1) Boston Whaler:	14 ft	16 ft	16 ft

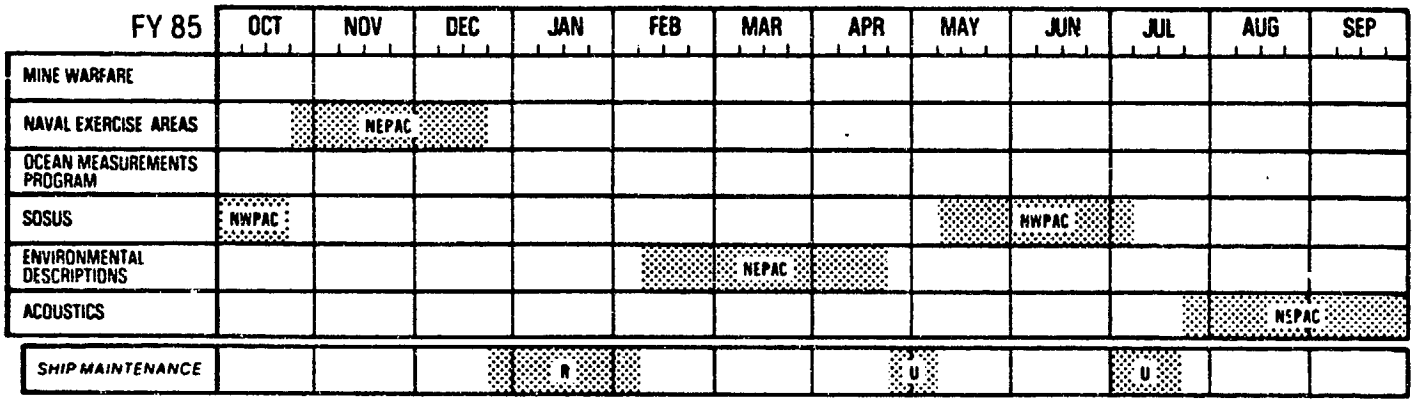
MISCELLANEOUS INFORMATION

- Berthing and Instrument Vans
- Wet and Dry Labs
- Meteorological Observations, Surface
- Winches: Coring, Anchor, Oceanographic Magnetometer
- Satellite Navigation, LORAN C
- Narrow Beam Sonar
- Seismic Profiling System
- Shallow and Deep Sounding Systems
- HODAS (Hydrographic/Oceanographic Data Acquisition System)
- CTD (Conductivity/Temperature/Depth)
- Side-Scan Sonar

