OPERATIONAL LOGISTICS SUPPORT PLAN (OLSP) FOR THE 49' BUOY UTILITY STERN LOADING (BUSL) BOAT

U.S. Department of Transportation

United States Coast Guard

COMDTINST M4081.14

U.S. Department of Transportation
United States Coast Guard

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COMDTINST M4081.14
Nov 7 2001

COMMANDANT INSTRUCTION M4081.14

Subj: OPERATIONAL LOGISTICS SUPPORT PLAN (OLSP) FOR THE 49' BUOY UTILITY STERN LOADING (BUSL) BOAT

1. PURPOSE. This Manual describes how the 49' Buoy Utility Stern Loading (BUSL) boat will be logistically supported during its operational lifetime and is intended for use by all units employing 49' BUSLs as well as support activities responsible for maintaining the operational readiness of the platform. Logistics support responsibilities and related support policy are promulgated in this Manual.

2. ACTION. Area and district commanders, commanders of maintenance and logistics commands, commanding officers of headquarters units, assistant commandants for directorates, Chief Counsel, and special staff offices at Headquarters shall ensure adherence to the content of this Manual at all units which operate and/or maintain 49' BUSLs. Engineering and Logistics Command will coordinate an Integrated Logistics Support Management Team (ILSMT) meeting at least annually to review 49' BUSL logistics support policy, including recommendations for changes to this OLSP. Commandant (G-OCS) will promulgate changes as necessary based upon recommendations by the ILSMT.

3. DIRECTIVES AFFECTED. None.

4. CHANGES. Recommendations for changes are requested from all users of this Manual.

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5. POLLUTION PREVENTION (P2) CONSIDERATIONS. Pollution Prevention considerations were examined in the development of this directive and have been determined to be not applicable.

TERRY M. CROSS
Assistant Commandant for Operations

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CHAPTER 1. INTRODUCTION

A. <u>Purpose</u>. The purpose of the 49-foot Stern Loading Buoy Boat (49-BUSL) Operational Logistics Support Plan (OLSP) is to describe how operational 49-BUSL's will be supported and deployed. For those responsible for deploying the 49-BUSL, the OLSP serves as a reference that describes operational limits and shore-side requirements. For those responsible for providing integrated logistics support (ILS) for 49-BUSL's, the OLSP serves as a reference that describes what support is necessary, where support is located and how to implement support services. This OLSP is an iterative planning document which outlines support resources (including personnel, training, technical data, facilities, and all resources required for maintenance and repair activity) required to operate the 49-BUSL from the time of deployment through disposal. The 49-BUSL OLSP is prepared in accordance with OLSP Development and Management Policy, HQINST 4081.2. Distribution of the plan includes:

Headquarters Offices

Engineering Logistics Center (ELC)

Maintenance and Logistics Commands (MLC's)

Coast Guard Yard (YARD)

Electronics Support Units (ESU's)

Electronics Support Detachments (ESD's)

Naval Engineering Support Units (NESU's)

Civil Engineering Units (CEU's)

Areas

Districts

Activities/Groups

Stations (STA's)

Aids to Navigation Teams (ANT's)

Cutters (with an attached 49-BUSL)

B. <u>General</u>. As a result of the Buoy Boat Replacement Project, which is a Level IIIA Coast Guard Acquisition, twenty-six new-construction 49-BUSL's will be added to the Coast Guard's fleet of buoy boats. The first two 49-BUSL's were constructed at Maritime Contractors Incorporated in FY-95 and were placed in Coast Guard service as pre-production boats. These two vessels were replaced by production model BUSL's in 2nd Qtr FY-01. The 49-BUSL production boat fleet was constructed at the Coast Guard Yard in Baltimore, MD. Construction was completed June 27, 2002. The 49-BUSL is designed to provide a stable, versatile platform capable of operating in ocean harbors, major lakes, or

navigable rivers, and can recover short range aids (SRA) to navigation items. 49-BUSL's service buoys and structures in harbors and channels that are inaccessible to larger buoy tenders or beyond the capabilities of 21-foot trailerable aids to navigation boats (TANB's). The Service Force Mix 2000 Part II (SFM II) study validated the need to replace most of the 45-foot Bow Loading (45-BU's) and 46-foot Stern Loading Buoy Boats (46-BUSL's), and to assume a portion of the buoy servicing responsibilities of inland buoy tenders (WLI's and WLIC's).

C. Revisions. The Integrated Logistics Support Management Team (ILSMT), as described in Chapter 3, will review proposed revisions to this plan. Units and support managers will forward all suggested OLSP changes/revisions to Engineering Logistics Center (ELC) via the chain of command. Changes that are under the purview of Areas, Districts, or MLCs as outlined in this document may be made by message, without G-OCS approval. Such changes will be subsequently documented by the ILSMT. The ILSMT will meet at least once each year. In years when a Boat Support Review (BSR) is held, the ILSMT meeting will be held immediately prior to the BSR. Upon scheduling each session, ELC will prepare and distribute an agenda to the ILSMT members' offices, attaching all current issues received from the field. They will request that issues of logistics support or policy on the agenda, e.g., maintenance, training, personnel, supply, etc., be fully staffed by appropriate organizations prior to the ILSMT meeting. ELC will document the results of each ILSMT, prepare OLSP changes, as required, and forward to Commandant (G-OCS) for formal approval. Commandant (G-OCS) will promulgate all OLSP revisions.

D. Mission Requirements. 49-BUSL mission requirements and operating capabilities are outlined in the:

1. Mission Needs Statement (MNS), dated 30 April 1992; and

2. Sponsor's Requirements Document (SRD), dated 12 May 1992.

E. Mission Areas. The Buoy Boat Replacement Project MNS describes the primary mission of the 49-BUSL.

1. Primary Mission. The primary mission of the 49-BUSL is to service the SRA system. To meet the SRA mission the 49-BUSL's are able to accomplish the following:

a. Functional Tasks:

Replace buoys

Check buoy signals and positions

Inspect and replace buoy mooring systems

Position buoys accurately

Replace buoy power systems and associated hardware

Correct critical aids to navigation (ATON) discrepancies in accordance with current response policies

Verify the operation of ATON in the vicinity of a marine casualty in a timely manner

Provide logistics support for maintenance of fixed ATON and shore structures

Locate and retrieve sunken buoys within equipment capablities

b. Operational Capabilities. To perform the above missions, the 49-BUSL possesses the capability to:

Transport ATON equipment between aid position and storage/repair facilities. Equipment consists of buoys ranging in size up to standard 5' x 11' buoys, along with associated chain, sinkers, batteries, and other hardware.

Maneuver in shallow water and restricted channels. Some channels may be as narrow as 50-feet, with controlling depths as shallow as six feet.

Lift up to 4,500 pounds.

Serve as a safe work platform for performing on-station routine buoy servicing. Buoys may be as large as a standard 5' x 11' buoy.

Transport up to 16,000 pounds of cargo.

Service up to standard 5' x 11' buoys in Sea State Two maximum.

2. Secondary Missions. The 49-BUSL ILS Plan lists the following secondary missions that 49-BUSL's may be tasked to perform:

Search and Rescue (SAR)

Law Enforcement

Marine Environmental Protection (MEP)

Waterways Management

Port Environmental Safety

Recreational Boating Safety

F. Operations Concept.

1. Deployment. The 49-BUSL may be deployed as follows:

Day Trips. All 49-BUSL's accomplish part of their buoy servicing responsibilities by getting underway from, and returning to, their homeport on the same day.

Short Overnight Deployment. 49-BUSL's can operate up to four days unreplenished. Some deployments occur overnight without additional logistics support. On overnight trips, 49-BUSL's

anchor in a protected location, or moor to a bank or structure in a remote area, to await enough light for the next day's work.

Extended Overnight Deployment. Extended deployments can be up to ten days away from homeport with replenishment. Units that service wide expanses of territory make extended deployments. 49-BUSL's deploy with full deck loads to work in remote locations and then meet a resupply vehicle on the third or fourth day at a preplanned shore facility. After resupply, the boats get underway for a second three or four-day trip, repeating the cycle as often as necessary to cover the extreme reaches of their area of responsibility.

2. **Mission Employment.** The 49-BUSL is a tool to assist each assigned unit with the mission of transportation and deployment of short-range aids to navigation. Mission performance entails the following tasks and capabilities:

   Observing, checking and inspecting ATON

   Correcting most ATON discrepancies within its capabilities

   Establishing and maintaining lighted or unlighted buoys to include routine servicing, recharging, and mooring inspections

   Transporting maintenance crews and equipment to and from large navigational buoys and major lights

3. **Operational Environment.** 49-BUSL's operate in a protected or semi-exposed environment (sea-state two, maximum), and are capable of transiting an exposed area (sea-state three, maximum). 49-BUSL's do not operate routinely in rough seas, but can survive unexpected heavy weather. 49-BUSL's can operate in six inches of broken ice without damage to the boat with continuous power plant reliability at a speed of 2 knots.

4. **Service/System Life Cycle.**

   a. **Service Life Cycle**. The planned service life of the 49-BUSL is 20 years. However, periodically, a Ship Structure and Machinery Evaluation Board will convene, per the Naval Engineering Manual (NEM), COMDTINST M9000.6 (series), to estimate remaining service life of the boat and determine the need for structural, machinery, habitability, electronics upgrades/replacement, and possible service life extension. Per the NEM, boats in active service status shall be inspected at least every six months for proper preservation of hull interiors and structural members. Steel hulls shall be preserved according to procedures in Coatings and Color Manual, COMDTINST M10360.3 (series), and other current information pertaining to authorized coatings.

   b. **System Life Cycle.** During the 49-BUSL's service life cycle, alterations will be required to various systems since the boat's various commercial systems have service lives of less than 20 years. Alteration projects may include electronics, machinery, and boat hulls. All alterations will comply materially and logistically with the Naval Engineering Manual, COMDTINST M9000.6 (series) and Electronics Manual, COMDTINST M10550.25 (series).

CHAPTER 2. SYSTEM DESCRIPTION AND CONCEPTS

A. General.

1. **System Operating Components.** 49-BUSL's have improved navigation, propulsion, and weight handling systems that can accomplish the missions of their predecessors (45-BU's and 46-BUSL's). Major system operating and support system components include the following:

   a. An A-frame crane with a maximum safe working load rating of 4,500 pounds.

   b. A buoy deck with 225 square feet of open deck space for handling sinkers, battery racks, cargo, lighted and unlighted buoys.

   c. State-of-the-art communications and data processing equipment that provide precise navigation and communications consistent with present regulations and Coast Guard standards. Navigation and electronic chart equipment are integrated to the autopilot, course computer, and differential global positioning system (DGPS) for use in navigation and buoy positioning.

2. **System Logistics Components.** The existing Coast Guard infrastructure resources currently supporting standard boats shall support 49-BUSL requirements. Specific support resources include:

   a. Supply Support. The ELC will stock 49-BUSL specific spare parts and coordinate supply support agreements for common boat parts with other government agency (OGA) supply centers for the life of the boat.

   b. Technical Data. Commercial technical manuals (TM's) are provided to all units and Group/Activities for all equipment/systems. ELC (02T) will update technical manuals per the Naval Engineering Manual, COMDTINST M9000.6 (series).

   A preliminary set of 49-BUSL drawings was completed by the Coast Guard Yard and delivered to ELC (02T). In accordance with the Naval Engineering Manual, COMDTINST M9000.6 (series), all Groups/Activities assigned a 49-BUSL were shipped an aperture card set of drawings, or CD-ROM; MLC's have a full sepia copy set of preliminary drawings. Electronic copies of drawings are available through the Naval Engineering Technical Information System (NETIMS). Final 49-BUSL drawings are under development by the Coast Guard Yard; upon completion of the acquisition phase, in 2nd Qtr FY-01, the Coast Guard Yard will relinquish custody of the drawings to ELC (02T) for review. Final drawings will be distributed 3rd Qtr FY-01in accordance with the Naval Engineering Manual.

   A 49-BUSL system-level Boat Information Book (BIB) is under development by ELC-02.

   c. Configuration Management. In lieu of using standard Real-Time Outfitting Management Information System (ROMIS) software requirements, the YARD, with concurrence from ELC, developed a Microsoft Access database with applicable ROMIS and data elements to accomplish Configuration Management Accounting objectives. The Microsoft database, when fully populated, will be provided to Commandant (G-SL), and will support the Configuration Management Plus (CMplus) program.

d. Training and Training Support. The YARD provides familiarization (FAM) training for the initial crew of each 49-BUSL delivered to each receiving unit. As with the current boat fleet, the majority of required training (such as buoy deck operations, aids to navigation servicing standards, vessel maintenance procedures) for the 49-BUSL will be completed in an on-the-job format, or by using existing service schools (such as the National Aids to Navigation School at Reserve Training Center Yorktown). While some curriculum revision may be necessary, this will be accomplished during the course of normal review cycles. It is not anticipated that the 49-BUSL fleet will generate new requirements for additional training services, equipment, or facilities.

e. Maintenance Support. 49-BUSL's are maintained in accordance with the tri-level maintenance philosophy described in the NEM:

The Engineering Logistics Center has prepared and distributed the 49-BUSL PMS Manual, TP-3377. This manual includes maintenance procedure cards (MPC's) for all HM&E equipment installed in the 49-BUSL. Subsequent revisions to HM&E PMS will be managed by ELC (017) in accordance with the Naval Engineering Manual, COMDTINST M9000.6 (series).

The Office of Electronic Systems (G-SCE) has prepared and distributed required and recommended preventive maintenance tasks and maintenance procedure cards (MPC's) for all electronics equipment installed in the 49-BUSL. Subsequent revisions to electronics PMS will be managed by ELC (017) in accordance with the Electronics Manual, COMDTINST M10550.25 (series).

