TECHNICAL MANUAL

ORGANIZATIONAL MAINTENANCE MANUAL

LIGHTER, AMPHIBIOUS (LARC-LX);

SELF-PROPELLED; DIESEL; STEEL;

60 TON; 61 FT;

DESIGN 2303; HULLS 5 THROUGH 60

NSN 1930-00-392-2981

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H E A D Q U A R T E R S , D E P A R T M E N T O F T H E A R M Y

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REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistake or if you know of a way to improve the procedure, please let us know. Mail you letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, U.S. Army Troop Support Command ATTN: AMSTR-MCTS, 4300 Goodfellow Boulevard, St. Louis, MO 63120-1798. A reply will be furnished directly to you.

TABLE OF CONTENTS

			Page
CHAPTER	1.	INTRODUCTION	1-1
Section	I.	General	1-1
	II.	Description and Data	1-4
CHAPTER	2.	MAINTENANCE INSTRUCTIONS	2-1
Section	I.	Service Upon Receipt of Material	2-1
	II.	Movement to a New Worksite	2-9
	III.	Repair Parts, Special Tools and Equipment	2-9
	IV.	Lubrication Instructions	2-10
	V.	Preventive Maintenance Checks and Services	2-11
	VI.	Troubleshooting .2	2-54
	VII.	Radio Interference Suppression	2-82
	VIII.	Maintenance of Electrical System	2-83
	IX.	Maintenance of Hull and Components	2-115
	X.	Maintenance of Hydraulic System	2-131
	XI.	Maintenance of Diesel Engine	2-151
	XII.	Maintenance of Fuel System	2-200
	XIII.	Maintenance of Land Drive System	2-206
	XIV.	Maintenance of Marine Drive System	2-225
	XV.	Maintenance of Compressed Air System	2-240
	XVI.	Maintenance of Steering System	2-290
	XVII.	Maintenance of Cooling System	2-297
	XVIII.	Maintenance of Gages and Instruments	2-308
	XIX.	Maintenance of Winch Equipment	2-317
	XX.	Maintenance of Miscellaneous Hull Accessories	2-324
	XXI.	Maintenance of Hydraulic Starter and Wheel Alignment System	2-329

TABLE OF CONTENTS (Continued)

		Page
APPENDIX A.	REFERENCES	A-1
B.	MAINTENANCE ALLOCATION CHART	B-1
C.	EXPENDABLE SUPPLIES AND MATERIALS LIST	C-1
D.	ILLUSTRATED LIST OF MANUFACTURED ITEMS	D-1
INDEX		Index-1

LIST OF ILLUSTRATIONS

Figure	Title	Page
1-1	Amphibious Lighter (LARC-LX)	1-2
1-2	Hull and Cab Access Covers	1-7
2-1	Hoisting the LARC	2-4
2-2	Electrical System Wiring Diagram (See FO-1 and FO-2)	
2-3	Battery Charging Generator Drivebelt Adjustment	2-85
2-4	Bow and running Light Lamp Replacement	2-89
2-5	Range Anchor Light Lamp Replacement	2-90
2-6	Searchlight Lamp Replacement	2-91
2-7	Cargo Well Light Lamp Replacement	2-92
2-8	Compartment Light Lamp Replacement	2-94
2-9	Machinery Compartment Light Lamp Replacement	2-95
2-10	Spot and Trouble Light Lamp Replacement	2-96
2-11	Headlight Lamp Replacement (Old Type)	2-98
2-12	Headlight Lamp Replacement (New Type)	2-99
2-13	Master Warning Light Lamp Replacement	2-101
2-14	Warning Lights Lamp Replacement	2-102
2-15	High-Beam Indicator Light Lamp Replacement	2-103
2-16	Instrument Panel Light Lamp Replacement	2-105
2-17	Cab Dome Light Lamp Replacement	2-106
2-18	Circuit Breaker Panel	2-108
2-18.1	Compass	2-108.1
2-18.2	Compass Replacement	2-108.2
2-18.3	Replace Compass Resistor	2-108.3
2-18.4	Replace Compass Switch	2-108.4
2-19	Compartment Scuttle Cover, Removal and Installation	2-111
2-20	Towing Lug and Shackle, Removal and Installation	2-112
2-21	Bilge Drain Valve, Exploded View	2-114
2-22	Ramp Latch, Exploded View	2-117
2-23	Ramp Cable Harness, Removal and Installation	2-119
2-24	Sliding Hatch Latch, Removal and Installation	2-123
2-25	Cab Scuttle Cover, Removal and Installation	2-124
2-26	Hydraulic Supply System Diagram	2-126
2-27	Ramp Hydraulic System Diagram	2-129
2-28	Ramp Cylinder Inspection	2-130
2-29	Cargo Well Pump Hydraulic System Diagram	2-132
2-30	Bilge Pump Hydraulic System Diagram	2-134
2-31	Forward Steering Hydraulic System Diagram	2-136
2-32	Steering Cylinder Cushion Screw, Adjustment	2-138
2-33	Aft Steering and Winch Hydraulic System Diagram	2-139

