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**FM 55-501**

**MARINE CREWMAN'S HANDBOOK**

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**HEADQUARTERS,  
DEPARTMENT OF THE ARMY**

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# MARINE CREWMAN'S HANDBOOK

## Contents

	Page
<b>Preface</b> .....	<b>vii</b>
<b>Chapter 1 INTRODUCTION TO ARMY WATERCRAFT</b> .....	<b>1-0</b>
Watercraft Operations .....	1-0
Classes of Watercraft .....	1-1
Descriptions of Logistics Support Vessel .....	1-2
<b>Chapter 2 SHIPBOARD LIFE</b> .....	<b>2-0</b>
Marine Qualification .....	2-0
Shipboard Customs and Courtesies .....	2-3
Deck Watches .....	2-7
Logbooks .....	2-13
Shipboard Sanitation .....	2-17
Water Pollution Control .....	2-19
Accident Reports .....	2-22
<b>Chapter 3 VESSEL TERMS AND DEFINITIONS</b> .....	<b>3-1</b>
Nautical Terminology .....	3-1
Structural Parts of the Hull .....	3-1
Shipboard Measurements .....	3-7
Categories of Ship's Deck Gear .....	3-11

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	Page
<b>Chapter 4</b>	<b>SMALL BOAT HANDLING .....4-1</b>
	Forces Affecting Boat Handling .....4-1
	Standard Steering Commands.....4-3
	Handling Characteristics of Single- and Twin-Screw Vessels .....4-5
	Docking and Undocking ..... 4-11
	Handling Grounded Harbor Craft ..... 4-17
	Heavy Weather Measures ..... 4-21
<b>Chapter 5</b>	<b>CHARTS AND PUBLICATIONS.....5-0</b>
	The Earth and Its Coordinates .....5-0
	The Mercator Chart .....5-7
	Chart Portfolios..... 5-21
	Correcting a Chart ..... 5-22
	Requisitioning Procedures for Charts..... 5-26
	Publications..... 5-29
<b>Chapter 6</b>	<b>DEAD RECKONING AND PILOTING TECHNIQUES .....6-1</b>
	The Magnetic Compass .....6-1
	Piloting Instruments..... 6-16
	Aids to Navigation ..... 6-25
	Dead Reckoning..... 6-39
	Piloting Techniques ..... 6-50
<b>Chapter 7</b>	<b>TIDES AND CURRENTS .....7-1</b>
	Tides .....7-1
	Tide Tables .....7-4
	Predicting the Height of Tide .....7-8
	Tidal Currents..... 7-13
	Tidal Current Tables..... 7-13
	Predicting the Set and Drift of the Current ..... 7-14
<b>Chapter 8</b>	<b>WEATHER .....8-0</b>
	Weather Instruments .....8-0
	Clouds..... 8-13
	Basic Elements of Weather ..... 8-18

	Page
<b>Chapter 9</b>	<b>SHIPBOARD COMMUNICATIONS.....9-0</b>
	Shipboard Tactical and Marine Radios ..... 9-0
	Communications-Electronics Operation Instructions ..... 9-9
	Signaling by International Code Flags ..... 9-15
	Flashing Light Signals ..... 9-17
	Distress, Urgent, and Special Signals ..... 9-21
	Emergency Radiotelephone Procedures..... 9-27
<b>Chapter 10</b>	<b>MARINE EMERGENCIES..... 10-1</b>
	Station Bill..... 10-1
	Emergency Signals ..... 10-2
	Emergency Squad..... 10-4
	Abandon Ship Procedures..... 10-5
	Life Rafts..... 10-22
	Search Air Rescue ..... 10-44
	Shipboard NBC Defense ..... 10-51
<b>Chapter 11</b>	<b>SHIPBOARD FIRE FIGHTING..... 11-1</b>
	Chemistry of Fire..... 11-1
	Classes of Fire ..... 11-6
	Extinguishing Agents..... 11-6
	Portable Fire Extinguishers ..... 11-26
	Semiportable Fire Extinguishers..... 11-43
	Fixed Fire Stations ..... 11-44
	Self-Contained Breathing Apparatus..... 11-50
<b>Chapter 12</b>	<b>MARLINESPIKE SEAMANSHIP ..... 12-0</b>
	Care and Use of Fiber Line..... 12-0
	Knots, Bends, and Hitches..... 12-10
	Splicing Three-Strand Fiber Line ..... 12-21
	Care and Use of Wire Rope ..... 12-26
	Putting an Eye in Wire Rope ..... 12-34
	Splicing 2-in-1 Double-Braided Nylon Line (Samson 2-in-1 Braid-Splicing Principles) ..... 12-41
<b>Chapter 13</b>	<b>DECK MAINTENANCE ..... 13-0</b>

