TECHNICAL MANUAL

OPERATOR'S MANUAL
FOR

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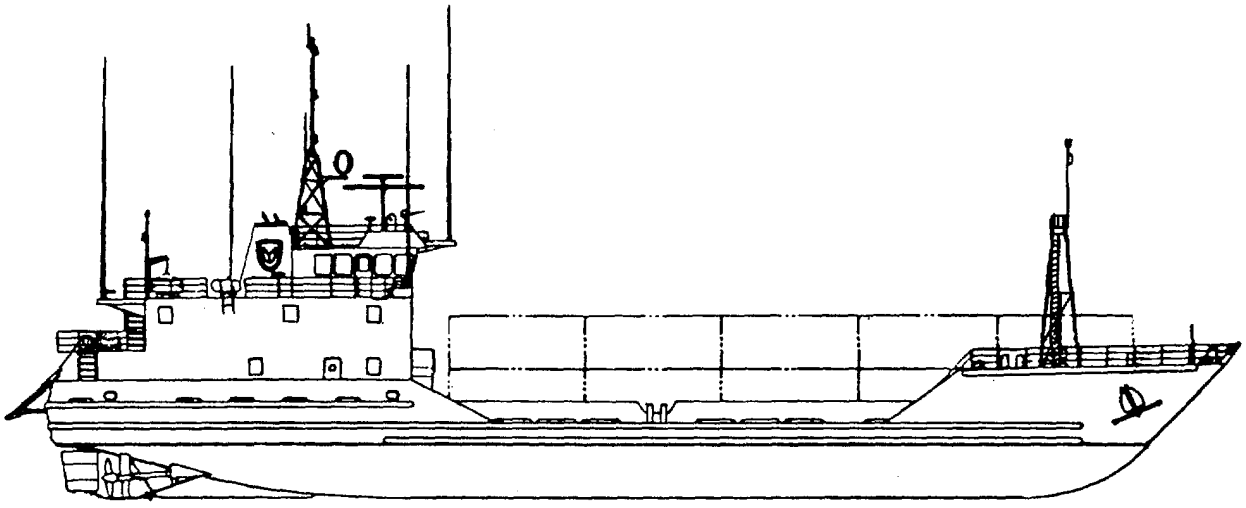
LANDING

CRAFT, UTILITY
(LCU 2000 CLASS)
NSN 1905-01-154-1191



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HEADQUARTERS, DEPARTMENT OF THE ARMY
17 January 1989

TECHNICAL MANUAL

NO. 55-1905-223-10

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 17 January 1989

OPERATOR'S MANUAL FOR

LANDING CRAFT, UTILITY (LCU 2000 CLASS) NSN 1905-01-154-1191

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HOW TO USE THIS MANUAL

GENERAL. This manual contains description, technical principles of operation, and operating instructions for the Landing Craft, Utility (LCU). The manual is divided into three chapters:

CHAPTER 1, INTRODUCTION, provides general information about the vessel, identifies the major components and systems by deck and compartment, and describes how the components or systems work.

CHAPTER 2, OPERATING INSTRUCTIONS, identifies operating controls and indicators and explains how to use them. Most of the information is organized by the compartment in which it is located. This chapter covers preventive maintenance checks and services (PMCS), how to operate the vessel and its equipment during usual and unusual conditions, and how to respond to certain emergency conditions.

CHAPTER 3, MAINTENANCE INSTRUCTIONS, references the user to the applicable Department of the Army Technical Manual that explains what to do when something goes wrong with the vessel.

WARNINGS, CAUTIONS, AND NOTES. Information is provided throughout the manual which does not fit into a procedural step. This information is in the form of WARNINGS, CAUTIONS, and NOTES. WARNINGS are provided where injury may occur to personnel on or near the equipment. WARNING headings are boxed, as shown below:

WARNING

RADIO FREQUENCY HAZARD

- Electromagnetic radiation has the potential for serious injury or death.
- Avoid placing your body in the path of radiation emissions.

There are also a number of general WARNINGS listed in the Warning Page which should be read before operating the vessel.

