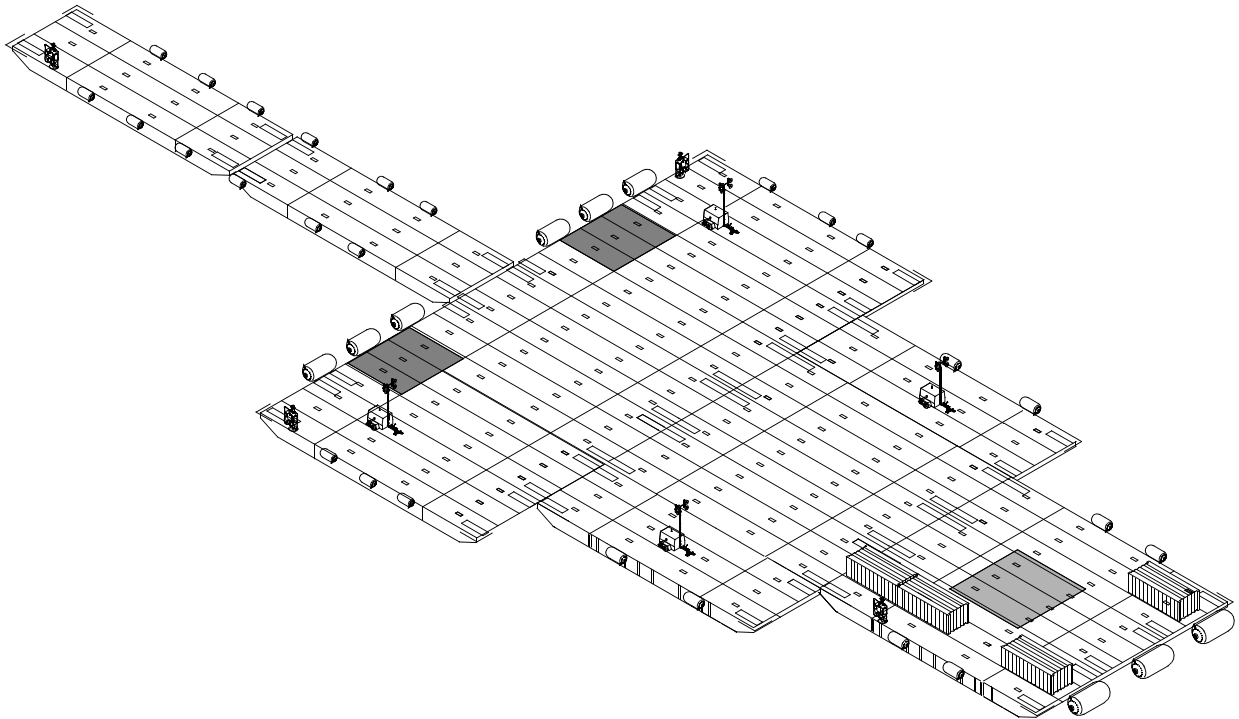


TM 55-1945-216-10

TECHNICAL MANUAL

OPERATORS MANUAL
FOR

**MODULAR CAUSEWAY SYSTEM (MCS)
ROLL-ON/ROLL-OFF DISCHARGE FACILITY (RRDF)
NSN 1945-01-497-7059**



DISTRIBUTION STATEMENT A - Approved for public release; distribution is unlimited.

**HEADQUARTERS, DEPARTMENT OF THE ARMY
JUNE 2004**

WARNING SUMMARY

This warning summary contains general safety warnings and hazardous materials warnings that must be understood and applied during operation and maintenance of this equipment. Failure to observe these precautions could result in serious injury or death to personnel. Also included are explanations of safety and hazardous materials icons used within the technical manual.

NO SMOKING

Smoking is prohibited aboard this vessel.

JEWELRY

Remove rings, bracelets, wristwatches, and neck chains before working around or on a unit.

HEAVY OBJECTS

Handling heavily weighted objects can cause bodily injury. Do not lift materials or equipment over 50 lb without using appropriate material handling equipment.

BATTERIES

Do not smoke around batteries.

HAZARD REPORTING

Report all hazards. It is your responsibility to report hazards through your chain-of-command.

HIGH VOLTAGE

Use extreme caution when checking energized circuits. Always place power off warning tags on power supply switches so that no one will apply power while performing maintenance.

NUCLEAR, BIOLOGICAL OR CHEMICAL

In the event equipment has been exposed to nuclear, biological or chemical warfare, the equipment shall be handled with extreme caution and decontaminated in accordance with **FM 3-5**. Unprotected personnel can experience injury or death if residual toxic agents or radioactive material are present. If equipment is exposed to radioactive, biological or chemical agents, personnel must wear protective mask, hood, protective overgarments, chemical gloves and chemical boots in accordance with **FM 3-5**.

FUELS

Personnel must wear chemical resistant gloves when handling fuels. Promptly wash exposed skin and change fuel-soaked clothing.

COOLANTS

Before opening coolant system, allow time to cool and wear effective hand, eye and skin protection.

HAND-HELD FIRE EXTINGUISHER

Evacuate the personnel shelter after discharging the dry chemical fire extinguisher. Personnel must wear dust masks, hand, eye and skin protective equipment before re-entering the shelter to clean up residue.

WARNING SUMMARY - CONTINUED

NOISE

Single hearing protection must be worn when inside the generator container 10 kW (TQG) when generator is operating and during all rolling cargo movements.

ICE BUILDUP

Cold weather operations could create ice buildup on exposed surfaces producing hazardous footing conditions. Use extreme care when operating under icing conditions; death or serious injury to personnel could occur.

WELDING OR GRINDING

Personnel must use a gas-free meter before performing module repair that requires welding or grinding.

EXPLANATION OF SAFETY WARNING ICONS



EAR PROTECTION

EAR PROTECTION - Headphones over ears shows that noise level will harm ears.



ELECTRICAL

ELECTRICAL - Electrical wire to hand with electricity symbol running through hand shows that shock hazard is present.



ELECTRICAL

ELECTRICAL 2 - Electrical wire to arm with electricity symbol running through hand shows that shock hazard is present.



EYE PROTECTION

EYE PROTECTION - Person with goggles shows that the material will injure the eyes.



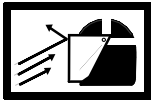
FALLING PARTS

FALLING PARTS - Arrow bouncing off human shoulder and head shows that falling parts present a danger to life or limb.



FLYING PARTICLES

FLYING PARTICLES - Arrows bouncing off face shows that particles flying through the air will harm face.



FLYING PARTICLES

FLYING PARTICLES 2 - Arrows bouncing off face with face shield shows that particles flying through the air will harm face.



HEAVY OBJECTS

HEAVY OBJECTS - Human figure stooping over heavy object shows physical injury potential from improper lifting technique.



HEAVY PARTS

HEAVY PARTS - Foot with heavy object on top shows that heavy parts can crush and harm.

EXPLANATION OF SAFETY WARNING ICONS - CONTINUED



HEAVY PARTS

HEAVY PARTS 2 - Hand with heavy object on top shows that heavy parts can crush and harm.



HEAVY PARTS

HEAVY PARTS 3 - Heavy object on human figure shows that heavy parts present a danger to life or limb.



HEAVY PARTS

HEAVY PARTS 4 - Heavy object pushed up against human figure shows that heavy parts present a danger to life or limb.



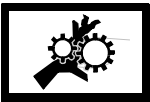
HELMET PROTECTION

HELMET - Arrow bouncing off head with helmet shows that falling parts present a danger.



HOT AREA

HOT AREA - Hand over object radiating heat shows that part is hot and can burn.



MOVING PARTS

MOVING PARTS - Hand with fingers caught between rollers shows that the moving parts of the equipment present a danger to life or limb.



MOVING PARTS

MOVING PARTS 2 - Hand with fingers caught between gears shows that the moving parts of the equipment present a danger to life or limb.



MOVING PARTS

MOVING PARTS 3 - Human figure with an arm caught between gears shows that the moving parts of the equipment present a danger to life or limb.



SHARP OBJECT

SHARP OBJECT - Pointed object in foot shows that a sharp object presents a danger to limb.

EXPLANATION OF SAFETY WARNING ICONS - CONTINUED



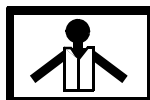
SHARP OBJECT

SHARP OBJECT 2 - Sharp object on hand shows that a sharp object presents a danger to limb.



SLICK FLOOR

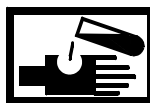
SLICK FLOOR - Wavy line on floor with legs prone shows that slick floor presents a danger for falling.



VEST

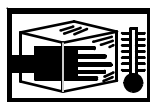
VEST - Life preserver on human figure shows life preserver must be worn to prevent drowning.

EXPLANATION OF HAZARDOUS MATERIAL WARNING ICONS



CHEMICAL

CHEMICALS - Drops of liquid on hand shows that the material will cause burns or irritation to human skin or tissue.



CRYOGENIC

CRYOGENICS - Hand in block of ice shows that the material is extremely cold and can injure human skin or tissue.



EXPLOSION

EXPLOSION - Rapidly expanding symbol shows that the material may explode if subjected to high temperatures, sources of ignition or high pressure.



FIRE

FIRE - Flame shows that a material may ignite and cause burns.



POISON

POISON - Skull and crossbones shows that a material is poisonous or is a danger to life.



VAPOR

VAPOR - Human figure in a cloud shows that material vapors present a danger to life or health.

LIST OF EFFECTIVE PAGES / WORK PACKAGES

Dates of issue for original and changed pages / work packages are:

Original 1 JUNE 2004

**TOTAL NUMBER OF PAGES FOR FRONT AND REAR MATTER IS 34 AND TOTAL
NUMBER OF WORK PACKAGES IS 118 CONSISTING OF THE FOLLOWING:**

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Warning Summary (a-f pgs)	0	WP 0037 00 (4 pgs)	0
List of Effective Pages (A-B pgs)	0	WP 0038 00 (6 pgs)	0
Title Block Page (2 pgs)	0	WP 0039 00 (6 pgs)	0
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TECHNICAL MANUAL

OPERATORS MANUAL
FOR

MODULAR CAUSEWAY SYSTEM (MCS)
ROLL-ON/ROLL-OFF DISCHARGE FACILITY (RRDF)
NSN 1945-01-497-7059

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this publication. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Submit your DA Form 2028 (Recommended Changes to Equipment Technical Publications), through the Internet, on the Army Electronic Product Support (AEPS) website. The Internet address is <http://aeps.ria.army.mil>. If you need a password, scroll down and click on "ACCESS REQUEST FORM". The DA Form 2028 is located in the ONLINE FORMS PROCESSING section of the AEPS. Fill out the form and click on SUBMIT. Using this form on the AEPS will enable us to respond quicker to your comments and better manage the DA Form 2028 program. You may also mail, fax or email your letter or DA Form 2028 direct to: AMSTA-LC-CI / TECH PUBS, TACOM-RI, 1 Rock Island Arsenal, Rock Island, IL 61299-7630. The email address is TACOM-TECH-PUBS@ria.army.mil. The fax number is DSN 793-0726 or Commercial (309) 782-0726.

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HOW TO USE THIS MANUAL

This manual contains certain features to improve the convenience of using this manual and increase the user's efficiency. These features include:

a. Accessing Information

Information is accessed by referring to the Table of Contents, located in the front of this manual, or by looking in the Alphabetical Index, located in the back of this manual.

b. Illustrations

Various methods are used to locate and repair components. Locator illustrations in Controls and Indicator tables, PMCS tables, exploded views and cut-away diagrams make the information in the manual easier to understand and follow.

c. Using This Manual

When using this manual, read and understand the entire maintenance action before performing the task. Also, read and understand all warnings, cautions and notes as well as general safety precautions that apply to the task to be performed. The warning summary will inform personnel of hazards associated with the equipment to be worked on. However, the summary is not all inclusive and personnel should be aware at all times of hazardous conditions that may arise.

Prior to starting the procedures in this manual, the initial setup requirements are located directly above each procedure. The information is given to ensure all materials, expendables, tools and any other equipment necessary are readily available for use. The initial setup will be accomplished prior to starting the actual steps of each maintenance procedure.

Locating Major Components

Obtain the manual for the system to be worked on. Open to the Table of Contents located in the front of this manual. Find Chapter 1, *Description and Theory of Operation*. Under the chapter title you will find the work package titled *Location and Description of Major Components*. Turn to the work package indicated. This work package will give a brief description of the major components, and show an illustration of what the component looks like and its location.

The Alphabetical Index, located in the back of this manual, contains an alphabetical list of all sections of this manual. *Location and Description of Major Components* is found in section L. The work package is found on the right side of the title where the *Location and Description of Major Components* is located. Turn to the work package indicated to find the description and location of each component.

Operator Instructions

To locate an operator task, open the manual to the Table of Contents located in the front of this manual. Locate the procedure that is to be performed. Next to the procedure, on the right, locate the work package number. Turn to the work package number in the manual. Perform the initial setup by obtaining the expendables, tools, materials and other items listed prior to starting the task. Perform the listed steps in order. The Alphabetical Index can also be used to locate the item and procedures to follow.

Tools: Lists all tools (standard or special) required to perform the task. Tools are identified with an item number and work package number from the *Tool Identification List* located in Chapter 5, *Supporting Information*.

Materials/Parts: Lists all parts or materials necessary to perform the task. Expendable and durables are identified with an item number from the applicable work package located in Chapter 5, *Supporting Information*.

Personnel Required: Lists all personnel necessary to perform the task.

Equipment Condition: Notes the conditions that must exist before starting the task. The equipment condition will also include any prerequisite maintenance tasks to be performed with reference to the work package number or to the TM number.

References: Includes any other manuals necessary to complete the task. When there are no references listed, all steps necessary to complete the task are contained within this manual. A listing of reference materials is contained in the work package *References* in Chapter 5, *Supporting Information*.

Location of Controls and Indicators

To locate a particular control and/or indicator, open the manual to the Table of Contents located in the front of the manual. Find Chapter 2, *Operator Instructions*. Locate the work package titled *Description and Use of Operator Controls and Indicators*. Turn to the work package indicated. Locate the control and, or indicator that you are attempting to identify. Take note of the number pointing to the control or indicator. Refer to the table below the picture and find the number in the column on the far left hand side. Reading from left to right, find the number that matches the number from the picture, then read the name of the control/indicator and following function of the item, as detailed in the far right hand column.

Troubleshooting Procedures

The Table of Contents or Alphabetical Index may be used to locate sections within this manual. To locate a particular troubleshooting procedure, open the manual to the Table of Contents located in the front of this manual. Find Chapter 3, *Troubleshooting Procedures*. Under this section, find a work package titled *Troubleshooting Index*. Turn to the work package indicated, which lists all of the troubleshooting procedures. Look down the list until you find the appropriate work package for the problem you are trying to solve. To the right side of the procedure will be a work package number. Turn to the work package indicated and follow the steps to complete the troubleshooting procedure. The procedures list the malfunction, symptom and the corrective action. The corrective action will indicate which maintenance procedure to go to for the repair of the symptom or what level of maintenance is capable of repair of the problem. Follow the procedures indicated to complete the task. At the top of the task you will have a section called INITIAL SETUP. There are five basic headings listed under INITIAL SETUP.

Test Equipment: Lists all test equipment (standard or special) required to troubleshoot, test and inspect the equipment covered in this manual. The test equipment is identified with an item number and work package number from the *Tool Identification List* located in Chapter 5, *Supporting Information*.

Tools: Lists all tools (standard or special) required to perform the task. Tools are identified with an item number and work package number from the *Tool Identification List* located in Chapter 5, *Supporting Information*.

Personnel Required: Lists all personnel necessary to perform the task.

Equipment Condition: Notes the conditions that must exist before starting the task. The equipment condition will also include any prerequisite maintenance tasks to be performed with reference to the work package number or to the TM number.

References: Includes any other manuals necessary to complete the task. When there are no references listed, all steps necessary to complete the task are contained within this manual. A listing of reference materials is contained in the work package *References* in Chapter 5, *Supporting Information*.

Maintenance Instructions

To locate a maintenance procedure, open the manual to the Table of Contents located in the front of this manual. Find Chapter 4, *Maintenance Instructions*. Look down the list and find the maintenance procedure to be accomplished. On the right side of the maintenance procedure will be a work package number. Turn to the work package indicated. Before beginning the maintenance task, look through the procedure to familiarize yourself with the entire maintenance procedure. At the top of the task you will have a section called INITIAL SETUP. There are five basic headings listed under INITIAL SETUP.

Tools: Lists all tools (standard or special) required to perform the task. Tools are identified with an item number and work package number from the *Tool Identification List* located in Chapter 5, *Supporting Information*.

Materials/Parts: Lists all parts or materials necessary to perform the task. Expendable and durables are identified with an item number from the applicable work package located in Chapter 5, *Supporting Information*.

Personnel Required: Lists all personnel necessary to perform the task.

References: Includes any other manuals necessary to complete the task. When there are no references listed, all steps necessary to complete the task are contained within this manual. A listing of reference materials is contained in the work package *References* in Chapter 5, *Supporting Information*.

Equipment Condition: Notes the conditions that must exist before starting the task. The equipment condition will also include any prerequisite maintenance tasks to be performed with reference to the work package number or to the TM number.

Test Equipment: Lists all test equipment (standard or special) required to troubleshoot, test and inspect the equipment covered in this manual. The test equipment is identified with an item number and work package number from the *Tool Identification List* located in Chapter 5, *Supporting Information*.

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
GENERAL INFORMATION**

SCOPE

This manual contains descriptions and operation instructions for the Roll-On/Roll-Off Discharge Facility (RRDF).

Type of Manual: Operator's Manual.

Purpose of Equipment: The system provides the capability to move rolling cargo from a sealift vessel to lighters for movement ashore.

MAINTENANCE FORMS, RECORDS AND REPORTS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750, Functional Users Manual for The Army Maintenance Management System (TAMMS) and AR 700-138, Army Logistics Readiness and Sustainability.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If any component in your system 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, Product Quality Deficiency Report. Mail it to the address specified in DA PAM 738-750, Functional Users Manual for The Army Maintenance Management System (TAMMS), or as specified by the acquiring activity. We will send you a reply.

HAND RECEIPT (HR) MANUALS

This manual has a companion document with a TM number followed by "-HR" (which stands for Hand Receipt). TM 55-1945-216-10-HR consists of preprinted hand receipts that list end item related equipment (i.e., COEI, BII, and AAL) that must be accounted for. As an aid to property accountability, additional HR manuals may be requisitioned through normal publication channels.

CORROSION PREVENTION AND CONTROL (CPC)

CPC of Army materiel is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items.

While corrosion is typically associated with rusting of metals, it can also include deterioration of other materials, such as rubber and plastic. Unusual cracking, softening, swelling or breaking of the materials may be a corrosion problem. If a corrosion problem is identified, it can be reported using an SF 368, Product Quality Deficiency Report. Use of key words, such as "corrosion", "rust", "deterioration" or "cracking", will ensure that the information is identified as a CPC problem. The form should be submitted to the address specified in DA PAM 738-750, Functional Users Manual for The Army Maintenance Management System (TAMMS).

OZONE DEPLETING SUBSTANCES (ODS)

The continued use of ODS has been prohibited by Executive Order 12856 of 3 August 1993.

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

The procedures for destruction of Army materiel to prevent enemy use are contained in TM 750-244-6.

PREPARATION FOR STORAGE OR SHIPMENT

Reference WP 0069 00 through WP 0082 00 for preparation for storage or shipment of the RRDF system.

LIST OF ABBREVIATIONS/ACRONYMS

Abbreviation/Acronym	Name
AC	Alternating Current
AEPS	Army Electronic Product Support
AF	Audio Frequency
amp	Ampere
AOAP	Army Oil Analysis Program
AR	Army Regulation
BII	Basic Issue Items
C	Centigrade
CAGEC	Commercial and Government Entity Code
CBSE	Combination Beach/Sea End
CF	Causeway Ferry
cm	Centimeters
CO ₂	Carbon Dioxide
COEI	Components of End Item
COMDTINST	Commandant Instruction
COTS	Commercial Off the Shelf
CPC	Corrosion Prevention Control
DA PAM	Department of Army Pamphlet
dB	Decibels
DC	Direct Current
Deg	Degrees
DIP	Dual Inline Package (switch)
EASY	Emergency Anchor System
EIR	Equipment Improvement Recommendations
F	Fahrenheit
FGC	Functional Group Code
fl	Fluid
FM	Field Manual
ft	Feet
GAL	Gallon
GFI	Ground Fault Interrupter
GPH	Gallons Per Hour
HP	Horse Power
hr	Hour
Hz	Hertz
in.	Inches
ISO	International Standards Organization
ISOPAK	International Standards Organization Package
lb	Pound
kg	Kilograms
kHz	Kilohertz
kW	Kilowatt
J-LOTS	Joint-Logistics-Over-The-Shore
LCU	Landing Craft Utility
LED	Light Emitting Diode
LMSR	Large Medium Speed Roll-On/Roll-Off vessel
LOTS	Logistics-Over-The-Shore
LSV	Logistics Support Vessel
m	Meters
mA	MilliAmpere
MAC	Maintenance Allocation Chart
MBT	Main Battle Tank
MCF	Modular Causeway Ferry

LIST OF ABBREVIATIONS/ACRONYMS (CONT'D)

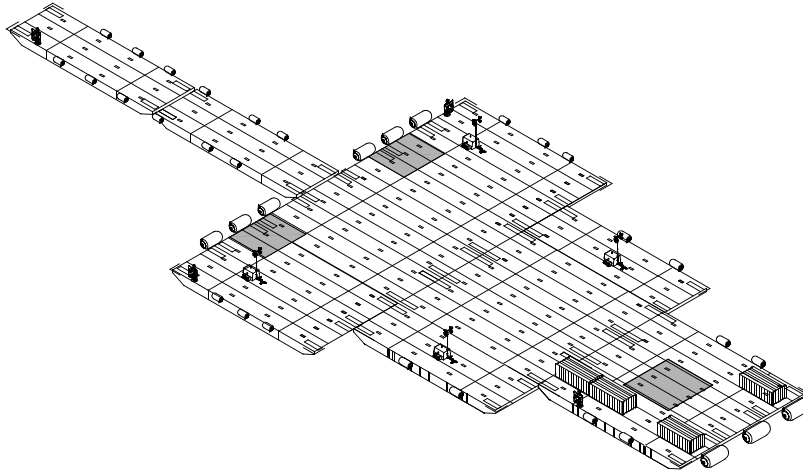
Abbreviation/Acronym	Name
MCS	Modular Causeway System
MHz	Megahertz
ml	Milliliters
MTBE	Methyl Tertiary Butyl Ether
MTO&E	Modified Table of Organization and Equipment
NAVMOOR	Naval Mooring
NBC	Nuclear, Biological, or Chemical
NCOIC	Noncommissioned Officer in Charge
NEMA	National Electrical Manufacturers Association
NHA	Next Higher Assembly
Ni-Cd	Nickel Cadmium
N-m	Newton-Meters
NOAA	National Oceanic and Atmospheric Administration
NSN	National Stock Number
ODS	Ozone Depleting Substance
OIC	Officer in Charge
OMC	Outboard Marine Corporation
oz	Ounces
PMCS	Preventive Maintenance Checks and Services
PN	Part Number
PSI	Pounds Per Square Inch
PTT	Push To Talk
rcv	Receive
RF	Radio Frequency
RHIB	Rigid Hull Inflatable Boat
Ro/Ro	Roll-on/Roll-off
RPM	Revolutions Per Minute
RPSTL	Repair Parts and Special Tools List
RRDF	Roll-On/Roll-Off Discharge Facility
RTCH	Rough Terrain Container Handler
SF	Standard Form
SINAD	Signal (plus) Noise And Distortion
SMR	Source, Maintenance Recoverability
SOLAS	Safety Of Life At Sea
SRA	Specialized Repair Activity
SS	Sea State
TACOM	United States Army Tank-Automotive and Armaments Command
TAMMS	The Army Maintenance Management System
TM	Technical Manual
TMDE	Test, Measurement and Diagnostic Equipment
TO&E	Table of Organization and Equipment
TQG	Tactical Quiet Generator
Tx	Transmit
US	United States
uv	Ultra Violet
V	Volt
VAC	Volts Alternating Current
VDC	Volt Direct Current
VHF/FM	Very High Frequency/Frequency Modulation
W	Watt
WP	Work Package
WT	Warping Tug

CHAPTER 1

**DESCRIPTION AND THEORY OF OPERATION
FOR
MODULAR CAUSEWAY SYSTEM (MCS)
ROLL-ON/ROLL-OFF DISCHARGE FACILITY (RRDF)**

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
MAJOR COMPONENTS
EQUIPMENT DESCRIPTION AND DATA**

EQUIPMENT CHARACTERISTICS, CAPABILITIES AND FEATURES



ROLL-ON/ROLL-OFF DISCHARGE FACILITY

NOTE

This platform is fully mission capable from the two lane 18 section configuration down to the Port Opening one lane 6 section platform. A platform of less than 6 sections is considered non-mission capable.

The RRDF is a floating discharge platform for ocean-going Roll-on/Roll-off (Ro/Ro) capable sealift vessels to allow rolling cargo to be transferred to lighters for movement ashore.

A typical RRDF consists of seventeen intermediate modules, one Combination Beach/Sea End (CBSE) section, one generator container, one personnel shelter, one Emergency Anchor System (EASY) container, four light towers and required component equipment (fendering, mooring bitts and dunnage mats).

Four different configurations of the RRDF may be assembled based upon command decision: full side, full stern, force opening side and force opening stern. The force opening configurations do not include the CBSE, generator container, personnel shelter, EASY container and light towers.

The full side and full stern configured RRDF are capable of supporting the combined weight of the following equipment while operating through Sea State (SS) 2.

- a. The side ramp and stern ramp (non concurrently) of the Large Medium Speed Ro/Ro vessel (LMSR) with one combat loaded Main Battle Tank (MBT).
- b. Two combat loaded MBTs on the RRDF simultaneously being positioned to board two Army watercraft of the Logistics Support Vessel (LSV) or Landing Craft Utility (LCU) 2000 class. One tank will be maneuvering to board one Army watercraft while the other tank is maneuvering to board the other watercraft. The two tanks will not be simultaneously placed on any one modular causeway system section.
- c. The ramps of two army LSV class watercraft (concurrently) while conducting cargo operations.

GENERATOR CONTAINER

The generator container is mounted on the deck of the RRDF and houses a skid mounted tactical quiet 10 kW diesel generator set which provides electrical power to the personnel shelter.

The generator container is equipped with fluorescent lighting, auxiliary DC lighting system, ventilation system, fire suppression system, 1,000 gallon fuel system and accessories required to support operation of the personnel shelter for 90 days.

PERSONNEL SHELTER

The personnel shelter provides a weatherproof, temperature controlled environment for personnel on the RRDF.

The personnel shelter is outfitted with fluorescent lighting, tables, benches, heating/cooling unit, communications equipment, electrical outlets, emergency lighting, portable fire extinguishers and a rest room with an electrically powered incinerator toilet

LIGHTING SYSTEM

The lighting equipment is provided to illuminate the deck of the RRDF and consists of four trailer-mounted light towers.

Each light tower is self-contained with its own diesel-fueled power source capable of providing an average of 30 foot-candles of illumination over the area of six sections.

EMERGENCY ANCHOR SYSTEM

The EASY is capable of mooring the RRDF in water depths up to 60 ft and remain secured through Sea State 4 and a controlled drift in Sea State 5 conditions.

The EASY is capable of being deployed in Sea State 3 and is retrievable with the Warping Tug (WT) in Sea State 2 conditions.

RIGID HULL INFLATABLE BOAT

The Rigid Hull Inflatable Boat (RHIB) is capable of supporting 8 men and is propelled by a 70 horsepower (HP) gasoline outboard motor.

The RHIB accompanies the RRDF during transport and is stored in its own 20 ft container.

COMMUNICATION EQUIPMENT

The communication equipment consists of four Very High Frequency/Frequency Modulation (VHF/FM) handheld transceivers powered by Direct Current (DC) batteries.

A battery charging station for the transceivers is located in the personnel shelter.

FENDERS

There are four types of cylindrical fenders authorized for use on the RRDF: 6 ft by 12 ft, 5 ft by 10 ft, 4 ft by 12 ft and 3 ft by 5 ft.

The corner fenders provides protection for the corners of the RRDF platform.

MOORING BITTS

The mooring bitts are used for securing lines from other vessels and fenders to the RRDF and are mounted in the module guillotine connectors.

DECK MATTING

The deck matting protects the deck of the RRDF under the ramps of sealift and lighter vessels without interfering with their operations and are secured to the deck with fasteners.

DECK FITTINGS

The sections of the RRDF are provided with D-ring and deck cleat fittings to meet various operational needs.

TOWING BRIDLE AND TOWING INTERFACE

The towing bridle and towing interface allow the RRDF to be stern towed by commercial and military tugs when platform relocation is required.

BASIC ISSUE ITEMS CONTAINER

The Basic Issue Items (BII) container provides RRDF personnel with all the necessary tools and equipment required to assemble, operate and maintain the RRDF and its supporting equipment.

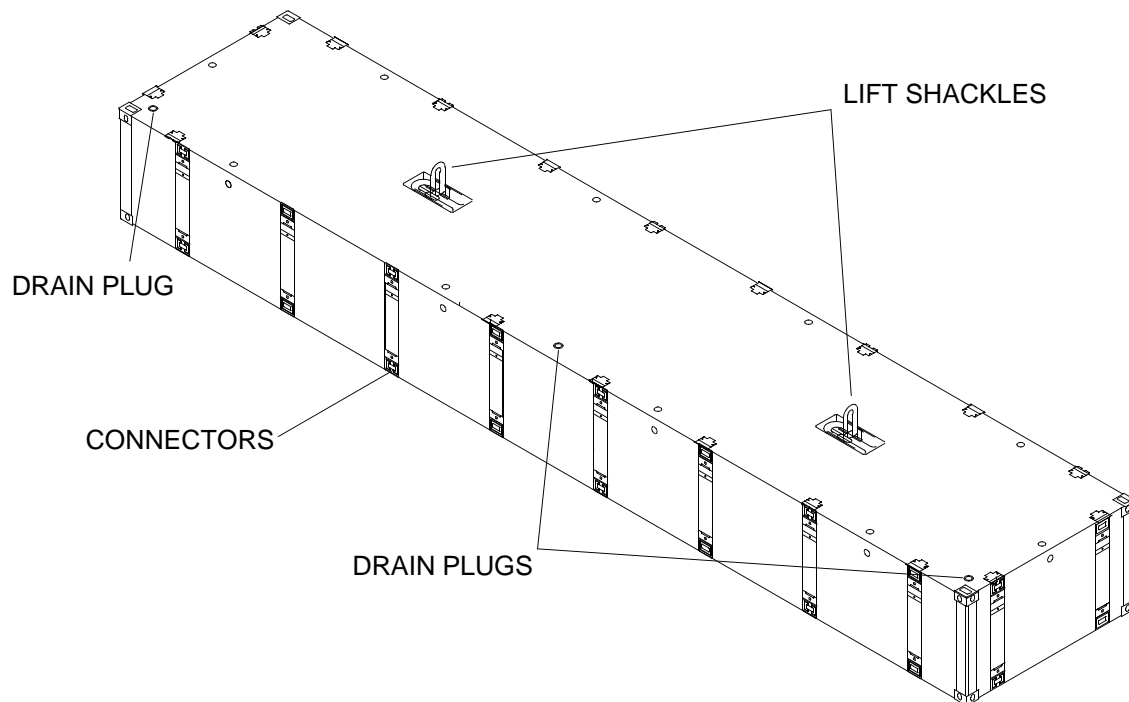
**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
EQUIPMENT DESCRIPTION AND DATA**

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS**CENTER MODULE****Location**

The center modules are located between and attached to the end rake modules.

Description

The center module is a hollow structure. Each center module has two 25 ton capacity lifting shackles which are flush mounted in the deck. The textured deck and smooth bottom are free of any protrusions that might obstruct packing. Access for internal leak detection of each compartment is provided by three recessed threaded plugs located on the top of the module. Alternating male and female connectors are equally spaced along both sides and ends of the module. These lock assemblies are stowed flush with the surface and, when deployed, they connect modules with minimum clearance.

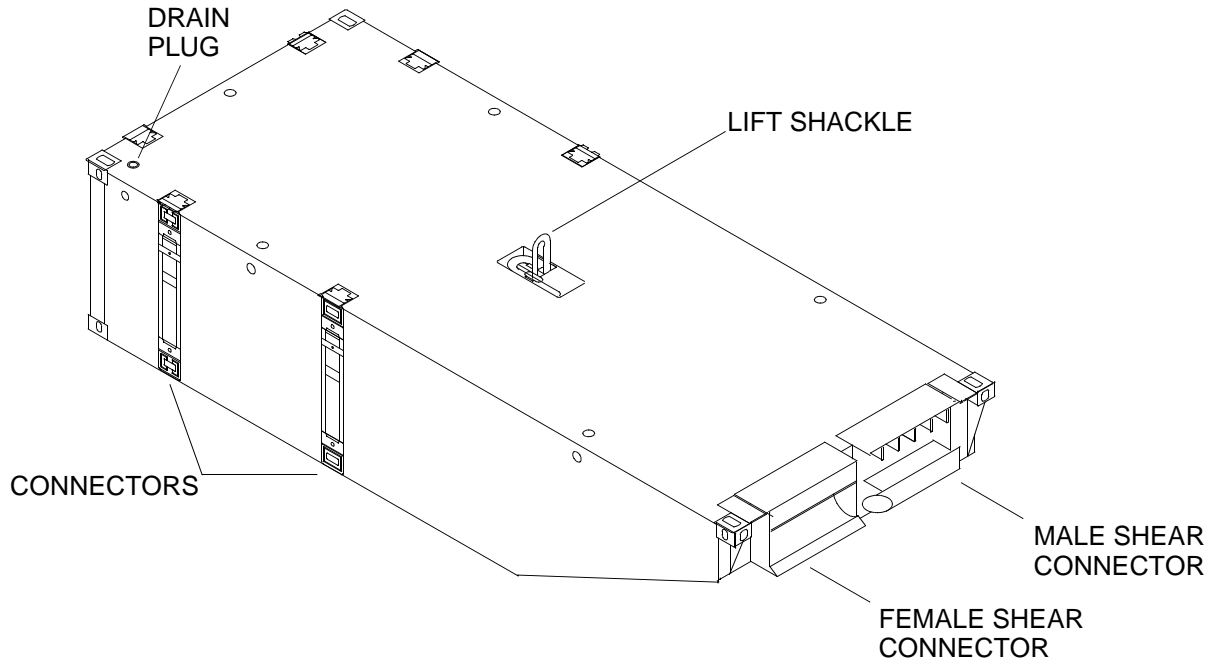


CENTER END RAKE MODULE**Location**

The center end rake modules are attached to the center module.

Description

The center end rake module is a hollow structure. Each center end rake module has one 25 ton capacity lifting shackle, which is flush mounted in the deck. The textured deck and smooth bottom are free of any protrusions that might obstruct packing. Access for internal leak detection of each compartment is provided by a recessed threaded plug located on the top of the module.



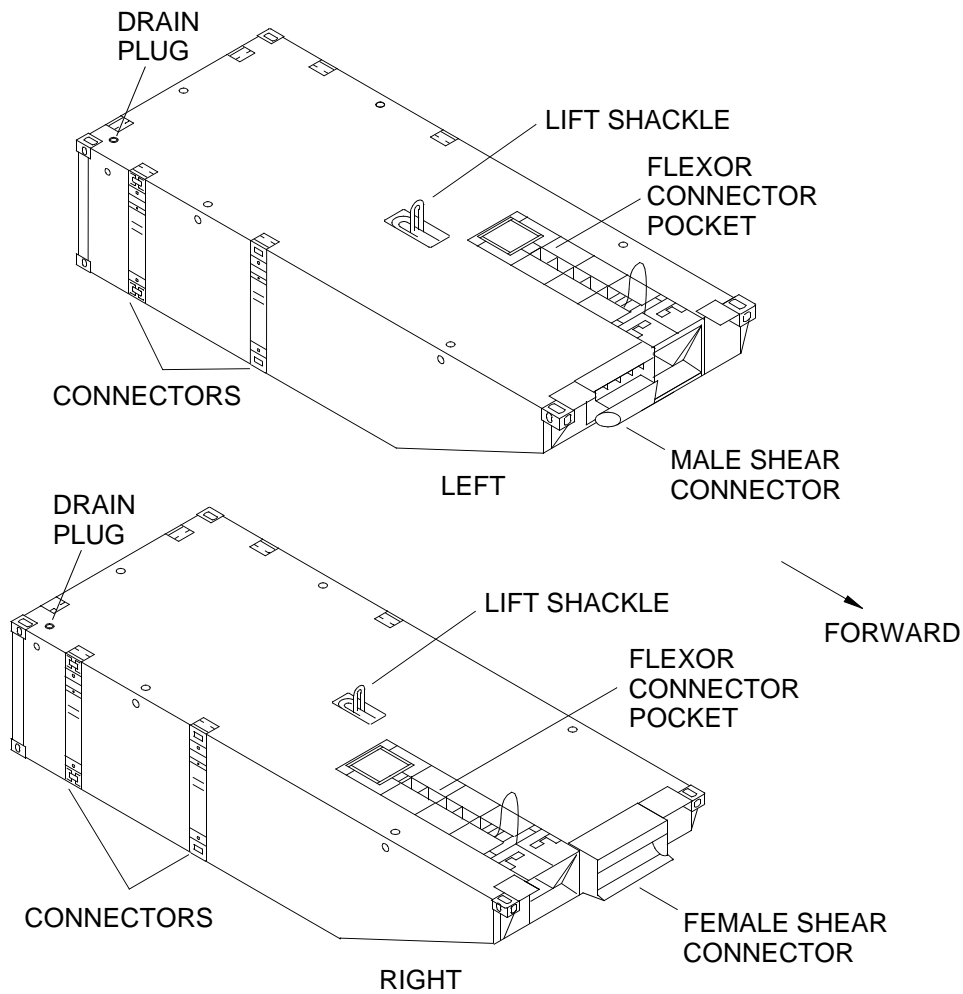
LEFT AND RIGHT END RAKE MODULES

Location

The left and right end rake modules are attached to the center modules.

Description

The left and right end rake modules are hollow structures. Each left and right end rake module has one 25 ton capacity lifting shackle, which is flush mounted in the deck. The textured deck and smooth bottom are free of any protrusions that might obstruct packing. Access for internal leak detection of each compartment is provided by a recessed threaded plug located on the top of the module. The left end rake has a flexor connector pocket for flexor connector installation in the outboard forward corner of the module. The right end rake has a flexor connector pocket for flexor connector installation in the outboard forward corner of the module. The left end rake has a male shear connector and the right end rake has a female shear connector. These are used as a mating device during assembly and act as a hinge during operation.



COMBINATION BEACH/SEA END MODULE

WARNING

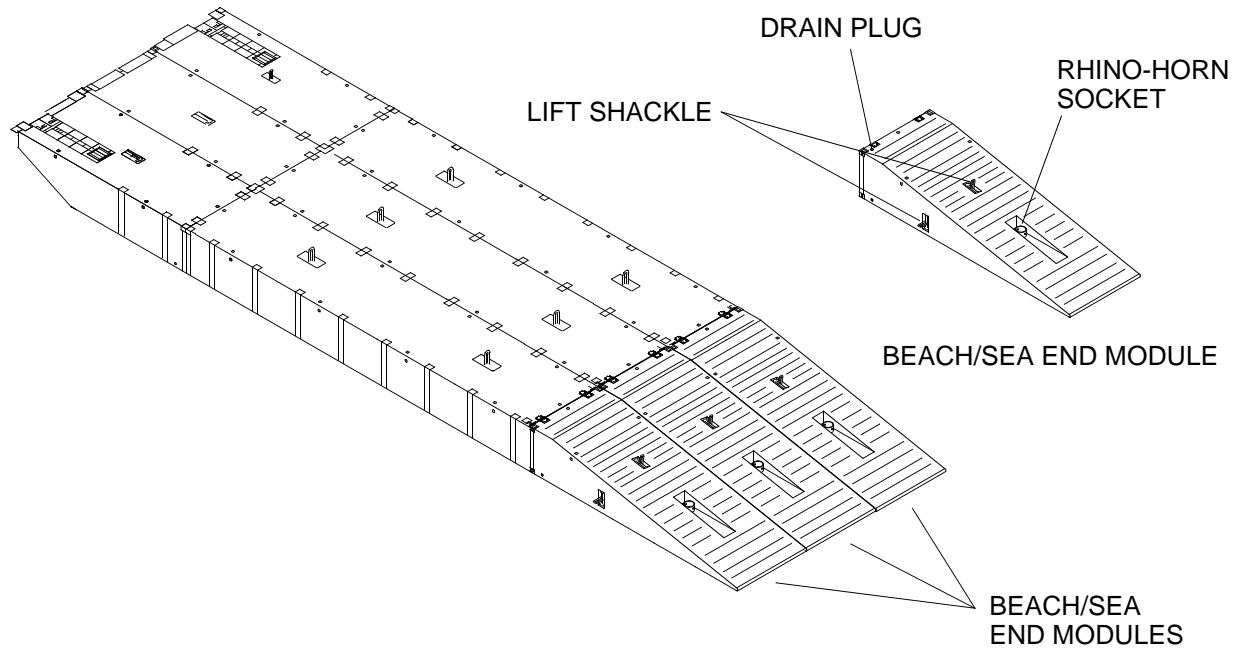
Sections of the RRDF containing Combination Beach/Sea End (CBSE) modules are designed to interface with Army/Navy Lighters via Rhino Horn connection. Do not traverse Rough Terrain Container Handler (RTCH) across CBSE modules to load smaller craft from the RRDF. Failure to observe these precautions could result in serious injury or death.