LIST OF ILLUSTRATIONS (Continued)

Figure	Title	Page
2-36	Accessory Side of Engine	2-146
2-37	Manifold Side of Engine	2-148
2-38	Rocker Cover Assembly, Removal and Installation	2-150
2-39	Air Cleaner Assembly, Exploded View	2-152
2-40	Fluid Starting Aid	2-155
2-41	Fuel Pump Assembly	2-157
2-42	Primary Fuel Strainer, Service	2-158
2-43	Secondary Fuel Filter, Service	2-160
2-44	Cylinder Head With External Fuel Manifold	2-162
2-45	Water Pump Assembly	2-164
2-46	Water and Exhaust Manifold Components	2-165
2-47	Muffler and Exhaust Piping	2-168
2-48	Full Flow Oil Filter, Removal and Installation	2-170
2-49	Bypass Oil Filter, Removal and Installation	2-171
2-50	Air Starting Motor	2-175
2-51	Governor-Throttle Controls, Removal and Installation	2-176
2-52	Fuel Injector Controls	2-178
2-53	Engine Block Components, Removal and Installation	2-179
2-54	Exhaust Valve Adjustment	2-183
2-55	Fuel Injector Timing	2-185
2-56	Injector Rack Control Lever Positioning	2-187
2-57	Governor Gap Adjustment	2-188
2-58	Engine Idling Speed Adjustment	2-189
2-59	Maximum No-Load Speed Adjustment	2-192
2-60	Fuel System Schematic	2-195
2-61	Fluid Pressure Filter, Exploded View	2-197
2-62	Land Drive System	2-201
2-63	Brake Lining	2-201
2-64	Torque Converter-Transmission Flexible Coupling, Exploded View	2-205
2-65	Transmission-Miter Box Flexible Coupling, Exploded View	2-207
2-66	Transmission-Torque Converter Oil Lines Locator Diagram	2-210
2-67	Transmission Oil Strainer, Exploded View	2-211
2-68	Transmission Oil Filter, Exploded View	2-213
2-69	Oil Filter Element	2-216
2-70	Column and Wheel Spindle Grease Retainer, Removal and Installation	2-218
2-71	Marine Drive System	2-221
2-72	Gathering Box Oil Lines Flow Diagram	2-222
2-73	Gathering Box Oil Pump and Lines, Removal and Installation	2-223
2-74	Gathering Box-Marine Gear Angle Drive Coupling, Exploded View	2-225
2-75	Marine Gear Oil Lines Flow Diagram	2-228
2-76	Oil Sediment Strainer, Exploded View	2-229
2-77	Propeller Shaft Components, Removal and Installation	2-232
2-78	Air Supply System Diagram	2-236
2-79	Globe Valve, Disassembly and Reassembly	2-237
2-80	Air Compressor, Model 3YC	2-239
2-81	Flexible Coupling Insert, Removal and Installation	2-240
2-82	Intercooler Assembly, Model 3YC	2-241
2-83	Air Compressor, Model 3VC	2-243

LIST OF ILLUSTRATIONS (Continued)