CAUTIONS are provided where equipment may be damaged but no personal injuries should result. The word CAUTION is underlined, as shown below:

CAUTION

Do not hold in START position any longer than necessary to start equipment or the starter will overheat.

NOTES highlight or amplify information to operate the vessel or equipment, but no equipment damage or personnel injury is involved, as shown below:

HOW TO USE THIS MANUAL - continued

NOTE

Engine should start within 10 seconds.

WARNINGS, CAUTIONS, AND NOTES SHOULD NEVER BE IGNORED.

INTERNAL REFERENCING. In this manual, internal referencing is done by paragraph number. For example: Align fuel oil transfer piping system (see para. 2-9.a.).

The note (see para. 2-9.a.) refers you to Chapter 2, paragraph 9.a., of this manual. If the paragraph is less than 10 lines or 200 words, the information will be repeated and not referred to.

For quick reference to a vessel item or procedure, use the alphabetical index in the back of this manual.

Operating procedures that involve valves will contain the valve number, followed by the valve name, followed by the illustration callout number in parenthesis.

EXTERNAL REFERENCING. Referencing outside this manual will be by the military publication number. For example: Clean and lubricate (see LO 55-1905-223-12). The note (see LO 55-1905-223-12) refers you to the lubrication order for the Landing Craft, Utility (LCU) vessel.

PROBLEMS AND MALFUNCTIONS. The vessel may not work properly during operation. When malfunctions occur, the operator should go to the appropriate page of the equipment technical manual (TM 55-1905-223-24-series) and look for the problem in the symptom (malfunction) index of the troubleshooting section. This index will direct the operator to identify exactly what is wrong and correct it. The procedure may direct the operator to other sections of the manual, such as Maintenance. When the operator has done all that can be done and the problem still exists, the operator will be directed to notify higher maintenance. If there is no procedure provided in the symptom (malfunction) index to correct the problem, then the operator should notify higher maintenance.

APPENDIXES. There are six appendixes that provide additional information needed to operate the vessel. Various lists of equipment and supplies, sounding tables, and other general information are provided. The appendixes are lettered A through F.

SECTION INDEXES. Section indexes are provided for each section in chapter 2 to assist you in locating the desired information.

ALPHABETICAL INDEX. Items and operations are listed in alphabetical order by paragraph number.

LOCATION TERMS. The terms starboard (STBD), port, forward, and aft are used to describe areas of the vessel. The location terms refer to the right side (STBD), left side (PORT), front (FORWARD), or rear (AFT) standing in the pilothouse facing the bow ramp of the LCU.

HOW TO USE THIS MANUAL - continued

ILLUSTRATIONS AND TEXT. Locator views are included wherever necessary. An arrow is used to show the general location of the equipment referred to in the text. An arrow connects the point of interest to an overall view of the equipment. Callout numbers identifying parts appear on the art and in parentheses in the text.

PIPING DIAGRAMS. Piping diagrams show the general location of valves, diverters, pumps, etc. Piping between these locations is functional and may not reflect the "as installed" piping. In small areas where a number of items are located, you will see a circle with a note (for example, SEE DETAIL A).

The detailed diagram will be found after the first sheet and will be labeled to match the note. See the table below for a legend of piping symbols used.

SYMBOL	DESCRIPTION
	VALVE providing ON-OFF CONTROL
	RELIEF VALVE
	STRAINER
	EDUCTOR
	CHECK VALVE
	PUMP
	KEEL COOLER (INLET OR OUTLET)
	HAND PUMP

SYMBOL	DESCRIPTION
	REACH ROD HAND WHEEL
	CONNECTOR (indicator vertical continuation of piping)
	CONNECTOR (indicator same-deck continuation of piping)
	CONNECTOR, provides means of tracing piping between sheets
	DIVERTER, directs flow between three pipes
	WATER HEATER
	DRAIN
	REGULATOR

CHAPTER 1

INTRODUCTION

Section I. GENERAL INFORMATION

1-1. **Scope.** This is an operator's manual for the 2000 Class Landing Craft, Utility (LCU) (See FIGURE 1-1). The LCU is designed to transport cargo from ships offshore to shore and to transport cargo to areas that cannot be reached by ocean going vessels. The LCU can carry rolling stock (trucks, tanks, and other vehicles) and dry cargo. The vessel can operate in coastal waters and on the open ocean. It can beach and retract itself on remote coastlines and undeveloped port areas. Because of its shallow draft, the LCU can carry cargo from deep drafted ships to shore in ports or areas too shallow for larger ships. The LCU is also capable of deploying overseas under its own power.