Location

The combination beach/sea end modules may also be connected to Army/Navy Lighters via Rhino Horn connection for traverse of larger stock via RTCH.

Description

The combination beach/sea end module is a hollow structure with a ramp slope of 10°. Each CBSE has two 25 ton lifting padeyes, which are flush mounted one per side. Access for internal leak detection of each compartment is provided by a recessed threaded plug located on top of CBSE.



INTERCONNECT GUILLOTINES AND FLEXOR CONNECTORS

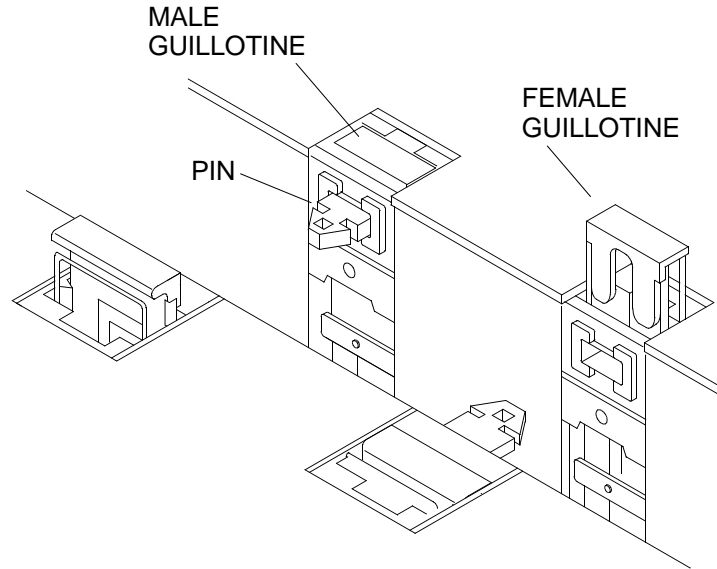
Location

The interconnect guillotines are mounted to the sides and ends of the modules.

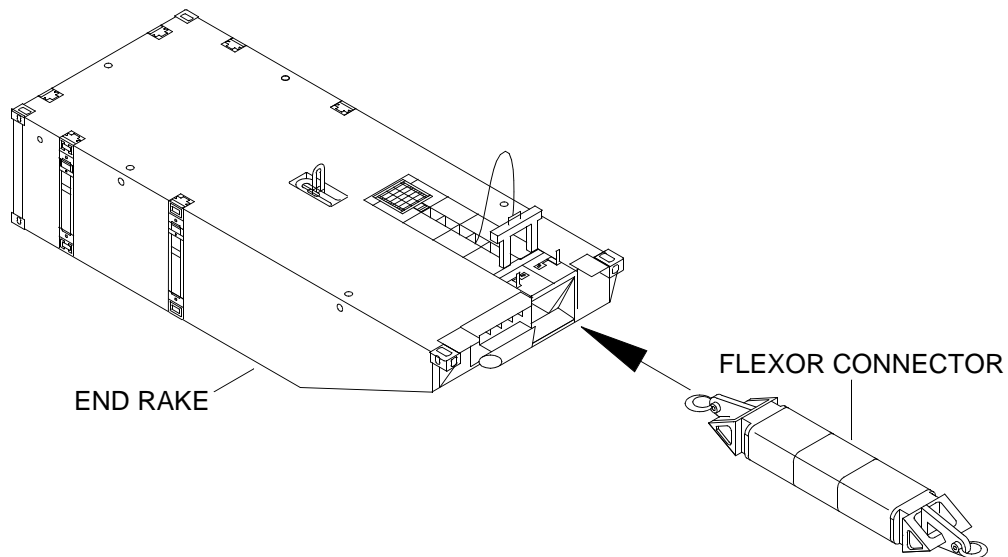
The flexor connectors are stowed in the left end rake modules.

Description

The interconnect guillotines secure the sides of modules together during assembly of the RRDF platform. The female guillotine interlocks with the male guillotine connecting pin and lock when the guillotines are flush with the deck.



The flexor connectors secure the end rake modules together during assembly of the RRDF platform.

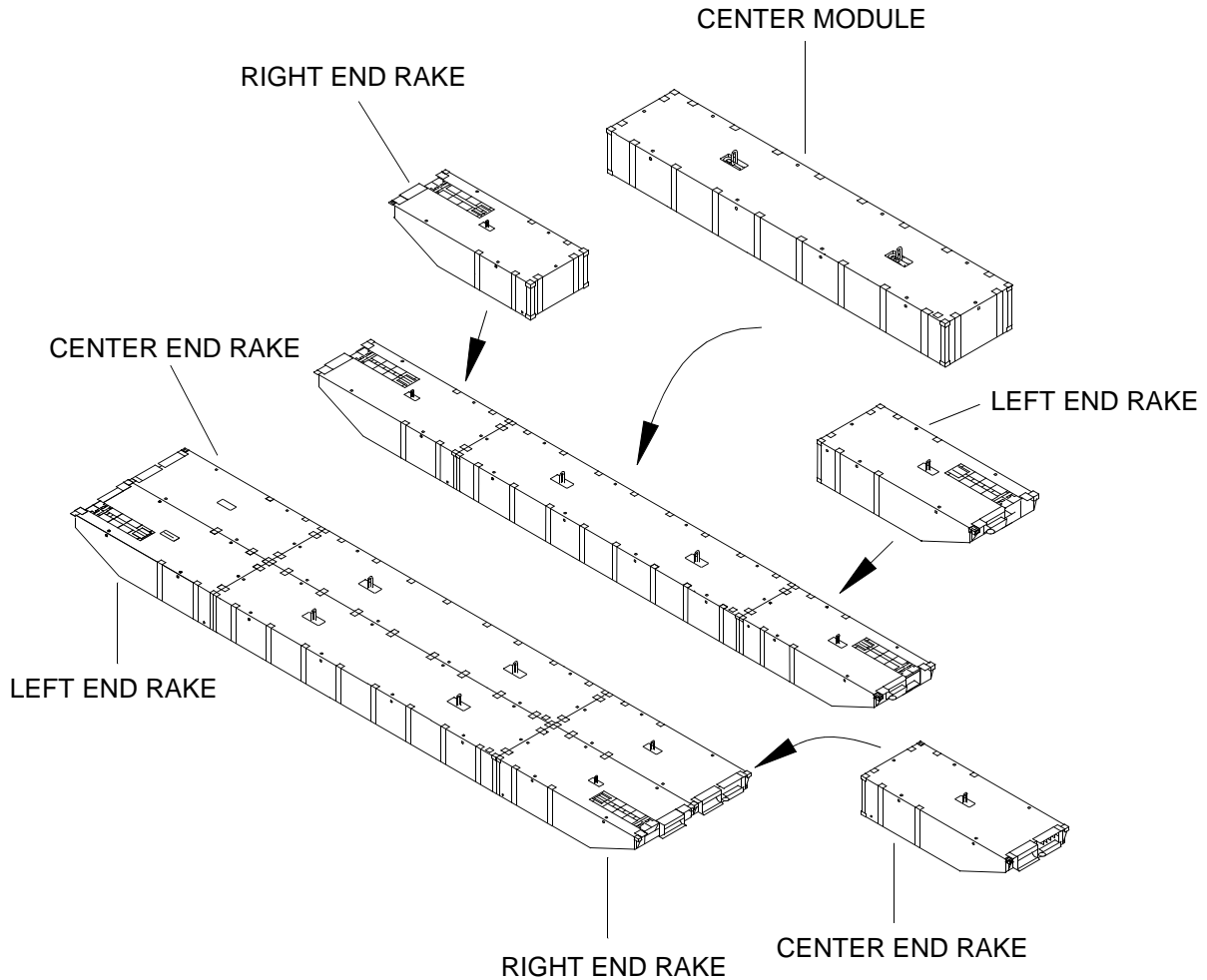


RRDF STRING**Location**

The module string is attached to other strings to make up an intermediate section.

Description

The module string may be assembled in five different configurations: a center module with two center end rake modules, a center module with one left and one right end rake module, a center module with a center end rake and a combination beach/sea end module, a center module with a left end rake and a combination beach/sea end module or a center module with a right end and a combination beach/sea end module.



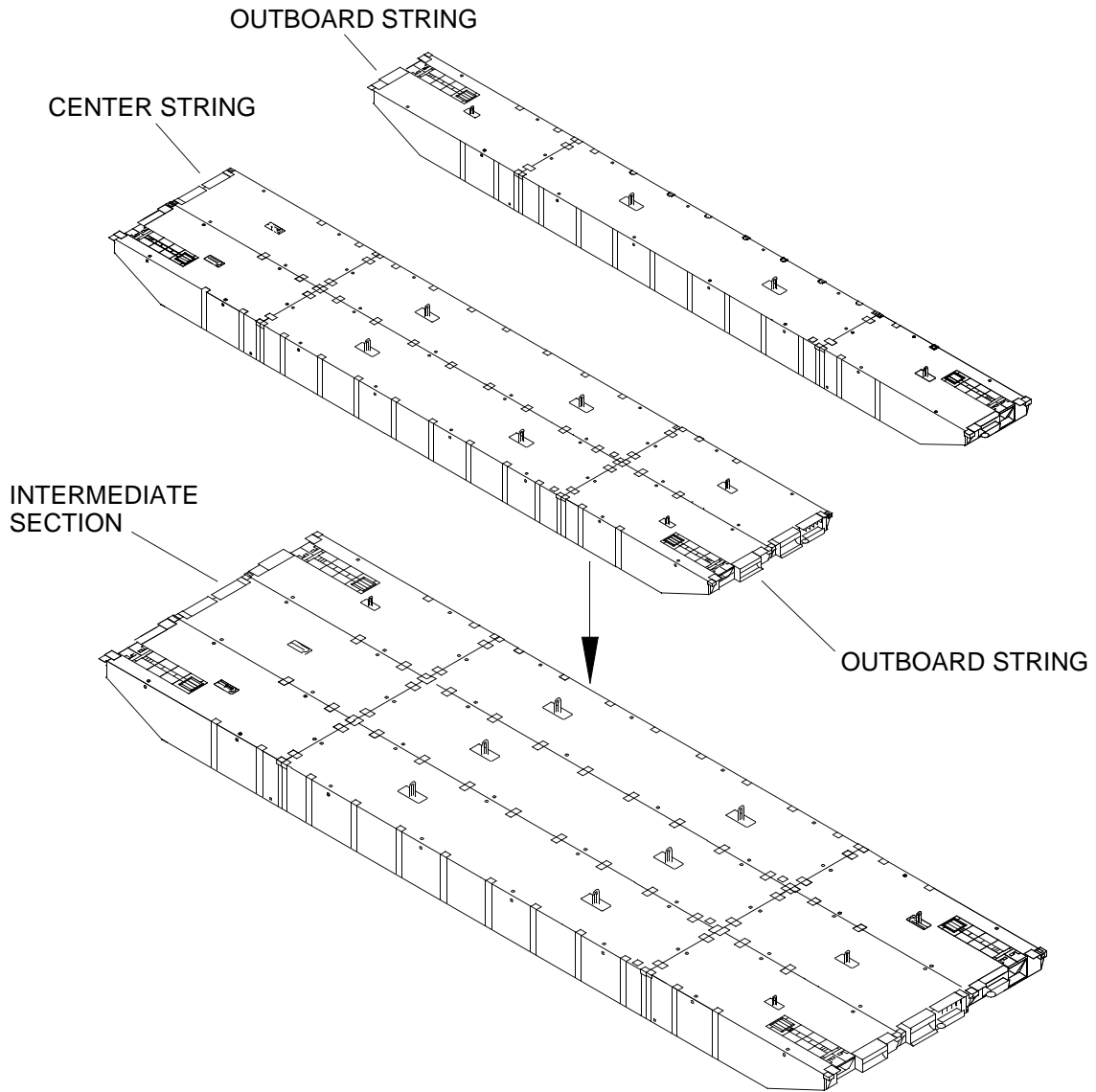
RRDF INTERMEDIATE SECTION

Location

The intermediate section is attached to other intermediate sections to construct an RRDF segment.

Description

An intermediate section is composed of three strings: two outboard strings and a center string. The two outboard strings consist of a center module, left end rake module and right end rake module. The center string consists of a center module and two center end rake modules. Strings are connected using male and female connectors.

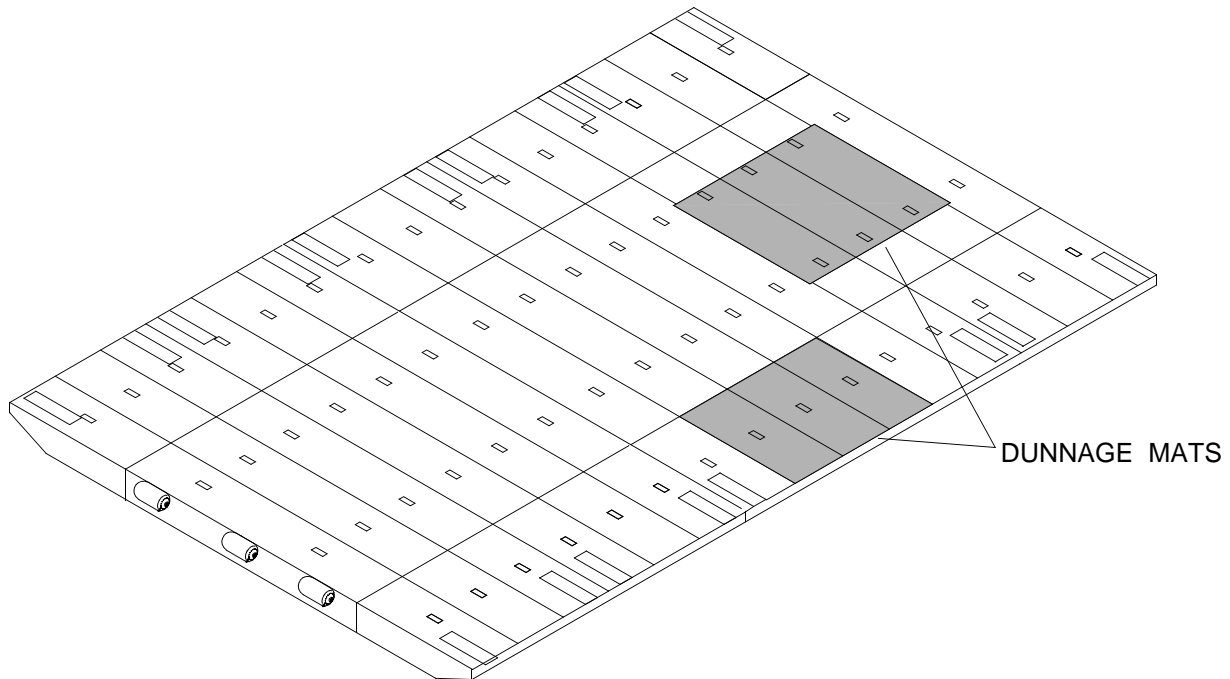


RRDF SEGMENT**Location**

The RRDF segments are connected and form the RRDF platform.

Description

The RRDF segment is comprised of a grouping of side connected intermediate sections/strings.

**10 KW GENERATOR AND CONTAINER****Location**

The 10 kW generator is located in a 20 ft container. The container is located on the RRDF platform.

Description

The description and specifications for the 10 kW generator may be found in TM 9-6115-642-10.

The generator is supplied with fuel by the generator mounted day fuel tank. A 1,000 gallon base fuel tank is mounted in the container. Fuel is transferred to the day fuel tank utilizing an electric fuel transfer pump. A hand operated fuel transfer pump is provided in case of electric fuel transfer pump failure. A fuel level indicator on the generator instrument panel aids in the refueling of the day tank. The 1,000 gallon fuel tank may be refueled inside or outside the container. Fuel level indicator lights are mounted on the inside and outside of the container to aid in refueling the 1,000 gallon fuel tank. The generator container weighs 15,000 lb.

A stainless steel motorized louver provides air to the generator for cooling. Generator exhaust is routed outside of the container. A stainless steel motorized vent provides ventilation for the generator container. Aluminum covers are used while in storage to protect the louvers from the elements.

The container is equipped with a CO₂ fire suppression system. The fire suppression system may be operated automatically or manually. In the automatic mode, one of two fixed temperature heat detector elements will activate the fire suppression system when the temperature exceeds 200°F. When the system activates, an alarm bell sounds, a 24 VDC horn strobe will flash and sound, and CO₂ from one 100 lb cylinder is then discharged through two multijet nozzles to flood the container. The system may be operated in the manual mode using the manual pull station when electrical power is available or by pulling the pin and raising the actuator handle when electrical power is not available. The two elements are located on the generator container roof centerline.

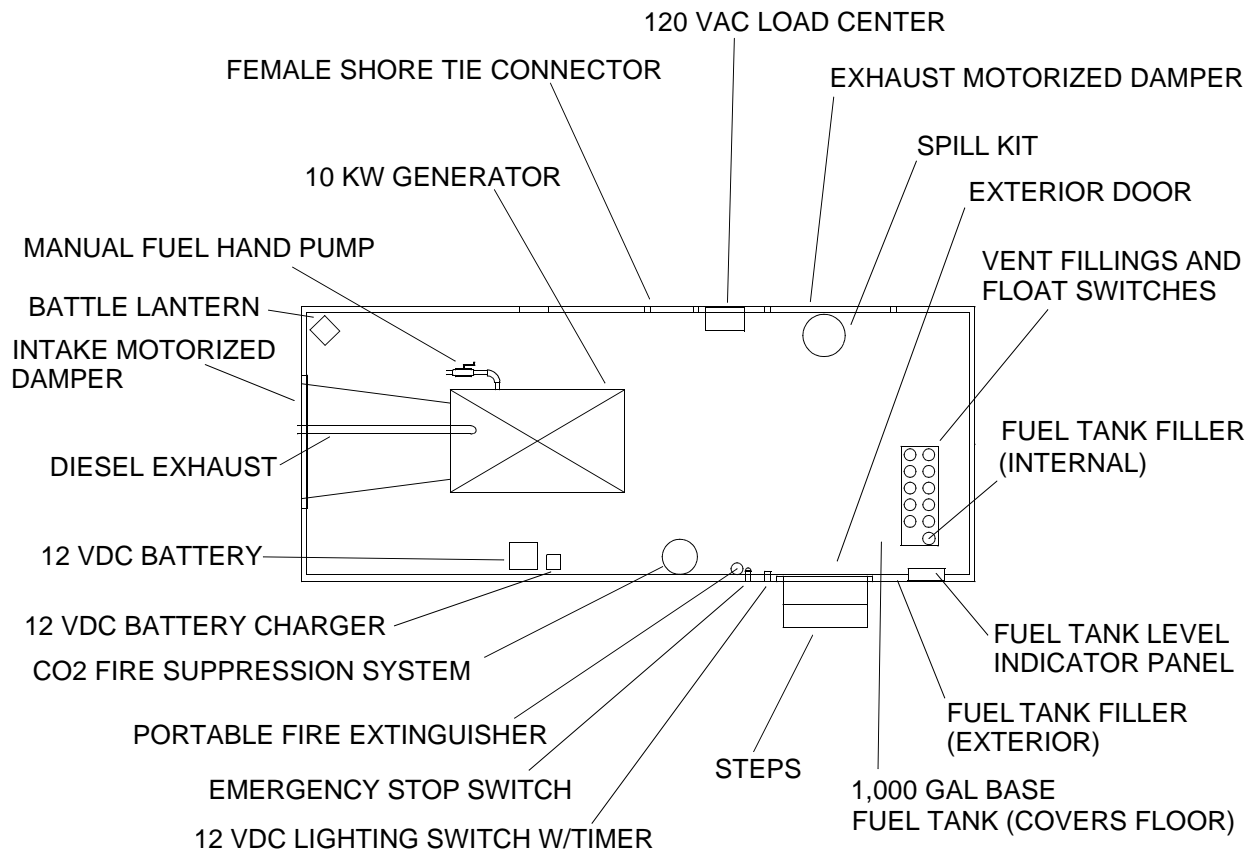
The CO₂ fire suppression system is controlled by the control module. Two 12 VDC rechargeable batteries provide backup power for the module. Upon sensing that a fire is present, the control module activates the fire suppression sequence. A time delay between the initial alarm condition and operation of the shutdown relay occurs. This delay may be programmed for 0, 10, 20 or 30 seconds by the user. The shutdown relay shuts down the generator and allows personnel time to vacate the shelter. After the delay sequence is completed, a second delay before actuation of the fire extinguishing agent occurs. This second delay may be programmed for 0, 10, 20 or 30 seconds by the user. When using the manual pull station, the delays used in the automatic mode are implemented by the control module.

A portable fire extinguisher is mounted on the generator container bulkhead adjacent to personnel access door.

Two warning signs designate the exit and are mounted on both the exterior and interior of the container.

The container is equipped with Alternating Current (AC) fluorescent light fixtures. A load center is used to control the AC system. A Direct Current (DC) lighting system, comprised of a spring wound timer switch, 12 volt battery with battery charger and light fixtures, supply light when AC lighting is not available.

An EMERGENCY STOP button is mounted inside the container personnel access door. When pressed, the EMERGENCY STOP button stops the generator.



PERSONNEL SHELTER

Location

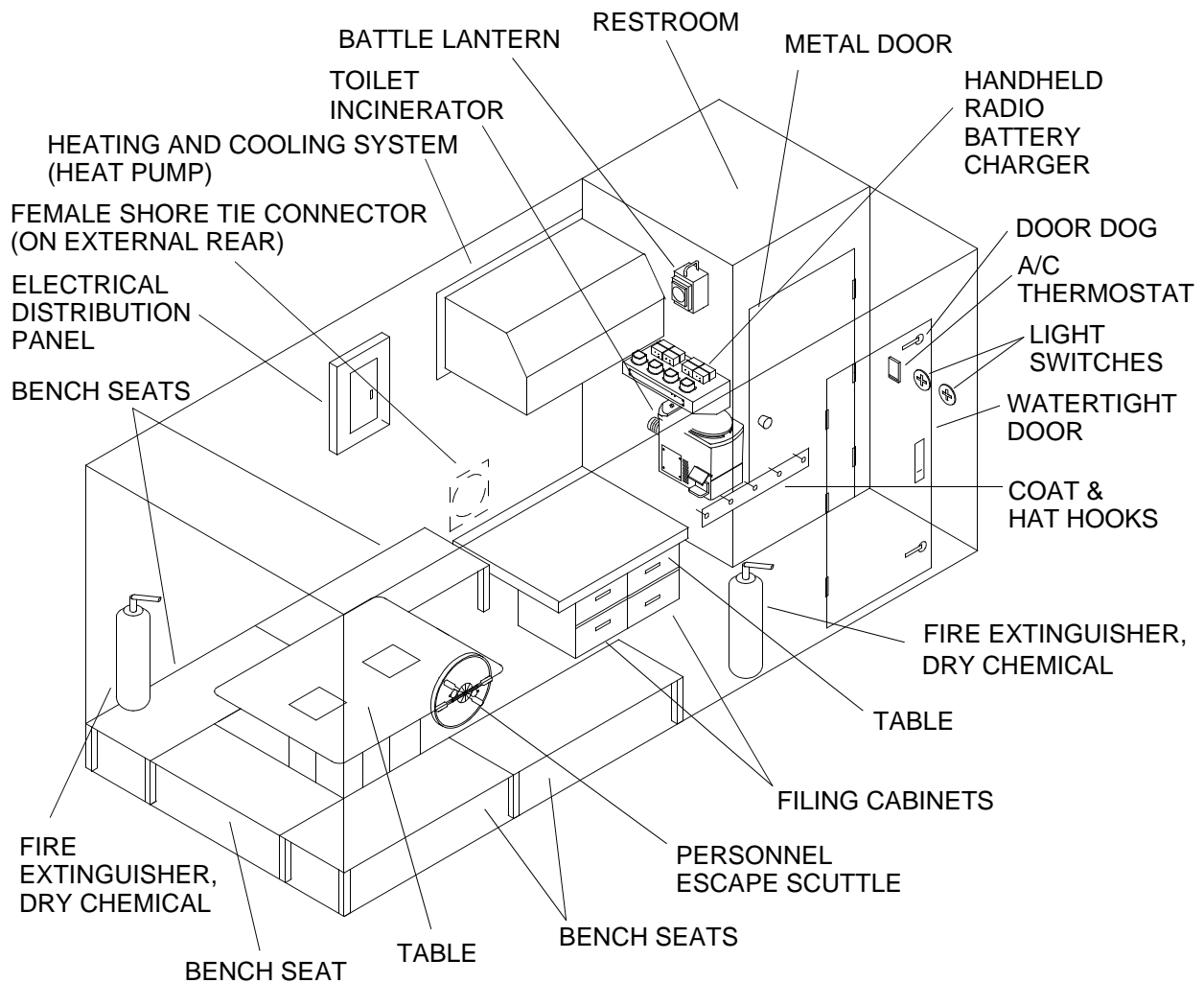
The personnel shelter is located on the deck of the RRDF platform.

The description and specifications for the packaged terminal air conditioner and heat pump may be found in TM 55-1945-220-14&P.

The description and specifications for the incinerator toilet may be found in TM 55-1945-219-14&P.

Description

The personnel shelter provides a controlled environment for soldiers supporting the RRDF platform. The personnel shelter equipment is contained in a 20 ft container. The shelter is equipped with an air conditioner and heat pump unit with remote thermostat, incinerator toilet, AC lighting system (red and white lights), portable fire extinguishers, a battle lantern, bench seating for personnel, a table, a personnel escape scuttle located in the wall over the bench seat and a handheld radio charging station. The personnel shelter receives electrical power from the 10 kW generator.



LIGHT TOWERS**Location**

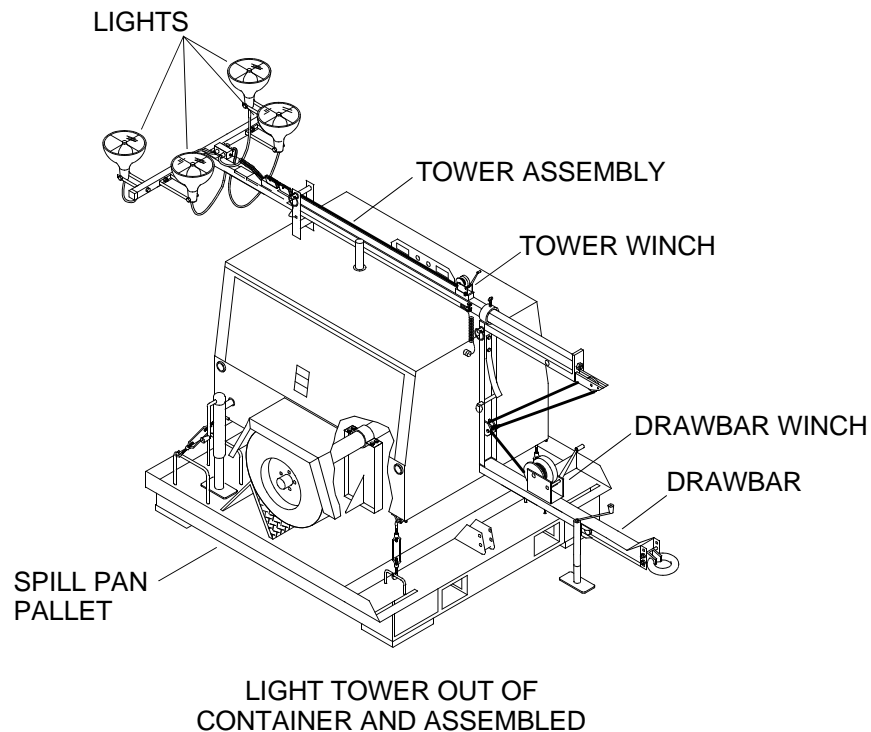
The light towers are positioned on the RRDF platform to provide lighting during night operations. The light towers are positioned by the operators as desired.

The description and specifications for the light tower may be found in TM 55-1945-217-14&P.

The description and specifications for the light tower engine may be found in TM 55-1945-218-14&P.

Description

The light towers are commercially available, self contained lighting systems. The light towers illuminate the work area using four high pressure sodium 1,000 W lamps each. The light towers are powered by a three cylinder diesel engine. The light towers are stored in a 20 ft container when not in use. Each light tower is secured to its shipping pallet that serves as a spill containment pan/tray.

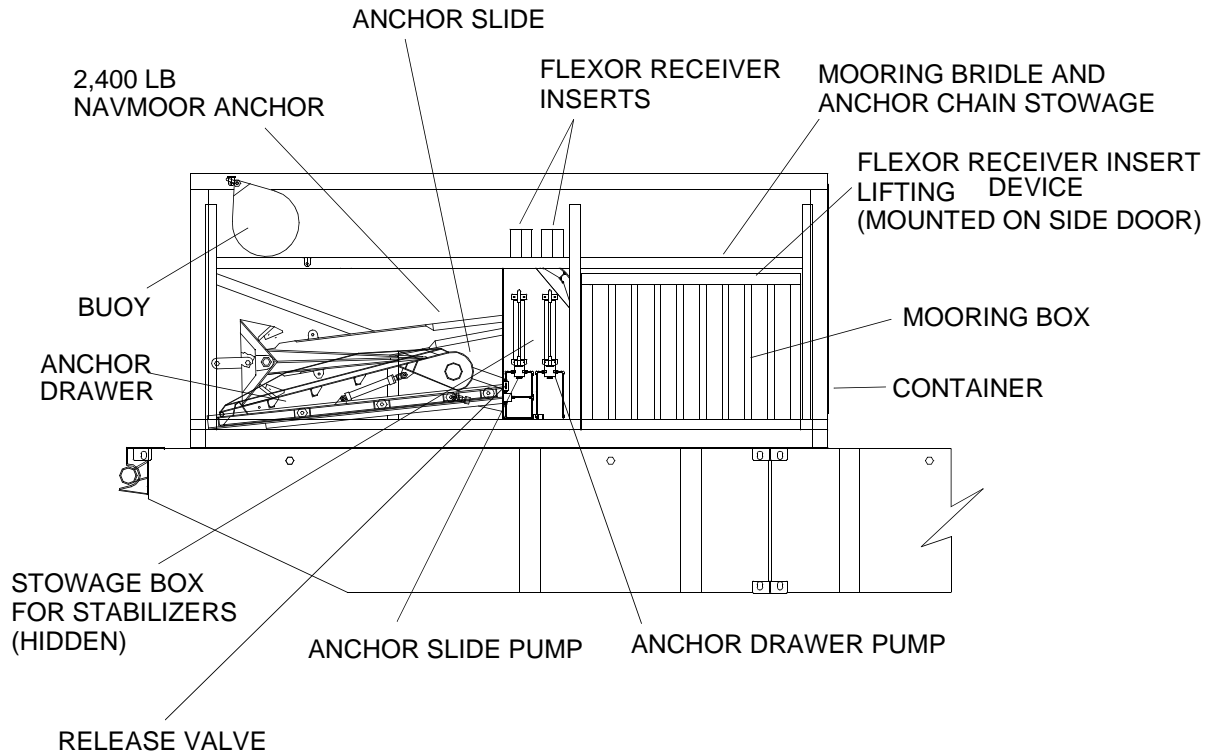


EMERGENCY ANCHOR SYSTEM (EASY)
Location

The EASY is housed in a 20 ft container which is placed and secured on the upstream end of the RRDF near the forward edge. The anchor end of the EASY container should be located 24 in. from the upstream deck edge to allow enough room for opening of the anchor-end container doors and to allow the anchor to deploy properly.

Description

The EASY is provided to anchor the RRDF platform in the event that the sealift vessel departs the operating area due to weather or other contingencies. It is designed to hold the RRDF platform in its anchored position through Sea State 4 conditions. In more severe conditions, the EASY will control the drift of the platform. Major components of the EASY, in addition to the container, are the mooring, the stowage and deployment frame that is secured within the container, the mooring box, two manual hydraulic pumps for actuating the moving parts of the stowage/deployment frame, mooring line, anchor and mooring line buoys and flexor receiver inserts that are used to secure the mooring bridle to flexor receivers on end rake modules.



EASY Container

The container for the EASY system is a 20 ft full access container. The “full access” descriptor means that both sides and both ends of the container open to give full access to the interior. In addition to providing access to the interior, the doors are used for stowage of some of the smaller components of the EASY.

EASY Mooring Bridle and Anchor Assembly

The EASY mooring consists of a 2,400 lb NAVMOOR anchor attached to 200 ft of 2½ in. stud link chain. The chain is attached to a 500 ft of 10 in. circumference nylon line. The main line and two 35 ft legs of 10 in. circumference nylon line are joined at a pear link. The mooring bridle legs are attached to flexor receiver inserts installed in left and right end rakes.

EASY Stowage and Deployment Frame

The stowage and deployment frame is a steel assembly which fits inside the EASY container. It includes a tubular steel frame, an anchor drawer, slide sub-assembly with a guide track, two hydraulic actuators and manual pumps to operate the anchor drawer and slide. The 2,400 lb NAVMOOR anchor rests on the anchor slide when the EASY is in the stowed or ready mode.

EASY Mooring Box

The mooring box is a steel, open top box that holds the EASY anchor chain and mooring line. It is placed within the stowage and deployment frame at the inboard end of the EASY container.

EASY Flexor Receiver Inserts and Lifting Device

The flexor receiver inserts (quantity 2) are stored on the upper shelf of the EASY container. The two halves of the flexor receiver lifting device are mounted on the container side door (hand pump side) and assembly hardware is located in the stowage box inside the container. The flexor receiver inserts provide securing points on the RRDF platform for the mooring bridle. They are inserted into the flexor receivers of the rake modules. A large shackle at the outboard end is used to secure the mooring bridle.

RIGID HULL INFLATABLE BOAT
Location

The RHIB is located alongside the RRDF platform.

The description and specifications for the RHIB may be found in TM 55-1945-224-14&P.

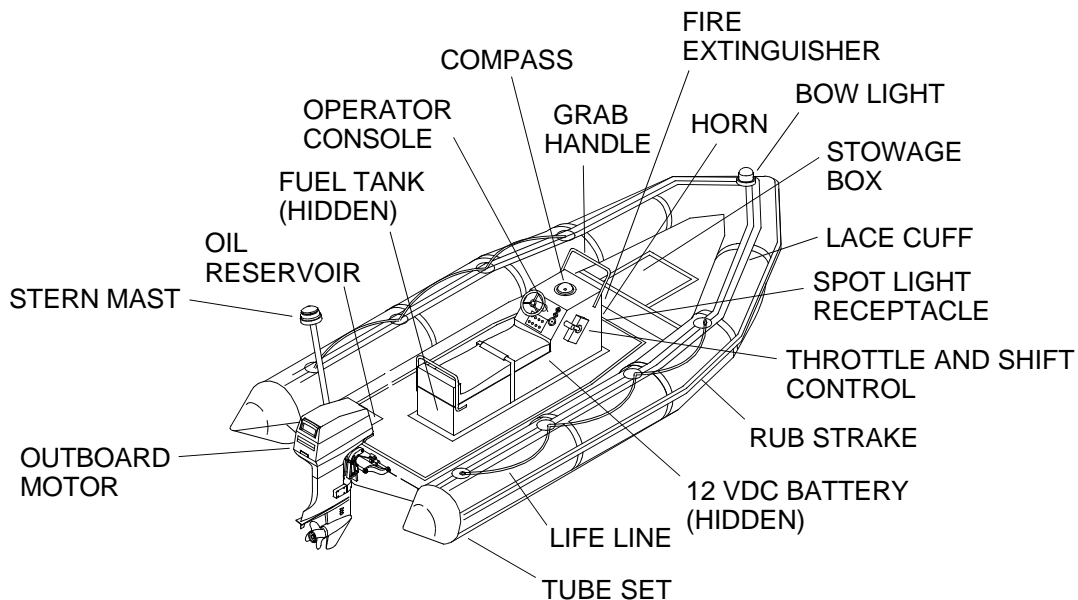
The description and specifications for the RHIB outboard motor may be found in TM 55-1945-221-14&P.

Description

The RHIB is a rigid hull boat with an inflatable collar that supplies reserve buoyancy and acts as an energy sink to soften the ride in rough conditions. The RHIB will transport seven personnel. The RHIB is used as a work boat only and does not meet the Safety Of Life At Sea (SOLAS) requirements of a rescue boat. The RHIB is equipped with hydraulic assist steering, a dual function single lever engine control, a 12 volt battery and electrical system, spotlight, compass, horn, navigation lights and a 2½ lb fire extinguisher.

The RHIB is powered by a 70 horsepower, two stroke outboard engine. The engine is equipped with an oil tank and oil injection system. Oil may be mixed with the fuel for operation without the oil tank. Two 6 gallon fuel tanks provide fuel for operation of the boat.

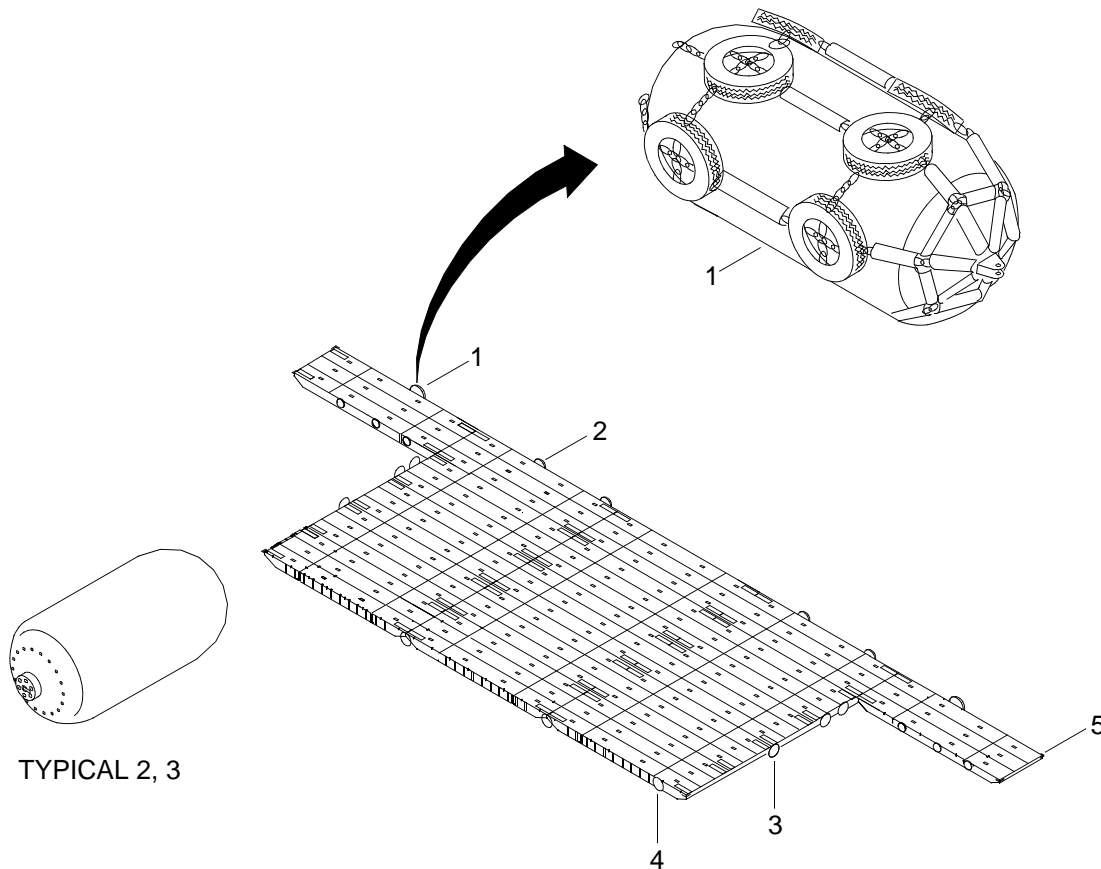
A shipping cradle is provided with the RHIB for storage in a 20 ft full access container. A lifting sling with shackles is supplied for placing the boat in the water.



