

TECHNICAL MANUAL
OPERATOR, UNIT AND INTERMEDIATE
(DIRECT AND GENERAL SUPPORT)
MAINTENANCE MANUAL

LANDING CRAFT, MECHANIZED
(LCM-8)
(ROHR AND GUNDERSON MODELS)
OPERATOR
MAINTENANCE
(1905-01-284-2647 AND 1905-01-284-2648)

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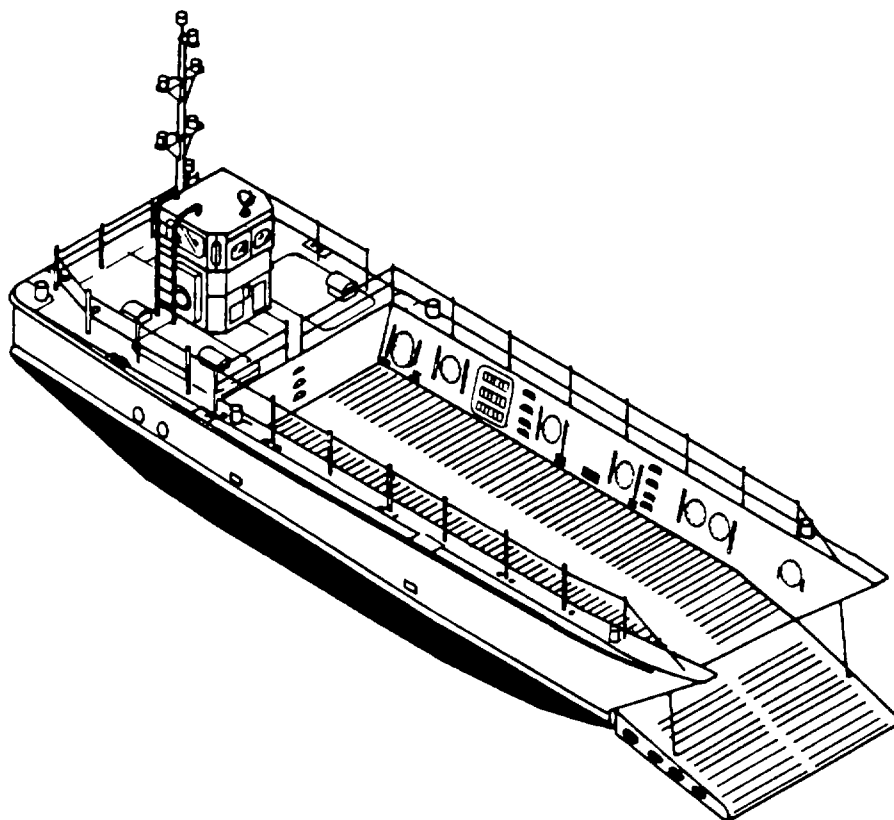
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HEADQUARTERS
DEPARTMENT OF THE ARMY
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Operator, Unit and Intermediate
(Direct and General Support)
Maintenance Manual

**LANDING CRAFT, MECHANIZED
(LCM-8)
(ROHR AND GUNDERSON MODELS)
(NSN 1905-01-284-2647 and 1905-01-284-2648)**

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve these procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual directly to Commander, US Army Aviation and Troop Command, ATTN: AMSAT-I-MP, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. A reply will be furnished directly to you.