Figure	Title	Page
2-84	Intercooler Assembly, Model 3VC	2-245
2-85	Air Compressor Governor Strainer, Exploded View	2-250
2-86	Main Air Supply Filter, Disassembly and Reassembly	2-253
2-86.1	Air Dryer.2-254	2-254
2-87	Air Starting Control and Supply System Diagram	2-255
2-88	Air Starting Filter, Disassembly and Reassembly	2-256
2-89	Air Starting Lubricator, Disassembly and Reassembly	2-258
2-90	Airbrake Control and Supply System Diagram	2-260
2-91	Foot Control Valve, Adjustment	2-262
2-92	Transmission Shifting Control and Engine Cutout Systems Diagram	2-263
2-93	Transmission Control Valve	2-264
2-94	Quick Release Valves	2-265
2-95	Throttle Control System Diagram	2-268
2-96	Hand Throttle Control Valve, Adjustment	2-269
2-97	Marine Gear and Radiator Fan Control System Diagram	2-271
2-98	Marine Gear Shifting and Throttle Control Valve	2-272
2-99	Tire Inflation-Deflation Control System Diagram	2-274
2-100	Tire Inflation Check Valve	2-276
2-101	Ramp Seal Control and Supply System Diagram	2-277
2-102	Reducing Valve, Adjustment	2-278
2-103	Cargo Well Pump and Ramp Control Systems Diagram	2-279
2-104	Windshield Wiper Assembly	2-281
2-105	Air Horn Pilot Valve	2-282
2-106	Air Horn, Adjustment	2-283
2-107	Steering Controls, Removal and Installation	2-285
2-108	Steering Follow-Up, Adjustment.	2-286
2-109	Marine Steering, Exploded View.	2-288
2-110	Rudder and Sleeve, Exploded View.	2-290
2-111	Engine Cooling System	2-292
2-112	Gage Board	2-304
2-113	Instrument Panel Gages	2-306
2-114	Fuel Quantity Gage	2-307
2-115	Sight Level Quantity Gage	2-308
2-116	Ramp Seal Air Pressure Gage	2-309
2-117	Starting Air Pressure Gage	2-310
2-118	Cargo Winch Assembly	2-312
2-119	Control Stand, Disassembly and Reassembly	2-313
2-120	Winch Brake	2-314
2-121	Speed Control Linkage, Disassembly and Reassembly	2-317
2-122	Anchor Stowage	2-318
2-123	Lifeline and Stanchion, Removal and Installation	2-321
2-124	Seat, Repair	2-324
2-125	Seat, Replacement	2-325
2-126	Portable Toilet, Replacement	2-326
2-127	Canopy, Replacement and Repair	2-327
2-128	Wheel Alignment System	2-329

LIST OF TABLES

Number	Title	Page
1-1	Differences in Models	1-17
2-1	Special Tools	2-9
2-2	Organizational Preventive Maintenance Checks and Services	2-12
2-3	Troubleshooting	2-55
2-4	Military Antifreeze Materials	2-303

CHAPTER 1

INTRODUCTION

SECTION I. GENERAL

1-1. SCOPE.

These instructions are for the use of personnel responsible for organizational maintenance of the amphibious lighter (LARC-LX), shown in figure 1-1.

1-2. MAINTENANCE FORMS AND RECORDS.

a. The maintenance forms and records required to maintain this equipment include DA Form 2402 (Exchange Tag), DA Form 2404 (Equipment Inspection and Maintenance Worksheet) and DD Form 314 (Preventive Maintenance Schedule and Record).

b. Any additional forms that are required are listed and explained. in DAPAM738-750,The Army Maintenance Management System (TAMMS).

1-3. ADMINISTRATIVE STORAGE.

a. General. Detailed instructions for the preparation of the amphibious lighter (hereafter called the LARC) for limited storage are outlined within this paragraph. Preservation will be accomplished in sequence that will not require the operation of previously preserved components.

b. Inspection. The LARC will be inspected for any unusual conditions such as damage, rusting, accumulation of water, and pilferage. Inspection of the individual components and assemblies will be outlined on the "Preventive Maintenance Service" in this manual.

c. Cleaning and Drying. All contamination shall be removed by an approved method. Approved methods of cleaning, drying, types of preservatives, and methods of application are described in TM 38-230-2.

d. Painting. Paint all surfaces where the paint has been removed or damaged. Refer to TB 43-0144 for detailed cleaning and painting instructions.

e. Preservation and Depreservation Guide. DA Form 3256 (Preservation and Depreservation Guide for Marine Equipment).