ELC (014) has completed the Management Information for Configuration and Allowances (MICA), publishing the list of required spare parts to be stocked at each unit and Group/Activity.

B. Platform/System Description.

49-BUSL Operating and Design Features

Feature	Measure/Capability
Displacement	35.57 Long Tons, full load; 42.92 Long Tons, full load with max cargo; 30.89 Long Tons, light ship. *CG R&D Center Report CG-27-97*
Length	49 Ft 2 In
Draft, Maximum	5 Ft 11 In at full load with max cargo at End of Service Life (EOSL)
Beam	16 Ft 10 In
Height, Maximum	24 Ft 6 In (from water line), Mast erect; 15 Ft, Mast folded
Speed	10 knots
Bollard Pull	Stern Pull at 11,000 pounds; Bow Pull at 8,000 pounds. *CG R&D Center Report CG-D-27-97*
Range	300 nautical miles at 10 knots
Endurance	4 days unreplenished
Habitability	Full climate control in crewed spaces. Meets Coast Guard standards for noise, heat, and vibration.
Accommodations	7 Total (4 crew, 3 passengers; accommodations for male and female)

C. Major Assemblies/Subassemblies. Described below are the major systems of the 49-BUSL.

1. **Hull System.** The hull and deckhouse designs meet the America Bureau of Shipping Rules of Building and Classing Steel Vessels Under 200-Feet in Length. Additional design criteria are provided for strengthening the aft buoy deck and hull sides to enable them to withstand impact loads.

2. **Machinery Plant Components and Characteristics.** The 49-BUSL machinery plant components and characteristics are listed in Table 2-1.

Table 2-1

Machinery Plant Components and Characteristics

Component/System	Description
Main Diesel Engines (MDE's)	Two, turbocharged, 305-HP, Cummins® 6CTA8.3 M1 marine engines each driving a fixed pitch propeller through a reverse reduction gear and a solid continuous shaft.
Ship's Service Diesel Generator **(SSDG)**	One Cummins® 4B 3.9-G2 diesel with an Onan® MCGBA 35 kilowatt (KW) downgraded to 20 KW generator, wired for 120 volts, single phase 60 Hertz, equipped with a power takeoff (PTO) and hydraulic pump drive for buoy handling hydraulic equipment and fuel system.
Buoy Handling Equipment	Rotating A-frame crane with two hydraulic powered hoisting winches and two cross-deck hydraulic winches.

3. **Propulsion Plant.** Table 2-2 defines the 49-BUSL propulsion plant components.

Table 2-2

Propulsion Plant Components and Characteristics

Component	Description
MDEs	Two Cummins® keel-cooled 6CTA8.3 M1
Control System	Mathers® Model 12009
Reduction Gears	Two Twin Disc® MG 507A-1
Propulsion Shaft	Two 11-foot, 2.5-inch diameter, Aquamet-22® or Seashaft-22® stainless steel alloy shafts
Shaft Seals	Two Duramax® DXU 2500 mechanical seals, one per shaft
Propellers	Two – 31" x 22", 4 bladed, Modified Style "I"-75%. Manufactured by Ellis Propeller Co.

4. **Buoy Handling Systems.** Mounted on the stern of the 49-BUSL is an A-frame of tubular steel

construction. A winch is mounted on each side of the port and starboard sides of the A-frame facing forward. The port winch is supplied with 50 feet of left-hand lay wire and the starboard winch is supported with 50 feet of right-hand lay wire. A swivel hook is attached to the end of each rope. When both winches are worked in combination the maximum safe working load rating is 4,500 pounds. The winches are variable speed, rated at 0 to 60 feet per minute. The A-frame winches are fitted with an emergency brake release in the event of hydraulic oil pressure loss. When used in tandem with the portable hand pumps, the emergency brake release can safely lower a suspended load to the buoy deck.

Two cross deck winches are mounted on the forward edge of the buoy deck space, port and starboard of the buoy deck centerline. Each winch is supplied with 50 feet of wire rope of identical construction to that of the A-frame winches. Each deck winch is rated at 1,500 pounds maximum safe working load. The winches are variable speed, from 0 to 100 feet per minute. The winches are equipped with a manual release in the event of a hydraulic failure. Controls for operating the hydraulic winches are located on the starboard side of the aft pilothouse control console. Pressure gauges are provided for monitoring the system. Other buoy handling equipment includes:

Two recessed bull chain tie downs – SWL 12,000 pounds.

Fourteen recessed buoy tie down pads – SWL 4,500 pounds.

5. **Electrical Systems.** The 49-BUSL has three main electrical systems: a 24-volt direct current (DC) battery/alternator system for starting and other vital boat services; a 120-volt, 60-Hertz, 35-KW generator downgraded to 20-KW; and a 120-volt, 60-Hertz, 100-amperes single phase shore tie with mechanically interlocked breaker:

The 49-BUSL's electrical power is supplied by a 35-KW Cummins®/Onan® ship service diesel generator (SSDG) downgraded to 20-KW. The generator is equipped with a power-take-off (PTO) which powers the hydraulic pump drive for buoy handling equipment. The 120-volt system provides power for the battery charger, air conditioning/heating, engine hot starts, lighting, navigation computer, galley equipment, pilothouse window heaters, and air compressor.

A 50-foot electrical shore tie cable is stowed in the forepeak. The main electrical switchboard, located in the machinery space, provides instrumentation to monitor shore power. The switchboard is also equipped with mechanically interlocked breakers to prevent the boat from being powered from both the installed SSDG and shore power. The boat electrical service breaker panel feeds individual panels located in the engine room, pilothouse, and galley area. In port, the boat uses the 120-volt battery charger that is mounted on the starboard side of the engine room. In the event shore power is interrupted, the unit should secure all 24-volt service loads with the exception of the alarm panel, loudhailer and bilge pumps in order to extend the batteries' useful life.

The generator must be running when the crew uses full hotel services. The 60-Amp shoretie breaker will trip if all hotel services are run on shore power.

The 24-volt direct current battery/alternator system provides boat service loads for engine starting, engine controls, navigation lights, spotlights, and navigation equipment (except navigation computer). A 24-volt power distribution panel, located on the port side of the pilothouse, receives

power from the main distribution panel located in the machinery space. The 24-volt system contains two battery banks, each wired with two 8D 12-volt batteries. Each battery bank has a 4-position switch for selecting secured, provide engine starting power, 24-volt vital distribution, or engine-start and 24-volt vital loads. The battery banks are located between the main engines beneath the deck plates.

6. **Auxiliary, Damage Control & Survival Systems.** Other systems and equipment, which provide the boat with the capability to perform its missions and support boat operations, are:

   Steering system

   Sewage/Collection, Holding and Transfer System

   Deck wash down system

   Potable water system

   Heating/ventilation/air-conditioning system

   Compressed air system

   Workshop equipment

   Damage control (DC) equipment

   Rescue and survival system equipment

7. **Electronic Systems.** The 49-BUSL is equipped with an electronic systems network that enables boat personnel to communicate, navigate, operate, and monitor equipment. The 49-BUSL's electronic systems include:

   a. **Navigation systems**

      Voyager Cap'N® Electronic Charting System (ECS)

      Raytheon® AN/SPS-69 Radar system and antenna

      Trimble® CEPY NT200CG Differential Global Positioning System

      COMNAV® 2001F Marine Autopilot

      Electronic Compass (Fluxgate) AUTOCOMP® 1000

      Raytheon® CRP-V850 Depthsounder/Doppler Speed Log

   b. **Exterior communication system**

Raytheon® RAY-201 unsecure VHF-FM radio & antenna
(CG-49403 - CG-49407)

Raytheon® RAY-210 unsecure VHF-FM radio & antenna
(CG-49408 +)

Astro Spectra® W9 Digitally Encrypted radio

c. <u>Interior communication system</u>

Intercom

Raytheon® RAY-430 Loudhailer

Interior communication system

8. <u>Microcomputer</u>. The microcomputer is primarily used for navigational charting. Secondary functions include running the Aids to Navigation Information System (ATONIS)/Automated Aid Positioning System (AAPS) and reading engineering drawings via the Naval Engineering Technical Information Management System (NE-TIMS). The first 20 boats were delivered with Dell® OptiPlex® Gs desktop or tower-mounted computers. Subsequent hulls will be delivered with Unisys® Coast Guard Standard Workstation (CGSWS) III tower mounted computers. All previous hulls are being retrofitted with CGSWS III. This is being funded by the project.

9. <u>Electronics HM&E</u>. The 49-BUSL comes equipped with the following electronics HM&E equipment:

Pilothouse controls.

Steering controls (main and auxiliary steering gear).

Engine controls.

Autopilot.

D. <u>Logistics Support Concepts</u>.

1. <u>Objectives</u>. The overall logistics support objective for the 49-BUSL is to ensure that support is in place when and where needed, and at minimal cost, throughout the boat's service life. The logistics support system will ensure each BUSL is available for service 260 days per year with routine maintenance, executed on a not to interfere basis. As necessary, sustainability goals also include post-production planning and block upgrades. Supportability and sustainability goals are as follows:

a. To provide a boat the unit can operate and maintain.

b. To provide technical manuals and Preventive Maintenance System (PMS) guidance for crews.

c. To ensure that the required ATON training is included in Coast Guard courses and schools.

d. To ensure that the Maintenance and Logistics Commands (MLC's) and Groups/Activities have the proper documentation and data to arrange for repair and maintenance of the boat over its life cycle.

e. To provide spare parts documentation and stock required (unit-level, group-level and critical/ELC-level) spare parts in support of the platform.

2. Support Environment. Support personnel, organizations, and facilities required to support 49-BUSL's are similar to the existing standard boats being replaced. Assets become available to the 49-BUSL with the decommissioning of the old systems. Existing support personnel, organizations, and facilities will transfer to the new system. G-OCS will evaluate the need for, and request, additional billets to support the 49' BUSL as required. Support resources outside the unit include:

a. Specific Support Personnel. These include the Sponsor's Representative, 49-BUSL Assistant Project Manager (APM) Yard Technical Liaison, and Naval Engineering Task Leader. These billets expire at the conclusion of the acquisition phase.

b. Specific Organizations. These include Office of Boat Forces (G-OCS), Office of Acquisition, Buoy Tender Replacement Project (G-AWL), Office of Naval Engineering (G-SEN), the Engineering Logistics Center (ELC), the Maintenance and Logistics Commands (MLC's), District Office of Aids to Navigation, Groups/Activities, and the Coast Guard Yard.

c. Specific Facilities. These include the Group/Activities maintenance facilities, Group docking and administrative facilities, commercial haul-out facilities, and the Coast Guard Yard production/construction facility.

3. Logistics Support Improvements. The 49-BUSL has received formal authorization to standardize all boat components and required spare parts via a Justification for Other Than Full and Open Competition (JOTFOC). Through standardization the project is expected to minimize new training requirements. Standardization allowed development of a single Management Information for Configuration and Allowances (MICA) document, rather than multiple variations, and decreased the range and depth of spares and repair parts required. The JOTFOC requires ELC renewal no later than 25 August 2003 (five-year expiration date) for future spare parts acquisition.

CHAPTER 3. ORGANIZATION AND RESPONSIBILITIES

A. General. Responsibility for Planning and providing logistics support for 49 foot BUSL's is widely distributed within Coast Guard Headquarters and field organizations. Adequate logistics support can be enhanced by early identification of support needs to the proper support organization. Commandant (G-OCS) is the Configuration Manager (CMan) and is the responsible Headquarters manager for the Operational Logistics Support Plan. To assist G-OCS with maintaining the currency of this plan, an ILSMT has been chartered. ELC has been designated to chair the ILSMT and maintain this plan. ILSMT members will represent their organizations on BUSL logistics support and ensure concurrence on issues. Permanent members shall include representatives of G-OCS, G-SEN, G-SL, G-SC, G-WT, ELC, MLCs and at least one representative field unit as designated by G-OCS.

B. Logistics Support Organization and Responsibilities. Specific logistics support responsibilities are as follows:

1. Commandant.

a. Acquisition Directorate, Buoy Tender Replacement Project (G-AWL):

1) Oversee construction of all 49-BUSL's in accordance with the YARD Project Order specifications.

2) Assist in resolving operational boat warranty issues.

3) During the acquisition phase, review all operational boat configuration change requests

4) Coordinate funding to acquire critical system stock spares.

5) Act as Configuration Manager during the acquisition phase.

b. Office of Boat Forces (G-OCS):

1) As program sponsor, act as the Configuration Management (CM) Manager for the 49-BUSL's following the conclusion of the acquisition phase. Determine and promulgate configuration management procedures.

2) Bear overall responsibility for the operational readiness of the 49-BUSL fleet. Coordinate support/operational issues with the appropriate support manager or operational command.

3) Determine basic plans, systems, methods, and procedures, by which 49-BUSL's will maintain operational readiness.

4) Periodically review pre-arrival or pipeline training requirements.

5) Carry out Planning, Programming, Budgeting, and Evaluation System (PPBES) activities for 49-BUSL's.

6) Set performance standards for the 49-BUSL fleet.

7) Update the 49-BUSL OLSP as required.

8) Maintain AIG 4913 to disseminate all 49-BUSL CASREP related information.

9) Establish a Standardization Team (STAN)

c. Office of Electronic Systems (G-SCE):

1) Manage the design, change, testing, development, procurement, installation, and maintenance (corrective and preventive) of 49-BUSL electronics systems and equipment after the boats enter the sustainment phase.

2) Manage the establishment of Systems Management Engineering Facilities (SMEF's).

3) Approve Engineering Changes (EC's) in accordance with the Naval Engineering Manual, COMDTINST M9000.6 (series).

d. Office of Logistics Systems (G-SLS):

1) Provide units with CMplus software application, installation, and initial training to allow them to manage their own supply, maintenance, and configuration.