	Preventive Maintenance .....	13-0
	Hand Tools and Their Use .....	13-1
	Painting .....	13-6
	Spray Guns and Their Use.....	13-26
	Maintenance of Ship's Rigging and Deck Machinery .....	13-42
		<b>Page</b>
<b>Chapter 14</b>	<b>BEACHING AND RETRACTING OPERATIONS.....</b>	<b>14-1</b>
	Rules for Landing Operations .....	14-1
	Surf Action .....	14-1
	Preparing to Hit the Beach.....	14-3
	Beaching Hazards .....	14-5
	Broaching To.....	14-6
	Beaching Procedures.....	14-7
	Beaching an LCU .....	14-7
	Retracting an LCU.....	14-8
	Retracting an LCM.....	14-9
	Salvage Procedures .....	14-10
<b>Chapter 15</b>	<b>LANDING CRAFT OPERATIONS.....</b>	<b>15-1</b>
	Administrative Operation .....	15-1
	Tactical Operation .....	15-1
	<b>Section I -- Tactical Operations .....</b>	<b>15-1</b>
	Amphibious Operations .....	15-1
	Loading for Movement Overseas.....	15-2
	Boat Groups .....	15-2
	Calling Boats Alongside.....	15-2
	Landing Craft Waves.....	15-4
	Types of Formations.....	15-4
	Landing Craft Visual Signals.....	15-5
	Hydrographic and Beach Markers.....	15-8
	General Unloading Phase.....	15-9
	<b>Section II -- Logistics-Over-The-Shore Operations .....</b>	<b>15-10</b>
	Logistic Over The Shore Operations.....	15-10
	Cargo Documentation.....	15-10
	Cargo Loading Operations.....	15-10
	Tips On Securing Cargo Aboard Landing Craft .....	15-10
	Loading Troops.....	15-12
<b>Chapter 16</b>	<b>SAFETY .....</b>	<b>16-1</b>

	Responsibilities for Safety Program.....	16-1
	Principles of an Effective Safety Program .....	16-2
	Safety Standing Operating Procedure .....	16-3
	Special Precautions.....	16-4
	Safety Color Code Markings and Signs .....	16-6
		<b>Page</b>
<b>Chapter 17</b>	<b>SHIPBOARD EXPEDIENTS (EMERGENCIES) .....</b>	<b>17-1</b>
	Emergency Steering Procedures, LCM-8.....	17-1
	Field Expedient Repairs .....	17-3
	LCU 1600 Emergency Steering .....	17-4
	Lowering the Ramp on an LCM-8 Without Power .....	17-6
	Raising the Ramp on an LCM-8 Without Power.....	17-12
	Beaching Stern First.....	17-12
	Underwater Repairs.....	17-14
	Expedient Repairs--Troubleshooting Chart .....	17-15
	Floating in a Towline .....	17-15
<b>Chapter 18</b>	<b>SEARCH AND RESCUE.....</b>	<b>18-0</b>
	Personal Survival.....	18-0
	Cold Water Survival and Hypothermia .....	18-1
	Sector Search Pattern for One Ship .....	18-2
<b>Chapter 19</b>	<b>TOWING.....</b>	<b>19-0</b>
	Types of Tow.....	19-0
	Description of Towing Equipment .....	19-1
	Handling Towlines .....	19-4
	Towing Alongside (Hip Tow) .....	19-6
	Towing Astern (Inland Waters) .....	19-9
	Towing Astern (Open Sea) .....	19-12
	Towing in Tandem.....	19-14
<b>Chapter 20</b>	<b>RIGGING (SEAMANSHIP).....</b>	<b>20-1</b>
	<b>Section I -- Blocks and Tackles .....</b>	<b>20-1</b>
	Description of Blocks.....	20-1
	Common Cargo Blocks.....	20-2
	Combinations of Blocks and Tackles .....	20-4
	Reeving Blocks and Tackles.....	20-6
	Determining the Mechanical Advantages of Tackles.....	20-8
	<b>Section II -- Computations.....</b>	<b>20-9</b>