FIGURE 2. Oceanographic Survey Ships

USNS SILAS BENT EMPLOYMENT PLAN

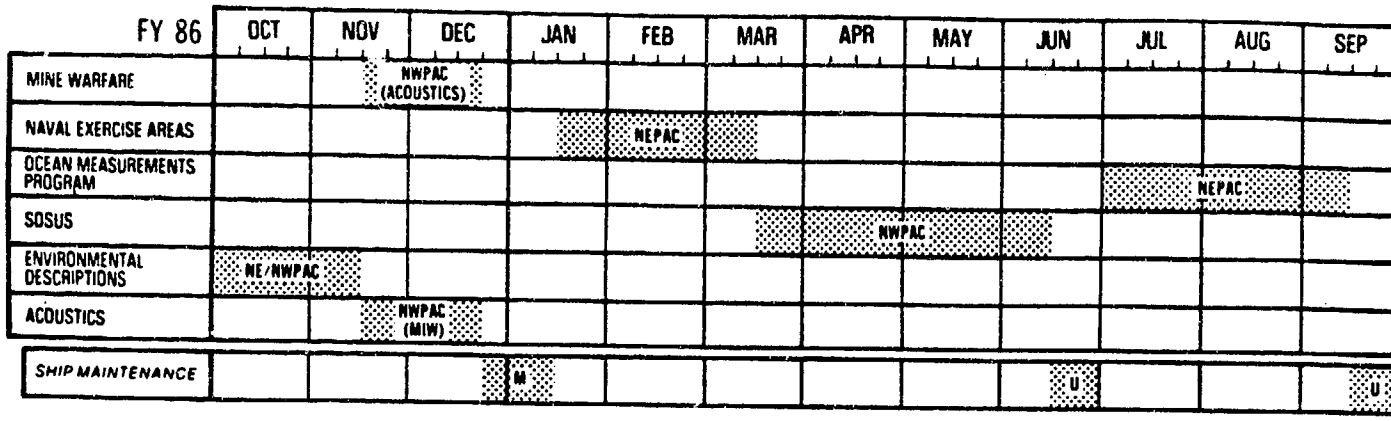


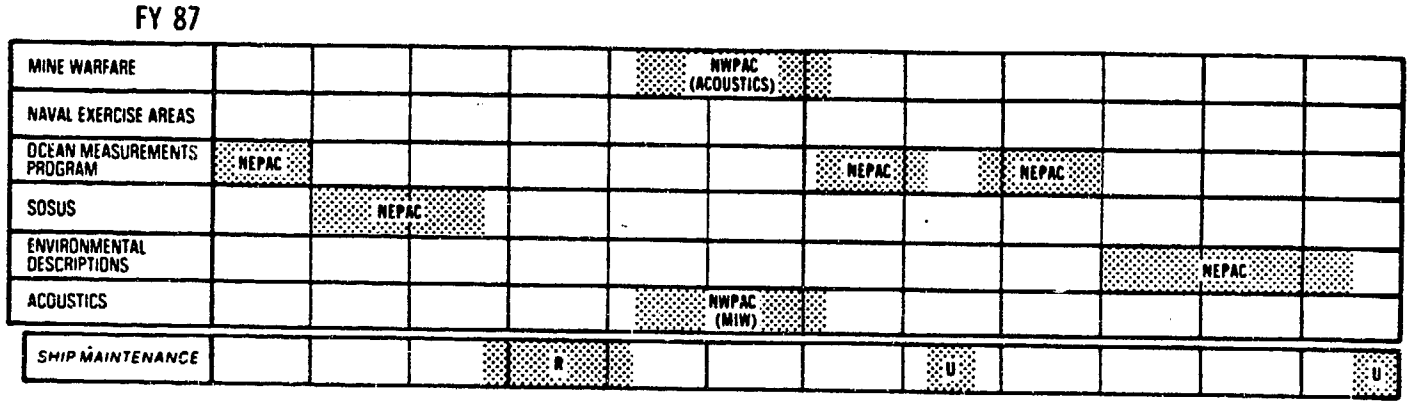


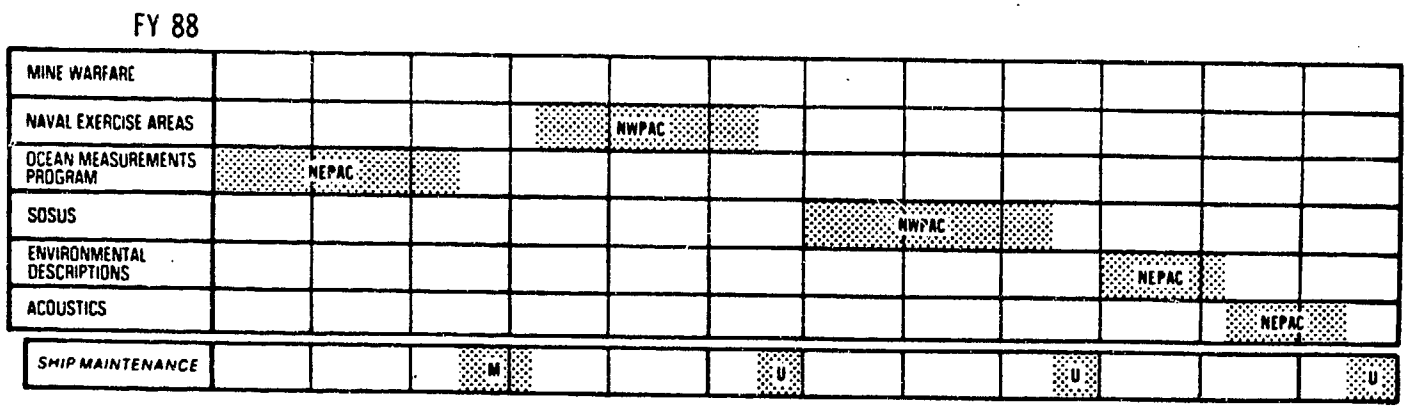
U - UPKEEP (15 DAYS)
M - MIDTERM (25 DAYS)
R - RECERTIFICATION (YARD 30-45 DAYS)

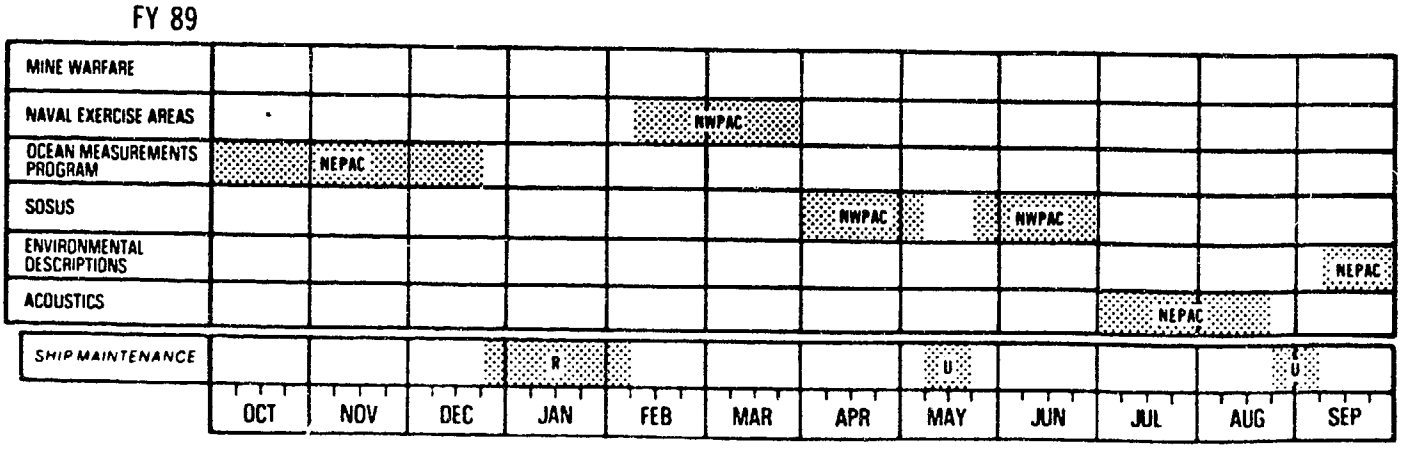
	REQUIREMENTS	PRODUCTS
MIW	Mine Warfare Surveys(Deep Water Acoustics) (COMINEWARCOM)	CAPTOR Data Report (Acoustics); input to CAPTOR Guide; input to data bank
NEA	Environmental Data in Submarine Sea Trial Areas (CNO)	HITS Chart/Report; input to data bank
OMP	Ocean Measurements Program(CNO); Visual/ Non-Acoustic Detection of Submarines(CINC-PACFLT)	Data Report; input to Environmental Guide; input to data bank
SOSUS	Environmental Support (NAVELEXSYSCOM)	Data Report; input to Environmental Guide; input to data bank
ENV DESC	Surface Lines of Communications; Environmental Guide (CINCPACFLT)	Data Report; input to Environmental Guide; input to data bank
ACOUS	Low Frequency Bottom Loss; Effects of Ocean Current Systems...; Effects of Fronts and Eddies (CINCPACFLT)	Data Report; inputs to Environmental Guide; input to data bank

USNS SILAS BENT EMPLOYMENT PLAN (Cont.)