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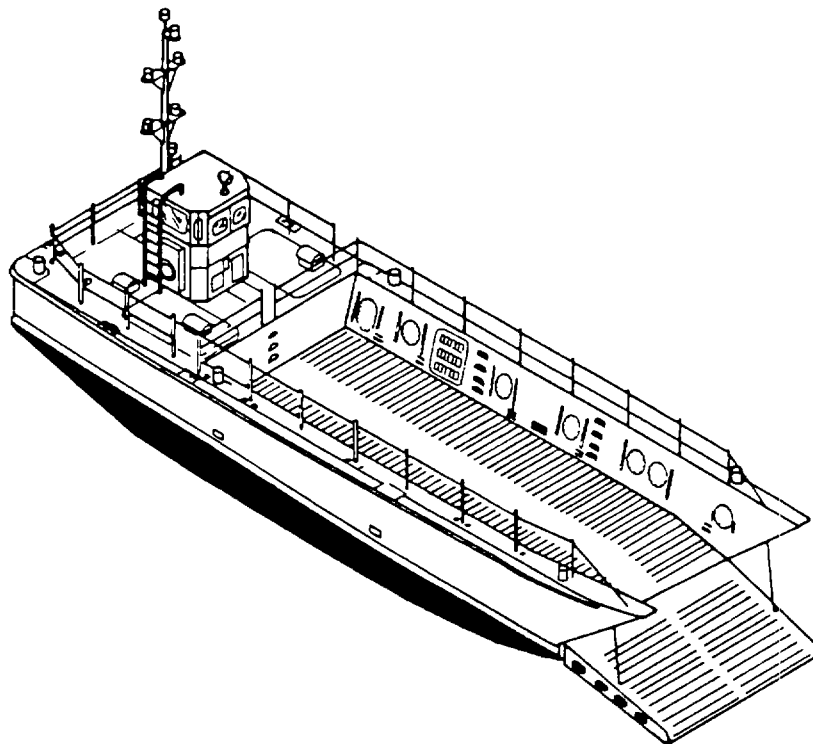
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Section I. GENERAL INFORMATION



1-1 SCOPE.

- ⌚ **Type of Manual:** Operator, Unit, and Intermediate (Direct and General Support) Maintenance for Landing Craft, Mechanized (LCM-8).
- ⌚ **Model Numbers:** NSN 1905-01-284-2647 (ROHR), NSN 1905-01-284-2648 (GUNDERSON)
- ⌚ **Purpose of Equipment:** To transport cargo, troops, and vehicles from ship-to-shore, shore-to-shore or in retrograde movements. May be utilized for lighterage and utility work in harbors. Additionally, the LCM-8 can be used in diving operations, coastal survey, repair of other craft and to assist ships in salvage operations.

1-2 MAINTENANCE FORMS AND RECORDS.

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750, The Army Maintenance Management System (TAMMS).

1-3 DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE.

Procedures to be followed when capture or abandonment of the landing craft is imminent are covered in TM 750-244-3.

1-4 REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIRs).

If your landing craft needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. Put it on an SF 368 (Quality Deficiency Report). Mail it direct to Commander, US Army Troop Support Command, ATTN. AMSTR - QX, 4300 Goodfellow Boulevard, St. Louis, MO 63120-1798. We will send you a reply.

1-5 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC).

The contents of this technical manual have been validated against engineering source data. Operator and maintenance instructions have been validated against the system/equipment by actual demonstration as required.

1-6 LIST OF ABBREVIATIONS.

The following is a list of abbreviations of components, maintenance terms and forms associated with the LCM-8:

DPDT	-	Double Pole, Double Throw Switch
DS/GS	-	Direct Support/General Support
EIR	-	Equipment Improvement Recommendation
FR	-	Frame
HWT	-	High Water Temperature
LCM	-	Landing Craft, Mechanized
LOP	-	Low Oil Pressure
MAC	-	Maintenance Allocation Chart
MSD	-	Marine Sanitation Device
MTOE	-	Modified Table of Organizational Equipment
OWS	-	Oil/Water Separator
PMCS	-	Preventive Maintenance Checks and Services
QAI	-	Quality Assurance Inspections
RAI	-	Rudder Angle Indicator
RIL	-	Red Indicating Lamps

RMHS	-	Remote Magnetic Heading System
RPSTL	-	Repair Parts and Special Tools List
TAMMS	-	The Army Maintenance Management System
TMDE	-	Test, Measurement and Diagnostic Equipment
TROSCOM	-	Troop Support Command

1-7 GLOSSARY.