(1) A properly annotated depreservation guide will, be completed concurrently with preservation for each item of mechanical equipment. Any peculiar requirements will be outlined in the blank

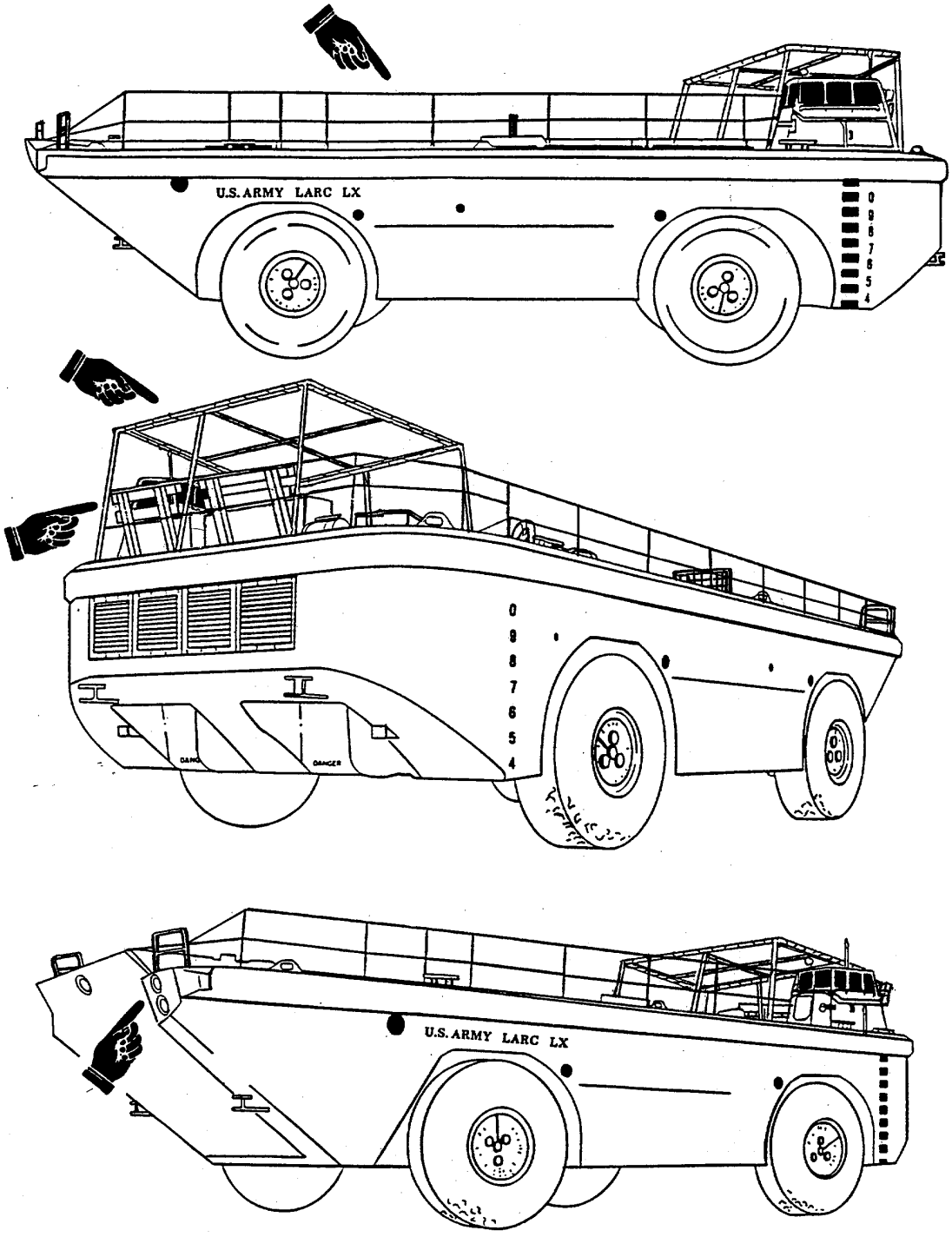

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Figure 1-1. Amphibious Lighter (LARC - LX).

spaces on the form. The completed depreservation guide will be placed with the equipment in a waterproof envelope marked "Depreservation Guide" and fastened in a conspicuous location on or near the operator's controls.

