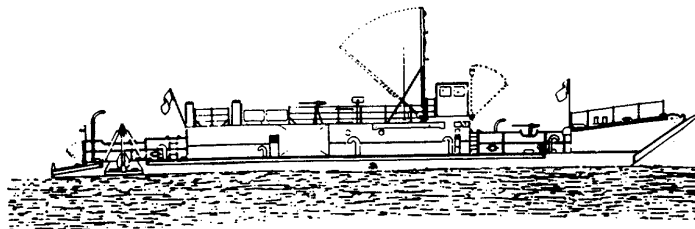


TECHNICAL MANUAL

OPERATOR'S. ORGANIZATIONAL,
DIRECT SUPPORT, AND GENERAL
SUPPORT MAINTENANCE MANUAL

OPERATOR MAINTENANCE
FOR AUXILIARY
EQUIPMENT INSTRUCTIONS

LANDING CRAFT UTILITY
LCU 1667-1670
NSN 1905-00-168-5764



*This manual supersedes TM 55-1905-219-14-8, 30 September 1980

HEADQUARTERS, DEPARTMENT OF THE ARMY
9 JULY 1984

TECHNICAL MANUAL

NO. 55-1905-219-14-8

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 9 July 1984Operator's, Organizational,
Direct Support, and General
Support Maintenance ManualLANDING CRAFT UTILITY
LCU 1667-1670
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REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your 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: DRSTR-MPS, 4300 Goodfellow Blvd., St. Louis, MO 63120. A reply will be furnished to you.

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CHAPTER 4
OPERATOR MAINTENANCE INSTRUCTIONS
FOR AUXILIARY EQUIPMENT

OVERVIEW

The operator maintenance instructions in this chapter apply to the following:

<u>DESCRIPTION</u>	<u>PARAGRAPH</u>
Commissary Space Equipment	4-36
Electronic/Navigation Equipment	4-48
Fire Detection and Extinguishing Equipment	4-45
Heating, Ventilation, and Air Conditioning System	4-22
Hull and Outfit	4-67
Interior Communication System	4-46
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Tanks and Voids	4-64
Vents and Sounding Tubes	4-66

Chapter 3 contains the maintenance instructions for all major equipment.

SECTION I. REPAIR PARTS, SPECIAL TOOLS,
TMDE,
AND SUPPORT EQUIPMENT

4-1. GENERAL.

Repair parts, special tools, test, maintenance, diagnostic equipment, (TMDE), and support equipment are listed and illustrated in TM 55-1905-219-20P.

SECTION II. SERVICE UPON RECEIPT

4-2. PRELIMINARY SERVICING OF EQUIPMENT.

a. General. When a landing craft is received, inspect all items for damage that may have occurred during shipping or setting-up operations. Particular attention should be directed toward loose or missing nuts, bolts, screws, drainplugs, draincocks, oil plugs, assemblies, subassemblies, or components that may be easily lost or broken in transit. All other onboard equipment listed in basic issue items list, or packing lists, on new or used equipment should be similarly inspected and all discrepancies carefully noted.

b. Batteries. Batteries may be shipped separately, or installed for convenience with the electrolyte shipped separately.

- (1) If batteries are not installed, uncrate and install.
- (2) If batteries are installed, remove filler caps and carefully fill each cell with electrolyte until level is 3/8 inch (9.53 mm) above plates. Replace filler caps.
- (3) Charge battery if required.

WARNING

Handle electrolyte with care. It is capable of inflicting severe burns. Solution contacting the body must be washed off with fresh water immediately. Do not smoke or use open flame while servicing batteries. Batteries generate a hydrogen gas which is highly explosive.

- (4) For testing of batteries, refer to PMCS Table 2-14, item 15.

c. Inspection. All areas will be carefully inspected for proper component attachment, or damaged components.

d. Servicing and Equipment. When a landing craft is received, perform all preventive maintenance checks and services. Before filling fuel tanks, cooling system, hydraulic reservoir, engine crankcase, transmission oil reservoir, or oil reservoir of any component, ensure that associated draincocks are closed, and all barrier material has been removed.

(1) Filters. Hydraulic filters are susceptible to easy contamination on new equipment. Check frequently and change elements after first 50 hours of operation.

4-3. INSTALLATION OF SEPARATELY PACKED COMPONENTS.

Normally, there are no components packed separately. Loose items of equipment subject to loss, damage, or pilferage, may be boxed and secured on the landing craft. Such items should be unpacked and properly stowed during inspection and servicing of equipment on receipt.