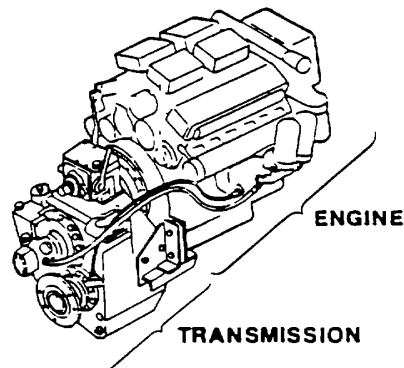
The following defines technical, nautical and mission-related terms used in this training manual:

Accumulators	-	Devices that receive, store, build-up and release hydraulic oil in the LCM-8 hydraulic starting system.
Anaerobic Decomposition	-	Sewage decay occurring in absence of oxygen. A natural action accelerated by the addition of selected bacteria.
Athwarthship	-	Across the ship from side to side.
Bilge	-	The lowest part of a ship's inner hull.
Biochemical Oxygen. Demand	-	The ratio of oxygen available to the oxygen required for stabilization of sewage.
Coalesce	-	Action arising from combination of distinct elements, such as oil/water mixture and other oil in fuel system.
Coaming	-	The raised frame (around the hatchway) that keeps out water.
Effluent	-	The outflow of sewage.
Hondu	-	A drum key, a device to hold ramp cable on winch drum to prevent cable from running out.
Lazarette.	-	Compartment between decks used as a storeroom for repair parts, line and auxiliary equipment. On the LCM-8, a compartment aft of the engine room.
Weir	-	Divider that controls or diverts flow of sewage in marine sanitation system.

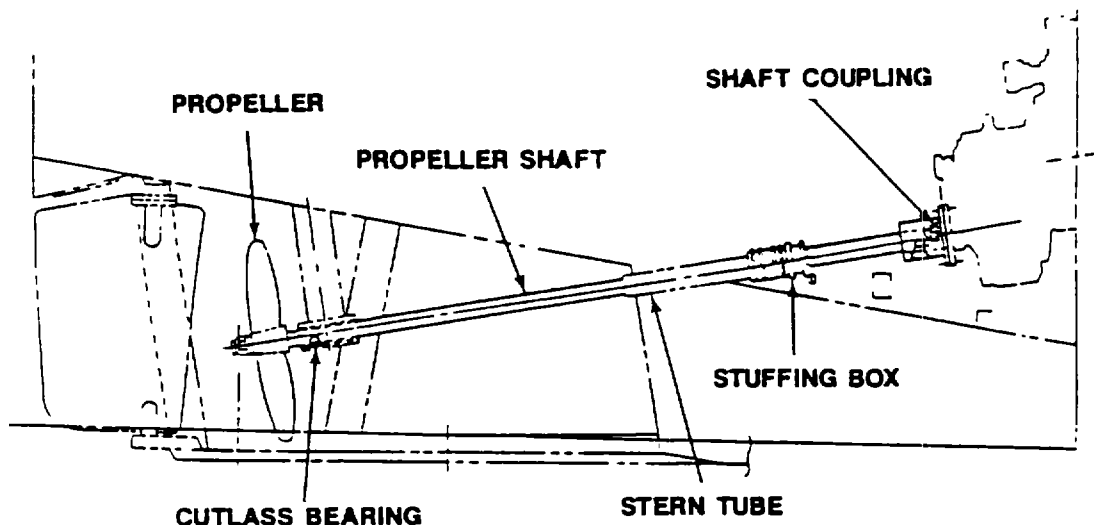
Section III. TECHNICAL PRINCIPLES OF OPERATION

1-12 PROPULSION SYSTEM.

1-12.1. Propulsion. Machinery. The power for propulsion of the landing craft is provided by two V-12 Detroit Diesel Engines and two Twin Disc Marine Transmissions. Each engine and transmission form one propulsion unit as shown below. The propulsion units rotate the propeller shafts in opposite directions. The starboard propeller shaft rotates clockwise and the port propeller shaft rotates counterclockwise when viewed from the stern while moving ahead. The propulsion units are controlled remotely by a Kobelt dual function, single lever control head, mounted in the pilothouse control console. In addition, the propulsion units provide the power directly and indirectly to operate other systems. Refer to TM. 5-2815-231-14 for further information on the propulsion engines.