FENDERS

Location

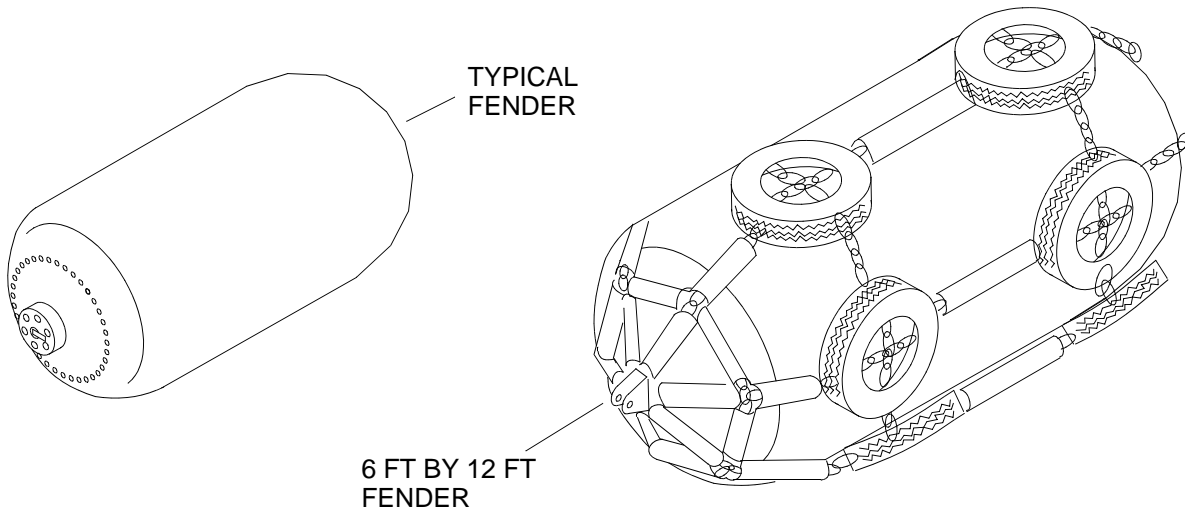
The corner fenders are installed on protruding corners of the RRDF, though the location of the placement of cylindrical fenders will vary with the configuration of the RRDF. One configuration, depicting all cylindrical fenders, is shown below.



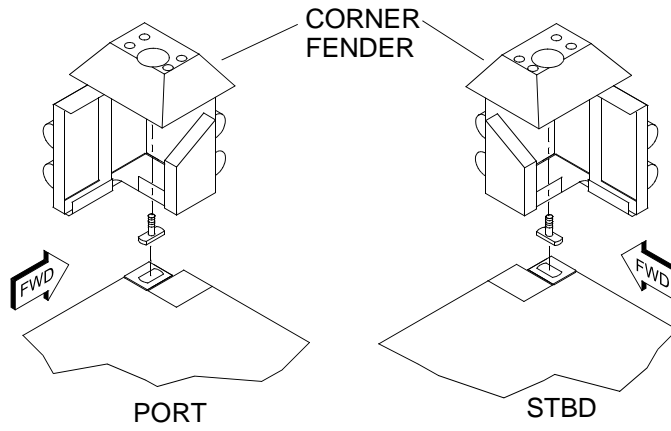
Description

There are two types of fenders which are components of the RRDF. These fenders are cylindrical type and corner type.

Cylindrical Type: There are four sizes of cylindrical shaped fenders constructed of rubber, that are components of the RRDF. The 6 ft diameter by 12 ft long (1), 5 ft diameter by 10 ft long (2), 4 ft by 12 ft (3) and 3 ft by 5 ft (not used on this configuration). The 3 ft by 5 ft, 4 ft by 12 ft and 5 ft by 10 ft fenders are stowed on specially constructed pallets in their own 40 ft open top containers. The 6 ft diameter by 12 ft long fenders are stowed on the sealift vessel. The 6 ft diameter by 12 ft long fender use aircraft tires (secured together by chains) as the abrasion element outside of the cylindrical skin and are secured to the RRDF mooring bitts (4). The 3 ft by 5 ft and 4 ft by 12 ft fenders are used for stand-off from lighters. The 5 ft by 10 ft and 6 ft by 12 ft fenders are used for stand-off from sealift vessels.



Corner Type: The one piece corner fenders (5) are installed on protruding ISO corners of the RRDF.

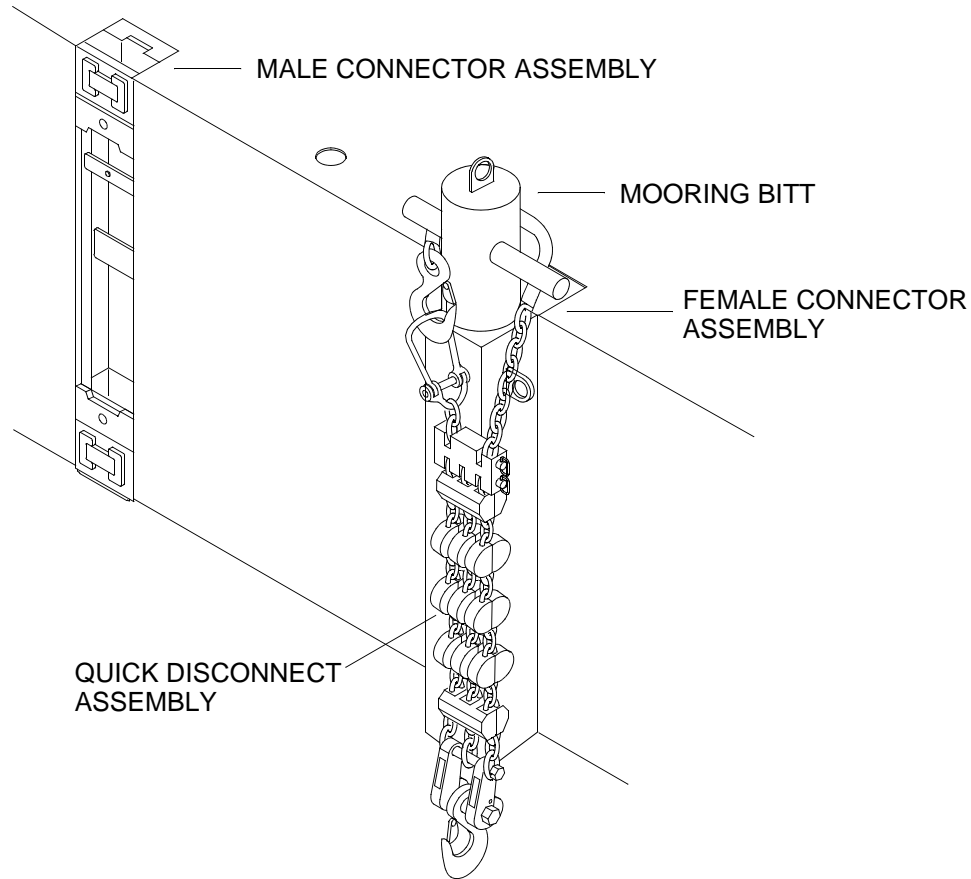


MOORING BITTS AND QUICK DISCONNECTS**Location**

The mooring bitts can be installed on any side of the RRDF that is exposed to the sea and accessible for mooring. Quick disconnect assemblies are attached to the mooring bitts.

Description

Mooring bitts incorporate two mounting connector pins that can only be installed into female module connector assemblies. The quick disconnect is used for creating a safe mooring connection to the mooring bitt. The quick disconnect is designed to break away if excessive pulling force is applied to the RRDF.

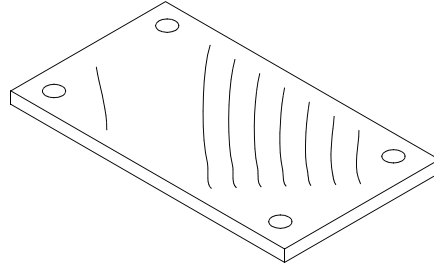


DUNNAGE MATS**Location**

Individual dunnage mats are attached to a module ISO corner fitting and are placed where the cargo ramps of the sealift vessel and the lighters will land on the RRDF. When not in use, the mats are stacked horizontally on a pallet in 20 ft storage containers.

Description

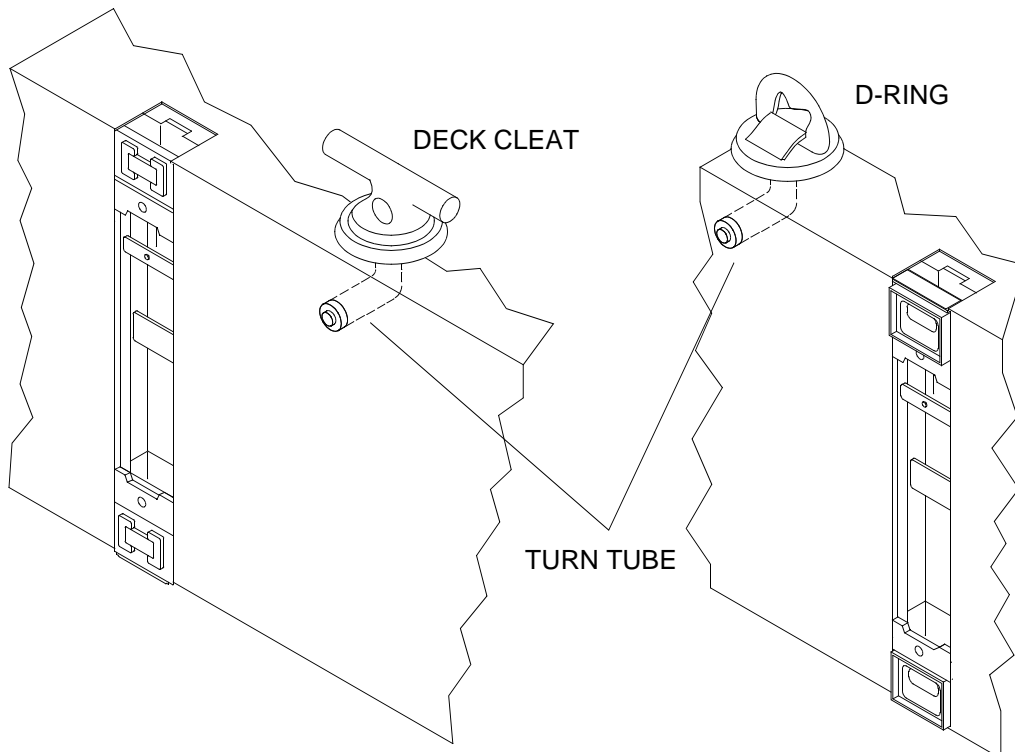
Each dunnage mat is made of high density polyethylene material and has a hole near each corner that are used for securing the mat to the ISO corner fittings.

**D-RING AND DECK CLEAT FITTINGS****Location**

D-ring and deck cleat fittings are installed in the module turn tubes located on the deck of the RRDF platform.

Description

These fittings have a 15,000 lb load capacity. There are ten tube turns per center module and five per end rake for mounting the fittings.



TOWING BRIDLE, TOWING INTERFACE AND TOWING LIGHTS
Location

The towing bridle is attached to towing interface and is stowed in the BII container when not in use.

The towing interface (flexor receiver inserts) are attached to the RRDF end rakes and are stowed in the BII container when not in use. A lifting device is provided for handling the flexor receiver inserts and is stowed in the EASY container when not in use.

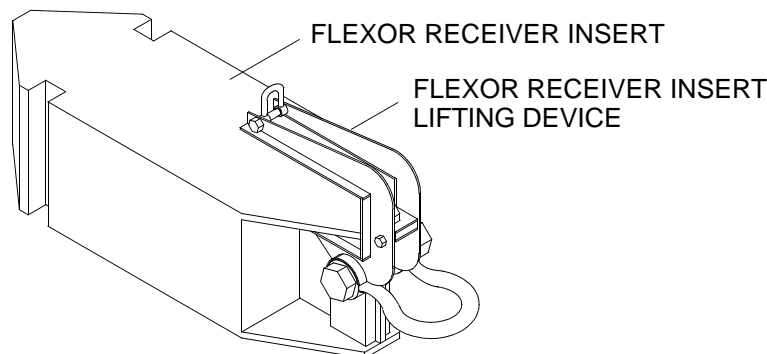
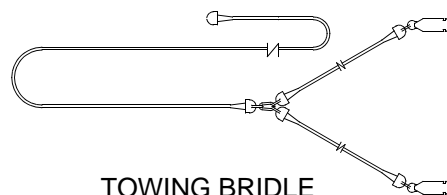
The towing lights should be installed in accordance with the U.S. Coast Guard Navigational Regulations when towing the RRDF. The lights are stowed in the BII container when not in use.

Description

The towing bridle consists of a 500 ft long by 10 in. circumference nylon line and a 2 1/2 in. anchor swivel connected to spliced in eyes and thimbles of the two bridle legs. The bridle legs are 10 in. circumference 12 strand plaited nylon line. One towing bridle has 35 ft long legs and one towing bridle has 60 ft long legs. Each end of the of the towing bridle has a shackle used to attach the legs to the towing interface at the RRDF and the other end to a warping tug.

The towing interface is used along with the towing bridle to tow the RRDF up through Sea State 5 conditions. The flexor receiver insert lifting device is used to install the towing interface.

There are four types of towing lights used during towing of the RRDF. The towing lights are identified by the color of the lens, which are white, green, red and amber. The lenses are interchangeable and are adjustable for aiming purposes during towing operations. These lights are battery operated and have magnetic bases so no adaptors are needed for installation.

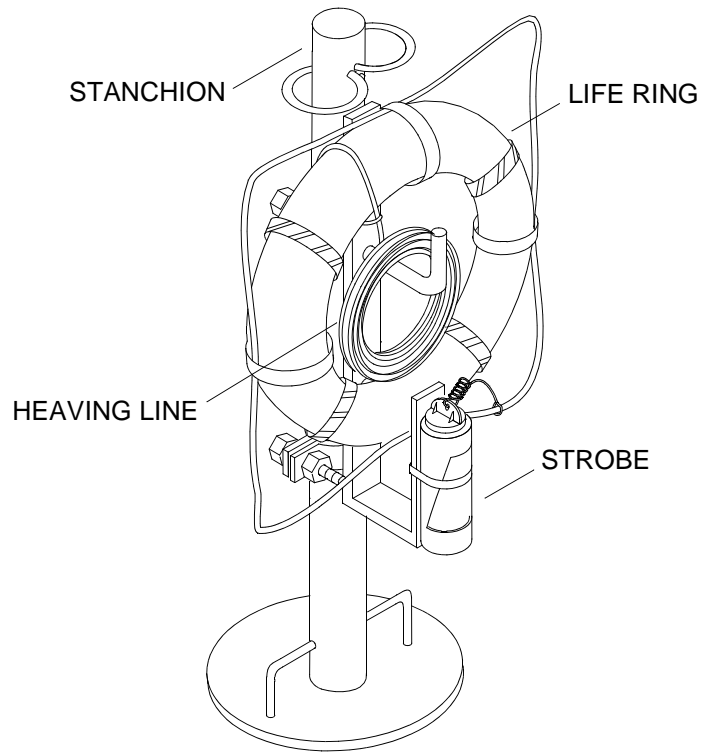


LIFE RING ASSEMBLIES**Location**

The life ring assemblies are installed at various locations on the RRDF platform to assist in the rescue of personnel in the water.

Description

The components of the life ring assembly consists of a donut shaped flotation device, nylon rope and strobe light mounted on a turn tube type stanchion.



**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
EQUIPMENT DESCRIPTION AND DATA**

EQUIPMENT DATA

The following table provides data applicable to major component levels.

Table 1. RRDF Equipment Data.

ITEM CHARACTERISTIC	DESCRIPTION
CENTER MODULE	
Width	8 ft
Length	40 ft
Depth	4 ft 6 in.
Weight	22,400 lb
ISO Compatible	Yes
Sea State Operation	SS 2
END RAKE MODULE	
Width	8 ft
Length	20 ft
Depth	4 ft 6 in.
Weight	12,500 lb
Weight (Flexor Stowed)	13,900 lb
ISO Compatible	Yes
Sea State Operation	SS 2
COMBINATION BEACH/SEA END MODULE	
Width	8 ft
Length	25 ft
Depth	4 ft 6 in.
Weight	15,000 lb
ISO Compatible	Yes
Sea State Operation	SS 2

Table 1. RRDF Equipment Data. (Continued)

ITEM CHARACTERISTIC	DESCRIPTION
INTERMEDIATE SECTION	
Center Modules (3 Per Section)	Non-Powered
End Rake Modules (6 Per Section)	Compatible With U.S. Navy flexor attachments and shear connectors
Width	24 ft
Length	80 ft
Depth	4 ft 6 in.
Weight of Assembled Intermediate Section	142,200 lb
ISO Compatible	Yes
Sea State Operation	SS 2
COMBINATION BEACH/SEA END SECTION	
Beach/Sea End Modules (3 Per Section)	Non-Powered
Center Modules (3 Per Section)	Non-Powered
End Rake Modules (3 Per Section)	Compatible with U.S. Navy flexor attachments and shear connectors
Width	24 ft
Length	85 ft
Depth	4 ft 6 in.
Weight of Assembled Combination Beach/Sea End Section	149,700 lb
ISO Compatible	Yes
Sea State Operation	SS 2
RRDF PLATFORM (FULL SIDE)	
Width	120 ft
Length	400 ft
ISO Compatible	Yes
Sea State Operation	SS 2

Table 1. RRDF Equipment Data. (Continued)

ITEM CHARACTERISTIC	DESCRIPTION
PERSONNEL SHELTER	
Width	8 ft
Length	20 ft
Depth	8.5 ft
Weight	9,000 lb
ISO Compatible	Yes
GENERATOR CONTAINER	
Width	8 ft
Length	20 ft
Depth	8.5 ft
Weight	15,000 lb
ISO Compatible	Yes
DIESEL GENERATOR SET	
10 kW Generator Set	Refer to TM 9-6115-642-10
ISO Compatible	Yes
LIGHT TOWERS	
Width	79 in.
Length	174 in.
Depth	89 in. in travel position, 30 ft in assembled position
Weight	2,010 lb
Weight of Pallet	2,600 lb
Weight of ISO Container, Including Light Towers	19,000 lb
ISO Compatible	Yes

Table 1. RRDF Equipment Data. (Continued)

ITEM CHARACTERISTIC	DESCRIPTION
RIGID HULL INFLATABLE BOAT (RHIB)	
Length	15 ft 5 in.
Beam	6 ft 7 in.
Lifting Weight	1,000 lb
Maximum Loading Capacity	1,903 lb
Diameter of Inflatable Tube	20 in.
ISO Compatible	Yes
EMERGENCY ANCHOR SYSTEM (EASY)	
ISO Container	Secured on the deck of the RRDF
Width	8 ft
Length	20 ft
Depth	8.5 ft
Weight	49,000 lb
ISO Compatible	Yes
Width	73 in.
Length	82 in.
Depth	58 in.
Weight	2,160 lb empty; 15,650 lb loaded with dry mooring
ISO Compatible	Yes
COMMUNICATIONS EQUIPMENT	
Communications Equipment	Consists of four VHF/FM handheld transceivers that are stored in the personnel shelter.
DUNNAGE MAT	
Mat	Made of high density polyethylene material
Width	4 ft
Length	10 ft
Depth	1 ½ in.
Weight	300 lb

Table 1. RRDF Equipment Data. (Continued)

ITEM CHARACTERISTIC	DESCRIPTION
Weight of Mat Pallet	13,100 lb
Weight of Dunnage Mat ISO Container With Dunnage Mats	22,000 lb
ISO Compatible	Yes
MOORING BITT	
Length	6 ft 11 in.
Weight	520 lb
Weight of Top Mooring Bitt Pallet (4 Bitts Per Pallet)	3,880 lb
Weight of Middle and Lower Mooring Bitt Pallets (3 Bitts Per Pallet)	3,360 lb each
Weight of ISO Container With Mooring Bitts	29,320 lb
ISO Compatible	Yes
6 FT BY 12 FT FENDER	
Weight	3,476 lb with chain and tire net
ISO Compatible	No
5 FT BY 10 FT FENDER	
Weight	1,500 lb
Weight of Fender Pallet	2,400 lb
Weight of ISO Container with Fenders	25,200 lb
ISO Compatible	Yes
4 FT BY 12 FT FENDER	
Weight	1,450 lb
Weight of Fender Pallet	3,800 lb
Weight of ISO Container with Fenders	25,200 lb
ISO Compatible	Yes

Table 1. RRDF Equipment Data. (Continued)

ITEM CHARACTERISTIC	DESCRIPTION
3 FT BY 5 FT FENDER	
Weight	300 lb
Weight of Fender Pallet	3,000 lb
Weight of ISO Container with Fenders	25,200 lb
ISO Compatible	Yes
FLEXOR CONNECTOR	
Weight	1,400 lb

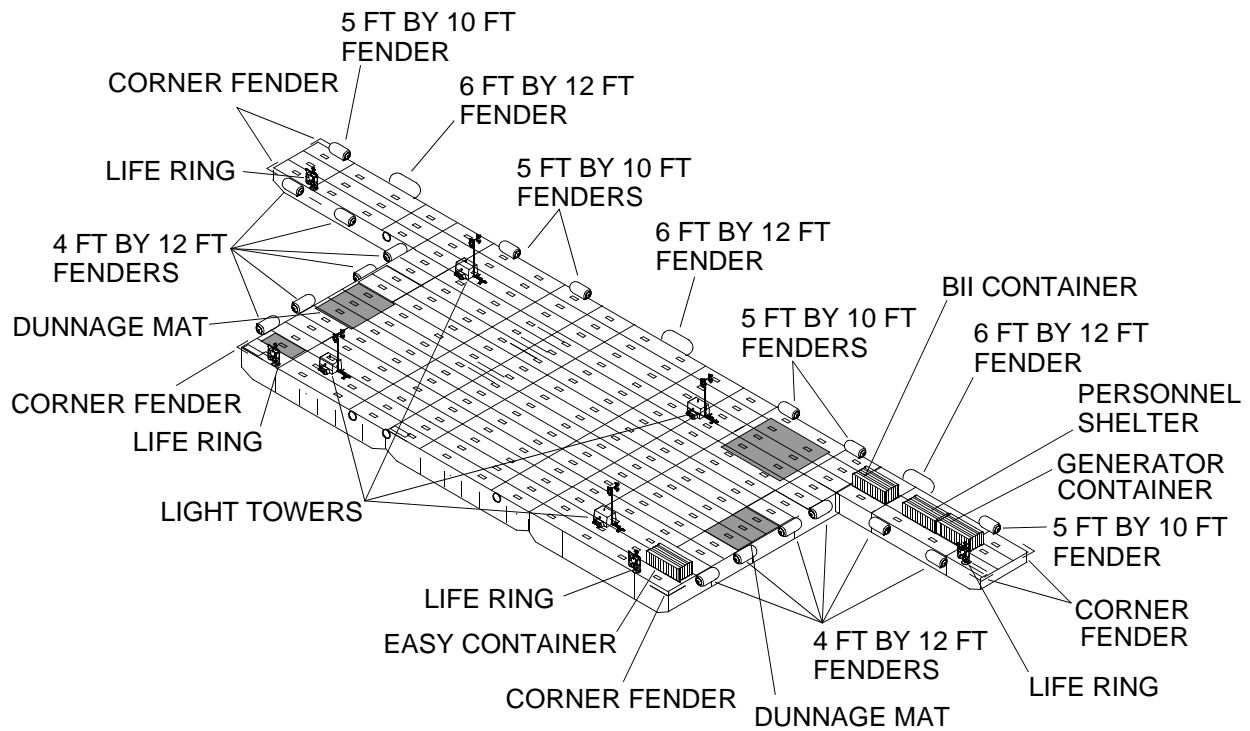
**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
EQUIPMENT DESCRIPTION AND DATA**

EQUIPMENT CONFIGURATION

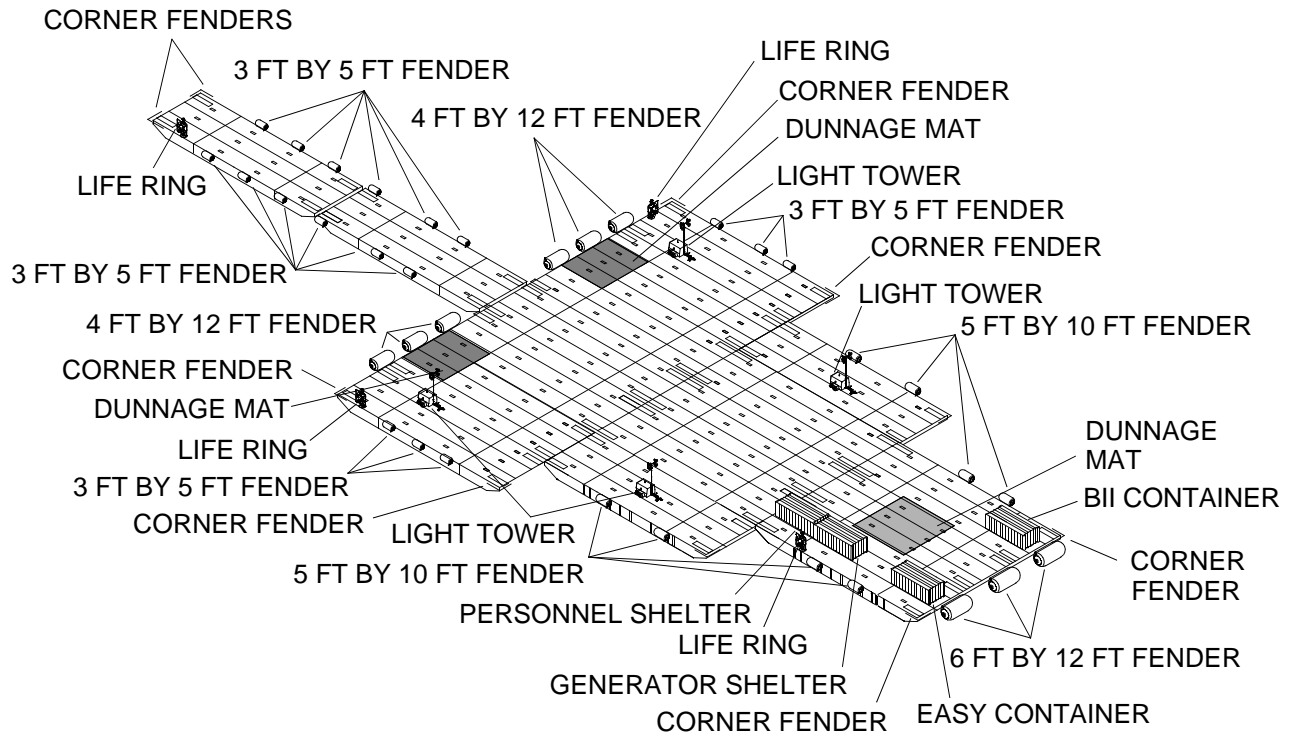
General

The following are four typical configurations that may be used as RRDF platforms for sealift vessels and/or watercraft lighters. The actual configuration will be determined by the watercraft and equipment being loaded/off loaded, if it is to be used at a side ramp or stern ramp of the sealift vessel, Sea State conditions and the operating area. The combination beach/sea end modules may be used in different alternate configurations for loading/off loading watercraft lighters. These are installed on the outboard end of a platform in place of the end rake modules. Only the full side and full stern configurations have light towers, a generator container, a personnel shelter and an EASY container mounted to the platform.

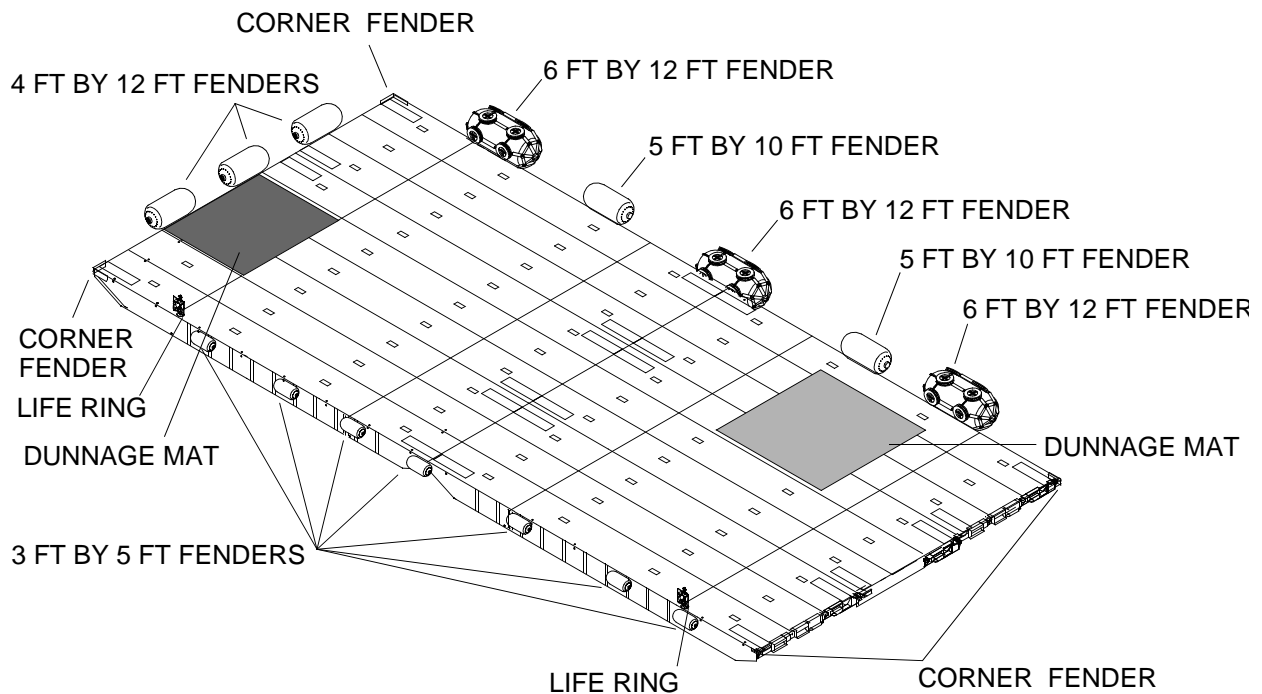
FULL RRDF SIDE CONFIGURATION



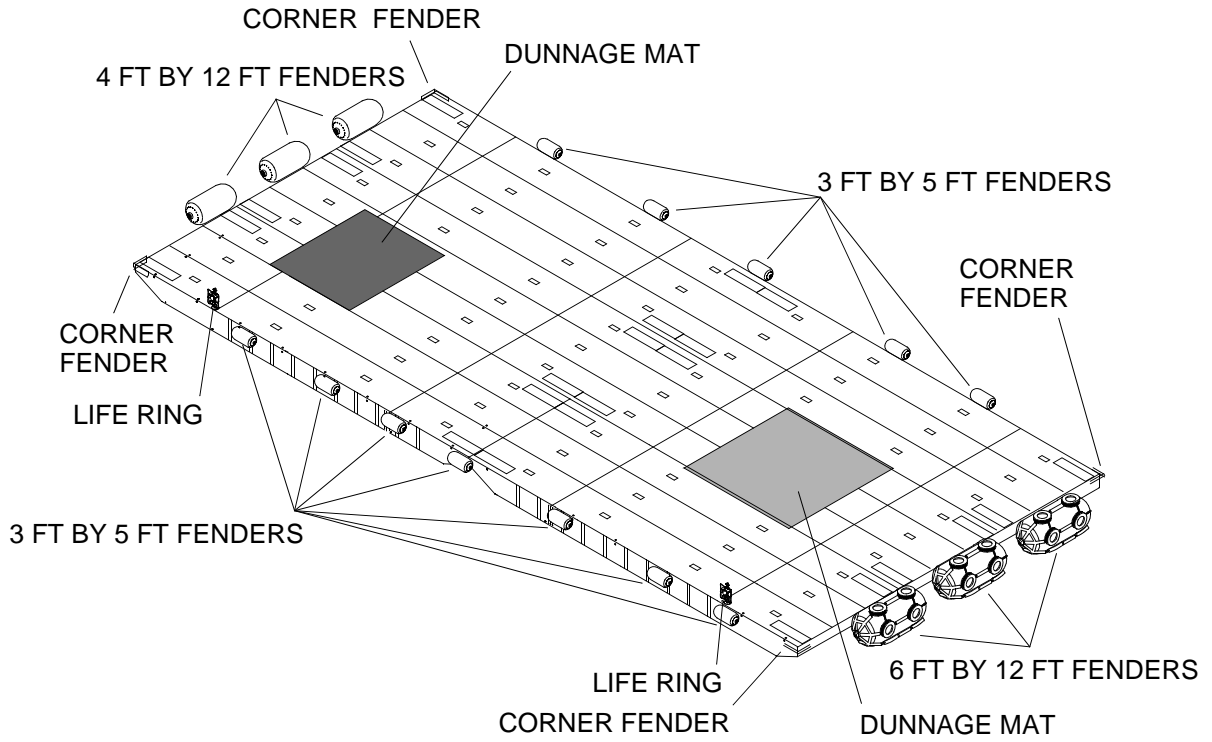
FULL RRDF STERN CONFIGURATION



FORCE OPENING RRDF SIDE CONFIGURATION



FORCE OPENING RRDF STERN CONFIGURATION



**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
THEORY OF OPERATION**

SYSTEM OPERATION

The RRDF is a floating discharge platform for ocean-going Ro/Ro sealift vessels. The modules and equipment comprising the RRDF are pre-positioned aboard ship until needed to support combat operations. The RRDF is used in support of J-LOTS operations. Vehicles are driven from the ship onto the RRDF and loaded on Army lighterage for transport to a theater of operations. The structure of the RRDF will withstand the cargo loading through Sea State 2 conditions.

10 KW SKID MOUNTED TACTICAL QUIET GENERATOR

Refer to TM 9-6115-642-10 for the theory of operation of the 10 kW diesel generator set.

PERSONNEL SHELTER

The personnel shelter is contained in a 20 ft container. Power is supplied to the shelter from the tactical quiet generator through a power cable stored in the shelter and connected from a 100 amp connector on the backside of the shelter to a 100 amp connector on the generator container. The power provided by the generator supplies power to the electrical distribution panel, which is cabled to the incinerator toilet, heating and cooling unit, lighting and to the GFI receptacles in the personnel shelter.

6 KW TRAILER MOUNTED LIGHT TOWER

The lighting system consists primarily of a self-contained, trailer mounted, 6 kW diesel generator, which illuminates the work area using four high pressure sodium 1,000 W lamps. The power to each lamp is controlled by individual switches on a control panel. The power is received from a 120 VAC, two phase alternator, which is cabled through two 25 amp circuit breakers, to the switches, to a ballast box and connected by quick disconnects to the lights.

VHF/FM HANDHELD TRANSCEIVER

The VHF/FM handheld transceivers are utilized for communicating between personnel during loading and unloading operations on the RRDF. The transceiver has a frequency range of 156.025 to 163.275 MHz, plus 10 weather channels. The transceiver has an RF power output with the CNB350 battery of 5.0 watts (high) and 1.0 watts (low). The operating voltage is 7.2 VDC. Current drain in standby mode is 40 mA, in receive mode 200 mA, in the transmit mode 1.8 amps (high power) and 0.7 amps (low power). The battery life (5% Tx, 5% rcv, 90% standby) is approximately 10 hrs (high mode) and 15 hrs (low mode). The audio response is within $\pm 2/-8$ of 6 dB/octave pre-emphasis characteristic from 300 Hz to 3,000 Hz. The AF harmonic distortion of the transmitter is 3%. The transmitter has a hum and noise rating of 37 dB and a frequency stability (-20 Degrees to +50 Degrees C) of $\pm 0.0005\%$. The receiver has a sensitivity rating of 20 dB, quieting at 0.35 uV and 12 dB SINAD at 0.30 uV. The squelch sensitivity (threshold) is 0.20 uV. Modulation acceptance bandwidth is + 4.5 kHz.

INCINERATOR TOILET

Refer to TM 55-1945-219-14&P for the theory of operation of the incinerator toilet.

EMERGENCY ANCHOR SYSTEM

The EASY is housed in a 20 ft. container and is secured on the deck of the RRDF. The EASY provides a means of anchoring the RRDF platform in the event the sealift vessel has to depart the operating area due to weather conditions or some other contingency. When required, the 2,400 lb. NAVMOOR anchor is deployed by extending the drawer to its extended position with one hand pump and elevating the slide with a separate hand pump until the anchor slides into the water. The anchor is tethered to the RRDF by an anchor chain and mooring bridle assembly. Buoys are attached to both the mooring line and anchor to facilitate recovery.

RIGID HULL INFLATABLE BOAT

The RHIB is a rigid hull type boat with an inflatable collar. Its arrangement consists of hoisting and mooring fittings, 70 horsepower outboard motor, fuel system, control console, electrical system, engine control system and steering system. A 12 volt battery provides power to the engine starting system, electrical accessories, switch/breaker panel and negative bus bar. The positive end of the battery is connected to the battery switch and then to the engine starter. The bilge pump is also connected to the battery switch.

CHAPTER 2

**OPERATOR INSTRUCTIONS
FOR
MODULAR CAUSEWAY SYSTEM (MCS)
ROLL-ON/ROLL-OFF DISCHARGE FACILITY (RRDF)**

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS**

GENERAL

The following paragraphs contain illustrations that show the location of each control and indicator for operation of the RRDF platform and installed items of equipment. Each control and indicator is clearly labeled as it appears on the equipment. Numbers on the illustrations are keyed to the tabular listing which contain the names, based on the equipment markings, and the functional description of each control and indicator.

10 KW GENERATOR CONTROLS AND INDICATORS

Refer to TM 9-6115-642-10 for generator operating procedures.

10 KW GENERATOR DAY FUEL TANK CONTROLS AND INDICATORS

Table 1 describes the controls and indicators for the 10 kW generator day fuel tank.

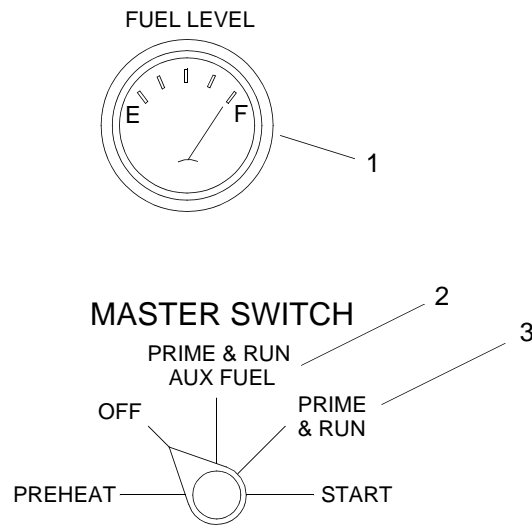


Table 1. 10 KW Generator Fuel Tank Operator Controls and Indicators.

KEY	CONTROL/INDICATOR	FUNCTION
1	Day FUEL LEVEL Gauge	Indicates the amount of fuel in the generator day tank.
2	MASTER SWITCH PRIME AND RUN AUX FUEL Position	Energizes generator set run circuits with auxiliary fuel pump operating.
3	MASTER SWITCH PRIME AND RUN Position	Energizes generator set run circuits with auxiliary fuel pump de-energized.

GENERATOR CONTAINER 1,000 GALLON FUEL TANK CONTROLS AND INDICATORS

Table 2 describes the controls and indicators for the generator container 1,000 gallon fuel tank.