SECTION III. LUBRICATION**4-4. GENERAL.**

Refer to Lubrication Order LO-55-1905-219 for lubrication instructions.

SECTION IV. TROUBLESHOOTING - SYMPTOM INDEX**4-5. GENERAL.**

a. This table lists the common malfunctions which you may find during the operation and maintenance of the following components:

- Commissary Space Equipment
- Electronic/Navigation System
- Fire Detection and Extinguishing Equipment
- Heating, Ventilation, and Air Conditioning System
- Hull and Outfit
- Interior Communication System
- Oil/Water Separation System
- Piping System
- Plumbing and Deck Drains
- Pump Sets
- Sewage System
- Tanks and Voids
- Vents and Sounding Tubes

b. You should perform the tests/inspections and corrective actions in the order listed.

c. This manual cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify your supervisor.

d. Refer to Chapter 3 for the maintenance procedures for major machinery.

4-5. GENERAL (Continued).

SYMPTOM INDEX

NOTE

M in Table number indicates malfunction item number.

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	Ignition coil - magneto	4-1-M4
	Wiring magneto	4-1-M5
	Flywheel	4-1-M6
	Carburetion troubleshooting	4-2
	Filter - fuel	4-2-M1
	Fuel tanks	4-2-M2
	Carburetor	4-2-M3
	Motor floods	4-2-M4
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	Poor compression	4-1A-M5
	Running troubles	4-2A
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	Runs unevenly	4-2A-M2
	Poor acceleration	4-2A-M3
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	Pings under heavy load, full throttle	4-2A-M6
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	Magnetic clutch slipping	4-3A-M2
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4-5. GENERAL (Continued).

SYMPTOM INDEX

EQUIPMENT	MALFUNCTION	TABLE
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4-5. GENERAL (Continued).

SYMPTON INDEX (Continued)

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	Bubbler valve stream too high or too low	4-12-M4
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	Compressor starts but starting winding remains in circuit	4-13-M3
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4-5. GENERAL (Continued).

SYMPTON INDEX (Continued)

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Macerator Pump - Electronic Controls	Pump operates only when micro-switch is depressed or water is running through flowswitch	4-17-M2
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	Washer vibration during spin or agitate	4-18-M4
	Motor will not operate	4-18-M5
	Won't agitate - motor operating	4-18-M6
	Noisy operation	4-18-M7
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	Water leaking onto deck	4-18-M10
	Wash water not hot enough, controls set for hot wash	4-18-M11
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	Odor in washer unit	4-18-M13
	Torn clothing	4-18-M14
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	Drum speed too fast	4-18-M16
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4-5. GENERAL (Continued).

SYMPTON INDEX (Continued)

EQUIPMENT	MALFUNCTION	TABLE
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	Improper drying temperature	4-18-M19
	Drying time too long or clothes not dry when removed from drum	4-18-M20
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	Voice reproduction weak	4-20-M5
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	Water temperature below setting at all time	4-21-M2
	Relief valve discharges continuously	4-21-M3
	Monitoring thermostat	4-21-M4
	Magnetic contactor	4-21-M5
Signaling Searchlight	No light	4-22-M1
	Weak beam	4-22-M2
	Shutter leaks light	4-22-M3
	Short lamp life	4-22-M4

4-5. GENERAL (Continued).

Table 4-1. Portable Fire Pump (P-250) Ignition Troubleshooting.

NOTE

Tables 4-1 thru 4-4 apply the Gale Marine P-250 portable fire pump. Tables 4-1A thru 4-3A apply to the Prosser PE250 electric start portable fire pump.

MALFUNCTION		
TEST OR INSPECTION		
CORRECTIVE ACTION		
1. Spark plug problems.		
Step 1.	Loose in cylinder head.	
	Refer to paragraph 4-7.5.	
Step 2.	Loose connection.	
	Refer to paragraph 4-7.5.	
Step 3.	Spark gap not properly adjusted.	
	Refer to paragraph 4-7.5.	
Step 4.	Fouled.	
	Refer to paragraph 4-7.5.	
Step 5.	Burned out.	
	Refer to paragraph 4-7.5.	
Step 6.	Faulty gasket.	
	Refer to paragraph 4-7.5.	
2. Breaker points - magneto.		
Step 1.	Improperly adjusted.	
	Refer to paragraph 4-7.5.	
Step 2.	Pitted or corroded.	
	Refer to paragraph 4-7.5.	

4-5. GENERAL (Continued).Table 4-1. Portable Fire Pump (P-250) Ignition Troubleshooting
(Continued).