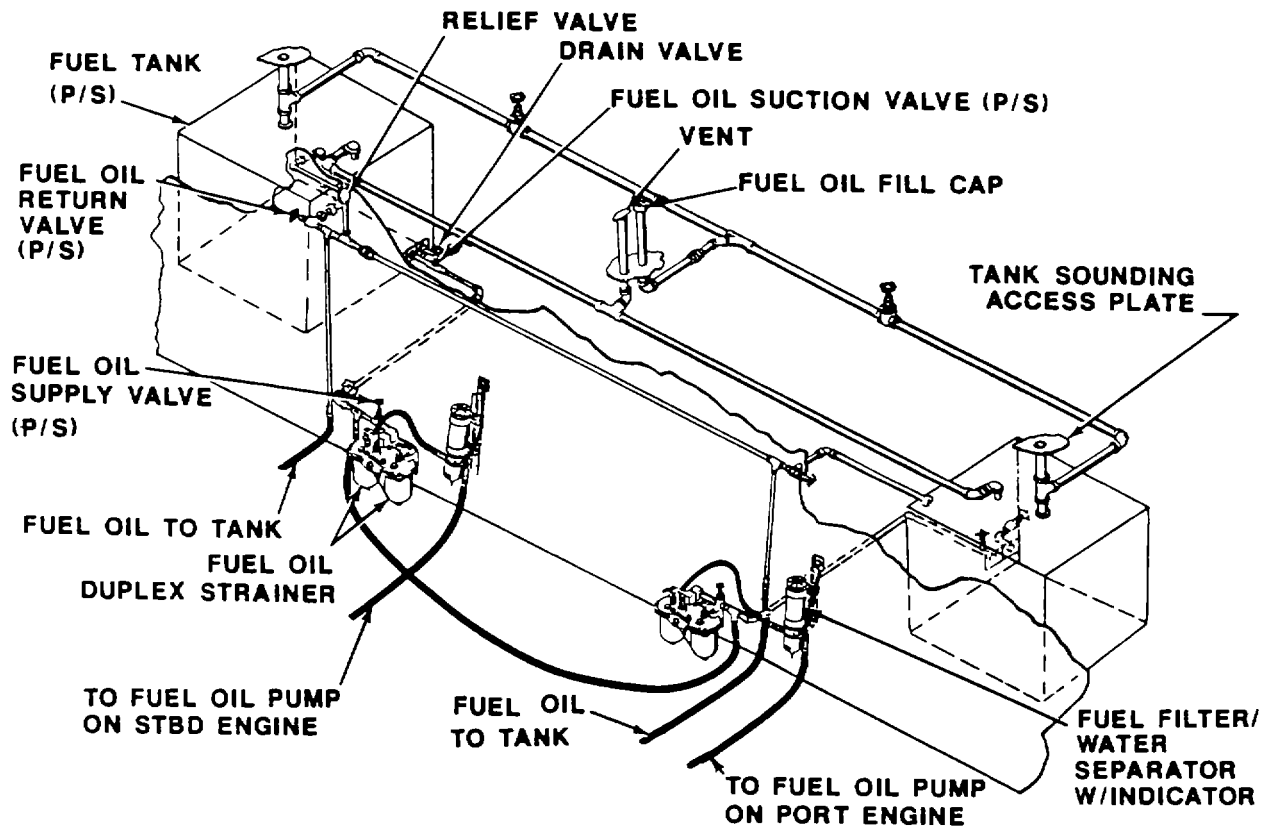


1-12.2. Shafts and Propellers. The propeller shafts are 2-1/2 inch diameter corrosion resistant steel. The transmission couplings are flange type with taper bore. Each shaft is supported by a cutlass bearing in a V-strut and shaft lug. The bearings are installed with light push fit and are secured with hex head cap screws. The stuffing boxes are rubber neck type with heavy duty hose and hose clamps. The propellers are keyed to the trailing tapered shaft end, and are secured to the shaft with a jam nut, plain nut and cotter pin.