2) Provide CMplus update when ELC approves updated allowance information (MICA).

3) Ensure 49-BUSL's are designated in the Casualty Reporting System (CASREP) database.

e. Office of Logistics Policy (G-SLP):

1) Provide policy direction in areas of configuration management and integrated logistics support.

2. Area Commanders. Administer Allotment Fund Code 30 (AFC-30) funds for unit, intermediate and depot level maintenance for 49-BUSL's.

3. Maintenance and Logistics Command Commanders.

a. Manage the repair, alteration, maintenance, and outfitting of the shore facilities supporting 49-BUSL's.

b. At the request of Commandant (G-AWL), manage Acquisition, Construction and Improvement

(AC&I) funds related to 49-BUSL support.

c. Manage the repair, maintenance, and approved alterations of electronics equipment installed on 49-BUSL's. Budget and manage AFC-42 funds associated with supporting 49-BUSL's. Plan, initiate, and execute electronic equipment repair contracts for 49-BUSL's as required.

d. Supervise NESU's responsible for repair, maintenance, and alteration support for 49-BUSL's.

e. Budget and manage AFC-45 funds for casualties involving fire, collision, or grounding. Upon request, draft repair specifications and put in place AFC-30 contracts beyond the contracting authority of the supporting Group, Activity, NESU or ISC.

f. Ensure that safety and environmental health hazards aboard 49-BUSL's are identified for abatement through the boat repair, maintenance, and alteration program

g. In accordance with the Financial Resource Management Manual, COMDTINST 7100.3 (series), MLC's will provide funding for EC's between $500 and $1000.

4. District Commanders.

a. Oversee 49-BUSL operating schedules.

b. Budget and manage AFC-30 operating and maintenance funds for fuel, outfit replenishment, maintenance, engine overhaul, annual availabilities, boat replacement and boat allowance changes.

c. Assist in maintenance not within the capability of operational commanders.

d. Assist boats and operational commanders in obtaining technical and logistics support and resolving support problems from the responsible MLC. Coordinate boat repair worklists with cognizant MLC.

e. Monitor Casualty Reporting System (CASREP) messages and respond as appropriate.

5. Activity/Group Commanders.

a. Provide intermediate level HM&E maintenance, and in some cases, unit level HM&E maintenance.

6. Engineering Logistics Center Commanding Officer.

a. Perform supply support activities for electronics and HM&E equipment. Support includes provisioning, allowance development, systems stock procurement, cataloging, arranging for inter-service supply support, inventory management, assigning and maintaining equipment SM&R codes, and development and distribution of the MICA.

b. Control Coast Guard-unique critical system stock spares for the 49-BUSL.

c. Approve Field Changes, and Temporary Changes for all systems and equipment under ELC cognizance.

d. Authorize electronics engineering approval to Engineering Change Reqests (ECR's) concerning equipment or systems for which the ELC has SMEF responsibility.

e. Maintain 49-BUSL master drawings for reference documentation design, alterations, and maintenance.

f. Maintain the master library and Engineering Information Data Base (EIDB) for all 49-BUSL technical information.

g. Develop and maintain Boat Class Maintenance Plan (BCMP) and submit to Commandant (G-SEN) for approval. Distribute approved BCMP and changes to fleet.

h. Develop and maintain the HM&E Preventive Maintenance System (PMS) manual and submit to Commandant (G-SEN) for approval. Maintain the HM&E PMS book, TP-3377, throughout the life-cycle phase of the 49-BUSL in accordance with the Naval Engineering Manual, COMDTINST M9000.6 (series).

i. Develop and maintain the electronics Coast Guard Preventive Maintenance System (CGPMS) in accordance with the Coast Guard Electronics Manual, COMDTINST M10550.25 (series). Distribute approved electronics CGPMS to the appropriate Electronics Support Unit (ESU) and Electronics Support Detachment (ESD).

j. Is an ad hoc member of the CCB and maintains all configuration documentation.

k. Provides funding for EC's over $1000.

l. Develop Boat Information Book (BIB) describing 49-BUSL specific HM&E systems.

7. <u>Coast Guard Yard Commanding Officer</u>.

a. Construct and deliver new 49-BUSL's in accordance with the 49-BUSL Project Order.

b. Provide final construction, vendor equipment drawings and commercial-of-the-shelf (COTS) equipment manuals.

c. Define the 49-BUSL Product Configuration Baseline (PBL) during the acquisition phase using a ROMIS-like database. Monitor and provide configuration management changes to ELC.

d. Provide FAM instructors and training to the initial crew of each unit receiving a new 49-BUSL.

e. Provide 49-BUSL deliverables in accordance with the 49-BUSL Project Order.

8. <u>Naval Engineering Support Unit/Civil Engineering Unit</u>.

a. Provide support as directed by the MLC's and Chapter 4 of this plan.

9. **Electronics Support Unit/Electronics Support Detachment.**

   a. Request 49-BUSL CGPMS from ELC (017). Perform unit-level electronics CGPMS.

   b. Provide support as directed by the MLC's and Chapter 4 of this plan.

10. **Unit Commanding Officer/Officer-In-Charge.**

   a. Provide primary support for the BUSL's electronic communications and navigation systems, as defined in PARA 2.A.7, with the exception of the COMNAV 2001F Marine Autopilot and the AUTOCOMP 1000 Compass.

   b. In coordination with the ANT OIC, schedule and perform all organizational level planned maintenance in accordance with the Coast Guard Planned Maintenance System (CGPMS) Work Schedule Book

   c. In accordance with appropriate SOP/Instructions maintain the required response capability for equipment casualties. Perform all organizational level corrective maintenance. Coordinate with the Electronics Support Unit (ESU) technical assistance outside of the capability of the ESD.

   d. Budget and manage all AFC-30 funds provided for the purpose of planned and corrective maintenance.

   e. Maintain and update the Management Information for Configuration Allowances (MICA); formerly ERPAL; spare parts inventory.

   f. Maintain and update the Electronic Installation Record (EIR). Maintain and update the CGPMS Work Schedule Book.

CHAPTER 4. MAINTENANCE SUPPORT

A. Concept. 49-BUSL's will be maintained using existing Coast Guard, commercial, and OGA facilities.

1. **Maintenance Philosophy.** The 49-BUSL maintenance philosophy is based on the tri-level maintenance organization described by the Naval Engineering Manual, COMDTINST M9000.6 (series). The maintenance objective is to keep the 49-BUSL and equipment ready to perform required missions.

2. **Responsibilities.** Unit personnel perform all unit level maintenance in accordance with the PMS Manual and the Boat Class Maintenance Plan (BCMP). While underway, unit level maintenance is limited to preventive/corrective maintenance that is essential to boat operation. The Engineering Petty Officer assigned to the boat performs corrective maintenance to ensure boat safety. Repair parts are stored in various quantities ashore at the unit, Group/Activity, and ELC/OGA supply centers. The ELC will publish and maintain the HM&E and Electronics PMS Books and the Management Information for Configuration and Allowances (MICA). Cognizant Group/ESD personnel provide unit-level and/or intermediate-level maintenance in accordance with the PMS Manual, electronics CGPMS and BCMP.

3. **Unit, Intermediate, and Depot Level Maintenance.** A detailed description of unit level, intermediate level, and depot level maintenance requirements and responsibilities is contained in Section 4-D.

4. **Logistics Support Organization and Responsibilities.** Specific logistics support responsibilities are as follows:

B. Equipment Categories. For maintenance purposes, equipment is divided into four broad categories: HM&E, electronic, ordnance, and electronic HM&E. Based on Maintenance Support Outlines (MSO's)/Maintenance Support Guides (MSG's), G-SEN has prepared a BCMP that includes each of the four categories, included in Appendix E.

1. **Hull, Mechanical, and Electrical.** 49-BUSL HM&E equipment includes the main propulsion system, electrical, fixed damage control equipment, buoy handling equipment, and auxiliary equipment. Paragraphs 2-C.1 through 2-C.6 list 49-BUSL major HM&E equipment.

2. **Electronic.**

   a. Electronic equipment is that principally containing circuits regulating conduction through devices such as tubes, transistors, and integrated circuits. For purposes of Integrated Logistics Support (ILS) planning, "electronics" refers to electronic equipment used for radio navigation, depth sounding, IFF, interior and exterior communications, including cryptography, CCTV, radar, command and control (C2), and electronic charting. Electronics also refers to computer systems integral to the performance of these functions, such as the computers in an Electronic Chart Display and Information System (ECDIS) or communication system. For ILS planning, the term "electronics" generally does not refer to equipment used in propulsion and steering control systems, electrical power generation and distribution systems, gyrocompasses, speed

logs, ordnance and fire control systems, control systems for HVAC systems, and other systems with primarily mechanical functions. This equipment is classified as HM&E electronics. In addition, electronics does not generally refer to aviation specific equipment. (See Chapter 6 of the Electronics Manual, COMDINST M10550.25 (series) for further details and examples.) The Maintenance and Support Outline (MSO), Cutter Class Maintenance Plan (CCMP), or Boat Class Maintenance Plan (BCMP) delineates which category specific items of equipment fall in.

b. Paragraphs 2.C.7 and 2.C.8 of this OLSP list all electronic systems on the BUSL. With the exception of the COMNAV 2001F Autopilot and the AUTOCOMP 1000 Compass all items listed meet the ILS definition of electronics equipment and are supported by the E SD.

3. **Ordnance.** Ordnance refers to installed weapons systems. There are no weapons systems installed aboard 49-BUSL's.

4. **Electronic Hull, Mechanical, and Electrical.** 49-BUSL electronic HM&E equipment includes the steering controls, autopilot and engine controls. Paragraph 2-C.9 lists 49-BUSL electronic HM&E systems.

C. **Types of Maintenance.** 49-BUSL maintenance is divided into the following categories:

1. **Preventive Maintenance.** Preventive maintenance consists of planned work routinely and systematically scheduled to prevent equipment and system failures. By its nature preventive maintenance is always scheduled. The scheduling of preventive maintenance is based on a specified interval of time or operating hours and may be modified by operating conditions.

The PMS Manual, TP-3377 outlines the minimum maintenance requirements and procedures for HM&E equipment. The CGPMS outlines the minimum maintenance requirements for electronics. Scheduled maintenance tasks are identified for unit, intermediate, and depot level maintenance.

2. **Corrective Maintenance.** Corrective maintenance is work to repair failures to equipment, systems, hull, and structure which are random in both time and severity.

Note that because warranties apply to newly constructed 49-BUSL's, units must communicate details of failed components to G-AWL for warranty determination. The 49-BUSL Warranty Manual describes the administration of warranty provisions. When items do not meet the criteria for warranty, units shall follow their established chain of command for corrective maintenance.

3. **Facility Maintenance.** Facility maintenance includes routine cleaning and painting that preserves the hull, superstructure, fittings, or protective or decorative coatings. Preservation requirements are described in the Coatings and Color Manual, COMDTINST 10360.3 (series).

D. **Maintenance Levels.** There are no established specification requirements (e.g. mean-time-to-repair) for the 49-BUSL. The tri-level maintenance philosophy of unit, intermediate, and depot level maintenance described in Chapter 081, Naval Engineering Manual, COMDTINST M9000.6 (series), applies to the 49-BUSL. The anticipated level of maintenance for each piece of equipment is described in Source, Maintenance and

Recoverability (SM&R) codes that are incorporated in the MICA document. The three levels of maintenance are described below:

1. **Unit Level Maintenance.** Unit level maintenance is maintenance, which is the responsibility of, and generally performed by, the 49-BUSL's assigned crew. It includes all scheduled, corrective, or facility maintenance that can be accomplished using the technical skills and tools available to the unit. Unit level maintenance includes:

   Inspecting, lubricating, cleaning, and adjusting.

   Removing and replacing parts and minor assemblies.

   Testing.

   a. **Funding.** Normally, routine unit level maintenance is funded through the unit AFC-30 account.

   b. **Technical Information Sources.** Unit level maintenance technical information can be found in the PMS Manual, or the CGPMS (for the most likely failure modes), equipment manuals, and commercial manuals.

   c. **Responsibilities.** Unit and ESD personnel perform all unit level maintenance and PMS requirements. While underway, only minimal corrective maintenance essential for boat operation may be performed by the crew. All other corrective maintenance is performed ashore.

   d. **HM&E Equipment Unit Level Maintenance.** The NEM contains the maintenance policy for HM&E equipment, including unit level requirements.

      1) **PMS 2000—HM&E Preventive Maintenance.** The PMS 2000 preventive maintenance program, applicable to the 49-BUSL, should provide increased system availability.

      2) **HM&E Corrective Maintenance.** The 49-BUSL BCMP provides guidance on how corrective maintenance will be accomplished for HM&E equipment. SM&R codes provide detailed information for each piece of installed HM&E equipment. Equipment that is not listed in the BCMP requires local support.

      3) **Facility Maintenance.** Unit personnel perform housekeeping and painting requirements. Painting may be shifted to the intermediate level as environmental restrictions increase.

   e. **Electronics Equipment Unit Level Maintenance.** Maintenance policy for electronics equipment is promulgated in the Electronics Manual.

      1) **CGPMS—Electronics Equipment Preventive Maintenance.** CGPMS applies to all electronic equipment installed aboard the 49-BUSL. The CGPMS provides the necessary guidance to plan, schedule, and perform preventive electronics maintenance. The CGPMS Work Schedule User Guide provides a detailed explanation of the various components of the CGPMS and how they are used.

Preventive maintenance shall be accomplished in accordance with Chapter 10 of the Electronics Manual and the CGPMS Work Schedule User Guide. Specific preventive maintenance procedures are contained in the 49-BUSL MPC's. Electronic Support Units and/or Electronic Support Detachments shall request relevant CGPMS from ELC.