Computing Friction ..... 20-9  
 Computing Breaking Strength and Safe Working Load ..... 20-9  
 Computing the Breaking Strength of a Block and Tackle ..... 20-11  
 Computing Safe Working Load for Hooks, Shackles, and Turnbuckles ..... 20-14

	<b>Page</b>
	<b>Section III -- Block Maintenance and Rigging..... 20-15</b>
	Maintenance and Overhaul of Blocks ..... 20-15
	Standing Rigging ..... 20-17
	Inspections of Rigging ..... 20-18
	Grounding Masts ..... 20-18
<b>Chapter 21</b>	<b>GROUND TACKLE ..... 21-1</b>
	Anchors ..... 21-1
	Anchor Chain..... 21-2
	Marking the Anchor Chain ..... 21-6
	The Anchor Windlass ..... 21-8
	Letting Go the Anchor--General Procedures ..... 21-11
	Operating the Capstan Anchor Windlass ..... 21-12
	Operating the Horizontal Anchor Windlass..... 21-15
	Sequence of Weighing Anchor ..... 21-21
	Securing the Anchor for Sea..... 21-21
	Maintenance..... 21-21
<b>Chapter 22</b>	<b>DAMAGE CONTROL ..... 22-1</b>
	Damage Control Program ..... 22-1
	Shoring..... 22-3
	Bracing..... 22-6
	Use of Carpenter's Steel Square in Shoring..... 22-10
	Plugging ..... 22-14
	Patching ..... 22-14
	Pipe Repair ..... 22-18
	Emergency Damage Control Metallic Pipe Repair Kit ..... 22-20
<b>Appendix A</b>	<b>NAUTICAL CHART SYMBOLS AND ABBREVIATIONS .....A-0</b>
<b>Appendix B</b>	<b>FORMATS FOR REQUISITIONING CHARTS AND OTHER MARINE PRODUCTS FROM THE DEFENSE MAPPING AGENCY .....B-0</b>
<b>Appendix C</b>	<b>EXTRACT FROM AMERICAN PRACTICAL NAVIGATOR, VOLUME II .....C-0</b>
<b>Appendix D</b>	<b>WIRE AND NYLON TOWLINES .....D-0</b>

<b>Glossary</b>	.....	<b>Glossary-0</b>
<b>Bibliography</b>	.....	<b>Bibliography-0</b>
<b>Index</b>	.....	<b>Index-1</b>



## Preface

The US Army watercraft fleet is made up of all types of vessels, including oceangoing vessels, tugs, landing craft, barges, and amphibians. Although all of these vessels operate on water, their missions are different. The watercraft operator must have the skills and knowledge to perform the tasks required on any of these vessels.

This FM is for the 88K watercraft operator, skill levels 1 through 4. It will provide the subject matter that relates directly to the common technical tasks listed in STP 55-88K14-SM-TG.

The US Army's environmental strategy into the 21st century defines the Army's leadership commitment and philosophy for meeting present and future environmental challenges. It provides a framework to ensure that environmental stewardship ethic governs all Army activities. The Army's environmental vision is to be a national leader in environmental and natural resource stewardship for present and future generations, as an integral part of all Army missions. The Army's environmental vision statement communicates the Army's commitment to the environment.

