

# 44' MLB OPERATOR'S HANDBOOK

COMDTINST M16114.3B

U.S. Department  
of Transportation

**United States  
Coast Guard**





COMDTINST M16114.3B

COMMANDANT INSTRUCTION M16114.3B

8 SEP 1992

Subject: 44' MLB OPERATOR'S HANDBOOK

1. **PURPOSE.** This handbook provides technical orientation and performance characteristics of the 44' MLB. It also standardizes boat outfit and basic operating procedures.
2. **DIRECTIVES AFFECTED.** COMDTINST M16114.3A is canceled.
3. **RECOMMENDATIONS.** Recommendations for changes or improvements to this manual should be submitted to Commandant (G-NRS-2) by completing one of the publication review cards in the back of this manual.
4. **ACTION.** Operational and supervisory commands shall comply with the procedures and limitations set forth in this manual for the 44' MLB.

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Chief, Office of Navigation Safety  
and Waterway Services

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# CHAPTER 1. INTRODUCTION

**A. SCOPE.** This handbook contains information necessary for the safe and efficient operation of the 44 foot Motor Lifeboat (MLB). Operational capabilities, limitations, and emergency procedures are clearly defined. The fittings, outfit list (Enclosure 1), and physical characteristics of the boat are pictured and described in detail.

**NOTE**

An operating procedure or technique which it is considered essential to emphasize.

**B. WARNINGS, CAUTIONS, AND NOTES.** The following definitions apply to Warnings, Cautions, and Notes found throughout the handbook:

**WARNING**

Operating procedures or techniques which may result in personal injury or loss of life if not carefully followed.

**CAUTION**

Operating procedures or techniques which may result in damage to equipment if not carefully followed.

**C. NATIONAL MOTOR LIFEBOAT SCHOOL.** The National Motor Lifeboat School (NMLBS) serves as the systems command for the 44 foot motor lifeboat. In addition to training coxswains to operate the MLB, they provide expertise to the MLB community in all aspects of its operation and maintenance. The NMLBS is the source of information for questions concerning any aspect of the boat. Their review of the boat, its equipment, crew procedures, operational reports, and technical manuals allow continuous updating of this information.

**D. CHANGES.** This manual will be updated periodically. Commandant (G-NRS) is responsible for formulating, producing, and distributing applicable changes to this manual. All changes will be reviewed by the NMLBS prior to issue. Recommended changes to this manual may be submitted directly to the NMLBS, using the form in the back of this manual, or indirectly via the applicable chain-of-command.

## CHAPTER 2. BOAT CHARACTERISTICS

### NOTE

All illustrations in this operators handbook are for familiarization purposes only. The placement of machinery and equipment depicted in illustrations may not reflect the proper placement and installation of equipment and machinery. Refer to the appropriate blueprint, technical publication or enclosure to this handbook for proper placement.

#### A. GENERAL DESCRIPTION.

1. The Coast Guard 44 foot motor lifeboat (MLB) is a high endurance boat designed to perform search and rescue missions in adverse weather and sea conditions. It is self bailing and self righting. Built by the Coast Guard Yard, Curtis Bay, Maryland, the first 44 foot MLB was placed into service in 1961.

2. Enclosure 2 is an index of applicable boat alterations (BOATALTS). BOATALTS issued after the date of this revision supersede information in this manual.

3. This boat has a steel hull with a semi-enclosed coxswain's platform. The main deck is directly over the engines. An airtight survivor's cabin is located aft. The boat has a semi-displacement, planing hull with buoyancy concentrated in the bow and stern portions. The skeg runs from frame 9, just below the coxswain console, to a point midway beneath the aft survivor's cabin,

where the boat's deepest draft of 3 feet, 6 inches is reached.

4. The boat's superstructure (forward cabin top, pilothouse, and aft survivors cabin) is constructed of aluminum alloy. Beginning at frame 4, the forward cabin top rises, extends horizontally aft to frame 8 where it extends vertically to form the forward portion of the pilothouse. The semi-enclosed pilothouse superstructure extends from frame 8 to frame 12. The main deck gives way to a well deck at bulkhead 15; the well deck terminates at bulkhead 17, where a watertight survivors cabin is fitted to the deck. The survivors cabin then extends aft to bulkhead 21. The highest fixed point on the boat (13 feet, 3 inches) is the radar antenna atop the pilothouse located at frame 10 1/2. The mast, which folds aft, has antennas fixed atop which extend to a height of 23 feet, 3 inches.

### Boat Specifications

Length	44' 1-1/2"
Beam	12' 8"
Freeboard, Bow	6' 2"
Freeboard, Stern	4' 7"
Draft	3'6"
Fixed height of radar antenna above waterline	13' 3"
Height of mast above waterline	20' 7"
Displacement, full load	39,500 lbs
Displacement, less cargo	33,360 lbs
Engines	Detroit Diesel model 6V-53
Horsepower, each engine	185
Maximum Speed	14 KTS
Fuel Capacity (95%)	313 gal, #2 Diesel
Range	215 NM at 2380 RPM's
Minimum Crew Size	3
Passengers	21
Endurance, at maximum speed	11.9 Hours

**TABLE 2-1  
BOAT SPECIFICATIONS**

5. This chapter describes the features of each compartment in the boat. A detailed description of each system may be found in Chapter 3. Since most boats differ from the standards contained in this manual, consider initiating changes to conform with these standards.

#### **B. THE HULL**

1. The hull is constructed of 3/16-inch Corten steel. Frames are spaced at 18 to 22 inch intervals to provide structural reinforcement. The MLB has fixed fenders or "rub-rails" to protect the exterior of the hull and other vessels during alongside work. This hull is divided into nine watertight spaces:

- a. The forepeak, from bow to bulkhead 1.
- b. The passenger compartment, from bulkhead 1 to bulkhead 5.
- c. A void under passenger compartment.
- d. The mess deck, from bulkhead 5 to bulkhead 9.
- e. A void under the mess deck, from bulkhead 5 to bulkhead 9.
- f. The engine space, from bulkhead 9 to bulkhead 15.
- g. The well deck void, from bulkhead 15 to bulkhead 17.
- h. The survivors cabin, from bulkhead 17

to bulkhead 21.

- i. The lazarette, from bulkhead 21 to the stern transom.

#### **2. Hull Reference Points.**

- a. Numbering the frames from fore to aft provides a reference for designating various locations on the craft.

- 1) Spray rails are welded to the hull just above the waterline from the bow to frame 6, port and starboard, and on the stern quarters from bulkhead 17 to 21.

- 2) D-rings are welded to the hull at frames 9, 12, 15, and 18 for the installation of 1/2" diameter nylon grab-lines.

- 3) Visual identification of the boat is located on each side of the hull between frames 1 and 9. This includes the boat's number in 6 inch black numbers, a Coast Guard identification stripe with a 13 inch emblem, and "U. S. Coast Guard" in 6 inch black letters. The boat's number is also displayed on the stern, and its homeport on the aft survivor's compartment bulkhead

- above the towing flood light.
- 4) Fixed fenders or "rub-rails" are installed at the gunwale level from the bow to frame 8, at main deck gunwale level from frame 7 to bulkhead 21, and around the stern to bulkhead 21. Each fender is a hollow, D-shaped, synthetic rubber tube 4 inches in diameter. They are attached to studs which are welded to the hull. A continuous stainless steel washer plate and plastic top nuts are used to secure the fenders.
  - 5) The galley sink discharges overboard on the starboard side just forward of frame 8.
  - 6) The fathometer transducer is located between frames 9 and 10.
  - 7) The fire main and eductor overboard discharge is located at frame 12 on the starboard side.
  - 8) The main engine sea chest is located between frames 13 and 14 about 6 inches to port of the keel.
  - 9) Twin propeller shafts exit the hull through cutlass bearings located between frame 13 and frame 14.
  - 10) A curved exhaust line crosses the well deck void and exits the hull at frame 16.
  - 11) The boat's point of deepest draft (3 feet, 6 inches) is located at frame 19, below the after quarter bitts.
  - 12) Propeller shaft struts are welded to the hull between frames 19 and 20.
  - 13) The propellers lie directly between frames 20 and 21.
  - 14) Rudder posts, constructed of 2-1/2 inch diameter solid steel, penetrate the hull just aft of bulkhead 21.

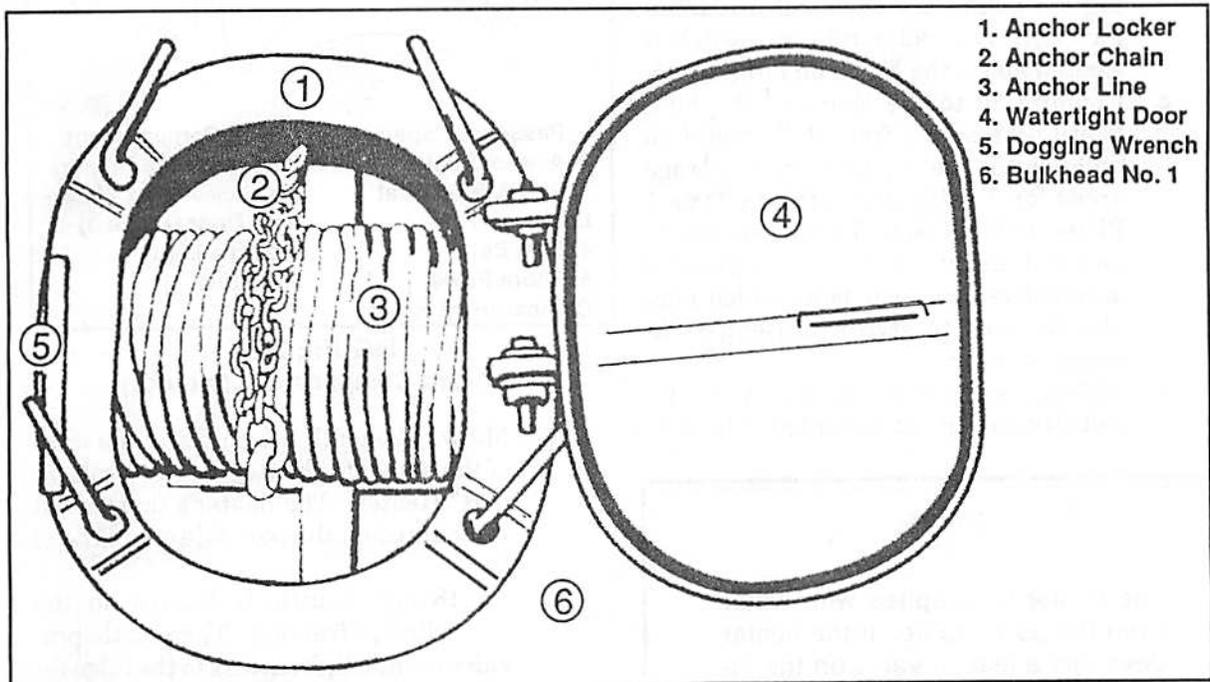


FIGURE 2-1 Forepeak and Anchor Locker

### C. FOREPEAK.

1. Door. The forepeak may be accessed through a watertight door which penetrates bulkhead 1 from the forward passenger compartment. A securing hook on the starboard side of the forward compartment holds this door open.

2. Anchor line. An anchor line reel hangs from brackets on the overhead and holds 300 feet of 3 inch double braided nylon (DBN) line. A thimble is spliced to the end of the anchor line to which 9 feet of 1/2 inch galvanized BBB anchor chain is attached. The line feeds from the bottom

of the reel to a hook welded to the hawse pipe expansion plug on the overhead. Small stuff secures the BBB chain to the reel to prevent it from vibrating loose in the forepeak.

#### D. FORWARD COMPARTMENT.

1. Exterior.
  - a. A 24 inch square, quick-acting, water-tight escape hatch is located in the deck at frame 2. A T-handle wrench is used to open and close the hatch from above. A handwheel is used to operate the hatch from below. A safety latch secures the hatch when in the open position.
2. Interior.
  - a. A battle lantern is mounted on the port side of bulkhead one. A dogging wrench is located on the port side of the hatch to the forepeak.
  - b. On bulkhead 5, to the port of the water-tight door, is a welded bracket for mounting a 5 pound dry chemical fire extinguisher. The radar rollover switch is located above the hatch on bulkhead 5.
  - c. Conforming to the shape of the hull, Seat/Lockers run from bulkhead 1 to bulkhead 5. Seat cushions cover storage areas for 7 adult and 3 child's Type 1 PFDs, 4 blankets, and 2 pillows. Cushions and seat boards are held in place by automotive type seat belts which may also be used to secure passengers in rough weather.
  - d. Midway beneath the port seat is a 24 volt circulating hot water space heater.

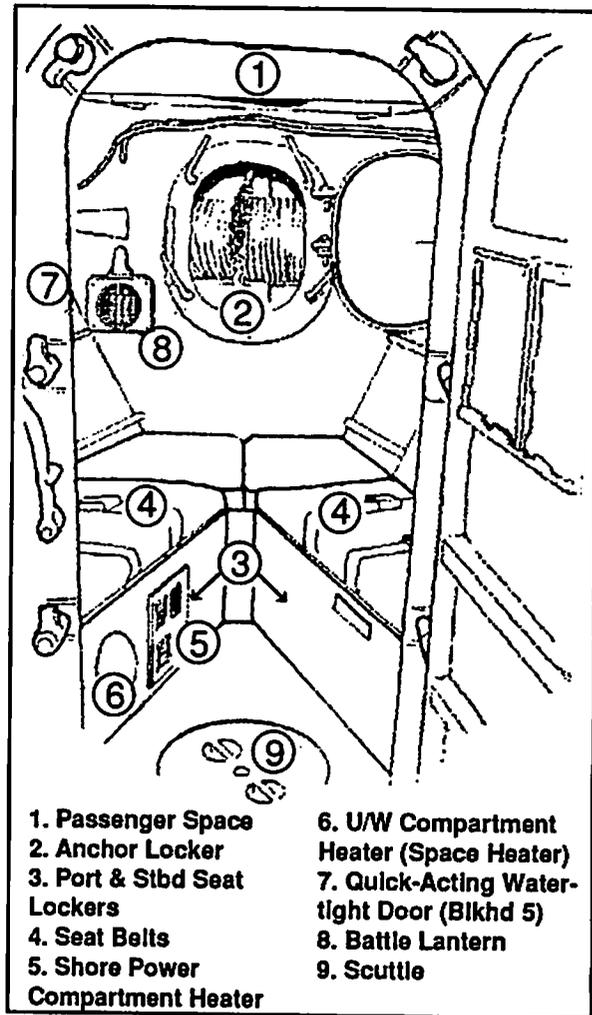
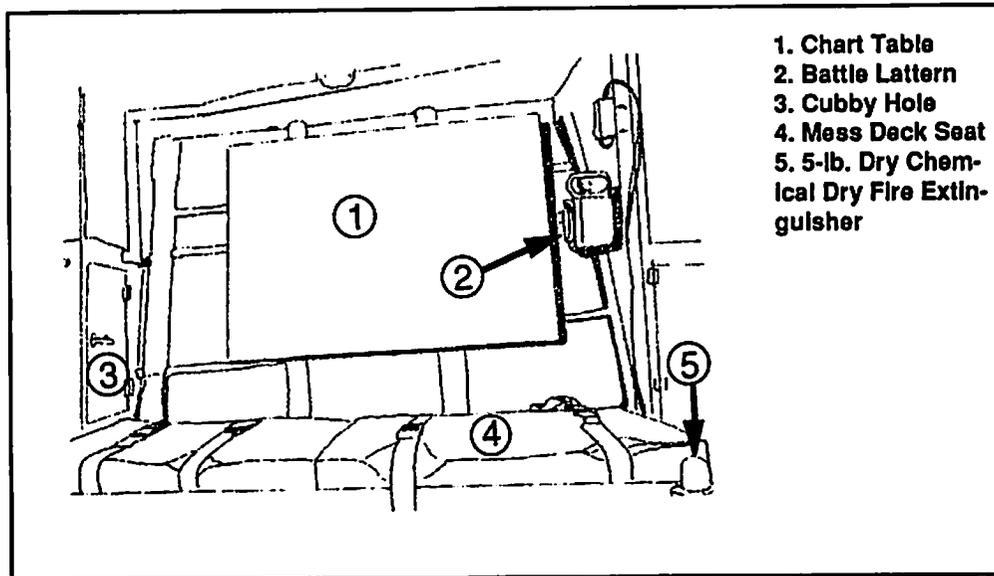


FIGURE 2-2  
Forward Compartment (Interior)

- e. Midway beneath the port seat, forward of the hot water heater, is a 110 volt "in port" Heater. The heater's thermostat is mounted on the port side of bulkhead 5.
- f. An 18 inch scuttle is located on the centerline at frame 3. The scuttle provides a watertight access to the bilge for inspection. The bilge runs from bulkhead 1 to bulkhead 5.
- g. The deck is covered with deck matting. The bulkheads and overhead are covered with Ensolite foam.
- h. Two overhead lights in the compartment are controlled by switches on the lights themselves. One of the lights should have a red lens for night operations.

#### NOTE

The heater is supplied with water from the port engine. If the heater develops a leak, a valve on the intake side of the heater can be used to shut off its flow of water. Water to the entire heating system can be shut off by a valve on the outboard side of the port engine.



1. Chart Table
2. Battle Lantern
3. Cubby Hole
4. Mess Deck Seat
5. 5-lb. Dry Chemical Dry Fire Extinguisher

**FIGURE 2-3 Mess Deck and Chart Table**

### **E. MESSDECK**

1. Access to the mess deck is gained through a quick-acting water tight door in bulkhead 9 to port of the coxswain console. A four step aluminum ladder with safety treads and a port and starboard handrail leads to the mess deck. A marine clock is located on the bulkhead to the port side of the ladder.

2. Attached to steel brackets and recessed under the port side of the main deck is a bulkhead mounted chart table which folds down. Charts and navigation equipment are stored in this table. Extending from bulkhead 9 to frame 8 in this recess is the cubbyhole storage space. This space provides storage for navigation publications, binoculars, the boat's bell, mouth-operated foghorn, T-handle wrench, hand crank for tow reel, spare bulbs and fuses and a flashlight. Between the cubbyhole and chart table, mounted to brackets, is a UHF-SSB Transceiver. A high-voltage warning sign is mounted on the port bulkhead near the antennae coupler for this radio. A seat/locker extends forward from frame 8 to bulkhead 5. Under this seat are the "in port" and underway compartment heaters, the loudhailer, the damage control (DC) kit. On the aft face of the seat is another small void which lies directly below the cubbyhole. This space should be checked periodically to insure the fuel lines running through this space are not deteriorating.

### **WARNING**

The antennae coupler can produce high voltage during radio transmissions.

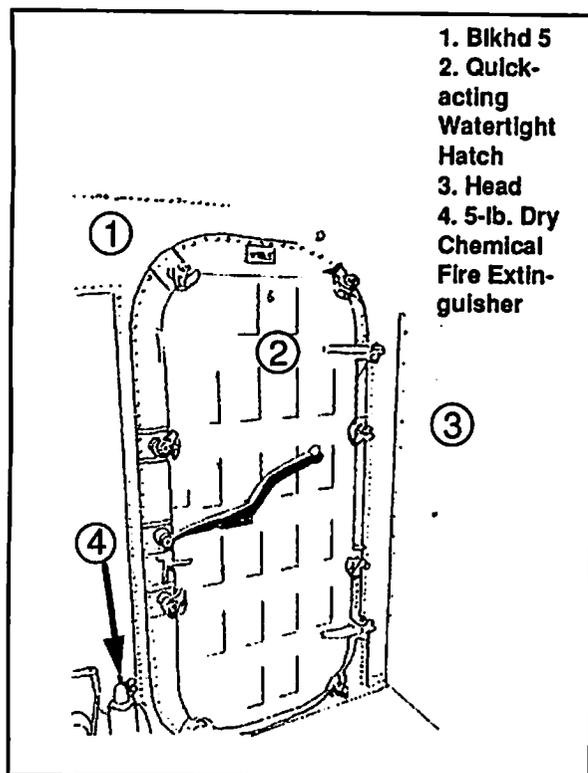
3. Access to the forward passenger space is through a quick-acting, watertight door located centerline on bulkhead 5. A hook on the starboard bulkhead holds this door open. A 5 pound, dry chemical fire extinguisher is mounted on bulkhead 5 to the port side of this door. A battle lantern is also located on the port side of bulkhead 5.

4. An 18 inch scuttle provides access to the void at frame 6. In the void space, mounted to frames and used for ballast, are lead blocks weighing 600 pounds. The after part of this void, between frame 7 and bulkhead 9, is occupied by the fuel tank. An inspection plate for the fuel tank is located on the deck between the scuttle and bulkhead 9.

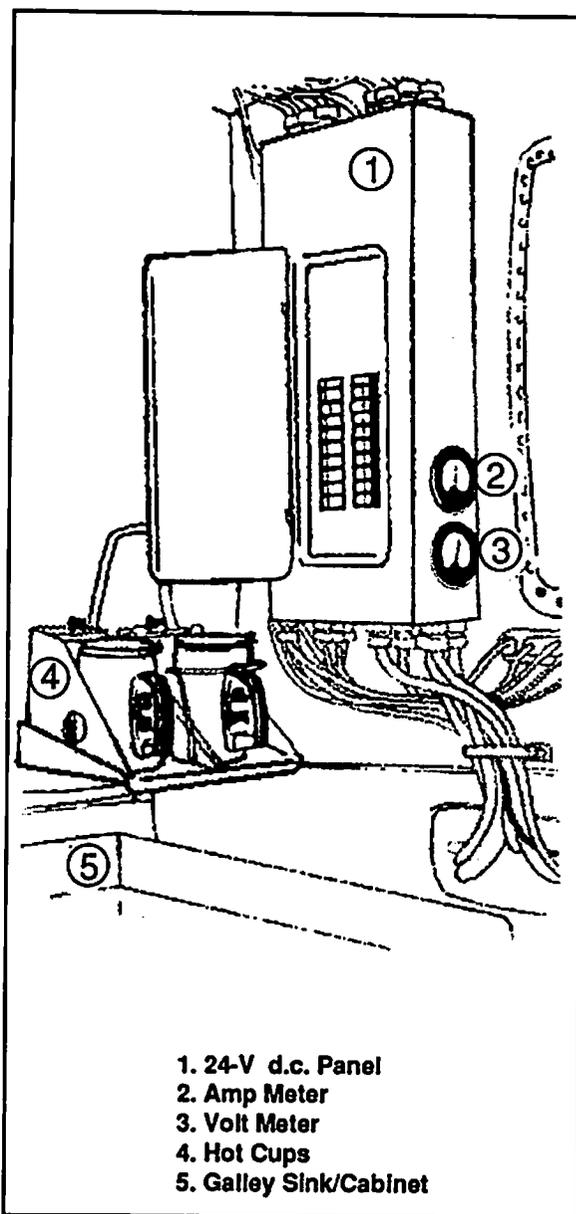
5. The crew's head is located to the starboard side of the compartment between bulkhead 5 and frame 7. The marine "porta-potti" is carried in the crew's head. Engine operating and securing instructions are mounted on the door to the crew's head.

6. A stainless steel sink with countertop follows the starboard hull contour from frame 7 to bulkhead 9. The aft half of the sink cabinet has a drawer. Located below is a storage compartment. Engineering spare parts and emergency rations are kept in this storage space. The compartment forward of this provides access to the sink drain and overboard discharge and boat pyrotechnics are stowed in this space. A 3 gallon stainless steel jug is mounted above the sink, and a paper towel dispenser is on the aft bulkhead of the crew's head. Above the sink is a 10-man first aid kit. At bulkhead 9, a circuit breaker panel is mounted at eye level. Two hot cups are mounted above the counter top at bulkhead 9. An ammeter and volt meter are mounted inboard of the circuit breaker panel on bulkhead 9. Inspection plates provide access behind the coxswain's console.