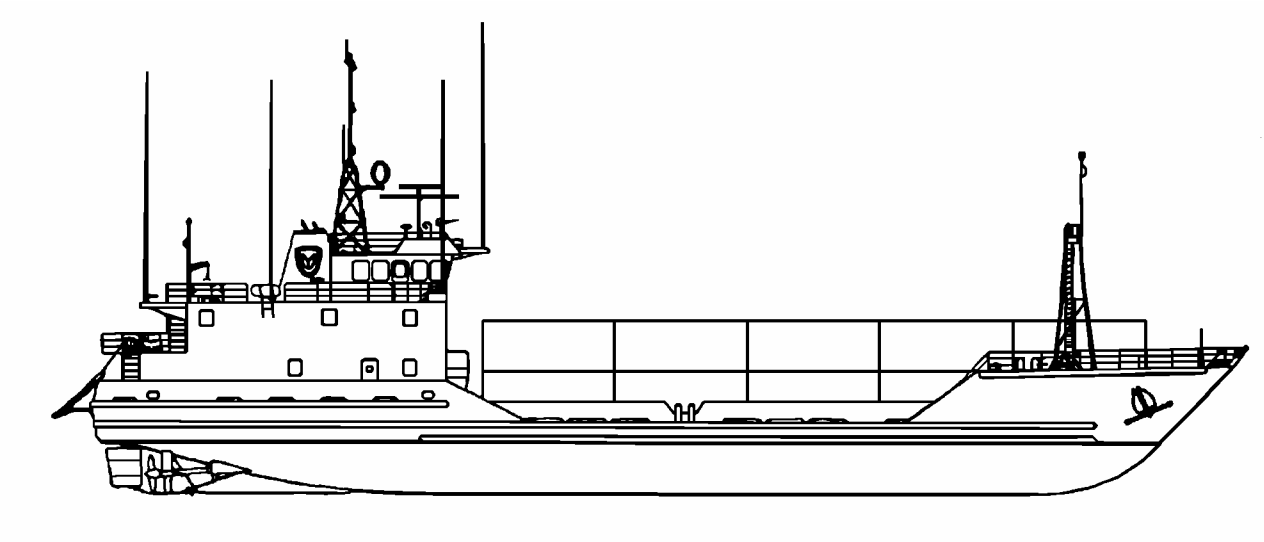

FIGURE 1-1. Landing Craft, Utility

1-2. Hand Receipt (HR) Manuals. Not applicable.

1-3. Reporting Equipment Improvement Recommendations (EIRs). If your LCU needs improvement, let us know. Send us an EIR. You the user are the only one who can tell what you don't like about the equipment. Let us know why you don't like the design or performance. Put it on an SF 368 (Quality Deficiency Report). Mail the SF 368 to us at Commander, US Army Tank-automotive and Armaments Command, AMSTA-LC-CIP-WT, Rock Island, IL 61299-7630. We will send you a reply.

1-4. Warranty. Refer to TB 55-1905-223-24, Warranty Procedures for Landing Craft Utility (LCU).

1-5. Cross Reference List For Selected CECOM Equipment. A cross reference list for commercial electronic equipment recently type classified is provided in Table 1-1. This list provides a cross reference from the equipment description to both official government nomenclature and commercial identification.