The proponent of this publication is HQ TRADOC. Send comments and recommendations on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to Commander, US Army Combined Arms Support Command, ATTN: ATCL-AT, 401 1<sup>st</sup> Street, Suite 227, Fort Lee, Virginia 23801-1511.

Unless this publication states otherwise, masculine nouns and pronouns do not refer exclusively to men.

## Chapter 1

# Introduction to Army Watercraft

Army watercraft are used in the following operations: harbor, coastal, interisland, and LOTS. They are also used for other operations such as ocean towing and security patrols. This chapter addresses these operations and the categories of watercraft.

### WATERCRAFT OPERATIONS

1-1. US Army watercraft play a major role in projecting and sustaining combat forces. From established ports to LOTS operations, Army watercraft provides a flexible means of moving troops and supplies. Through prepositioning and self deployable vessels, the Army's fleet of diverse watercraft are capable of playing a dynamic part in the Army Strategic Mobility Program.

### MISSION

1-2. The mission of Army watercraft is to support the Army's RSOI movement plan. Army watercraft provide the vital link between the offshore arrival of combat power, loaded aboard strategic sealift ships, and placing that power ashore in a ready-to-fight configuration. The Army watercraft fleet must be prepared to do this mission anywhere in the world. This is accomplished by the following means:

- Transport of personnel and cargo between ship and shore and on inland waterways.
- Floating equipment support for terminal operations within a fixed-port or unimproved port facility complex.
- During riverine operations.
- Lighterage for cargo and personnel from ships lying offshore to transfer-segregation areas beyond the beach lines in LOTS operations.

### HARBOR OPERATIONS

1-3. This includes the movement of cargo and personnel within a harbor and the protected waters in the vicinity of the harbor. Tugs, barges, and floating cranes discharge and transfer cargo; small craft provide ferrying service; and picket boats conduct security patrols. Tugs are used for providing berthing service for oceangoing vessels and for fire fighting in the port area.

## INTERISLAND AND COASTAL OPERATIONS

1-4. Large watercraft carry cargo and personnel from central ports to smaller outlying installations (such as sub-ports, radar installations, and other terminals). Where larger oceangoing freighters cannot navigate, LSVs and landing craft can safely transport cargo through shallow waters and narrow winding channels.

## LOGISTICS-OVER-THE-SHORE OPERATIONS

1-5. This includes ship-to-shore operations moving cargo and personnel onto a prepared beachhead from larger vessels anchored offshore. This operation is the most difficult and time consuming. Planning, timing, and a skilled Weather Eye means the difference in success or failure in this type of cargo operation. Landing craft, amphibians, and causeway ferry systems are normally used for such operations. Tugs with barges, floating cranes, and LSVs may also be used where causeway piers have been installed on the beach.

## WORLD WIDE MISSIONS

1-6. Army watercraft are capable of deployment to any theater of operation around the world. Vessels such as the LSV and the 128-foot tug are capable of self deployment. The LCU 2000, while capable of self deployment, may also be transported aboard heavy lift ships. The remainder of the smaller vessels in the fleet also uses this method of transportation.

## CLASSES OF WATERCRAFT

1-7. There are three classes of Army watercraft. These classes include the following:

- Class A vessels.
- Class B vessels.
- Class C vessels.

## CLASS A VESSELS

1-8. These are the self-sustaining vessels that are self-propelled and designed for continuous operation. They are commanded by WOs licensed to serve on class A vessels according to AR 56-9. Within this class of vessels are two subclasses. They are as follows:

- *Class A-1 Vessels.* This class of vessel normally operate in coastal waters.
- *Class A-2 Vessels.* This class of vessel is fully ocean capable.