7. On the deck, inboard of the sink, is a 2 inch sounding tube for the fuel tank. The sounding stick is stowed inboard of the ladder. Access



**FIGURE 2-4**  
Head and Bulkhead 5

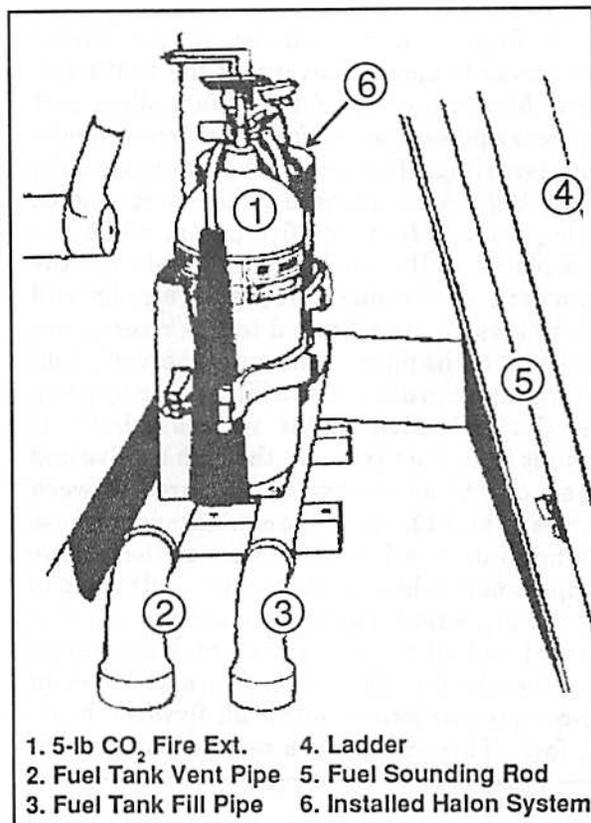


**FIGURE 2-5**  
Galley Area

to the engine room is gained through a quick-acting, watertight door which penetrates bulkhead 9. The door has a port for viewing the engine space. The port can be opened and used to fight an engine room fire. A "hearing protection" placard is mounted on bulkhead 9 outside the engine room hatch and two pairs of hearing protectors are stored over the inboard handrail leading into the compartment.

8. Two pipes (a fill pipe and a vent) are located under the ladder, outboard of the door. Brackets over these pipes support a 5 pound CO<sub>2</sub> fire extinguisher and the fixed Halon fire extinguisher system. Warning and operation placards are mounted above the Halon system on bulkhead 9. Two emergency fuel cut-off stops, one for each engine, are located on either side of the hatch to the engineroom.

9. Compartment bulkheads, hull interiors, and the overheads are covered with Ensolute foam insulation. The insulation is painted with Devflex for preservation and further soundproofing. The mess deck is covered with rubber matting. At least one light in the compartment should be covered with a red lens for night operations.



- |                                   |                           |
|-----------------------------------|---------------------------|
| 1. 5-lb CO <sub>2</sub> Fire Ext. | 4. Ladder                 |
| 2. Fuel Tank Vent Pipe            | 5. Fuel Sounding Rod      |
| 3. Fuel Tank Fill Pipe            | 6. Installed Halon System |

FIGURE 2-7  
Mess Deck Fire Extinguishers

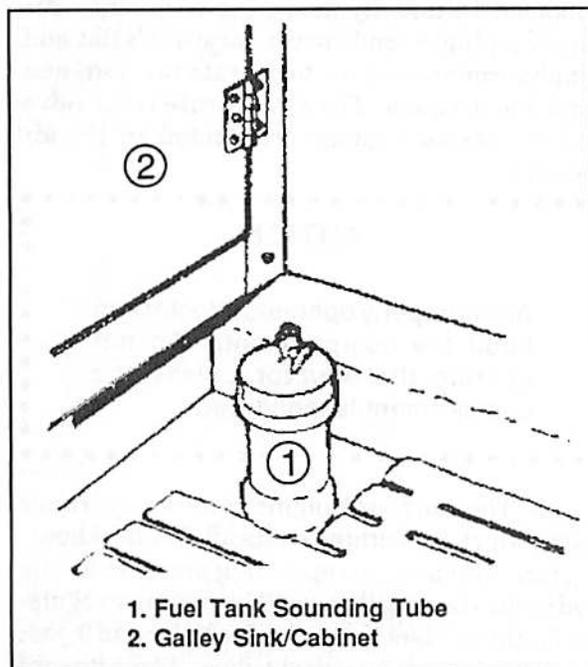


FIGURE 2-6  
Fuel Sounding Tube

## F. ENGINE ROOM

1. Access to the engineroom is gained through a quick-acting watertight door at bulkhead 9. The engine space extends from bulkheads 9 to 15. Two General Motors Detroit Diesel model 6V-53 engines are mounted from frame 10 to frame 13. Each engine is a 6-Cylinder, 2-Cycle marine diesel. Each 318 cubic inch displacement engine generates 165 hp at a cruising speed of 2,380 RPM and 185 hp at the maximum of 2,800 RPM. The engines come in separate port and starboard versions. The starboard is right rotating and the port left rotating. Hot starts are located on the right side of each engine.

2. Besides main propulsion, the port engine also serves to operate several of the boat's systems. Mounted on the forward face of the port engine is a power take-off for a belt-driven single-stage centrifugal fire pump. The pump is located in the bilge area, inboard of the port engine. Piping extends from the fire pump, under the deck plates, to the starboard hull and exits the main deck aft of frame 9. A pressure gauge and securing valve are mounted to this riser at eye level next to the piping. This pump serves a dual purpose and can also act as a bilge pump by using the eductor located on the starboard hull. It extends from the fire main, through a valve and an eductor to an overboard discharge between frames 11 and 12. A flexible eductor suction hose extends into the lowest section of the engine compartment bilge, a foot strainer is attached to the end to prevent clogging. An eductor warning placard and oil discharge placard are mounted near the eductor. The port engine also drives an air-compressor located on its aft flywheel housing. This pump fills a receiver mounted to

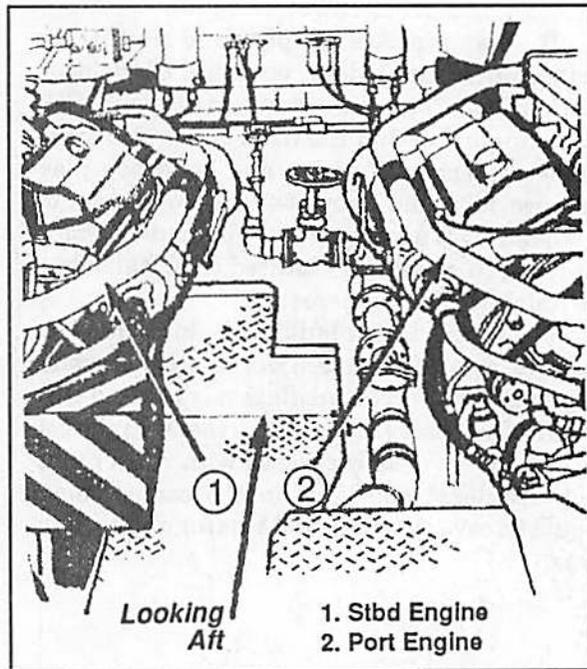


FIGURE 2-8 Engine Room

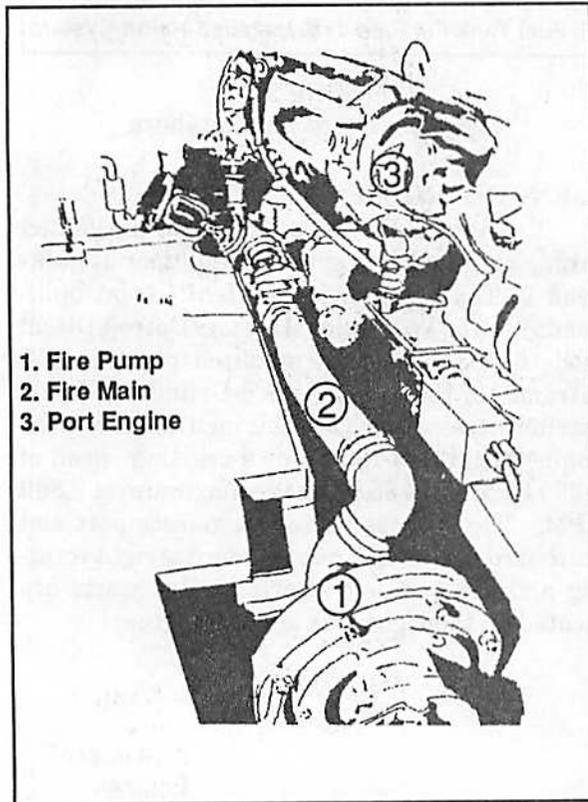


FIGURE 2-9  
Port Engine, Fire Fighting Equipment

bulkhead 15 directly above the port vent. Air supply piping extends to the coxswain's flat and supplies compressed air to operate the horn and windshield wipers. The air pressure relief valve and the pressure gauge are located on the air receiver.

**CAUTION**

An improperly operated eductor can flood the compartment. Do not operate the eductor unless the compartment is monitored.

3. The starboard engine powers a hydraulic pump which is mounted on its aft flywheel housing face. It maintains operating pressure for the hydraulic steering system. The pressure regulator for this system is mounted to bulkhead 9, just starboard of the watertight door. The pressure gauge is located on the starboard bulkhead next to the fire main pressure gauge. The hydraulic hoses extend from the pump to the orbitol in the steering console, then aft along the starboard hull where they penetrate bulkhead 15. A hydraulic fluid steering reservoir is mounted aft. On earlier models of the MLB, it is located above

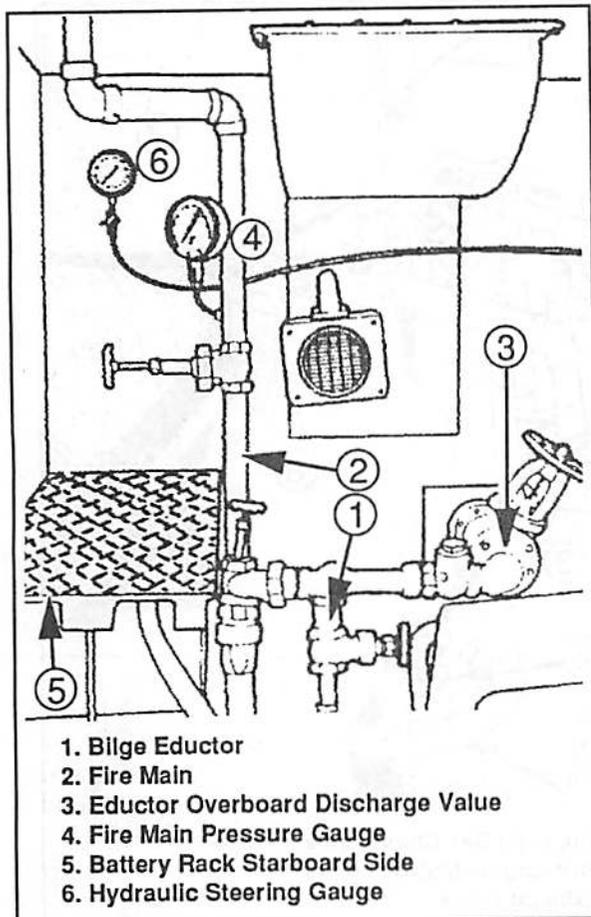


FIGURE 2-10  
 Eductor and Fire Main

the starboard vent near bulkhead 15. On later models it is starboard of the centerline on bulkhead 15, just below the overhead.

**NOTE**

In accordance with the Naval Engineering Manual, flammable fluid hoses are required to be replaced every 5 years. A metal tag indicates the replacement date.

**NOTE**

Illustrations in this handbook are for familiarization purposes only, for exact placement of mechanical equipment, refer to the appropriate blueprint.

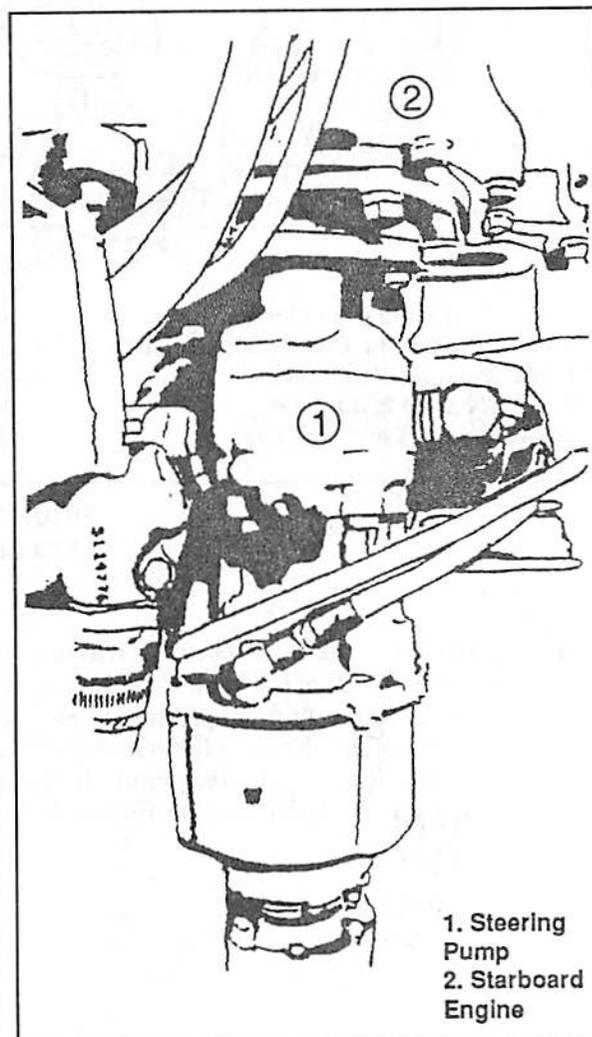


FIGURE 2-11  
 Starboard Engine, Steering Pump

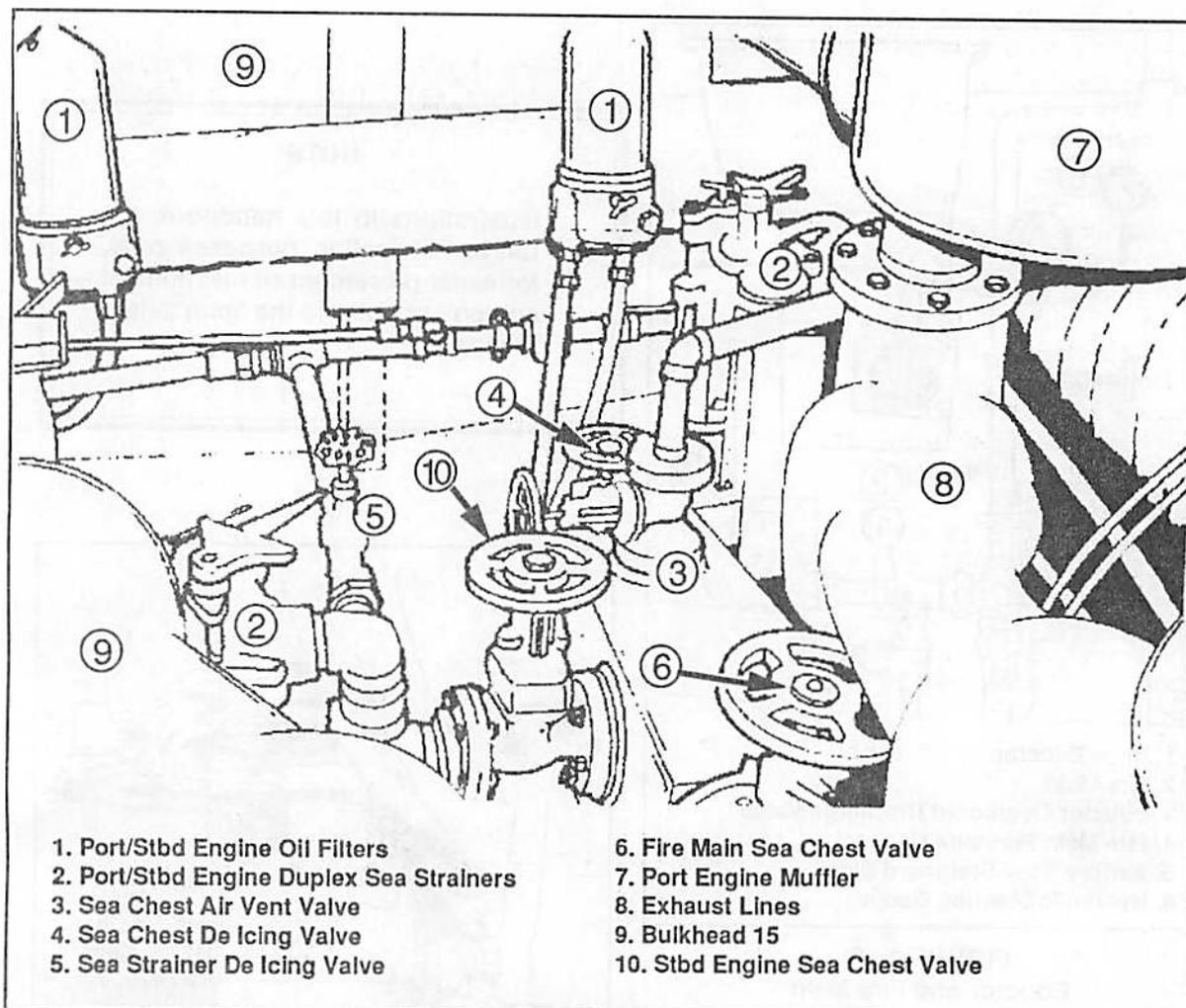


FIGURE 2-12  
 Sea Chest

4. The sea chest is located between frames 13 and 14 on the port side of the keel. Sea suction valves, duplex strainers and supply piping extend from the sides of the sea chest to each engine and muffler. Piping for a de-icing and shaft cooling system continue from each muffler cool-

ing supply line to the stern tubes and duplex strainers. A sea chest air vent valve and piping extend from the sea chest to the port well deck. A sea suction valve with a simplex strainer and 2-1/2 inch piping extends forward to the fire pump.

5. Engine gauges are mounted above each engine on a display panel. The gauges show the internal water temperature, oil pressure, and drive oil (reduction gear oil) pressure. The outer rim of each gauge is marked in green for normal ranges, and red for abnormal ranges. These gauges are visible from the mess deck through the porthole in the watertight door. Attached to the overhead are nine 24v DC watertight light fixtures. They are attached at frames 10, 11, 12, and 13. White lens covers should be present within this compartment. Engine control cables run from the after portion of the engines, to bulkhead 9 in overhead conduit tubing. The cables join together and proceed upward through the overhead to the engine controls on the coxswains flat.

6. The emergency fuel shut-off valves for the port and starboard engines are located on each side of the engine room step tread at bulkhead 9. Directly above these valves are the fuel return valves, which are lock wired open. Immediately to port of the watertight door is the fuel tank stripping pump. Above the stripping pump is an AC electrical outlet. The Racor fuel filters are outboard of the stripping pump and positioned with their top no higher than the fuel tank. This positioning aids in the priming of the filter canisters. A battery charger is mounted to the bulk-

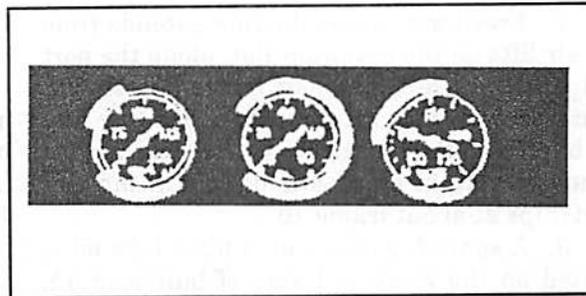


FIGURE 2-13 Engine Gauges

head above, and outboard of the fuel filters. On the starboard side above the hydraulic steering pressure regulator is the AC circuit breaker panel for hot starts, battery charger, inport heaters, engine room inport lighting and the AC outlet. Next to the AC panel are the engine alarm safety switches. Below the alarms are the batteries. The batteries sit in two different battery trays mounted at different levels on the bulkhead. The batteries are wired in series providing 24V DC. The fathometer transducer is aft of bulkhead 9 on the port side of the keel.

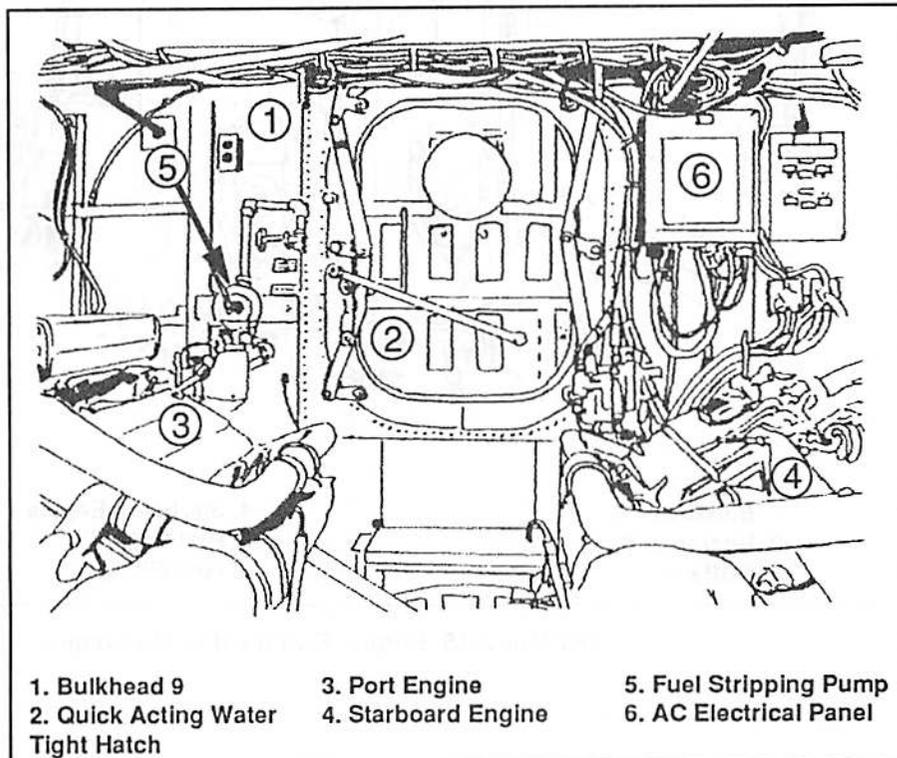


FIGURE 2-14  
Engine Room (Forward Bulkhead)

7. Fresh air supply ducting extends from the air lifts on the coxswain flat, along the port and starboard hull to about frame 13. An exhaust blower with solid piping extending into the bilge is on the port ducting. A battle lantern is mounted on the starboard air vent facing athwartships at about frame 10.

8. A spare 5 gallon can of 9250 lube oil is carried on the starboard side of bulkhead 15, above or below the air vent depending on location of the hydraulic tank. Two exhaust muffler outlets exit bulkhead 15 behind the engines. A sluice valve, located just starboard of centerline

is used to drain water from the well deck void. A sluice valve placard with 2 inch letters is mounted to the bulkhead next to the valve. Between the sluice valve and the hydraulic reservoir, mounted on either side of centerline, are two main engine lube oil filters. Both port and starboard shaft logs exit the engine room at bulkhead 15 where the bulkhead and the hull join through shaft packings. The towing bitt extends into the engine room with 4 inch steel pipe to the keel amidships forward of bulkhead 15. A two inch pipe bracket braces the main deck for additional towing bitt strength.