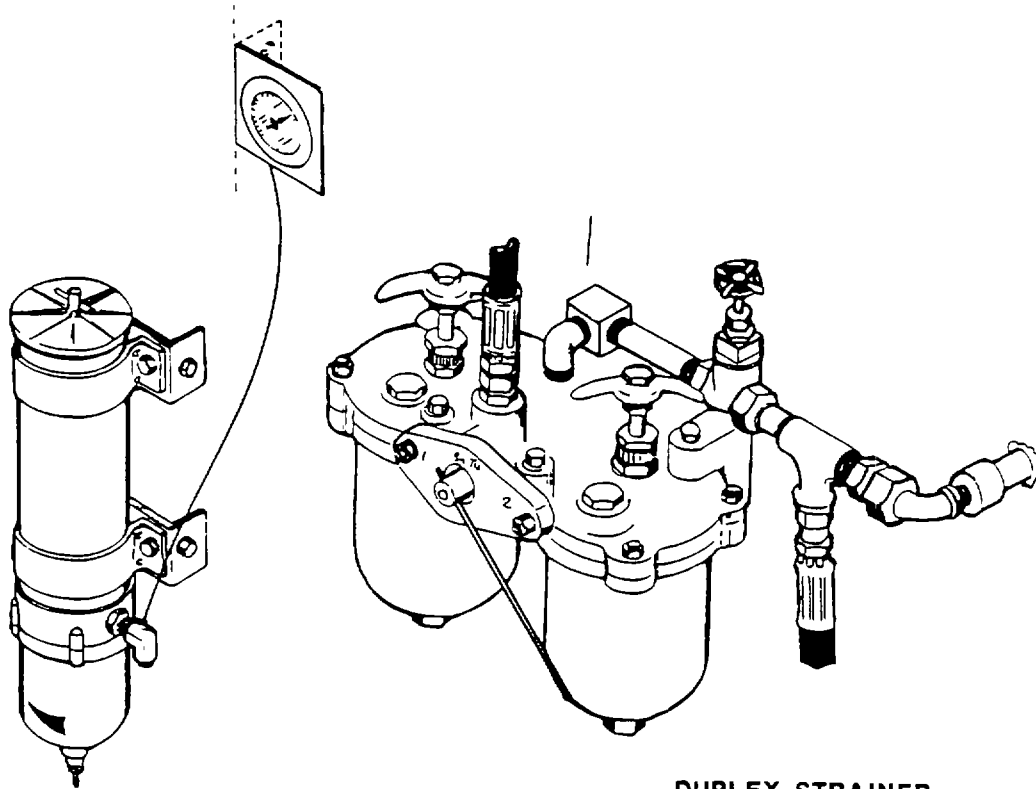


1-13 FUEL SYSTEM.

a.. Identical fuel systems are installed, port and starboard. The fuel system supplies fuel oil for operating the propulsion engines. When the system is lined up for operation, fuel oil flows from the fuel tanks through the suction valves in the lazarette into the engine room. Two supply valves located in the engine room near bulkhead 39 (on both sides of the ramp/starting system hydraulic tank) allow fuel oil to flow into the fuel strainers. The cross-over line located ahead of the supply valves permits fuel oil to flow from the port fuel tank through the starboard fuel oil strainer to the starboard engine, and vice versa. The fuel oil is further purified as it flows through the fuel filter/water separators before going to the engines. Fuel oil not injected into the engine is cooled in the fuel oil coolers before returning to tank. Fuel oil from either engine may be returned to either fuel oil tank through the return valves in the fuel oil return piping. The relief valve in the return piping relieves directly to the starboard fuel oil tank when the pressure in the return lines exceeds 2 psi. The engine mounted fuel filter, fuel pump, and fuel manifold which complement the system are covered in TM 5-2815-231-14.



b. Each case of the duplex strainer has a cleaning knife and a metal edge element with. particle size retention of 0001. inch (25 microns). The cleaning knives are rotated around the elements by turning the ratchet handles. The head is equipped with a control valve so that flow can be directed to one element while the other is serviced.