CGPMS procedures shall take precedence over all other planned maintenance procedures, including Navy and other locally developed procedures. Other forms of the PMS are not authorized if CGPMS is available. If CGPMS is not available for a specific piece of equipment, Navy or locally developed CGPMS procedures are authorized. Requests for deviations from the above procedures should be forwarded to Commandant (G-SCE) via the cognizant MLC.

49-BUSL's have a limited amount of CGPMS requirements. Systems with CGPMS requirements are: VHF-FM Transceiver and VHF antenna
DGPS system
Loudhailer
AN/SPS-69A radar system

2) **Electronics Corrective Maintenance.** Electronics corrective maintenance is defined in the BCMP. There is no unit level corrective maintenance for electronic equipment. 49-BUSL electronics maintenance philosophy requires removal and replacement of an electronic item from a rotatable pool of spares managed by the servicing ESU/ESD. Repair is performed by either the ESD or by their contractor.

2. **Intermediate Level Maintenance.** Intermediate level maintenance includes all preventive and corrective maintenance in direct support of the unit that is neither unit nor depot level support. Intermediate level maintenance requires technical skills or equipment not normally available to the unit.

a. **Responsibilities.** 49-BUSL intermediate level maintenance is performed by designated maintenance activities (Groups/Activities, NESU's, ESU's, or ELC) in accordance with the Naval Engineering Manual, COMDTINST M9000.6 (series). Cognizant Group/Activities engineering personnel and ESU personnel provide intermediate level maintenance in accordance with the PMS Manual, BCMP and/or MICA SM&R codes. SM&R codes indicate the type of equipment for which intermediate level support is planned. Intermediate level maintenance includes:

All electronics maintenance scheduled by ESU's (normally by contractor).

All HM&E preventive maintenance with an annual periodicity.

Facility or corrective maintenance beyond unit capabilities.

b. **Funding.** Intermediate level maintenance is funded through either the AFC-30 account for

HM&E equipment or the AFC-42 account for electronics equipment**.** AFC-45 funds are available for catastrophic failures due to fire, grounding, and collision, and approved EC's over $500.00 per boat.

c. **Accessing Intermediate Level Maintenance.** Intermediate level maintenance support is normally accessed by request from the unit to the Group/Activity. Unplanned maintenance requests are generally submitted via CASREP's; planned maintenance requests are generally submitted via CSMP.

3. **Depot Level Maintenance.** Depot level maintenance includes all maintenance performed on equipment or material requiring major overhaul or a complete rebuild of parts, including the manufacture of parts and their modification and testing. Typically depot level maintenance can only be performed during drydock or a dockside availability with commercial or Coast Guard Yard assistance.

CHAPTER 5. SUPPLY SUPPORT

A. General. The 49-BUSL supply support concept is based on practices described in the Supply Policies and Procedures Manual, COMDTINST M4400.19 (series). Upon delivery, each unit receives an allowance of spare and repair parts from G-AWL based on the ELC's MICA document.

The ELC is the inventory control point (ICP) for the 49-BUSL. G-AWL uses AC&I funds to establish the initial stock of system spare parts maintained at the ELC. The ELC is responsible for cataloging and maintaining Coast Guard material within the Federal Supply System (FSS). The 49-BUSL is supported with materials provisioned in the supply system. G-SCE supports standard electronics equipment with operational funds accounts. The ELC coordinates and stores large 49-BUSL support items for use in the CEO program.

B. Allowance Documentation. The 49-BUSL allowance documents developed during the initial provisioning process are described below. Allowance documents are provided to each boat upon delivery.

1. **Management Information for Configuration and Allowances (MICA).** The ELC has distributed allowance documentation in the form of the new Management Information for Configuration and Allowances (MICA), which combines and enhances data currently found in the CALMS, ERPAL, and BOSS. A MICA will be provided to each boat. Updates will occur approximately every two years. The MICA defines all items installed on the 49-BUSL, assigns a Source, Management & Recoverability (SM&R) code, and outlines required unit and Group/Activity spares.

C. Reparable Management. SM&R codes are included in the MICA. The ELC Platform Manager, with MLC concurrence, is responsible for maintaining SM&R codes

D. Unit Supply Support. Unit supply support for HM&E equipment is based upon guidelines contained in the MICA. Supply support for electronics equipment is performed by the designated Electronic Support Detachment per the unit's MICA document. The ELC is responsible for determining both initial and operational spares and repair parts allowance requirements. ELC shall monitor and adjust allowances based on demand data. Units shall submit allowance change requests to the ELC Platform Manager to request changes to the required spare parts. Usage data available from ELC records of expended material will be used to verify the unit and Group/Activity spare parts inventory levels.

1. **49-BUSL Critical System Stock Spares.** A separate list of critical system stock spares, developed and procured by ELC using AC&I funds provided by G-AWL for the 49-BUSL, is managed by the ELC. Following the initial procurement, the ELC will replenish, as necessary, critical system stock spares using ELC's revolving operating expenses. Critical system stock spares include:

   Main diesel engines

   Reduction gears

   Generator sets

PTO units

Shafts

Couplings

Propellers

Rudders

2. **Support Equipment.** Support equipment allowances contained in the MICA are supported by ELC. Changes to these allowances are made by request to ELC through the chain of command using an Allowance Change Request (4790CK).

CHAPTER 6. OTHER LOGISTICS SUPPORT ELEMENTS

A. Manpower and Personnel Support.

1. **General.** Current 45-BU's and 46-BUSL's are generally being replaced on a one-for-one basis with few changes to personnel requirements. 49-BUSL's are crewed by members of the unit where the boat is assigned. Since there is no training pipeline for personnel assigned to units with 49-BUSL's, crewmembers apply the basic skills gained from previous assignments to meet boat operational requirements. As with the current aids to navigation boat fleet, the majority of training is completed while on the job or from existing service schools.

2. **Billet Structure.** The 49-BUSL is designed to operate with a crew of five personnel, just like the boats it is replacing—45-BU's and 46-BUSL's. The 49-BUSL has the capacity for two additional crewmembers for lengthy deployments, surge operations, or training. The composition of each crew differs depending on how many buoys/structures require maintenance and the difficulty of accessing the SRA locations. Generally, the five regular crewmembers consist of:

   One BMC, or BM1 or BM2, and one other BM, E-4 or above

   One MK2 or MK3

   Two non-rated personnel

B. Training and Training Support.

1. **Concept.** The 49-BUSL training objective is to provide the capability to train unit personnel in the operation of the 49-BUSL and its equipment. Training support includes:

   a. **BUSL Training Courses.** No 49-BUSL specific training courses have been identified. Since the 49-BUSL is very similar to the 46-BUSL, there is no need for extensive training for the 49-BUSL. The YARD will provide familiarization (FAM) training prior to delivery of each boat.

   b. **Pre-Arrival Training.** There is no specified 49-BUSL pre-arrival training requirements. Requests to add specific 49-BUSL pre-arrival/pipeline training should be made through the chain of command to Commandant (G-OCS).

   c. **On-the-Job Training (OJT).** The majority of required training for the production 49-BUSL's is completed in an OJT format. Basic Coast Guard seamanship skills developed from previous training and assignments will be sufficient experience for assignment to 49-BUSL duty.

   d. **Follow-on Training.** Upon arrival at the unit, follow-on crewmembers receive OJT from crewmembers who have received the FAM training courses.

   e. **Training Allowance Billets (TAB's).** There are no TAB's for the 49-BUSL.

   f. **Support Allowance Billets (SAB's).** There are no SAB's identified for the 49-BUSL.

2. **Requirements/Constraints.** As boats are deployed, unit operational commanders, facility managers, and program managers shall articulate emerging training requirements to Commandant (G-OCS). The existing ATON servicing courses will be analyzed by rating managers, in cooperation with G-OCS and G-WTT to determine the changes required.

3. **Formal School Training.** There are no formal school training requirements.

   a. **Personnel Qualification Standards (PQS).** G-OCS is updating the following requirements with 49-BUSL specific information. In the interim, units shall follow the requirements established for 46-BUSL's:

      1) All personnel designated as 49-BUSL coxswains shall complete the requirements outlined in the Boat Crew Qualifications Guide - Vol. II - Coxswain, COMDTINST M16114.11 (series).

      2) All personnel designated as 49-BUSL boat crew members shall complete the requirements outlined in the Boat Crew Qualifications Guide - Vol. I - Crew Members, COMDTINST M16114.10 (series).

   b. **Job Qualification Requirements (JQR)**. There are no JQR for the 49-BUSL.

4. **Master Training List (MTL).** There is no MTL for the 49-BUSL. There are no special training requirements except for FAM training.

5. **Training Equipment.** There is no 49-BUSL peculiar training equipment. Training takes place on board the boat.

C. **Support and Test Equipment.**

1. **General.** No special support and test equipment requirements and/or built-in-test equipment requirements are required for the 49-BUSL. Additions to the support and test equipment shall be forwarded up the chain of command to ELC.

2. **Requirements/Constraints.** No support and test equipment will be carried aboard the 49-BUSL. While underway, only minimal corrective maintenance essential for boat operation is accomplished Each unit determines the storage arrangements and establishes procedures for inventory and maintenance of proposed support and test equipment.

D. **Facilities Support.** The following is derived at from a facilities support review that was completed by Commandant (G-SEC) in FY97:

1. **Berthing Area Requirements.** There are no additional berthing requirements for the boat. The 49-BUSL has accommodations for a mixed gender crew. Existing shore facilities are adequate for crew berthing requirements.

2. **Facilities Connections.** Facilities connections requirements are as follows:

   a. **Sewage.** Each 49-BUSL is delivered with 50 feet of 1-1/2 inch hose with a KAM-LOK

coupler, the same as requirements for existing ATON boats. The 49-BUSL has a 250-gallon polypropylene holding tank. The sewage discharge tank pump uses 120-volts to transfer at 10 gallons per minute.

b. **Fuel.** The 49-BUSL has a 1000-gallon total capacity, and uses the same service requirement for existing ATON boats, which is a standard fuel hose nozzle.

c. **Grey Water.** Grey water passes through the installed sewage system.

d. **Bilge Water.** Each compartment has an installed bilge pump which pumps directly overboard. The engine room comes equipped with a standpipe to dewater the engine room bilge from the buoy deck with a removable pump.

e. **Telephone.** Not required.

f. **Potable Water.** The 49-BUSL has a 350-gallon tank and uses a 1-1/2 inch screw type hose and a standard 1-1/2 inch KAM-LOK fitting, the same as for existing ATON boats.

g. **Electrical.** One service of 120-volts alternating current, single phase, 100-amperes is required. Each boat is provided with 100-feet of shore tie cable with a fitting on one end only, to connect with a Hubbell Inc. 3100B4W box. Units receiving the boat locally install a shore-end plug to match the existing shore receptacle.

h. **Fuel Dispensing.** The 49-BUSL does not dispense fuel.

i. **Compressed Air.** There is no shore connector for low pressure air.

3. **Mooring Devices, Deck Fittings and Pier Requirements.** A minimum of three bollards and cleats are required for each boat and should be spaced no more than 30-feet apart. 49-BUSL's have the following mooring requirements:

a. **Mooring length.** 61-feet recommended.

b. **Mooring depth.** Six feet minimum at lowest predicted tide; eight feet recommended.

c. **Multiple moorings.** Spacing should be not more than 30-feet between boats.

d. **Accessibility.** 49-BUSL's should be accessible by a vehicle for buoy loading and rapid-response for potential fire and/or flooding emergencies. Units should refer to local fire codes to establish the appropriate level of fire-protection

4. **Fendering System.** Non-marking fendering systems are used along the pier and boat bulkhead.

5. **Boat Haul-Out Requirements.** In general, units assigned a 49-BUSL will use existing shore side facilities used by predecessor boats, the 45-BU and 46-BUSL. G-SEC's FY-97 survey revealed that the 49-BUSL exceeds the haul-out capacity of most homeport locations. However, the same survey revealed that all homeport locations are in the vicinity of commercial haul-out facilities. Units requiring a 49-BUSL haul-out for planned or unplanned maintenance should use commercial

sources to the fullest extent possible.

E. Configuration Management (CM).

1. **Concept.** CM is accomplished in accordance with the 49-BUSL CM Plan (CMP). Timely logistics support cannot be provided unless the configuration of the 49-BUSL's is properly managed. The support organizations need to know which equipment is installed so the correct spare parts, test equipment, special tools, maintenance instructions, and crew skills can be provided. Before modifications are accomplished or new equipment added, the impact on the operational capabilities and the logistic support organization must be assessed. CM relies on configuration control. The program sponsor (G-OCS) shall convene a CCB meeting as needed to ensure configuration control is maintained.