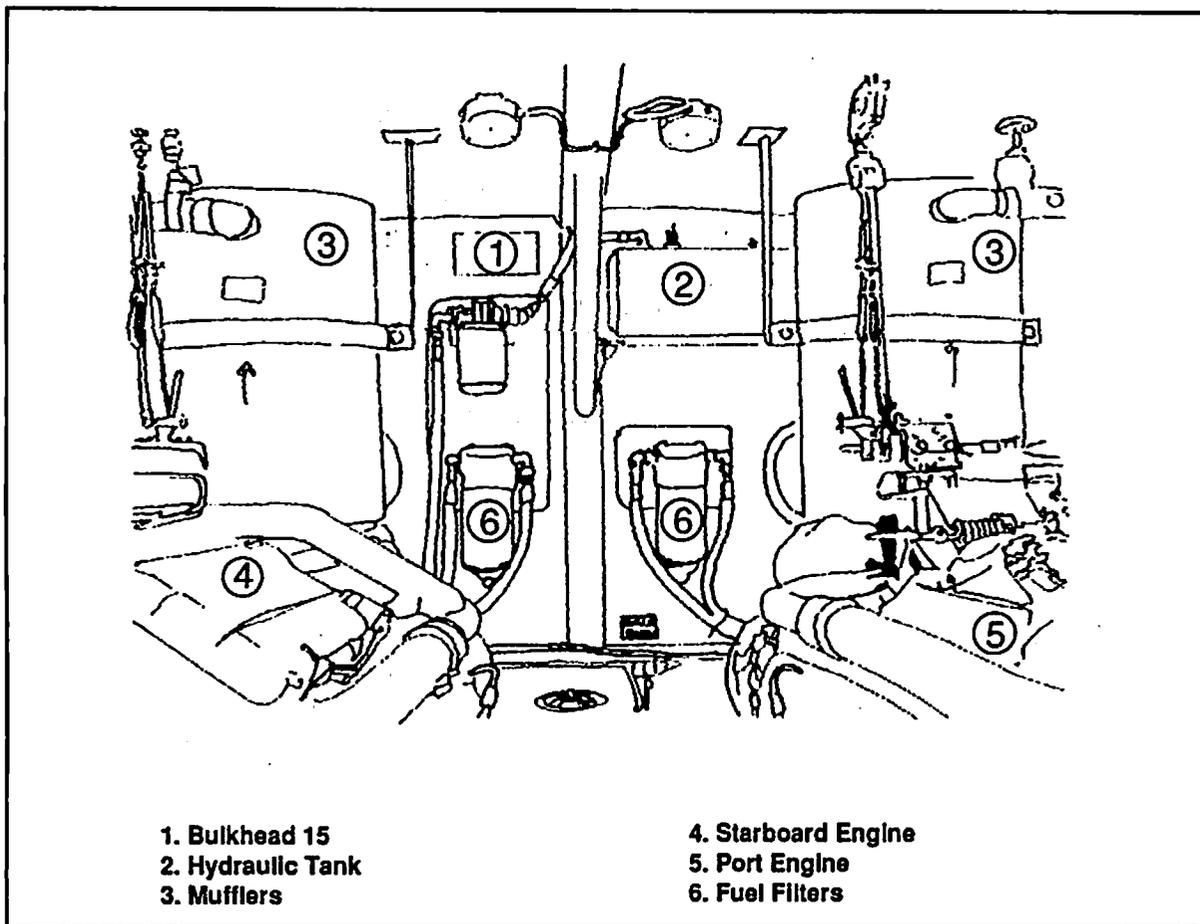
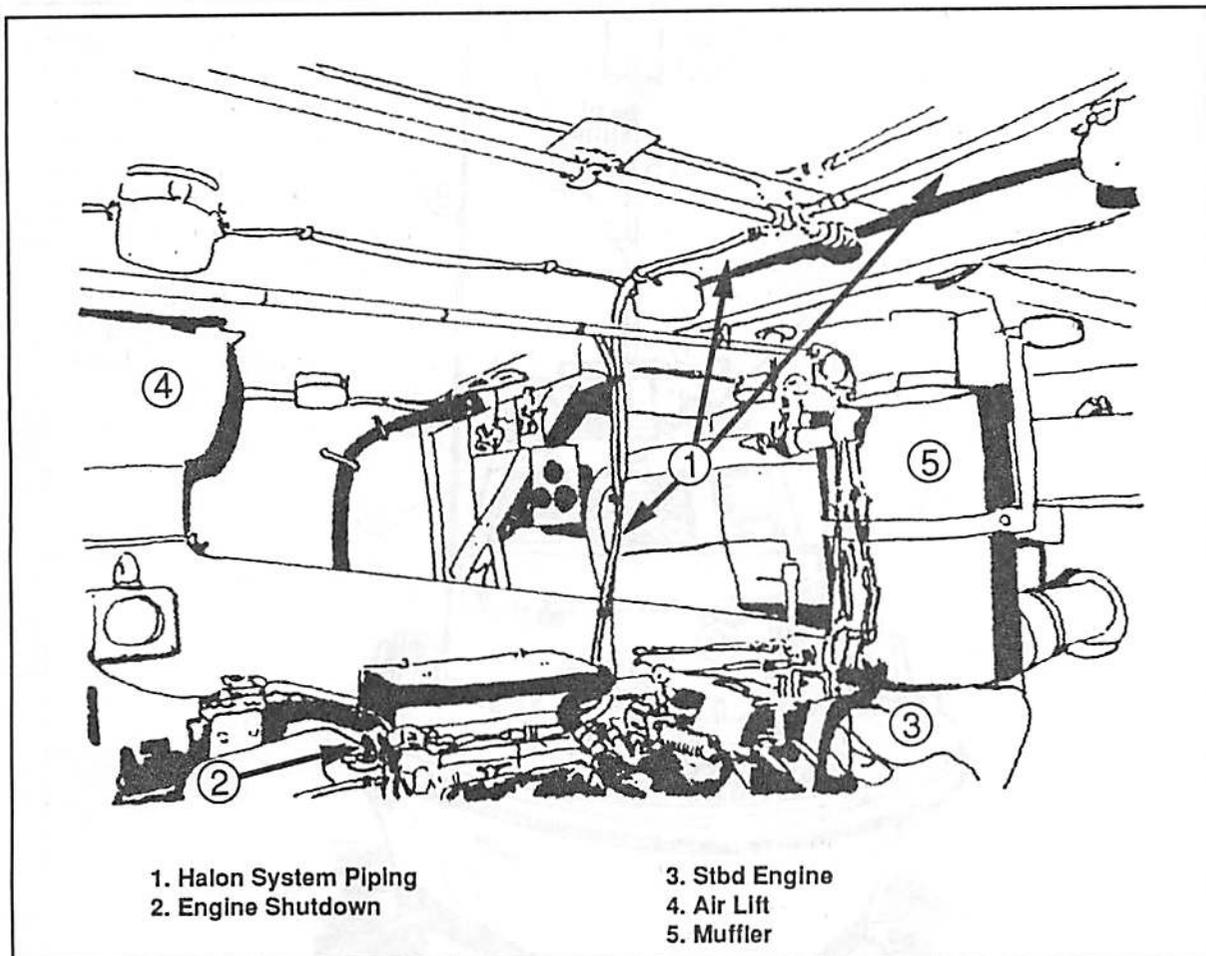


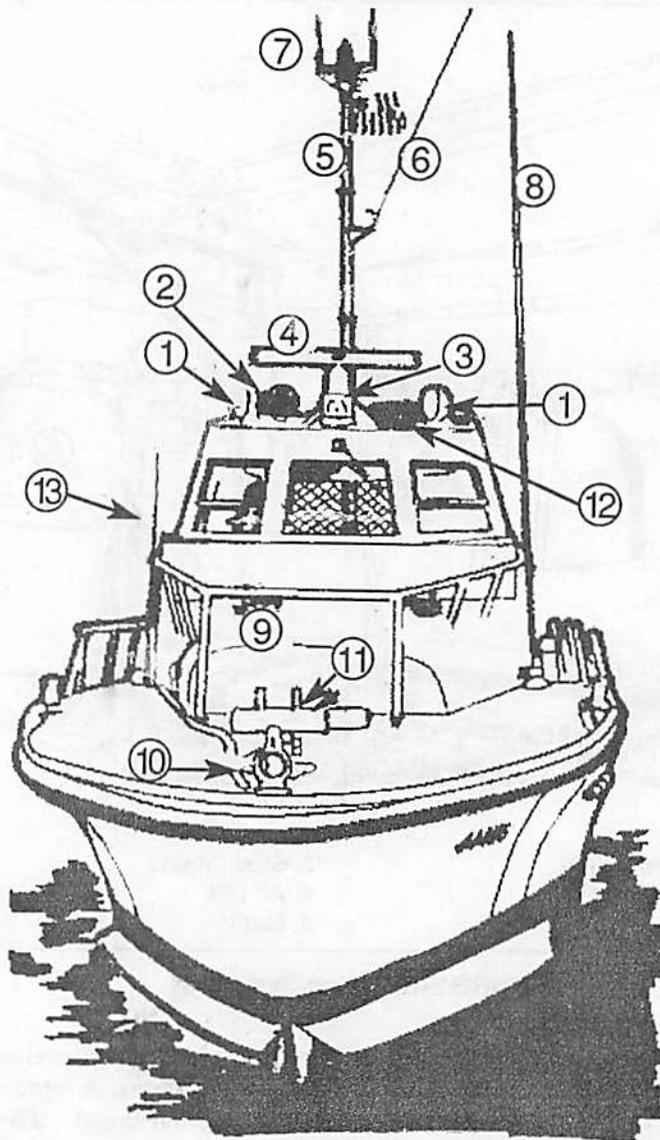
FIGURE 2-15 Engine Room (After Bulkhead)



**FIGURE 2-16 Halon System**

9. The halon fire system piping runs through bulkhead 9 on the port side and continues parallel to the bulkhead until it reaches the centerline. It then travels aft along the overhead to a discharge nozzle at frame 12. Two 190 degree temperature sensors are located above each reduction gear on the overhead. Removable alumi-

num deck plating is installed between, and forward of the engines. A removable soft patch is located in the overhead. The engineroom bulkheads and overhead are covered with fiberglass, and backed by aluminum sheathing to prevent condensation and baffle engine noise.



- |                           |                          |
|---------------------------|--------------------------|
| 1. Port/Stbd Search Light | 8. AM Antenna            |
| 2. Air Horn               | 9. 60 lb Danforth Anchor |
| 3. Blue Light             | 10. Bull Nose            |
| 4. Radar Antenna          | 11. Forward Mooring Bitt |
| 5. Mast                   | 12. Loudhailer Speaker   |
| 6. FM Antenna             | 13. Loran C Antenna      |
| 7. FM Homer Antenna       |                          |

FIGURE 2-17  
Forward Exterior of MLB

## G. COXSWAINS FLAT.

1. Exterior (top of overhead)
  - a. The radar antenna pedestal is located centerline forward. It supports the radar antenna. A warning placard is located on the side of the radar antenna housing. Two 24v, 450w, searchlights are mounted 12 inches aft of the windshield, one to port and one to starboard of the radar antenna. Each light is fully trainable and individually controlled from the coxswain's flat using watertight switches and control levers.
  - b. To starboard of the centerline is the air horn. This horn is operated by a pull handle mounted to the interior of the overhead. It is located to the right of centerline above the helmsman chair.
  - c. Between the radar pedestal and the port searchlight is the loudhailer speaker. The aft portion of the coxswain's flat overhead is a detachable extension. This extension, which supports the foul weather nylon dodger, is made of aluminum framework and hangers. Clear vinyl windows are sewn into the dodger for visibility aft when the boat is being operated with the curtain down.

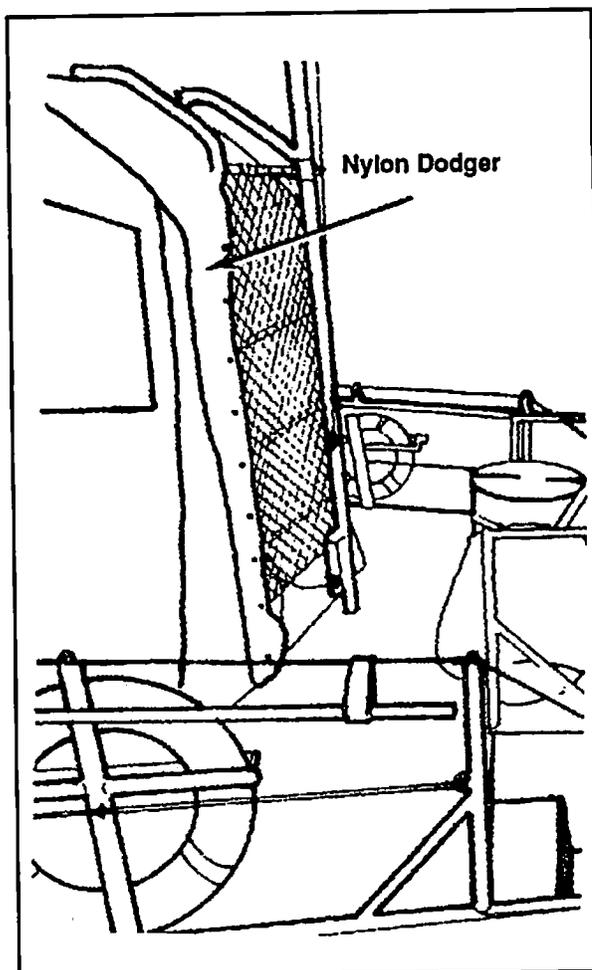


FIGURE 2-18  
Coxswain Flat Dodger

### WARNING

Securely closing the dodger in heavy weather or surf is not recommended. If the boat capsizes, enough water may be held inside the dodger to prevent the boat from righting.

- d. A blue rotating light is located on the centerline just forward of the radar antenna.

## 2. Interior.

- a. Forward, over the console area, is a three section windshield made of 1/2 inch heat treated glass. The center is a fixed single pane window. The outboard sections are split panes of which the upper sections fold out to assist ventilation, night vision, and communication with crew members working forward. A single windshield wiper, powered by the same air system as the horn, clears the center window. The air control and wiper operation valves are mounted on the overhead, between the starboard search light and centerline.

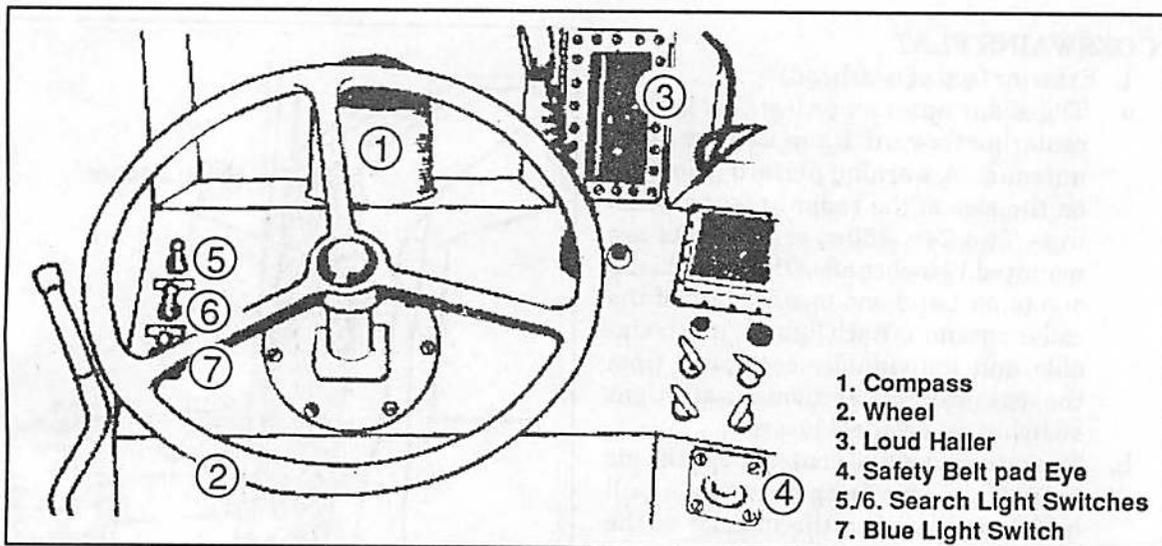


FIGURE 2-19 Coxswain Flat

**CAUTION**

On some boats, two defroster units are mounted on either side of the compass. These units operate off the mess deck compartment heater. Care should be taken to avoid taking water down these vents as it could short out electrical equipment under the port seat in the mess deck. These vents should be covered when not in use.

b. Console Instruments. The 5 inch Danforth Constellation compass is mounted with a spacer on the centerline in a recessed area on the console directly in front of the helmsman's chair.

**CAUTION**

DO NOT place metallic or magnetic objects such as radio microphones, knives, screwdrivers, or wrenches on the console near the compass. Additional metal will adversely affect compass accuracy.

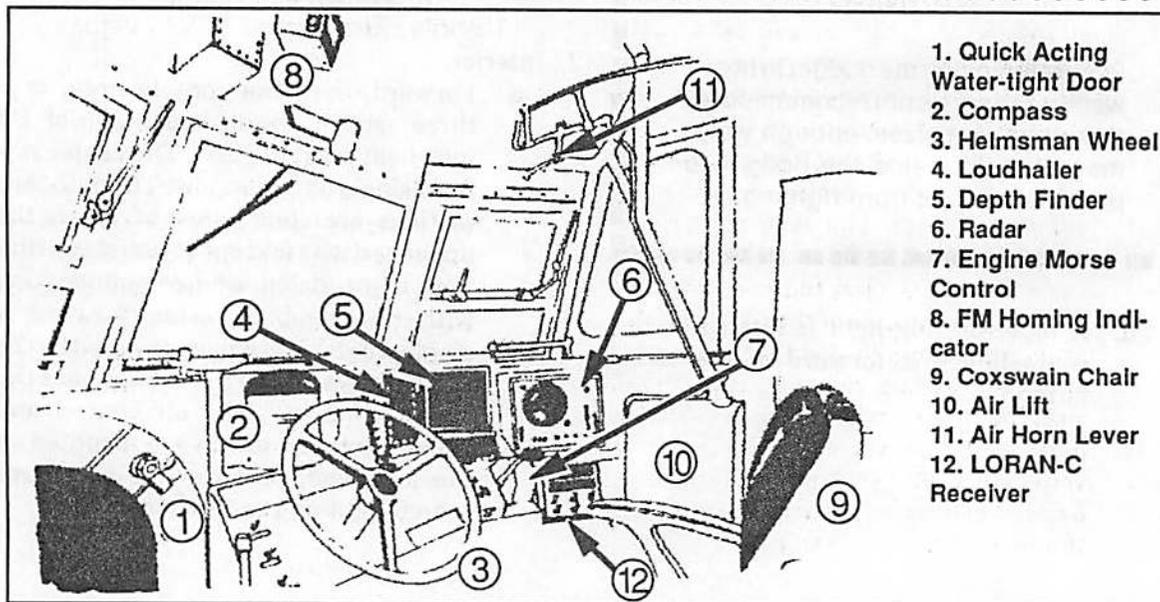
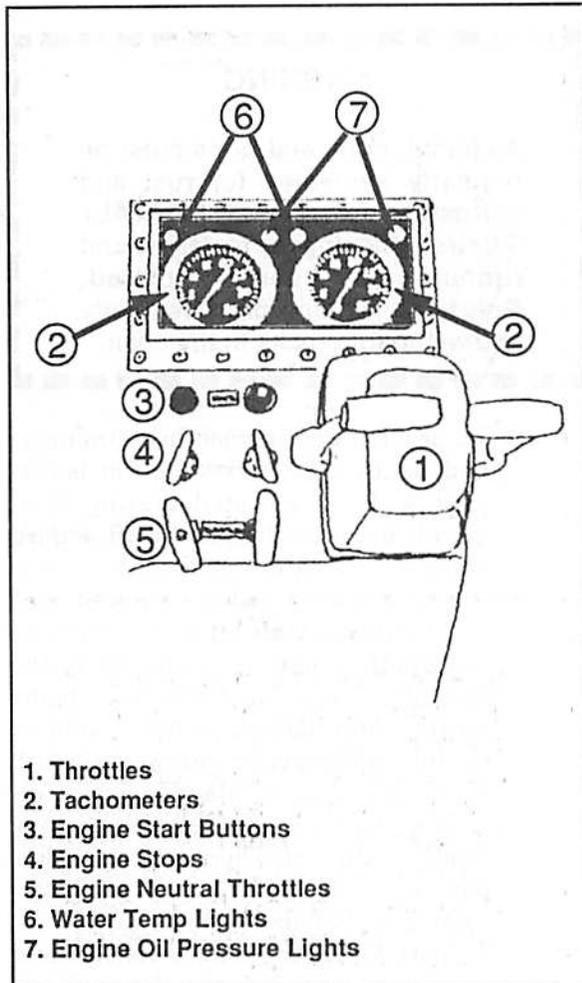


FIGURE 2-20 Coxswain Flat

- c. Directly below the compass is a 20 inch diameter cast or welded spoke heavy weather helm mounted on the centerline to the angled face of the console. To starboard of the wheel, sealed under a watertight glass cover, are the engine alarm warning lights for water temperature, alternator and lube oil pressure. The port and starboard engine tachometers are centered in this area. Immediately below the tachometer and alarm package are the main engine start buttons, two T-handle neutral throttles to adjust engine RPM while in neutral, and two T-handle engine stops.
- d. To starboard of the neutral throttles and engine stops are the two main engine controls. These levers combine clutch and throttle action for each engine.
- e. The VHF-FM homer indicator is mounted in the interior of the coxswain flat on the overhead, port of centerline. The remote HF Radio speaker is also mounted on the port side overhead. Starboard of the homer indicator, and on the centerline is the VHF-FM radio transceiver. To starboard of the compass, is the loudhailer. Recessed into the console, in the area above the tachometers, is a depth finder. Outboard of the depth finder is the radar unit. Immediately below the radar is a LO-RAN "C" unit. Below the radar shelf is the shore tie receptacle.
- f. Mounted on both port and starboard sides of the superstructure are the main engine air vents. The vents start at the main deck level and rise to the top of the superstructure. They then return to the deck on the interior of the coxswain flat area, pass through the main deck, and enter the engine compartment. Each vent has a screen over its opening. At deck level, forward of the starboard air vent, is a 1-1/2 inch fire main riser. At deck level forward of the port air vent is the fuel fill and fuel tank vent risers.



**FIGURE 2-21**  
**Throttles and Engine RPM Gauges**

- g. A helmsman's chair is bolted to a pedestal. The pedestal is welded to the removable engine room access deck. Directly aft of the wheel, the chair is equipped with a bar under the front of the seat for fore and aft adjustment, an adjustable back rest, three height settings and swivel adjustment. Attached to the arm base is a seat belt which when worn comes through the chair arms and is buckled over the helmsman's lap.

## WARNING

All joints, nuts, and bolts must be regularly inspected for rust and corrosion. Ensure that BOATALT 60, strengthening the fasteners and runners, has been completed. Grease all running parts regularly and watch for cracks in the chair.

- h. To provide better visibility, drainage, and traction, the coxswain flat is covered with an elevated grating. Foot guards are attached to the aft, angled sides of this grating. Stainless steel plates with safety padeyes are positioned waist high at points aft of the air intake vents both inboard and outboard, on the face of the console, below the engine controls and lighting switches, and on the inboard face of the coxswains guard. These padeyes are intended for the attachment of the crew safety belt in heavy weather and surf. There are handholds, port and starboard, above the watertight door and above the radar.
- i. To port of the coxswain's console is a quick-acting watertight door with a portlight. This door leads to the mess deck compartment. A hook to hold the door open is attached to the port air vent.

## H. AFT SURVIVORS COMPARTMENT

1. Between bulkhead 17 and bulkhead 21 is the aft survivor's compartment. This compartment is constructed of .090 aluminum sheet, with a quick-acting watertight door and a portlight on bulkhead 17. A hook on the port side of bulkhead 17 holds the door open. On both sides of the main deck, between frames 17 and 18, are mooring bitts. A 12 inch catwalk runs along each side of the compartment from frame 17 to 21.

2. The aft survivor's compartment is entered through a quick-acting watertight door, placed off centerline to starboard on bulkhead 17. There is a ventilation warning placard on the inside of the door. Two overhead lights are in the compartment, one should have a red lense. Two handrails are on the overhead. This space has a false aluminum deck with an inspection port just aft of bulkhead 17, and to the port side of the compartment's center. Deck matting is fitted over the deck. A 5 pound dry chemical fire extinguisher is mounted alongside the seat on the port side of bulkhead 17. The seat cushions are covered and have automotive type seat belts. Above each bench seat are aluminum panels which can be removed for access to covered areas of the compartment and outboard sections of the bilge.