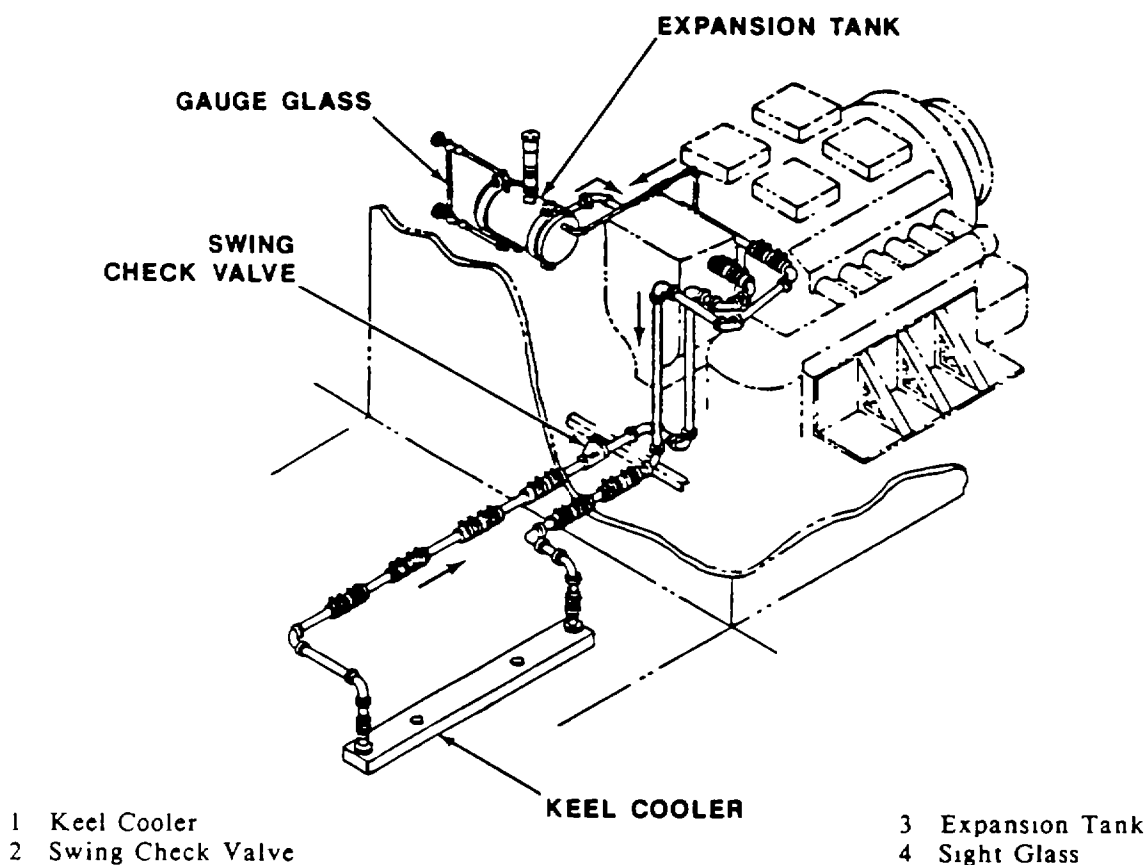
DUPLEX STRAINER

FUEL FILTER/WATER SEPARATOR

c. The fuel filter/water separator works in a series of three stages to progressively clean the diesel fuel. In the primary stage (separation), liquid and solid contamination down to 30 microns are separated out by centrifugal action. In the secondary stage (coalescing), minute particles of liquid contamination tend to bead on the lower inner wall of the shell, accumulating and eventually falling to the bottom of the bowl. In the final stage (filtration), fuel flows through the replacement element where the minute solids are removed.

1-14 ENGINE COOLING SYSTEM.