MALFUNCTION	
TEST OR INSPECTION	
CORRECTIVE ACTION	
Step 3.	Broken or weak spring. Refer to paragraph 4-7.5.
Step 4.	Loose or corroded connection. Refer to paragraph 4-7.5.
Step 5.	Breaker arm binding on pivot post. Refer to paragraph 4-7.5.
Step 6.	Broken or worn cam follower. Refer to paragraph 4-7.5.
Step 7.	Broken or cracked cam. Refer to paragraph 4-7.5.
3. Condenser - magneto.	
Step 1.	Weak. Refer to paragraph 4-7.5.
Step 2.	Shorted. Refer to paragraph 4-7.5.
Step 3.	Improperly mounted. Refer to paragraph 4-7.5.
Step 4.	Faulty connections. Refer to paragraph 4-7.5.
4. Ignition coil - magneto.	
Step 1.	Weak. Refer to paragraph 4-7.5.

4-5. GENERAL (Continued).Table 4-1. Portable Fire Pump (P-250) Ignition Troubleshooting
(Continued).

MALFUNCTION	
TEST OR INSPECTION	
CORRECTIVE ACTION	
	Step 2. Shorted.
	Refer to paragraph 4-7.5.
	Step 3. Improperly mounted.
	Refer to paragraph 4-7.5.
5. Wiring - magneto.	Step 4. Loose or faulty connection.
	Refer to paragraph 4-7.5.
	Step 1. Loose, corroded or otherwise faulty connections.
	Refer to paragraph 4-7.5.
	Step 2. Broken wires (under insulation).
	Refer to paragraph 4-7.5.
	Step 3. Oil soaked to cause leaks.
	Refer to paragraph 4-7.5.
6. Flywheel.	Step 4. Broken insulation.
	Refer to paragraph 4-7.5.
	Loose on crankshaft.
	Refer to paragraph 4-7.5.

4-5. GENERAL (Continued).

Table 4-2. Portable Fire Pump (P-250) Carburetion Troubleshooting.

NOTE

Tables 4-1 thru 4-4 apply the Gale Marine P-250 portable fire pump. Tables 4-1A thru 4-3A apply to the Prosser PE250 electric start portable fire pump.

MALFUNCTION		
TEST OR INSPECTION		
CORRECTIVE ACTION		
1.	Filter - fuel.	
	Step 1.	Clogged filter element. Refer to paragraph 4-7.2.
	Step 2.	Air leak due to faulty or misplaced filter bowl gasket. Refer to paragraph 4-7.2.
	Step 3.	Faulty fuel line connections. Refer to paragraph 4-7.2.
2.	Fuel tanks.	
	Step 1.	Loose filler cap - faulty gasket. Refer to paragraph 4-7.4.
	Step 2.	Faulty fuel line connectors. Refer to paragraph 4-7.4.
	Step 3.	Clogged fuel line. Refer to paragraph 4-7.4.
	Step 4.	Leaks in fuel and air lines. Refer to paragraph 4-7.4.
	Step 5.	Pressure leaks in fuel tank. Refer to paragraph 4-7.4.

4-5. GENERAL (Continued).

Table 4-2. Portable Fire Pump (P-250) Carburetion Troubleshooting (Continued).

MALFUNCTION	
TEST OR INSPECTION	
CORRECTIVE ACTION	
Step 6.	Faulty diaphragm.
	Refer to paragraph 4-7.4.
Step 7.	Faulty acting check discs in pump mechanism.
	Refer to paragraph 4-7.4.
Step 8.	Clogged screen.
	Refer to paragraph 4-7.4.
Step 9.	Water in fuel tank.
	Refer to paragraph 4-7.4.
3. Carburetor.	
Step 1.	Improperly adjusted high and slow speed needles.
	Refer to paragraph 4-7.2.
Step 2.	Carburetor loosely mounted.
	Refer to paragraph 4-7.2.
Step 3.	Faulty fuel line connection.
	Refer to paragraph 4-7.2.
Step 4.	Shutter (butterfly) improperly adjusted.
	Refer to paragraph 4-7.2.
Step 5.	Faulty float action.
	Refer to paragraph 4-7.2.
Step 6.	Faulty float valve action.
	Refer to paragraph 4-7.2.
Step 7.	Damaged needle and float valve seats.
	Refer to paragraph 4-7.2.

4-5. GENERAL (Continued).

Table 4-2. Portable Fire Pump (P-250) Carburetion Troubleshooting (Continued).