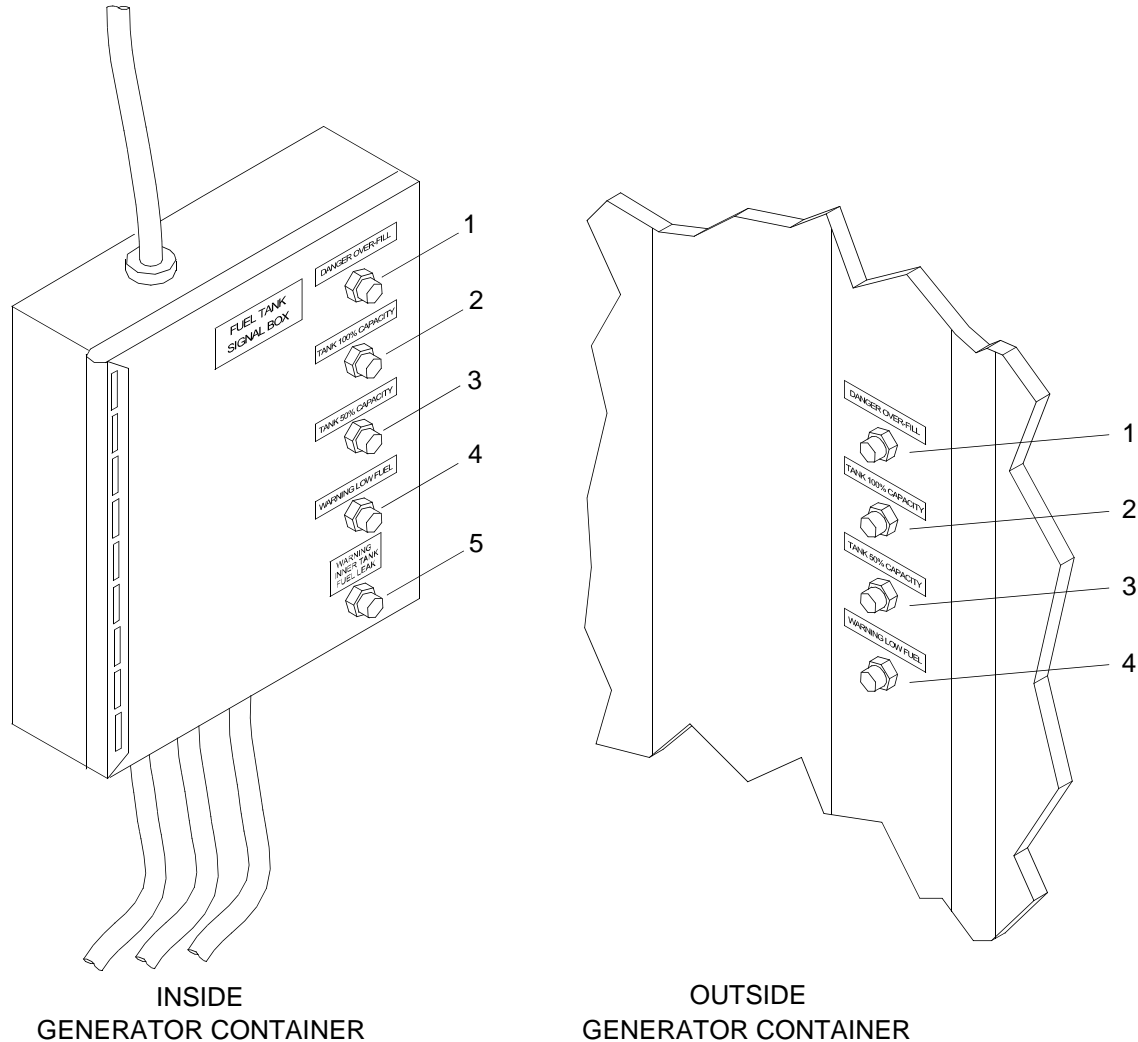


Table 2. Generator Container 1,000 Gallon Fuel Tank Operator Controls and Indicators.

KEY	CONTROL/INDICATOR	FUNCTION
1	DANGER OVER-FILL Indicator Light	Light illuminates when tank is overfilled during refueling operations.
2	TANK 100% CAPACITY Indicator Light	Light illuminates when fuel tank is at 100% of capacity.
3	TANK 50% CAPACITY Indicator Light	Light illuminates when fuel tank has 50% of fuel remaining in tank.
4	WARNING LOW FUEL Indicator Light	Light illuminates when tank fuel level is low.
5	WARNING INNER TANK FUEL LEAK Indicator Light	Light illuminates when an inner tank fuel leak is detected.

GENERATOR CONTAINER OVERHEAD LIGHTS CONTROLS AND INDICATORS

Table 3 describes the controls and indicators for the generator container overhead lights.

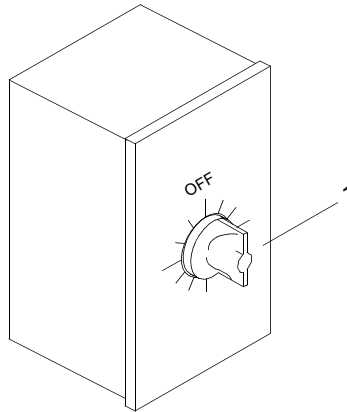


Table 3. Generator Container Overhead Lights Operator Controls and Indicators.

KEY	CONTROL/INDICATOR	FUNCTION
1	Overhead Lighting Timer Switch	When timer switch is turned, overhead lighting illuminates. Duration of illumination is dependant upon time set on dial of switch.

GENERATOR EMERGENCY STOP CONTROLS AND INDICATORS

Table 4 describes the controls and indicators for the generator emergency stop.

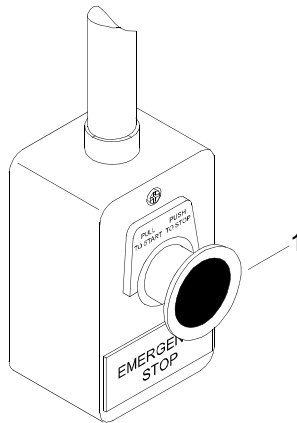
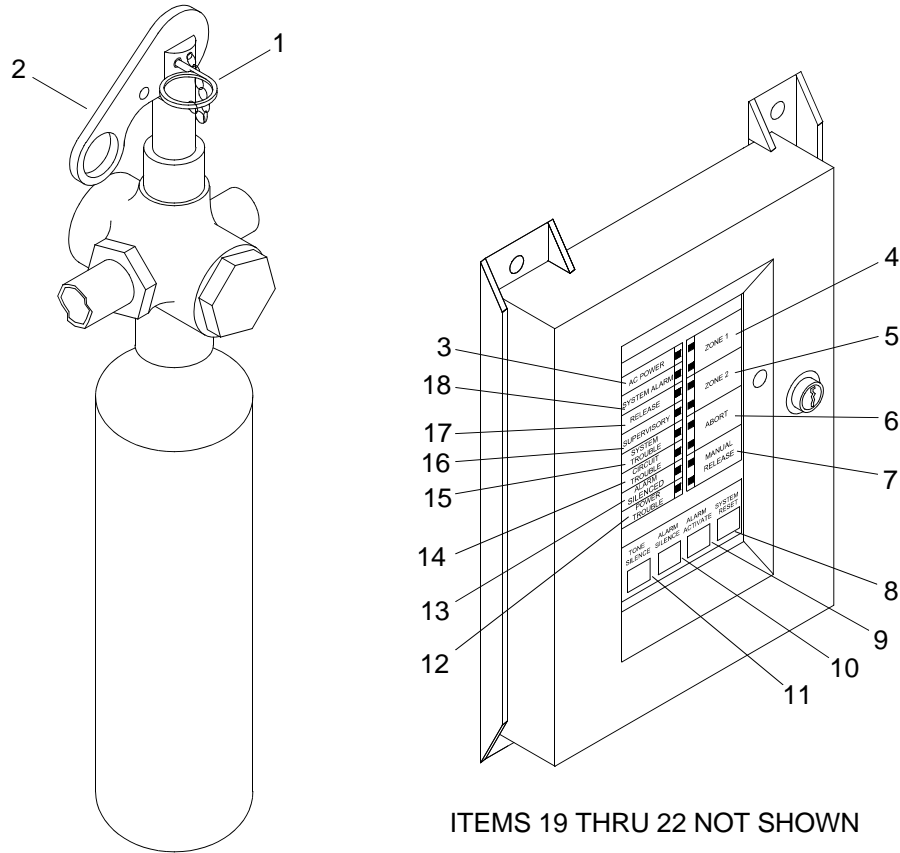


Table 4. Generator Emergency Stop Operator Controls and Indicators.

KEY	CONTROL/INDICATOR	FUNCTION
1	Generator Emergency Stop	When pushed, stops generator. Switch must be pulled out to restart generator.

GENERATOR CONTAINER FIRE SUPPRESSION SYSTEM CONTROLS AND INDICATORS

Table 5 describes the controls and indicators for the generator container fire suppression system.



**Table 5. Generator Container Fire Suppression System
Operator Controls and Indicators.**

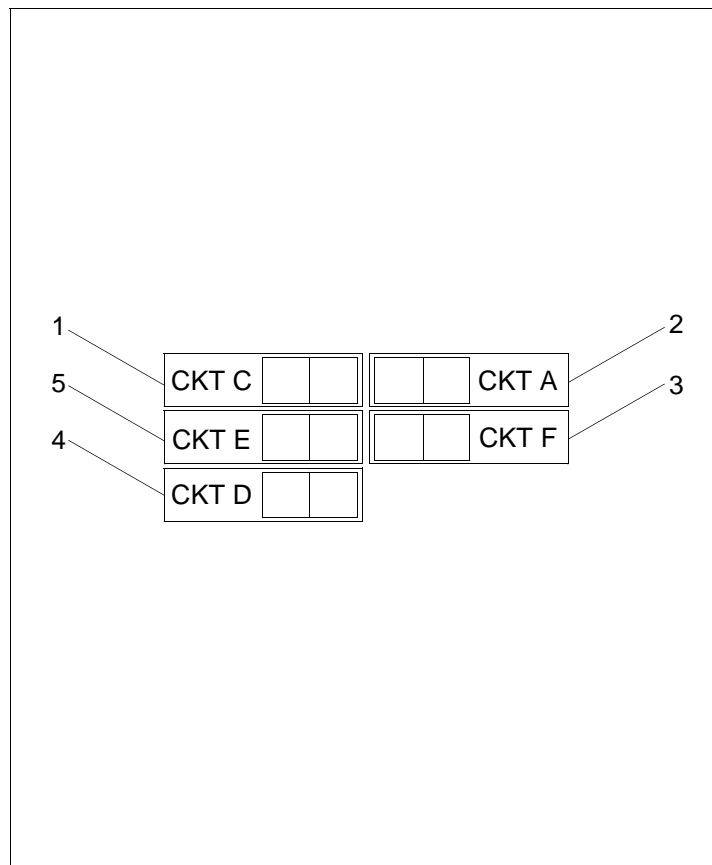
KEY	CONTROL/INDICATOR	FUNCTION
1	Ring Pin	Pull ring pin to allow manual activation of fire suppression system.
2	Manual Actuator Handle	Manually activates fire suppression system. 30 seconds later CO ₂ will discharge.
3	Control Module AC POWER Green LED Indicator	LED indicator is lit (steady green) when AC power is present.
4	Control Module ZONE 1 Red Alarm and Yellow Trouble LED Indicators	For ZONE 1, alarm LED indicator is lit (flashing red) for alarm condition and (steady red) for acknowledged alarm condition. Trouble LED indicator is lit (flashing yellow) for system or circuit trouble and (steady yellow) for acknowledged trouble condition.
5	Control Module ZONE 2 Red Alarm and Yellow Trouble LED Indicators	For ZONE 2, alarm LED indicator is lit (flashing red) for alarm condition and (steady red) for acknowledged alarm condition. Trouble LED indicator is lit (flashing yellow) for system or circuit trouble and (steady yellow) for acknowledged trouble condition.
6	Control Module ZONE 3 ABORT Red Abort and Yellow Abort Trouble LED Indicators.	For ZONE 3, abort LED indicator is lit (steady red) when an abort condition occurs. Abort trouble LED indicator is lit (steady yellow) when trouble condition exists in abort circuitry.
7	Control Module ZONE 4 MANUAL RELEASE Red Manual Release and Yellow Manual Release Trouble LED Indicators	For ZONE 4, manual release LED indicator is lit (steady red) when system is manually activated. Manual release trouble LED indicator is lit (steady yellow) when trouble condition exists in manual release circuitry.
8	Control Module RESET Switch	Pushbutton used to break power to all initiating circuits and will clear any activated output circuits. If alarm or trouble conditions still exist after RESET is depressed, conditions will reactivate control module. Holding RESET down will perform a lamp test and will test piezo.
9	Control Module ALARM ACTIVATE Switch	Pushbutton may be used to activate notification appliance circuits. Also activates system alarm relay. When ALARM ACTIVATE is depressed, notification circuits and system alarm relay are silenced, and ALARM SILENCED LED will illuminate. RESET must be depressed to return system to normal.
10	Control Module ALARM SILENCE Switch	Pushbutton used to acknowledge alarms and supervisories. When ALARM SILENCE is depressed, flashing LEDs turn steady, piezo silences and ALARM SILENCED LED will illuminate. RESET must be depressed to return system to normal.

**Table 5. Generator Container Fire Suppression System
Operator Controls and Indicators. (Continued)**

KEY	CONTROL/INDICATOR	FUNCTION
11	Control Module TONE SILENCE Switch	Pushbutton is depressed to acknowledge alarms, troubles and supervisories. Control module alarm and trouble conditions will produce flashing LED indicators and sound piezo. When TONE SILENCE is depressed, flashing LEDs turn steady and piezo silences. A second trouble condition will resound piezo. Although trouble conditions are self-restoring, alarms require RESET to be depressed to clear conditions.
12	Control Module POWER TROUBLE Yellow LED Indicator	LED indicator is lit (flashing yellow) for low or disconnected batteries and earth fault conditions.
13	Control Module ALARM SILENCED Yellow LED Indicator	LED indicator is lit (steady yellow) when ALARM SILENCE switch has been depressed after an alarm.
14	Control Module CIRCUIT TROUBLE Yellow LED Indicator	LED indicator is lit (flashing yellow) for trouble conditions on output circuits (notification and releasing circuits).
15	Control Module SYSTEM TROUBLE Yellow LED Indicator	LED indicator is lit (flashing yellow) for all trouble conditions.
16	Control Module SUPERVISORY Yellow LED Indicator	LED indicator is lit (flashing yellow) upon activation of a supervisory device.
17	Control Module RELEASE Red LED Indicator	LED indicator is lit (steady red) when release occurs.
18	Control Module SYSTEM ALARM Red LED Indicator	LED indicator is lit (flashing red) when alarm occurs.
19	BATT Yellow LED Indicator (Internal)	LED indicator is lit on internal motherboard (steady yellow) when battery power is low or not detected.
20	EARTH Yellow LED Indicator (Internal)	LED indicator is lit on internal motherboard (steady yellow) when a ground fault condition exists.
21	MICRO FAIL LED Indicator (Internal)	LED indicator is lit on internal motherboard (steady yellow) when watchdog timer detects microprocessor failure.
22	Piezo (Local Buzzer) Alarm Tones (Internal)	Three specific tones from piezo indicate different alarm/trouble conditions. * Alarm - generates a steady tone, no pulse. * Trouble - pulses one second on, one second off and repeats 30 pulses per minute. * Supervisory - pulses one-half second on, one-half second on and repeats 60 pulses per minute.
23	Electric Manual Pull Station	Manually initiates fire suppression system. Lift lever to actuate. Time delay circuit will activate.

**GENERATOR CONTAINER ELECTRICAL DISTRIBUTION PANEL BOARD
CONTROLS AND INDICATORS**

Table 6 describes the controls and indicators for the generator container electrical distribution panel board.



**Table 6. Generator Container Electrical Distribution Panel Board
Operator Controls and Indicators.**

KEY	CONTROL/INDICATOR	FUNCTION
1	CIRCUIT BREAKER "C"	Provides circuit protection for overhead lighting. Rated at 20 amps.
2	CIRCUIT BREAKER "A"	Provides circuit protection for louver motor. Rated at 20 amps.
3	CIRCUIT BREAKER "F"	Provides circuit protection for float switches. Rated at 20 amps.
4	CIRCUIT BREAKER "D"	Provides circuit protection for fire detection control module. Rated at 20 amps.
5	CIRCUIT BREAKER "E"	Provides circuit protection for charger receptacle. Rated at 20 amps.

PERSONNEL SHELTER HEATING AND AIR CONDITIONING SYSTEM AND ELECTRICAL DISTRIBUTION PANEL BOARD CONTROLS AND INDICATORS

Table 7 describes the controls and indicators for the personnel shelter heating and air conditioning system and electrical distribution panel board.

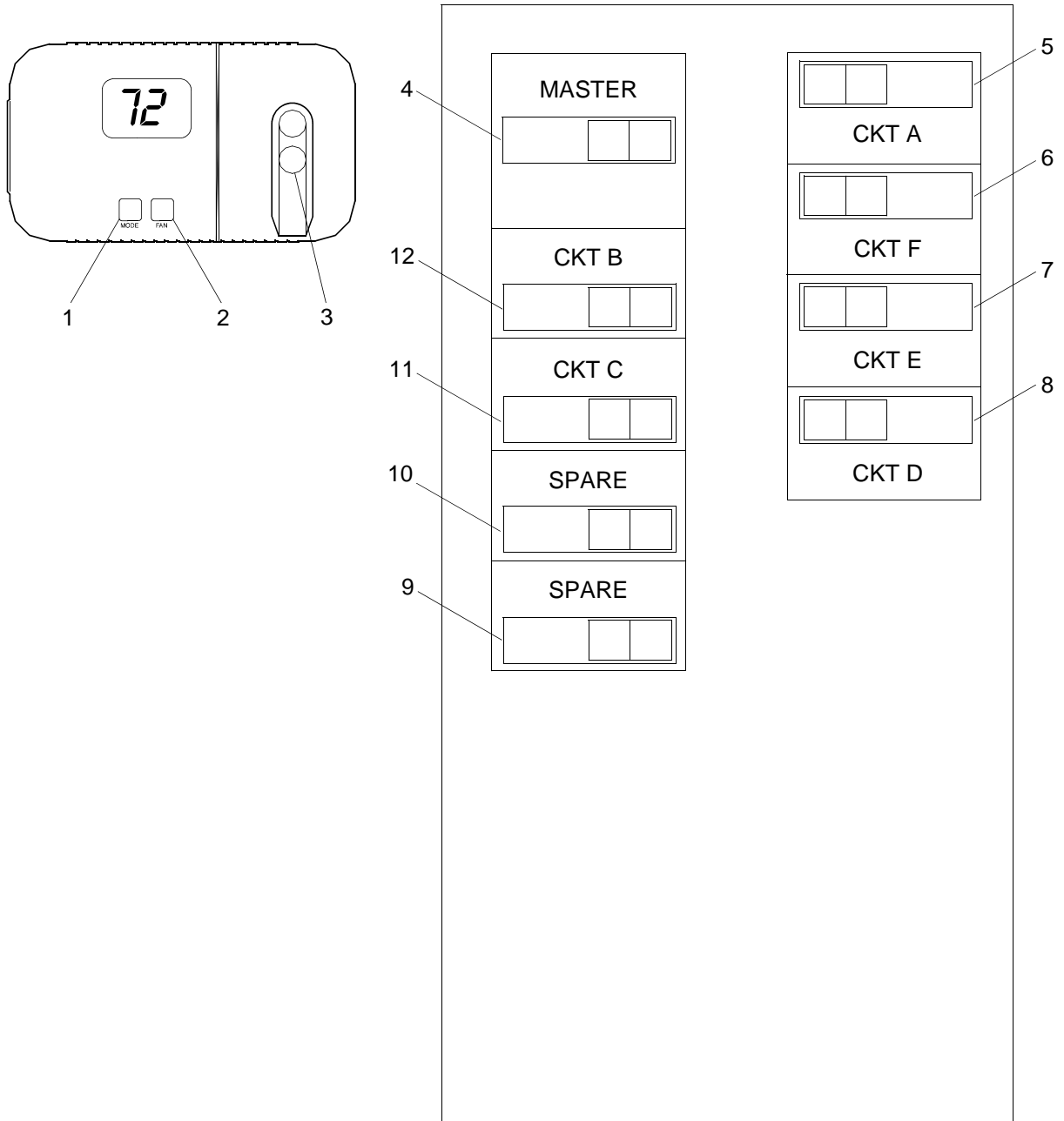


Table 7. Personnel Shelter Heating and Air Conditioning System and Electrical Distribution Panel Board Operator Controls and Indicators.

KEY	CONTROL/INDICATOR	FUNCTION
1	Mode Selector Switch	Selects the mode of operation for the heating and cooling system. In the COOL mode, the air conditioning system will cycle on at the thermostat setting. In the HEAT mode, the heating system will cycle on at the thermostat setting. In the OFF mode, the system does not operate.
2	FAN Switch	Selects mode of operation for fan. When in the ON position, fan operates continuously. When in the AUTO mode, fan operates in conjunction with the thermostat.
3	Thermostat Adjustment	Adjust the temperature at which the heating or cooling system will cycle on.
4	MASTER CIRCUIT BREAKER	Allows the operator to turn off all electrical power to electrical distribution panel board. Rated at 100 amps.
5	CIRCUIT BREAKER "A"	Provides circuit protection for heating and air conditioning system. Rated at 30 amps.
6	CIRCUIT BREAKER "F"	Provides circuit protection for Incinolet toilet. Rated at 20 amps.
7	CIRCUIT BREAKER "E"	Provides circuit protection for charger receptacle. Rated at 20 amps.
8	CIRCUIT BREAKER "D"	Provides circuit protection for toilet lighting and ventilation. Rated at 15 amps.
9	CIRCUIT BREAKER "SPARE"	Spare circuit. Rated at 15 amps.
10	CIRCUIT BREAKER "SPARE"	Spare circuit. Rated at 15 amps.
11	CIRCUIT BREAKER "C"	Provides circuit protection for overhead lighting. Rated at 15 amps.
12	CIRCUIT BREAKER "B"	Provides circuit protection for receptacles. Rated at 20 amps.

VHF/FM HANDHELD TRANSCEIVER CONTROLS AND INDICATORS

Table 8 describes the controls and indicators for the VHF/FM handheld transceiver.

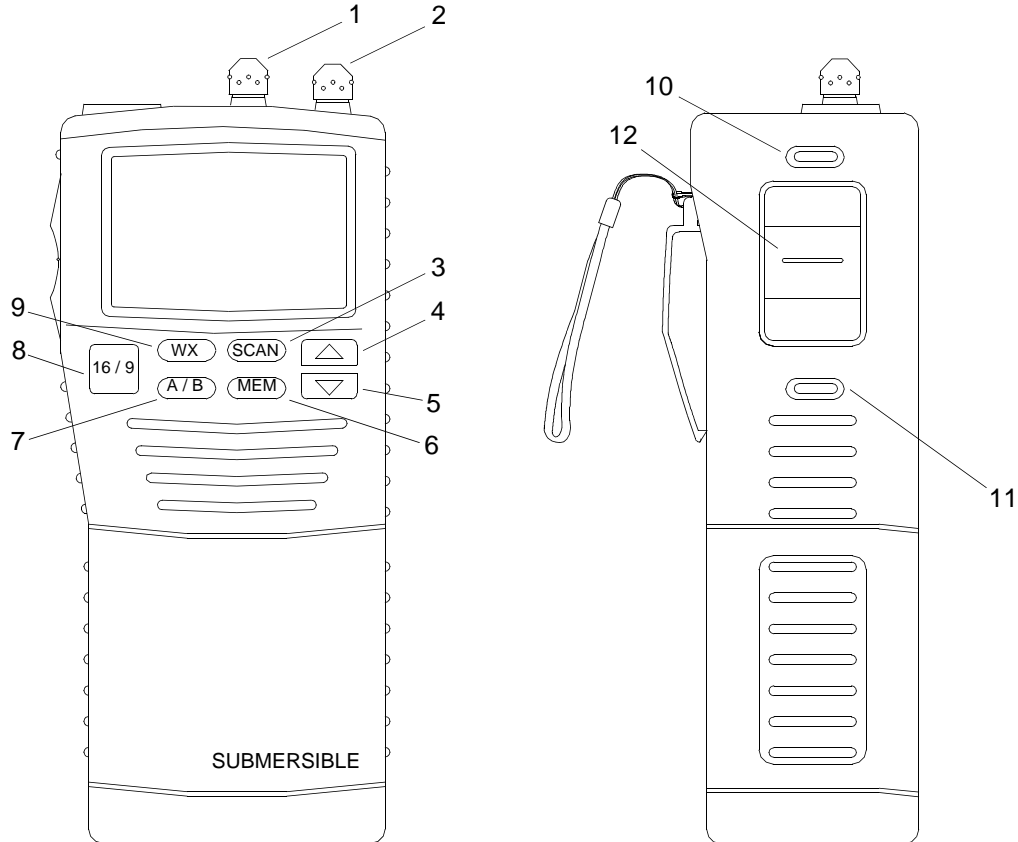


Table 8. VHF/FM Handheld Transceiver Operator Controls and Indicators.

KEY	CONTROL/INDICATOR	FUNCTION
1	SQUELCH CONTROL Knob	Sets the threshold level of signals that will produce audio output from the speaker.
2	POWER/VOLUME Knob	Turns power on and off. Adjusts speaker level.
3	SCAN Key	Starts scanning programmed channels. Press key for at least one second to turn on and off priority scan during scan.
4	Up Arrow Key	Selects the desired channel. Each press increases the channel number. When held down, the channels increase continuously.
5	Down Arrow Key	Selects the desired channel. Each press decreases the channel number. When held down, the channels decrease continuously.
6	MEM Key	Memorizes the selected channel. When pressed again, deletes the selected channel.
7	A/B Key	Immediately recalls two user assigned channels from any channel location.

Table 8. VHF/FM Handheld Transceiver Operator Controls and Indicators. (Continued)

KEY	CONTROL/INDICATOR	FUNCTION
8	16/9 Key	Immediately recalls channel 16 from any channel location. Holding this key down recalls channel 9. When the WX key is pressed while holding this key, the mode toggles between USA, International and Canada.
9	WX Key	Immediately recalls a weather channel from any channel location. Recalls the previous channel when the WX key is pressed again.
10	LAMP/KEY LOCK Key	Turns the display lamp on and off. Hold down key to lock the displayed channel. Key symbol appears in display. Hold down until key symbol in display disappears to unlock.
11	H/L Key	Toggles between high and low power. To change from low power to high power, hold down key on Canada channel 13, USA channel 13 or 67.
12	MICROPHONE PUSH TO TALK (PTT) Switch	Press the push to talk switch to transmit. Release button to receive. A transmit timer limits continuous transmissions to 5 minutes.

VHF/FM HANDHELD TRANSCEIVER BATTERY CHARGER CONTROLS AND INDICATORS

Table 9 describes the controls and indicators for the VHF/FM handheld transceiver battery charger.

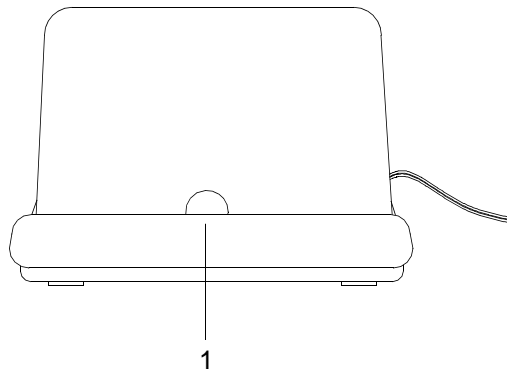


Table 9. VHF/FM Handheld Transceiver Battery Charger Operator Controls and Indicators.

KEY	CONTROL/INDICATOR	POSITION/FUNCTION
1	Power On/Recharging Light	Red light on indicates the VHF/FM handheld transceiver is charging.

INCINOLET CONTROLS AND INDICATORS

Refer to TM 55-1945-219-14&P incinerator toilet controls and indicators.

HEATING AND COOLING UNIT CONTROLS AND INDICATORS

Refer to TM 55-1945-220-14&P for packaged terminal air conditioner and heat pump controls and indicators.

LIGHT TOWER AND LIGHT TOWER ENGINE CONTROLS AND INDICATORS

Refer to TM 55-1945-217-14&P for light tower controls and indicators.

Refer to TM 55-1945-218-14&P for light tower engine controls and indicators.

RIGID HULL INFLATABLE BOAT AND RHIB OUTBOARD MOTOR CONTROLS AND INDICATORS

Refer to TM 55-1945-224-14&P for RHIB controls and indicators.

Refer to TM 55-1945-221-14&P for RHIB outboard motor controls and indicators.

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
MODULE ISOPAK
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

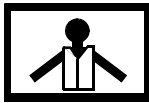
Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Ladder (Item 36, WP 0116 00)
 Sling, Lifting, 8,400 lb (Yellow) (Item 60, WP 0116 00)
 Qty 4
 Sling, Lifting, 53,000 lb (Brown) (Item 59, WP 0116 00)
 Qty 2
 Sling, Lifting, 36,000 lb Adjustable Chain (Item 61, WP 0116 00)
 Qty 4

Personnel Required

Seaman 88K (2)

PREPARATION FOR USE - DISASSEMBLE MODULE ISOPAK

WARNING



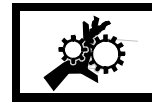
VEST



HELMET PROTECTION



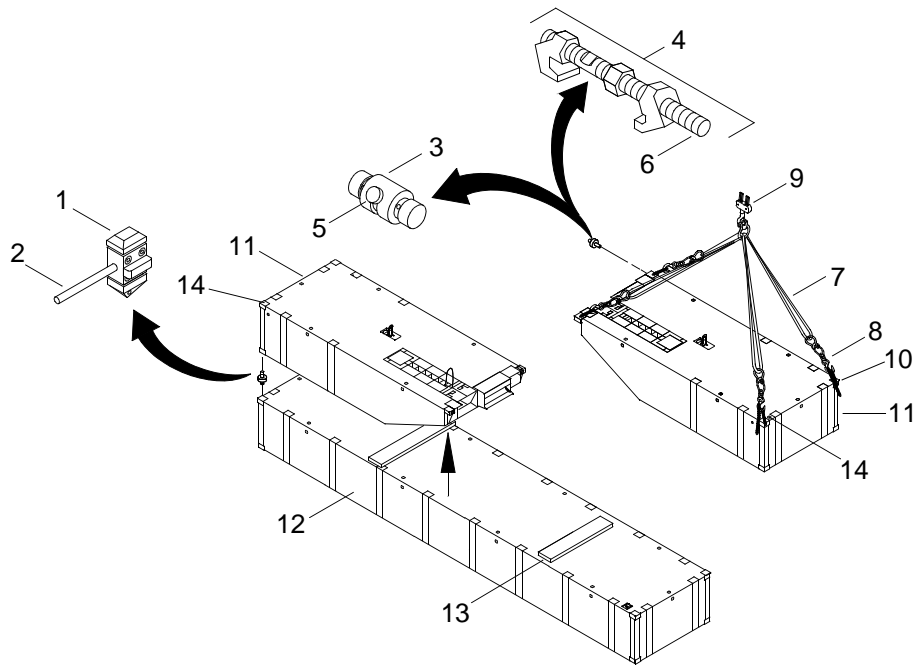
HEAVY PARTS



MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Unlock four vertical connectors (1) by rotating levers (2).



NOTE

Either horizontal twist locks or bridge locks are used to connect two end rake modules.

2. Unlock two horizontal twist locks (3) or bridge locks (4).
 - a. Unlock two horizontal twist locks (3) by rotating levers (5).
 - b. Unlock and remove two bridge locks (4) by loosening jack screws (6).
3. Attach four 8,400 lb slings (7) and 36,000 lb adjustable chain slings (8) from crane (9) to corners (10) on end rake module (11).

WARNING

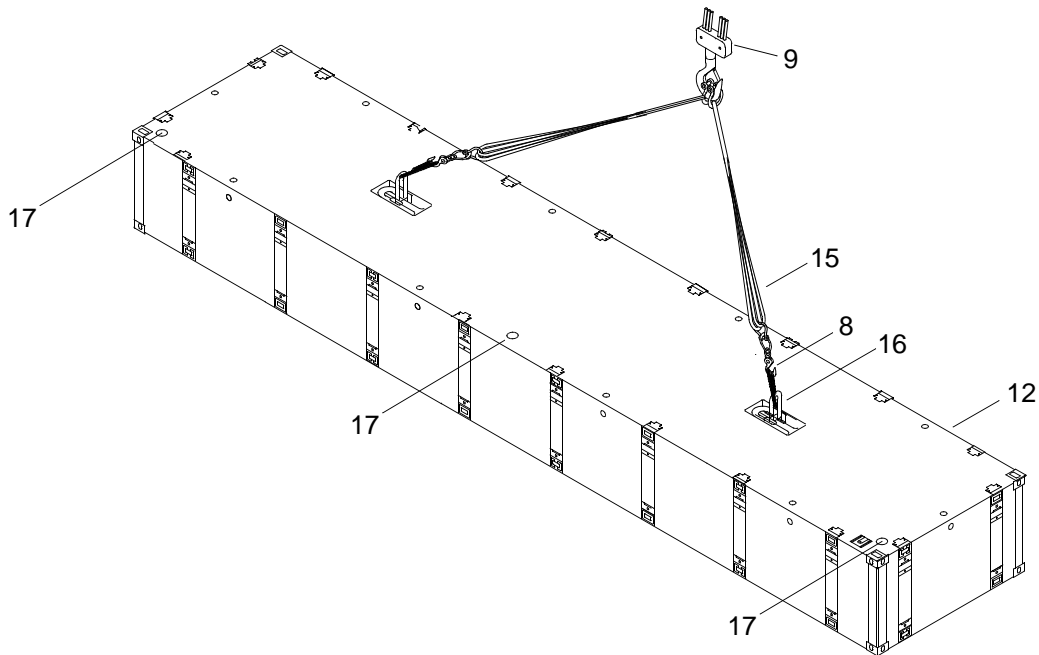


HEAVY PARTS

4. Using slings (7 and 8) and crane (9), lift end rake module (11) from top of center module (12).
5. Remove 36,000 lb adjustable chain slings (8) from corners (10) on end rake module (11).
6. Attach four 8,400 lb slings (7) and 36,000 lb adjustable chain slings (8) from crane (9) to corners (10) on second end rake module (11).

WARNING**HEAVY PARTS**

7. Using slings (7 and 8) and crane (9), lift end rake module (11) from top of center module (12).
8. Remove 36,000 lb adjustable chain slings (8) from corners (10) on end rake module (11).
9. Remove 8,400 lb slings (7) from crane (9).
10. Remove four vertical connectors (1) from corners of center module (12).
11. Remove two horizontal twist locks (3) from end rake modules (11).
12. Remove dunnage (13) from top of center module (12).
13. Verify drain plugs (14) on end rake modules (11) are installed and tight.
14. Attach two 53,000 lb slings (15) and 36,000 lb adjustable chain slings (8) from crane (9) to padeyes (16) on center module (12).

**WARNING****HEAVY PARTS**

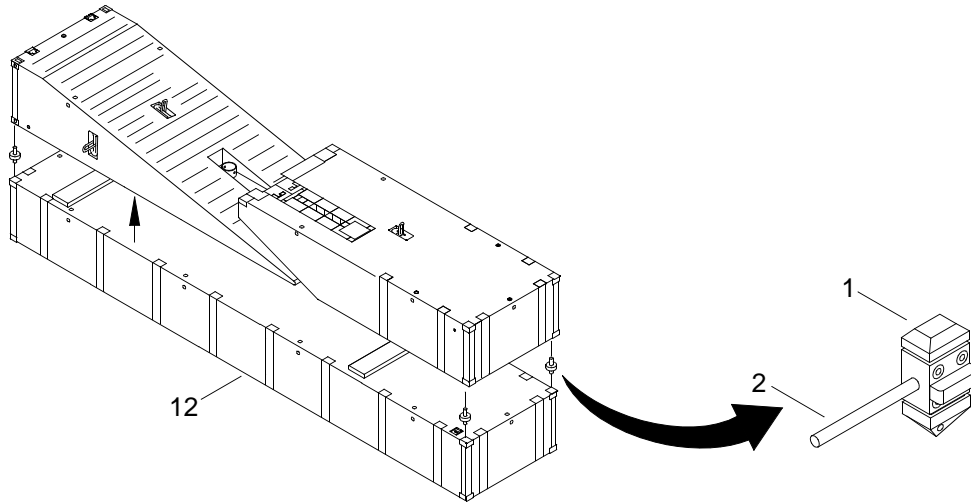
15. Using slings (8 and 15) and crane (9), lift center module (12).
16. Remove 36,000 lb adjustable chain slings (8) from padeyes (16) on center module (12).

17. Remove 53,000 lb slings (15) from crane (9).

18. Verify drain plugs (17) on center module (12) are installed and tight.

DISASSEMBLE COMBINATION BEACH SEA END MODULE ISOPAK

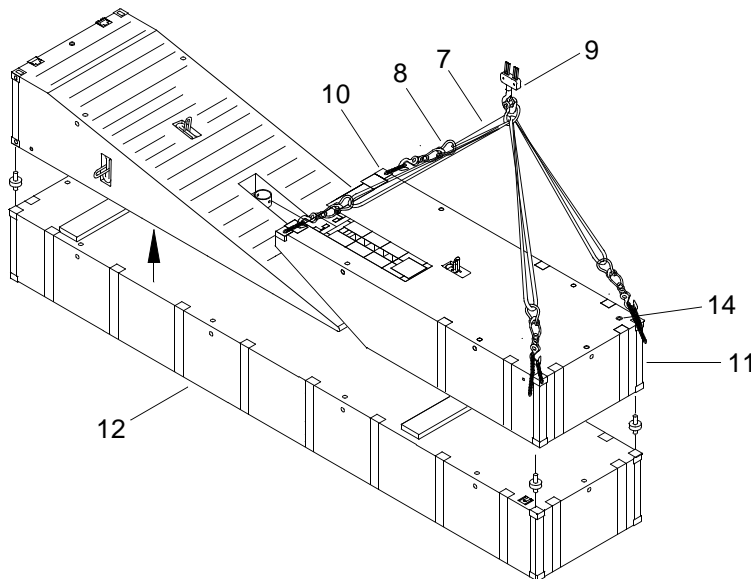
1. Unlock four vertical connectors (1) by rotating levers (2).



NOTE

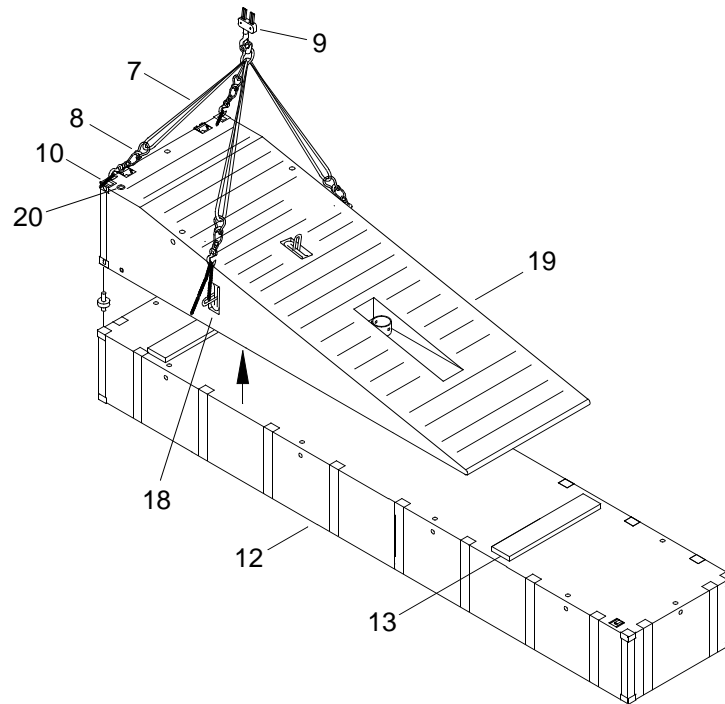
Either a left, right or center end rake can be mounted on the center module with a CBSE.

2. Attach four 8,400 lb slings (7) and 36,000 lb adjustable chain slings (8) from crane (9) to corners (10) on end rake module (11).