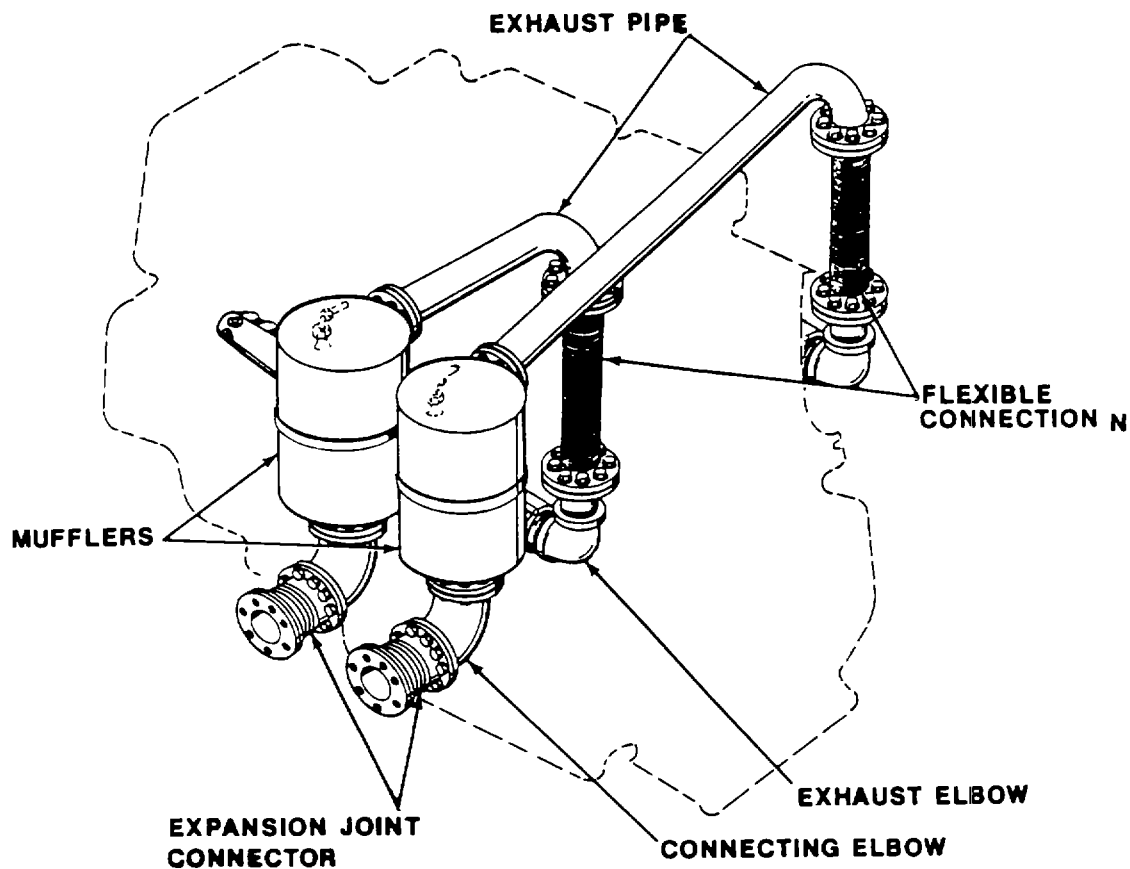
Identical engine cooling systems are installed, port and starboard. The engine cooling system uses fresh water for cooling the engine block. Coolant is circulated through the engine by a centrifugal type water pump. Heat is removed from the coolant by the keel coolers. The two keel coolers act as heat exchangers, utilizing the surrounding sea water to dissipate the heat of the engine coolant. Port and starboard keel coolers are longitudinally recessed in the underside of the hull between frames 25 and 31. The keel coolers employ a fin design to provide maximum surface area for heat transfer. Access to the keel cooler installations and piping is in the buoyancy holds 6 and 7. Upon leaving the keel coolers, the coolant passes through a swing check valve in the engine room and into the suction of the engine-driven water pump. The coolant is then pumped through the cooling passages in the engine. Control of the engine temperature is accomplished by thermostats that regulate the flow of the coolant within the cooling system. The expansion tanks, located in the upper reaches of the engine room, accommodate excess coolant and resupply the system when needed.



(STARBOARD SYSTEM SHOWN)

1-15 EXHAUST SYSTEM.