Table 1-1. Cross Reference List for Selected Communications-Electronics Equipment

NO.	DESCRIPTION	NOMENCLATURE	COMMERCIAL IDENTIFICATION
1	Radar Set (3 cm)	AN/SPS-64(V)16	AN/SPS-64
2	Radar Set (10 cm)	AN/SPS-64(V)17	AN/SPS-64
3	Radar Interswitch Unit	SA-2308/SPS-64(V)	SA 2308
4	Radio Set	AN/SRD-26	4005A
5	Sonar Sounding Set	AN/SQN-21	D600D
6	Radio Frequency Amplifier	AM-7387/URC	MSR 1020
7	Power Supply	PP-8236/URC	MSR 6212
8	Antenna Coupler	CU-2417/URC	MSR 4030
9	Facsimile Recorder Reproducer	RD-605/UXH	TR-1
10	Receiver Transmitter	RT-1600/U	6100
11	Alarm Signal Generator	SG-1319/SCN	MR 370-13A
12	Radio Receiver	R-2414/SRA	M1511
13	Telegraph Terminal	AN/SGC-14	RF3500
14	Radio Receiver	R-2408/URC	MSR 5050
15	Radio Transmitter	T-1527/URC	MSR 6700

Table 1-1. Cross Reference List for Selected Communications-Electronics Equipment (Continued)

NO.	DESCRIPTION	NOMENCLATURE	COMMERCIAL IDENTIFICATION
16.	Receiver-Transmitter	RT-1588/SRQ	403A
17.	Communication Modem	MD-1255/URC	1280A
18.	Interface Unit	J-4795/U	6606
19.	Electronic Equipment Installation Kit	MK-2453/G	MK-2453
20.	Sound Measuring Set	AN/SQN-20	DSL-150
21.	Radio Set	AN/PRC-129	RPX-150
22.	Satellite Signals Navigation Set	AN/WRN-6(V)2	

Section II. EQUIPMENT DESCRIPTION

1-6. Equipment Characteristics, Capabilities, and Features. These are given in the following subparagraphs.

a. Characteristics. The LCU is designed to carry 350 short tons of dry cargo on the cargo deck. Deck cargo can include:

- Standard containers
- Pallets
- Army vehicles
- M–1 Tanks
- Crane
- Container handler
- General cargo

b. Capabilities. The LCU is capable of self–delivery to overseas locations, has a maximum range of 4500 nautical miles with 25% fuel reserve, can land and retract from undeveloped coastlines under full load, and can deliver cargo to terminal areas not accessible to deep draft vessels.

c. Features. The LCU features discharge and backloading of other ships and provides roll on/roll off (RO RO) delivery for portable equipment. It is capable of carrying cargo from ship–to–shore in a minimum of four feet of water.

1-7. Location and Description of Major Components. External and internal illustrations show the location of major components and compartments of the LCU.

a. LCU Decks. Items shown on FIGURE 1-2 are described as follows:

(1) Pilothouse top. The pilothouse top (weather deck) contains radar antennas, searchlights, foam fire station, fire monitors, gyro repeater, satellite signals navigation set antenna and antenna amplifier, the binnacle compass and supports for cargo lights.

(2) 02 Level. The 02 Level includes, but is not limited to, the pilothouse and poop deck.

(3) 01 Level. The 01 Level includes, but is not limited to, crew accommodations, stern anchor winch, and the aft damage control locker.

(4) Main deck. The main deck includes, but is not limited to, the provisions storeroom, galley, mess room, recreation room, sick bay, arms control room, the air conditioning and emergency generator room, paint locker, boatswains locker, and the forward damage control locker.

(5) Forecastle deck. The forecastle deck (weather deck) is fitted with the anchor windlasses port and starboard, bitts, chain stopper, and roller fairlead.

(6) Below main deck. Below the main deck are the steering gear compartment, ballast, fuel, and water tanks; fire station; engine room; tunnel; bowthruster compartment; machine shop; stowage compartments, and engine operating station.