USNS KANE EMPLOYMENT PLAN

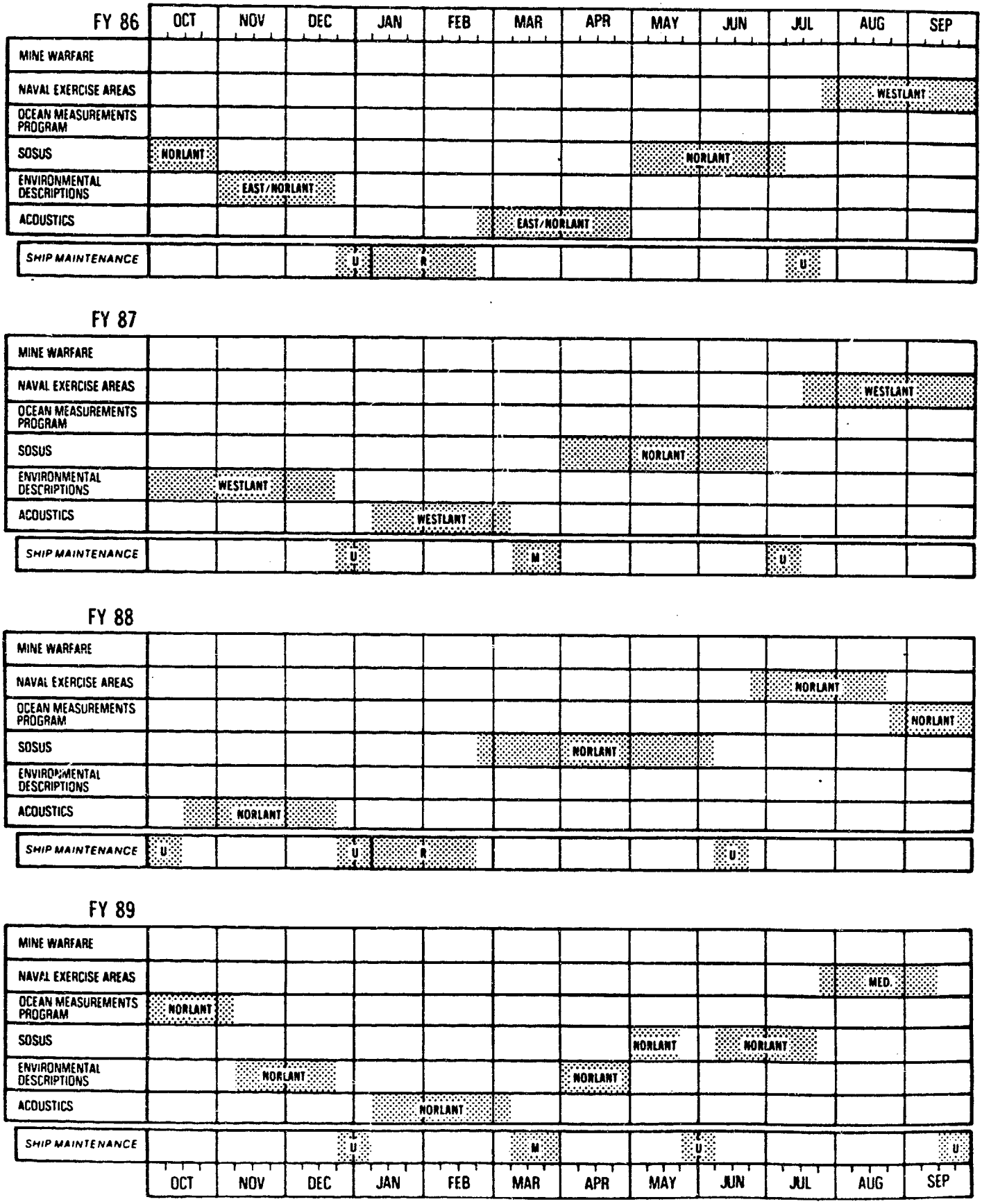
FY 84	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MINE WARFARE	MED (OCY)			MED.SEA (OCY)								
NAVAL EXERCISE AREAS												
OCEAN MEASUREMENTS PROGRAM												
SOSUS		WESTLANT					NORLANT					
ENVIRONMENTAL DESCRIPTIONS	MED. (MIW)			MED.SEA (MIW)								
ACOUSTICS										WESTLANT		
SHIP MAINTENANCE	U			U		R			U			U

FY 85	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MINE WARFARE				MED.SEA (ACOUSTICS)								
NAVAL EXERCISE AREAS									NORLANT			
OCEAN MEASUREMENTS PROGRAM	NORLANT						NORLANT					
SOSUS											NORLANT	
ENVIRONMENTAL DESCRIPTIONS		EASTLANT										
ACOUSTICS				MED.SEA (MIW)								
SHIP MAINTENANCE			U			M				U		

U - UPKEEP (15 DAYS)
M - MIDTERM (25 DAYS)
R - RECERTIFICATION (YARD 30-45 DAYS)

	REQUIREMENTS	PRODUCTS
MIW	Mine Warfare Surveys(Deep Water Oceanography and Acoustics) (COMINEWARCOM)	CAPTOR Data Report(Physical Oceanography and Acoustics); input to CAPTOR Guide; input to data banks
NEA	Environmental Data in Submarine Sea Trial Areas (CNO)	Hits Chart/Report; input to data bank
OMP	Ocean Measurements Program(CNO); Visual/ Non-Acoustic Detection of Submarines (CINCLANTFLT)	Data Report; input to Environmental Guide; input to data bank
SOSUS	Environmental Support (NAVELEXSYSCOM)	Data Report; input to Environmental Guide; input to data bank
ENV DESC	See MIW above	See MIW above
ACOUS	See MIW above	See MIW above

USNS KANE EMPLOYMENT PLAN (Cont.)



USNS WILKES EMPLOYMENT PLAN

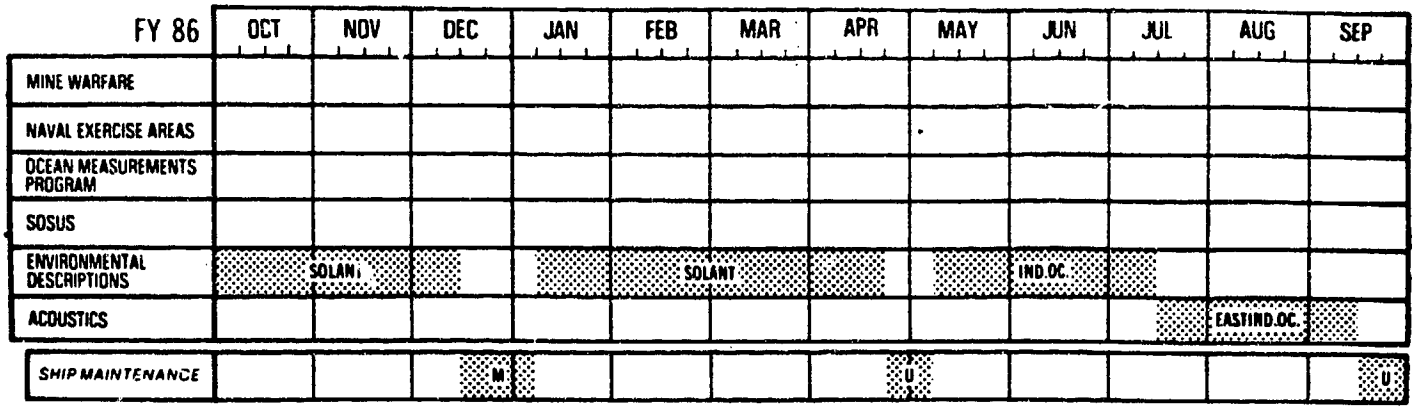
FY 84	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MINE WARFARE												
NAVAL EXERCISE AREAS												
OCEAN MEASUREMENTS PROGRAM												
SOSUS												
ENVIRONMENTAL DESCRIPTIONS	SOLANT				SOLANT		SOLANT			SOLANT/IND.OC.		IND.OC.
ACOUSTICS		SOLANT		SOLANT				SOLANT				
SHIP MAINTENANCE			M			U			U		U	