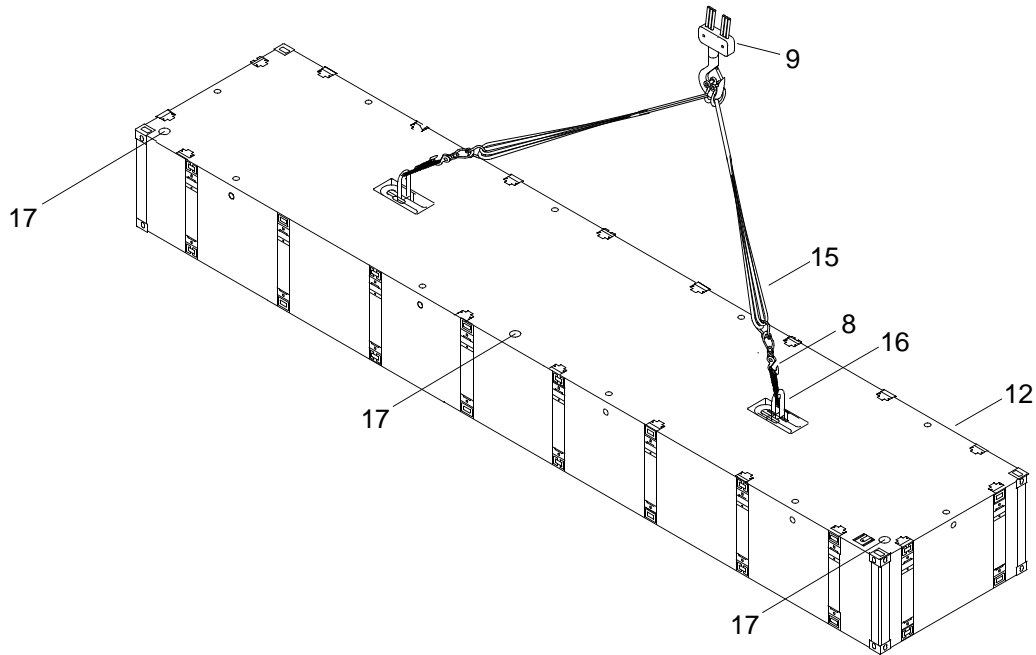
WARNING**HEAVY PARTS**

3. Using slings (7 and 8) and crane (9), lift end rake module (11) from top of center module (12).
4. Remove 36,000 lb adjustable chain slings (8) from corners (10) on end rake module (11).
5. Remove 8,400 lb slings (7) from crane (9).
6. Verify drain plugs (14) on end rake modules (11) are installed and tight.
7. Attach four 8,400 lb slings (7) and 36,000 lb adjustable chain slings (8) from crane (9) to two corners (10) and two side padeyes (26) on CBSE module (27).

**WARNING****HEAVY PARTS**

8. Using slings (7 and 8) and crane (9), lift CBSE module (27) from top of center module (12).
9. Remove 36,000 lb adjustable chain slings (8) from two corners (10) and two side padeyes (26) on CBSE module (27).
10. Remove 8,400 lb slings (7) from crane (9).

11. Remove dunnage (13) from top of center module (12).
12. Verify drain plug (28) on CBSE module (27) is installed and tight.
13. Attach two 53,000 lb slings (15) and 36,000 lb adjustable chain slings (8) from crane (9) to padeyes (16) on center module (12).



WARNING

**HEAVY PARTS**

14. Using slings (8 and 15) and crane (9), lift center module (12).
15. Remove 36,000 lb adjustable chain slings (8) from padeyes (16) on center module (12).
16. Remove 53,000 lb slings (15) from crane (9).
17. Verify drain plugs (17) on center module (12) are installed and tight.
18. Place modules in service. (WP 0110 00)

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
MALE AND FEMALE GUILLOTINE CONNECTORS
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

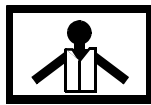
Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Crowbar (Item 68, WP 0116 00)
 Hammer, Hand (10 lb Sledge) (Item 55, WP 0116 00)

Personnel Required

Seaman 88K

PREPARATION FOR USE - OPERATE MALE AND FEMALE GUILLOTINE CONNECTORS

WARNING



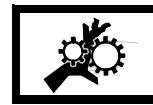
VEST



HELMET PROTECTION



HEAVY PARTS



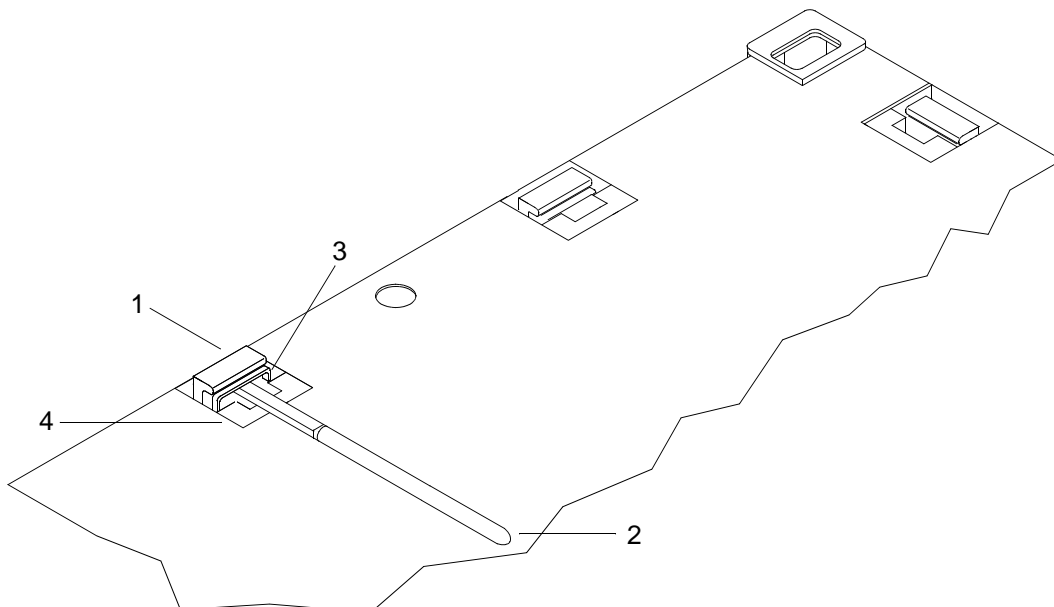
MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

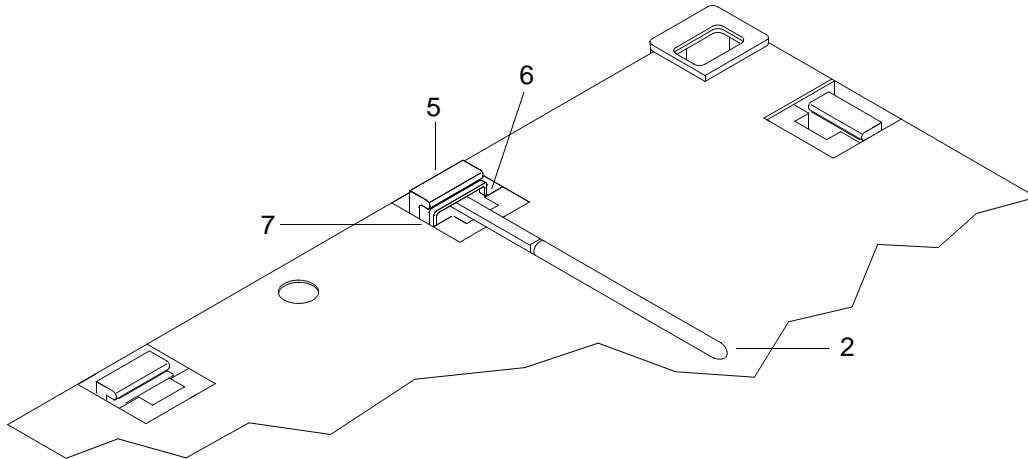
NOTE

The following procedure is typical for all module side and end connectors.

1. Raise female guillotine connector (1).



- a. Insert crowbar (2) behind spring bar (3) under female guillotine connector (1).
 - b. Rotate crowbar (2) downward to clear spring bar (3) from deck overhangs (4) and allow female guillotine connector (1) to move upward.
 - c. Raise female guillotine connector (1) approximately 6 in. until it stops.
2. Raise male guillotine connector (5).



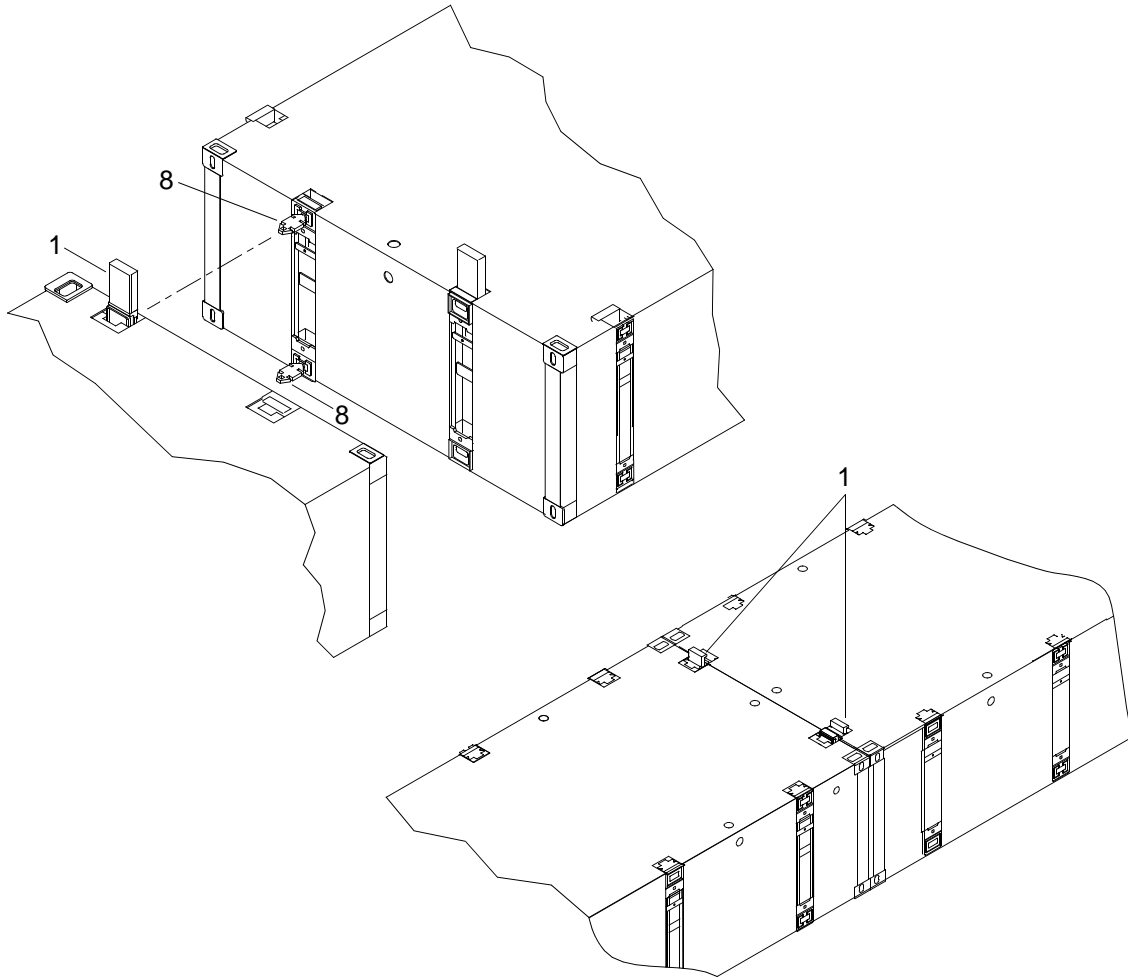
- a. Insert crowbar (2) behind spring bar (6) under male guillotine connector (5).
- b. Rotate crowbar (2) downward to clear spring bar (6) from deck overhangs (7) and allow male guillotine connector (5) to move upward.

NOTE

Personnel should hear two clicks as both pins extend or, if the module is in the water, personnel should see the first pin extend and continue to pull up until one can hear or feel the second lower pin extend.

- c. Raise male guillotine connectors (5) approximately 6 in. until it stops, allowing male connector pins to fully extend.
- d. Remove crowbar (2).
- e. Drive male guillotine connector (5) back into stowed position using a sledgehammer to secure the male connector pins (8) in the fully extended position.

3. Position the modules to be connected so male connector pins (8) and female guillotine connectors (1) are aligned.



4. Using a sledgehammer, drive each female guillotine connector (1) down.
5. If female guillotine connector (1) does not close completely, lift female guillotine connector (1) completely.
6. Raise male guillotine connector (5) two to three inches to allow play in male connector pin (8).
7. Push or pull sections together.
8. Using a sledgehammer, drive female guillotine connector (1) down.
9. Using a sledgehammer, drive male guillotine connector (5) down.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
D-RING AND DECK CLEAT FITTINGS
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)

Personnel Required

Seaman 88K

PREPARATION FOR USE - INSTALLATION OF D-RING AND DECK CLEAT FITTINGS

WARNING



VEST



HELMET PROTECTION



HEAVY PARTS



MOVING PARTS

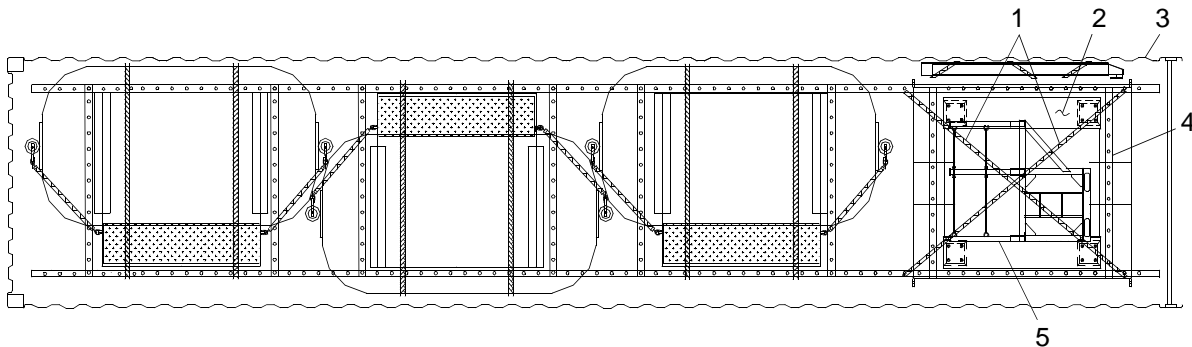
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Unlatch and open 5 ft by 10 ft fender container doors.

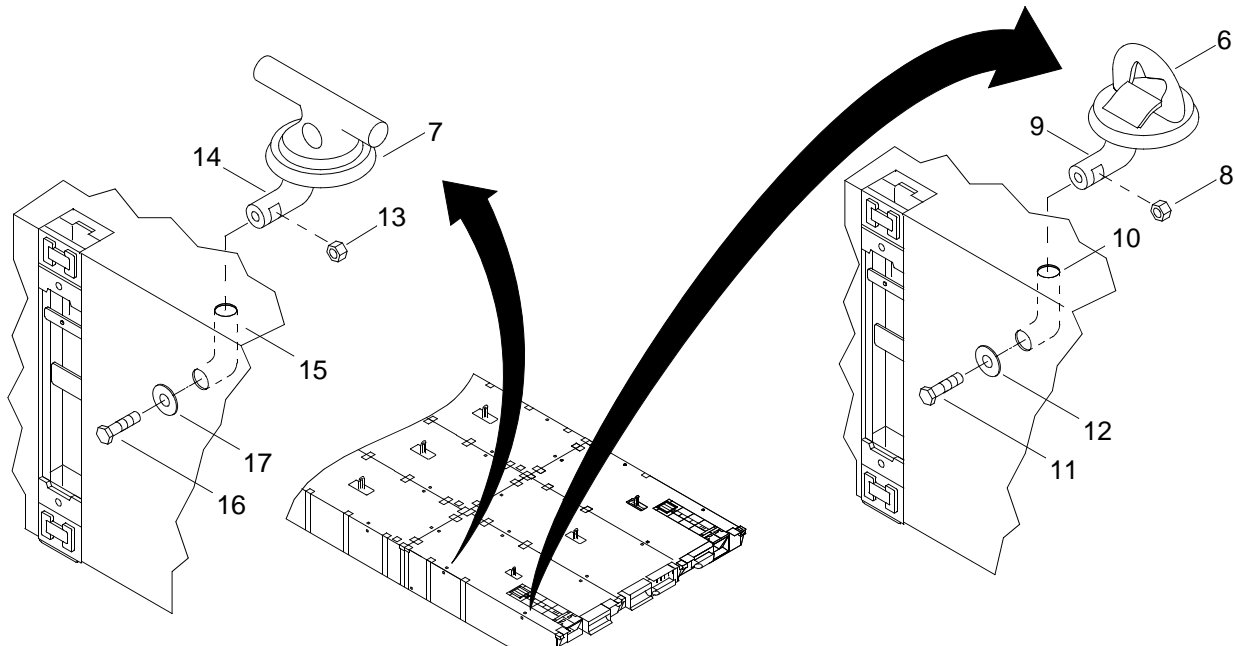
WARNING

Doors must be secured in the open position. Failure to comply could result in death or injury to personnel.

2. Secure container doors open with locking bars, pins or hooks.
3. Remove two ratcheting tie down straps (1) securing pallet (2) to container (3).
4. Remove track stop (4) in front of pallet (2) nearest container (3) door.



5. Using forklift, remove pallet (2) from container (3) and move to installation location on RRDF platform.
6. Using forklift, remove manlift basket (5).
7. Remove all D-ring (6) and deck cleats (7) fittings.
8. Install D-ring fittings (6) on modules.



- a. Place nut (8) in slot in tailpiece (9) of D-ring fitting (6).
- b. Insert D-ring fitting (6) into module turn tube (10).

WARNING

Beware of other craft or objects coming alongside while working outboard installing the bolt and keeper plate. Serious injury may result if body parts are crushed between module and other craft or objects.

- c. Insert bolt (11) through keeper plate (12) and thread it into nut (8) in tailpiece (9). Tighten bolt (11).
9. Install deck cleat fitting (7) on modules.
 - a. Place nut (13) in slot in tailpiece (14) of deck cleat fitting (7).
 - b. Insert deck cleat fitting (7) into module turn tube (15).

WARNING

Beware of other craft or objects coming alongside while working outboard installing the bolt and keeper plate. Serious injury may result if body parts are crushed between module and other craft or objects.

- c. Insert bolt (16) through keeper plate (17) and thread it into nut (13) in tailpiece (14). Tighten bolt (16).

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
MODULE STRINGS
OPERATION UNDER USUAL CONDITION**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Sling, Lifting, 53,000 lb (Brown) (Item 59, WP 0116 00)
 Qty 2
 Sling, Lifting, 5,300 lb (Green) (Item 57, WP 0116 00)
 Qty 4
 Sling, Lifting, 36,000 lb Adjustable Chain (Item 61, WP 0116 00)
 Qty 4

Personnel Required

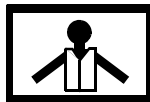
Seaman 88K (2)

Equipment Condition

Module ISOPAK Disassembled. (WP 0008 00)

PREPARATION FOR USE - ASSEMBLY OF MODULE STRINGS

WARNING



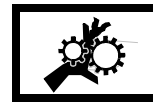
VEST



HELMET PROTECTION



HEAVY PARTS

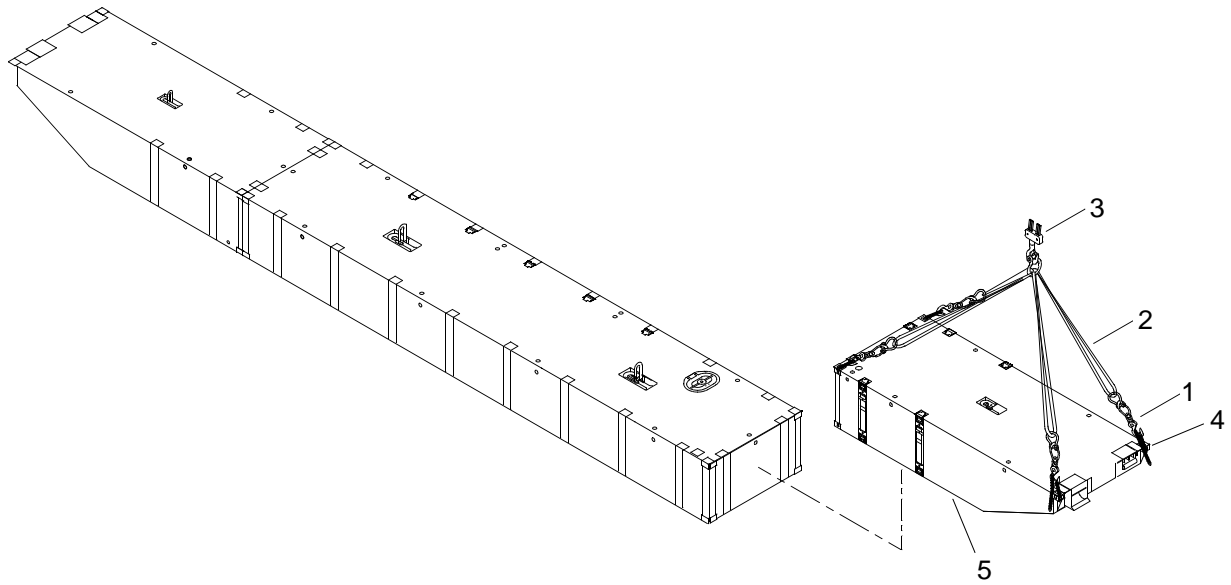


MOVING PARTS

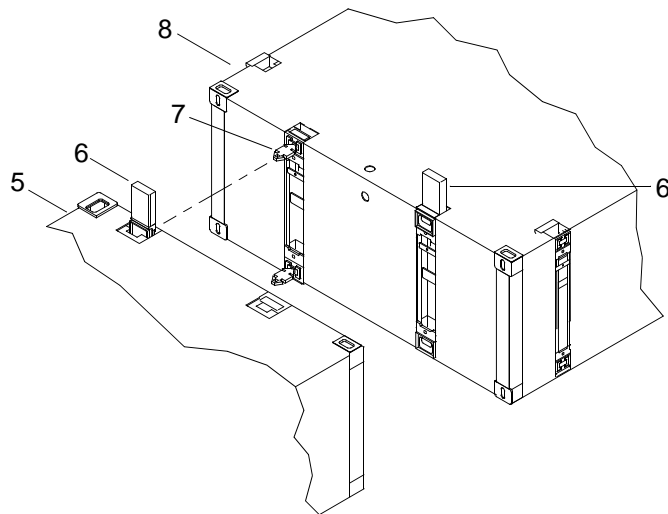
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

ASSEMBLY OF MODULE STRINGS ON DECK OF SEALIFT VESSEL

1. Attach four 36,000 lb adjustable chain slings (1), four 8,400 lb slings (2) and crane (3) to ISO corner fittings (4) on end rake module (5).

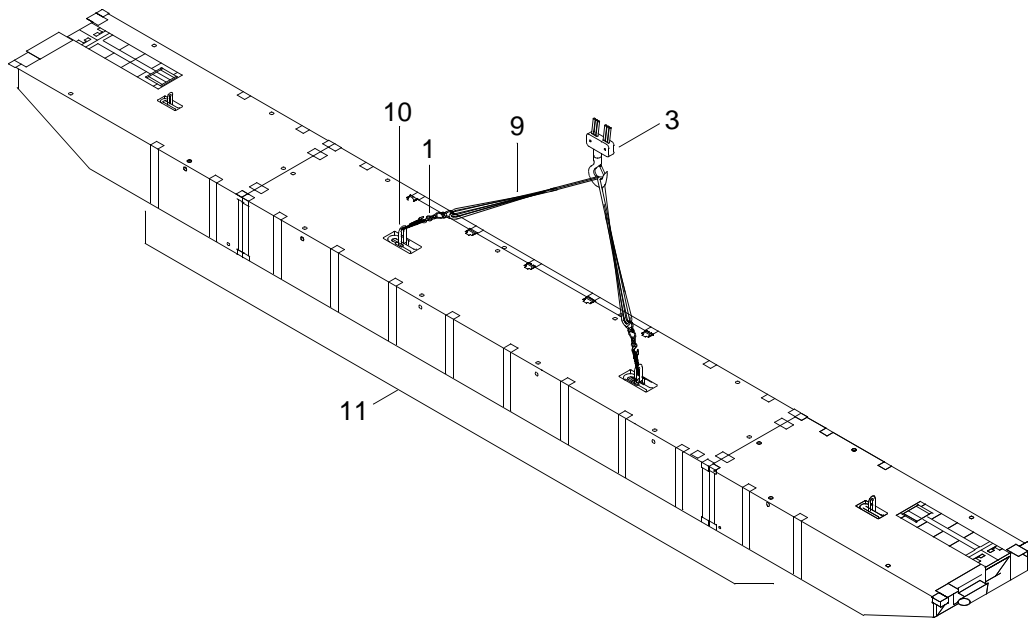


2. Lift end rake module (5).
3. Position end rake module (5) so that female connectors (6) align with male connectors (7) on center module (8).



4. Operate male and female guillotine connectors. (WP 0009 00)

5. Attach two 53,000 lb slings (9) and 36,000 lb adjustable chain slings (1) from crane (3) to padeye shackles (10) on module string (11).



WARNING

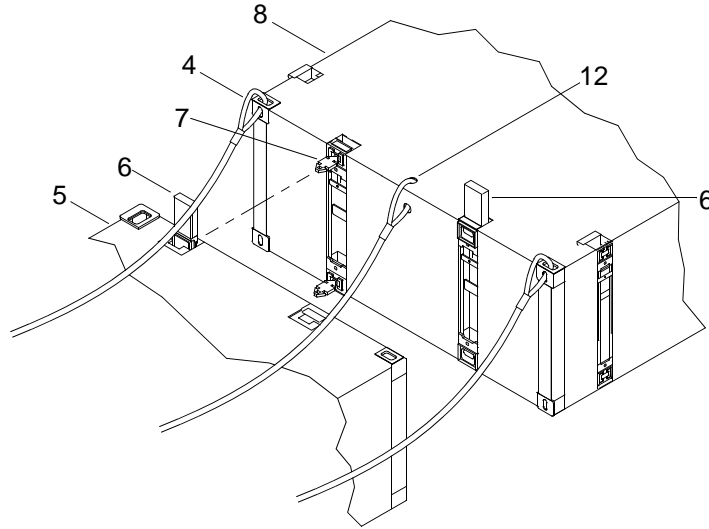
**HEAVY PARTS**

6. Using slings (1 and 9) and crane (3), lift module string (11) and position for assembly.
7. Remove 36,000 lb adjustable chain slings (1) from padeye shackles (10) on module string (11).
8. Remove 53,000 lb slings (9) from crane (3).

ASSEMBLY OF MODULE STRINGS IN WATER**NOTE**

This procedure is typical of attaching left, or right end rakes to center modules.

1. Attach tag lines to turn tubes (12) and ISO corner fittings (4).



WARNING

Place the hands on top or on the outside of ropes/lines so that in an emergency the lines can be released quickly to preclude being pulled into the equipment. Failure to observe these precautions could result in serious injury or death.

2. Using tag lines, maneuver end rake module (5) so that female connectors (6) align with male connectors (7) on center module (8).
3. Operate male and female guillotine connectors. (WP 0009 00)
4. Remove tag lines.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
INTERMEDIATE SECTION
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Sling, Lifting, 53,000 lb (Brown) (Item 59, WP 0116 00)
 Qty 4
 Sling, Lifting, 36,000 lb Adjustable Chain (Item 61, WP 0116 00)
 Qty 4

Personnel Required

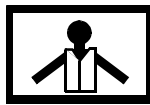
Seaman 88K (2)

Equipment Condition

Module String Assembled. (WP 0011 00)

PREPARATION FOR USE - ASSEMBLY OF INTERMEDIATE SECTION

WARNING



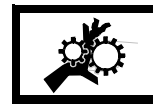
VEST



HELMET PROTECTION



HEAVY PARTS

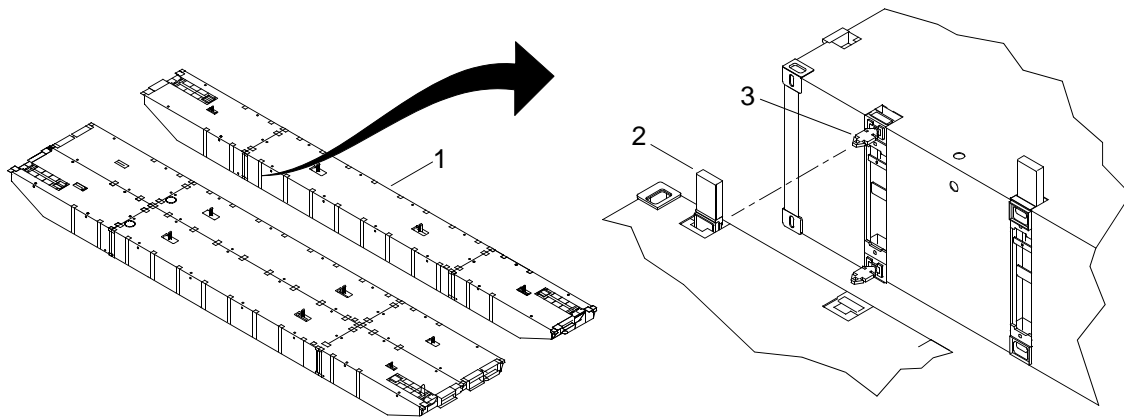


MOVING PARTS

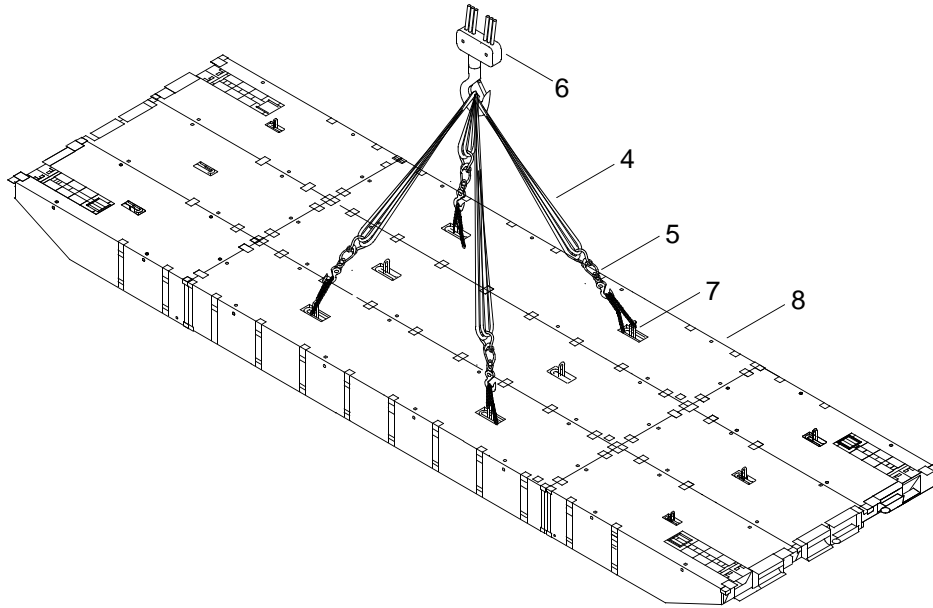
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

ASSEMBLY OF INTERMEDIATE SECTION ON SEALIFT VESSEL

1. Position module string (1) so that female connectors (2) align with male connectors (3) on the other module strings (1).



2. Operate male and female connectors. (WP 0009 00)
3. Attach four 53,000 lb slings (4) and 36,000 lb adjustable chain slings (5) from crane (6) to pad eye shackles (7) on intermediate section (8).



WARNING

**HEAVY PARTS**

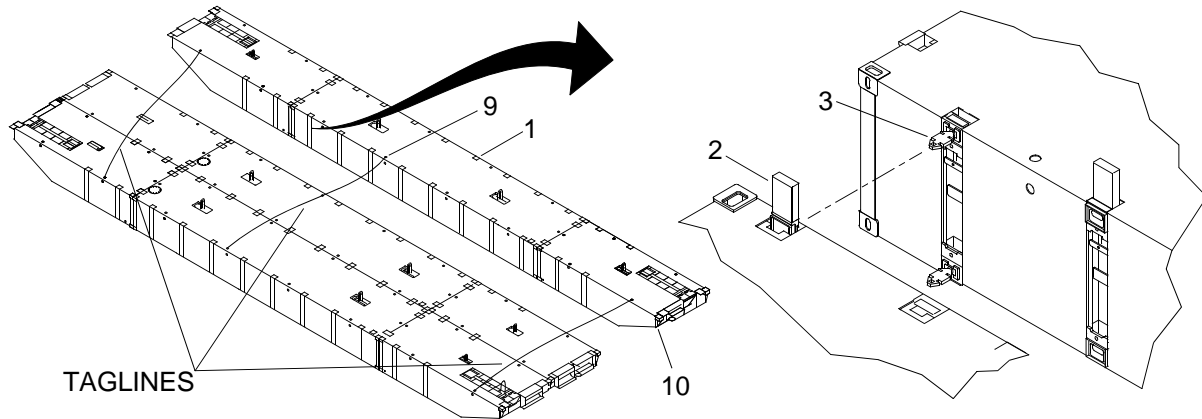
4. Using slings (4 and 5) and crane (6), lift intermediate section (8).
5. Remove 36,000 lb adjustable chain slings (5) from pad eye shackles (7) on intermediate section (8).
6. Remove 53,000 lb slings (4) from 36,000 lb adjustable chain slings (5) and crane (6).

ASSEMBLY OF INTERMEDIATE SECTION IN WATER

NOTE

This procedure is typical of attaching module strings together in water.

1. Attach tag lines to turn tubes (9) and ISO corner fittings (10).



WARNING

Place the hands on top or on the outside of ropes/lines so that in an emergency the lines can be released quickly to preclude being pulled into the equipment. Failure to observe these precautions could result in serious injury or death.

2. Using tag lines, maneuver module strings (1) so that female connectors (2) align with male connectors (3).
3. Operate male and female guillotine connectors. (WP 0009 00)
4. Remove tag lines.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
COMBINATION BEACH/SEA END SECTION
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Sling, Lifting, 53,000 lb (Brown) (Item 59, WP 0116 00)
 Qty 4
 Sling, Lifting, 36,000 lb Adjustable Chain (Item 61, WP 0116 00)
 Qty 4

Personnel Required

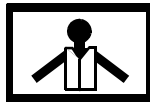
Seaman 88K (2)

Equipment Condition

Module String Assembled. (WP 0011 00)

PREPARATION FOR USE - ASSEMBLY OF COMBINATION BEACH/SEA END SECTION

WARNING



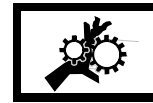
VEST



HELMET PROTECTION



HEAVY PARTS

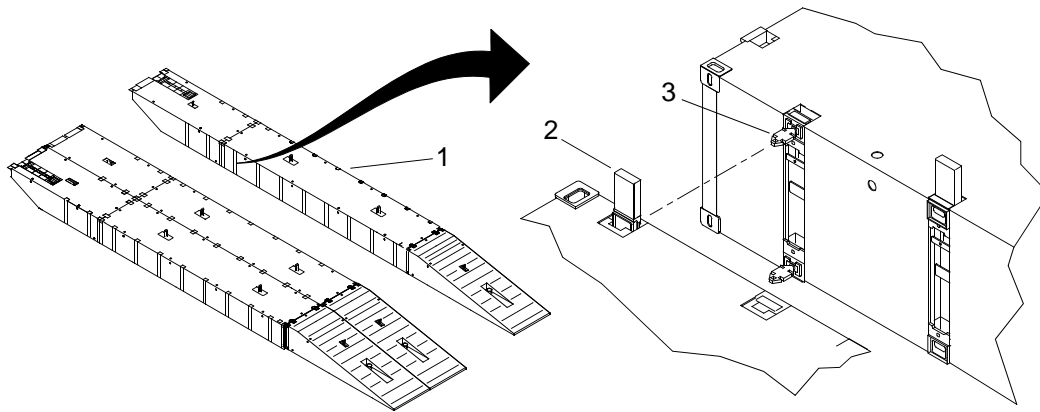


MOVING PARTS

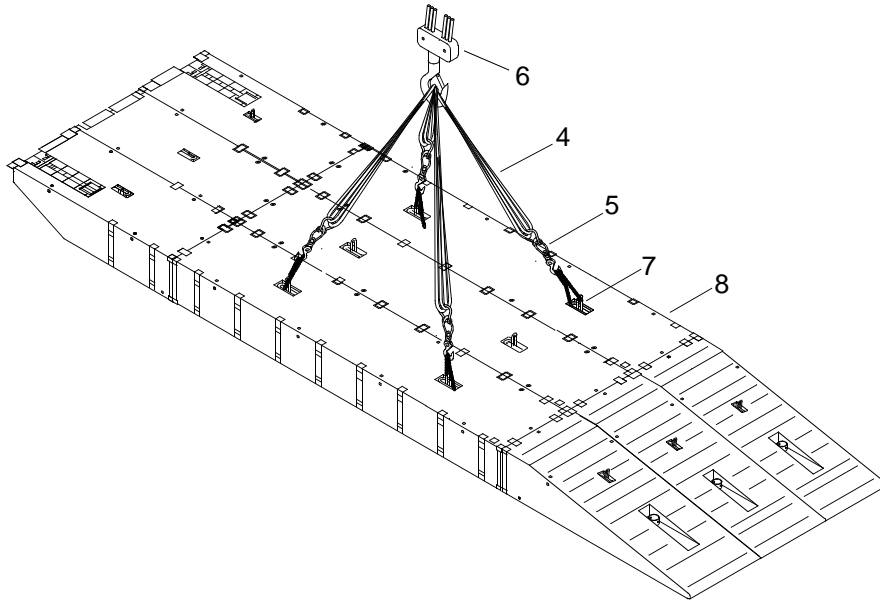
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

ASSEMBLY OF COMBINATION BEACH/SEA END SECTION ON DECK OF SEALIFT VESSEL

1. Position module string (1) so that female connectors (2) align with male connectors (3) on the other module strings (1).



2. Operate the male and female connectors. (WP 0009 00)
3. Attach four 53,000 lb slings (4) and 36,000 lb adjustable chain slings (5) from crane (6) to padeye shackles (7) on combination beach/sea end section (8).



WARNING



HEAVY PARTS

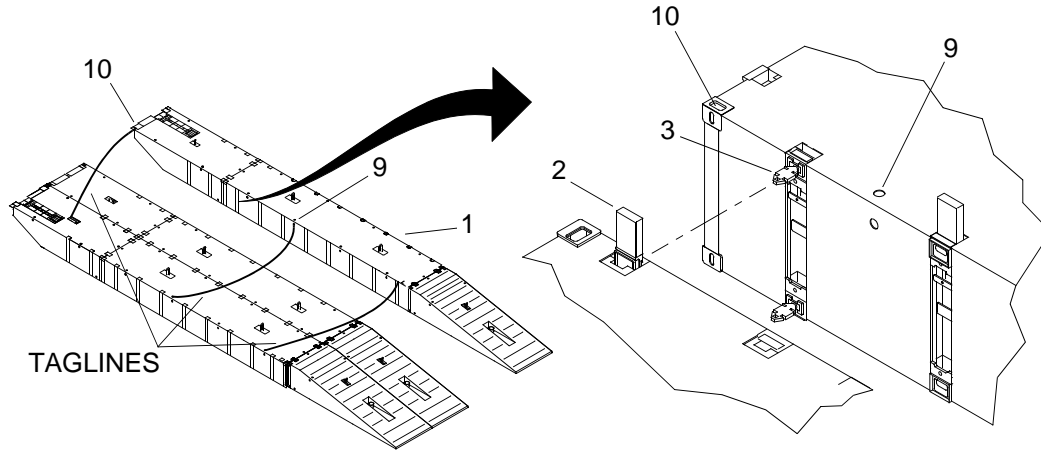
4. Using slings (4 and 5) and crane (6), lift combination beach/sea end section (8).
5. Remove 36,000 lb adjustable chain slings (5) from padeye shackles (7) on intermediate section (8).
6. Remove 53,000 lb slings (4) from 36,000 lb adjustable chain slings (5) and crane (6).

ASSEMBLY OF COMBINATION BEACH/SEA END SECTION IN WATER

NOTE

This procedure is typical of attaching module strings in water.