(2) Prior to plaqing the LARC in operation or to the extent necessary for inspection, depreservation of the item shall be performed as outlined in the depreservation guide.

f. Cooling System. Fill cooling system with proper solution.

g. Lubrication System. Check level of lubricant.

h. Sealing of Openings. Openings that will permit the direct entry of water into the interior of engine, starting motor, generator, electrical enclosures and so on, shall be sealed with pressure- sensitive tape conforming to Specification PPP-T-60, Type III, Class 1.

i. Fuel Tank. Drain fuel tanks.

j. Air Cleaner. Clean and seal all openings that permit the direct entry of water. Use pressure-sensitive tape conforming to Specification PPP-T-60, Type III, Class 1.

k. Marine and Land Drive System, Drive Shafts, and Transmissions. Fill to operating level with the lubricant specified in the lubrication order.

l. Hydraulic System. The hydraulic system will be filled to capacity with the type and grade of lubricant specified in the lubrication order.

m. Exterior Surfaces. Coat exposed machined ferrous metal surfaces with type P-6 preservative conforming to Specification MIL-C-11796, Class 3. If preservative is not available, cup grease may be used.

n. Marking. Marking shall conform to MIL-STD-129.

o. Batteries and Cables. Batteries shall be filled, fully charged and secured in the battery compartment. Cables shall be disconnected, vent holes sealed and all terminals wrapped and secured with Type III, Class 1, pressure-sensitive tape conforming to Specification PPP-T-60.

p. Disassembly, Disassembled Parts and Basic Issue Items.

(1) Disassembly shall be limited to the removal of parts and projecting components that tend to increase the overall profile of the LARC and that which is subject to pilferage.

(2) If possible, disassembled items shall be packed with the publications. Otherwise, items will be packed in a suitable container and secured to the LARC to prevent loss or pilferage.

NOTE

If packing is required to provide adequate protection against damage during shipment, refer to TM 38-230-2 for guidance in crate fabrication.

q. Storage. Every effort should be made to provide covered storage for the LARC. If this is impossible, select a firm, level, well-drained storage location, protected from prevailing winds. Position the LARC on heavy planking. Provide the LARC with. maximum protection from the elements.

r. Inspection and Maintenance of Equipment in Storage. Every 90 days, the LARC will be inspected as outlined in table 2-2 (Preventive Maintenance Checks and Services), and operated long enough to assure complete lubrication of bearings. After each inspection period, the LARC shall be represerved.

1-4. DESTRUCTION OF ARMY-MATERL TO PREVENT ENEMY USE.

a. Mechanical Destruction. Using axes, picks mattocks, sledges, or any other heavy implements, damage all vital elements such as engine block and manifolds, fuel pumps, transmission housings, hydraulic and lubrication pump, radio equipment, fuel tanks, lines and filters, radiator, keel cooler, crossover pipes, starting motor, alternator batteries, junction box, instrument panel and control console, hull and tires.

b. Demolition by Misuse.

(1) Operate engine at full throttle.

(2) Drain transfer transmission and forward-reverse transmission while in operation.

(3) Pour sand, sugar, salt or dirt in fuel tanks, crankcase and radiator.

(4) Drain engine oil and run engine until it ceases.

(5) Pour sand, sugar, glass and dirt into the hydraulic reservoir and operate steering system and bilge pumps.

(6) Shift transmission rapidly from one position to another with engine at full throttle.

c. Demolition by Explosives. Place as many of the following charges as the situation permits, and detonate.

(1) One 1/2 pound (226 g) charge on the right side of the engine, left side of the engine and the top of each engine.

(2) Four 1/2 pound (226 g) charges (two on each side) on the forward-reverse transmission.