2. **Responsibilities.**

   a. **Units.** Units are responsible for maintaining the current configuration of the boats assigned to their unit. Configuration changes are allowed only as authorized by EC's, Field Changes, or other established, authorized procedure. Units are responsible for maintaining accurate allowance documents and submitting configuration change requests as identified in the Naval Engineering Manual, COMDTINST M9000.6 (series).

   b. **Configuration Control Board (CCB).** Commandant (G-AWL) chairs the CCB and approves configuration changes during the acquisition phase in accordance with the Stern Loading Buoy Boat Configuration Management Plan, approved on 1 August 1996. After delivery of the last 49-BUSL, G-OCS shall chair the CCB. The CCB chair selects members and publishes configuration change procedures.

   c. **Configuration Identification.** The MNS, SRD, and the Production BUSL Statement of Work define the functional baseline. The Master Equipment List, List of Government Furnished Equipment and Government Furnished Information, and the Contract Data Requirements List define the allocated baseline. The product baseline is defined by the final production drawings and associated lists and data, the MICA, technical manuals, validation and verification documentation, and the YARD logistics configuration database file.

   d. **Configuration Control.** Configuration control is the process of maintaining and regulating all changes to the configuration items (CI's). A CI is an aggregation of hardware, software, or both; or any of its discrete portions, which satisfies an end-use function, and is designated for CM. Field requests for configuration changes shall be submitted according to the instructions contained in the Naval Engineering Manual, COMDTINST M9000.6 (series). CM control responsibilities are contained in the BUSL CMP. Configuration changes shall be made only as authorized by established, authorized procedures, and approved by the CCB. The CCB will remain intact, with the exception of Commandant (G-AWL), upon expiration of the project. During acquisition, the YARD tracks engineering change proposals (ECP's), engineering design change notices (EDCN's), deviations (RFD's), and waivers (RFW's) in the YARD configuration status accounting system established for the 49-BUSL. At project completion, the these files will fall under Commandant (G-SEN) jurisdiction.

e. **Configuration Status Accounting (CSA).** Configuration status accounting provides traceability of all changes to each CI. Configuration changes occur based on Boat Alterations, Engineering Change Proposals, and Configuration Change forms. CSA procedures are described in the NEM, the Electronics Manual, and the Supply Policy and Procedures Manual.

The YARD uses a CM database resident in Microsoft Access. This database is used to define the logistics configuration baseline for the BUSL during acquisition, track Provisioning Technical Documentation (PTD) delivery, and develop and monitor outfitting. At the 49-BUSL level, individual units maintain 49-BUSL configuration baselines in CMplus. A primary concern is that allowance lists properly reflect and support installed equipment. Allowance lists are maintained according to the instructions accompanying individual allowance documents. G-AWL and the YARD monitor configuration changes and provide them to the ELC.

f. **Configuration Management Plus.** Current Coast Guard policy calls for all new cutters to be delivered with CMplus, when appropriate. CMplus is a management information system that assists units in managing configuration and related logistics support tasks. Per Chapter 4-E-4 of the Integrated Logistics Support Plan dated 3 September 1996, Commandant (G-SL) will take delivery of all 49-BUSL related configuration data to populate the CMplus database. Commandant (G-SL) will provide all units, with an assigned 49-BUSL, software, conversion of data to CMplus, installation support, and training on CMplus as required. CMplus is scheduled for implementation in 2nd Qtr FY-02.

F. Packaging, Handling, Storage and Transportation (PHS&T).

1. **Normal Packaging, Handling, Storage and Transportation.** Normal packaging, unpacking, handling and transportation policies and procedures apply to the 49-BUSL project. The BUSL's themselves are sailed by unit members to their respective homeports Equipment and repair parts are preserved, packaged, packed, and marked in accordance with ASTM D3951-90 with the following exceptions:

   a. Sensitive electronic items are preserved in accordance with MIL-E-17555H, Electronic Equipment Accessories, Section 3.11.10. Solid state components, such as diodes and transistors, that can be damaged as a result of static electricity or electromagnetic force, are packed/preserved to prevent such damage in accordance with MIL-E-17555, Sections 3.6 and 3.11.10.

   b. Shafting and propellers are individually packaged and preserved in accordance with MIL-P-2845D.

   c. Spare propulsion engines are packaged in reusable, contractor furnished containers, similar to that shown in Supply Center specification 4336-P-233-139 dated 12/18/92. Spare reduction gears are packaged in accordance with MIL-E-10062E. Spare engine and reduction gears are preserved in accordance with MIL-P-116J.

   d. Standard bar codes are placed on spares and repair parts in accordance with MIL-STD-129M, Marking for Shipment and Storage, and MIL-STD-1189B, Standard Department of Defense Bar Code Symbology

2. **Special Packaging, Handling, Storage and Transportation.** Most repair parts and spares are stored ashore. A small number of repair parts are stored in the 49-BUSL workshop for minor corrective maintenance and are listed in the "Transit Spares List" which is also Bill of Material 905.

G. **Computer Resources Support.** The only embedded computer aboard is the Electronics Charting System (ECS). The YARD provides computer resource support for the production 49-BUSL's through the warranty period. Local ESU's/ESD's will provide computer support if the non-standard computer has been replaced with the CGSWIII per Chapter 2-C-8. Year 2000 compliance testing was completed in March 1999; results were published via G-AWL P091830Z APR 99.

H. **Technical Data.**

1. **Engineering Drawings.** The YARD has provided preliminary construction and vendor's equipment drawings. ELC(02T) shall perform a desktop review of the engineering drawings. This review will be completed no later than thirty days after the delivery of the final hull, and should be completed by the end of May 2001. ELC retains master drawings for reference documentation, design alterations, and maintenance. Requests for drawings should be forwarded to ELC (02T). The Naval Engineering Manual, COMDTINST M9000.6 (series) lists the types of drawings that are to be kept up to date.

2. **Technical Manuals.** Commercial off-the-shelf (COTS) technical manuals (TM's) have been procured for all equipment and systems. COTS manuals are used with no changes, except for manuals covering multiple configurations or items of equipment. In these cases, the YARD marks the manual to indicate which text applies to the item or configuration on the 49-BUSL. ELC(02) is developing a 49-BUSL system Boat Information Book (BIB). A list of 49-BUSL TM's that have been provided to the boats is contained in *Appendix B*. ELC (02T) maintains a Master Library of all TM's and MPC's, and is sole authority for publishing and issuing amendments to TM's/MPC's. Per the Naval Engineering Manual, COMDTINST M9000.6 (series), an Engineering Information Data Base (EIDB) is maintained by ELC (02T) for all controlled TM's/MPC's. EIDB listings for a particular boat can be obtained from ELC (02T) via the Military Standard Issue and Requisitioning Procedures (MILSTRIP) system. Recommended changes to existing TM's/MPC's should be submitted to ELC (02T) via the cognizant MLC for approval.

3. **Warranty.** Each 49-BUSL is under warranty for a period of 12-months from the date of preliminary acceptance. The 49-BUSL warranty manual has amplifying information regarding warranty.

CHAPTER 7. MILESTONES

A. <u>Major Project Events</u>. *Appendix C* identifies major project events.

B. <u>Logistics Milestones</u>. Milestones for the Production & Deployment phase are included in *Appendix C*. During Production & Deployment, the lead boat was transferred to the United States Coast Guard.

APPENDIX A. REFERENCE DOCUMENTS

	Document
ACQUISITION MANAGEMENT	BUSL Homeport Assignment List
	Mission Needs Statement (4/30/92)
	Sponsors Requirements Document (5/12/92)
	Stern Loading Buoy Boat Test and Evaluation Master Plan (7/12/96)
	BUSL Project Work Order, Rev 6 (12/16/96)
ILS PLANNING	ILSP for the Stern Loading Buoy Boat Replacement (10/21/96)
MAINTENANCE	Casualty Reporting (CASREP) Procedures Materiel, COMDTINST M3501.3 (series)
	Naval Engineering Manual, COMDTINST M9000.6 (series)
	Coating and Color Manual, COMDTINST M10360.3 (series)
	Electronics Manual, COMDTINST M10550.25 (series)
	49-BUSL MICA Manual, ELCINST M4441.49 (series)
	49-BUSL Warranty Manual (1/16/98)
SUPPLY SUPPORT	49-BUSL MICA Manual, ELCINST M4441.49 (series)
	49-BUSL Microcomputer Request (9/25/98)
	BUSL-ECP-045 (Replace ROMIS Software Requirements with MS Access) (5/14/98)
	Supply Policy and Procedures Manual (SPPM), COMDTINST M4400.19 (series)
TECHNICAL MANUALS	49A BUSL TP 3345-3349 Technical Manual List
PACKAGING, HANDLING, STORAGE & TRANSPORTATION	ATSM 3951-90, American Society for Testing and Materials
	Inspection, Packaging, Handling, Storage & Transportation Handbook, COMDTINST M4450.1
	Methods of Preparation, MIL-P-II6J
	Packing for Shipment and Storage, MIL-STD-129M
	Standard Department of Defense Bar Code Symbology, MIL-STD-1189B
	Packaging of Propulsion Systems Boat and Ship, Main Shafting, Propellers, Bearings, Gauges, Special Tools, and Associated Repair Parts, MIL-P-2845D
	Preparation for Shipment and Storage of Engines, MIL-E-10062E
	Electronic Equipment Accessories, MIL-E-17555H
CONFIGURATION MANAGEMENT	BUSL Configuration Management Plan (8/1/96)
	Acquisition Management of Integrated Logistics Support for Coast Guard Systems and Equipment, COMDTINST 4105.2 (series)
TRAINING AND TRAINING SUPPORT	Boat Crew Qualifications Guides, COMDTINST M16114.10 (series) & COMDTINST M16114.11 (series)
	Boat Crew Seamanship Manual, COMDTINST M16114.5 (series)
	49-BUSL Crew Familiarization Document
	BUSL-ECP-029 (Familiarization Training) (2/20/97)
	49-BUSL Boat Information Book/Operators Manual

APPENDIX B. TECHNICAL MANUAL LISTING

SYSTEM MANUALS

TITLE	
Boat Information Book	Under ELC(02) Development

GOVERNMENT FURNISHED EQUIPMENT

TITLE	Model/Ident. Number
Radar Set	R49X/R41X, AN/SPS-69
Differential Global Positioning System	

COMMERCIAL-OFF-THE-SHELF (COTS)

TECHNICAL MANUALS

SWBS	Volume	Item/Manufacturer	Model/Ident. Number
	1 of 1	***PROPULSION***	
233		*Main Engine*/CUMMINS	
		Jacket Water Heater/KIM	6CTA8.3-M1
		Local Gage Panel/MURPHY	VH-151-T8
		Helmsman Panels/MURPHY	30-09-0367
		Intake Air Separator/WALKER	30-09-0365 & 66
		Lube Oil Change Pump/AEROQUIP	FLOCS 15
		Isolation Mounts/BARRY	27166-3
		Alternator/LEECE-NEVILLE	A001 4629JA
		Sea Water Pump/SHERWOOD	P1727F
		Fuel Filter/Separator/RACOR	75/500MAX
241		*Reduction Gear*/TWIN DISK	MG-507-A1
		Coupling/CENTA	CF-DS-40-7-1-011-0687
		Oil Cooler/CUMMINS	3916002
243		*Shafting*	
		Shaft Seal/DURAMZX	2 ½”
244		*Shaft Bearing*/THORDON	Colorado
245		*Propellers*/ELLIC	J-50001
252		*Propulsion Control*/MATHERS	10157
259		*Exhaust System*	
		Muffler/NELSON	26981N
		Flex Joint/B. BOLDEN	5” x 12.5”
	1 of 1	***ELECTRICAL & ELECTRONIC***	
302		*Motor Starters*	
		Ventilation Fans/EATON	M1CFC
		Deck Washdown Pump/EATON	M1CFC

SWBS	Volume	Item/Manufacturer	Model/Ident. Number
		Grey Water Pump/EATON	M1CFC
		Sewage Discharge Pump/EATON	M1CFC
		Air Compressor	M2CFC
310		*S/S Generator*	See SWBS 502
313		*Batteries, Etc.*	
		Battery Charger/LAMARCHE	A12B-60-24V-A1-18644
		Batteries/DEKA	1400 AMPS
		Transformer/SQUARE D	15S6HISCU-15KVA
		UPS Power/CLARY	UPS1-1.25k-1G-SRN
320		*Power Distribution/Panel Boards*	
		120 VAC Load Center/SQUARE D	HC3248WP
		24 VDC Load Center/SQUARE D	MH44WP
		Machy Space Panel/SUARE D	MH35WP
		Pilothouse Panels/SQUARE D	MH35WP
		Galley Mess Panel/SQUARE D	MH32WP
330		*Lighting*	
		Fluorescent Lighting/AULUHN	FC2175
400		*Antennas*	
		TV AntennaNAVAL ELECTRONICS	PB 12
421		*Magnetic Compass*/GLOBEMASTER	D-515-E-5-BLACK-24
422		*Electrical Nav. Aids*	
		Search Light/JABSCO	62042-4006
		Remote Control/JABSCO	18753-0335
423		*Electronic Nav. Aids*	
		Radar/RAYTHEON	R40XR41X
		DGPS/TRIMBLE	NT200CG
		Depth Sounder/RAYTHEON	V850
		VHF-FM Radio/RAYTHEON	RAY201
		Loudhailer/RAYTHEON	RAY430
436		*Alarm System*	
		Central Alarm System/AMETEK	610630
		Converter/NEWMAR	32-12-6C
490		*Electronic Chart System*/JJM MARINER'S EYE	ME-50
	1 of 2	***AUXILIARIES***	
502		*Auxiliary Diesel*	
		Diesel Generator Set/ONAN	35 MCGBVA
		Jacket Water Heater/KIM	VH-151-T8
		Intake Air Separator/WALKER	KW-4BT-N50
		Lube Oil Change Pump/AEROQUIP	FLOCS 15
		Isolation Mounts/ONAN	402-0630-11 & 12
		Sea Water Pump/SHERWOOD	M-7
		Intake Air Shutdown/AMOT	4261B0*A023
		Flex Joint/B. BOULDEN	3" X 5 5/8"
		Muffler/NELSON	27004N
		Helmsman Panels/MURPHY	30-09-0370
		Fuel Filter/Separator/RACOR	75/500MAX
503		*Buoy Hydraulic Pump*/DENISON	PV29-1L5C-F00
		Clutch/PITTS	H36D400