1. Attach tag lines to turn tubes (9) and ISO corner fittings (10).



WARNING

Place the hands on top or on the outside of ropes/lines so that in an emergency the lines can be released quickly to preclude being pulled into the equipment. Failure to observe these precautions could result in serious injury or death.

2. Using tag lines, maneuver module strings (1) so that female connectors (2) align with male connectors (3).
3. Operate male and female guillotine connectors. (WP 0009 00)
4. Remove tag lines.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
SEGMENT
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)

Personnel Required

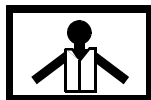
Seaman 88K

Equipment Condition

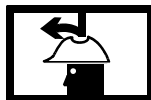
Intermediate Section Assembled. (WP 0012 00)

PREPARATION FOR USE - ASSEMBLY OF SEGMENT

WARNING



VEST



HELMET PROTECTION



HEAVY PARTS



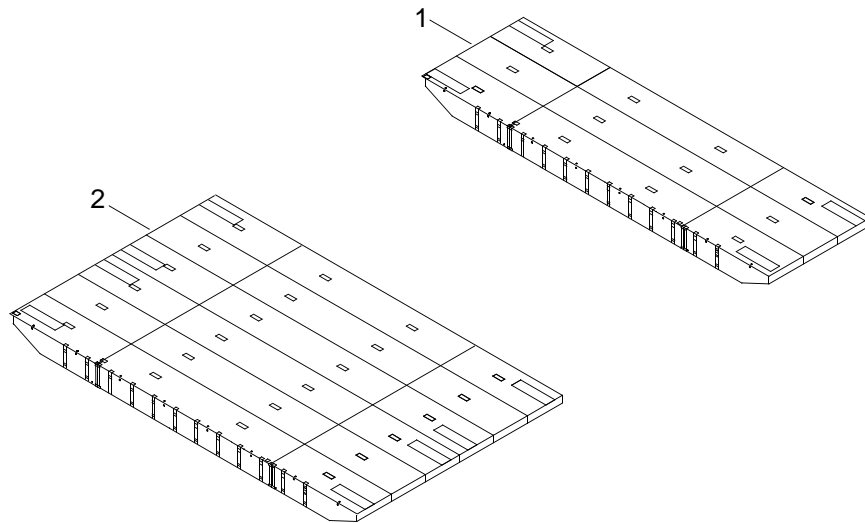
MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The segment consists of one or more side connected intermediate sections.

1. Position intermediate sections (1) so that female connectors align with male connectors on the second intermediate section (2).

**NOTE**

Ensure intermediate sections are completely aligned before locking the connectors.

2. Operate male and female guillotine connectors. (WP 0009 00)

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
PLATFORM
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Crowbar (Item 68, WP 0116 00)
 Hammer, Hand (10 lb Sledge) (Item 55, WP 0116 00)
 Flexor Well Cover (Item 19, WP 0116 00)

Personnel Required

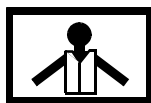
Seaman 88K (4)

Equipment Condition

Module String Assembled. (WP 0011 00)

PREPARATION FOR USE - ASSEMBLY OF PLATFORM

WARNING



VEST



HELMET PROTECTION



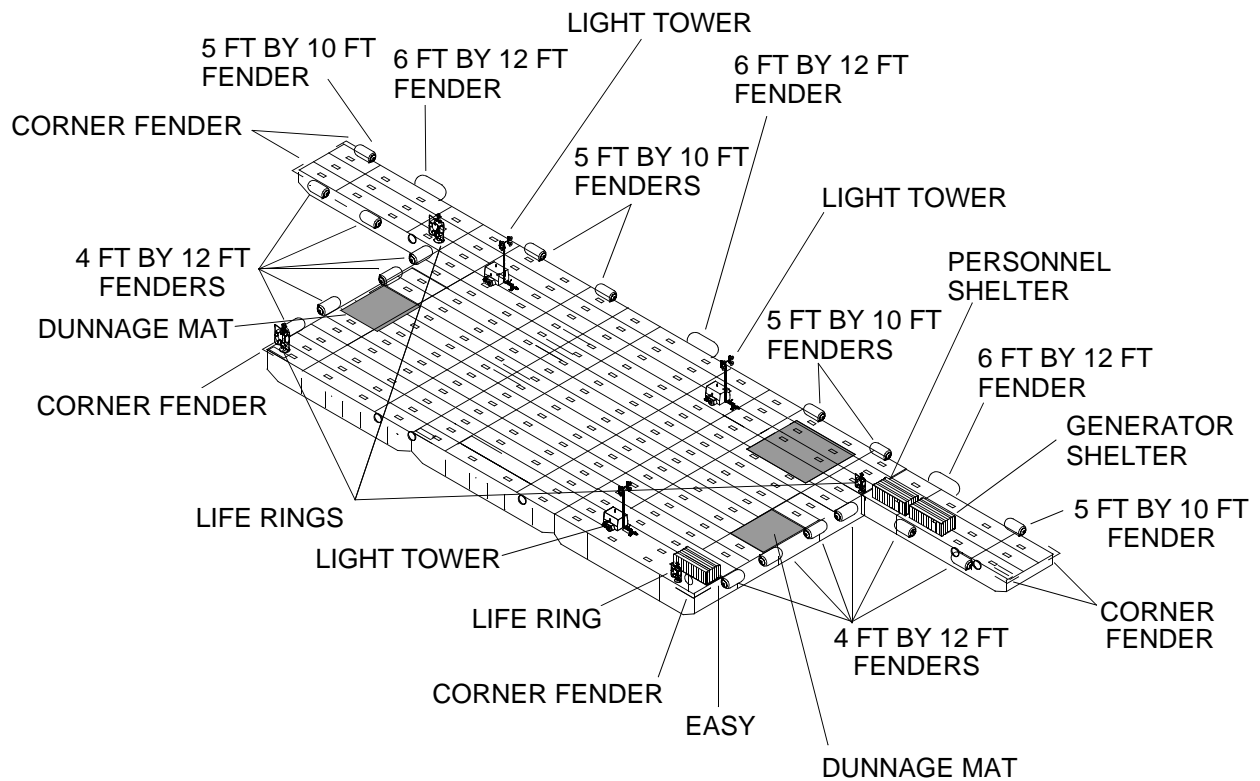
HEAVY PARTS



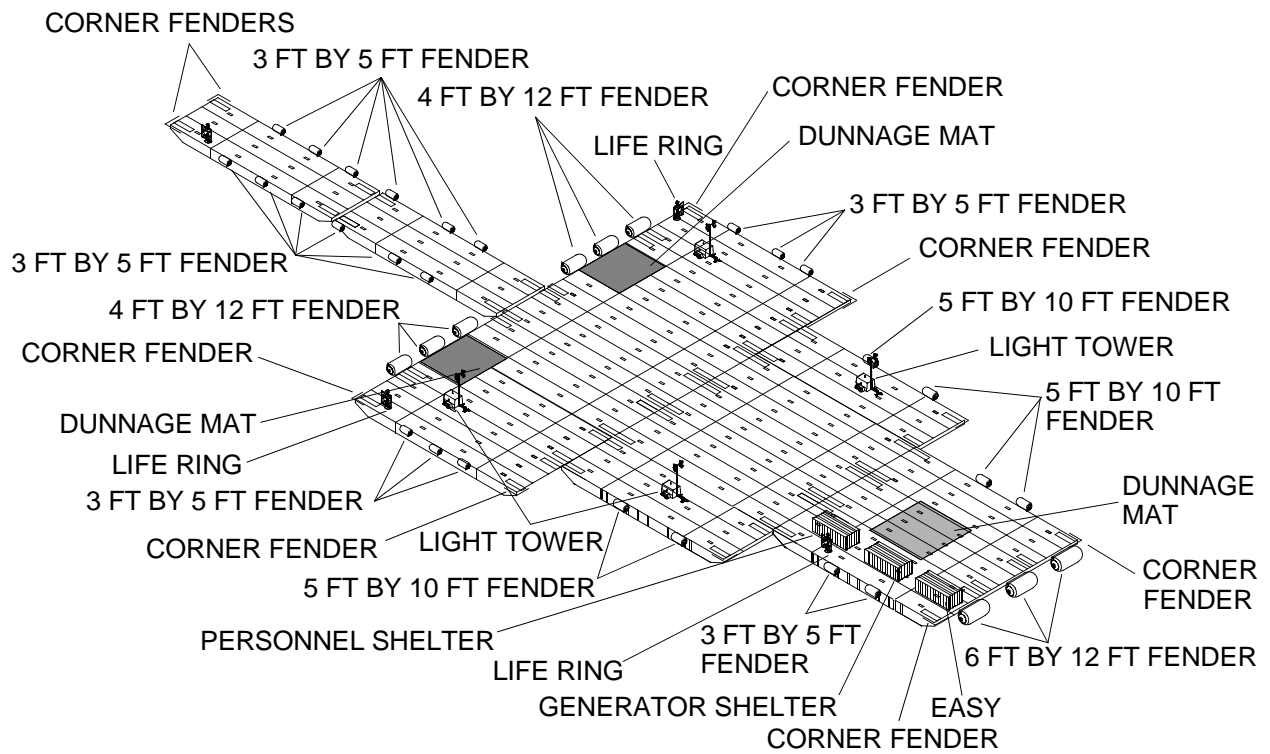
MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

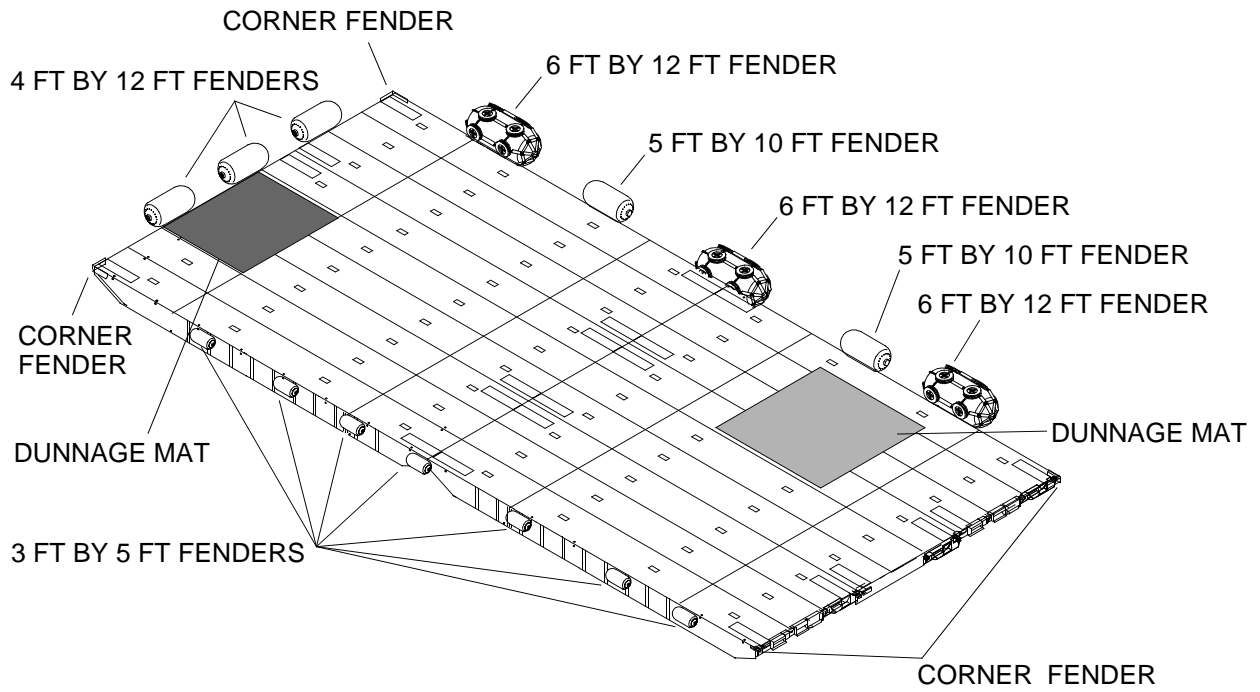
1. Determine configuration of RRDF to be assembled.



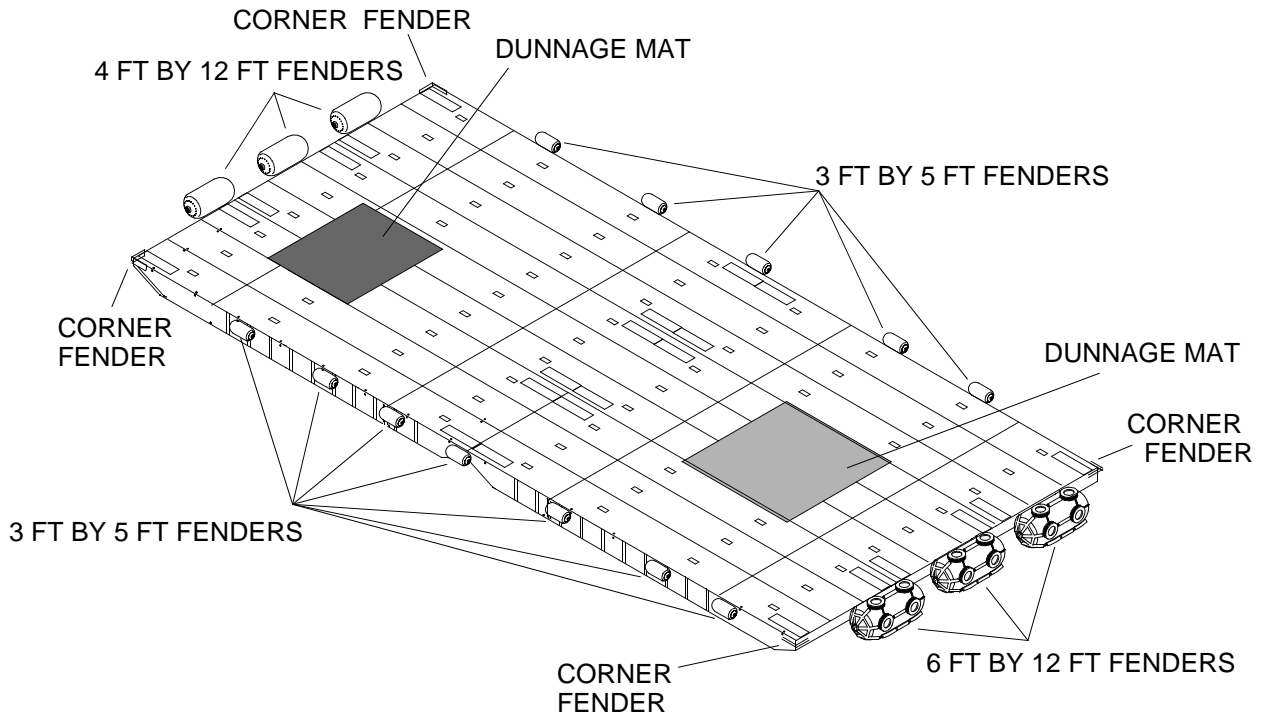
FULL RRDF SIDE CONFIGURATION



FULL RRDF STERN CONFIGURATION



FORCE OPENING RRDF SIDE CONFIGURATION



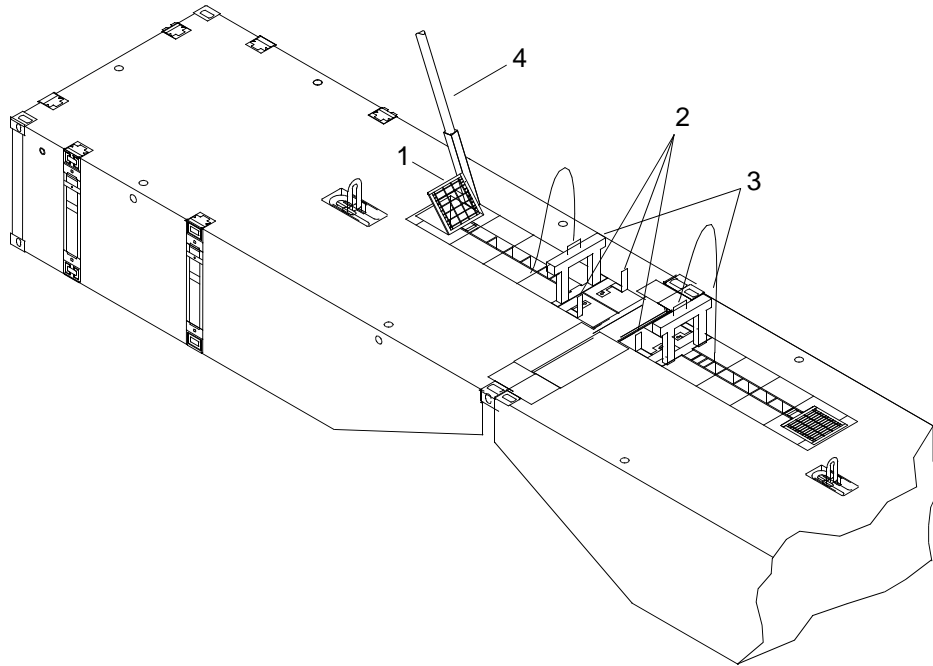
FORCE OPENING RRDF STERN CONFIGURATION

NOTE

The RRDF full side and stern ramp configurations consist of seventeen intermediate sections.

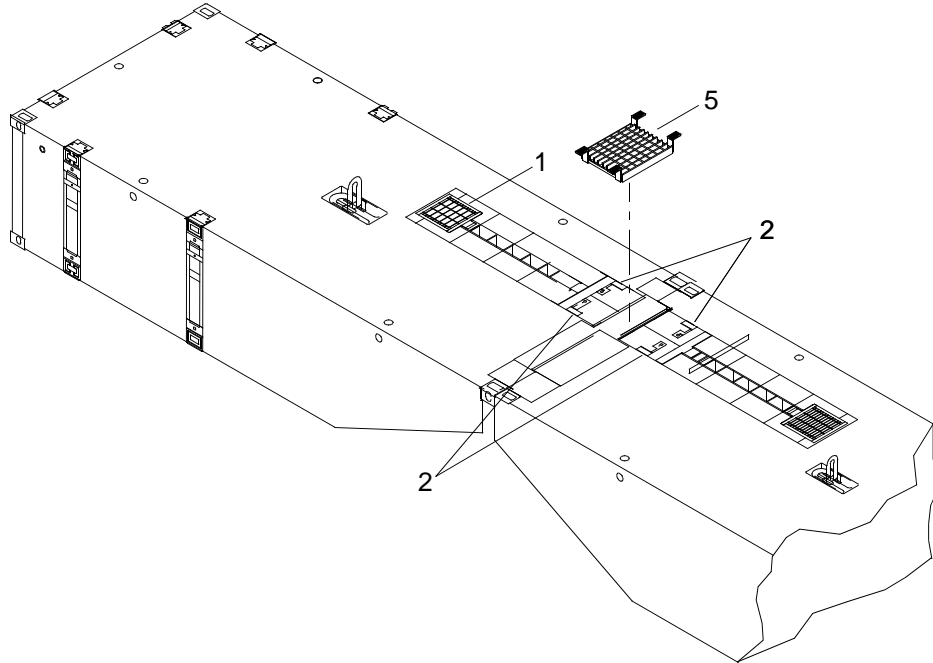
Both force opening RRDF configurations consist of nine intermediate sections.

2. Assemble appropriate number of intermediate sections. (WP 0012 00)
3. Assemble intermediate sections into segments. (WP 0014 00)
4. Open flexor hatch (1).
5. Rotate chute bolts (2) and pull chute bolts (2) to unlocked position.



6. Remove guillotines (3).
7. Push each flexor connector from left end rake into corresponding pocket of right end rake until guillotines (3) are aligned with flexor connector slots.
8. Use a crowbar (4) to position flexor connector.
9. Insert guillotines (3).
10. Drive guillotines (3) down into flexor slot using a sledgehammer.

11. Push chute bolts (2) to locked position and rotate chute bolts (2) to closed position.



12. Close flexor hatch (1).

13. Remove flexor well covers (5) from BII container.

14. Install flexor well covers (5).

15. Install BII container. (WP 0016 00)

16. Install mooring bits and quick disconnects. (WP 0017 00)

17. Install fenders. (WP 0019 00, WP 0020 00, WP 0021 00, WP 0022 00, WP 0023 00)

18. Install safety equipment. (WP 0024 00)

19. Install generator container. (WP 0026 00)

20. Install personnel shelter. (WP 0027 00)

21. Install EASY. (WP 0028 00)

22. Install light towers. (WP 0029 00)

23. Install dunnage mats. (WP 0025 00)

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
BII CONTAINER
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

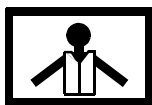
Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)

Personnel Required

Seaman 88K (2)

PREPARATION FOR USE - INSTALLATION OF BII CONTAINER ON RRDF PLATFORM

WARNING



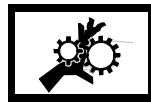
VEST



HELMET PROTECTION



HEAVY PARTS



MOVING PARTS



HEAVY PARTS

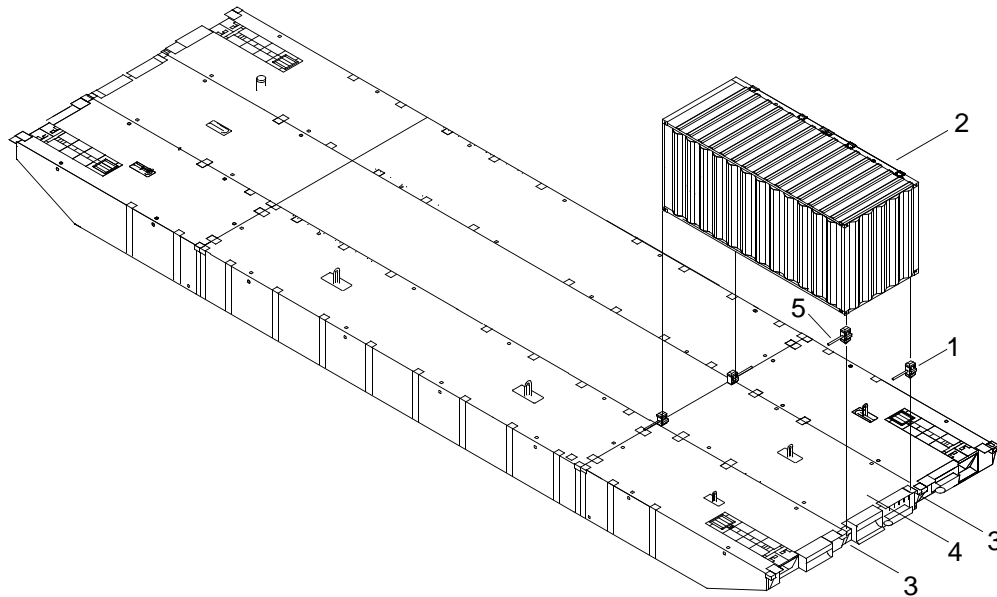
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Unlatch and open BII container doors.

WARNING

Doors must be secured in open position. Failure to comply could result in death or injury to personnel.

2. Secure BII container doors with locking bars, pins or hooks.
3. Remove four vertical connectors (1) from BII container (2).



4. Remove locking bars, pins or hooks to close container doors.
5. Close and latch container doors.
6. Position four vertical connectors (1) in ISO corner fittings (3) on center end rake (4).

WARNING

**HEAVY PARTS**

7. Using crane, position BII container (2) on four vertical connectors (1).
8. Lock four vertical connectors (1) by rotating levers (5) to secure BII container (2) to center end rake (4).

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
MOORING BITTS AND QUICK DISCONNECTS
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Crowbar (Item 68, WP 0116 00)
 Hammer, Hand (10 lb Sledge) (Item 55, WP 0116 00)
 Forklift Adaptor (Item 1, WP 0116 00)
 Push Rod (Item 6, WP 0116 00)
 Sling, Lifting, 5,300 lb (Green) (Item 56, WP 0116 00)

Personnel Required

Seaman 88K (4)

PREPARATION FOR USE - INSTALLATION OF MOORING BITTS AND QUICK DISCONNECTS**REMOVE MOORING BITTS FROM CONTAINER**

WARNING



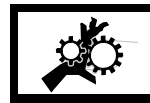
VEST



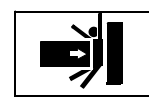
HELMET PROTECTION



HEAVY PARTS



MOVING PARTS



HEAVY PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

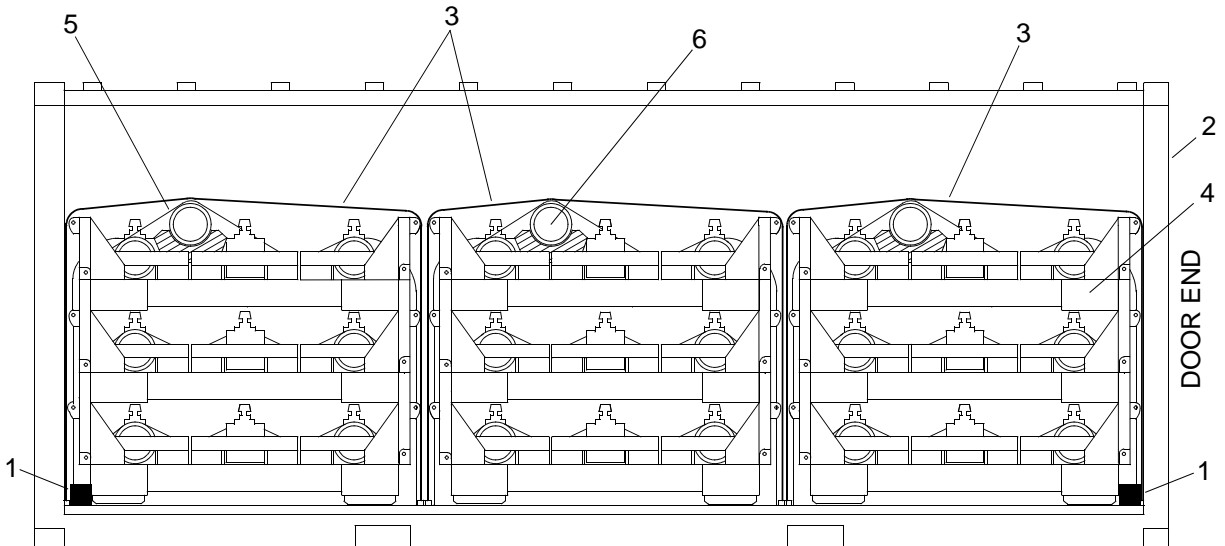
1. Unlatch and open end door of mooring bitt container.

WARNING

Door must be secured and latched in open position. Failure to comply could result in injury to personnel.

2. Secure mooring bitt container end door open with locking bars and pins.

3. Remove track stop bar (1) from container (2).



4. Remove tie down straps (3) securing mooring bitt pallets (4) to container (2).

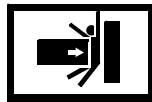
WARNING



HEAVY PARTS

5. Using forklift, remove first stack of mooring bitt pallets (4) from container (2).

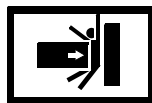
WARNING



HEAVY PARTS

6. Using forklift and push rod, hook second stack of pallets and pull mooring bitt pallets (4) to container (2) door.

WARNING



HEAVY PARTS

7. Using forklift, remove second stack of mooring bitts (4).
8. Repeat step 6 for third stack of mooring bitt pallets (4).
9. Remove tie down straps (5) securing mooring bitts (6) to mooring bitt pallets (4).

10. Remove locking bars and pins to close mooring bitt container (2) door.
11. Latch and secure mooring bitt container door.

INSTALL MOORING BITTS

WARNING

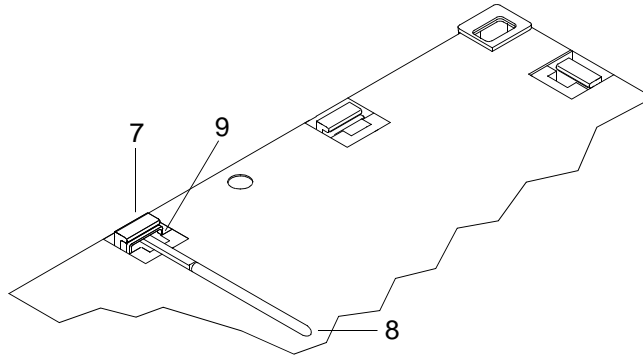
Attempting to install mooring bitts on RRDF in higher sea conditions than Sea State 0 could cause injury or possible death to personnel and/or damage equipment.

1. Unlatch and open end door of BII container.

WARNING

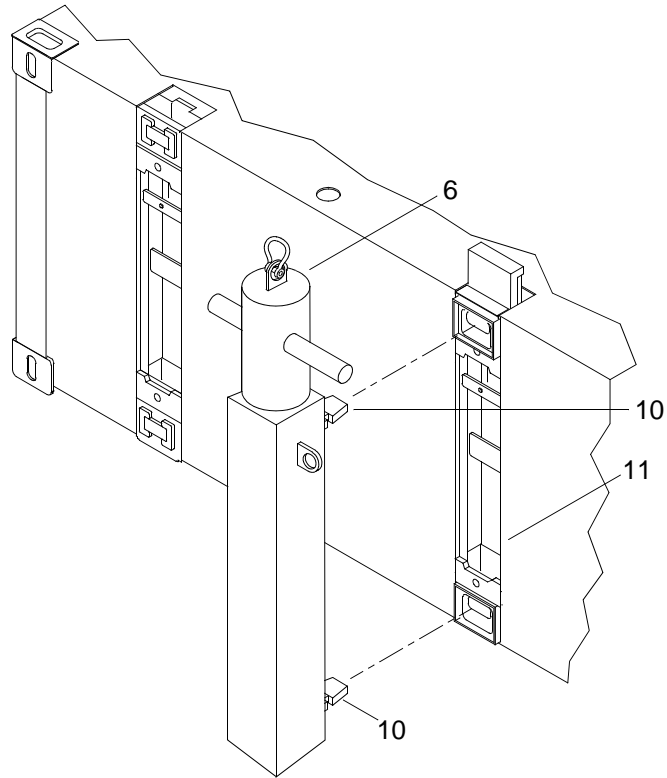
Door must be secured and latched in open position. Failure to comply could result in injury to personnel.

2. Secure BII container end door open with locking bars and pins.
3. Raise female guillotine bar (7).



- a. Insert crowbar (8) behind spring bar (9) under female guillotine bar (7).
- b. Rotate crowbar (8) downward to clear spring bar (9) from deck overhangs and allow female guillotine bar (7) to move upward.
- c. Raise female guillotine bar (7) approximately six inches until it stops.
- d. Remove crowbar (8).

4. Install shackle to mooring bitt (6).



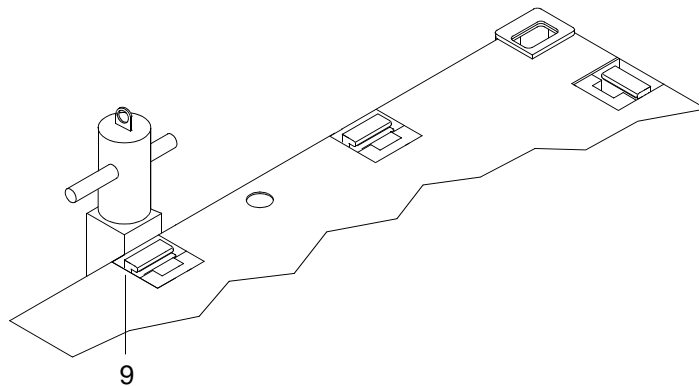
5. Attach sling to shackle on mooring bitt (6).
6. Using forklift, take up tension on sling and shackle.

WARNING



HEAVY PARTS

7. Using forklift, sling and shackle, align mooring bitt male connectors (10) with female guillotine assembly (11).
8. Drive female guillotine bar (7) down using a sledgehammer.

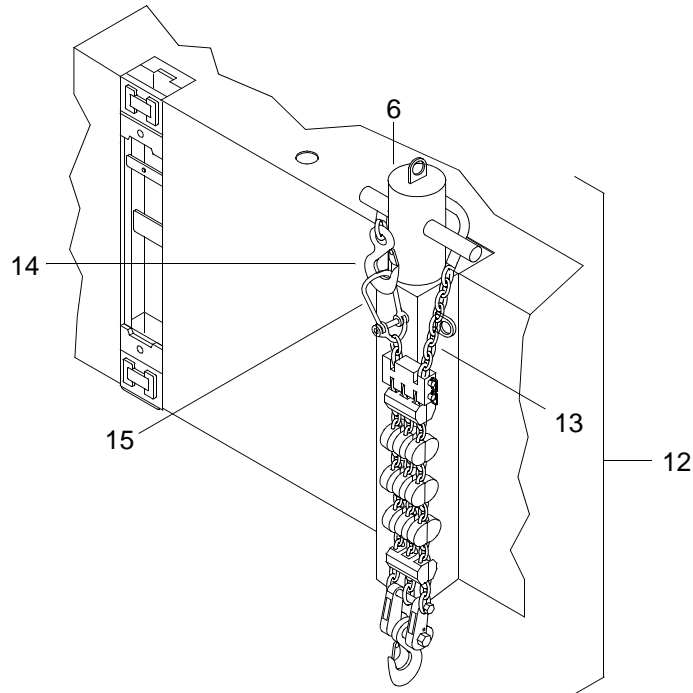


INSTALL QUICK DISCONNECT ASSEMBLY

WARNING

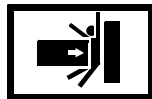
**HEAVY PARTS**

1. Install shackle on quick disconnect assembly (12).



2. Attach sling to shackle on quick disconnect assembly (12).
3. Using forklift, take up tension on sling and shackle.

WARNING

**HEAVY PARTS**

4. Using forklift, sling, and shackle, position quick disconnect assembly (12) over mooring bitt (6).
5. Wrap mounting chain (13) around mooring bitt (6).

6. Connect pelican hook (14) to half link (15).
7. Remove shackle from sling and quick disconnect assembly (12).
8. Remove locking bars and pins to close BII container door.
9. Latch and secure BII container door.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
TOWING BRIDLE, TOWING INTERFACE AND TOWING LIGHTS
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Hammer, Hand (10 lb Sledge) (Item 55, WP 0116 00)
 Crowbar (Item 68, WP 0116 00)
 Lifting Device Assembly (Item 7, WP 0116 00)
 Sling, Lifting, 5,300 lb (Green) (Item 57, WP 0116 00)
 Forklift Adaptor (Item 1, WP 0116 00)
 Towing Lights (Item 38, WP 0116 00)
 Bridle, Towing (Item 32, WP 0115 00)
 Flexor Receiver Insert (Item 31, WP 0116 00)

Personnel Required

Seaman 88K (3)

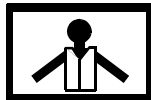
References

COMDTINST M16672.2D

**PREPARATION FOR USE - INSTALLATION OF TOWING BRIDLE, TOWING
INTERFACE AND TOWING LIGHTS**

INSTALL TOWING BRIDLE AND TOWING INTERFACE

WARNING

**VEST****HELMET PROTECTION****HEAVY PARTS****MOVING PARTS**

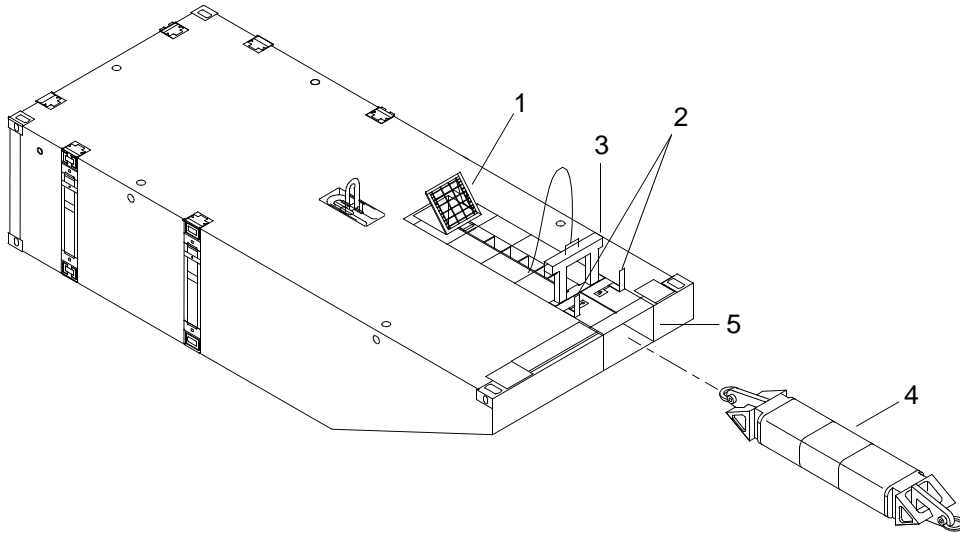
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Unlatch and open end doors of BII container.

WARNING**HEAVY PARTS**

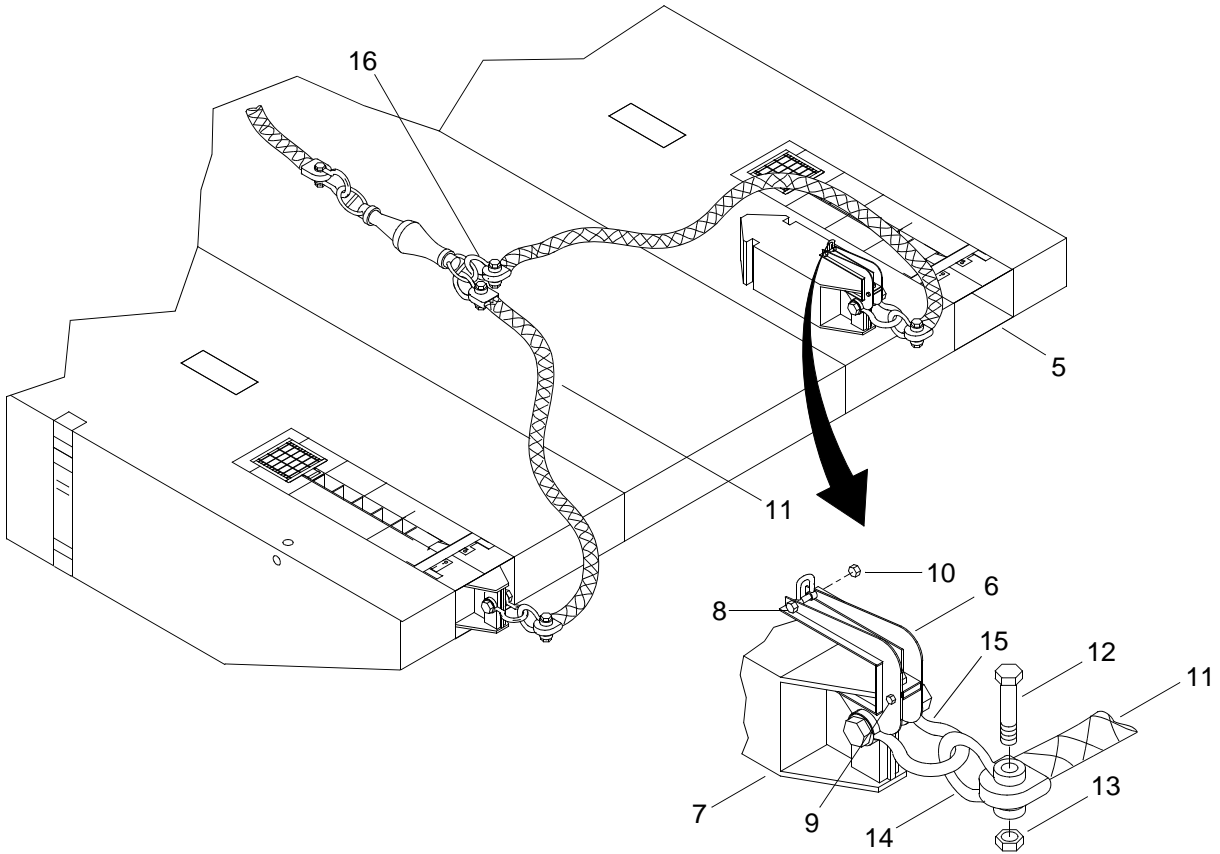
Doors must be secured and latched in open position. Failure to comply could result in death or injury to personnel.

2. Secure BII end doors open with locking bars and pins.
3. Open flexor hatch (1) on left end rake to be used for towing.