(3) Two 1/2 pound (226 g) charges on each side of gathering boxes.

(4) Two 1/2 pound (226 g) charges on1 each side of the miter boxes and one 1/2 pound (226 g) charge on each end of the differential transmission.

(5) One 1/4 pound (113 g) charge on the instrument panel.

(6) One 1/4 pound (113 g) charge on the control console.

(7) Two 1/2 pound ('226 g) charges on the surface of each wheel.

d. Weapon Fire. Fire on the vessel with the heaviest weapons available.

e. Scattering and Concealment. Remove all easily detachable parts such as filters, water, oil and fuel lines, batteries, alternator, belts, control panel, float tank, solenoids, valves and wiring. Scatter or bury them.

f. Burning. Break fuel lines at engine and puncture the fuel tanks and auxiliary tank. Saturate deck, cockpit, transfer transmission, and engine with gasoline, fuel oil, kerosene or other combustible material and ignite.

g. Submersion. Remove bilge drain plugs and puncture hull. Remove radiator cap, oil fill caps, oil fill plug and fuel tank caps. Open all drain valves on engine, transmission and hydraulic system. Drive vessel into deepest water available.

1-5. REPORTING EQUIPMENT I-PROVEMENT RECOMMENDATIONS (EIR)

EIR's will be prepared using Standard Form SF 368, (Quality Deficiency Report.) Instructions for preparing EIR's are provided in DA PAM 738-750, The Army Maintenance Management System (TAMMS). EIR's should be mailed directly to Commander, U.S. Army Troop Support Command, ATTN: AMSTR-QX , 4300 Goodfellow Blvd., St. Louis, MO 63120-1798.. A reply will be furnished to you.

SECTION II. DESCRIPTION AND DATA

1-6. DESCRIPTION.

a. General. The LARC is a four-wheel, diesel engine, amphibious lighter used for transporting large loads of cargo and troops between seagoing vessels and the beach or inland transfer points.

b. Land Operation. In land operation, each wheel is independently driven by one of the four engines. Wheel drive power is transmitted from the flywheel end of the engines through the respective torque converters, transmissions, miter boxes, and wheel columns to the planetary gears in the wheels.

c. Marine Operation. In marine operation, the port propeller may be driven by either or both port engines and the starboard propeller by either or both starboard engines. Power for marine drive is taken from the end of the engines opposite to the flywheel ends. Power from the engines is transmitted through fluid couplings and gathering boxes to their corresponding marine gear. A shaft extends aft from each marine gear through the hull to drive the propellers.

d. Electrical System. The electrical system is a 24 volt dc system powered by two 12 volt batteries connected in series. The batteries are charged by two battery charging alternators mounted on the gathering boxes. The electrical system is used primarily for LARC lighting.

e Hull and Cab Access Openings. There are numerous compartments within the LARC, some of which are watertight. These compartments house the mechanical, electrical, air pressure, and hydraulic components necessary for operation. Seventy-six access covers (fig. 1-2) provide maintenance personnel access to all work areas in the corresponding compartments.

f. Hydraulic Systems.

(1) Hydraulic oil pressure for operation of the winch, steering cylinders, steering alignment cylinders, ramp, cargo well pumps, bilge pumps, and radiator fans is supplied by eight double hydraulic pumps. The double hydraulic pumps, driven by the marine gear, supply hydraulic fluid at the required operating pressure.

(2) Hydraulic oil pressure for an independent system for hydraulic starting and wheel alignment is provided by a pump driven by Engine No. 3. The pump charges accumulators. A hand pump is provided if system is not pressurized and engines cannot be air started. Oil pressure operates a hydraulic starter motor and wheel alignment cylinders.

g. Compressed Air System. The compressed air system is supplied by two air compressors. One compressor is driven by each marine gear. The compressed air is stored in two air tanks located on the port and starboard sides under the cargo well deck. The compressed air system serves as a control system for the throttles, cargo well pumps, ramps, transmissions, marine gears, and radiator fans. The system supplies air for operation of the air horn, airbrakes, engine starting motors, and windshield wiper. The system also supplies air for inflation of the ramp seal and tires.

h. Steering System. The front and rear wheels of the LARC can be steered independently to make it more maneuverable on land. In marine operation, the LARC is steered by two rudders.