SWBS	Volume	Item/Manufacturer	Model/Ident. Number
512		*HVAC Equipment*	
		Air Conditioning Units/MARINE AIR	VRP9K
		AC Cooling Water Pump/MARINE AIR<SCOT> P-110 M <72>	
		Air Heater/VALAD	C400-11.0-1NM
		Air Heater/VALAD	C400-10.75-1NM
		Air Heater/VALAD	C400-11.5-1NM
		Defroster Heater/VALAD	C450-11.5-1NM-SP
		Control Box/VALAD	RCB-NM-SP
		Vent Fans/CONTINTENTAL	12E5TA3450-.075
523		*Deck Washdown*	
		Deck Washdown Pump/AURORA	321 – ¾ x 1 x 7
528		*Plumbing Drains*	
		Grease Interceptor/JOSAM	60102
		Waste Water Pump/JABSCO	18690-0000
		AC Condensate Pump/RULE	2000
529		*Bilge System*	
		Bilge Pump/RULE	2000
533		*Potable Water*	
		Potable Water Pump	36900-1010
		Accumulator/PAR	18810-0000
		Water Heater/RARITAN	171201
		Water Chiller/ELKAY	ERS-1
		Eyewash/BRADLEY	S19-430A
541		*Fuel Oil Stripping*	
		Fuel Stripping Pump/BLACKMER	PA 210A
551		*Compressed Air*	
		Air Compressor/INGERSOLL RAND	2340
		Air Receiver/INGERSOLL RAND	ASME 300 GALLON
555		*Fire Extinguishing*	
		CO2 Flooding System/KIDDE-FENWALL	
556		*Buoy Hydraulics*	
		[P2] Hand Pump/PARKER	P-39
		[VF2] Deceleration Valve/PARKER	DF1200SV
		[HX1] Heat Exchanger/YOUNG	F-301-EY-2P-CNTB
		[CY1] Cylinders/CUNNINGHAM	3 ¼ CMVNP3 C65 3 4 S 3500
		[FL2] Discharge Filter/SCHROEDER	KFN30-1KSX3-V-S-D
		[FL3] Return Filter/SCHROEDER	RT-1KS7-W-SS
		[VP1] Pressure Control/GRESDEN	RPL-16-N-G (SAE-4)
		[VM6] Temp Control/AMOT	1” CM-SW-120-06
		[VM7] Solenoid Valve/ATKOMATIC	SLST #2100-S
		Joystick Controllers/DENISON	796-30011
		Engage/Disengage Switch/ALLEN BRADLEY	800T-H2A
		Load/No Load Switch/ALLEN BRADLEY	800T-H2A
		Local/Remote Switch/ALLEN BRADLEY	800T-H2A
		A-Frame & Cross Deck Manifolds	
		[VD1] Direction Valve/DENISON	4DP02EO203D40A2G24C1V
		[VF1] Flow Control/DENISON	ZRD-AA02-SO-D1
		[VF3] Flow Control/DENISON	ZNS-A02-2-SO-D1
		[VM4] Shut Off Valve/CPV	365-3

SWBS	Volume	Item/Manufacturer	Model/Ident. Number
561	***2 of 2***	*Steering System/JASTRAM*	B1-200-9-2-35
		Tiller/HOUGH	Dwg 2069
		Tie Bar/HOUGH	Dwg 2352-2
		Cylinder/JASTRAM	B-200-9
		Conver. Change. Manif./JASTRAM	CCO-2300
		Helm Pump/JASTRAM	H58
		Hydraulic Power Unit/JASTRAM	Dwg E-521077
		Autopilot/COMNAV	2001F
		Rudder Feedback Unit/JASTRAM	RFU 300
		Rudder Angle Unit/JASTRAM	RAI 300
		Aft Steering Lever/JASTRAM	LC-1
		Station Selector Switch/JASTRAM	CP-55
573		*Buoy Handling Equipment*	
		Cross Deck Winch/LANTEC	CD-275
		A-Frame Winch/LANTEC	SF-190
593		*Sewage System*	
		Sewage Discharge Pump/JABSCO	18690-0000
		Toilet/SEALAND	808
		Vacuum Pump/SEALAND	S24
		Vacuum Pump/SEALAND	729100
625		*Window Equipment*	
		Window Washers/DENSO	LWW-016A

Owner's Manuals

Cooktop	Seaward	2244
Microwave Oven	Sharp	R-21FT
Refrigerator	GE	TAX6
Coffee Maker	Bunnomatic	A-10A
TV/VCR	Panasonic	PV-M1326/PV-1326W
Stereo System	Kenwood	UD303

Tech Pub Information

TP# 3345	SWBS 233-244	NSN 7610-01-P05-0100
TP# 3347	SWBS 502-555	NSN 7610-01-P05-0300
TP# 3348	SWBS 561-625	NSN 7610-01-P05-0400
TP# 3349	Misc Owner's Manual	NSN 7610-01-P05-0500
TP# 3377	PMS Manual	NSN 7610-01-P05-6800
ELCINST M4441.49	MICA Manual	N/A
TP# 3346	SWBS 302-490	NSN 7610-01-P05-0100

APPENDIX C. 49-BUSL DELIVERY SCHEDULE

Hull	Location	Planned Delivery	Actual Delivery
CG-49401	ANT Bristol		Surveyed
CG-49402	ANT Sledge/Baltimore		Surveyed
CG-49403	ANT Woods Hole		03 Oct 97
CG-49404	ANT Saugerties		05 Feb 98
CG-49405	ANT New York		12 Mar 98
CG-49406	ANT Moriches		16 Apr 98
CG-49407	ANT Cape May		20 May 98
CG-49408	ANT Charleston		09 Dec 98
CG-49409	ANT New York		28 Jan 99
CG-49410	ANT Long Island Sound		18 Mar 99
CG-49411	ANT Long Island Sound		21 Apr 99
CG-49412	ANT Grand Haven		10 Jun 99
CG-49413	ANT Buffalo		21 Jul 99
CG-49414	STA Burlington		25 Aug 99
CG-49415	ANT Panama City		21 Oct 99
CG-49416	ANT Jacksonville		04 Nov 99
CG-49417	ANT Boston		13 Jan 00
CG-49418	ANT Boston		13 Jan 00
CG-49419	ANT South Portland		24 Mar 00
CG-49420	ANT South Portland		24 Mar 00
CG-49421	ANT Southwest Harbor		28 Apr 00
CG-49422	ANT Saginaw River		14 Jun 00
CG-49423	ANT Duluth		12 Jul 00
CG-49424	ANT Detroit		08 Aug 00
CG-49425	ANT Crisfield		28 Sep 00
CG-49426	ANT Corpus Christi		01 Nov 00
CG-49427	ANT Bristol		12 May 01
CG-49428	ANT Sledge/Baltimore		27 Jun 01

Event	Planned	Actual
KDP-1 Approved (Mission Need Statement)		03 Sep 91
Contract Design Specifications Completed		01 Nov 91
SBA 8(a) Single Source Approved		27 Jan 92
Acquisition Plan Approved		01 Apr 92
KDP-3 Approved		30 Apr 92
Pre-Production Contract Awarded		28 Sep 92
First Pre-Production Boat Accepted		03 Jan 95
Operational Testing & Evaluation (OT&E) Completed		27 Jan 95
Second Pre-Production Boat Accepted		07 Mar 95
Coast Guard Yard Detail Design Project Order Initiated		04 Dec 95
Critical Design Review Completed		19 Mar 96
Coast Guard Yard Construction Project Order Initiated		01 Apr 96
KDP-4 Approved		05 Jun 96
First Production Boat Accepted		24 Sep 97
Material Support Date (MICA Publication)		25 Oct 99
BCMP Published		24 Mar 00
Last Production Boat Accepted		27 Jun 01
Yard Production Line Closeout		27 Jun 01
Boat Information Book Published	3rd Qtr FY02	
ELC/G-AWL Drawing Review Complete		30 Jun 01
Last Production Boat Warranty Expiration	2nd Qtr FY02	
Yard Project Order Closeout	3rd Qtr FY-02	

APPENDIX D. ACRONYMS

AC&I ..... Acquisition, Construction, and Improvement
AFC ..... Allotment Fund Code
AIG ..... Address Information Group
ANT ..... Coast Guard Aids-to-Navigation Team
APM ..... Assistant Project Manager
ASTM ..... American Society for Testing and Materials
ATON ..... Aids-to-Navigation

BCMP ..... Boat Class Maintenance Plan
BIB ..... Boat Information Book
BMC ..... Chief Boatswain's Mate
BM ..... Boatswain's Mate
BOSS ..... Boat Outfit and System Support
BU ..... Buoy Boat, Utility
BUSL ..... Stern Loading Buoy Boat

CALMS ..... Combined Allowances for Logistics, Maintenance, and Support
CASREP ..... Casualty Reporting System
CCB ..... Configuration Control Board
CEO ..... Central Engine Overhaul
CEU ..... Civil Engineering Unit
CGPMS..... Coast Guard Planned Maintenance System
CGSWS ..... Coast Guard Standard Workstation
CI ..... Configuration Item
CM ..... Configuration Management
CMan…….Configuration Manager
CMP..... Configuration Management Plan
CMplus ..... Configuration Management Plus
COMDTINSTCommandant Instruction
COSAL ..... Coordinated Shipboard Allowance List
COTS ..... Commercial-Off-the-Shelf
CSA ..... Configuration Status Accounting
CSMP ..... Current Ship's Maintenance Projects

DC ..... Damage Control
DC ..... Direct Current
EC's……Engineering Changes
ECR's…….Engineering Change Requests
ECS..... Electronic Charting System
EIDB..... Engineering Information Data Base
ELC ..... Engineering Logistics Center
ERPAL ..... Electronics Repair Parts Allowance List
ESD ..... Electronics Support Detachment
ESU ..... Electronics Support Unit

FAM ..... Familiarization Training
FM ..... Frequency Modulated
FSD..... Full-Scale Development
FSS ..... Federal Supply System

G-AWL..... Office of Acquisition, Buoy Tender Replacement Project
G-OCS ..... Office of Boat Forces
G-SEC..... Office of Civil Engineering
G-SCE..... Office of Electronics Systems
G-SEN ..... Office of Naval Engineering
G-SI ..... Director, Information and Technology
G-SLS ..... Office of Logistics Systems
G-WTT ..... Office of Training and Performance Consulting

HM&E ..... Hull, Mechanical, and Electrical
HQINST ..... Headquarters Instruction
Hz ..... Hertz

ICP..... Inventory Control Point
ILS ..... Integrated Logistics Support

JOTFOC ..... Justification for Other Than Full and Open Competition
JQR ..... Job Qualification Requirement

KW ..... Kilowatt

MDE ..... Main Diesel Engine
MEP..... Marine Environmental Protection
MICA..... Management Information for Configuration and Allowances
MIL-STD ..... Military Standard
MILSTRIP .... Military Standard Issue and Requisitioning Procedures
MK..... Machinery Technician
MLC ..... Maintenance and Logistics Command
MLCLANT... Maintenance and Logistics Command Atlantic
MLCPAC..... Maintenance and Logistics Command Pacific
MNS ..... Mission Needs Statement
MOU..... Memorandum of Understanding
MPC..... Maintenance Procedure Card
MSG ..... Maintenance Support Guide
MSO ..... Maintenance Support Outline
MTL..... Master Training List

NEM ..... Naval Engineering Manual

NESU..... Naval Engineering Support Unit

OEM ..... Original Equipment Manufacturer
OGA ..... Other Government Agency

OJT ..... On-The-Job-Training
OLSP ..... Operational Logistics Support Plan

PHS&T ..... Packaging, Handling, Storage and Transportation
PMS ..... Preventive Maintenance System
PPBES ..... Program, Planning, Budgeting and Evaluation System
PQS..... Personnel Qualification System
PTD ..... Provisioning Technical Documentation
PTO ..... Power Take Off

ROMIS ..... Real-Time Outfitting Management Information Systems
SAR ..... Search and Rescue
SAB ..... Support Allowance Billets
SMEF..... Systems Management Engineering Facilities
SM&R..... Source, Maintenance, and Recoverability
SRA ..... Short Range Aids
SRD ..... Sponsors' Requirements Document
SSDG..... Ship's Service Diesel Generator
STA ..... Coast Guard Station

TAB ..... Training Allowance Billets
TANB ..... Trailerable Aids-to-Navigation Boat
TM ..... Technical Manual