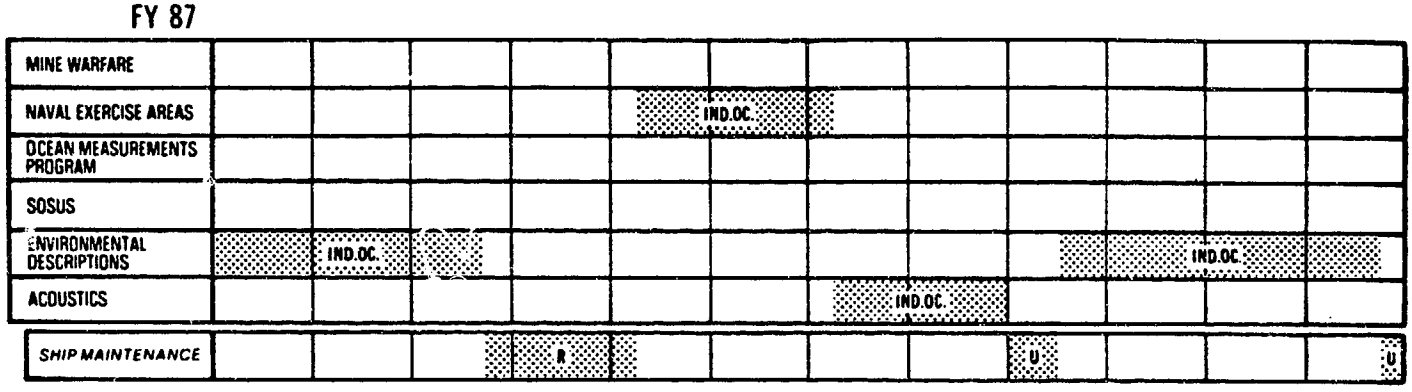
FY 85	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MINE WARFARE												
NAVAL EXERCISE AREAS												
OCEAN MEASUREMENTS PROGRAM												
SOSUS												
ENVIRONMENTAL DESCRIPTIONS	SWIND.OC./SOLANT							SOLANT		EASTLANT		WEST LANT
ACOUSTICS					SOLANT							
SHIP MAINTENANCE				R					U		U	

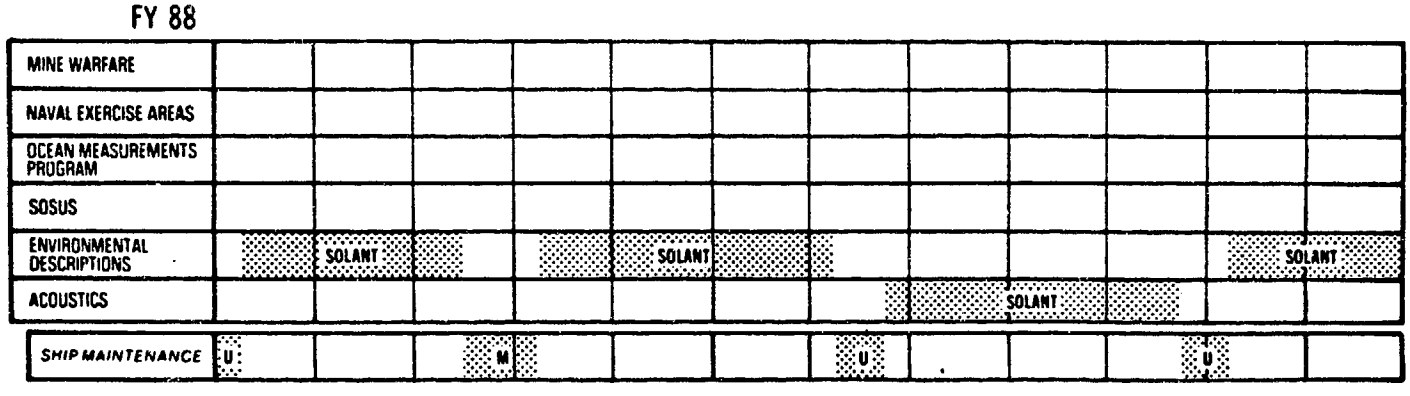
U - UPKEEP (15 DAYS)
M - MIDTERM (25 DAYS)
R - RECERTIFICATION (YARD 30-45 DAYS)

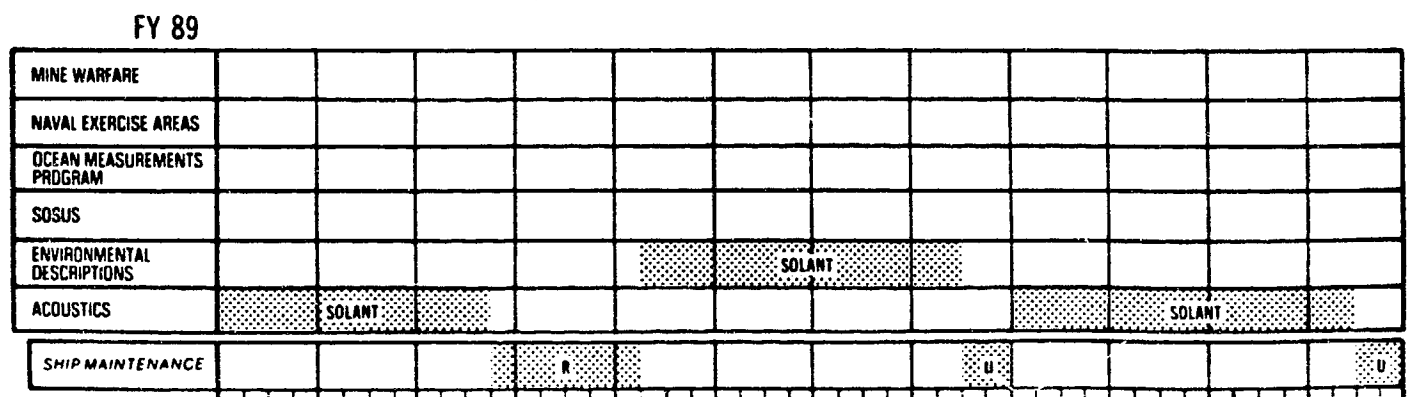
	REQUIREMENTS	PRODUCTS
MIW		
NEA		
OMP		
SOSUS		
ENV DESC	South Atlantic Reconnaissance Survey (CNO) Southern Hemisphere Environmental Data (CINCLANTFLT); Sea Lines of Communications (CINCPACFLT)	Data Report (Oceanography); input to Environmental Guide; input to data bank
ACOUS	South Atlantic Reconnaissance Survey (CNO) Southern Hemisphere Environmental Data (CINCLANTFLT); Sea Lines of Communications (CINCPACFLT)	Data Report (Acoustics); input to Environmental Guide; input to data bank

USNS WILKES EMPLOYMENT PLAN (Cont.)