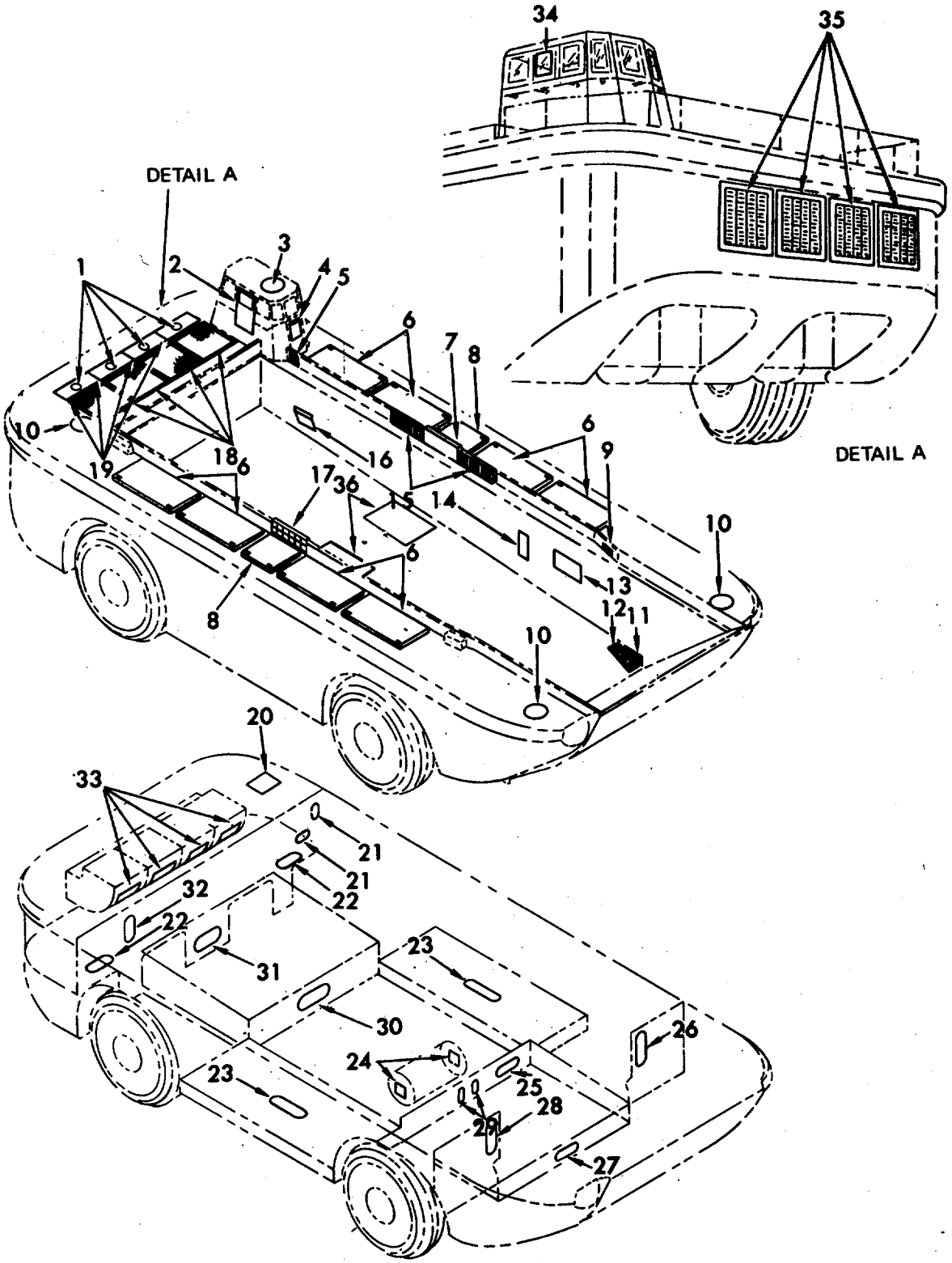

Figure 1-2. Hull and Cab Access Covers.