VHF ..... Very High Frequency

WLI ..... Inland Buoy Tender

YARD..... Coast Guard Yard

APPENDIX E. BOAT CLASS MAINTENANCE PLAN

MAINTENANCE ACTION REQUIRED									
SWBS	**SYSTEM**	**COMPONENT**	**CYCLE**	**UNIT**	**INTERMEDIATE**	**DEPOT**	**USE/ POOL**	**REPAIR**	**STOCKED AT**
1 YEAR ITEMS									
110	**External Structure**	Underwater body	1 yr	Haulout/Inspect	Funding	None	N/A	Contract/ISO	N/A
123	**Miscellaneous Tanks and Voids**	Forepeak	1 yr	None	Clean/Inspect	Repair	N/A	Contract/ISO	N/A
		Accessible voids	1 yr	None	Clean/Inspect	Repair	N/A	Contract/ISO	N/A
241	**Reduction Gear**	Reduction Gear	1 yr	Inspect	Repair	Renew	2\0	Small Purchase	ELC(02)
256	**Seawater Cooling**	Simplex Strainers	1 yr	Inspect/Repair	Renew	None		Small Purchase	N/A
310	**24VDC Generation**	Battery Charger	1 yr	Inspect	Repair/Renew	None		Small Purchase	N/A
		Alternator (MDE)	1 yr	Inspect	Repair/Renew	None		Small Purchase	N/A
320	**Power Distribution**	Distribution Panels	1 yr	None	Thermographic		N/A	Small Purchase	N/A
321	**Electrical Connectors**	Shore Power Conn.	1 yr	Repair	Renew	None		N/A	N/A
		Receptacle, shore power	1 yr	Repair	Renew	None		N/A	N/A
		Plug, shore power	1 yr	Repair	Renew	None		N/A	N/A
437	**Gauges & meters**		1 yr	None	Check and Cal	None	N/A	N/A	N/A
505	**Piping Systems**	Relief Valves	1 yr	Test/Repair/Renew	None	None	N/A	Small Purchase	N/A
541	**Fuel Oil System**	F/O Stripping Pump	1 yr	Inspect/Repair	Renew	None		S/F - Group	N/A
555	**Firefighting Systems**	CO-2 System	1 yr	Inspect	Repair	None	N/A	Small Purchase	N/A
625	**Outfit & Furnishing**	Windows	1 yr	Inspect/Repair	Renew	None		Small Purchase	N/A
		Wipers, Windshield	1 yr	Inspect/Repair	Renew	None		Small Purchase	N/A
625	**Outfit & Furnishing**	Blower, Window	1 yr	Inspect/Repair	Renew	None		Small Purchase	N/A
		Pump, Washer	1 yr	Inspect/Repair	Renew	None		Small Purchase	N/A
633	**Cathodic Protection**	Hull Zincs	1 yr	None	Inspect	Renew	N/A	Avail.	N/A
		Shaft Zincs	1 yr	None	Inspect	Renew	N/A	Avail.	N/A
		Keel Cooler Zincs	1 yr	None	Inspect	Renew	N/A	Avail	N/A
2 YEAR ITEMS									
160	**Strut**	Port/Stbd	2 yr	None	Inspect/Repair	Renew	N/A	Avail	ELC(02)
	Stern Tubes	Port/Stbd	2 yr	None	Inspect/Repair	Renew	N/A	Avail	ELC(02)
167	**Structural Closure**	Watertight Hatches	2 yr	Inspect	Repair	Renew	N/A	Contract/ISO	ELC(02)

MAINTENANCE ACTION REQUIRED									
SWBS	**SYSTEM**	**COMPONENT**	**CYCLE**	**UNIT**	**INTERMEDIATE**	**DEPOT**	**USE/ POOL**	**REPAIR**	**STOCKED AT**
2 YEAR ITEMS (Continued)									
242	**Prop Shaft Couplings**	Coupling, Half	2 yr	None	Inspect/Repair	Renew	2\0	Avail	ELC(02)
244	**Prop Shaft Bearing**	Bearing-Stern	2 yr	None	Inspect/Renew	None	2\0	Avail	ELC(02)
541	**Fuel Oil System**	DFM Tank	2 yr	Inspect	Contract Repair	None	N/A	Small Purchase	N/A
562	**Rudders**	Rudder Assembly	2 yr	None	Inspect/Repair	Renew	0/2	Avail	ELC(02)
		Rudder Bearing	2 yr	None	Inspect/Repair	Renew	0/2	Avail	ELC(02)
		Bearing, lower	2 yr	None	Inspect/Repair	Renew	0/2	Avail	ELC(02)
		Bearing, upper	2 yr	None	Inspect/Repair	Renew	0/2	Avail	ELC(02)
		Tiller	2 yr	None	Inspect/Repair	Renew	0/2	Avail	ELC(02)
3 YEAR ITEMS									
91	**SSMEB**	SSMEB	3 yr	None	None	Schedule			
110	**External Structure**	Haul Out	3 yr	None	Haul Out/Inspect	Fund	N/A	Avail	N/A
	Above Waterline	Freeboard	3 yr	None	Inspect/Repair	Renew	N/A	Avail	N/A
		Pilothouse	3 yr	None	Inspect/Repair	Renew	N/A	Avail	N/A
	Below Waterline	Hull Plating	3 yr	None	Inspect/Repair	Renew	N/A	Avail	N/A
110	**Deck plating**	Weather decks	3 yr	None	Inspect/Repair	Renew	N/A	Avail	N/A
		Internal decks	3 yr	None	Inspect/Repair	Renew	N/A	Avail	N/A
123	**Miscellaneous Tanks and Voids**	Forepeak	3 yr	None	Air-Test/Repair	Renew	N/A	Avail	N/A
		Accessible voids	3 yr	None	Air-Test/Repair	Renew	N/A	Avail	N/A
167	**Structural Closure**	Watertight Doors	3 yr	Inspect	Inspect/repair	Renew	N/A	Contract/ISO	ELC(02)
171	**Mast**	Mast	3 yr	Inspect	Repair	Renew	N/A	Contract/ISO	N/A
192	**Wt Compartment**	Compartment	3 yr	None	Sonic Test/Repair	None	N/A	Avail	N/A
244	**Prop. Shaft Bearings**	Bearing-Strut	3 yr	None	Inspect/Renew	None	2\0	Avail	ELC(02)
245	**Propellers**	Port Prop	3 yr	None	Inspect/Repair	Renew		Avail	ELC(02)
		Stbd Prop	3 yr	None	Inspect/Repair	Renew		Avail	ELC(02)
261	**Fuel Oil System**	Root valves	3 yr	None	Inspect/Repair	Renew		Avail	N/A
505	**Seawater System**	Keel Cooler	3 yr	None	Inspect/Repair	Renew	1\1	Avail	ELC(02)
		Keel Cooler	3 yr	None	Hydro Test/Repair	Renew		Avail	ELC(02)
		Seawater Valves	3 yr	None	Inspect/Repair	Renew	1\1	Avail	ELC(02)
541	**Fuel Tanks**	DFM Tanks	3 yr	None	Clean/Insp/Repair	None	N/A	Avail	N/A
562	**Shafting**	Shaft seal	3 yr	None	Inspect/Repair	Renew	N/A	Avail	ELC(02)

625	**Outfit & Furnishings**	Windows	3 yr	None	Inspect/Repair	Renew		Contract/ISO	ELC(02)

MAINTENANCE ACTION REQUIRED

SWBS	SYSTEM	COMPONENT	CYCLE	UNIT	INTERMEDIATE	DEPOT	USE/ POOL	REPAIR	STOCKED AT
				3 YEAR ITEMS (Continued)					
634	**Deck covering**	Non-skid pads	3 yr	Inspect/Repair	Renew	None	N/A	Avail	N/A
		Dielectric Matting	3 yr	Inspect/Repair	Renew	None	N/A	Avail	N/A
634	**Deck covering**	Carpets	3 yr	Inspect/Repair	Renew	None	N/A	Avail	N/A
		Anti-Fatigue Matting	3 yr	Inspect/Repair	Renew	None	N/A	Avail	N/A
634	**Exterior Paint**	Coating System	3 yr	Inspect/Repair	Repair (major)	Renew	N/A	Avail	N/A
		Pilothouse	3 yr	Inspect/Repair	Repair (major)	Renew	N/A	Avail	N/A
634	**Exterior Paint**	Freeboard	3 yr	Inspect/Repair	Repair (major)	Renew	N/A	Avail	N/A
		Decks	3 yr	Inspect/Repair	Repair (major)	Renew	N/A	Avail	N/A
		Masts/Superstructures	3 yr	Inspect/Repair	Repair (major)	Renew	N/A	Avail	N/A
		Hull ID Markings	3 yr	Renew	None	None	N/A	S/F	N/A
				5 YEAR ITEMS					
233	**Main Propulsion Unit**	Flex piping	5yr	Renew				Small Purchase	N/A
		Flex hoses	5yr	Renew				Small Purchase	N/A
241	**Reduction Gear**	Red. Gear Cooler	5 yr	Inspect	None	None	2\0	Small Purchase	N/A
311	**Ship's Service Diesel Generator**	Flex Piping	5 yr	Renew				Small Purchase	N/A
		Flex Hoses	5 yr	Renew				Small Purchase	N/A
533	**Potable Water System**	Pressure Tank	5 yr	None	Hydro Test/Renew	None		Small Purchase	N/A
551	**Compressed Air Systems**	Tank, Compressed Air	5 yr	None	Hydro Test/Renew	None	N/A	Small Purchase	N/A
555	**Fire Fighting Sys**	CO-2 Extinguisher	5 yr	None	Hydro Test/Renew	None	N/A	Small Purchase	N/A
		PKP Extinguisher	5 yr	None	Hydro Test/Renew	None	N/A	Small Purchase	N/A
				6 YEAR ITEMS					
167	**Structural Closure**	Watertight Doors	6yr	Inspect	Repair/Replace	Renew	N/A	Contract/ISO	N/A
		Watertight Hatches	6yr	Inspect	Repair/Replace	Renew	N/A	Contract/ISO	N/A
233	**Main Propulsion Unit**	L/O Cooler	6 yr	Clean/Hydro	None			Small Purchase	
		J/W Heat Exchange	6 yr		Clean/Hydro test			Avail.	
		(Grid/Keel Cooler)							
241	**Reduction Gear**	Red. Gear Cooler	6 yr	Remove/Install	Clean/Hydro	None		Small Purchase	N/A
		L/O Cooler	6 yr	Clean/Hydro	None			Small Purchase	N/A

MAINTENANCE ACTION REQUIRED									
SWBS	**SYSTEM**	**COMPONENT**	**CYCLE**	**UNIT**	**INTERMEDIATE**	**DEPOT**	**USE/ POOL**	**REPAIR**	**STOCKED AT**
6 YEAR ITEMS (Continued)									
311	**Ship's Service Diesel**	L/O Cooler	6 yr	Clean/Hydro	None			Small Purchase	N/A
	Gen.	Manifold/Cooler	6 yr		Clean/Hydro			Small Purchase	N/A
		Grid Cooler	6 yr		Clean/Hydro			Small Purchase	N/A
508	**Thermal Insulation**	Piping Insulation	6 yr	None	Inspect/Repair	Renew	N/A	Small Purchase	N/A
509	**Thermal Insulation**	Machinery	6 yr	None	Inspect/Repair	Renew	N/A	Small Purchase	N/A
		Vent AC	6 yr	None	Inspect/Repair	Renew	N/A	Small Purchase	N/A
636	**Hull Insulation**	Insulation	6 yr	None	Inspect/Repair	Renew	N/A	Avail	N/A
641	**Furnishings**	Various	6 yr	None	Inspect/Repair	Renew	N/A	Small Purchase	N/A
10-12 YEAR ITEMS									
79	**Stability**	Stability	10 yr	None	None	Schedule			
91	**SSMEB**	SSMEB	10 yr	None	None	Schedule			
555	**Fire Fighting Systems**	CO-2 Bottle (fixed)	12 yr	None	Hydro test/Renew	None	N/A	Small Purchase	N/A
MISCELLANEOUS ITEMS									
74	**Weld Repairs**	Hull	Cond.	Inspect	Repair	Fund	N/A	Contract/ISO	N/A
110	**Internal Structures**	Structure Elements	Cond.	Inspect	Repair	Renew	N/A	Contract/ISO	N/A
		Framing & bulkhead	Cond.	Inspect	Repair	Renew	N/A	Contract/ISO	N/A
		Bilges	Cond.	Inspect	Repair	Renew	N/A	Contract/ISO	N/A
		Grating	Cond.	Inspect	Repair	Renew	N/A	Small Purchase	N/A
	External Structures	Pilothouse	Cond.	Inspect	Repair	None	N/A	Contract/ISO	N/A
	Below waterline	Underwater body	Cond.	Inspect	Repair	Renew	N/A	Contract/ISO	N/A
		Hull plating	Cond.	Inspect	Repair	Renew	N/A	Contract/ISO	N/A
	Above waterline	Freeboard	Cond.	Inspect	Repair	None	N/A	Contract/ISO	N/A
		Deck plating	Cond.	Inspect	Repair	Renew	N/A	Contract/ISO	N/A
		Pilothouse	Cond.	Inspect	Repair	Renew	N/A	Contract/ISO	N/A
171	**Mast**	Mast	Cond.	Inspect	Repair	Renew	N/A	Contract/ISO	N/A
180	**Foundations**	Equip Foundations	Cond.	Inspect	Repair	Renew	N/A	Contract/ISO	N/A

MAINTENANCE ACTION REQUIRED									
SWBS	**SYSTEM**	**COMPONENT**	**CYCLE**	**UNIT**	**INTERMEDIATE**	**DEPOT**	**USE/ POOL**	**REPAIR**	**STOCKED AT**
MISCELLANEOUS ITEMS (Continued)									
233	**Main Propulsion Unit**	Port Engine	Cond.	Assist	Remove/Install	Repair		Contract	ELC
		Stbd Engine	Cond.	Assist	Remove/Install	Repair		Contract	ELC
		Governor/Throttle	Cond.	Remove/Install	Repair/Renew	None		Small Purchase	N/A
		Blower	Cond.	Remove/Install	Repair/Renew	None		Small Purchase	N/A
		L/O Cooler	Cond.	Remove/Install	Repair/Renew	None		Small Purchase	N/A
		Cylinder heads	Cond.	Remove/Install	Repair/Renew	None		Small Purchase	N/A
		J/W Heater Exchange	Cond.	Inspect	Inspect/Repair	Renew		Small Purchase	N/A
		Starter motor	Cond.	Remove/Install	Repair/Renew	None		Small Purchase	N/A
		Vib. dampner	Cond.	Remove/Install	Repair/Renew	None		Small Purchase	N/A
		Engine Mounts	Cond.	Remove/Install	Repair/Renew	None		Small Purchase	N/A
233	**Main Propulsion Unit**	Aft Mount	Cond.	Remove/Install	Repair/Renew	None		Small Purchase	N/A
		Fwd Mount	Cond.	Remove/Install	Repair/Renew	None		Small Purchase	N/A
		Flex Piping	Cond.	Remove/Install	Repair/Renew	None		Small Purchase	N/A
		Flex Hoses	Cond.	Remove/Install	Repair/Renew	None		Small Purchase	N/A
		Exhaust Manifolds	Cond.	Remove/Install	Repair/Renew	None		Small Purchase	N/A
	Main Propulsion	Fuel Oil Supply	Cond.	Remove/Install	Ovhl/Repair/Renew	None		Small Purchase	N/A
	Attached pumps	Kit, Reconditioning	Cond.	Remove/Install	Ovhl/Repair/Renew	None		Small Purchase	N/A
		Raw Water	Cond.	Remove/Install	Ovhl/Repair/Renew	None		Small Purchase	N/A
		Jacket Water	Cond.	Remove/Install	Ovhl/Repair/Renew	None		Small Purchase	N/A
		Lube Oil	Cond.	Remove/Install	Ovhl/Repair/Renew	None		Small Purchase	N/A
241	**Reduction Gear**	Reduction Gear	Cond.	Remove/Install	Repair	Renew	2\0	Contract/ISO	N/A
		Red Gear Cooler	Cond.	Remove/Install	Repair/Renew			Small Purchase	N/A
245	**Propellers**	Port Prop	Cond.	None	Inspect/Repair	Renew		Small Purchase	Group
		Stbd Prop	Cond.	None	Inspect/Repair	Renew		Small Purchase	Group
261	**Fuel Oil System**	Filter, Water Separator (MDE)	Cond.	Inspect/Renew	None	None	N/A	Small Purchase	N/A
261	**Fuel Oil System**	Filter, Water Separator (SSDG)	Cond.	Inspect/Renew	None	None	N/A	Small Purchase	N/A