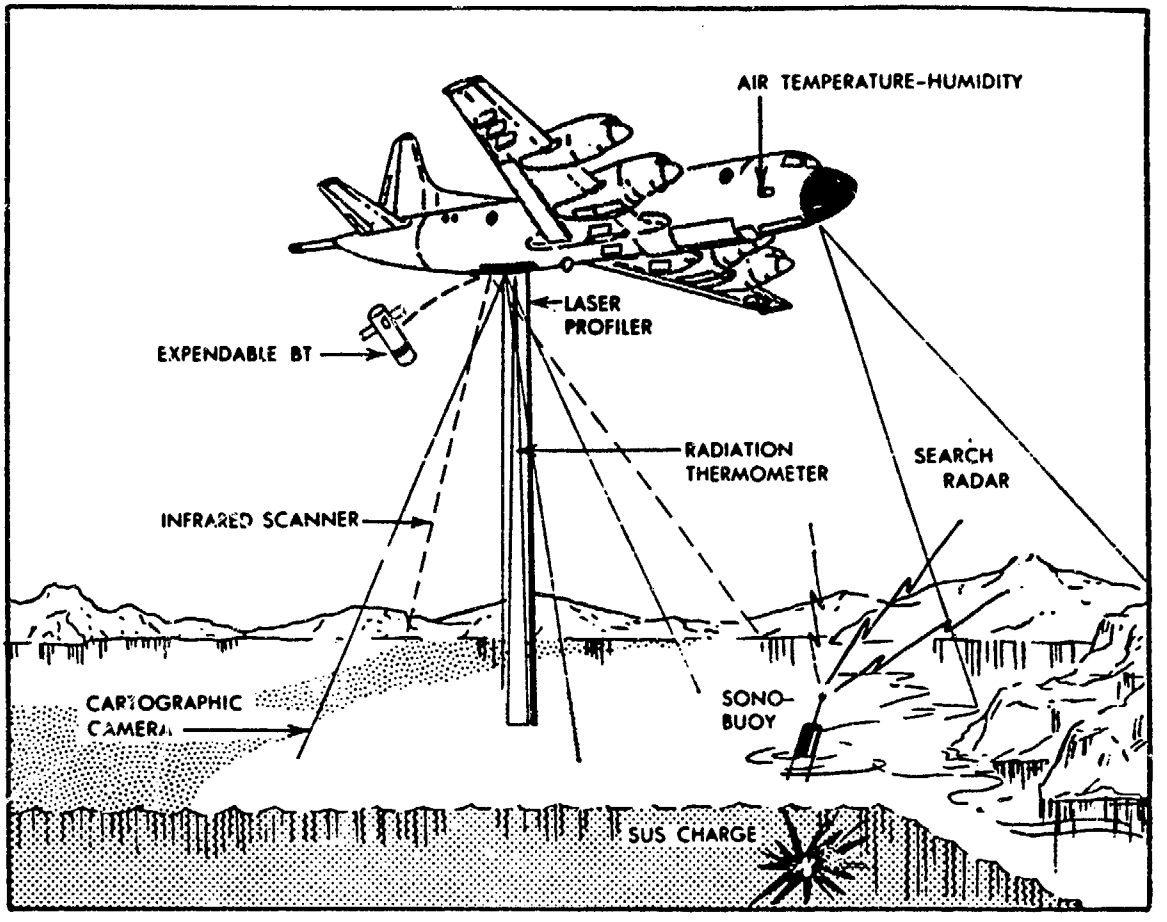


VI. OCEANOGRAPHIC AIRCRAFT EMPLOYMENT PLANS

Project BIRDSEYE and Project OUTPOST SEASCAN aircraft are assigned to Oceanographic Development Squadron Eight (VXN-8). Operational control of the aircraft is maintained by Commander in Chief, U. S. Atlantic Fleet, with technical control assigned to NAVOCEANO via Commander, Naval Oceanography Command.

BIRDSEYE and SEASCAN are long-range aircraft equipped with remote sensor systems for oceanographic measurements. Both aircraft are capable of supporting a variety of environmental requirements and can be used interchangeably for survey operations. However, space equivalent to that used by the digital BIRDSEYE Airborne Survey System (BASS) is available as additional rack space on SEASCAN. As the BASS system is not required for acoustic surveys, SEASCAN is generally scheduled for these missions, and BIRDSEYE is generally scheduled for other oceanographic surveys. Specific survey assignments for each aircraft are determined on an annual basis. This is necessary because maintenance cycles are based on the number of flight hours each aircraft accumulates. Oceanographic projects are supported from either BIRDSEYE or SEASCAN, depending on the number of flight hours requested versus the number of flight hours remaining before the next mandated maintenance cycle. Figure 3 depicts some of the significant capabilities of the aircraft.

Routine airborne surveys are conducted primarily for operational requirements. A few missions are flown in support of RDT&E requirements. Planned support, including maintenance periods, is shown in detail for FY84; FY85 support is shown in general format (without maintenance period) for each of the major projects. Out-year (FY86-89) support is depicted as flight hours allocated for each of the consolidated requirements.



PROJECT BIRDSEYE – RP-3A

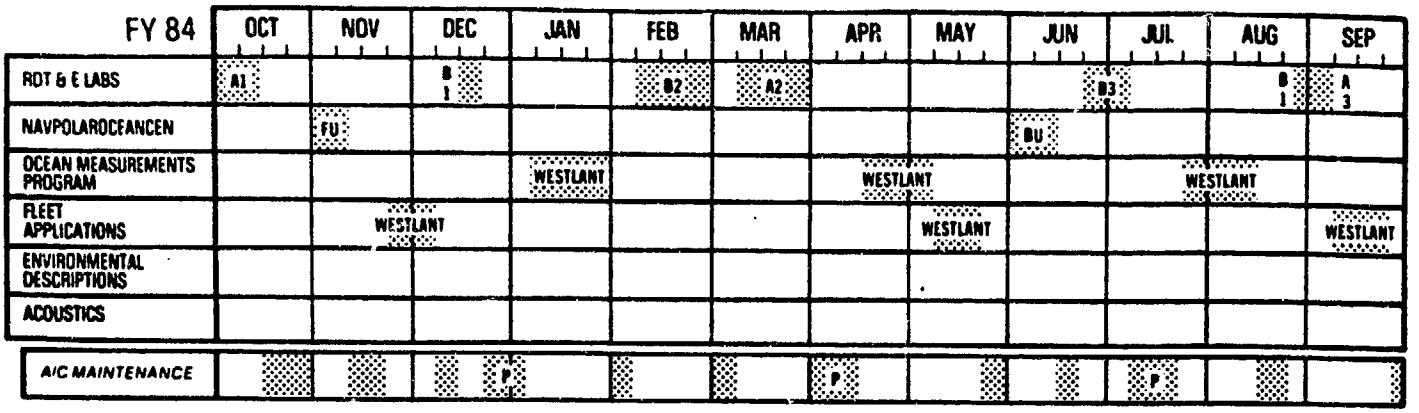
Used for Arctic studies in sea ice prediction and to support Navy Arctic operations, as well as oceanographic and acoustic surveys. The aircraft mounts an airborne radiation thermometer to measure sea surface temperature; an infrared scanner to map sea surface thermal patterns, a helium laser to profile ocean surface waves or ice ridges; expendable telemetering bathythermographs to obtain vertical temperature profiles; meteorological sensors to measure flight-level air temperature, pressure, and dew point; a precision cartographic camera system for aerial photography; and a P-3A ASW acoustic system. An onboard Inertial Navigation System, autotracking Loran-A/C, and navigational satellite receivers provide geographic positioning.