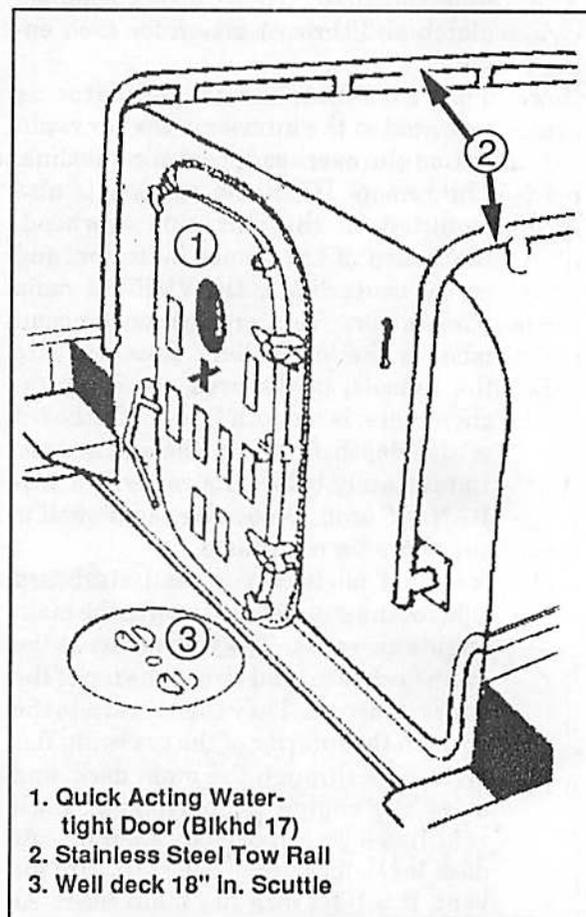
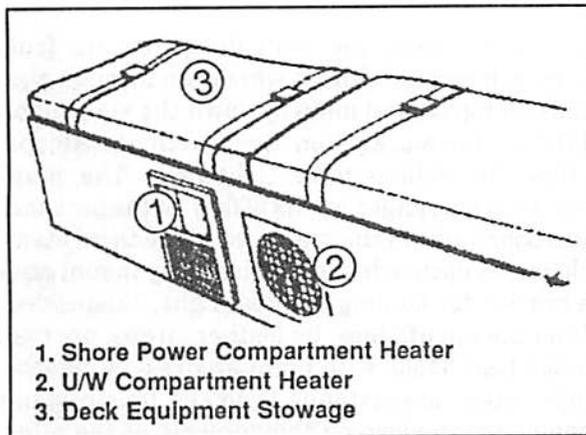


FIGURE 2-22  
Aft Survivors Compartment (Exterior)



**FIGURE 2-23**  
**Port Bench (After Compartment)**

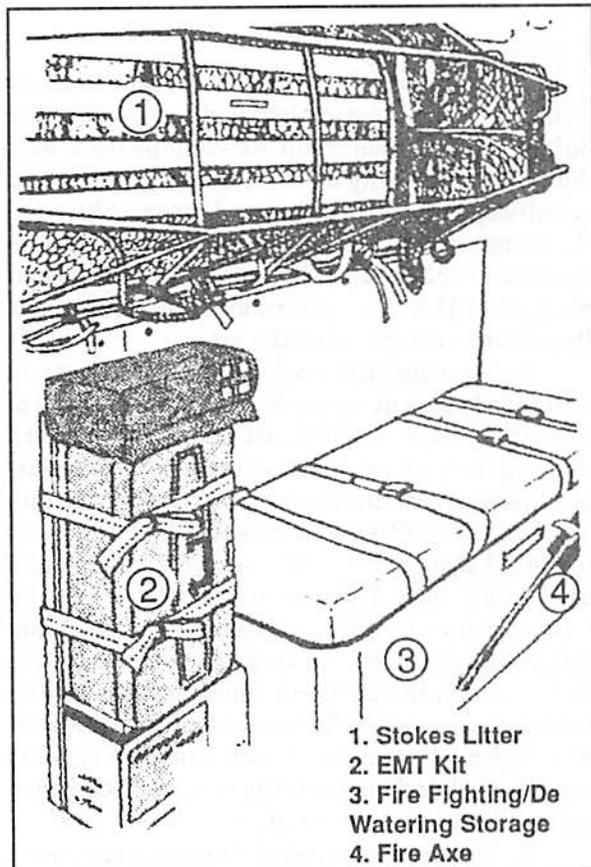
3. Built into the port bench seat are the underway compartment heater and the inport (shore-tie) compartment heater. The control switch for the underway heater is found in the upper port side corner of bulkhead 21 and the shore-tie heater control is on the face of the port bench seat just aft of bulkhead 17.

4. Above the starboard bench seat, mounted to the bulkhead on brackets, is the Stokes litter. A swimmer's harness is attached to the Stokes litter with small stuff so it is available for immediate use. Secured on the face of the starboard bench seat is a fire axe. The emergency medical technician's kit and oxygen kit is secured to the deck in the space between bulkhead 17 and the starboard bench seat.

5. A battle lantern hangs on bulkhead 21 on the centerline above the lazarette hatch. Mounted in brackets above the watertight door is the emergency tiller arm. To starboard of the door, under the deck, is a sluice valve which allows water to be drained from the aft lazarette.

**NOTE**

The sluice valve location should be labeled with the words "SLUICE VALVE" in 2 inch letters on bulkhead 21 directly above the valve.



**FIGURE 2-24**  
**EMT Kit and Stokes Litter Stowage**

6. The watertight hatch in the center of bulkhead 21 leads into the lazarette for access to the hydraulic steering components, the rudder posts, and the emergency steering disconnects. The rudder posts protrude through the deck and allow emergency rudder control from the deck with the emergency tiller arm. A hook on the face of the port seat holds this door open. A dogging wrench is stowed on the starboard side of this hatch.

## I. WEATHER DECK

1. Centerline at the bow is the bow chock or bull nose. The mooring bitt is directly aft of the bull nose. The anchor line hawse pipe is a 4 inch diameter pipe rising 2 inches above the deck and is halfway between the forward mooring bitt and the escape hatch. This is plugged with a stainless steel and rubber expansion plug. The expansion plug should have a lanyard attached to the boat to prevent losing it over the side.

2. Mooring bitts are located on the port and starboard sides at frame 5. A hand rail, made of aluminum pipe, begins just aft of the forward mooring bitt and runs aft on the port and starboard sides, terminating between frames 10 and 11. The UHF-SSB antenna is attached to a deck-mounted pivot bracket between frames 5 and 6 on the port side. The antenna is held upright by a brace bracket welded to the forward hand rail. A warning placard is located near the base of the antenna. On the port and starboard sides of the forward coxswain's flat bulkhead are the running lights. Detachable aluminum steps lead to the forward deck on both the port and starboard sides of the coxswain's flat.

3. The area on top of the forward survivor's space, from bulkhead 5 to frame 8 starboard of centerline, contains one 60 pound Danforth anchor.

4. An open "working area" begins at frame 11. A coxswain guard screen of vinyl coated chain link fence material hangs from a stainless steel, flat bar and is attached to the inside of the coxswain's guard with small diameter nylon line.

**WARNING**

This screen will not withstand the force of a parting towline which can generate as much as 450,000 foot pounds of force. (By comparison, a 30.06 rifle generates only 3,000 foot pounds of energy) It is only effective against loose gear flying free through the air. Maintain your catenary, and WATCH THE LINE.

5. Enclosing the main deck area are four 7/16 inch bronze lifelines which run through pig-tails on top of, and midway down the stanchion. Lifeline turnbuckles on the fourth stanchions allow the lifelines to be tightened. The stanchions are arranged in sets of four on the port and starboard side of the main deck. The third stanchions on each side have a ring buoy mount and a bracket for holding the float light. Suspended from the top lifelines, by leather straps, are two 8 foot boat hooks with night grooves. A detachable safety line extends from the fourth stanchions to a padeye on the gunwale at the after most corners of the well deck.

6. The mast is on the centerline just aft of the coxswain's guard. It stands 16 feet above the main deck and is attached to a pivot bracket. It is held in the upright position by a brace which locks into an aluminum plate. This brace is welded to the aft portion of the cabin top. The bracket for the ship's bell is bolted to this plate.

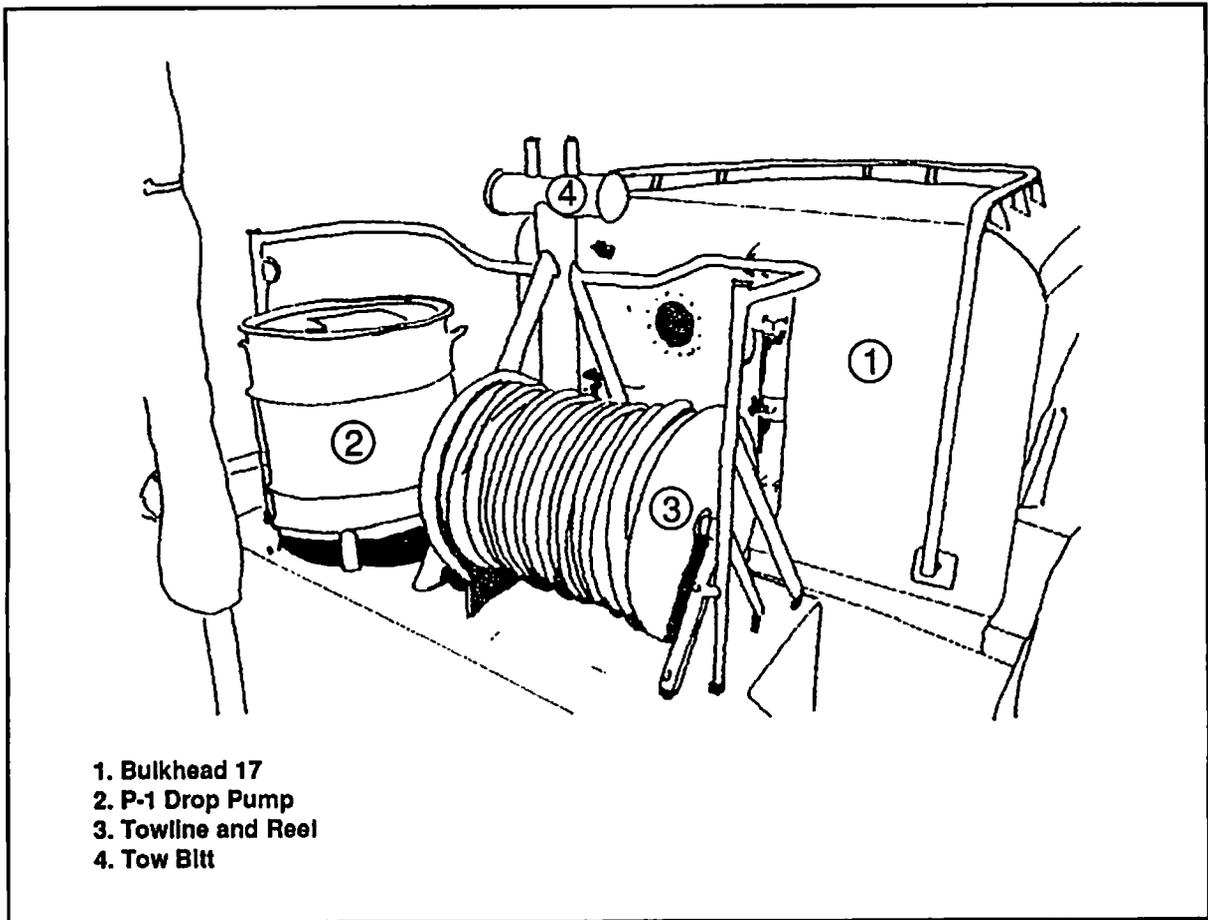
7. On the top of the mast is a 360 degree white anchor light. Just below on the forward side, is a 225 degree white masthead light. Spaced at one meter intervals from the mast head light are two 225 degree towing lights. One meter below the anchor light, facing aft, is a 135 degree yellow towing light. A 135 degree white stern light is one meter below this towing light.

8. Wiring from the mast is combined in one cable running from the base of the mast up the port side of the coxswain screen guard, attached to the overhead, and plugged into a 10 pin cannon plug connector. A pair of cables leading from the twin homer antenna on the top of the mast follows the same route as the mast cable, then travels down the windshield pipe to the homer. A single-wire coaxial cable connects the mast top antenna with the VHF-FM radio transceiver.

9. The towing bitt is on the main deck at frame 15 on the centerline.

**CAUTION**

The working surface of the bitt MUST NOT BE PAINTED, as paint may damage the tow line or cause it to jam.



**FIGURE 2-25**  
Tow Reel, Bitt and Drop Pump

**NOTE**

The height of the tow bitt will cause the boat to heel sharply while turning with a tow.

10. Just to port of the centerline is a manually operated towline stowage reel which holds 600 feet of 3 inch DBN towline.

**CAUTION**

The MLB exerts a bollard pull (static towing force) of 6,500 pounds. The rated strength of the bitt and the line is matched to this capability. NEVER double the line or use a size larger than the 3 inch DBN authorized.

11. Starboard of the bitt is a portable dewatering pump. The pump is stored in a sealed container and mounted on a bracket which is attached to the deck. The pump, bitt, and tow reel working area are enclosed by a safety railing which extends forward to frame 14 on the port and starboard sides. This rail has padeyes on each side for attachment of boat crew safety belts.

12. On each side of the aft survivor's compartment, a 1 foot wide deck leads aft to the stern. Detachable aluminum steps lead up to the stern from this deck. Bolted to the top of the aft survivors compartment is a stainless steel tow rail. Running up the forward face of bulkhead 17 on the port and starboard sides, the rail runs around the top edges of the compartment. This rail serves as a hand rail but more important, it supports the towline off the aft compartment as it tends over the stern.

13. On the centerline under the tow rail is a 135 degree white stern light. Six inches below the stern light is a fixed flood light which is used to illuminate a stern tow if necessary.

14. On the stern deck are capped fittings atop each rudder post. These caps can be removed to allow the emergency tiller arm to be placed atop the rudder post in case a steering casualty occurs. These caps should have lanyards attached to keep them from being lost over the side. Directly outboard of each cap fitting is a small knuckle bitt.

#### J. WELLDECK

1. Exterior.

- a. A well deck, with a single detachable aluminum step in each corner, extends from bulkhead 15 to 17. To allow drainage from this area, scuppers are located in each of corner of the deck. In each scupper is a 4 inch plastic ball which prevents water from entering the well deck from the outside. Inboard, on the port side, next to bulkhead 15, is the sea chest vent pipe.

2. Interior.

- a. Access to the well deck void is through an 18 inch water tight scuttle. Mounted in brackets on the starboard side of the void, are two high pressure hoses carrying hydraulic fluid for the rudders. On the port side are two solid copper tubes that supply hot water to the underway heaters in the aft survivor's compartment. A transverse exhaust tube, lead ballast, and wiring for the aft survivor's compartment lights and heater are also located in this space. Lead weights, weighing 1400 pounds total, are mounted to the frames for extra ballast. These weights have been adjusted to provide optimum trim for the boat.

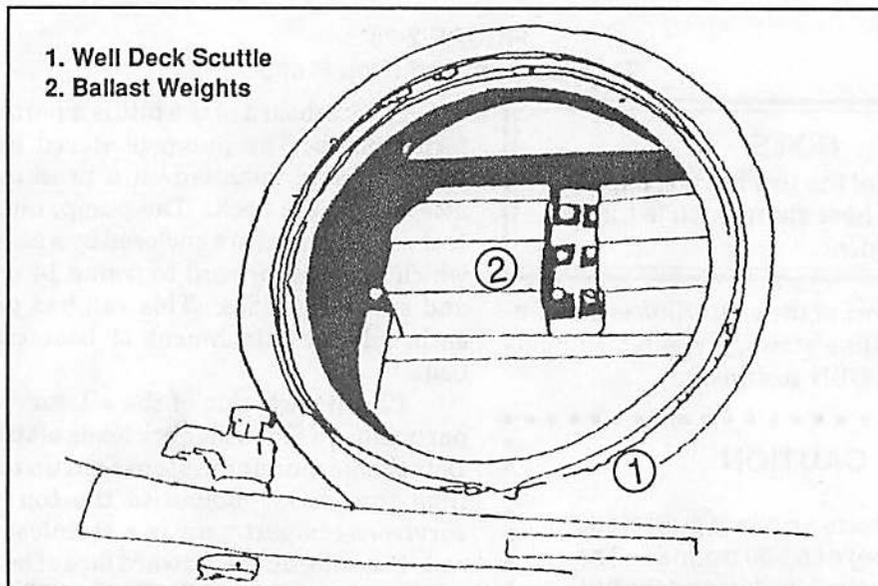


FIGURE 2-26  
Well Deck Void

## CHAPTER 3. BOAT SYSTEMS AND COMPONENTS

**A. INTRODUCTION.** This chapter provides information pertaining to the mechanical, electronic, and manual operating systems of the motor lifeboat. It will familiarize the crew with basic operating characteristics of the boat. It also provides information which will prevent common casualties and allow the boat's crew to operate more efficiently.

### B. PROPULSION SYSTEM.

1. **Engines.** The Detroit Diesel model 6V-53 marine engine is a 6-cylinder, 2-cycle, 318 cubic inch displacement engine. Each engine generates 165hp at a cruising speed of 2380 RPM's and 185hp at the maximum of 2800 RPM. Shaft RPM at maximum speed is 933. The engine comes in separate port and starboard versions with each engine shaft turning in an outboard direction in forward gear.

- a. The port engine (model 5062-7000) operates a power take-off (PTO). The PTO runs a 120 gpm fire pump, mounted inboard and below the engine, and an air compressor, mounted on the aft face of the flywheel housing. This engine also supplies water to the underway heating system. The shaft of this engine turns counterclockwise in forward gear. This engine and its accessories weighs approximately 2,000 pounds.
- b. The starboard engine (model 5032-3000) operates a hydraulic pump. The pump maintains pressure in the steering system and is mounted on the aft face of the flywheel housing. The shaft of this engine turns clockwise in forward gear. The approximate weight of this engine and accessories is 1,800 pounds.

### CAUTION

Use care when adding lube oil to these engines. The interval between the "Low" and "High" marks on the engine oil dipstick represents one half gallon of oil. Allow adequate time for oil to drain back to the oil sump to prevent overfilling.

- c. Each engine has a variable speed mechanical governor mounted aft between the engine blower and the flywheel housing. The governor controls the engine idle speed, limits the maximum "no-load" speed, and holds the engine at any constant speed set by the operator. It incorporates one lever to set and adjust engine speed, and another stop lever that overrides the governor and stops the engine.

### NOTE

The engine has three separate STOP systems; the main control T-handle on the coxswain console, which is connected to the stop lever atop the governor, an emergency air shut-down on the front of the engine just below the air silencer, and emergency fuel oil cut-offs located on the forward side of Bulkhead 9. The air shut-down and fuel oil cut-off are ONLY to be used in an emergency (such as a fire or runaway engine).

2. **Fuel Oil System.**
  - a. The boat's fuel (Number 2 diesel) is carried in a 333 gallon tank located in the mess deck void. The tank's 2 inch sounding tube is located just forward of bulkhead 9 on the starboard side in the mess deck compartment. A sounding rod is stowed inboard on the ladder to the mess deck. A vent pipe passes through the mess deck, ahead of bulkhead 9 port side, and up through the weather deck to a goose neck air vent. A course protective screen covers the opening of the vent and a 40 mesh screen can be found inside the vent. Both screens serve to prevent foreign material from entering the fuel system. A check ball is located inside to prevent water from entering the vent. A 1-1/2 inch fill pipe

Sounding (inches)	Gallons	Sounding (inches)	Gallons
0	18.8(max)	15	187.9
1	27.1	16	198.6
2	36.8	17	209.8
3	48.2	18	220.7
4	60.3	19	231.4
5	72.4	20	241.9
6	84.5	21	252.4
7	96.4	22	262.8
8	108.1	23	273.2
9	119.8	24	283.4
10	131.5	25	293.5
11	142.9	26	303.5
12	154.4	27(95%)	313.3
13	165.6	28	323.2
14	176.8	28.5(FULL)	333.7

**Table 3-1  
44' MLB Fuel Tank Sounding Table**

is located 8 inches aft of bulkhead 9, out board of the spray shield on the port side. Table 3-1 is a conversion table. It lists the gallons of fuel that correspond to soundings in inches (providing a sounding rod calibrated in inches is used).

**NOTE**

To allow for expansion of fuel and to minimize condensation, the tank is normally filled to 95% of its capacity (313 gallons).

**NOTE**

When filling, several soundings should be taken to ensure that you do not exceed 95% of its capacity. If the fuel tank is over-filled while the sounding tube cap is removed it is possible to flood the mess deck with diesel fuel.

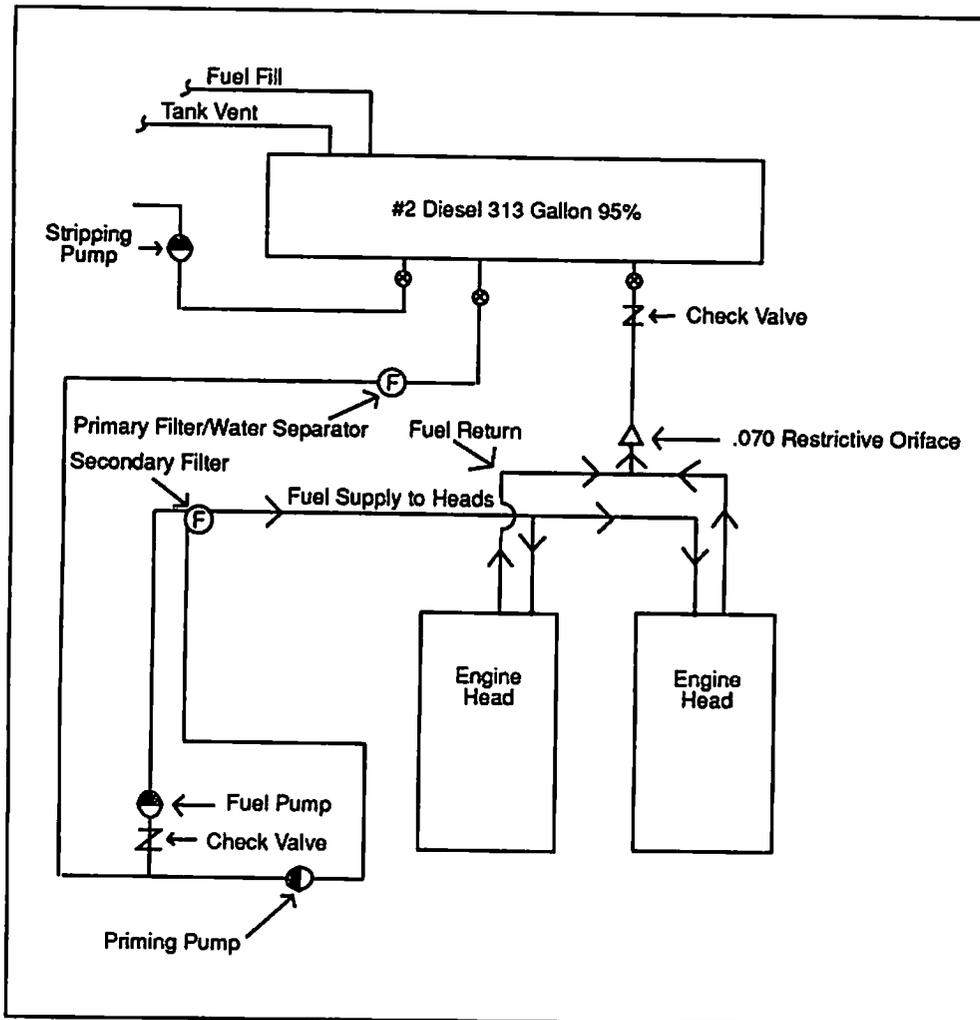


Figure 3-1  
Fuel Oil System

- b. The positive displacement, gear type fuel pump draws fuel from the tank through a Racor filter. It is then forced under pressure through a secondary filter. After the secondary fuel filter, fuel is forced through the fuel inlet passages in the cylinder head and fuel lines to the injectors. Excess fuel is circulated through the injectors, serving as a coolant/lubricant then back to the fuel tank where it is cooled. Emergency fuel stops, located on bulkhead 9, are primarily used to stop the flow of fuel to the engine room in the event of a fire. The engine will exhaust the fuel in the system before stopping.

**NOTE**

Fuel pumps mounted on the fly-wheel housing, are furnished in port and starboard versions and are not interchangeable. Operating fuel pressure at 1800 engine RPM's should be between 50-70 psi.