### CLASS B VESSELS

1-9. These are nonself-sustaining vessels that are self-propelled. They are commanded by NCOs, certified to serve on class B vessels according to AR 56-9. The crews are small and generally these vessels do not have living space accommodations. To perform continuous operations, complete crew changes must be made. These vessels require significant shoreside support. Two crews, running in two 12-hour periods, can perform 24-hour operations.

### CLASS C VESSELS

1-10. All nonpropelled floating equipment, such as cranes, dry and liquid barges, and refrigerated barges are classified as class C vessels. This class is further divided into the following two subclasses:

- *Class C-1 Vessels.* This class of vessel are the nonpropelled floating craft having berthing facilities aboard for assigned personnel.
- *Class C-2 Vessels.* This class of vessel are nonpropelled manned vessels having no berthing facilities aboard.

### DESCRIPTIONS OF LOGISTICS SUPPORT VESSEL

1-11. The Army's mission for watercraft requires a fleet of over 20 different types of vessels. These vessels differ greatly in design and use.

### DESCRIPTION OF LOGISTICS SUPPORT VESSEL

1-12. The LSV (Figure 1-1) is a self deployable vessel designed to transport combat vehicles and sustainment cargo worldwide. It is capable of performing cargo loading and discharge by RO/RO or crane supported LO/LO operations. The characteristics of the vessel are as follows:

**Length overall:** 273 feet

**Beam:** 60 feet

**Displacement (weight):** 4,199 long tons

**Deck area:** 10,500 square feet (up to 24 M1 main battle tanks or 50 double stacked 20-foot ISO containers)

**Payload:** 2,000 tons (equivalent to 86 C-141 payloads)

**Range:** Light - 8,200 nautical miles at 12.5 knots, loaded - 6,500 nautical miles at 11.5 knots

**Crew Size:** 8 WOs and 24 enlisted

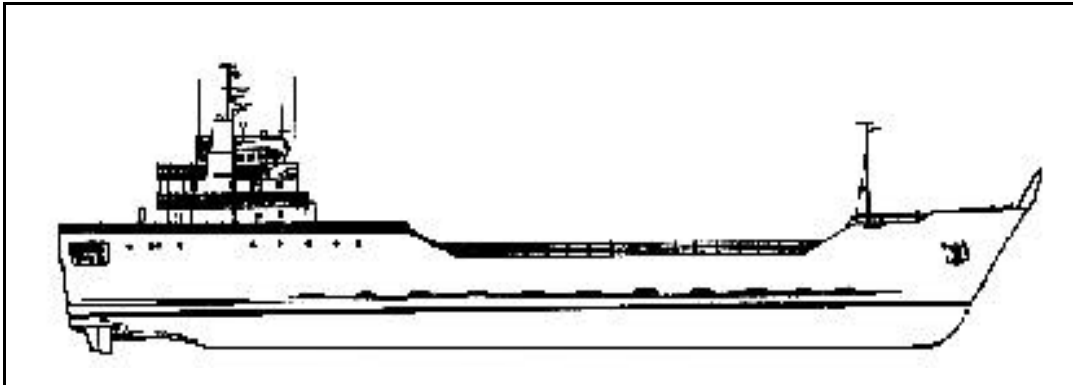


Figure 1-1. Logistics Support Vessel

#### DESCRIPTION OF LCU 2000

1-13. The LCU 2000 (Figure 1-2) provides worldwide transport of combat vehicles and sustainment cargo. Like the LSV, it provides intratheater movement of cargo and equipment. The LCU 2000 can perform missions ranging from RO/RO discharge of LMSR's to LOTS operations on unimproved beaches. The characteristics of the vessel are as follows:

**Length overall:** 174 feet

**Beam:** 42 feet

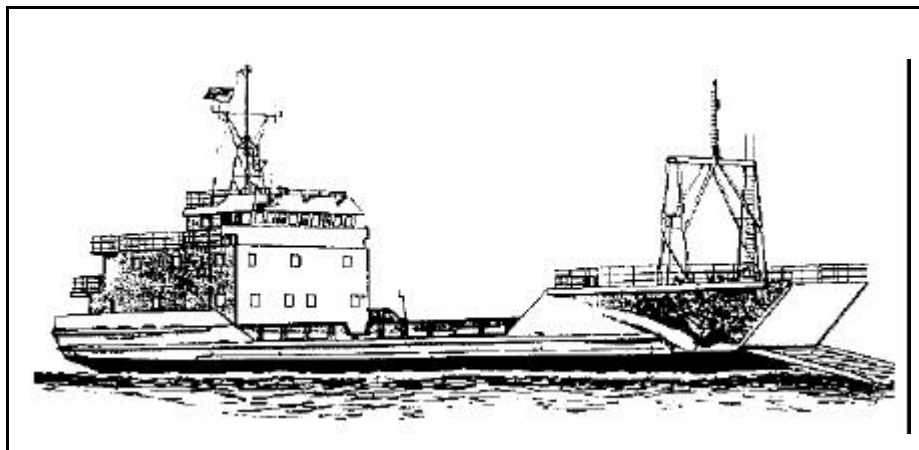
**Displacement (weight):** 1,087 long tons (loaded)

**Deck area:** 2,500 square feet (5 M1 main battle tanks or 24 double stacked, 20-foot ISO containers)

**Payload:** 350 tons (equivalent payload of 15 C-141 aircraft loads)

**Range:** Light - 10,000 nautical miles at 12 knots, loaded - 6,500 nautical miles at 10 knots

**Crew size:** 2 WOs and 11 enlisted



**Figure 1-2. LCU 2000****DESCRIPTION OF LCU 1600**

1-14. The LCU 1600 (Figure 1-3) is used to transport combat vehicles and sustainment cargo from ship-to-shore, shore-to-shore, and in retrograde operations. Intratheater transport is also accomplished using harbor and inland waterway routes. The characteristics of the vessel are as follows:

**Length overall:** 135 feet

**Beam:** 30 feet

**Displacement (weight):** 390 long tons (loaded)

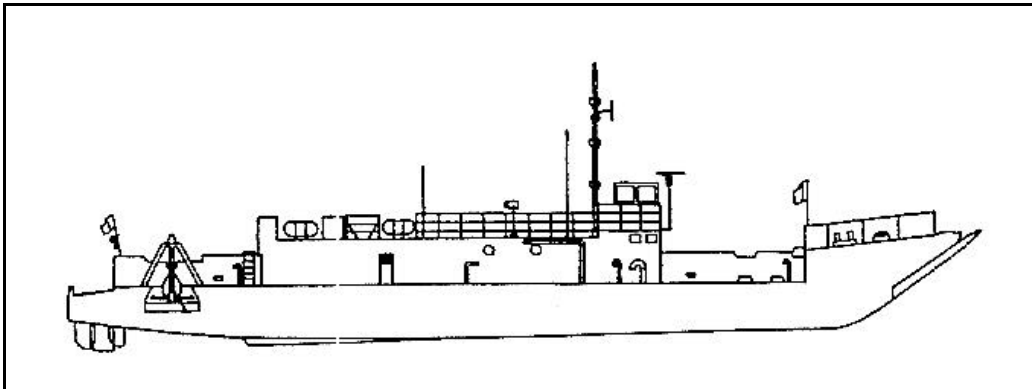
**Deck area:** 1,785 square feet (2 M1 main battle tanks or 10 double stacked, 20-foot ISO containers)

**Payload:** 184 tons (equivalent payload capacity of 7 C-141 aircraft loads)

**Range:** Light - 1,200 nautical miles at 12 knots, loaded - 1,100 nautical miles at 11 knots

**Draft:** Light - 6 feet, loaded - 7 feet

**Crew size:** 2 WOs and 12 enlisted

**Figure 1-3. LCU 1600**

### DESCRIPTION OF THE LCM-8

1-15. The LCM-8 (Figure 1-4) is used to transport cargo, troops, and vehicles from ship-to-shore or in riverine operations. It is also used in lighter and utility work in harbors. It is designed for use in rough or exposed waters and is capable of operating through breakers and grounding on the beach. The bow ramp permits RO/RO operations with wheeled and tracked vehicles. Its small size allows for use in confined areas. The characteristics of the vessel are as follows:

**Length overall:** 74 feet

**Beam:** 21 feet

**Displacement (weight):** 111 long tons (loaded)

**Deck area:** 620 square feet (two 20-foot ISO containers or 200 combat troops)

**Payload:** 53 tons (equivalent payload capacity of 2 C-141 loads)

**Range:** Light - 332 nautical miles at 11 knots, loaded - 271 nautical miles at 9 knots

**Draft:** Light - 3.5 feet, loaded - 5 feet

**Crew size:** 6 enlisted for 24-hour operations (two shifts)

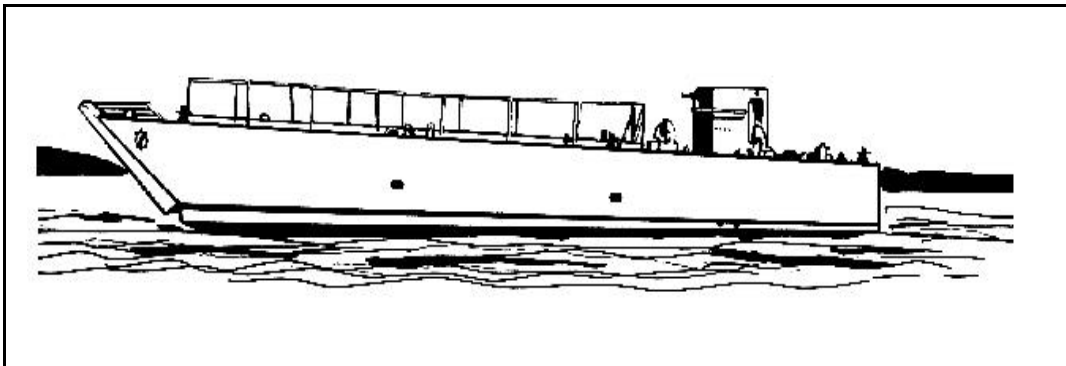


Figure 1-4. LCM-8

**DESCRIPTION OF THE LARGE TUG, 128-FOOT**

1-16. The 128-foot LT (Figure 1-5) is used for ocean and coastal towing operations. It is also used to dock and undock large ships. It has a secondary mission, which is to perform general purpose harbor duties (such as positioning floating cranes and so forth). The LT is equipped to accomplish fire fighting duties, a significant capability particularly where ammunition ships are being worked. It is also used to perform salvage and recovery operations for other watercraft disabled or damaged along the coastal MSR. The 128-foot tug is totally self deployable. The characteristics of the vessel are as follows:

**Length overall:** 128 feet

**Beam:** 36 feet

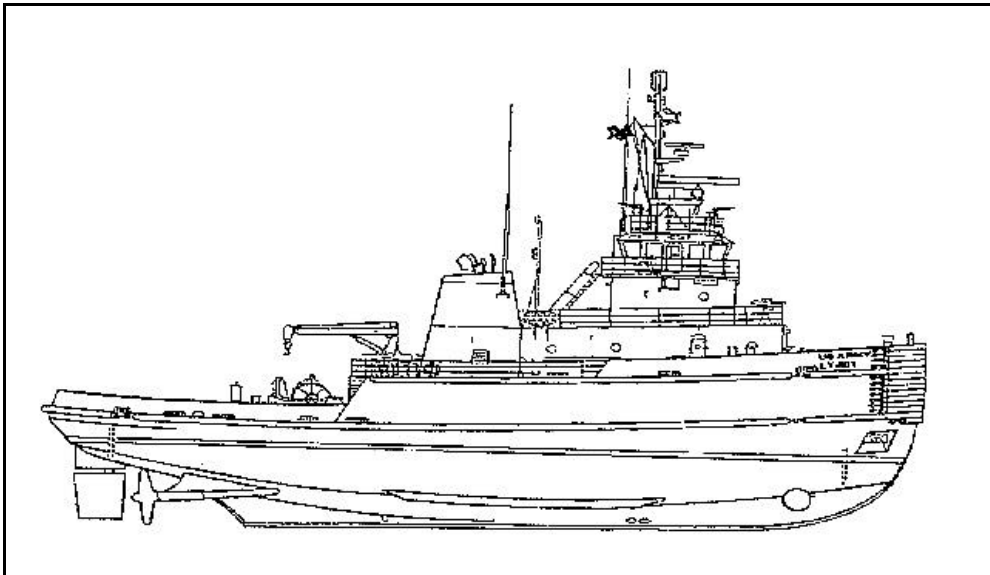
**Displacement (weight):** 1,057 long tons (loaded)