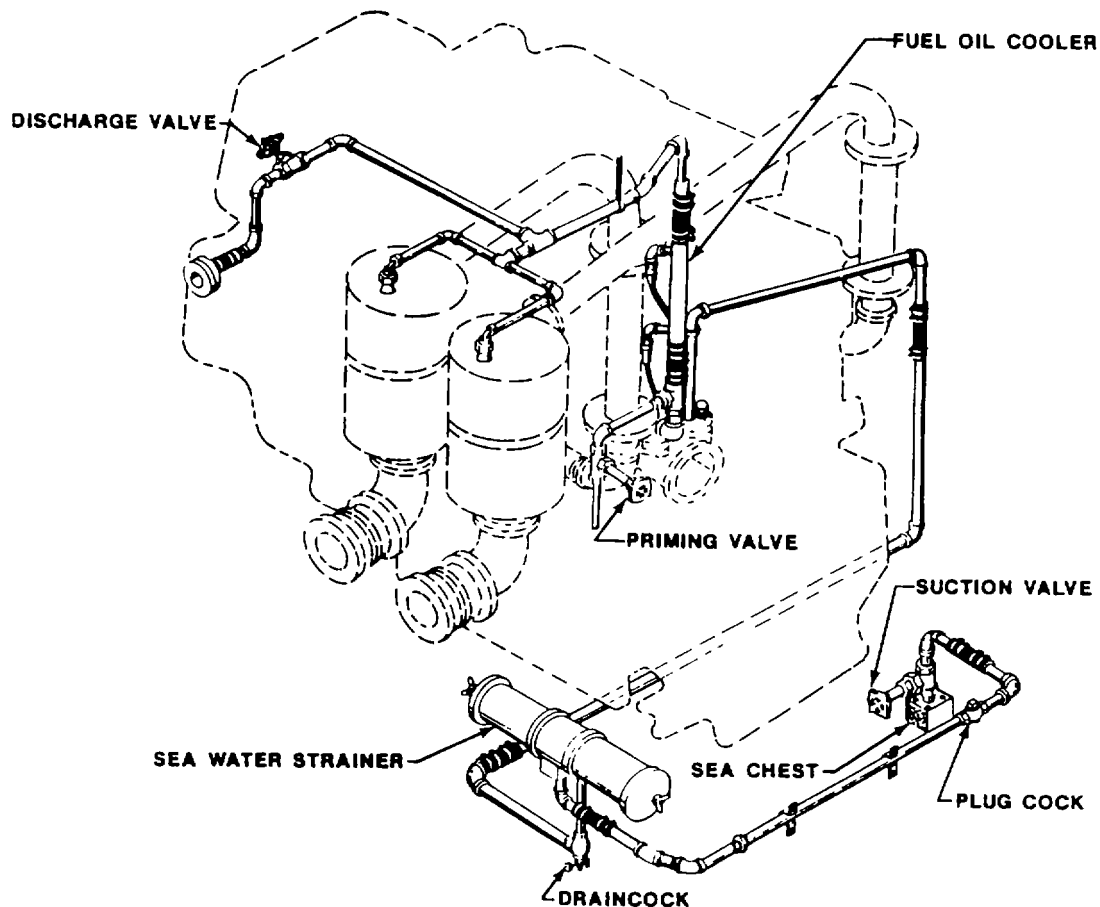
Identical exhaust systems are installed, port and starboard. The exhaust system removes the products of combustion from the engine exhaust manifold to the atmosphere. The mufflers in the system suppress noise and are cooled by sea water from the raw water system. Other major components of the system are the exhaust elbow, flexible connection, exhaust pipe, connecting elbow and expansion joint connector. The exhaust piping is insulated to a depth of 3 inches in one inch layers with thermal glass fiber insulation in accordance with military specification MIL-I-16411, Type II insulation over flanges is removable.



(STARBOARD SYSTEM SHOWN)

1-16 RAW (SEA) WATER COOLING SYSTEM.

Identical raw water systems are installed, port and starboard. The function of the raw water cooling system is two-fold provide cooling for the mufflers and the return fuel oil, and priming for the bilge pumps. Sea water Intake is at the sea chest located aft of each marine transmission. The suction valves allow sea water to flow through the strainers mounted on each side of the engine room. The engine-mounted raw water pump pumps the sea water through the fuel oil coolers and the mufflers. The priming valve allows sea water priming of the bilge pump. Some sea water is discharged overboard through the discharge valve. The discharge valve is used to control the amount and rate at which sea water passes through the fuel oil coolers and mufflers. The sea water which is used to cool the mufflers is discharged through the exhaust ports with the exhaust gases



(STARBOARD SYSTEM SHOWN)