- c. A stripping pump is located on the port side of bulkhead 9 for stripping fuel from the bottom of the tank.
3. Engine Cooling System. To maintain efficient operating temperatures in the main

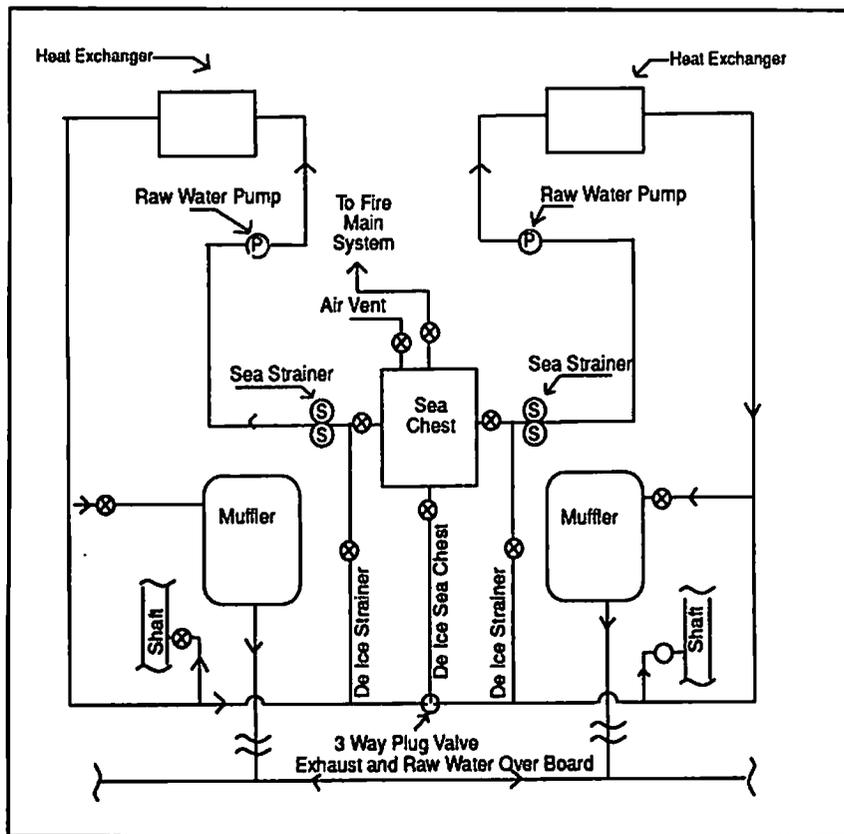
engines and the reduction gears, the boat uses a dual raw/fresh water system. The raw water cools the closed circuit fresh water system, which cools the engine both directly and indirectly, by cooling the lubricating oil and the reduction gear fluid. It works as follows:

- a. A sea chest located port of the centerline between frames 13 and 14 serves both engines. Two 2 inch duplex strainers, one for each engine, are located aft of the port and starboard engines.

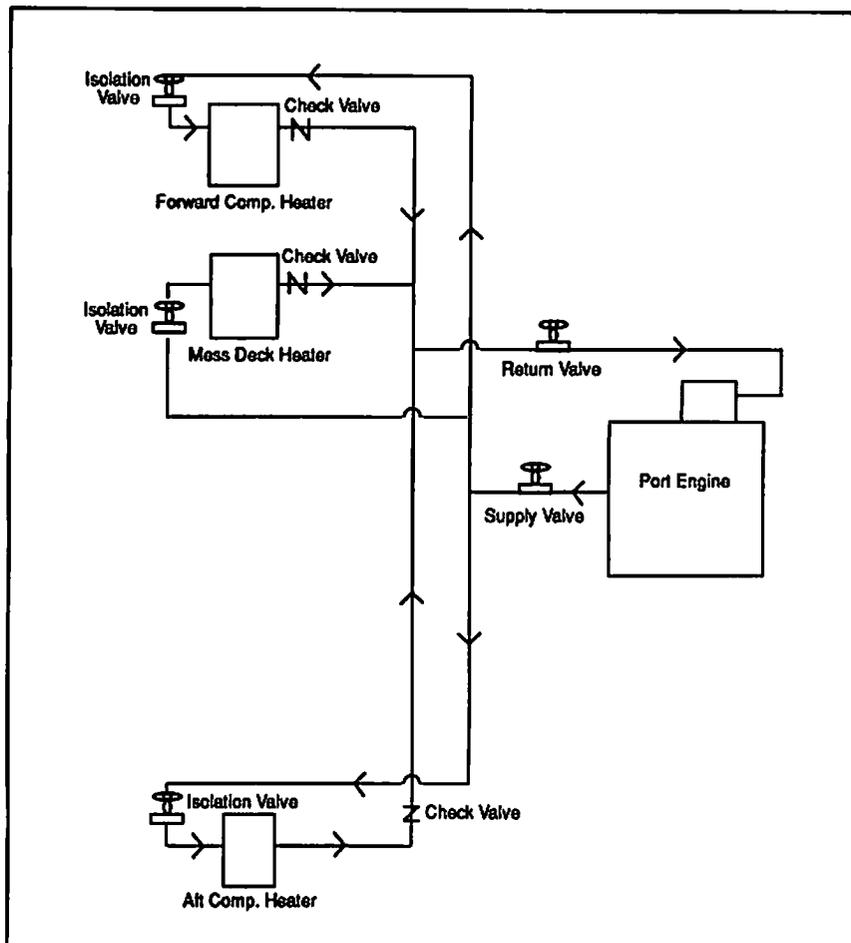
**CAUTION**

When cleaning a sea strainer, only one basket should be cleaned at a time. If the engine is operated without water running through the pump, damage may occur to the pump impeller.

- b. The raw water pump, mounted on the back of each engine, draws water from the sea chest through the 2 inch gate valves and duplex strainers. The pump then forces raw water through the heat exchanger where it cools the enclosed fresh water. The raw water then discharges through the muffler where it cools the exhaust and muffles engine noise before passing overboard through the transverse exhaust pipe. Part of the water is drawn off to stern tube connections, where it lubricates shaft bearings. A branch line from the sea water discharge supplies engine heated water to the sea chest and sea strainers for de-icing.



**Figure 3-2**  
**Raw Water Cooling System**



**Figure 3-3**  
**Fresh Water Cooling System**

- c. Direct cooling of the engines is done by a closed-circuit fresh water system. Coolant is drawn by a belt driven fresh water pump from the heat exchanger tank to the engine/reduction gear oil cooler, then it is circulated through the cylinderblock, around the cylinderheads and the exhaust manifold, to the thermostat housing. The thermostat regulates coolant flow to maintain an operating temperature of 160-185° F. The coolant capacity of the starboard engine is 7-1/2 gallons. The coolant capacity of the port engine, including the heating system, is 9-1/2 gallons.

**NOTE**

To protect the heat exchanger element from electrolysis (corrosion), there is a replaceable zinc electrode in the heat exchanger inlet and another in the outlet.

4. Engine Exhaust System. Exhaust gases leave the engine through twin manifolds to a vertical water injection dual muffler tube where they are cooled by a raw water discharge. Gases then pass into 6 inch stainless steel exhaust tubes, which connect to a transverse 8 inch exhaust pipe aft of bulkhead 15. Gases exhaust from the vessels side. Muffler connections are arranged so exhaust lines are open regardless of the boats attitude in the water.

## 5. Engine Alarm System.

a. The engines are equipped with an alarm system to alert the crew whenever there is a deviation from the engine's normal operating standards. The system is operated by the 24V DC electrical system and consists of:

- (1) a water temperature switch
- (2) a lube oil pressure switch
- (3) indicating lights
- (4) an alarm bell
- (5) a cut-out switch for silencing the bell

b. During normal operating conditions, the water temperature switch and the lube oil pressure switches are open. Any abnormal rise in the water temperature of either engine will close the water temperature switch. A drop in lube oil pressure will close the lube oil pressure switch. In either case, the alarm bells, located in the steering console, will sound. The bells will continue ringing until the abnormal condition is corrected. The cut-out switches are provided to silence the bells for corrective action ONLY. The switch shuts off the bell for all engine alarms.

c. In addition to the electrical engine alarm system, mechanical gauges are provided to indicate the water temperature and lube oil pressures for each engine. These gauges are not affected by the alarm system

## 6. Marine Gear.

a. Power is transmitted to the propellers by way of Warner Series 73C hydraulic reverse gear, controlled with the throttle levers. The gear ratio is 3 to 1 in forward, and 2.64 to 1 in reverse. The unit consists of a forward and reverse gear box mounted in a separate housing on the rear face of the transmission. The transmission incorporates a planetary gearset, forward clutch, reverse clutch, oil pump, pressure regulator, and rotary control valve; all are contained in a cast iron housing. Operation of the gear is completely hydraulic. The crescent-type gear pump draws oil from the pump to a pressure regulator valve, which

regulates the oil for clutch operations. Oil type is Dextron II Automatic Transmission Fluid, the capacity is 3 quarts.

7. Propellers. The MLB is fitted with two 30 inch diameter, 25 inch pitch, 3 blade propellers. The starboard propeller is right-handed, the port is left-handed; thus both props turn outboard at forward throttle, inboard at reverse throttle.

### NOTE

When varying engine speeds the stern will "walk" in the direction of the faster propeller in forward and away from that direction in reverse.

### NOTE

The design, gearing, and propellers of all boats are intended to drive the boat forward. As a result, the boat will act more quickly and positively in forward motion than in reverse. This is particularly true of the MLB. Since this boat's drive ratio is low in reverse, it is necessary, when steering with the engines, to use significantly higher RPM on the reverse engine to balance the action of the forward propeller.

## C. ENGINE ACCESSORIES

1. Steering Pump. Steering an MLB in heavy seas by purely mechanical means would require a great deal of physical effort. An engine-driven hydraulic steering pump used aboard this boat greatly reduces this effort. The pump is located on the aft outboard portion of the starboard engine. It provides hydraulic pressure up to 500 psi. The oil capacity of the reservoir is 10 gallons. Oil type is 2075 turbine hydraulic oil. Hydraulic lines extend to the steering wheel and the rudder hydraulic cylinder.

### NOTE

Should failure of the steering pump occur, an orbital steering cylinder in the coxswain console reverts automatically to manual steering. Steering action will become noticeably stiff.

2. Air Compressor. The windshield wipers and horn on the MLB are powered by compressed air supplied by a Bendix-Westinghouse model Flo 500 compressor. The compressor, mounted on the port engine, runs continuously off that engine's power to maintain pressure in a 1.5 cubic-foot capacity air tank, located aft and outboard of the engine. Air is supplied to the horn and wiper motor through a 3/8 inch line running forward on the centerline. Pressure within the system is controlled at 80-100 psi by a governor located in the input line just forward of the air tank. Although the compressor runs constantly, when pressure reaches 100 psi the governor will not allow air to be compressed until the pressure falls below 80 psi. A relief valve on the air tank, set at 110 psi, also helps to prevent overloading of the system.

### CAUTION

Clean air intake to the compressor is important to prevent damage to the compressor. Check the air strainer regularly, and clean it as necessary.

### D. FIREFIGHTING EQUIPMENT.

1. Fire Pump. The fire pump provided on the MLB is a single-stage centrifugal fire pump, rated at 120 gpm. It can produce a 240 foot head at 3,500 pump RPM (1,325 engine RPM), maintaining 100-110 psi. The pump is located inboard, below the port engine, and is driven by that engine using a belt-drive power takeoff. Raw water is drawn from the sea chest through a simplex strainer. The pump provides sea water to an installed eductor in the engine room and to the main deck via a 1-1/2 inch fire main riser on the starboard side forward of the air vent.

### CAUTION

DO NOT EXCEED an engine speed of 1,500 RPM. With the fire pump engaged, engine speed should be maintained at 1,325 RPM.

#### 2. Eductor.

- The MLB carries one portable, and one installed eductor. The installed eductor is fitted to the fire main system, forward against the starboard hull in the engine room. It is used for dewatering the engine room bilge. The other eductor is stored aft in the litter space and is used to dewater vessels.
- Externally, the portable eductor has 1-1/2 inch intake and a 2-1/2 inch outlet. Its interior is more complex. A small volume of water is pumped into a Venturi Chamber. This chamber, by restricting water flow, creates a vacuum which draws water through its lower pressure

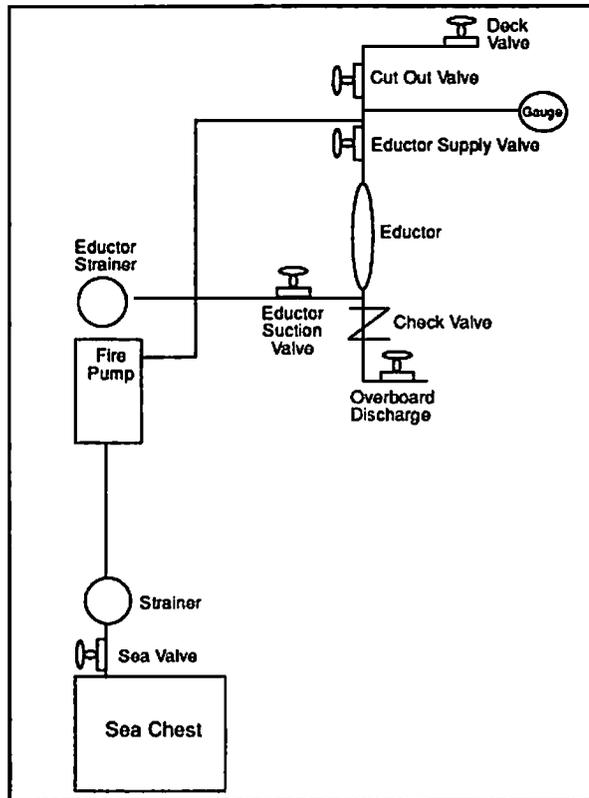


Figure 3-4

Fire Fighting and Eductor System

opening. When a higher volume of water is forced through the intake, a greater vacuum is created. This results in increased suction and fluid removal from an area being pumped. When the eductor is powered by the main engine fire pump running full pressure to the fire-fighting hose, it is an excellent dewatering tool.

**3. Dewatering Pump Kit.**

- a. The dewatering pump kit consists of a portable, gasoline engine-driven dewatering pump, stowed in a removable, water tight container. It is used when an eductor equipped boat cannot come alongside and remain with a stricken boat, or where an eductor cannot reach the flooded area. For ease of transfer, the can may be dropped into the water and floated to the distressed vessel.

**NOTE**

Always be sure tending lines have been securely attached when passing the pump.

**WARNING**

Exhaust fumes from this pump are harmful. Ensure area is sufficiently ventilated when operating engine. Do not attempt to start or operate this pump in its container.

- b. For specifications, and pump operating and packing instructions, refer to COMDTINST M10470.10 (series), CG Rescue and Survival Systems Manual.

**4. Fire Extinguishing Agents.**

- a. In addition to the main engine fire pump and its auxiliary equipment, the MLB carries two types of portable fire extinguishers and a fixed Halon fire extinguishing system.

- (1) **Dry Chemical Fire Extinguisher.** These extinguishers are charged with potassium bicarbonate (PKP).

They are effective, to varying degrees, on all types of fires, but are most effective on burning liquids (Class B). The MLB carries three 5-pound dry chemical fire extinguishers; one each in the passenger compartment, mess deck, and the aft survivor's compartment.

**WARNING**

The dry chemical extinguisher cannot cool a fire nor remove its oxygen. It is effective **ONLY** in knocking down flames. If enough heat, or an ignition source is present, the fire will reflash after the powder settles from the air. Class A fires are particularly prone to reflash, and thus dry chemical extinguishers are least effective on this type of fire.

- (2) **Carbon Dioxide (CO<sub>2</sub>) Fire Extinguisher.** This extinguisher is most effective in fighting electrical (Class C) fires. CO<sub>2</sub> is non-corrosive and does not conduct electricity. It will not damage electronics, wiring, nor clog engine parts, as will PKP. The MLB carries one 5-pound CO<sub>2</sub> extinguisher mounted in brackets under the ladder in the mess deck.

**WARNING**

CO<sub>2</sub> presents the same reflash hazard associated with dry chemical extinguishers. Be sure all hot spots are cooled to prevent reignition. Note also, CO<sub>2</sub> is not very effective in extinguishing Class B fires. Vapor fires can burn within a cloud of CO<sub>2</sub>.

- 3) **Fixed Halon Fire Extinguishing System.**
  - a) The Halon fire extinguishing system provides a fixed means of combating an otherwise uncontrollable engine room fire. The engine room is equipped with two thermal sensors. If a fire breaks out in the engine room, once the temperature rises above 190o F, contacts in the sensors will close and sound the alarm horn. The sensors are wired to operate independently. A thorough understanding of this system is vital.
  - b) The bottle containing Halon is installed just port of the engine room hatch, in brackets on the fuel fill and vent pipes.

**NOTE**

Crew members must have a thorough understanding of the Halon fire extinguishing system.

**CAUTION**

The engines must be secured prior to activating the Halon fire extinguishing system.

**CAUTION**

The temperature sensors **DO NOT** automatically activate the Halon fire extinguishing system. Once the alarm and investigation indicates a uncontrollable fire is present, the system must be activated manually.

**E. ELECTRICAL SYSTEM.**

1. **Electrical Power Alternators**
  - a. Each engine is equipped with a 70 amp Motorola alternator with a rectified output of 28.5V DC.
  - b. Each alternator's drive ratio delivers

full output at engine idle speed. They are designed for parallel operation, charging a bank of two 12V, 200 Amp/hour, batteries connected in series and used for power, lighting, and electronics.

**WARNING**

Always use extreme care when handling batteries. Battery gases are highly explosive. NEVER smoke around a battery and NEVER disconnect a battery until the space has been thoroughly ventilated. The sulfuric acid solution is corrosive and will burn.

2. **Electrical Panels.**
  - a. A switch panel located above the sink on the starboard side of the mess deck controls power to the following items:
    - (1) navigation lights
    - (2) blue light
    - (3) search lights
    - (4) instrument lights
    - (5) general lighting
    - (6) hot cups
    - (7) engine starting and alarm system
    - (8) space heaters
    - (9) electronics
    - (10) stern floodlight
    - (11) engine room vent blower
  - b. An A/C panel for the shore tie connection powers the:
    - (1) battery charger
    - (2) engine heaters (hot starts)
    - (3) electric space heaters
    - (4) A/C plug
    - (5) inport engine room lighting

**F. ELECTRONICS.**

1. **Introduction.** The MLB is outfitted with advanced electronic gear to aid the crew in navigation and search and rescue. Each component, when properly operated, will add to the safety and efficiency of the boat. New operational capabilities and equipment are constantly being evaluated. See enclosure (5) for the specific and type of equipment currently in use.

## CHAPTER 4. THE CREW

### A. INTRODUCTION.

1. Each crew member on a Coast Guard boat must know not only their own duties, but those of the other crew members. They must also know the characteristics of the boat, its equipment, and which procedures to follow in the event of an onboard casualty. Commit the characteristics of your boat, its equipment, and casualty procedures to memory. When you have done this, imagine yourself in as many operationally difficult circumstances as you can and think how you and the rest of the crew would work them out. Then, when the opportunity is available underway, practice.

2. The minimum crew for the MLB is three. This crew consists of a coxswain, engineer, and crewman. The nature of response, local requirements, missions assigned, and special operations could all increase the need for extra crew members. For example, an experienced safety observer, preferably a coxswain, is necessary during helicopter operations and fire response. Whenever possible, a crew of four or more should be assigned to these, and other missions involving emergency situations. All crew members are qualified and certified for their positions in accordance with COMDTINST M16114.9 (series), Boat Crew Training Manual. Their general duties are outlined below.

### B. COXSWAIN.

1. The coxswain is in charge of the boat and its crew during a mission. As Officer-in-Charge of the boat, he assigns all tasks and directs all operations. The Coast Guard places great trust in a coxswain's ability to accomplish assigned missions in a professional manner, often times under adverse conditions. The position of coxswain is one of the most respected and responsible positions in the Coast Guard.

2. Whenever operating in surf or breaking bar conditions, the coxswain should be experienced. Operating in these conditions without experienced coxswain can seriously jeopardize the safety of the boat and crew. Estimates of wave height are very subjective. In addition, other factors must be considered when operating in the surf. These include case severity, experience of the coxswain and crew, period and type of

break of the waves, water and air temperature, and weather outlook. Surf heights are meant to be estimates of the size of a breaking wave caused by bars, reefs or the shoreline.

3. The extent of a coxswain's authority and responsibilities are specified in COMDTINST M5000.3, Coast Guard Regulations, as follows: "The coxswain shall be responsible, in order of precedence, for the safety and conduct of passengers and crew; the safe operation and navigation of the boat assigned; and the completion of the sortie or mission(s) assigned or undertaken pursuant to Coast Guard policy and regulations. A coxswain underway will at all times respond, within the limits of capabilities and legal authority, to observed hazards to life or property, and violations of law or regulations."

4. The coxswain is the direct representative of the Commanding Officer or Officer-in-Charge and, as such, (subject to Articles 88-91 of the UCMJ) has authority and responsibility which are independent of rank or seniority in relation to other personnel embarked. The coxswain's authority and responsibility exist only when the boat is engaged on a specific sortie or mission(s). The only persons embarked in a boat who may relieve the coxswain of the responsibilities described above are:

- a. The coxswain's Commanding Officer, Officer-in-Charge, Executive Officer or Executive Petty Officer.
- b. A senior officer at the scene of a distress, emergency, or other abnormal situation who exercises authority under the provisions of Coast Guard Regulations, whether or not other units are involved.

### C. ENGINEER/CREWMAN.

1. The engineer/crewman must be certified as a crewman before obtaining certification as a boat engineer. This individual performs duty in both capacities.

2. Responsibilities of this position include operational and underway maintenance of the boats engines. He may also serve as helmsman, line handler, emergency medical technician, and such duties as may be assigned by the coxswain in support of operational/training sorties or mission(s).

**D. CREWMAN.** Under the direct supervision of the coxswain, the crewman is responsible for line handling, especially during towing, and for assisting the coxswain during all maneuvers.

**E. TRAINING.**

1. Assignment as a crew member of a MLB requires considerable practice. Individual characteristics of the boat must be learned. Each crew member should take the time to study not

only the boat, but the duties of the other crew members since it may be necessary to perform them in an emergency. Where local staffing permits, additional crew members should ride in a training capacity, to gain familiarity with the boat and cross-train in assigned duties. To become and remain proficient as a crew member on this, or any boat, you must get underway and practice your skills.

**D. ENGINE ROOM FIRE.**

1. The greatest single potential for disaster on a boat is fire. Fire prevention is a necessity. The potential for fire may never be completely eliminated. It should always be considered a threat and must be watched for, and guarded against.

2. The most likely areas for a fire to occur are the engines and the electrical panels. Almost every possible source of fire in these areas will give some advanced warning. Be alert and inspect the systems regularly.

- a. Pinhole leaks in the fuel lines can be caused by cracking at loose brackets, or chaffing at contact points. Ensure chaffing gear is used where required.
- b. Alternator fires can result from burned out bearings, electrical shorts, or incorrect wiring. The alternator will smoke before it flames. Check engine spaces regularly when underway.
- c. Keep the engines free of oil, grease, and hydraulic fluid. None of the external engine parts are flammable (except the wiring), but waste oil will ignite and can cause great damage.

- (1) Upon observing smoke, engines should be secured, the engine room hatch dogged and engines monitored through port light. The crewman should stand by the HALON discharge valve to activate if necessary

**WARNING**

A by-product produced when burning Halon 1301 gas in a diesel engine is poisonous bromine gas. There is only enough Halon in the system for one extinguishing attempt. FOLLOW THE DIRECTIONS AND EXTINGUISH THE FIRE THE FIRST TIME.

- 2) You should wait approximately 5 seconds after pulling the engine stops before discharging the Halon. This provides the engines a chance to come to a dead stop.

**OPERATING INSTRUCTIONS FOR HALON 1301 FIRE EXTINGUISHING SYSTEM**

- (1) SECURE ENGINES.
- (2) CLEAR ENGINE ROOM OF PERSONNEL.
- (3) CLOSE ENGINE ROOM DOOR.
- (4) SECURE ELECTRICAL POWER (EXCEPT VHF-FM)
- (5) PULL EMERGENCY FUEL CUT-OFFS
- (6) PULL PIN AND DISCHARGE HALON
- (7) KEEP ENGINE ROOM DOOR CLOSED FOR 15 MINUTES.
- (8) VENTILATE COMPARTMENT FOR 15 MINUTES

**CAUTION**

Because of the many different type of materials in the engine room, the presence of harmful vapors and toxic gases are a distinct possibility. Use EXTREME CAUTION and COMMON SENSE before entering.

Table 7-1  
Halon Instructions

### NOTE

You should carefully assess the damage of the fire before entering the engine room or attempting to restart engines. The prudent action may be to do nothing other than to call for assistance.

#### E. OVERHEATING

1. Main Engine Overheating may occur on the 44 foot MLB, if this happens you should take the following actions:

- a. Reduce engine rpm's
- b. Investigate, if steam is coming from the overflow relief. **SECURE ENGINE.**
- c. If no steam is present, feel Salt Water pipes on affected engine, if pipes are warm take the following actions:
  - (1) Check sea suction valves
  - (2) Check sea strainers
  - (3) Check raw water pump
- d. If no steam is present, and Salt Water pipes are cool take the following actions:
  - (1) Check Fresh Water pump belts
  - (2) Check for obvious water leaks

### WARNING

Removing expansion tank cap while engine is hot may cause coolant to flash to steam causing serious burns.