MAINTENANCE ACTION REQUIRED									
SWBS	**SYSTEM**	**COMPONENT**	**CYCLE**	**UNIT**	**INTERMEDIATE**	**DEPOT**	**USE/ POOL**	**REPAIR**	**STOCKED AT**
MISCELLANEOUS ITEMS (Continued)									
302	**Electric Motors**	A/C S/W Pump Motor	Cond.	Inspect/Repair	Renew	None		Small Purchase	N/A
		Deck W'shdwn Pump Mtr	Cond.	Inspect/Repair	Renew	None		Small Purchase	N/A
		Gray Wtr Pump Motor	Cond.	Inspect/Repair	Renew	None		Small Purchase	N/A
		Potable Wtr Pump Mtr	Cond.	Inspect/Repair	Renew	None		Small Purchase	N/A
		Vent Fan Motor	Cond.	Inspect/Repair	Renew	None		Small Purchase	N/A
		Steering Pump Motor	Cond.	Inspect/Repair	Renew	None		Small Purchase	N/A
		Sewage. Macerator Mtr	Cond.	Inspect/Repair	Renew	None		Small Purchase	N/A
311	**Ship's Service Diesel Generator**	Service Diesel Gen	Cond.	Inspect/Assist	Remove/Install	Repair		Small Purchase	N/A
		Governor/Throttle	Cond.	Remove/Install	Repair/Renew	None		Small Purchase	N/A
		L/O Cooler	Cond.	Remove/Install	Repair/Renew	None		Small Purchase	N/A
		Manifold/Cooler	Cond.	Remove/Install	Repair/Renew	None		Small Purchase	N/A
		Grid Cooler	Cond.	Remove/Install	Repair/Renew	None		Small Purchase	N/A
261	**Fuel Oil System**	Cylinder heads	Cond.	Remove/Install	Repair/Renew	None		Small Purchase	N/A
		Starter motor	Cond.	Remove/Install	Ovhl/Repair/Renew	None		Small Purchase	N/A
		Attached pumps	Cond.	Remove/Install	Ovhl/Repair/Renew	None		Small Purchase	N/A
		Fuel Injection	Cond.	Remove/Install	Ovhl/Repair/Renew	None		Small Purchase	N/A
		Engine Mounts	Cond.	Remove/Install	Repair/Renew	None		Small Purchase	N/A
		Flex Piping	Cond.	Remove/Install	Repair/Install	None		Small Purchase	N/A
		Flex Hoses	Cond.	Remove/Install	Repair/Install	None		Small Purchase	N/A
		Exhaust Manifolds	Cond.	Remove/Install	Repair/Renew	None		Small Purchase	N/A
311	**Ship's Service Diesel**	Generator	Cond.	Inspect/Assist	Remove/Install	Repair		Small Purchase	N/A
	A/C- Brushless								
		Voltage Regulator	Cond.	Inspect/Repair	Repair	None			N/A
320	**Power Distribution**	24/28 VDC Panel	Cond.	None	Repair	Renew	N/A	Small Purchase	N/A
		12 VDC Panel	Cond.	None	Repair	Renew	N/A	Small Purchase	N/A
		480/120 VAC Panel	Cond.	None	Repair	Renew	N/A	Small Purchase	N/A
		Isolation X-Former	Cond.	None	Repair	Renew		N/A	N/A
331	**Lighting system**	Various	Cond.	Repair	Renew	None	N/A	S/F - N/A	N/A
422	**Electrical Navigation Aids**	Lights	Cond.	Repair/Renew	None	None	N/A	S/F	N/A

MAINTENANCE ACTION REQUIRED									
SWBS	**SYSTEM**	**COMPONENT**	**CYCLE**	**UNIT**	**INTERMEDIATE**	**DEPOT**	**USE/ POOL**	**REPAIR**	**STOCKED AT**
MISCELLANEOUS ITEMS (Continued)									
436	**Alarms**	Various	Cond.	Repair	Renew	None	N/A	SF - N/A	N/A
437	**Gauges & meters**	Various	Cond.	Renew	None	None	N/A	S/F	N/A
443	**Signaling**	Electric Horn	Cond.	Repair	Renew	None	N/A	N/A	N/A
503	**Auxiliary Pumps**	A/C Seawater Pump	Cond.	Inspect/Repair	Renew	None		Small Purchase	N/A
		Deck Wash down Pump	Cond.	Inspect/Repair	Renew	None		Small Purchase	N/A
		Gray Water Pump	Cond.	Inspect/Repair	Renew	None		Small Purchase	N/A
		Pot. Water Pump	Cond.	Inspect/Repair	Renew	None		Small Purchase	N/A
505	**Piping Systems**	Duplex Strainers	Cond.	Inspect/Repair	Renew	None	Jan-01	S-F - Group	N/A
		Simplex Strainers	Cond.	Inspect/Repair	Renew	None	Jan-00	S-F - Group	N/A
		Valve, Butterfly	Cond.	Inspect/Repair	Renew	None	Jan-00	Small Purchase	N/A
		Valve, Ball	Cond.	Inspect/Repair	Renew	None	Jan-00	Small Purchase	N/A
		Valve, Gate	Cond.	Inspect/Repair/Renew	Renew	None	N/A	Small Purchase	N/A
		Relief Valves	Cond.	Inspect	None	None	N/A	Small Purchase	N/A
		Piping	Cond.	Inspect	Repair	None	N/A	Small Purchase	N/A
508	**Thermal Insulation**	Piping Insulation	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
508	**Thermal Insulation**	Machinery	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
		Vent-A/C	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
512	**Ventilation Fans**	Fan, Axial	Cond.	Inspect/Repair	Renew	None	0/1	Small Purchase	N/A
514	**Air Conditioning Systems**	12000 BTU Units	Cond.	Inspect/Repair	Renew	None	Jan-01	Small Purchase	N/A
		Compressor	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
		10000 BTU Units	Cond.	Inspect/Repair	Renew	None	Jan-01	Small Purchase	N/A
		Compressor	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
514	**Air Conditioning Systems**	24000 BTU Units	Cond.	Inspect/Repair	Renew	None	Jan-01	Small Purchase	N/A
		Compressor	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
514	**Heating System**	Space Heater 1500-2000 watts	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
		Space Heater 1125-1500 watts	Cond.	Inspect/Repair	None	None		Small Purchase	N/A

MAINTENANCE ACTION REQUIRED									
SWBS	**SYSTEM**	**COMPONENT**	**CYCLE**	**UNIT**	**INTERMEDIATE**	**DEPOT**	**USE/ POOL**	**REPAIR**	**STOCKED AT**
MISCELLANEOUS ITEMS (Continued)									
529	**Bilge System**	24VDC Electric pumps	Cond.	Inspect/Repair/Renew	None	None	N/A	Small Purchase	N/A
		24VDC Float switch	Cond.	Inspect/Repair/Renew	None	None		Small Purchase	N/A
533	**Potable Water System**	Pressure Tank	Cond.	Inspect/Repair	Renew	None		Small Purchase	N/A
551	**Compressed Air Systems**	Air compressor	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
		Tank, Compressed Air	Cond.	Inspect	Repair/Renew	None	N/A	Small Purchase	N/A
555	**Fire Fighting Systems**	CO-2 Extinguisher	Cond.	Recharge	None	None	N/A	Small Purchase	N/A
		PKP Extinguisher	Cond.	Recharge	None	None	N/A	Small Purchase	N/A
		CO-2 Bottles (fixed)	Cond.	Recharge	None	None	N/A	Small Purchase	N/A
556	**Hydraulic Fluid Systems**	Main Hydraulics	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
		Hydraulic Pump	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
		Hydraulic Motor	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
556	**Hydraulic Fluid Systems**	Valve, Proportional	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
		Valve, Directional	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
		Thermostatic Control Valve	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
556	**Hydraulic Fluid Systems**	Filter Unit, Portable	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
		Cylinder Assembly, Hyd	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
		(A-Frame)							
		Steering Hydraulics	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
		Cylinder, Steering	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
		Cylinder Assembly, Hyd	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
556	**Hydraulic Fluid Systems**	Hydraulic Power Unit	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
		Hydraulic Pump	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
		Valve, Directional	Cond.	Inspect/Repair	Renew	None	2/0	Small Purchase	N/A
560	**Ship Control System**	Control, Steering Remote	Cond.	Inspect/Repair	Renew	None	2/0	Small Purchase	N/A
		Pump, Steering	Cond.	Inspect/Repair	Renew	None	2/0	Small Purchase	N/A
		Helm Manual	Cond.						
560	**Ship Control System**	Control, Steering Remote	Cond.	Inspect/Repair	Renew	None	2/0	Small Purchase	N/A
		Control, Steering Remote	Cond.	Inspect/Repair	Renew	None	2/0	Small Purchase	N/A

MAINTENANCE ACTION REQUIRED									
SWBS	**SYSTEM**	**COMPONENT**	**CYCLE**	**UNIT**	**INTERMEDIATE**	**DEPOT**	**USE/ POOL**	**REPAIR**	**STOCKED AT**
MISCELLANEOUS ITEMS (Continued)									
560	**Ship Control System**	Control, Steering Remote	Cond.	None	Inspect/Repair	Renew	2/0	Small Purchase	N/A
562	**Rudders**	Rudder Assembly	Cond.	None	Inspect/Repair	Renew	0/2	Avail	ELC(02)
		Rudder Bearing	Cond.	None	Inspect/Repair	Renew	0/2	Avail	ELC(02)
		Bearing, lower	Cond.	None	Inspect/Repair	Renew	0/2	Avail	ELC(02)
		Bearing, upper	Cond.	None	Inspect/Repair	Renew	0/2	Avail	ELC(02)
		Tiller	Cond.	None	Inspect/Repair	Renew	0/2	Avail	N/A
		Rudder Shaft Seal	Cond.	None	Inspect/Repair	Renew	N/A	Avail	N/A
		Tie Bar Assembly	Cond.	Inspect	Repair	Renew	0/2	Avail	N/A
573	**Materials Handling Sys**	Cross-DECK Winch	Cond.	Inspect	Repair	Renew	0/2	Avail	N/A
		Winch A-Frame	Cond.	Inspect	Repair	Renew	0/2	Avail	N/A
593	**Pollution Control**	Sewage System	Cond.	Inspect	Repair	Renew	0/2	Avail	N/A
		Tank Vacuum Accumltr	Cond.	Inspect	Repair	Renew	0/2	Avail	N/A
		Toilet, Vacuum	Cond.	Inspect	Repair	Renew	0/2	Avail	N/A
		Pump, Vacuum Flush	Cond.	Inspect	Repair	Renew	0/2	Avail	N/A
		Pump, Macerator	Cond.	Inspect	Repair	Renew	0/2	Avail	N/A
625	**Outfit & Furnishings**	Windows	Cond.	Inspect/Repair	Renew	None		Small Purchase	N/A
		Wipers, Windshield	Cond.	Inspect/Repair	Renew	None		Small Purchase	N/A
		Blower, Window	Cond.	Inspect/Repair	Renew	None		Small Purchase	
		Pump, Washer	Cond.	Inspect/Repair	Renew	None		Small Purchase	
634	**Below Waterline**	Coating System	Cond.	None	None	Renew	N/A	Contract/ISO	N/A
	Deck Covering	Non-skid pads	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
		Dielectric Matting	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
636	**Hull Insulation**	Insulation	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
641	**Furnishings**	Various	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
651	**Galley Furnishings**	Microwave	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A
664	**Salvage Pump**	P-5 pump (1)	Cond.	Inspect/Repair	Renew	None	N/A	Small Purchase	N/A

MAINTENANCE ACTION REQUIRED									
SWBS	**SYSTEM**	**COMPONENT**	**CYCLE**	**UNIT**	**INTERMEDIATE**	**DEPOT**	**USE/ POOL**	**REPAIR**	**STOCKED AT**
HOURLY ITEMS									
110	**Below waterline**	Underwater body	3 Mo.	Clean/Inspect/Dive	Funding	None	N/A	Small Purchase	N/A
233	**Main Propulsion Unit**	Central Engine Overhaul	5K hr/	Assist	Remove/Install	Replace		Contract	ELC(02)
		Port Engine	Cond.						
		Stbd Engine	($-TBD)						
241	**Reduction Gear**	Reduction Gear	10K Hrs	None	Inspect/Repair	Repair	2\0	S/F - Group	ELC(02)
		(Major Inspect/Overhaul)							