PROJECT OUTPOST SEASCAN – RP-3A

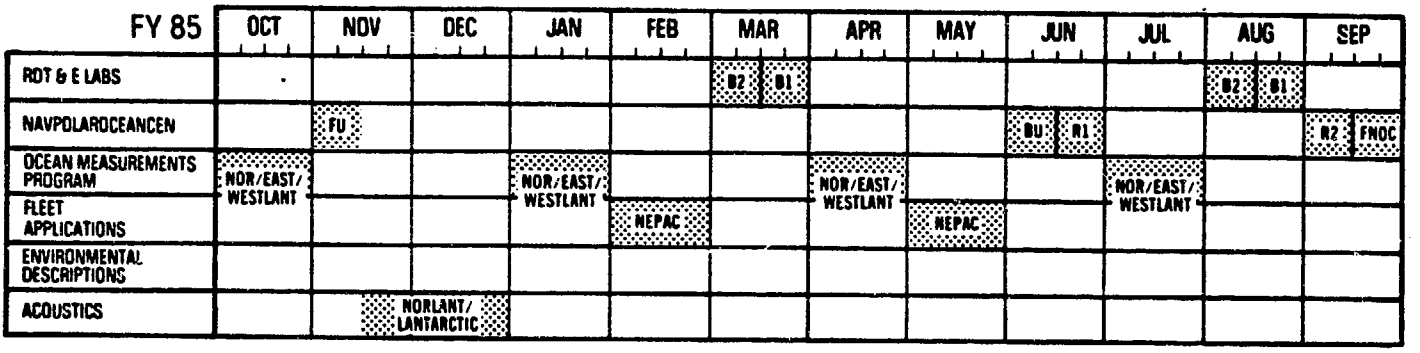
Used primarily for oceanographic and acoustic surveys. This aircraft has essentially the same scientific and navigational equipment listed above. Additionally, an airborne computer system acquires and performs inflight processing of scientific and navigational data.

FIGURE 3. Airborne Oceanography

OUTPOST BIRDSEYE EMPLOYMENT PLAN

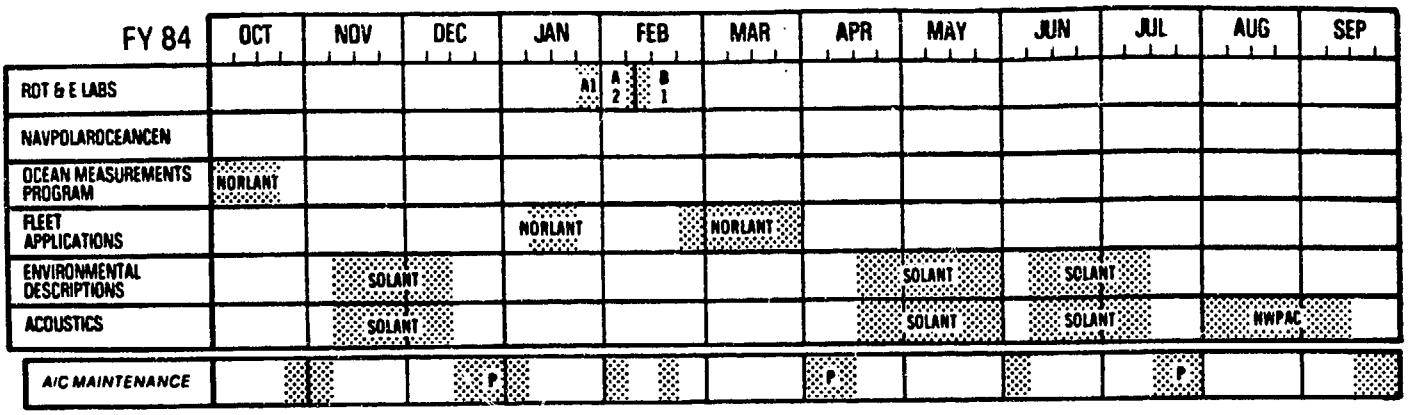


U - UPKEEP (1-15 DAYS)
P - PHASE MAINTENANCE (15 DAYS)
S - SCHEDULED DEPOT - LEVEL MAINT. (3-4 MONTHS)

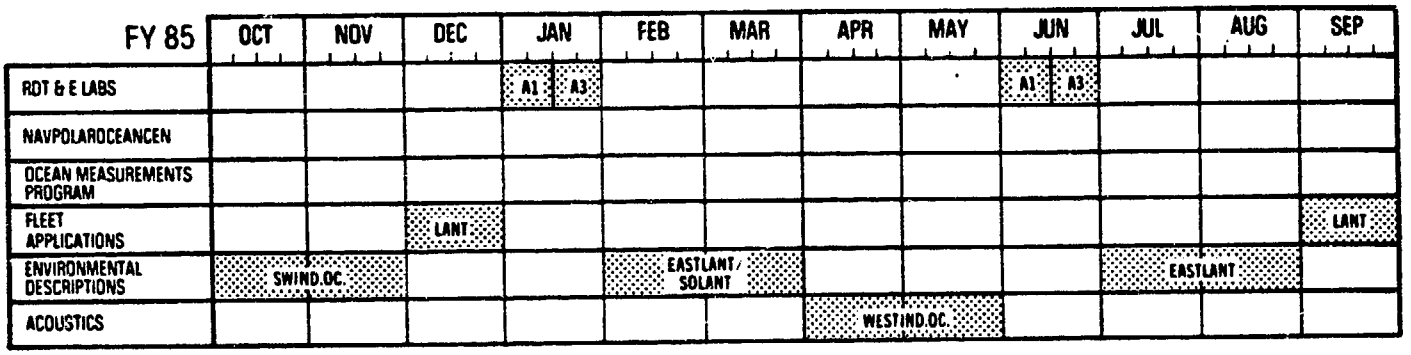


	REQUIREMENTS	PRODUCTS
RDT & E	A1: APL/JHU conclude FY83 NEPAC Ops; A2: APL/JHU NEPAC Ops A3: APL/JHU WESTLANT Radar-B B1: NORDA GEOSAT, WESTLANT B2: NORDA KRMS (332) Pacific Arctic B3: NORDA KRMS (332) Atlantic Arctic	A1, A2: SSBN Area Assessments A3: Data Report B1: GEOSAT Validation Data Report B2: KRMS Radiometer Development Report B3: " " "
NPOC	FU: Ice Freeze-Up, AR-1, NA-1; BU: Ice Break-Up, Ar-1, 7-9, 11... R1/R2: Ice RECON	Ice Charts
OMP	Ocean Measurements Program (CNO); Visual/ Non-Acoustic Detection of Submarines(CINC-PACFLT)	Data Report; input to Environmental Guide; input to data bank
FLT APPL	Oceanographic Support for Fleet Exercises Thermal Effects on Ocean Acoustics; (CINC-LANTFLT, CINCPACFLT)	Data Report; Reconstruction Report; Frontal Study; input to Tactical Forum and Environmental Guide
ENV DESC		
ACOUS	Mine Warfare Surveys (Deep Water Acoustics (COMINEWARCOM)	CAPTOR Data Report (Acoustics); input to CAPTOR Guide; input to data bank