#### F. LOSS OF LUBRICATION OIL PRESSURE

1. If there is a loss of engine lubrication oil pressure, you should take the following actions:

- a. Reduce engine rpm's while checking engine oil pressure gauge.

### WARNING

If engine oil pressure gauge reads zero. **SECURE** engine immediately.

- b. Check the following:

- (1) Oil level
- (2) Obvious oil leaks
- (2) Expansion tank contamination
- (3) Blown oil cooler
- (4) Faulty sensor
- (5) Fuel Oil dilution

#### G. ENGINE RUNAWAY

1. If a main engine runaway occurs the following steps should be taken:

- a. Bring both throttles to idle ahead.
- b. Pull engine stop for affected engine.
- c. Turn into the affected engine, to put load on engine.
- d. Pull emergency fuel cut-off
- e. Trip the emergency air shut down on front portion of blower.

### WARNING

**DO NOT** use Halon firefighting system to secure engines.

## CHAPTER 7. EMERGENCY PROCEDURES

### A. CAPSIZING.

1. Preparation. Any surface activity big enough to roll the boat will bring it right back up. If your lower gunwale digs into the trough, prepare to roll over. Take a deep breath and hang on. Average time under water will be approximately 8 to 15 seconds. Although the boat was built to withstand a roll over, there will be damage.

2. Recovery. Once righted, assess the situation quickly. You will still be in the surf and must take the next wave correctly or the boat may roll again. Check the crew to ensure no one was lost overboard or injured. If the engines are still working, move to safe water. Once in safe water, the engineer should go below to check for damage. Secure the electrical circuit breakers with the exception of the VHF-FM Radio. The engine room may be coated with water and oil presenting a fire hazard. Be sure to look through the port light in the engine room hatch for signs of a fire before entering. If there is no fire the engineer should dewater the engine room with the installed eductor system. Once this is accomplished, check the oil in both main engines (Engines must be secured to ensure an accurate reading). After damage has been assessed, determine whether to proceed with the mission or return to the unit. The following factors should be considered:

- CONDITION OF CREW MEMBERS.
- OVERALL CONDITION OF ENGINES AND BOAT STRUCTURE.
- CONDITION OF ELECTRONICS, ESPECIALLY VHF-FM.
- URGENCY OF MISSION

Upon returning to the station all electronic and electrical equipment must be removed and cleaned.

### WARNING

**DO NOT HOOK UP THE SHORE TIE.** The distribution panel in the engine room may be soaked with oil and water. Particular attention must be given to cleaning the following equipment.

- A/C Power Panel
- Alternators
- Battery charger
- Engine Alarm Panel
- Batteries
- Starter Motors

### NOTE

**ALL WIRING** must be cleaned, dried, and a ground and insulation leakage test accomplished.

The engine room must be washed down and the sound dampening material must be inspected. During a roll over this material becomes oil soaked and a fire hazard. All fluids and associated filters, such as reduction gear, hydraulic system, and main engine oil should be replaced.

### B. STEERING CASUALTY

1. The 44 foot MLB steering system is hydraulic and has an operating pressure of up to 500 psi. The system has a maximum pressure rating of 1000 psi, but the relief valve is set at 500 psi. A properly maintained system makes it close to being casualty free. Only high quality hydraulic hoses and fittings should be used. All hoses must be secured (with brackets) to eliminate chaffing. All through-hull fittings should be inspected frequently. The hose fittings attached to the ram are stressed the most.

**WARNING**

If a loss of hydraulic steering fluid occurs, failure to secure the starboard engine may result in damage to the engine or steering pump.

2. If a steering casualty does occur, the twin screws of the MLB allow boat control to be maintained with the rudders centered. If this is not possible, remove one of the rudder caps on the main stern deck. Remove the tiller from its stowage area (bulkhead 21), and drop the socket end onto either rudder stock. Remove the ram from the twin rudder, and lay it on the deck (Tie off ram to prevent damage). The upper portion of the rudder stock is machined square to receive the emergency tiller.

**WARNING**

If a steering failure occurs while the MLB has a tow, do not rig the emergency tiller. Crew members working aft of bulkhead 17 during towing operations are placed in grave danger. Steer with engines and/or call for assistance if emergency repairs cannot be made.

**NOTE**

If the steering system fails while underway with no tow and you decide to rig the tiller, have the crewman use a safety belt attached to the taft rail.

**C. BILGE FLOODING.**

1. Draining the engine room bilge is accomplished by using the fire pump discharge water and installed eductor. The suction line is run to the lowest point of the bilge.
2. The forward passenger space and mess deck bilges must be pumped from the deck scuttle.
3. To sluice the well deck void, use the sluice valve located low on bulkhead 15 in the engine room. Water will drain into the engine room.
4. The aft steering space can be sluiced into the aft survivors compartment by the sluice valve located at bulkhead 21.

**WARNING**

Operation of the bilge eductor system requires a crew member in the engine room at all times since the engine room can be flooded using this system.

5. When operating the bilge eductor system, the following steps shall be followed:
  - a. Ensure valves to fire station riser and EDUCTOR suction line are CLOSED.
  - b. Open sea chest valve to fire pump.
  - c. Open EDUCTOR inlet and overboard discharge valves
  - d. Engage fire pump.
  - e. Increase port engine speed to 1325 rpm's and ensure positive overboard discharge.
  - f. Slowly open valve in EDUCTOR SUCTION line, and pump bilges as necessary.
  - g. When pumping is complete, reverse the procedure.

**NOTE**

After the MLB has experienced a grounding, heavy sea, and/or surf, check all bilges. If any amount of water exists, investigate its source. Take corrective action as necessary.

## **G. SURF OPERATIONS.**

1. Introduction. Operations in surf or bar conditions, or rough seas require constant action by the coxswain. It is not possible to outrun a wave with this boat nor maintain position on the back of a wave. Maintaining a 360 degree watch for approaching waves is critical. The coxswain must concentrate on positioning the MLB to avoid being caught under a breaking wave. If a breaking wave cannot be avoided, maneuvering to avoid the break itself is necessary. If possible, maneuver to meet a wave bow on. Generally, surf over 12 feet can capsize the boat if taken abeam or over the stern with forward way on, but smaller waves have been known to cause a roll over. The 44 foot MLB is self-bailing and self-righting. These characteristics were designed to protect personnel. No roll over should ever be considered routine. However, in the event heavy weather capsizes the boat, these characteristics are highly desirable. During a roll over, expect the boat to sustain considerable damage. When the engines are operating in the inverted position, they may lose up to two gallons of lube oil per engine. The engine room may take-on up to 350 gallons of water through its air vents.

2. Capabilities. With a capable crew, the 44 foot MLB can perform almost any SAR mission in extreme bar and surf conditions. To utilize the boat's capabilities, the crew must be completely familiar with its handling characteristics. Constant training and the use of good judgment is necessary to safely operate this boat in a heavy weather environment. Several factors should be considered before commencing surf operations, height of breaking surf has traditionally set the standard. Surf refers to the height of a breaking wave caused by a bar, reef or the shoreline and should not limit operations in larger offshore waves or non breaking bars. Height of surf estimates are very subjective. Other factors should be considered as well. These include the boat's seaworthiness, endurance and experience of the coxswain and crews, period and type of wave breaks, weather conditions and forecast, and the severity of the case or the potential benefits to be derived. Below are some general guidelines for surf operation.

3. Operation. Surf operation with the 44 foot MLB is covered only briefly in this manual. The coxswain must understand different types and sizes of surf. Different operating areas require varied procedures, and cannot be fully covered in this publication. There is no substitute for actual underway training. Training should be performed in a variety of surf conditions in local operational areas. Allow coxswains to acquire the experience necessary to read the waves and get a proper feel for the capabilities and limitations of the MLB.

### **WARNING**

Never allow the boat to be caught below a breaking wave. Begin to climb the wave in time to keep its top from falling on you. One cubic yard of salt water weighs almost a ton. A 20 foot breaker will drop 1,500 tons of water on the boat.

- a. Procedures for transiting surf. Prior to entering surf, advise the station of intentions. Acquire bar conditions from all available sources (such as tower personnel, pilot boat, other vessels operating in vicinity, et cetera). It is difficult to effectively observe actual bar/inlet conditions from seaward. Ensure the dodgers are rolled up, the main diesel engines are physically checked, and the crew is in protective clothing, helmets, and safety harnesses. Stand off and observe wave trains. Wait until the last big wave in the series has passed and then proceed inbound behind it. Get as close to the last big wave in the series as possible. There is little chance of over-running it. Ensure a 360 degree lookout is maintained and do not let your attention wander.

- b. **Bow into Surf.** The 44 foot MLB is designed to take surf bow first. As a breaking wave approaches the boat, keep your bow square to the sea. Try to pick your route through the breaker hitting the "saddle" - that is, passing through the portion which has not broken, if possible. Breaker avoidance is the preferred alternative. Increase power smoothly. Gain some headway before the sea begins to lift the boat. However, not so much headway that the boat powers into the lower part of the wave, allowing it to break over the boat. Move smoothly up the wave until momentum and the MLB's weight causes the boat to push through to the other side. This momentum and the weight of the boat will carry it through the wave. As the crest of the wave hits the bow, ease off the throttle. Be prepared for the next breaking wave using the same procedure. With experience, it is possible to "station keep" by using just enough power to meet the oncoming wave, thereby holding position.
- c. **Beam Surf.** At times, it may be necessary to enter a surf zone with the boat's beam exposed to breaking waves. The MLB is extremely vulnerable in this position. Therefore, a high rate of speed is desirable, enabling the boat to arrive at its destination as soon as possible. Speed may be reduced to allow waves to pass ahead of the vessel, or increased to maximum throttle to avoid a breaker on the beam. The helmsman must be conscious of any and all waves coming at him. When it is obvious the boat will be overtaken by a breaking wave, the helmsman must retain speed or increase

RPM, depending on wave height and boat's position, and turn to "MEET" the breaker with the bow. The helm must then be returned amidships and the throttles decreased, to avoid launching through the crest. It may be necessary to keep station and negotiate several breakers before applying power and returning to the original trackline.

- d. **Surf on Stern.** When transiting an area with breaking waves on the stern, utmost caution must be observed. This is the MLB's most vulnerable position. Due to the semi-displacement construction of the MLB, the stern of the boat offers much less resistance to the surface of the water than the bow and has a tendency to "BROACH" when being overtaken by a swell or breaker. It is necessary for the coxswain to observe the period and pattern of the breakers in the area about to be entered. This requires holding position outside the surf line and determining the safest route. The coxswain must also assess the series or sets of waves and proceed inbound behind the last swell of the series. In most instances there will be a short period of calmer water between each series of waves. This is referred to as a "LULL". This is the optimum time for the coxswain to proceed inbound, if safe to do so. Sometimes the best option is to remain outside and wait for more favorable conditions. There are several techniques used to transit with surf or large swells on the stern. Local conditions and the experience level of the coxswain will determine which method is appropriate for the given situation.

## CHAPTER 6. MISSION PERFORMANCE

**A. INTRODUCTION.** The descriptions and procedures discussed in this manual are as specific as possible. Amplifying information may be found in COMDTINST M16114.5 (series), the Boat Crew Seamanship Manual. The only way to learn these evolutions is to actively train.

### **B. DISABLING CASUALTIES.**

1. When a boat is called upon to perform a mission there are command decisions which need to be made as to the suitability of available boats for that mission. If a boat has a limiting casualty, the ability of the boat to safely perform the mission must be assessed. Considerations such as experience of the crew, sea conditions, weather, and mission urgency are all important in making this determination. Generally, if any one of the following boat equipment is not fully operational, **THE BOAT SHOULD NOT GET UNDER WAY.**

**ENGINE** (A boat's operational capabilities are severely limited with only one engine. Additionally, no backup exists in case of breakdown.)

**STEERING SYSTEM** (Steering with just engines or with the emergency tiller severely limits any type of operational response and are, at best, only a backup system to allow the boat to return safely.)

**VHF-FM RADIO** (If no backup communications exist.)

**DEPTH FINDER**

**RADAR** (If visibility is less than 1 mle.)

**COMPASS** (For night operations, the compass light must also be functional.)

**TOWLINE** (Must have a minimum of 500' onboard.)

Table 6-1 Disabling Casualties

### **C. TOWING.**

1. The 44 foot MLB has enough power, and the right equipment to handle any emergency towing job likely to be encountered. The coxswain should consider all factors concerning weather, sea state, distance, and size of vessel before attempting each tow. General towing limitations established for this boat are set at

125 gross tons. In less than favorable conditions, it may not be possible for the MLB to handle towing vessels of this size.

2. Detailed information on towing procedures and practices are contained in COMDTINST M16114.5 (series), the Boat Crew Seamanship Manual.

### **D. ANCHORING.**

1. The 44 foot MLB does not often drop anchor; a boat designed for rough seas rides poorly at anchor, and the low rate of fuel usage makes it practical to continue moving in many cases. However, the boat is fitted with an anchoring system used when the boat must stand by a location.

2. Removing the stainless steel expansion hawse pipe plug, find the hook built into its other side. Suspended from this hook with a 1/2 inch shackle is 9 feet of 1/2 inch BBB anchor chain. A 1/2 inch swivel forms the connection of the anchor chain to a thimble, spliced into the end of the anchor line. This is secured to the tow reel with small stuff that must be broken loose. This shackle is attached to the 60 pound Danforth anchor when preparing to anchor. The anchor should not remain attached to the anchor line while routinely underway.

3. Detailed procedures and instructions on anchoring are contained in COMDTINST M16114.5 (series), the Boat Crew Seamanship Manual.

### **E. PERSONNEL RECOVERY.**

1. The MLB, with its ability to operate in heavy weather, and its twin props and rudders, is designed to be able to maneuver in almost any conditions to retrieve a person in the water. Personnel recovery drills conducted in all weather conditions are essential training for any coxswain.

2. Personnel recovery procedures are contained in COMDTINST M16114.5 (series), the Boat Crew Seamanship Manual.

## F. FIREFIGHTING.

1. Introduction. The 44 foot MLB is outfitted with the standard tools and equipment to fight marine fires aboard the boat itself, as well as on other vessels. Of course, the best firefighting procedure is to prevent the fire from starting:

- **KEEP OIL AND GREASE OUT OF THE BILGES.**
- **CLEAN ANY SPILLED FUEL OR LUBE OIL IMMEDIATELY AND ENSURE IT IS PROPERLY DISPOSED ASHORE.**
- **PROPERLY STOW CLEANING MATERIALS.**
- **KEEP ALL AREAS FREE OF WASTE MATERIAL.**
- **USE PROPER CONTAINERS FOR FLAMMABLE LIQUIDS.**
- **VENT ALL SPACES THOROUGHLY BEFORE STARTING ENGINES.**
- **BE ALERT FOR SUSPICIOUS ODORS AND FUMES.**

### 2. Equipment.

- a. The primary system (for nonelectrical fires) uses sea water, fed by a 120 gpm fire pump driven by a power takeoff from the port main engine. The pump drives water through a single 1-1/2 inch fire main outlet located on the starboard side, forward of the engine air vent.
- b. For fires on another vessel or ashore, the following equipment is carried:
  - Dewatering Pump kit (CG P-1)
  - 2-1/2 inch Eductor Discharge Hose, 25 feet
  - 1-1/2 inch Fire Hose, 50 feet (2)
  - 1-1/2 inch Fire Hose, 25 feet
  - 1-1/2 inch and 2-1/2 inch spanner wrenches
  - VARI nozzle
  - Eductor, 1-1/2 inch inlet, 2-1/2 inch discharge
  - In-line proportioner

### 3. Procedure.

- a. A minimum crew of four may be required to conduct firefighting and dewatering operations.
- b. The first priority is the safety of personnel and your vessel. For detailed firefighting procedures, see COMDTINST M16114.5 (Series) Boat Crew Seamanship Manual.

## CAUTION

**Do not exceed engine RPM of 1500 while the fire pump is engaged.**

4. Dewatering. During the firefighting process, great quantities of water will be pumped into the stricken vessel. Since the water has no place to go, the boat will sink as the fire is extinguished unless you remove the water.

- a. As soon as fire conditions permit, board the boat and check for flooded areas.
- b. Determine the source of flooding. If there is another source of flooding besides the firefighting hose, locate it and attempt to reduce the flow.
- c. If you remain on scene, your eductor powered by the main engine pump is your best dewatering tool. To rig the eductor:

- (1) Connect the inlet on the eductor to the fire main with a 50 foot length of 1-1/2 inch firefighting hose.
- (2) Connect the eductor discharge hose to the outlet side of the eductor, and run it overboard.
- (3) Start the fire pump; watch the eductor discharge hose to ensure it is running freely. If not, the eductor may not be dewatering; an obstruction of the line is the most likely cause.

## CAUTION

**Any kink or obstruction in the discharge line will cause the eductor to pump water into the flooded area rather than out of it.**

- d. The dewatering pump kit carried aboard the MLB may also be used to dewater a vessel if necessary.

other breakdown in the cooling system.

- (2) A pronounced steady vibration, probable with loud noise below, is a likely indication of a bent shaft or propeller.
- (3) Is the boat responding normally? If not, isolate the problem and repair it.
- (4) Does all electronic gear function properly? If not, the cause should be detected and repaired before departing the station.

c. Increase speed gradually, in steps, to allow engines to warm up thoroughly. Unless absolutely necessary, avoid using maximum RPM until the engine temperature has reached 140 degrees.

**CAUTION**

Do not exceed 2380 RPM's for more than 2 continuous hours  
Maximum RPM's 2800

**E. HANDLING CHARACTERISTICS.**

1. **Stability.** The MLB is self-righting and self-bailing. Its construction and outfitting place the center of gravity low so it will return naturally to the upright position in any weather conditions.

2. **Buoyancy.** The boat has nine water-tight compartments which, if properly maintained, render it completely unsinkable in the normal sense of the word. None have ever sunk. Only a major collision underway will do serious damage to the buoyancy of this boat.

3. **Strength.** The hull is constructed of 3/16 inch Corten steel; a high tensile-strength alloy. It is framed by a combination of transverse and longitudinal members.

4. **Speed.** The maximum speed of the 44 foot MLB, depending on the age of the machinery and engine tuning, is 13-14 knots at 2,800 RPM.

5. **Steering.** The MLB is fitted with hydraulic steering, which markedly decreases the effort necessary to reach and hold a course. Hydraulic pressure magnifies any force exerted by the helmsman and then freezes the rudder in place until

the wheel is moved again.

6. **Stopping.** Displacement hulls, by design provide little resistance to water flow and will coast for a considerable distance if power is cut. In an extreme situation, the boat can be stopped very quickly by moving the throttles directly from ahead to full astern. Tests in 45 feet of water show the boat is capable of stopping within a space of 94.4 feet in 4 seconds when the boat was traveling at 14 knots.

**WARNING**

Transition from full ahead to full astern should not be used except in an extreme emergency.

7. **Weathervaning.** The boats center of gravity is amidship. This fact, coupled with the presence of superstructure areas both fore and aft, causes the boat to pivot on this center axis as winds hit it. Left alone, it will swing back and forth to an angle, 25 to 30 degrees off the prevailing wind direction.

8. **Following Seas.** Widely spaced rolling swells present no problem to this boat, provided the operator is alert. The rounded cruiser type stern presents little obstruction for the sea to act upon. However, buoyancy considerations have produced a very shallow draft stern which, left alone, will move freely into a broaching position. Exercise caution and steer into any tendency of the stern to slip sideways, especially in short, choppy seas.

9. **Head Seas.** The prime consideration here is to maintain a comfortable speed. The boat's sturdy construction allows it to break easily through oncoming seas. Its shallow draft, however, makes it very active. You will want to find a speed which gives the best ride. Keep the screws in the water at all times, and avoid burying the bow in a wave.

10. **Beam Seas.** If your course is broadside to heavy swells, tack across the swell at a slight angle in zigzag fashion. Make each tack as long as possible, adjusting for the most stable ride. Remember, seas directly off the boat's beam will cause a lively rolling motion that can be uncomfortable.



## CHAPTER 5. OPERATIONS

### A. INTRODUCTION.

1. This chapter describes how to use the 44 foot MLB in a safe, efficient manner. There are limitations on just how specific such instructions can be. The policies and techniques set forth here provide an outline of necessary actions and the DO'S and DON'TS that are a product of field experience with boats of this design.

2. Local operating conditions, district regulations, and the skill of the crew will determine how much of the full capability of this motor lifeboat is used.

3. The 44 foot MLB is neither an especially fast nor powerful boat. It is constructed with one primary goal - to survive and travel through heavy seas. It will not outrun the seas, and it can be stopped cold by surf of excessive size.

4. This boat is a highly visible symbol of the Coast Guard, and its operation should serve as an example of safe boating. Always be aware of wind and current conditions, and watch for any changes. Learn the limitations of this boat, but most importantly, learn your own limitations. Do not allow your boat to take you past them. The sea provides little room for error and is most unforgiving of mistakes.

### B. OPERATING LIMITS

1. The coxswain always has final responsibility for the safe operation of the boat and must decide whether the mission warrants putting the crew and boat in danger.

2. The boat was designed and built to operate in the following conditions:

- a. UP TO 50 NM OFFSHORE.
- b. SURF CONDITIONS UP TO 20 FEET.
- c. TOWING VESSELS UP TO 125 GROSS TONS.
- d. UP TO 50 KNOT WINDS
- e. SEAS UP TO 30 FEET.

### NOTE

These limits may be exceeded upon approval of the Group or District Commander after due consideration of the boat's seaworthiness, fuel level, crew endurance and experience, weather conditions, and the potential benefits that may be derived.

### C. PERFORMANCE DATA.

1. The fuel capacity is considered to be 313 gallons at 95% capacity. The usable amount of fuel at 95% capacity is 303 gallons due to the positioning of the fuel intake lines. Accurate fuel soundings will be difficult under active sea conditions and fuel estimates should be based on operating hours per given RPM. Table 5-1 provides estimated gallons per hour used based on the engines' operating speed (RPM).

RPM's	Gals/Hr	Speed(kn)	Range (mi)
1400	4.4	8	550
1750	9.2	9	295
2100	12.4	10	243
2450	21.0	11.5	165
2800	26.3	14	164

Table 5-1 Fuel/Speed Curve

### NOTE

The following items can affect fuel usage, operating range, and speed of the MLB:

- Engine tuning
- Operating area
- Helmsman skill (frequent course changes decrease mileage)
- Weather conditions (active seas will require more power and the boat will not move in a straight line)
- Towing operations

## D. LAUNCH.

### 1. Pre-start Checklist.

a. The following procedures must be followed before starting a cold engine, and should be repeated before and after each mission.

- (1) Energize the main breaker and general lighting on the circuit breaker panel located on the mess deck.
- (2) Check for fuel or excessive water in the bilges.
- (3) Check all fluid levels.
- (4) Open sea suction valves, and check sea strainers for cleanliness.
- (5) Check to see that fuel supply and return valves are open. Sound the fuel tank using the sounding stick.
- (6) Inspect linkages, check all belts for proper tension. You should be able to depress the belt only about 7/16 inch per foot of span.
- (7) Secure shore-tie power at the boat AC power panel and at dockside; then disconnect the shore power cable.
- (8) Ensure all A/C electrical power switches are in the "Off" position.