**Bollard Pull:** 58 tons

**Range:** Light - 5,000 nautical miles at 13.5 knots, loaded - 5,000 nautical miles at 12 knots

**Draft:** Light - 14.5 feet, loaded - 17 feet

**Crew size:** 8 WOs and 15 enlisted



**Figure 1-5. Large Tug, 128-Foot**



**DESCRIPTION OF THE LARGE TUG, 100-FOOT**

1-17. The 100-foot LT (Figure 1-6) is used to berth and unberth large oceangoing vessels and for towing within the harbor areas. Secondary missions include general utility uses, fire fighting, and salvage operations. It is also used for limited offshore and coastal towing between terminals. The characteristics of the vessel are as follows:

**Length overall:** 107 feet

**Beam:** 27 feet

**Displacement (weight):** 390 long tons (loaded)

**Bollard pull:** 13.8 long tons/31.5 long tons

**Range:** Light - 3,323 nautical miles at 12.8 knots

**Draft:** Light - 11.5 feet, loaded - 12.5 feet

**Crew size:** 4 WOs and 12 enlisted

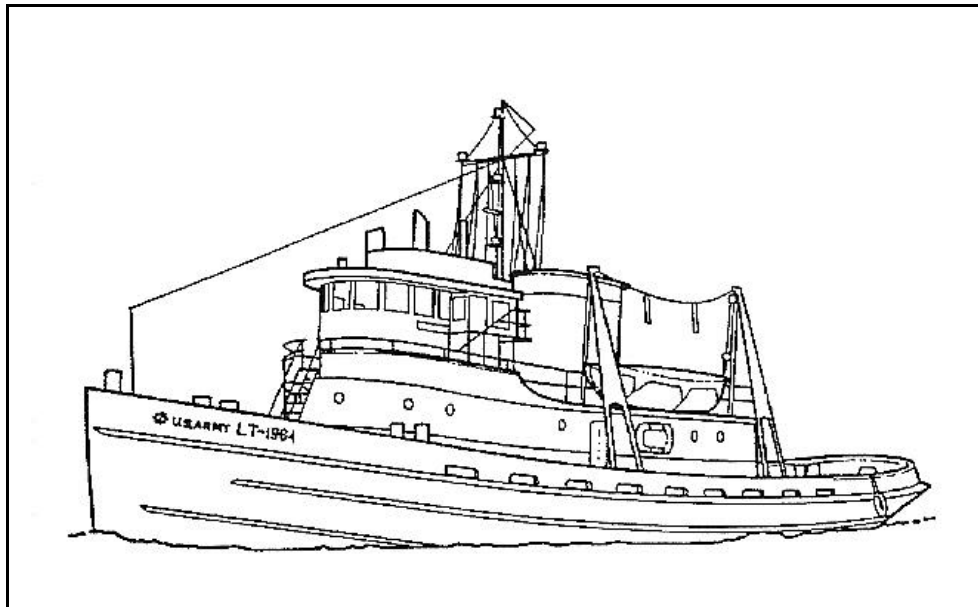


Figure 1-6. Large Tug, 100-Foot

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