OUTPOST SEASCAN EMPLOYMENT PLAN



U - UPKEEP (1-15 DAYS)
P - PHASE MAINTENANCE (15 DAYS)
S - SCHEDULED DEPOT - LEVEL MAINT (3-4 MONTHS)



	REQUIREMENTS	PRODUCTS
RDT & E	A1: NORDA GEOSAT data validation A2: NORDA AEAS "Resolution" A3: NORDA KRMS B1: APL/JHU SA II Survey	Data report Data report KRMS Radiometer Development Report Data report
NPOC		
OMP	Ocean Measurements Program(CNO); Visual/ Non-Acoustic Detection of Submarines(CINC-LANTFLT)	Data Report; input to Environmental Guide; input to data bank
FLT APPL	Oceanographic Support for Fleet Exercises; Thermal Effects on Ocean Acoustics;(CINC-LANTFLT)	Data Report; Reconstruction Report;Frontal Study; input to Tactical Forum and Environmental Guide
ENV DESC	South Atlantic Reconnaissance Survey(CNO); Southern Hemisphere Environmental Data (CINCLANTFLT); Sea Lines of Communications (CINCPACFLT)	Data Report (Oceanography); input to Environmental Guide; input to data bank
ACOUS	South Atlantic Recommaissance Survey(CNO); Southern Hemisphere Environmental Data (CINCLANTFLT); Sea Lines of Communications (CINCPACFLT)	Data Report (Acoustics); input to Environmental Guide; input to data bank

AIRCRAFT EMPLOYMENT PLANS FY 86 - 89

FISCAL YEAR	REQUIREMENTS	ALLOCATED TIME (FLIGHT HOURS)
86	CINCLANTFLT	530
	CINCPACFLT	700
	CNO	650
	NAVPOLAROCEANCEN	220
87	CINCLANTFLT	600
	CINCPACFLT	600
	CNO	550
	NAVPOLAROCEANCEN	220
	NATO	120
88	CINCLANTFLT	630
	CINCPACFLT	630
	CNO	500
	NAVPOLAROCEANCEN	220
	NATO	120
89	CINCLANTFLT	630
	CINCPACFLT	700
	CNO	500
	NAVPOLAROCEANCEN	220

VII. SURVEY PLANS - OTHER PLATFORMS

Survey plans for other platforms primarily address environmental data support to Commander, Mine Warfare Command. These platforms include contract ships in U. S. territorial waters and foreign vessels in certain overseas areas.

OTHER SURVEY PLATFORMS

MINE WARFARE SUPPORT (FY/quarter)	FY 84				FY 85				FY 86	FY 87	FY 88	FY 89
	1	2	3	4	1	2	3	4				
CONUS PORTS: Q-Route surveys (contract ship)	X	X	X	X	X	X	X	X	X			
CONUS MACAS Surveys							X		X	X	X	X
Foreign MACAS Surveys			X						X		X	X

APPENDIX A

REQUIREMENTS DOCUMENTATION

COMNAVELEXSYSCOM msg 132017Z APR 83

(Requested FY84-88 oceanographic support in the North Atlantic and North Pacific Oceans)

Tasked by: COMNAVOCEANCOM ltr of transmittal ser 3201 of 11 May 83

CINCLANTFLT ltr ser S558 of 18 Dec 80

(Requested support for 25 requirements, 14 of which were assigned to NAVOCEANO)

Tasked by: COMNAVOCEANCOM ltr ser 1699 of 15 Oct 81

CINCPACFLT ltr ser 02M/S306 of 4 Sep 80

(Requested support for 33 requirements, 15 of which were assigned to NAVOCEANO)

Tasked by: COMNAVOCEANCOM ltr ser 1699 of 15 Oct 81

COMINEWARCOM N41 ltr ser S177 of 14 Jul 82

(Updated and consolidated previously validated and tasked requirements for Q-Routes, environmental information for mining and mine countermeasures, CAPTOR Environmental Planning Guides and Mine Warfare Pilots)

Tasked by: COMNAVOCEANCOM N3 ltr ser 3008 of 4 Jan 83

SSTP report, STD-R-599 (1982 Edition)

Information Requirements for the Ocean Measurements Program (Requested oceanographic support for the Ocean Measurements Program)

Tasked by: CNO ltr ser 952D/S349893 of 13 Sep 82

COMSUBDEVGRU ONE ltr ser C3 of 11 Jan 74
CINCPACFLT ltr ser 21/C423 of 12 June 75
COMSUBLANT msg 281913Z Sep 76

(Requested oceanographic data collection, products and services within designated submarine trial areas)

Tasked by: COMNAVOCEANCOM ltr ser N32/2004 of 26 Nov 80

NOTE: This requirement was recently updated; revalidation process is in progress.

COMNAVOCEANCOM ltr ser 0281 of 13 Feb 81

(Validated NORDA/NAVOCEANO modeling efforts in the Bottom Loss Upgrade (BLUG) task.)

CNO ltr ser 952/S350982 of 17 Jun 81

(Validated and tasked NAVOCEANO to conduct oceanographic surveys in the South Atlantic Ocean.)

Tasked by: CNO ltr ser 952/S350982 of 17 Jun 81

CINCLANTFLT 191524Z Feb 82 and 191529Z Feb 82
COMNAVELEXSYSCOM 020412Z May 82

(GOBI and Array Characterization requirements combined into the MARAC program that concentrates efforts on long-range acoustic transmission characteristics in the ocean)

Tasked by: COMNAVOCEANCOM ltr ser 4123 of 27 May 82

OCEANAV ltr ser 50/030 of 28 Sep 78

(NAVOCEANO tasked to develop the software for the Tactical Environmental Support System--TESS)

Tasked by: COMNAVOCEANCOM ltr ser 1006 of 26 Jun 79

APPENDIX B

VALIDATED REQUIREMENTS

Project/ Task	Requirement Title	Requirement Source or Sponsor
INSHORE/		
Mine Warfare:	Mine Warfare Environmental Surveys, Shallow Water	COMINEWARCOM
	Mine Warfare Environmental Surveys, Deep Water	"
	Mine Warfare Pilots	"
	Mine Warfare Automated Systems	"
	Environmental Data Review	"
	Request for Technical Guidance	"
	Flushing Studies	CNO
Naval Exercise Areas:	Environmental Data for Submarine Sea Trial Areas	CNO
OCEANOGRAPHY AND GEOPHYSICS/		
Ocean Measurements Program	Visual Detection of Submarines	CINCPACFLT
	Non-Acoustic Detection of Submarines	"
	Ocean Measurements Program	CNO
Environmental Descriptions:	Environmental Guide	CINCLANTFLT
	Surface Lines of Communications	CINCPACFLT
	Environmental Guide	"
	South Atlantic Reconnaissance Survey	CNO
	Publications Support	DMAHTC
SOSUS	SOSUS Support	NAVELEXSYSCOM
ACOUSTICS/		
ASW Predictions:	Bottom Loss Atlas	CINCLANTFLT
	Shallow Water Acoustic Forecasts	CINCPACFLT
	Tactical Use of Low Frequency Bottom Bounce Propagation Loss Data	"
	Propagation Loss for Submarines	"
	ASW Prediction Area Charts	"
	Low Frequency Bottom Loss Upgrade/ Evaluation	CNO
ASW/Surveillance:	Long Range Transmission Loss Characteristics	CINCLANTFLT
	Ambient Noise Characteristics	"
	Ambient Noise Data	"

APPENDIX B

VALIDATED REQUIREMENTS (cont.)