### 2. Start-Up Instructions.

- a. Ensure throttles are in the neutral position, engine stops, and neutral throttles are pushed in.
- b. Energize starting and alarm breakers on the 24V DC power panel.
- c. Depress starter button and hold until engine starts. Repeat for other engine. If an engine does not start within 15 seconds, allow it to stand for 30 seconds, then repeat the procedure. If it still does not start after three tries, consult the maintenance manual. Possible causes

are:

- (1) Fuel not getting to engine.
  - (2) Water in the fuel.
  - (3) Insufficient air to engine.
  - (4) Dead or weak batteries.
  - (5) Short in an electrical system.
- d. When the engine starts, check for proper oil pressures and water temperatures. Check raw water system to ensure adequate circulation. Inspect the engines for external water or oil leaks, or other abnormal conditions. Hot-starts keep the engine temperature around 120o F. When practical, get under way as soon as the check-off procedures are completed. Diesel engines warm up best under a medium load. Long periods of idling are not good for a cold engine. Idling cold engines for checkout should be minimized and idling the engines for any period of time longer than 10 minutes should be avoided. Table 5-2 provides normal gauges readings.
- ### 3. Getting Under Way.
- a. The 44 foot MLB will respond very slowly when placed in gear at low RPM's. This is ideal for pulling away from, or into a mooring. Experience will show you just which forward/reverse power application to use when maneuvering within a confined area. Water depth, current flow, and other variables affect the boats reaction.
  - b. Once under way, observe how all systems are reacting and interacting.
    - (1) Are the gauges steady and within the normal range? A falling or steady low oil pressure reading indicates a probable oil leak. A rapidly rising temperature gauge, passing the normal limits, may well mean a burned-out impeller or

Gauge	Idle	Cruising
Tachometer	750 rpm	2,380 rpm
Lube Oil	10-20 psi	40-60 psi
Marine Gear Oil		120-160 psi
Water Temperature		160-185 degrees F

Table 5-2 Performance Data

**44 FOOT MOTOR LIFEBOAT  
OUTFIT LIST AND STOWAGE PLAN**

FOREPEAK	QTY	LOCATION
ANCHOR LINE, 3" DBN	300	ON REEL AMIDSHIPS
SHACKLE, WIRE-MOUSED (1/2")	2 EA	ATTACHED TO ANCHOR CHAIN
ANCHOR LEADER CHAIN (1/2" BB)	9 FT	ATTACHED TO ANCHOR LINE
SWIVEL (1/2")	1 EA	ATTACHED TO ANCHOR LINE
THIMBLE	1 EA	ATTACHED TO ANCHOR LINE
<b>FORWARD COMPARTMENT</b>	<b>QTY</b>	<b>LOCATION</b>
BATTLE LANTERN	1 EA	BULKHEAD 1, PORT SIDE
FIRE EXTINGUISHER, 5# PKP	1 EA	BULKHEAD 5, PORT SIDE
DOGGING WRENCH	1 EA	BULKHEAD 1, PORT OF DOOR
PERSONAL FLOTATION DEVICES, CG-APPROVED TYPE I I.A.W. COMDTINST M16114.10 (Series)	7 EA 3 EA	(adult) UNDER STARBOARD SEAT (child) UNDER STARBOARD SEAT
WOOL BLANKETS	4 EA	UNDER PORT SEAT
COVERED PILLOWS	2 EA	UNDER PORT SEAT
<b>MESS DECK COMPARTMENT</b>	<b>QTY</b>	<b>LOCATION</b>
BATTLE LANTERN	1 EA	BULKHEAD 5, PORT SIDE
FIRE EXTINGUISHER, 5# PKP	1 EA	BULKHEAD 5, PORT SIDE
FIRE EXTINGUISHER, 5# CO2	1 EA	UNDER LADDER
FIXED HALON EXTINGUISHING SYSTEM	1 EA	UNDER LADDER
CLOCK	1 EA	PORT SIDE ABOVE LADDER
FUEL SOUNDING ROD	1 EA	INBOARD ON LADDER
BINOCULARS (7x50)	2 EA	CURBY HOLE, PORT SIDE

<b>MESS DECK COMPARTMENT (cont'd)</b>	<b>QTY</b>	<b>LOCATION</b>
TOWLINE REEL HAND CRANK	1 EA	CUBBY HOLE, PORTSIDE
RUNNING AND INTERIOR LIGHT BULBS AND FUSES	AS REQ	CUBBY HOLE, PORT SIDE
T-HANDLE WRENCH	1 EA	CUBBY HOLE, PORT SIDE
MOUTH HORN, REED, FOG	1 EA	CUBBY HOLE, PORT SIDE
EAR PROTECTORS	2 PR	INBOARD LADDER HANDRAIL
BOAT'S BELL (WHEN NOT ON MAST)	1 EA	CUBBY HOLE, PORT SIDE
FLASHLIGHT W/RED LENS	1 EA	CUBBY HOLE, PORT SIDE
CHART BOX(*)	1 EA	BULKHEAD ABOVE PORT SEAT

**\*REQUIRED CONTENTS**

- |                          |                               |
|--------------------------|-------------------------------|
| (1) CHARTS (AS RQRD)     | (5) WEEMS/PARALLEL RULER      |
| (2) DIVIDERS (2)         | (6) COMPASS DEVIATION TABLE   |
| (3) PENCILS (AS RQRD)    | (7) SEARCH PATTERN SLIDE RULE |
| (4) RPM/SPEED/FUEL CURVE | (8) TIDE BOOK                 |
| (5) NAUTICAL SLIDE RULE  |                               |

DAMAGE CONTROL KIT(\*)                      1 KT                      UNDER PORT SEAT

**\*SUGGESTED KIT CONTENTS AS PER 44' MLB BOSS MANUAL  
(LESS EDUCTOR)**

HOT CUPS AND RECEPTACLES	2 EA	STBD SIDE IN RECEPTACLES
BOAT PYROTECHNICS I.A.W. COMDTINST M8000.2 (Series)	1 KT	UNDER SINK
EMERGENCY RATIONS	AS REQ	UNDER SINK
EMERGENCY SPARE PARTS(*)	1 KT	UNDER SINK

**CONTENTS**

- |                                    |                              |
|------------------------------------|------------------------------|
| (1) ELECTRICAL/DUCT TAPE (1 RL EA) | (4) RAW WATER PUMP GASKET(2) |
| (2) PRIMARY FUEL FILTER (2)        | (5) RAW WATER IMPELLER       |
| (3) FRESH WATER PUMP BELT SET      | (6) ALTERNATOR BELT          |

<b>MESS DECK COMPARTMENT (cont'd)</b>	<b>QTY</b>	<b>LOCATION</b>
ENGINEER'S TOOL KIT Approximate size 18"x8"x8"	1 KT	UNDER SINK
FIRST AID KIT, 10 MAN	1 KT	ABOVE SINK
PAPER TOWEL DISPENSER	1 EA	ABOVE SINK, ON HEAD BULKHEAD
PORTABLE MARINE TOILET	1 EA	IN HEAD SPACE
HEAVY WEATHER SAFETY BELT	5 EA	HEAD ON BRACKET
<b>MAIN DECK</b>	<b>QTY</b>	<b>LOCATION</b>
DANFORTH ANCHOR (60#)	1 EA	IN BRACKETS ON CABIN TOP
LIFE RING, 30" DIA, W/75', 1/4" POLYPROP LINE	2 EA	PORT AND STARBOARD SIDE, ON SAFETY LINE
FLOAT LIGHT, W/ATTACHMENT LINE	2 EA	PORT AND STARBOARD SIDE, ON SAFETY LINE
BOAT HOOKS, W/WOODEN HANDLES	2 EA	PORT AND STARBOARD SIDE, ON SAFETY LINE
TOWLINE, 3"DBN, 600'	1 RL	ON TOWING REEL
PUMP, FLOATABLE (P-1)	1 KT	STARBOARD SIDE, IN BRACKETS
BOAT'S BELL	1 EA	ON MAST
HEAVING LINES	2 EA	COXSWAIN'S SCREEN
FLOTABLE HEAVING LINE	1 EA	COXSWAIN'S SCREEN
DIVER'S KNIFE	1 EA	COXSWAIN'S SCREEN

<b>AFT SURVIVOR'S COMPARTMENT</b>	<b>QTY</b>	<b>LOCATION</b>
FIRE EXTINGUISHER, 5# PKP	1 EA	BULKHEAD 17, PORT SIDE
DROGUE W/200' 2"DBN	1 EA	UNDER PORT SEAT
ALONGSIDE LINES (FOUR MIN.)	AS REQ	UNDER PORT SEAT
FENDERS	4 EA	STARBOARD OVERHEAD RAIL
GRAPNEL HOOK, 4#	1 EA	UNDER PORT SEAT
SKIFF HOOK (W/ PENDANT)	1 EA	UNDER PORT SEAT
CHAFING GEAR	AS REQ	UNDER PORT SEAT
BRIDLE	1 EA	UNDER PORT SEAT
ASSORTED SHACKLES	AS REQ	UNDER PORT SEAT
SWIMMER'S HARNESS, (W/ MINIMUM OF 100' OF 5/16" LINE)	1 EA	ON STOKES LITTER
EMERGENCY MEDICAL TECHNICIAN'S KIT	1 EA	STARBOARD SIDE
HAND RESUSCITATOR	1 EA	STARBOARD SIDE
EMERGENCY OXYGEN KIT	1 EA	STARBOARD SIDE
STOKES LITTER I.A.W. COMDTINST M10470.10 (Series)	1 EA	STBD SIDE ABOVE SEAT
EDUCTOR	1 EA	UNDER STARBOARD SEAT
IN LINE PROPORTIONER	1 EA	UNDER STARBOARD SEAT
SPANNER WRENCH, ADJUSTABLE	2 EA	UNDER STARBOARD SEAT
VARI NOZZLE	1 EA	UNDER STARBOARD SEAT
DISCHARGE HOSE (2-1/2"x25')	1 EA	UNDER STARBOARD SEAT
FIRE HOSE (1-1/2"x50')	2 EA	UNDER STARBOARD SEAT
FIRE HOSE (1-1/2"x25')	1 EA	UNDER STARBOARD SEAT

**AFT SURVIVOR'S  
COMPARTMENT**  
(cont'd)

	<b>QTY</b>	<b>LOCATION</b>
<b>FIRE AXE</b>	1 EA	ON FACE OF STBD SEAT
<b>BATTLE LANTERN</b>	1 EA	BULKHEAD 21
<b>DOGGING WRENCH</b>	1 EA	STBD OF DOOR, BLKD 21
<b>EMERGENCY TILLER</b>	1 EA	BULKHEAD 21

**ENGINE ROOM**

	<b>QTY</b>	<b>LOCATION</b>
<b>BATTLE LANTERN</b>	1 EA	ON STBD VENT
<b>LUBE OIL (9250)</b>	5 GAL	STBD SIDE IN BRACKETS

**44 FOOT MOTOR LIFEBOAT  
BOAT ALTERATIONS (BOATALTS)**

<b>BOATALT NUMBER</b>	<b>SUBJECT</b>	<b>DATE</b>
1	MODIFY PROPELLOR SHAFT STRUT LESS 44312	5/63
2	REINFORCE WINDSHIELD	7/63
3	INSTALL ELECTRO-CHEMICAL CHLORINATOR	7/63
4	RELOCATE ELECTRONIC MG INVERTOR SETS AND STARBOARD HYDRAULIC STARTING ACCUMULATORS	11/63
5	ADD TOWING SCREEN	2/64
	AMEND (1) TOWING PROTECTION MATERIALS	6/64
6	MODIFY STARBOARD HYDRAULIC STEERING BOOSTER PUMP	3/64
7	MODIFY CHAR-LYNN ORBITROL STEERING TO SPEED REACTION TIME	5/64
8	CHANGE SCREEN MATERIAL OF TOWING SCREEN	6/64
9	REPLACE CONSOLE ELECTRICAL ENGINE GAUGES WITH MECHANICAL GAGES AND ALARM SYSTEMS	7/64
10	CLARIFY IDENTIFICATION OF ENGINE GAUGES AND SWITCHES ON APPLICABLE PLANS	4/65
11	REPLACE BOLTS ON ENGINE HATCH	1/67
12	INSTALL SAFETY COVER FOR HYDRAULIC START MANUAL CONTROL VALVE	7/67

<b>BOATALT NUMBER</b>	<b>SUBJECT</b>	<b>DATE</b>
13	REPLACE LEECE-NEVILLE REGULATOR AND ALTERNATOR WITH MOTOROLA 2200W/70 AMP UNITS	9/67
	AMEND(1) PROVIDES DETAILS OF WIRING	4/68
	AMEND(2) AUTHORIZES ADDITION OF VOLTAGE PROTECTOR	6/69
	AMEND(3) PROVIDES FURTHER INSTALLATION DETAILS AND WIRING CHANGES	5/72
14	REPLACE DISCONTINUED GEAR ASSEMBLY WITH LATER MODEL	9/67
15	REPLACE CUTLASS BEARING 11/67 HOUSING AND STRENGTHEN STRINGER SHAFT STRUT	
16	ADD 115 VOLT AC METER FOR ELECTRONICS	3/68
17	REPLACE CLUTCH AND GEAR ASSEMBLY WITH HEAVY DUTY TYPE	4/68
18	REPLACE ALL HOSE SYSTEMS	5/68
	AMEND(1) PROVIDES INSTRUCTION MANUAL	8/68
19	MOVE ENGINE ROOM 115 VOLT AC RECEPTACLE TO PORT SIDE	2/69
20	REPLACE HYDRAULIC STARTING SYSTEM WITH ELECTRIC STARTERS AND MAKES 44-MLB(S)-13 MANDATORY IF THIS DISCRETION IS EXERCISED	8/68
21	REPLACE MONEL PROPELLER SHAFTS WITH K-MONEL TYPE	10/68
22	ADD SAFETY RAIL, PORTLIGHT AND MORE ENGINE ROOM LIGHTING	4/69
23	ALL INSTALL NYLON DODGER	5/69(D)

<b>BOATALT NUMBER</b>	<b>SUBJECT</b>	<b>DATE</b>
24	REPLACE MANUAL STEERING WITH CHAR-LYNN ORBITROL HYDRAULIC STEERING SYSTEM	5/69
25	DISCRETIONARY ADDITION OF BLUE LAW ENFORCEMENT LIGHT AND SIREN AND MANDATORY MODIFICATION TO TOWING AND NAVIGATION LIGHTS	8/69
	AMEND(1)      ADDS THIRD TOWING LIGHT AND RELOCATES BLUE LIGHT	1/74
26	RELOCATE ELECTRONIC EQUIPMENT FROM BULKHEAD 5	9/69
27	INSTALL ANCHOR BED ASSEMBLY FOR 60# ANCHOR AND OPTIONAL INSTALLATION FOR 28# ANCHOR	10/69
	AMEND(1)      CANCELS OPTION FOR 28# ANCHOR	10/83
28	INSTALL AN/URC-45 VHF-FM 12/69 TRANSCEIVERS AND REMOVE MODEL AN/PRC-59	
29	STANDARDIZE MOUNTING BRACKET FOR LINE-THROWING GUN	1/70
30	INSTALL LADDER HANDRAILS AND STANDARDIZE ENGINE CONTROL CABLES	3/70
31	FABRICATE AND INSTALL BODY ROLLERS	4/70
32	INSTALL SECURING BELTS ON TRANSOM SEAT LOCKERS	4/71
33	REPLACE WATER CLOSET WITH PORTA-POTTI	4/71
34	STANDARDIZE RADAR, ADF, VHF-FM, INVERTOR AND SSB ELECTRONICS	9/71
	AMEND(1)      INSTALL DIRECTIONAL RADAR COUPLER	11/72

BOATALT NUMBER	SUBJECT	DATE
35	INSTALL ELECTRIC COMPARTMENT HEATERS IN FORWARD CABIN	2/72
36	INSTALL 1/2" HEAVY DUTY, 6/72 HEAT-TREATED WINDSHIELDS	
37	INSTALL SAFETY LINE PADEYES ON TOWING BITT BRACES	6/72
38	INCREASE LOAD CAPACITY OF 24 VOLT DC MAIN CIRCUIT BREAKER	6/72
39	RELOCATE FUEL OIL AND LUBE OIL FILTERS AND REROUTE CERTAIN FUEL LINES	11/72
40	ADD TWO 5# CO2 FIRE EXTINGUISHERS TO MESS COMPARTMENT	11/72
41	STANDARDIZE FIRE PUMP WITH PACIFIC MODEL 1595-5	1/73
42	STANDARDIZE BATTERY CHARGER WITH LA MARCHE TYPE	8/73
43	REPLACE ENGINE MUFFLERS TO REDUCE AIRBORNE ENGINE NOISE	10/75
	AMEND(1)	8/76
	AMEND(2) REPLACE 4-MUFFLER SYSTEM WITH 2-MUFFLER SYSTEM AFTER COMPLE- TION OF 44MLB(S)46	9/77
44	STANDARDIZE RADAR, SSB TRANSCEIVER VHF-FM TRANSCEIVER AND DEPTH INDICATOR	11/75
	AMEND(1) ALLOWS OPTIONAL REMOVAL OF AN/SRC-42 TRANSCEIVER	10/77
	AMEND(2) CANCELS AMEND(1) AND MAKES THE AN/SRC-42 MANDATORY EXCEPT AS NOTED	4/82

<b>BOATALT NUMBER</b>	<b>SUBJECT</b>	<b>DATE</b>
45	ADD CHART TABLE WITH STORAGE	1/76
	AMEND(1) REMOVES DISCRETIONARY PROVISION	12/83
46	STANDARDIZE MAIN ENGINES WITH DETROIT DIESELS 6V-53	8/76
47	STANDARDIZE OF MAST, TOWING SCREEN AND NYLON DODGER	3/76
	AMEND(1) CLARIFIES INSTALLATION OF STERN TOW LIGHTS ON MAST	12/77
48	INSTALL NEUTRAL START SWITCH	1/77
	AMEND(1) MAKES INSTALLATION OPTIONAL	3/78
49	INSTALL DORNE-MARGOLIN VHF-FM HOMER	3/77
50	RELOCATE ELECTRICAL CABLES FROM WELL DECK	9/77
51	REPLACE GOOSE-NECK ROPE PIPE WITH STRAIGHT PIPE	9/77
52	STANDARDIZE FUEL SYSTEM	12/77
53	INSTALL SPRAY RAIL	12/77
54	INSTALL SPIN-ON FILTER FOR THE HYDRAULIC STEERING SYSTEM	12/77
	AMEND(1) SPIN-ON FILTER PROCUREMENT	10/91
55	INSTALL MAST HOIST TACKLE	11/77
56	RELOCATE BLUE LIGHT FROM MAST TO CABIN TOP	1/78
57	INSTALL LARGER RUDDERS AND ADD 2000 POUNDS OF LEAD FOR INTERNAL BALLAST	1/78
58	INSTALL AN/SRD-21 VHF-FM HOMER	1/78

<b>BOATALT NUMBER</b>	<b>SUBJECT</b>	<b>DATE</b>
59	STANDARDIZE ENGINE ROOM VENTS AND INSTALL EXHAUST BLOWER	1/78
60	MODIFY AND STRENGTHEN HELMSMAN CHAIR	4/78
61	REPLACE DEPTH FINDER WITH NEW VERSION AN/SQN-18X	4/78
62	ESTABLISH STOWAGE LOCATION AND ADD FOUNDATION BRACKETS FOR DEWATERING PUMP KIT	5/78
63	ADD VENTILATION WARNING PLATE FOR AFT SURVIVORS COMPARTMENT	5/78
64	ADD ACCESS PLATE FOR BILGE INSPECTION IN AFTER CABIN	2/79
65	INSTALL CEAN GLH-100 LOUDHAILER AND RELOCATE AN/SQN-18X DEPTH FINDER	8/80
	AMEND(1) REMOVES DISCRETIONARY PROVISIONS	11/81
66	REPLACE AN/SPS-57 WITH AN/SPS-66A AND INSTALL RAYNAV 6000 LORAN C	11/81
67	INSTALL HALON 1301 FIRE EXTINGUISHING SYSTEM FOR ENGINE ROOM AND STANDARDIZE LOCATION OF PORTABLE EXTINGUISHERS	5/82
	AMEND(1) IDENTIFIES PART CHANGES	5/83
68	GENERAL RELOCATION OF ELECTRONICS EQUIPMENT (TRITON 55/75 AND ANTENNA, CEAN GLH-100, AN/SPS-66A ANTENNA, AND AN/SRD-21 ANTENNA)	6/82
69	INSTRUCTIONS AND PARTS LISTS FOR REDUCTION GEAR SELECTOR VALVE MODIFICATION	8/83

<b>BOATALT NUMBER</b>	<b>SUBJECT</b>	<b>DATE</b>
70	STANDARDIZE ORBITROL STEERING SYSTEM	8/83
71	REMOVE DECK FIRESTATION HOSE RACK, FIRE HOSE, AND ALL PURPOSE NOZZLE	10/83
72	REMOVE DRY CHEMICAL EXTINGUISHER AND BRACKET FROM COXSWAIN FLAT	11/83
73	REMOVE NAVIGATOR'S SEAT	11/83
74	RELOCATE FIRE AX TO SURVIVOR'S SPACE	12/83
75	REMOVE AFFF AND STORE ASHORE	12/83
76	REMOVE DECK PLATES FROM AFTER STEERING	12/83
77	REMOVE MESSDECK TABLE	12/83
78	REMOVE LIFTING PADEYES	1/84
79	CREATE CHAIN LOCKER VOID	1/84
80	STANDARDIZE AND UPGRADE DISTRIBUTION PANELS, ENGINE STARTING AND ALARM SYSTEMS, AND JACKET WATER HEATERS, AND NAVIGATION ROTARY SWITCH	2/84
	AMEND(1) IDENTIFIES SPECIFIC WIRING CHANGES	7/84
	AMEND(2) REVISES DRAWING FOR ALTERATION	8/84
81	STANDARDIZE LIFE, HAND, AND TOW RAILS AND INSTALL HANDRAIL IN TURTLE	3/84
	AMEND(1) REVISES DRAWING FOR ALTERATION	7/84

Encl. (2) to COMDTINST M16114.3B

BOATALT NUMBER	SUBJECT	DATE
82	REPLACE MOTOROLA REMOTE VOLTAGE REGULATOR	6/84
83	INSTALL CRP-750 LORAN RECEIVER	8/84
84	HELMSMAN GRATING EXTENSION	12/84
85	RELOCATE EMERGENCY TILLER ARM	3/85
86	STEP TREAD ASSEMBLY REPLACEMENT	4/85
87	MORSE CONTROL HEAD REPLACEMENT AMEND(1) AUTHORIZES RELOCATION OF CABLE TURNBUCKLES	12/85 11/87
88	120 VAC LIGHTING IN ENGINE COMPARTMENT	3/87
89	SHORE TIE CONNECTOR REPLACEMENT	12/87
90	MAST SUPPORT RELOCATION	8/88
91	SAFETY BELT PADEYE STANDARDIZATION	10/88
92	DEPTH SOUNDER REPLACEMENT	6/90
93	VISUAL I. D. MODIFICATION	5/91
94	SPIN-ON LUBE OIL FILTER INSTALLATION	10/91
	AMEND (1) LUBE OIL FILTER PROCUREMENT INFORMATION	10/91
95	REMOVAL OF SHOULDER LINE THROWING GUN	8/91

## 44' MLB MATERIEL CHECKLIST

BOAT 44                      STATION \_\_\_\_\_

DATE \_\_\_\_\_

**REFERENCES**    - 44' MLB TYPE MANUAL, COMDTINST M16114.3B  
                  - NAVAL ENGINEERING MANUAL, COMDTINST M9000.6A  
                  - COLOR AND COATING MANUAL, COMDTINST M10360.3  
                  - RESCUE AND SURVIVAL SYSTEMS MANUAL, COMDTINST M10470.10B  
                  - PMS MANUAL TP 2062

**STANDARDS**    - The following standards apply to the 44' MLB's hull, superstructure, machinery, equipment, outfit, and all installed systems and accessories:

- Operates smoothly and correctly.
- Free of grease, oil, rust, and corrosion.
- Protective coatings applied correctly and neatly.
- Free of rips, tears, abrasions, and cracks.
- Outfit and equipment correctly installed/adjusted and stowed to specifications and design.
- Labels/test dates/placards properly indicated.
- Free of non-standard/unapproved installations or equipment.

**GUIDELINES** - This check list requires a minimum of two personnel, preferably one Boatswain's Mate and one Machinery Technician, both of whom possess extensive 44' MLB experience and a strong working knowledge of the contents of all references listed above. This Materiel checklist is only applicable to boats in a "Bravo" or "Ready for Sea" condition. Each item on the checklist should be judged against the applicable standards(s) and reference(s). Additional discrepancies, uninstalled Boats, etc. should be listed.

**CHECKED BY:** \_\_\_\_\_ (BM) \_\_\_\_\_ (MK)

**1. ANCHOR LOCKER** ..... **STDINONSTD** **REMARKS**

1. Watertight Door .....			
2. Anchor Line Reel Brackets.....			
2. Hawse Pipe Plug .....			
4. Stuffing Tubes (If installed) .....			
5. Line, Anchor 3"DBN-300 ft.....			
6. Chain, 1/2 in BBB 9ft.....			
7. Shackle, Screw Pin 1/2in-2 ea .....			
8. Swivel, 1/2 in-1 ea .....			
9. Thimble, 3/4 in-1 ea .....			
10. Bilge .....			
11. Bulkheads .....			
12. Overhead .....			