4. Rotate chute bolts (2) and pull chute bolts (2) to unlocked position.
5. Remove guillotine (3).
6. Using WT and slings, remove flexor (4) from flexor well pocket (5) and place on RRDF deck.
7. Using load restraining device, secure flexor (4) to centerline of RRDF deck.
8. Repeat steps three through seven for second flexor (4).

9. Remove flexor receiver insert lifting device (6) from EASY container.



10. Position flexor receiver insert lifting device (6) over end of flexor receiver insert (7).
11. Install bolts (8 and 9).
12. Tighten bolt (9).
13. Install nut (10) on bolt (8).
14. Tighten nut (10).

WARNING



HEAVY PARTS

15. Using forklift, forklift adaptor, sling and flexor receiver insert lifting device (6), remove flexor receiver insert (7) and place on RRDF deck.
16. Loosen nut (10), and bolt (9).
17. Remove flexor receiver insert lifting device (6) from flexor receiver insert (7).
18. Position flexor receiver insert lifting device (6) over end of second flexor receiver insert (7).

19. Tighten nut (10) and bolt (9).

WARNING

**HEAVY PARTS**

20. Using forklift, forklift adaptor, sling and flexor receiver insert lifting device (6), remove second flexor receiver insert (7) and place on RRDF deck.

WARNING

**HEAVY OBJECTS**

21. Using assistants, remove towing bridle (11) from BII container.
22. Place legs of towing bridle (11) on RRDF deck near both flexor receiver inserts (7).
23. Remove bolts (12) and nuts (13) from shackles (14) on each leg of towing bridle (11).
24. Attach shackles (14), nuts (13) and bolts (12) to flexor receiver insert shackles (15). Tighten nuts (13).
25. Secure a tag line between anchor swivel (16) and RRDF deck to prevent slippage of towing bridle (11) overboard.
26. Install flexor receiver insert (7) in end rake flexor pocket (5).

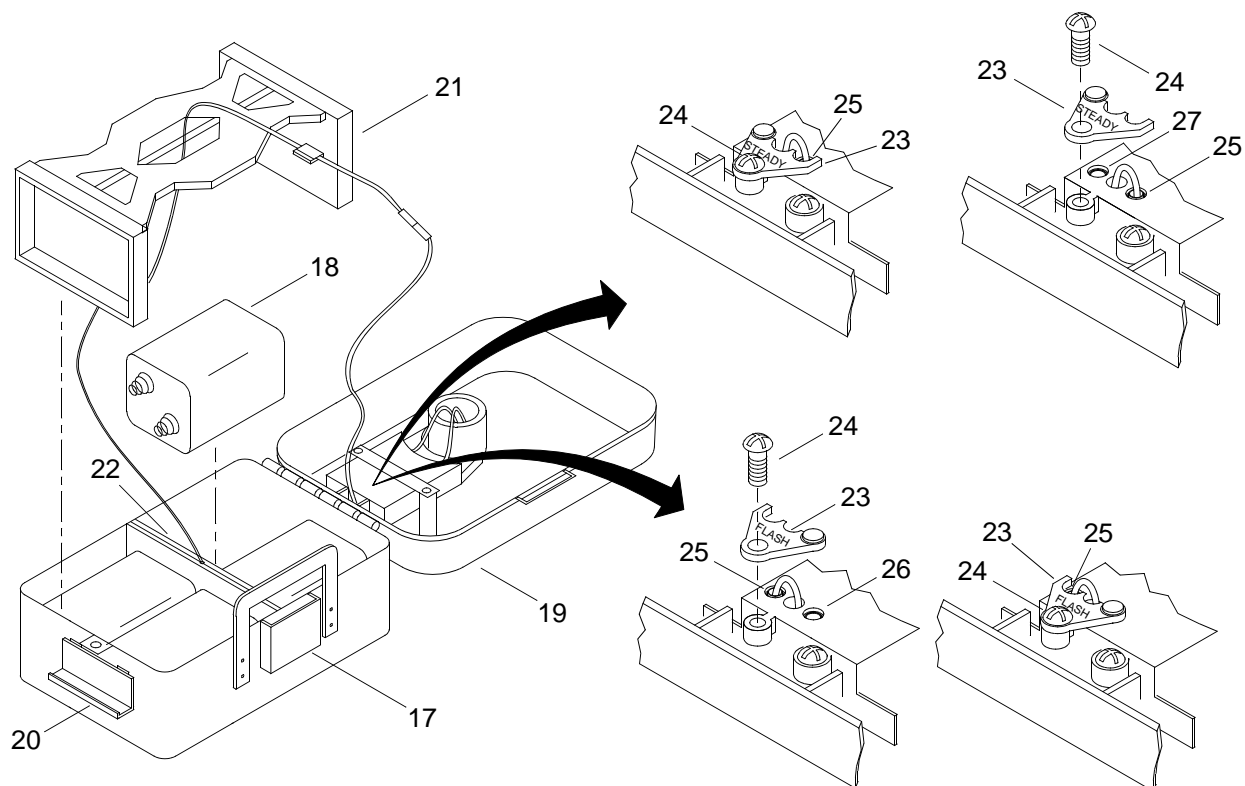
WARNING

**HEAVY PARTS**

- a. Using a forklift, forklift adaptor, sling and flexor receiver lifting device (6), position flexor receiver insert (7) in flexor well pocket (5).
 - b. Insert guillotine (3).
 - c. Drive guillotines (3) down into flexor slot using a sledgehammer.
 - d. Push chute bolts (2) to locked position and rotate chute bolts (2) to stowed position.
 - e. Close flexor hatch (1).
27. Repeat step 26 for second flexor receiver insert (7).
28. Stow flexor lifting device (6) in the EASY container and sling in BII container toolbox for use during removal.

INSTALL TOWING LIGHTS

1. Remove towing lights (17) and batteries (18) from BII container.



2. Open light cover (19) by unlatching clasp (20).
3. Remove battery bracket (21).

NOTE

Battery bracket must be flat in bottom of towing light case or light cover will not close.

4. Position two batteries (18) on each side of conductor plate (22) in towing light case (17).
5. Position battery bracket (21) over batteries (18) and conductor plate (22).
6. Push battery bracket (21) down evenly, over batteries (18).

NOTE

The red lamp selector changes the lamp between FLASH and STEADY lighting.

7. Verify red lamp selector (23) is positioned to FLASH or STEADY, as required.

-
8. If FLASH is required and STEADY is selected, change red lamp selector (23) as follows.
 - a. Remove screw (24) securing red lamp selector tab (23) to light cover (19).
 - b. Remove socket plug (25) from receptacle (26).
 - c. Install socket plug (25) in receptacle (27).
 - d. Turn red lamp selector (23) over to read FLASH.
 - e. Install screw (24) to secure red lamp selector (23) to light cover (19). Tighten screw (23).
 9. Close light cover (17) and latch clasp (20).
 10. Position towing lights (17) on RRDF deck per U. S. Coast Guard navigation requirements. (COMDTINST M16672.2D)
 11. Remove locking bars and pins to close BII container end doors.
 12. Latch and secure BII container end doors.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
3 FT BY 5 FT FENDERS
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

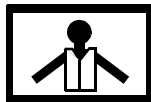
Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 5,300 lb 6 ft Sling (Green) (Item 57, WP 0116 00)
 Qty 2
 2-Ton 1/2 in. Anchor Shackle (Item 48, WP 0116 00)
 Qty 3

Personnel Required

Seaman 88K (4)

PREPARATION FOR USE - INSTALLATION OF 3 FT BY 5 FT FENDERS

WARNING



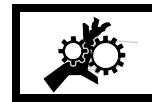
VEST



HELMET PROTECTION



HEAVY PARTS



MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the installation of all 3 ft by 5 ft fenders.

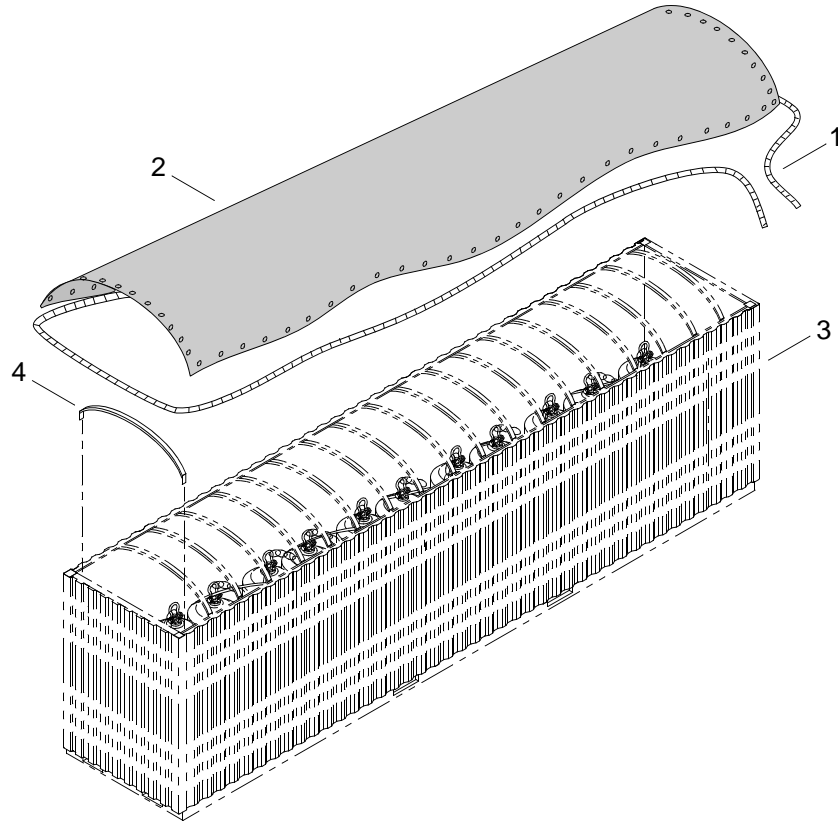
1. Unlatch and open container door.

WARNING

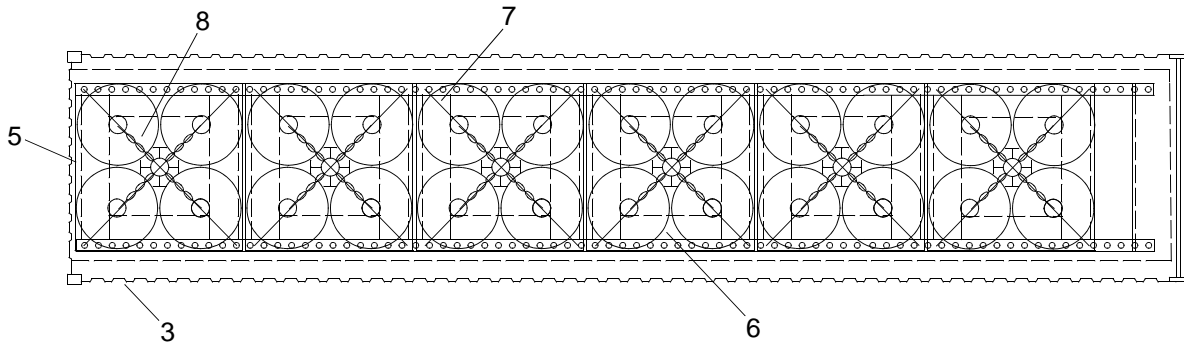
Door must be secured in the open position. Failure to comply could result in death or injury to personnel.

2. Secure container doors open with locking bars, pins or hooks.

3. Remove cable (1) attaching waterproof covering (2) to container (3).



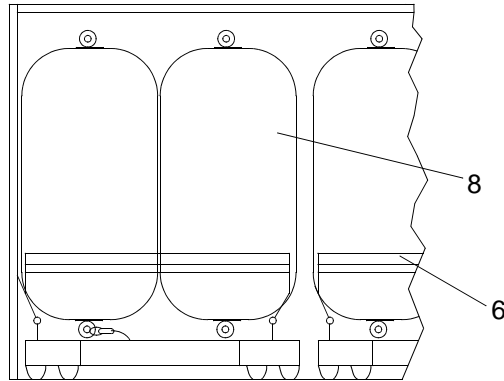
4. Remove waterproof covering (2) from bows (4).
5. Remove waterproof covering bows (4).
6. Remove track stop (5) from in front of pallet (6) nearest container (3) door.



7. Remove two tie down straps (7) securing pallet (6) and fender (8) to container (3).

WARNING**HEAVY PARTS**

8. Using forklift, remove pallet (6) and fender (8) from container (3).

**WARNING****HEAVY PARTS**

9. Using crane, slings and shackles lift fender (8) from pallet (6) and move to installation location on RRDF platform.
10. Attach tag lines to ends of securing chains.
11. Attach fender (8) to RRDF as required.

WARNING**HEAVY OBJECTS**

12. Roll fender (8) over side of RRDF platform into water.

WARNING**HEAVY OBJECTS**

13. Using forklift, place empty pallets (6) in container (3) and secure with two tie down straps (7).

14. Install waterproof bows (4) on container (3).
15. Install waterproof covering (2) on bows (4).
16. Install cable (1) to brackets on the side of container (3) to secure waterproof covering (2) to container (3).
17. Remove locking bars, pins or hooks to close container door.
18. Close and latch container door.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
4 FT BY 12 FT FENDERS
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

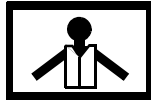
Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 5,300 lb 6 ft Sling (Green) (Item 57, WP 0116 00)
 Qty 2
 2-Ton 1/2 in. Anchor Shackle (Item 48, WP 0116 00)
 Qty 3

Personnel Required

Seaman 88K (4)

PREPARATION FOR USE - INSTALLATION OF 4 FT BY 12 FT FENDERS

WARNING



VEST



HELMET PROTECTION



HEAVY PARTS



MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the installation of all 4 ft by 12 ft fenders.

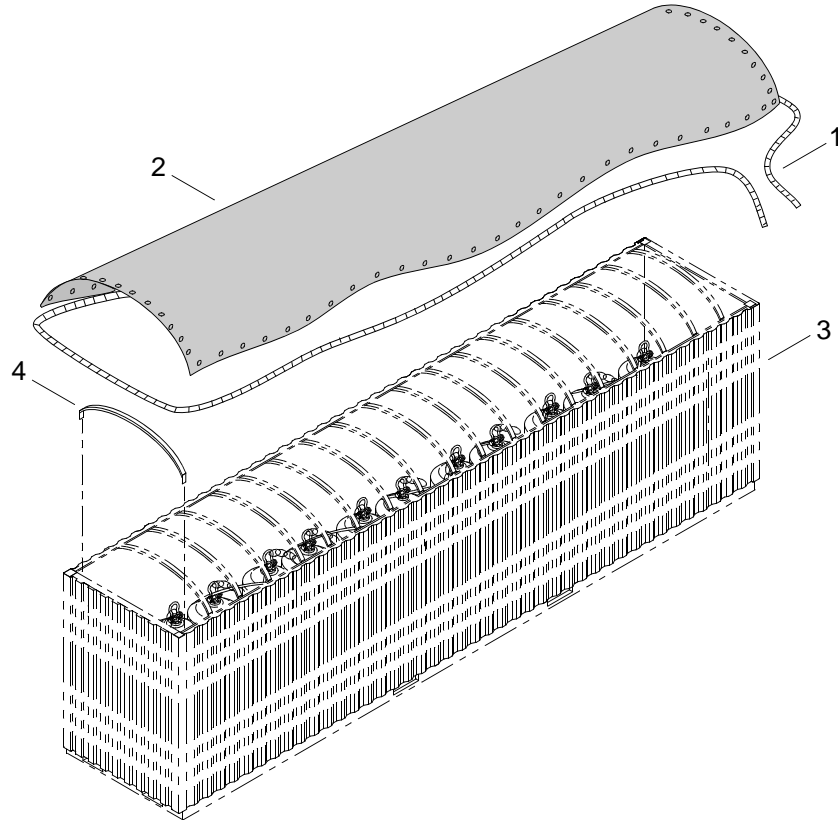
1. Unlatch and open container door.

WARNING

Door must be secured in the open position. Failure to comply could result in death or injury to personnel.

2. Secure container door open with locking bars, pins or hooks.

3. Remove cable (1) attaching waterproof covering (2) to container (3).

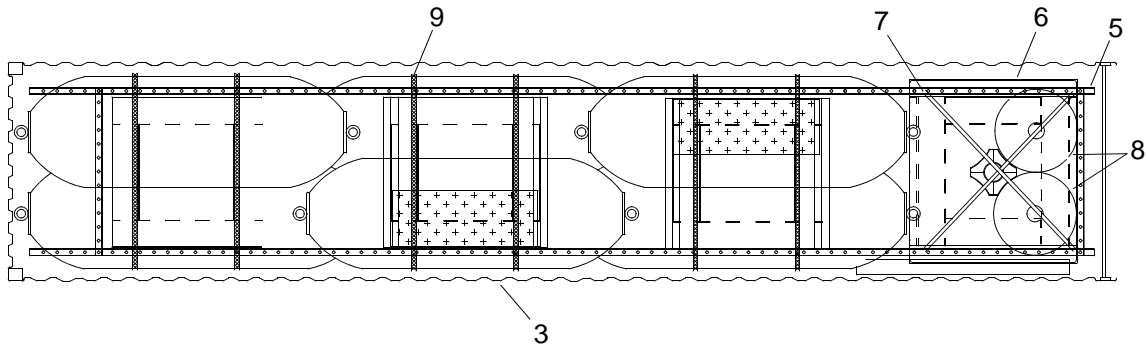


4. Remove waterproof covering (2) from bows (4).

NOTE

Center bow is welded and cannot be removed.

5. Remove waterproof covering bows (4).
6. Remove track stop (5) from in front of pallet (6) nearest container (3) door.



7. Remove two ratcheting tie down straps (7) securing pallet (6) and two 3 ft by 5 ft fenders (8) to container (3).

WARNING

**HEAVY PARTS**

8. Using forklift, remove pallet (6) and 3 ft by 5 ft fenders (8) from container (3).

WARNING

**HEAVY PARTS**

9. Using crane, slings and shackles, lift 3 ft by 5 ft fenders (8) from pallet (6) and move to installation location on RRDF platform.
10. Attach tag lines to ends of securing chains.
11. Attach 3 ft by 5 ft fenders (8) to RRDF as required.

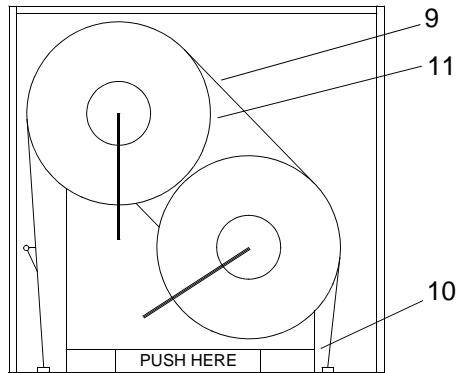
WARNING

**HEAVY OBJECTS**

12. Roll 3 ft by 5 ft fenders (8) over side of RRDF platform into water.
13. Remove two ratcheting tie down straps (9) securing pallet (10) and fenders (11) to container (3).

WARNING**HEAVY PARTS**

14. Using forklift, remove pallet (10) and fenders (11) from container (3).

**WARNING****HEAVY PARTS**

15. Using crane, slings and shackles, lift fenders (11) from pallet (10) and move to installation location on RRDF platform.

16. Attach tag lines to ends of securing chains.

17. Attach fenders (11) to RRDF as required.

WARNING**HEAVY OBJECTS**

18. Roll fender (11) over side of RRDF platform into water.

WARNING**HEAVY OBJECTS**

19. Using forklift, place empty pallets (10) in container (3) and secure with two tie down straps (7).

WARNING

**HEAVY OBJECTS**

20. Using forklift, place empty pallet (6) in container (3) and secure with two tie down straps (7).
21. Install track stop (5) in front of pallet (6) nearest container (3) door.
22. Install waterproof bows (4) on container (3).
23. Install waterproof covering (2) on bows (4).
24. Install cable (1) to brackets on side of container (3) to secure waterproof covering (2) to container (3).
25. Remove locking bars, pins or hooks to close container door.
26. Close and latch container door.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
5 FT BY 10 FT FENDERS
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 5,300 lb 6 ft Sling (Green) (Item 57, WP 0116 00)
 Qty 2
 2-Ton 1/2 in. Anchor Shackle (Item 48, WP 0116 00)
 Qty 3

Personnel Required

Seaman 88K (4)

PREPARATION FOR USE - INSTALLATION OF 5 FT BY 10 FT FENDERS

WARNING



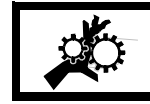
VEST



HELMET PROTECTION



HEAVY PARTS



MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the installation of all 5 ft by 10 ft fenders.

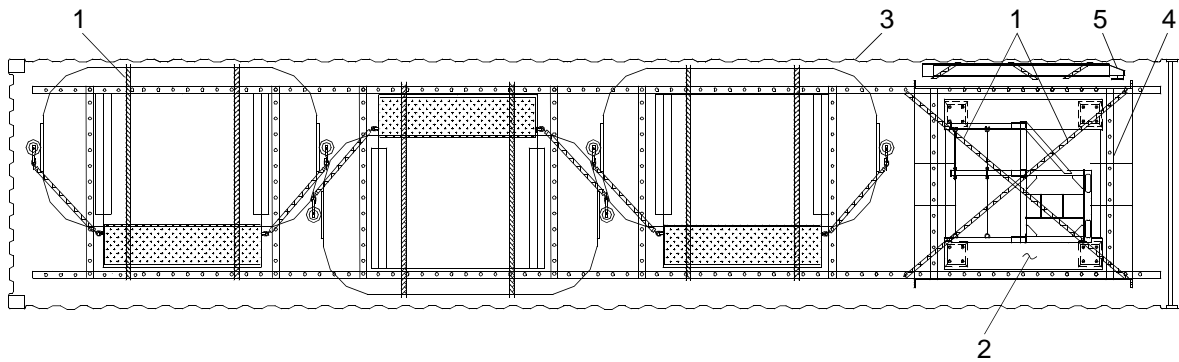
1. Unlatch and open container door.

WARNING

Door must be secured in the open position. Failure to comply could result in death or injury to personnel.

2. Secure container door open with locking bars, pins or hooks.

3. Remove two ratcheting tie down straps (1) securing deck fittings pallet (2) to container (3).



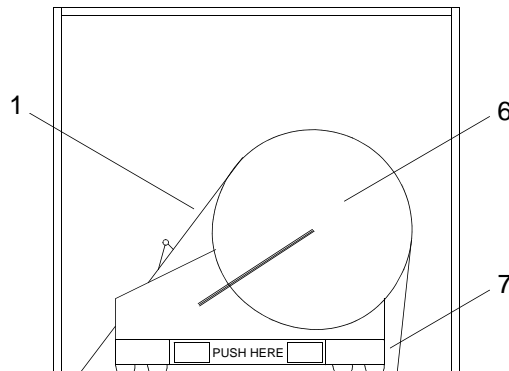
4. Remove track stop bar (4) in front of deck fittings pallet (2) nearest container (3) door.
5. Using forklift, remove deck fittings pallet (2) from container (3).
6. Remove remaining track stop bar (4) for rear position of deck fittings pallet (2).
7. Remove track stop (5) from in front of fender pallet (6) nearest container (3) door.
8. Remove two ratcheting tie down straps (1) securing pallet (7) and fender (6) to container (3).

WARNING



HEAVY PARTS

9. Using forklift and push-pull rod (5), remove pallet (7) and fender (6) from container (3).



10. Remove the second track stop (4) from behind pallet (7).

WARNING

**HEAVY PARTS**

11. Using crane, slings and shackles, lift fender (6) from pallet (7) and move to installation location on RRDF platform.
12. Attach tag lines to ends of securing chains.
13. Attach fender (6) to RRDF as required.

WARNING

**HEAVY OBJECTS**

14. Roll fender (6) over side of RRDF platform into water.

WARNING

**HEAVY OBJECTS**

15. Using forklift, place empty pallets (7) in container (3) and secure with two ratcheting tie down straps (1).
16. Remove locking bars, pins or hooks to close container door.
17. Close and latch container door.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
6 FT BY 12 FT FENDERS
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

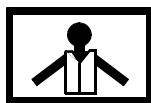
Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Chain, ½ in., General Purpose (Item 4, WP 0116 00)
 5,300 lb 6 ft Sling (Green) (Item 57, WP 0116 00)
 Qty 2
 2-Ton 1/2 in. Anchor Shackle (Item 48, WP 0116 00)
 Qty 3

Personnel Required

Seaman 88K (4)

PREPARATION FOR USE - INSTALLATION OF 6 FT BY 12 FT FENDERS

WARNING



VEST



HELMET PROTECTION



HEAVY PARTS



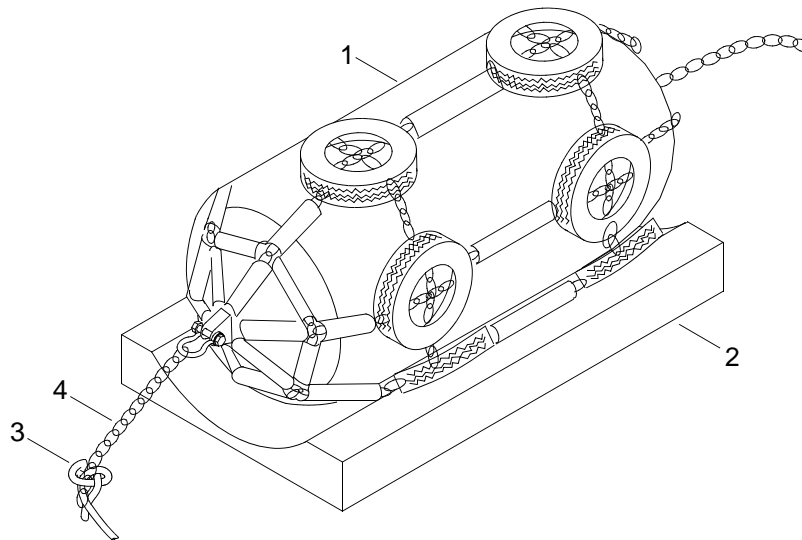
MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the installation of all 6 ft by 12 ft fenders.

1. Remove two tie down straps securing 6 ft by 12 ft fender (1) to pallet (2).



2. Attach tag lines (3) to ends of securing chains (4).
3. Using crane, attach slings and shackles to fender (1).

WARNING

**HEAVY OBJECTS****NOTE**

Two seamen are needed to man each tag line.

4. Using sealift vessel, place fender (1) in water.
5. Using general purpose chain, secure securing chains (4) to mooring bitts.
6. Remove tag lines (3) from securing chains (4).

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
CORNER FENDERS
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

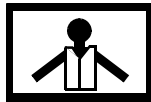
Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Socket, Socket Wrench (Item 64 WP 0116 00)
 Adapter, Socket Wrench (Item 2, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)

Personnel Required

Seaman 88K

PREPARATION FOR USE - INSTALLATION OF CORNER FENDERS

WARNING



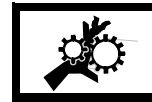
VEST



HELMET PROTECTION



HEAVY PARTS



MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the installation of both port and starboard corner fenders.

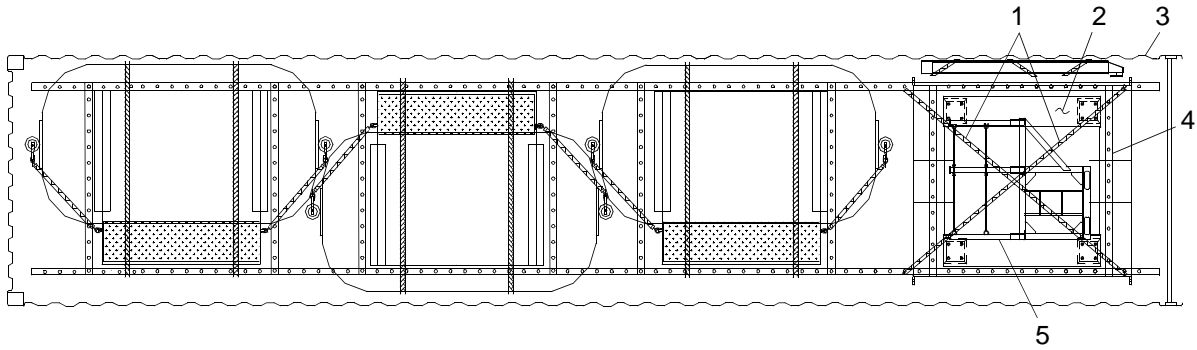
1. Unlatch and open 5 ft by 10 ft fender container doors.

WARNING

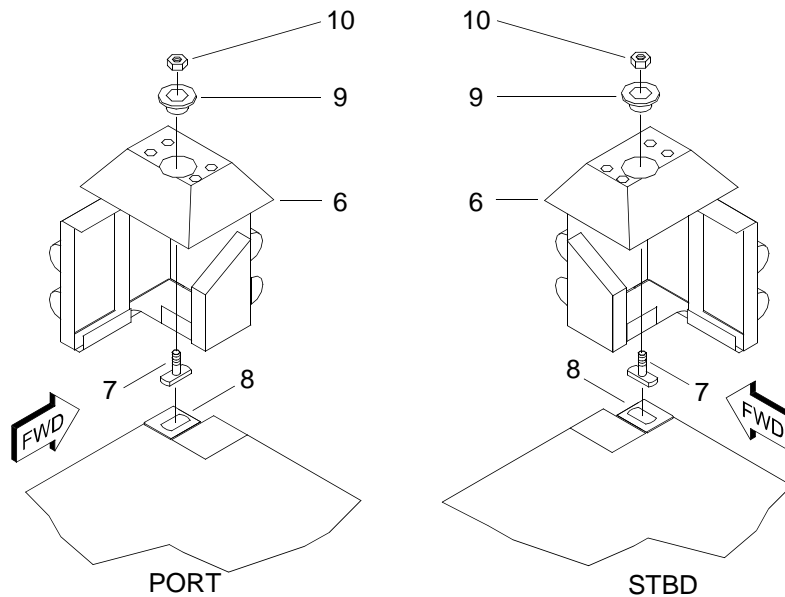
Doors must be secured in the open position. Failure to comply could result in death or injury to personnel.

2. Secure container doors open with locking bars, pins or hooks.
3. Remove two ratcheting tie down straps (1) securing pallet (2) to container (3).

- Remove track stop (4) in front of pallet (2) nearest container (3) door.



- Using forklift, remove pallet (2) from container (3) and move to installation location on RRDF platform.
- Using forklift, remove manlift basket (5).
- Remove corner fender (6) from pallet (2).
- Install tee bolt (7) into end rake ISO corner fitting (8).



- Install corner fender (6) over tee bolt (7) until threads are exposed through hole in top of corner fender (6).
- Install washer (9) and nut (10) to hold tee bolt (7) in place.

NOTE

The 2 3/4 inch socket and 3/4 to 1/2 inch square drive adapter are located in the dunnage mat pallet toolbox, in a canvas bag. Use these with the 1/2 inch square drive socket wrench from the tool kit.

- Turn tee bolt (7) until it contacts inner surface of ISO corner fitting (8) and hand-tighten nut (10). Snug down nut (10) with socket, adapter and wrench.
- Using forklift, place manlift basket (5) on pallet (2).

13. Using forklift, place pallet (2) in container (3).
14. Remove locking bars, pins or hooks to close container doors.
15. Close and latch 5 ft by 10 ft fender container door.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
SAFETY EQUIPMENT
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)

Personnel Required

Seaman 88K

Equipment Condition

Strobe Light Battery Removed. (WP 0106 00)

PREPARATION FOR USE - INSTALLATION OF SAFETY EQUIPMENT

WARNING



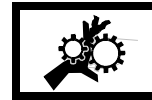
VEST



HELMET PROTECTION



HEAVY PARTS



MOVING PARTS

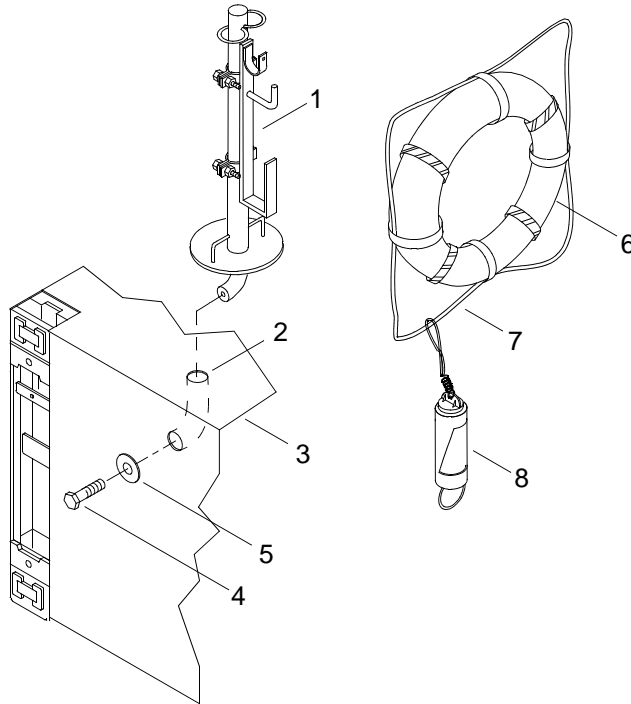
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for mounting all four life ring assemblies.

1. Remove life ring assemblies from BII container.
2. Determine location where life ring assemblies are to be mounted.

-
3. Install life ring stanchion (1) into turn tube (2) on module (3).



WARNING

Beware of other craft or objects coming alongside while working outboard installing the keeper plate and bolt on deck fittings, as the possibility exists of falling overboard. Failure to observe these precautions could result in death or injury to personnel.

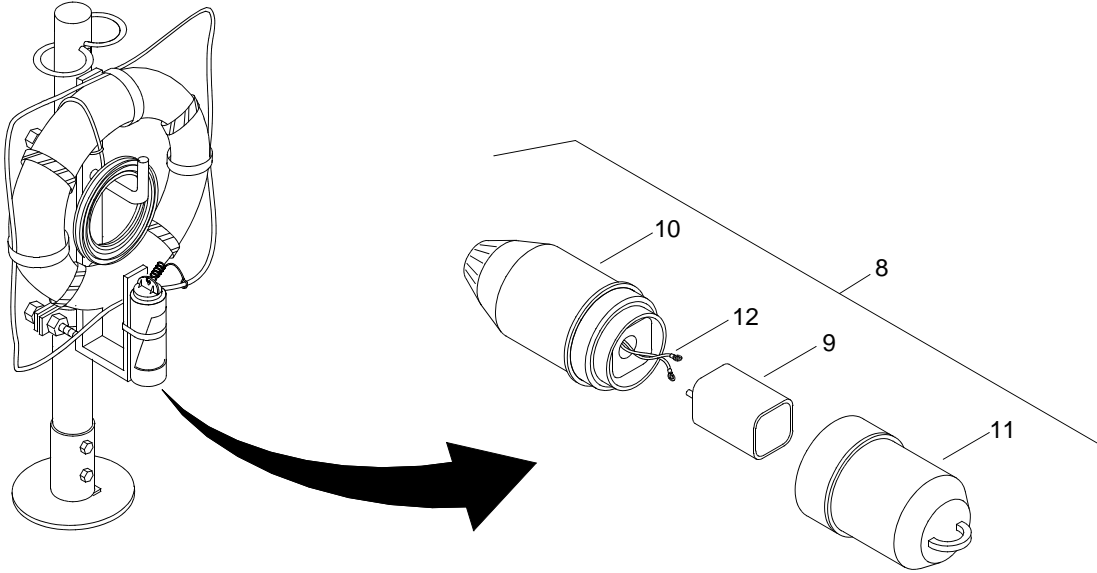
4. Insert bolt (4) through keeper plate (5) and module (3).
5. Install bolt (4) into threaded portion of life ring stanchion (1). Tighten bolt (4).
6. Position life ring (6) and rope (7) in life ring stanchion (1) and secure rope (7) to strobe light (8).

NOTE

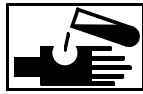
Strobe light batteries are stowed in the BII container.

7. Install strobe light batteries (9) in life ring strobe lights (8).

- a. Unscrew strobe light housing (10) from strobe light base (11).



WARNING



CHEMICAL



EYE PROTECTION

- b. Position battery (9) into strobe light base (11).
- c. Connect two battery wires (12) to battery (9).
- d. Screw strobe light housing (10) and strobe light base (11) together.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
DUNNAGE MATS
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

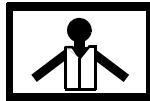
Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Socket, Socket Wrench (Item 63, WP 0116 00)
 Adapter, Socket Wrench (Item 2, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)

Personnel Required

Seaman 88K

PREPARATION FOR USE - INSTALLATION OF DUNNAGE MATS

WARNING



VEST



HELMET PROTECTION



HEAVY PARTS



MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

CAUTION

Opening doors while the container is on a soft or uneven surface will damage the container or doors.

Damage to container will occur if any door is open or unlocked while container is moved or lifted.

NOTE

The following procedure is typical for all dunnage mats.

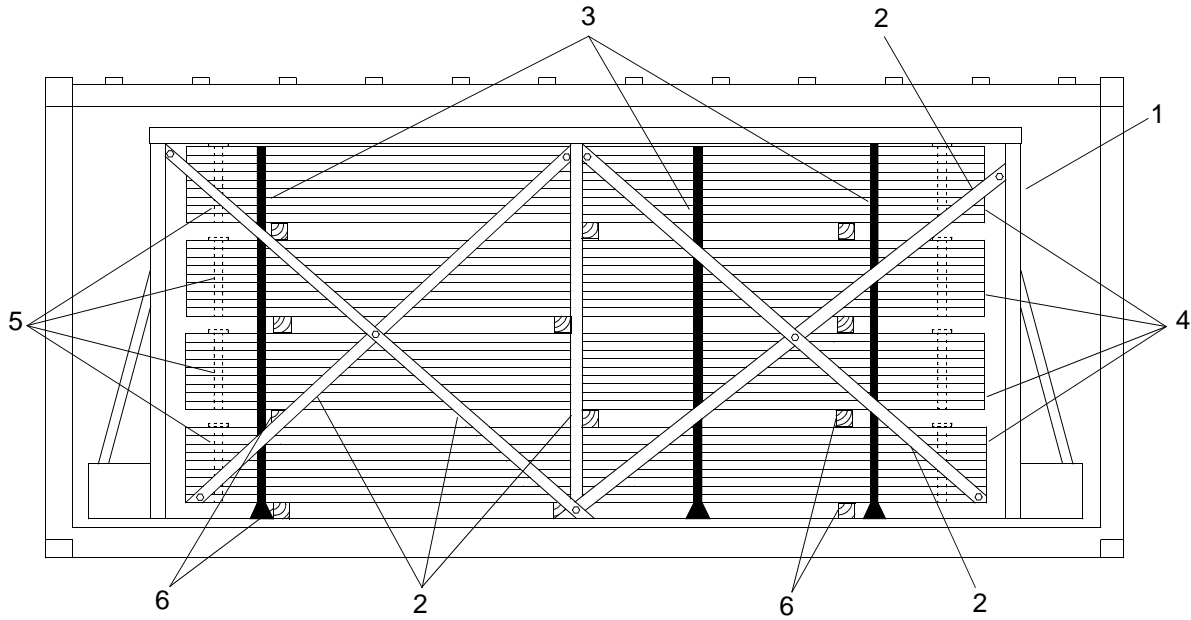
1. Unlatch and open container doors.

WARNING

Doors must be secured in the open position. Failure to comply could result in death or injury to personnel.

2. Secure container doors open with locking bars, pins or hooks.

3. Remove flat bars (2) from side of container (1).



4. Remove ratchet strap tie downs (3).

WARNING



HEAVY PARTS

5. Using forklift, or appropriate handling device, remove first stack of dunnage mats (4) from container (1).
6. Remove two dunnage mat rods (5) from dunnage mat (4) stack and store in container tool box.
7. Remove 4 in. X 4 in. dunnage wood (6) from container.

WARNING



HEAVY PARTS

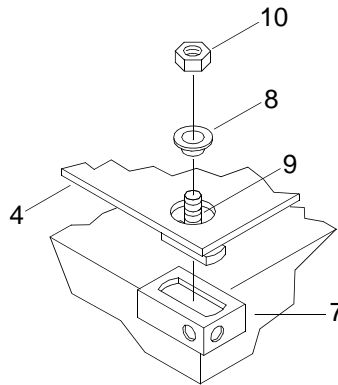
8. Repeat previous steps for removal of remaining dunnage mat (4) stacks from container (1).