(7) DIMENSIONS

CARGO DECK	11' 6"
RAISED MAIN DECK	14' 9"
01 LEVEL DECK	22' 9"
02 LEVEL DECK	30' 9"
PILOT HOUSE TOP	38' 9"
TOP OF MAIN MAST	69' 9" (MAST HEAD LIGHT)
TOP OF HIGHEST ANTENNA (MAIN MAST)	72' 3"
TOP OF FWD MAST	55' 8" (AT NAV LIGHT)
TOP OF ANTENNA	77' 9" (FWD MAST)

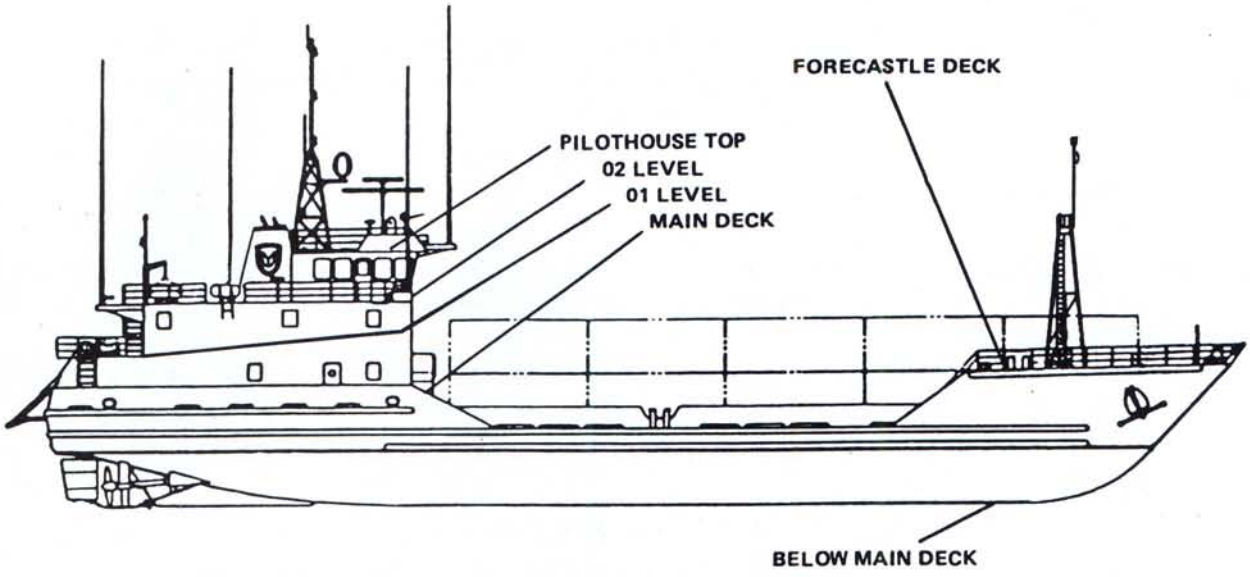

FIGURE 1-2. LCU Decks.

b. LCU External Features. FIGURE 1-3, sheets 1 through 3, shows the LCU external views. Sheet 1 shows the ship's profile to include top and starboard features. Sheet 2 displays the ship's antenna arrangement. Sheet 3 shows the countermeasure washdown system. FIGURE 1-4 shows the pilothouse deck equipment and the 02 level. FIGURE 1-5 shows the 01 level deck equipment. FIGURE 1-6 shows the main deck equipment. FIGURE 1-7 shows the equipment contained on the forecastle deck.

(1) LCU profile. Items shown on sheet 1 of FIGURE 1-3 are described as follows:

(a) Stern anchor (1). The stern anchor is a Danforth type weighing 2000 pounds with 1200 feet of galvanized wire rope. A turn buckle is provided to secure the anchor when stowed in the anchor rack.

(b) Bow anchor (port and starboard) (2). Two Danforth type, each weighing 1700 pounds are self-stowing anchors. Each anchor has a shackle and swivel. Port anchor has 6 shots of chain, starboard has 7 shots of chain.

(c) Hull (3). The hull is all steel, having continuous sealtight welding with full continuity of structural members.

(d) Propeller shaft (port and starboard) (4). Shafts of solid steel that transfer power from the reduction gear to the propellers.