Remarks \_\_\_\_\_

**2. FORWARD COMPARTMENT**

1. Deck Hatch .....			
2. Ensolite .....			
3. Wiring .....			
4. Lighting .....			
5. Stuffing Tubes .....			
6. Overhead .....			
7. Bulkhead .....			
8. Radar power supply .....			
9. Radar roll over switch .....			
10. Seat Cushions.....			
11. Seat Belts .....			
12. Inport Compartment Heater .....			
13. Underway Compartment Heater .....			
14. Hot water piping .....			
15. Life Jackets, CG Approved Type 1 .....			
7 Adult, 3 Child .....			
16. Blankets -4 ea.....			
17. Pillow - 2 ea .....			
18. Seat compartments .....			
19. Battle Lantern, 1 ea .....			
20. Fire Extinguisher, 5# PKP 1 ea .....			
21. Dogging Wrench 1 ea .....			
22. Deck matting .....			
23. Deck. ....			

Remarks \_\_\_\_\_

**3. FORWARD COMPARTMENT VOID**

1. Deck Scuttle .....			
2. Bilges .....			
3. Overhead .....			
4. Bulkhead .....			
5. Void Pipe Plug .....			

Remarks \_\_\_\_\_

**4. MESS DECK**

**STDINONSTD REMARKS**

1. Watertight Door To Forward Comp .....			
2. Battle Lantern .....			
3. Overhead .....			
4. Bulkheads .....			
5. Ensolite .....			
6. Wiring .....			
7. Lighting .....			
8. Stuffing Tubes .....			
9. DC Electrical Panel .....			
10. Amp meter .....			
11. Volt meter .....			
12. Hot cup # 1 .....			
13. Hot cup # 2 .....			
14. Head door .....			
15. Safety belts, 5 ea, on bracket.....			
16. Engine operating instructions .....			
17. DC Converters, 3 ea .....			
18. Marine Porta potti .....			
19. Loudhailer .....			
20. ADF SRD-21 .....			
21. Engineers tool kit .....			
22. First aid kit, 10 man .....			
23. Paper towel dispenser .....			
24. Fresh water tank .....			
25. Sink .....			
26. Cabinet .....			
27. Cabinet drawer .....			
28. Pyrotechnics			
a. Signal kit, MK79 2 ea .....			
b. Signal kit, MK13 12 ea .....			
c. Signal kit, MK127AI, as required .....			
29. Engineering spare parts: .....			
a. Electrical/Duct tape 1 roll ea .....			
b. Primary fuel filter 2ea .....			
c. Raw water pump cover plate gasket 2 ea .....			
d. Fresh water pump belt 1 set.....			
e. Raw water impellor .....			
f. Alternator belt 1 ea .....			

Remarks \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**MESS DECK (cont)**

**STDINONSTD REMARKS**

30. Chow as required .....				
31. Flashlight 1 ea.....				
32. Void under cabinet .....				
33. Sink overboard discharge .....				
34. Watertight door to engine room .....				
35. Watertight port hole on door .....				
36. Hearing protection placard for engine room .....				
37. Emergency fuel stops and labels .....				
38. Ladder and handrails .....				
39. Fuel tank sounding tube .....				
40. Fuel sounding stick .....				
41. Fire ext, 5lb PKP .....				
42. Fire ext, 5lb CO2 (behind ladder).....				
43. Fixed halon fire ext system .....				
44. Halon instruction placard .....				
45. Fuel vent and fill pipes .....				
46. Clock .....				
47. Ear protectors 2 ea .....				
48. HF Transceiver AN/SRC-42V .....				
49. Cubby hole .....				
50. Cubby hole void .....				
51. Binoculars .....				
52. T-handle wrench/Escape.Hatch .....				
53. Fog horn, mouth operated .....				
54. Flashlight w/ red lense .....				
55. Ship's bell (*) .....				
56. Spare light bulbs and fuses .....				
57. Hand crank for tow reel .....				
58. Chart table .....				
59. Charts, as necessary .....				
60. Nautical slide rule .....				
61. Weems, parallel rule .....				
62. Dividers, 2 ea .....				
63. Pencils, as required .....				
64. Tide book .....				
65. Compass deviation table .....				
66. RPM/Speed/fuel curve .....				

Remarks \_\_\_\_\_

\* Bell stowage if not on mast

**MESS DECK (cont)**

**STD\NONSTD    REMARKS**

67. Search pattern slide rule .....				_____
68. Seat cushions .....				_____
69. Seat belts .....				_____
70. Inport compt heater .....				_____
71. Underway compt heater .....				_____
72. Hot water piping .....				_____
73. DC kit .....				_____
74. Seat compartment .....				_____
75. Deck matting .....				_____
76. Deck .....				_____
77. Fuel tank access hatch .....				_____

Remarks \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**5. MESSDECK VOID**

1. Bilge Scuttle .....				_____
2. Bilges .....				_____
3. Overhead .....				_____
4. Lead Weights/Brackets .....				_____
5. Bulkheads .....				_____
6. Fuel Tank .....				_____

Remarks \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**6. ENGINE ROOM**

**STD\NONSTD REMARKS**

**1. Port Side, Port Engine**

a. Stern Tube .....				_____
b. Coupling/shaft .....				_____
c. Recirculating system .....				_____
d. Sea chest and valves .....				_____
e. Piping and strainers .....				_____
f. Exhaust piping/lagging .....				_____
g. Exhaust muffler/silencer .....				_____
h. Reduction gear .....				_____
i. Air receiver .....				_____
j. Governor and linkage .....				_____
k. Air psi gauge & relief valve .....				_____
l. Morse controls .....				_____
m. Air Compressor .....				_____
n. Air vent ducts .....				_____
o. Exhaust blower w/ duct .....				_____
p. Raw water system .....				_____
q. Fresh water system .....				_____
r. Fuel system .....				_____
s. Fuel stripping hand pump .....				_____
t. Gauges w/markings .....				_____
u. Starter .....				_____
v. Alternator .....				_____
w. Heater piping & valves .....				_____
x. Hot start .....				_____
y. Wiring on Engine .....				_____
z. Block .....				_____
aa. Head .....				_____
bb. Exhaust Manifold .....				_____
cc. Blower/flapper valve .....				_____
dd. Lube oil system .....				_____
ee. Engine mounts & frame .....				_____
ff. Fire main piping & strainer .....				_____
gg. Fire pump and foundation .....				_____
hh. Power take-off unit .....				_____
jj. Wiring and brackets, fwd blkd/Port side .....				_____
kk. Battery Charger .....				_____
ll. Electrical outlet 115 VAC .....				_____

Remarks \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**ENGINE ROOM cont** ..... **STDINONSTD** **REMARKS**

**2. Starboard side and starboard engine**

a. Sluice valve .....	___	___	_____
b. Sluice valve placard .....	___	___	_____
c. Stern tube .....	___	___	_____
d. Coupling/shaft .....	___	___	_____
e. Recirculating system .....	___	___	_____
f. Sea chest and valves .....	___	___	_____
g. Piping and strainers .....	___	___	_____
h. Exhaust piping/lagging .....	___	___	_____
i. Muffler/silencer .....	___	___	_____
j. Lube oil 9250 (5 gal) w/storage .....	___	___	_____
k. Reduction gear .....	___	___	_____
l. Morse controls .....	___	___	_____
m. Governor and linkage .....	___	___	_____
n. Hydraulic oil tank & piping .....	___	___	_____
o. Steering pump .....	___	___	_____
p. Steering hoses .....	___	___	_____
q. Air vent ducts .....	___	___	_____
r. Raw water system .....	___	___	_____
s. Fresh water system .....	___	___	_____
t. Fuel system .....	___	___	_____
u. Gauges w/markings .....	___	___	_____
v. Starter .....	___	___	_____
w. Alternator .....	___	___	_____
x. Wiring on Engine .....	___	___	_____
y. Block .....	___	___	_____
z. Head .....	___	___	_____
aa. Exhaust manifold .....	___	___	_____
bb. Blower/Flapper valve .....	___	___	_____
cc. Lube oil system .....	___	___	_____
dd. Engine mounts & frames .....	___	___	_____
ee. Hot start .....	___	___	_____
ff. Fire main piping & gauge .....	___	___	_____
gg. Eductor and piping .....	___	___	_____
hh. Eductor warning placard .....	___	___	_____
ii. Oil discharge placard .....	___	___	_____
jj. Battle lantern .....	___	___	_____
kk. Hydraulic relief/flow control valve .....	___	___	_____
ll. Hydraulic Gauge .....	___	___	_____
mm. AC elect panel w/ voltage meter .....	___	___	_____
nn. Batteries w/ hold-downs .....	___	___	_____
oo. Battery trays .....	___	___	_____
pp. Alarm switches .....	___	___	_____

Remarks \_\_\_\_\_

ENGINE ROOM cont

STDINONSTD REMARKS

c. Engineroom General

1. Bilges .....			
2. Bulkheads .....			
3. Overhead .....			
4. Fire alarm temperature sensor .....			
5. Overhead wiring and brackets .....			
6. Halon piping/systems .....			
7. Lighting (AC) .....			
8. Lighting (DC) .....			
9. Deck plates .....			
10. Step .....			
Remarks	_____		

d. Dock trials/Port Engine

1. Alt/Oil/Temp Warning lights .....			
2. Alarms w/bell .....			
3. Oil pressure .....			
4. Water temperature .....			
5. Reduction Drive Pressure .....			
6. Engine Idle 750 RPM .....			

e. Dock trials/Starboard Engine

1. Alt/Oil/Temp Warning lights .....			
2. Alarms w/bell .....			
3. Oil pressure .....			
4. Water temperature .....			
5. Reduction Drive Pressure .....			
6. Engine Idle 750 RPM .....			
7. Hydraulic relief 500 psi .....			

f. Underway trials | Port Engine

1. Oil pressure .....			
2. Water temperature .....			
3. Reduction drive pressure .....			
4. Full power 2800 RPM .....			
Remarks	_____		

g. Underway trials | Starboard Engine

1. Oil pressure .....			
2. Water temperature .....			
3. Reduction Drive Pressure .....			
4. Full power 2800 RPM .....			
Remarks	_____		

7. COXSWAIN FLAT

STDINONSTD    REMARKS

1. Steering Wheel .....			
2. Helmsman's Chair .....			
3. Chair pedastal .....			
4. Windows .....			
5. Shore Tie Receptacle .....			
6. Engine Neutral Throttles .....			
7. Starters .....			
8. Engine Stop .....			
9. Morse Controls .....			
10. RPM Gauges w/ markings .....			
11. Max continous RPM warning placard .....			
12. Rotary switch .....			
13. Loudhailer remote switch .....			
14. HF microphone .....			
15. Instrument Lights .....			
16. Fathometer .....			
17. Radar .....			
18. LORAN C .....			
19. Compass .....			
20. Windshield Wipers .....			
21. Wiper Controls .....			
22. Air Supply Piping .....			
23. Air Horn Lever .....			
24. VHF-FM Radio .....			
25. VHF-FM Homer .....			
26. Overhead .....			
27. Speakers 2ea .....			
28. Wiring .....			
29. Stuffing Tubes .....			
30. Bulkheads .....			
31. Radar pedastal .....			
32. Gussets/Port & Starboard .....			
33. Snap Back Screen .....			
34. Diver's knife .....			
35. Safety belt padeyes .....			
36. Heaving line 2 ea .....			
37. Flotable heaving line .....			
38. Vents/Screens .....			
39. Dodgers .....			
40. Coxswain Flat Grating .....			
41. Deck .....			

Remarks \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

7. COXSWAIN FLAT cont

STD | IN | STD | REMARKS

- 42. Grating Supports & Kickplates ..... |  |  | \_\_\_\_\_
- 43. Water Tight Door ..... |  |  | \_\_\_\_\_
- 44. Halon reset instruction placard ..... |  |  | \_\_\_\_\_
- 45. Mast/Wiring/nav Lights ..... |  |  | \_\_\_\_\_
- 46. Bell Bracket on mast ..... |  |  | \_\_\_\_\_
- 47. VHF DF Antennas ..... |  |  | \_\_\_\_\_
- 48. Flag, US (size 11) ..... |  |  | \_\_\_\_\_
- 49. Flag, USCG Organizational (size 5) ..... |  |  | \_\_\_\_\_
- 50. Handrails/Lifelines/Stanchions ..... |  |  | \_\_\_\_\_
- 51. Ring Buoy 30 in Diameter with  
polypropylene line - 2ea ..... |  |  | \_\_\_\_\_
- 52. Float Light - 2 ea ..... |  |  | \_\_\_\_\_
- 53. Boat Hook, 8 ft, Wood - 2 ea ..... |  |  | \_\_\_\_\_
- 54. Tow Line Reel and bracket ..... |  |  | \_\_\_\_\_
- 55. Towing Bitt ..... |  |  | \_\_\_\_\_
- 56. Line, 3"dia DBN 600ft ..... |  |  | \_\_\_\_\_
- 57. Drop pump support bracket ..... |  |  | \_\_\_\_\_
- 58. Pump, Floatable, CG P-1 ..... |  |  | \_\_\_\_\_

Remarks \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

8. WELLDECK

STD | IN | STD | REMARKS

- 1. Steps ..... |  |  | \_\_\_\_\_
- 2. Bulkhead ..... |  |  | \_\_\_\_\_
- 3. Deck ..... |  |  | \_\_\_\_\_
- 4. Sea chest Vent ..... |  |  | \_\_\_\_\_
- 5. Scuppers ..... |  |  | \_\_\_\_\_
- 6. Gunwale Lip ..... |  |  | \_\_\_\_\_
- 7. Well deck lifelines ..... |  |  | \_\_\_\_\_
- 8. Water tight door to after compt ..... |  |  | \_\_\_\_\_

Remarks \_\_\_\_\_  
 \_\_\_\_\_

**9. WELLDECK VOID**

**STD\NONSTD REMARKS**

1. Bilges .....				_____
2. Lead Weights .....				_____
3. Hydraulic Lines .....				_____
4. Exhaust Tube .....				_____
5. Wiring .....				_____
6. Stuffing Tubes .....				_____
7. Heater Lines .....				_____
8. Scuttle .....				_____
9. Overhead .....				_____
10. Bulkheads .....				_____

Remarks \_\_\_\_\_  
 \_\_\_\_\_

**10. AFTER COMPARTMENT**

**STD\NONSTD REMARKS**

1. Ventilation warning placard .....				_____
2. Ensolite .....				_____
3. Wiring .....				_____
4. Lighting .....				_____
5. Overhead Handrails .....				_____
6. Stokes litter .....				_____
7. Swimmer's Harness w/100'line - 1ea .....				_____
8. Fenders 4 ea, .....				_____
9. Towing flood light and wiring .....				_____
10. Battle lantern .....				_____
11. Emergency tiller .....				_____
12. Dogging wrench .....				_____
13. Fire ext, PKP 5 lb .....				_____
14. EMT kit .....				_____
15. Oxygen kit .....				_____
16. Hand operated resuscitator .....				_____
17. Fire axe .....				_____
18. Seat Cushions .....				_____
19. Seatbelts .....				_____
20. Sluice Valve .....				_____
21. Sluice Valve Placard .....				_____
22. Deck .....				_____
23. Deck matting .....				_____
24. Bilge access plate .....				_____
25. Bilges .....				_____

Remarks \_\_\_\_\_  
 \_\_\_\_\_

UNDER PORT SEAT

STD IN ON STD    REMARKS

- |   |  |  |  |       |
|---|--|--|--|-------|
| 1. Drogue, w/200' of 2"DBN - 1 ea ..... |  |  |  | _____ |
| 2. Alongside Lines 4 minimum .....      |  |  |  | _____ |
| 3. Bridle, 1 ea .....                   |  |  |  | _____ |
| 4. Grapnell Hook 4 lb .....             |  |  |  | _____ |
| 5. Skiff Hook - 1ea .....               |  |  |  | _____ |
| 6. Chafing Gear, as required .....      |  |  |  | _____ |
| 7. Assorted shackles .....              |  |  |  | _____ |
| 8. Underway compartment heater .....    |  |  |  | _____ |
| 9. Hot water lines .....                |  |  |  | _____ |
| 10. Inport compartment heater .....     |  |  |  | _____ |
| 11. Wiring .....                        |  |  |  | _____ |
| 12. Seat Compartment .....              |  |  |  | _____ |

Remarks \_\_\_\_\_  
 \_\_\_\_\_

UNDER STARBOARD SEAT

STD IN ON STD    REMARKS

- |  |  |  |  |       |
|--|--|--|--|-------|
| 1. VARI Nozzle - 1ea .....                     |  |  |  | _____ |
| 2. Eductor .....                               |  |  |  | _____ |
| 3. In-line Proportioner - 1ea .....            |  |  |  | _____ |
| 4. Spanner wrench 2 ea .....                   |  |  |  | _____ |
| 5. Eductor Discharge Hose 2 1/2" x 25'-1ea ... |  |  |  | _____ |
| 6. Fire Hose, 1 1/2"x50' - 2ea .....           |  |  |  | _____ |
| 7. Fire Hose, 1 1/2"x25' - 1ea .....           |  |  |  | _____ |
| 8. Hydraulic hoses .....                       |  |  |  | _____ |
| 9. Seat Compartment .....                      |  |  |  | _____ |

Remarks \_\_\_\_\_  
 \_\_\_\_\_

11. LAZARETTE

STD IN ON STD    REMARKS

- |   |  |  |  |       |
|---|--|--|--|-------|
| 1. Hatch .....                                |  |  |  | _____ |
| 2. Bulkhead .....                             |  |  |  | _____ |
| 3. Rudder posts, Packing nuts & Setscrews ... |  |  |  | _____ |
| 4. Hydraulic Steering Ram .....               |  |  |  | _____ |
| 5. Light .....                                |  |  |  | _____ |
| 6. Wiring .....                               |  |  |  | _____ |
| 7. Hydraulic Hoses .....                      |  |  |  | _____ |
| 8. Emergency Steering Disconnect .....        |  |  |  | _____ |
| 9. Overhead .....                             |  |  |  | _____ |
| 10. Bilge .....                               |  |  |  | _____ |

Remarks \_\_\_\_\_  
 \_\_\_\_\_

12. EXTERIOR. AFT

STD IN ON STD    REMARKS

- |   |  |  |  |       |
|---|--|--|--|-------|
| 1. Taff rail/With padeyes .....             |  |  |  | _____ |
| 2. Stern Nav Light .....                    |  |  |  | _____ |
| 3. Towing Floodlight .....                  |  |  |  | _____ |
| 4. Rudder Post Tiller Caps w/ lanyard ..... |  |  |  | _____ |
| 5. Knuckle Bitts .....                      |  |  |  | _____ |
| 6. Stern Deck .....                         |  |  |  | _____ |
| 7. Aft Compartment Deck .....               |  |  |  | _____ |
| 8. Aft Turtle Coaming .....                 |  |  |  | _____ |

Remarks \_\_\_\_\_  
 \_\_\_\_\_

13. EXTERIOR. FORWARD

STD IN ON STD    REMARKS

- |   |  |  |  |       |
|---|--|--|--|-------|
| 1. Fire Main System w/cap & lanyard ..... |  |  |  | _____ |
| 2. Windows .....                          |  |  |  | _____ |
| 3. Fuel Fill w/label .....                |  |  |  | _____ |
| 4. Fuel Vent w/label .....                |  |  |  | _____ |
| 5. Running Lights .....                   |  |  |  | _____ |
| 6. Blue Light .....                       |  |  |  | _____ |
| 7. Horn .....                             |  |  |  | _____ |
| 8. Spotlights .....                       |  |  |  | _____ |
| 9. Loud hailer speaker .....              |  |  |  | _____ |
| 10. FM Antenna .....                      |  |  |  | _____ |
| 11. Loran Antenna .....                   |  |  |  | _____ |
| 12. Radar Antenna .....                   |  |  |  | _____ |
| 13. Stuffing Tubes .....                  |  |  |  | _____ |
| 14. Wiring .....                          |  |  |  | _____ |
| 15. Bulkheads .....                       |  |  |  | _____ |
| 16. Windshield Wiper blade and arm .....  |  |  |  | _____ |
| 17. Handrails with padeyes .....          |  |  |  | _____ |
| 18. Anchor Chocks .....                   |  |  |  | _____ |
| 19. Anchor, 60 Danforth .....             |  |  |  | _____ |
| 20. Anchor Line Plug w/ lanyard .....     |  |  |  | _____ |
| 21. Deck .....                            |  |  |  | _____ |
| 22. Bullnose .....                        |  |  |  | _____ |
| 23. Crucifix .....                        |  |  |  | _____ |
| 24. Hatch/Pins and hinge .....            |  |  |  | _____ |
| 25. HF Antenna .....                      |  |  |  | _____ |
| 26. Forward Turtle Coaming .....          |  |  |  | _____ |

Remarks \_\_\_\_\_  
 \_\_\_\_\_

**15. HULL**

**STDINONSTD REMARKS**

1. Sides.....			
2. Water Line.....			
3. Rub Rails.....			
4. Spray Shield.....			
5. Insignia.....			
6. Numbering.....			
7. Safety Grab Lines.....			
8. Exhaust Ports.....			

Remarks \_\_\_\_\_  
\_\_\_\_\_

**ENGINE PRE-CHECKS**

1. \_\_\_ SECURE SHORE POWER AND CABLE
2. \_\_\_ ENERGIZE D.C. POWER AND LIGHTING
3. \_\_\_ INSPECT ENGINE ROOM BEFORE ENTERING
4. \_\_\_ CHECK BILGE FOR CLEANLINESS
5. \_\_\_ SECURE ALL A.C. SWITCHES
6. \_\_\_ CHECK ALARM/SAFETY SWITCHES
7. \_\_\_ OPEN SEA VALVES
8. \_\_\_ MACHINERY FLUID LEVELS
9. \_\_\_ LINKAGES/BELT DRIVE TENSION
10. \_\_\_ PTO DISENGAGED
11. \_\_\_ SOUND FUEL TANK (95% CAPACITY)

**ENGINE START-UP**

1. \_\_\_ ENERGIZE D.C. START/ALARM SWITCHES
2. \_\_\_ THROTTLES IN NEUTRAL
3. \_\_\_ ENGINE STOPS/NEUTRAL THROTTLES PUSHED IN
4. \_\_\_ START ENGINES INDIVIDUALLY
5. \_\_\_ ENGINE PARAMETERS
6. \_\_\_ COOLING PIPES/SEA SUCTION
7. \_\_\_ INSPECT MACHINERY SYSTEMS
8. \_\_\_ ENERGIZE SWITCHES FOR ELECTRICAL/ELECTRONICS
9. \_\_\_ ENERGIZE ELECTRONICS AT LOCATION

**ENGINE SECURING**

1. \_\_\_ SECURE ELECTRONICS AT LOCATION
2. \_\_\_ SECURE ELECTRICAL/ELECTRONICS D.C. SWITCHES
3. \_\_\_ PULL ENGINE STOPS/SECURE ENGINES
4. \_\_\_ SECURE START/ALARM D.C. SWITCHES
5. \_\_\_ SECURE SEA VALVES
6. \_\_\_ INSTALL SHORE POWER CABLE/ENERGIZE SWITCH DOCKSIDE
7. \_\_\_ ENERGIZE A.C. MAIN/HOTSTARTS/BATTERY CHARGER/LIGHTING
8. \_\_\_ INSPECT MACHINERY FLUID LEVELS
9. \_\_\_ REFUEL TO 95% CAPACITY!!!
10. \_\_\_ ENGINE ROOM CLEANLINESS
11. \_\_\_ SECURE MAIN BREAKER AT D.C. PANEL
12. \_\_\_ SET WATERTIGHT INTEGRITY

REMARKS: \_\_\_\_\_  
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**AUTHORIZED ELECTRONIC EQUIPMENT FOR THE 44 FT MLB AS OF JAN 92**

**RAYTHEON AN/SPS 66A RADAR**

**MOTOROLA MCX 1000 VHF/FM RADIO**

**RATHEON RAYNAV 750 LORAN-C**

**GENAVE GLH-100 LOUDHAILER**

**INTECH SRD-21 DIRECTION FINDER**

**AN/SRC-42(V) HF TRANSCEIVER**

**AUTOHELM ST-50 FATHOMETER**

**For installation and location of equipment , see the appropriate BOATALT and/or blueprint. Electronic technology and equipment is constandy improving and changing. Planned replacement of many of the MLB's electronics mske it infeasible to include operating instructions in this manual. The operator must refer to the appropriate manufacturers operating guide for specific procedures.**