MALFUNCTION	
TEST OR INSPECTION	
CORRECTIVE ACTION	
4. Motor floods.	
Step 1.	Choke improperly adjusted. Adjust choke.
Step 2.	Dirt between float needle and seat. Clean carburetor.
Step 3.	Float level set too high. Adjust float level.
Step 4.	Float valve stem "GUMMED" so valve does not close. Clean with solvent (P-D-680, general cleaner) or replace assembly.
Step 5.	Damaged needle valve or seat. Replace valve, carburetor body or float bowl - whichever is necessary.
5. Motor starves.	
Step 1.	Water or dirt clogging passages, jets, or screens. Clean carburetor and filter.
Step 2.	Float valve corroded - gummed so that valve does not open properly. Clean or replace valve.
Step 3.	Float level set low. Adjust float level.
Step 4.	Float hinge and pin dirty, corroded, or worn. Clean float hinge and replace hinge pin.

4-5. GENERAL (Continued).

Table 4-2. Portable Fire Pump (P-250) Carburetion
Troubleshooting (Continued).

MALFUNCTION	
TEST OR INSPECTION	
CORRECTIVE ACTION	
6. Poor Carburetion.	
Step 1.	Jets, needle valves, fuel lines, and filter obstructed. Clean.
Step 2.	Loose mounting or defective gasket between carburetor and crankcase. Tighten bolts or replace gasket, if required.
Step 3.	Faulty or gummed check valve. Refer to paragraph 4-7.2.
Step 4.	Dirty under leaf valve. Clean leaf valve, refer to paragraph 4-7.2.
Step 5.	Broken or damaged leaf valve. Replace leaf, refer to paragraph 4-7.2.

4-5. GENERAL (Continued).

Table 4-3. Portable Fire Pump (P-250) Power Head - Troubleshooting.

NOTE

Tables 4-1 thru 4-4 apply the Gale Marine P-250 portable fire pump. Tables 4-1A thru 4-3A apply to the Prosser PE250 electric start portable fire pump.

MALFUNCTION		
TEST OR INSPECTION		
CORRECTIVE ACTION		
1. Power head.		
Step 1.	Faulty, broken or cracked leaf valves.	
	Refer to paragraph 4-7.6.	
Step 2.	Faulty or blown cylinder head gasket.	
	Refer to paragraph 4-7.6.	
Step 3.	Exhaust ports clogged with carbon.	
	Refer to paragraph 4-7.6.	
Step 4.	Piston ring grooves clogged with carbon.	
	Refer to paragraph 4-7.6.	
Step 5.	Cylinder walls scored.	
	Refer to paragraph 4-7.6.	
Step 6.	Piston crown eroded or carboned.	
	Refer to paragraph 4-7.6.	

4-5. GENERAL (Continued).

Table 4-4. Portable Fire Pump (P-250) Cooling System -
Troubleshooting.

NOTE

Tables 4-1 thru 4-4 apply the Gale Marine P-250 portable fire pump. Tables 4-1A thru 4-3A apply to the Prosser PE250 electric start portable fire pump.

MALFUNCTION		
TEST OR INSPECTION		
CORRECTIVE ACTION		
1. Cooling system.		
Step 1.	Clogged water inlet.	
	Refer to paragraph 4-7.10.	
Step 2.	Blown or faulty cylinder head gasket to cause piston damage or failure to prime.	
	Refer to paragraph 4-7-10.	
Step 3.	Clogged water lines.	
	Refer to paragraph 4-7-10.	

4-5. GENERAL (Continued).

Table 4-1A. Portable Fire Pump (PE-250) - Hard Starting
or Will Not Start.

NOTE

Tables 4-1A thru 4-3A apply to the Prosser PE250 electric start portable fire pump. Tables 4-1 thru 4-4 apply the Gale Marine P-250 portable fire pump.

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

1. Lack of fuel.

Step 1. Empty fuel tank.

Refill fuel tank (Mixture: 2 cans of BIA-TC-W oil
and 6 gallons (22.7 liters) of 90 octane gasoline.

Step 2. Fuel line pinched or disconnected.

Check feed lines and repair or replace as required.

Step 3. Plugged vent hole in fuel tank filler cap.

Remove filler cap and clean vent hole.

Step 4. Fuel line connector plugged.

Remove connector and clean.

Step 5. In pulse tube loose or pinched.

Check impulse tube and repair or replace as
required.

2. Poor or no ignition spark.

Step 1. Ignition not turned on.

Turn ignition on.

Step 2. Spark plugs wet or carbon fouled.

Check spark plugs.

Step 3. Spark plug electrode broken.

Check spark plugs.