Project/ Task	Requirement Title	Requirement Source or Sponsor
	Low Frequency Bottom Loss	CINCLANTFLT
	Shallow Water ASW	"
	Southern Hemisphere Environmental Data	"
	Middle Frequency Bottom Loss	"
	Mid-Atlantic Ridge Acoustic Characterization	"
	Long Range Propagation Characterization	"
	Strategic Straits Studies	CINCPACFLT
	Effects of Ocean Current Systems	"
	Effects of Fronts and Eddies	"
	Deep Scattering Layer Applications to MK-48	"
	Effects of Civilian Acoustic Transponders	"
	South Atlantic Reconnaissance Survey	CNO
FLEET APPLICATIONS/		
Tactical Analysis and Applications:	Thermal Effects on Ocean Acoustics	CINCLANTFLT
	Oceanographic Support for Submarine Exercises	"
	Oceanographic Support for Surface ASW Operations and Exercises	"
	Oceanographic Support for Fleet Exercises by SECONDFLT and STRIKEFLT	"
	Strategic Straits Studies	CINCPACFLT
	Surface Lines of Communication	"
On-Scene Environmental Systems:	Tactical Environmental Support System	CNO
	Integrated Commnad ASW Prediction System	CNO

APPENDIX C

OCEANOGRAPHIC PRODUCTS

Project/ Task	Products
INSHORE/	
Mine Warfare	Digital Computer Tape Mine Warfare Pilot Mine Warfare Chart Mine Warfare Environmental Data Report CAPTOR Environmental Guide CAPTOR Data Report Target Summaries Flushing Studies Biofouling Intelligence Handbook Input to Environmental Guide Input to Digital Data Base
Naval Exercise Areas	Hull Integrity Test Dive Site (HITS) Chart Hull Integrity Test Dive Site (HITS) Report ODISTA Chart ODISTA Report
OCEANOGRAPHY AND GEOPHYSICS/	
Ocean Measurements Program	Biological Data Report Physical Oceanography Data Report Area Assessment Input to Digital Data Base
Environmental Descriptions	Environmental Guide Physical Oceanography Data Report Physical Oceanography Technical Report General Digitized Environmental Models (GDEM) Geoacoustic Chart CAPTOR Oceanography Data Report Input to DMAHTC Planning Guide Input to CAPTOR Environmental Guide Input to Digital Data Base
SOSUS Support	Broad Ocean Area Data Report Site Data Report Input to Digital Data Base

APPENDIX C

OCEANOGRAPHIC PRODUCTS (cont.)

Project/ Task	Products
ACOUSTICS/	
ASW Prediction	Digital Computer Tape Acoustic Performance Prediction Chart Bottom Loss Chart Input to Geoacoustic Digital Data Base Input to Environmental Guide Input to CAPTOR Environmental Guide
ASW/Surveillance	Strategic Straits Studies Ambient Noise Data Report Reverberation Data Report Bottom Loss Data Report Specific Surveillance Assessment Report Input to Geoacoustic Digital Data Base
FLEET APPLICATIONS/	
Tactical Analysis and Applications	Fleet Exercise Reconstruction Report Satellite Pattern Recognition Report Fronts and Eddies Report Technical Report Input to ASW Tactical Manual Input to Environmental Guide Input to Tactical Forum
On-Scene Environmental Systems	ICAPS Software Support HP-41CV Support HP-9845B Support Geophysics Fleet Mission Program Library Support Tess Acoustic Performance Prediction Documents Model Update/Evaluation Technical Report
Fleet Liaison	Command Contacts and Visits Technical Reports

APPENDIX D

GLOSSARY OF ABBREVIATIONS AND ACRONYMS USED

AEAS	ASW Environmental Acoustic Support
AGS (ship)	Auxiliary General Survey
APL/JHU	Applied Physics Laboratory/Johns Hopkins University
ASW	AntiSubmarine Warfare
BLUG	Bottom Loss Upgrade
BASS	BIRDSEYE Airborne Survey System
CAPTOR	enCAPsulated TORpedo
CNO	Chief of Naval Operations
CINCLANTFLT	Commander-in-Chief Atlantic Fleet
CINCPACFLT	Commander-in-Chief Pacific Fleet
COMINEWARCOM (CMWC)	Commander, Mine Warfare Command
COMNAVELEXSYSCOM (NESC)	Commander, Naval Electronics Systems Command
COMNAVOCEANCOM (CNOC)	Commander, Naval Oceanography Command
CONUS	Continental United States
COMSUBDEVGRU ONE	Commander, Submarine Development Group One
COMSUBLANT	Commander, Submarine Forces Atlantic
COMSUBPAC	Commander, Submarine Forces Pacific
CTD	Conductivity/Temperature/Depth
DMAHTC	Defense Mapping Agency, Hydrographic/Topographic Center
Environ Desc	Environmental Descriptions
GOBI	Global Ocean Bearing Interpretation
HODAS	Hydrographic/Oceanographic Data Acquisition System
HITS	Hull Integrity Test-dive Site

GLOSSARY OF ABBREVIATIONS AND ACRONYMS USED (cont.)

ICAPS	Integrated Command ASW Prediction System
KRMS	K-band Radiometric Mapping System
LANT	Atlantic (Ocean)
MACAS	MAgnetic Capability And Safety
MARAC	Mid-Altanic Ridge Acoustic Characterization
MC&G	Mapping Charting and Geodesy
MED SEA	Mediterranean Sea
MIW	Mine Warfare
MSC	Military Sealift Command
NAVOCEANO	Naval Oceanographic Office
NAVPOLAROCEANCEN (NPOC)	Naval Polar Ocean Center
NEA	Naval Exercise Areas
NORDA	Naval Oceanography Research and Development Activity
OCEAN MSTS PRGM (OMP)	Ocean Measurements Program
OCY	Oceanography
ODISTA	Ocean Data in Submarine Trial Areas
PAC	Pacific (Ocean)
RDT&E	Research, Development Test & Evaluation
SOLANT	South Atlantic (Ocean)
SOSUS	SOund SUrveillance System
SSTP	SSBN Security Technology Program
TESS	Tactical Environmental Support System
VXN-8	Oceanographic Development Squadron Eight