WARNING**HEAVY OBJECTS**

9. Remove first dunnage mat (4) from stack.

WARNING**HEAVY OBJECTS**

10. Position and place dunnage mat (4) on the appropriate intermediate section with corner hold over ISO corner fitting (7).



11. Place 5 5/8 in. diameter washer weldment (8) over tee bolt (9).
12. Start 1 in. nut (10) on threaded portion of tee bolt (9).
13. Tilt tee bolt (9) and place through dunnage mat (4) corner hole and into ISO corner fitting (7).

NOTE

The 1 5/8 inch socket and 3/4 to 1/2 inch square drive adapter are located in the dunnage mat pallet toolbox in a canvas bag. Use these with the 1/2 inch square drive socket wrench from the tool kit.

14. Turn tee bolt (9) until it contacts inner surface of corner fitting (7) and hand-tighten nut (10). Snug down nut (10) with socket, adapter and wrench.
15. Remove locking bars, pins or hooks to close container doors.
16. Close and latch container doors.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
GENERATOR CONTAINER
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Gloves, Rubber, Industrial (Item 24, WP 0116 00)
 Goggles, Industrial (Chipping, Chemical) (Item 26, WP 0116 00)

Materials/Parts

Antiseize Compound (Item 9, WP 0117 00)

Personnel Required

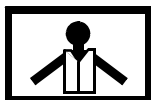
Seaman 88K (2)

Equipment Condition

RRDF Assembled. (WP 0015 00)

**PREPARATION FOR USE - INSTALLATION OF 10KW GENERATOR CONTAINER ON
RRDF PLATFORM**

WARNING



VEST



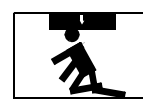
HELMET PROTECTION



HEAVY PARTS



MOVING PARTS



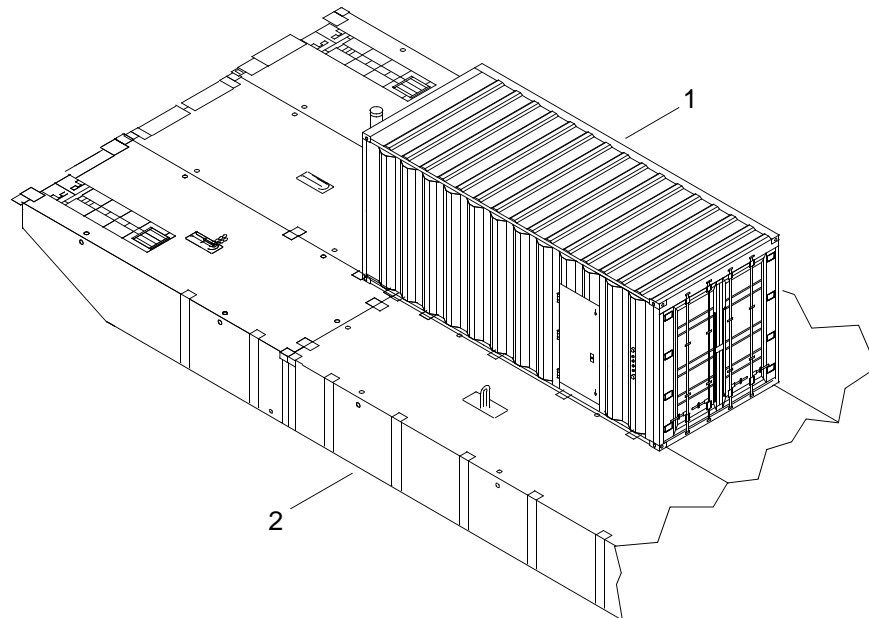
HEAVY PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

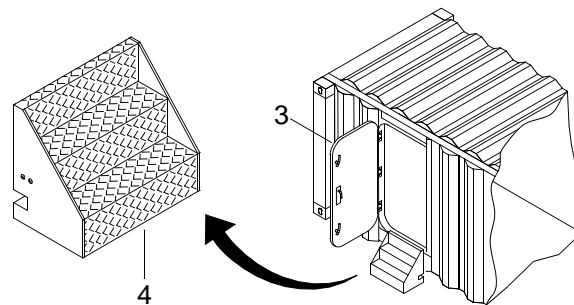
NOTE

Generator container must be located next to personnel shelter on same intermediate section. Generator container placement on RRDF platform is dependant upon configuration. (WP 0005 00)

1. Using crane, position generator container (1) on RRDF platform (2).



2. Unlock, undog and open generator container exterior door (3).

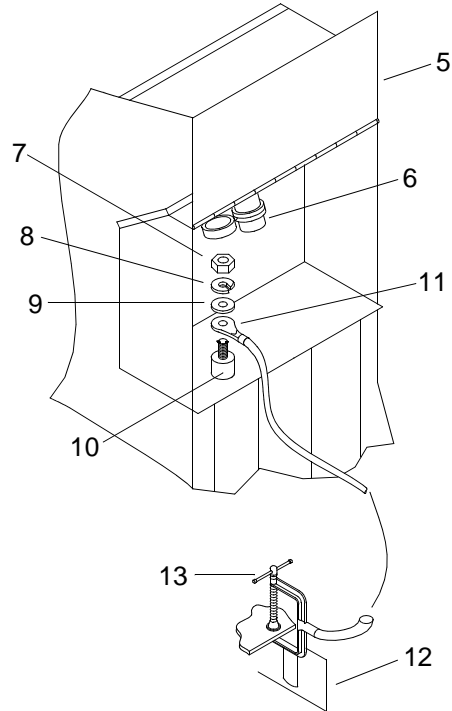
**NOTE**

Generator container door will not shut with steps lowered for access. The door will not secure when opened. Secure door open if necessary with a tag line.

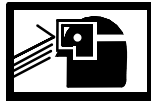
3. Fold out steps (4).
4. Place generator container in service. (WP 0110 00)

INSTALL GROUND CABLE

1. Open hinged cover (5) over shore tie connector fitting (6) and latch in open position.



2. Remove nut (7), lock washer (8) and flat washer (9) from ground stud (10).

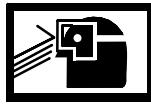
WARNING**EYE PROTECTION**

3. Using wire brush, clean shoulder of ground stud (10) so grounding surface has a smooth, bright finish.

WARNING**CHEMICAL**

4. Apply a thin coating of antiseize compound to ground stud (10) and ground cable terminal (11).
5. Install ground cable terminal (11) on ground stud (10).
6. Install flat washer (9), lock washer (8) and nut (7) on ground stud (10). Tighten nut (7).

WARNING

**EYE PROTECTION**

- Using wire brush, remove paint from ISO fitting (12) so grounding surface has a smooth, bright finish.

WARNING

**EYE PROTECTION**

- Using wire brush, clean ground cable C-clamp (13) grounding surface.

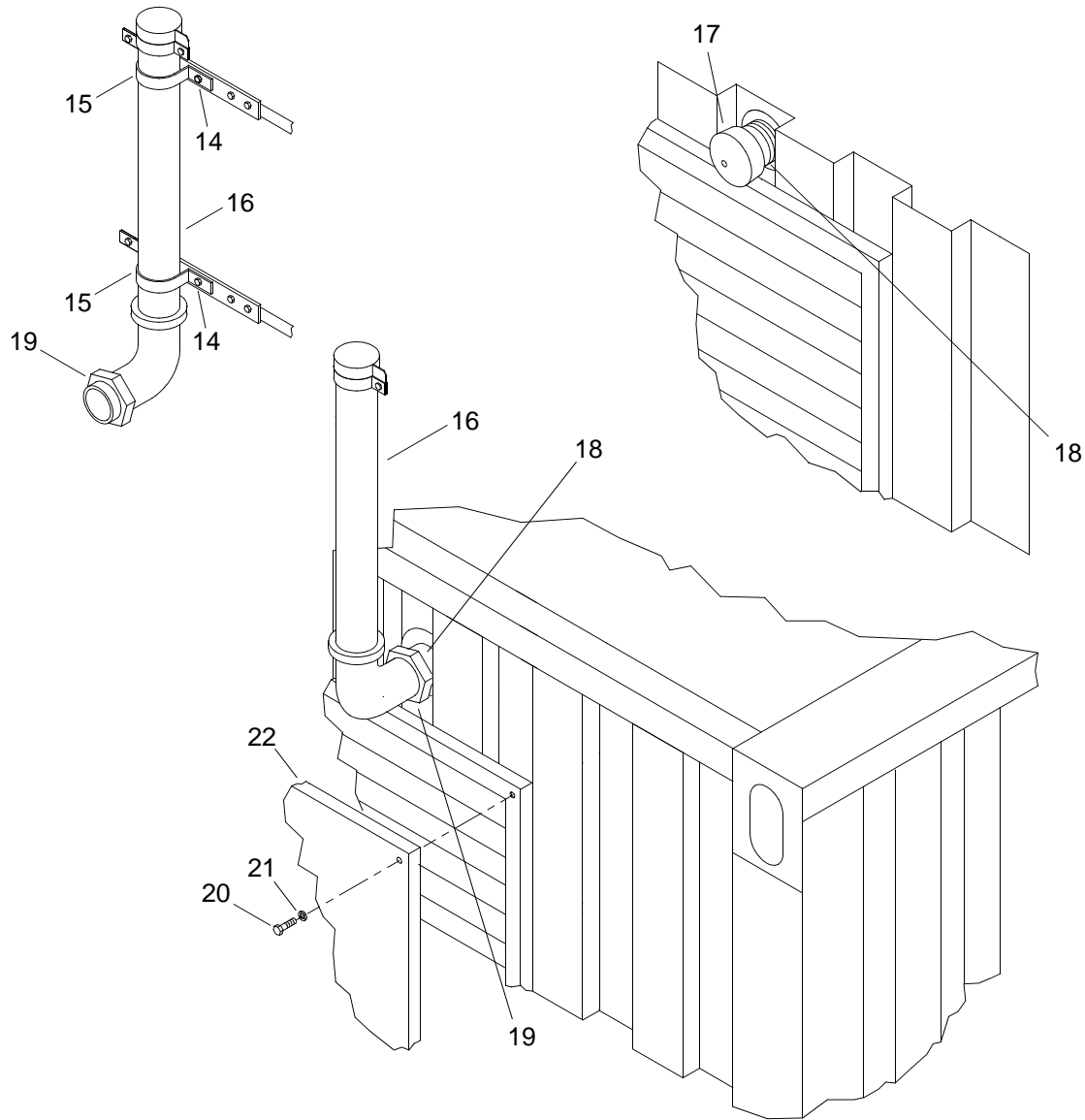
WARNING

**CHEMICAL**

- Apply a thin coating of antiseize compound to ISO fitting (12) grounding surface.
- Attach ground cable C-clamp (13) to ISO fitting (12). Tighten C-clamp (13).

INSTALL EXHAUST PIPE AND REMOVE LOUVER COVERS

1. Remove bolts (14) from stowage brackets (15) from interior of container.



2. Remove exhaust pipe (16) from stowage brackets (15) from interior of container.
3. Remove protective cover (17) from exhaust outlet (18). Stow protective cover (17) in container.
4. Position exhaust pipe (16) on exhaust outlet (18) and tighten flange nut (19).
5. Remove six hex bolts (20) with lock washers (21) and remove louver covers (22) from exhaust and intake dampers. Stow louver covers (22) in container.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
PERSONNEL SHELTER
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Gloves, Rubber, Industrial (Item 24, WP 0116 00)
 Goggles, Industrial (Chipping, Chemical) (Item 26, WP 0116 00)

Materials/Parts

Antiseize Compound (Item 9, WP 0117 00)

Personnel Required

Seaman 88K

References

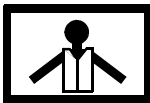
TM 9-6115-642-10

Equipment Condition

RRDF Assembled. (WP 0015 00)
 Generator Container Installed On RRDF Platform. (WP 0026 00)

PREPARATION FOR USE - INSTALLATION OF PERSONNEL SHELTER ON RRDF PLATFORM

WARNING



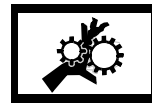
VEST



HELMET PROTECTION



HEAVY PARTS



MOVING PARTS



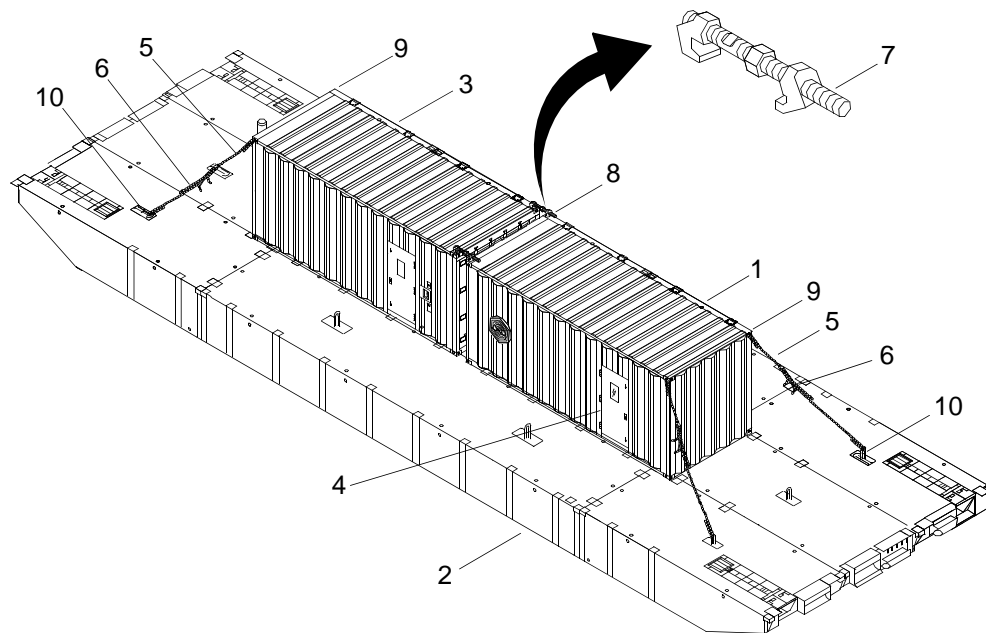
HEAVY PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

Personnel shelter must be located next to generator container on same intermediate section. Personnel shelter placement on RRDF platform is dependant upon configuration. (WP 0005 00)

1. Using crane, position personnel shelter (1) on RRDF platform (2) next to generator container (3).



2. Secure personnel shelter (1) and generator container (3) to RRDF platform (2).

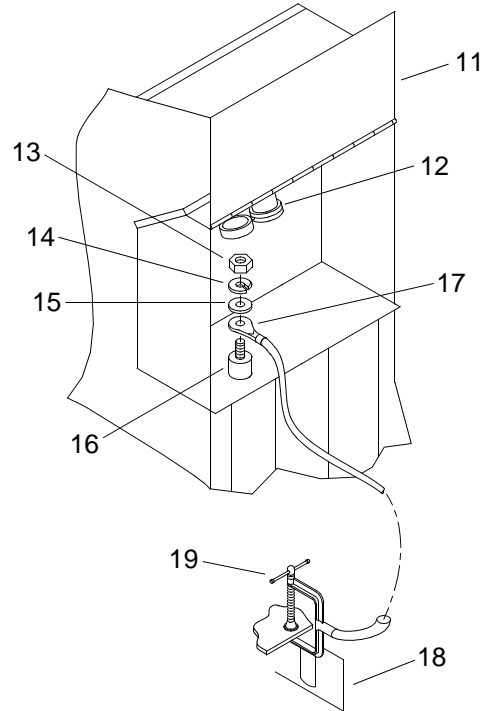
NOTE

The door will not secure when opened. Secure door open if necessary with a tag line.

- a. Unlock, undog and open personnel shelter exterior door (4).
 - b. Remove chains (5), chain binders (6) and bridgelocks (7) from inside personnel shelter (1).
 - c. Install bridgelocks (7) between personnel shelter (1) and generator container (3) on inboard top ISO corners (8). Tighten bridgelocks (7).
 - d. Loop chains (5) between outboard top ISO corners (9) and end rake padeye lifting shackles (10) on each side of personnel shelter (1).
 - e. Lock chains (5) tight with chain binders (6).
 - f. Loop chains (5) between outboard top ISO corners (9) and end rake padeye lifting shackles (10) on each side of generator container (3).
 - g. Lock chains (5) tight with chain binders (6).
3. Place personnel shelter in service. (WP 0110 00)

INSTALL GROUND CABLE

1. Open hinged cover (11) over shore tie connector (12) and latch in open position.



2. Remove nut (13), lock washer (14) and flat washer (15) from ground stud (16).

WARNING**EYE PROTECTION**

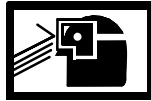
3. Using wire brush, clean shoulder of ground stud (16) so grounding surface has a smooth, bright finish.

WARNING**CHEMICAL**

4. Apply a thin coating of antiseize compound to ground stud (16) and ground cable terminal (17).
5. Install ground cable terminal (17) on ground stud (16).
6. Install flat washer (15), lock washer (14) and nut (13) on ground stud (16). Tighten nut (13).

WARNING**EYE PROTECTION**

- Using wire brush, remove paint from ISO fitting (18) so grounding surface has a smooth, bright finish.

WARNING**EYE PROTECTION**

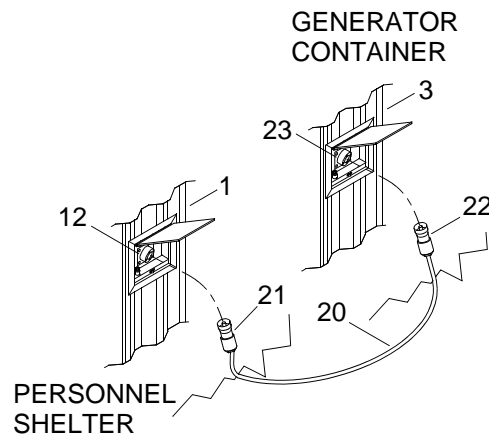
- Using wire brush, clean ground cable C-clamp (19) grounding surface.

WARNING**CHEMICAL**

- Apply a thin coating of antiseize compound to ISO fitting (18) grounding surface.
- Attach ground cable C-clamp (19) to ISO fitting (18). Tighten C-clamp (19).

INSTALL SHORE TIE POWER CABLE

- Remove shore tie power cable (20) from inside personnel shelter (1).



-
2. Connect female end (21) of shore tie power cable (20) to personnel shelter male shore tie connector (12).
 3. Connect male end (22) of shore tie power cable (20) to female shore tie connector (23) on generator container (3).
 4. Verify circuit breakers inside personnel shelter (1) are positioned to on. (WP 0007 00)
 5. Operate 10 kW generator to supply electrical power to personnel shelter (1). (TM 9-6115-642-10)

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
EMERGENCY ANCHOR SYSTEM (EASY)
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
Life Preserver, Vest (Item 71, WP 0116 00)
Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
Helmet, Safety (Brown) (Item 30, WP 0116 00)

Personnel Required

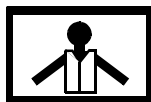
Seaman 88K

Equipment Condition

RRDF Assembled. (WP 0015 00)

PREPARATION FOR USE - INSTALLATION OF EASY ON RRDF PLATFORM

WARNING



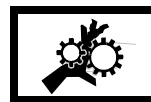
VEST



HELMET PROTECTION



HEAVY PARTS



MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

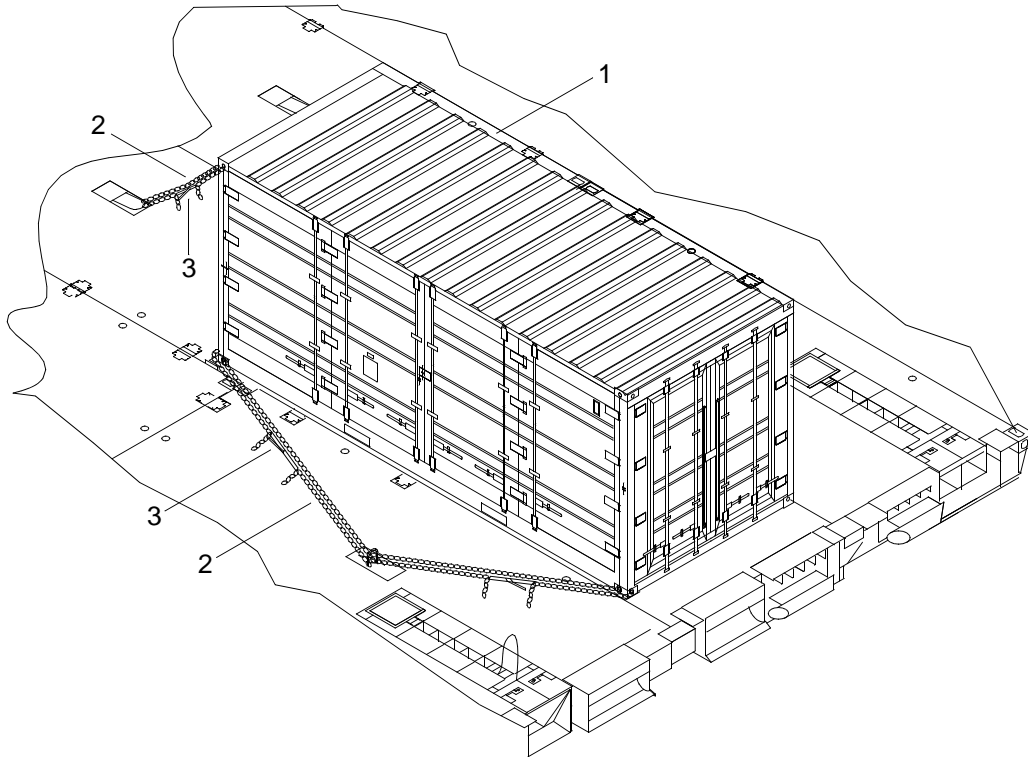
NOTE

Position EASY at upstream end of RRDF platform.

Ensure anchor end of EASY is located 24 inches from upstream deck edge to allow enough room for personnel to open end doors and allow anchor to deploy properly.

1. Using crane, position EASY (1) on RRDF platform.
2. Remove chains (2) and chain binders (3) from inside EASY (1).

3. Using chains (2) and chain binders (3), secure EASY (1) to RRDF platform.



- a. Loop chains (2) between EASY bottom ISO corners and one end rake padeye on each side.
- b. Lock chains tight with chain binders (3).
- c. Loop chains (2) between EASY top rear ISO corners and two separate center module padeyes.
- d. Lock chains tight with chain binders (3).

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
LIGHT TOWER
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Push Rod (Item 6, WP 0116 00)
 Sling, Lifting, 5,300 lbs (Green) (Item 57, WP 0116 00)
 Anchor Shackle, ½ in. 2 Ton (Item 48, WP 0116 00)

Materials/Parts

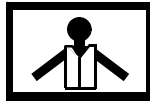
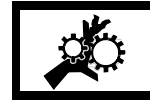
Pin, Cotter (Item 56, WP 0115 00)

Personnel Required

Seaman 88K (6)

PREPARATION FOR USE - INSTALLATION OF LIGHT TOWER**REMOVE LIGHT TOWER FROM CONTAINER**

WARNING

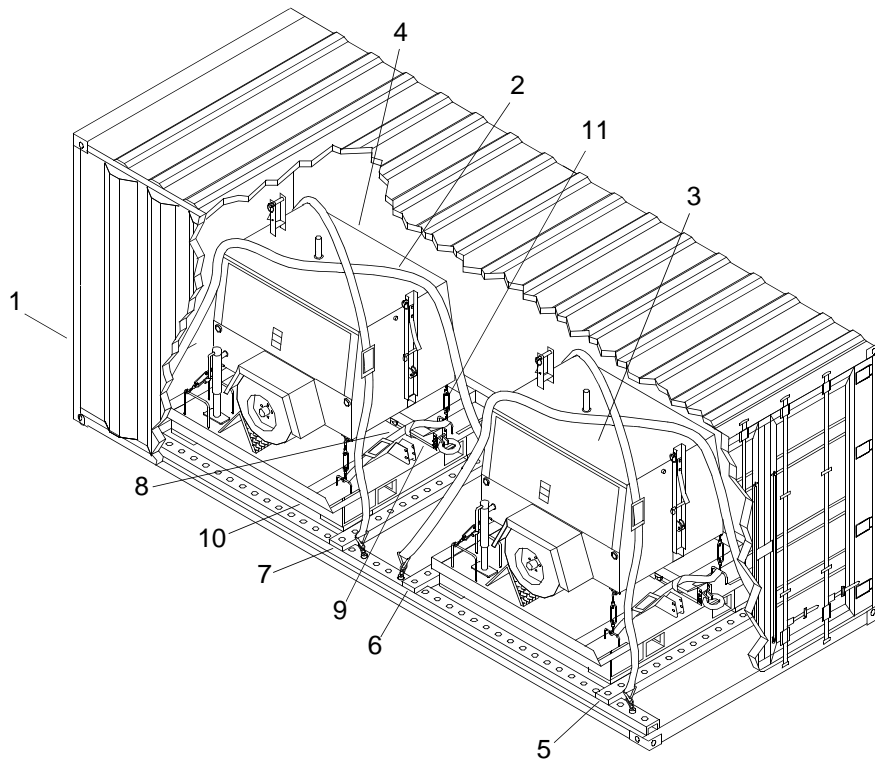
**VEST****HELMET PROTECTION****HEAVY PARTS****MOVING PARTS**

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The light towers are mounted on pallets and moved as assemblies.

1. Using crane, position light tower container (1) on RRDF platform.



2. Unlatch and open light tower container (1) doors.

WARNING

Doors must be secured in the open position. Failure to comply could result in death or injury to personnel.

3. Secure light tower container (1) doors open with locking bars, pins or hooks.
4. Remove ratcheting tie downs (2) securing forward (3) and aft (4) light towers to light tower container (1).
5. Remove forward light tower (3) front track stop (5).

WARNING



HEAVY PARTS

6. Using forklift, remove forward light tower (3) from light tower container (1) and position on RRDF platform.
7. Remove forward light tower (3) rear track stop (6).
8. Remove aft light tower (4) front track stop (7).

WARNING

**HEAVY PARTS**

9. Using forklift and push rod, remove aft light tower (4) from light tower container (1) and position on RRDF platform.
10. Stow track stops (5, 6, 7) and ratcheting tie downs (2) inside light tower container (1).
11. Using load restraining devices, secure light towers (3, 4) to RRDF platform.
12. Remove ratcheting tie downs (8) on both ends securing drawbars (9) to light tower pallets (10).
13. Stow ratcheting tie downs (8) inside light tower container (1).
14. Remove turnbuckles (11) from pallets (10) and light towers (3,4).

WARNING

**HEAVY OBJECTS**

15. Using assistant, remove drawbars (9) from beneath light tower pallets (10) and position near front of each light tower (3, 4).
16. Install turnbuckles (11) on pallets (10) and light towers (3,4).

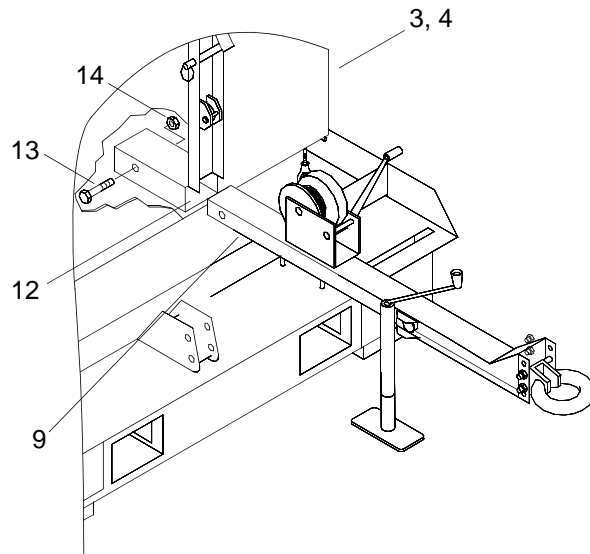
INSTALL DRAWBAR ON LIGHT TOWER

WARNING

**HEAVY OBJECTS****NOTE**

The following procedure is typical for drawbar installation.

1. Position drawbar (9) into drawbar receptacle (12) and secure with bolt (13) and nut (14). Tighten nut (14).



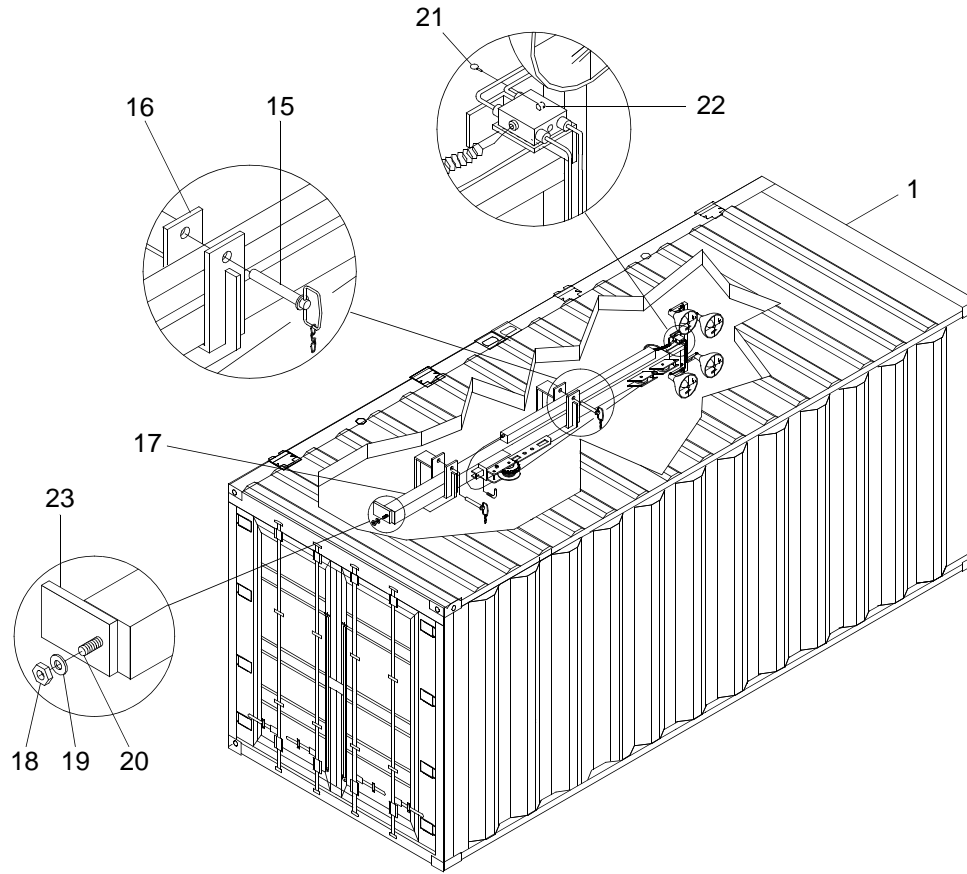
INSTALL TOWER ON LIGHT TOWER

NOTE

The towers for both light towers are mounted on brackets attached to the interior side walls of the container.

The following procedure is typical for tower installation.

1. Remove hitch pins (15) from wall brackets (16) securing tower (17) to side wall of light tower container (1).



2. At the lower end of tower (17), remove nut (18) and washer (19) from stud (20).
3. At the upper end of tower (17), remove quick release pin (21) from locator pin (22).
4. Slide tower (17) so that it clears the locator pin (22) at the upper end and the tower stud (20) clears the bracket (23) at the lower end.

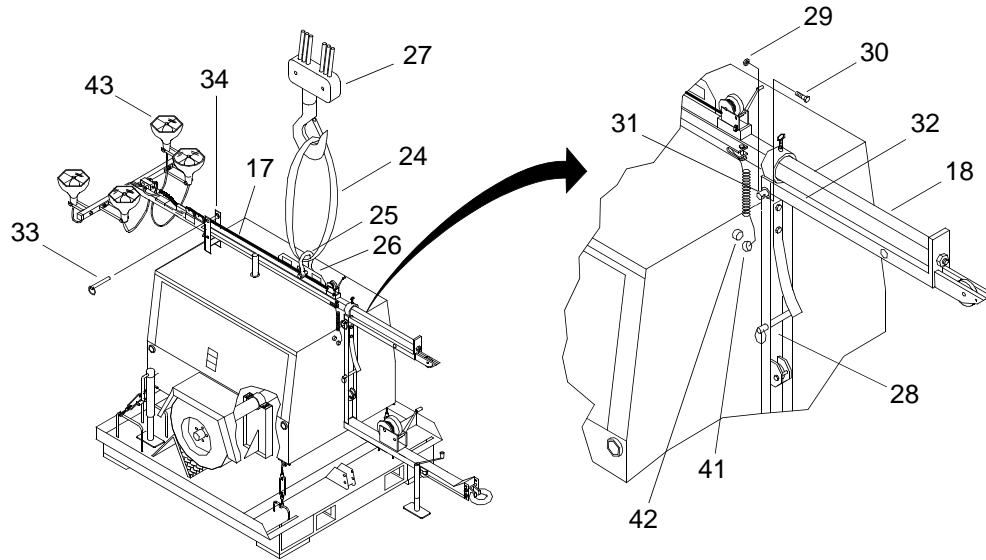
WARNING



HEAVY OBJECTS

5. Using six men, remove tower (17) from light tower container (1).

6. Attach 5,300 lb sling (24) and shackle (25) to lift point (26) on tower (18).



WARNING



HEAVY PARTS

7. Using crane (27), sling (24) and shackle (25), position tower (17) over tower support (28).
8. Remove nut (29), retaining bolt (30) and pivot pin (31) from upper end of tower support (28).
9. When guide holes align on tower support (28) and tower pivot support (32), install pivot pin (31).
10. Install retaining bolt (30) and nut (29) on pivot pin (31). Tighten nut (29).
11. Remove tower rest retaining pin (33) from tower rest (34).

WARNING



HEAVY PARTS

NOTE

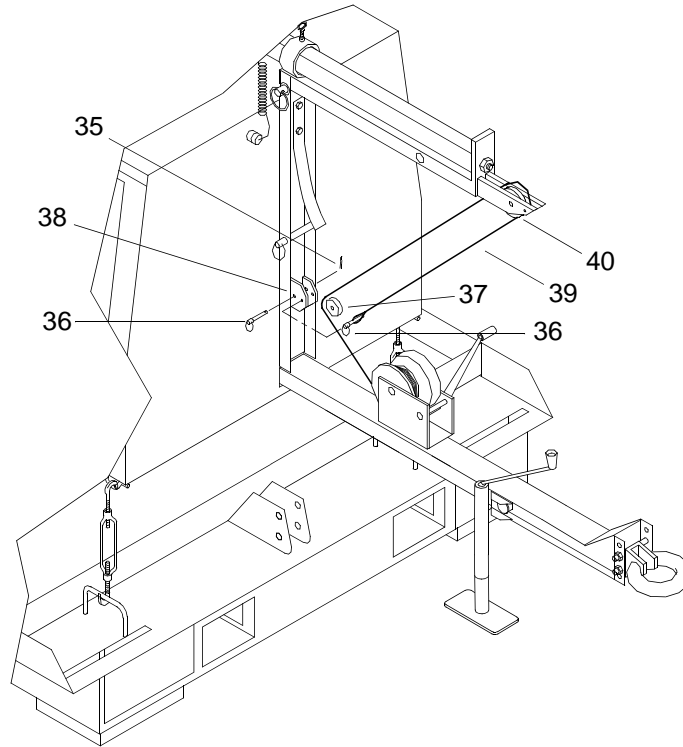
When fully retracted, holes in tower align to allow tower to rest on guide pin of tower rest.
If necessary, operate tower winch to align holes.

12. Lower tower (17) onto tower rest (34) and secure tower (17) with tower rest retaining pin (33).
13. Remove sling (24) and shackle (25) from lift point (26) on tower (17).

SETUP TOWER AND DRAWBAR TO RAISE TOWER**NOTE**

The following steps are typical for raising tower.

1. Remove cotter pin (35) and pulley pin (36) securing tower support pulley (37) to tower support pulley bracket (38) inner holes. Discard cotter pin (35).



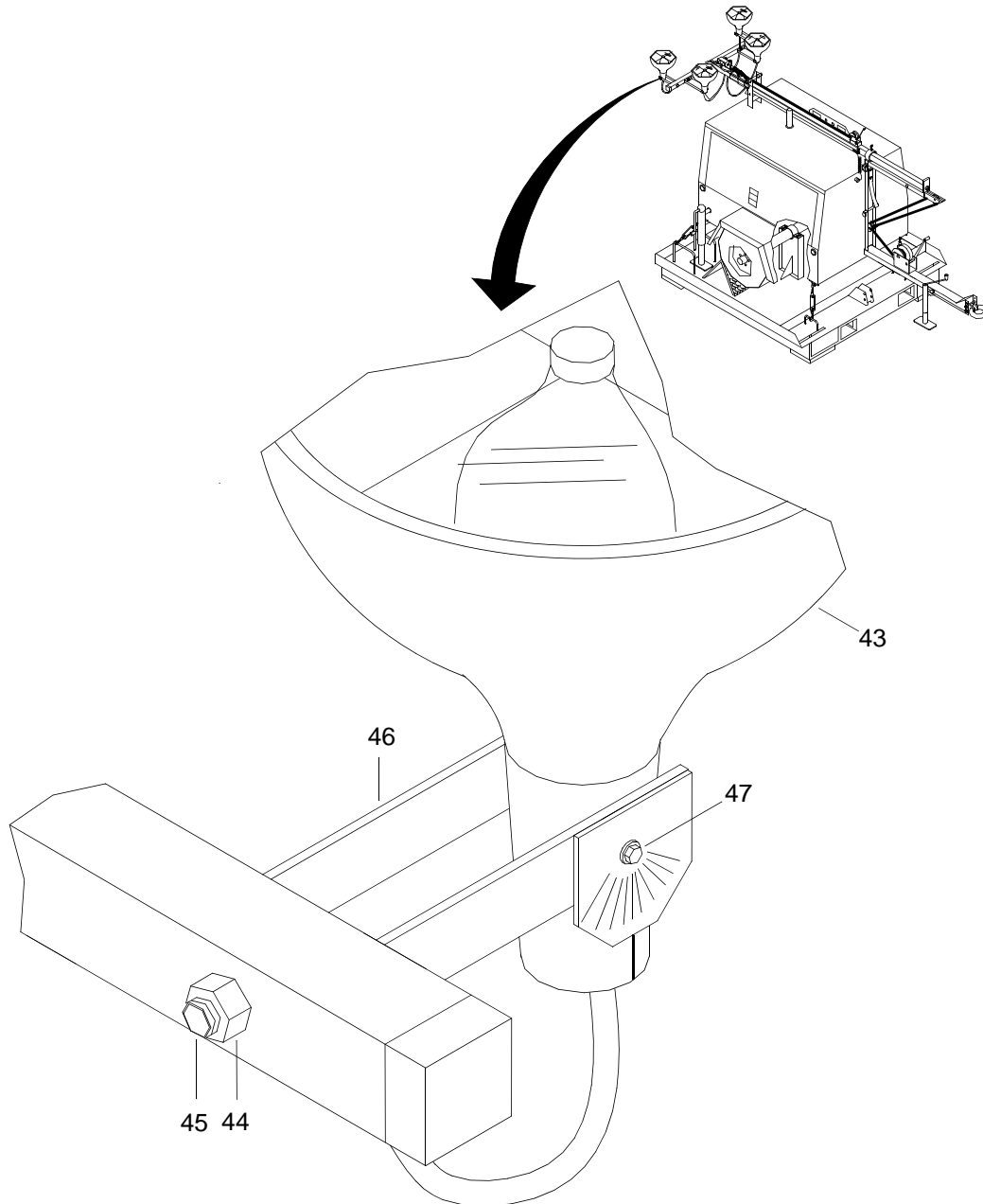
2. Route drawbar winch cable (39) under tower support pulley (37) and install tower support pulley (37) on tower support pulley bracket (38) with pulley pin (36) and new cotter pin (35).
3. Route drawbar winch cable (39) over pivot support pulley (40) and back to tower support pulley bracket (33).
4. Remove quick release pin (36) from tower support pulley bracket (33) outer holes.
5. Position end loop of drawbar winch cable (34) in tower support bracket (33) and install quick release pin (38).
6. Connect tower junction box electrical cable plug (41) to 125V receptacle (42) on front of light tower (3, 4) to supply power to lights (43).

AIM TOWER LIGHTS**NOTE**

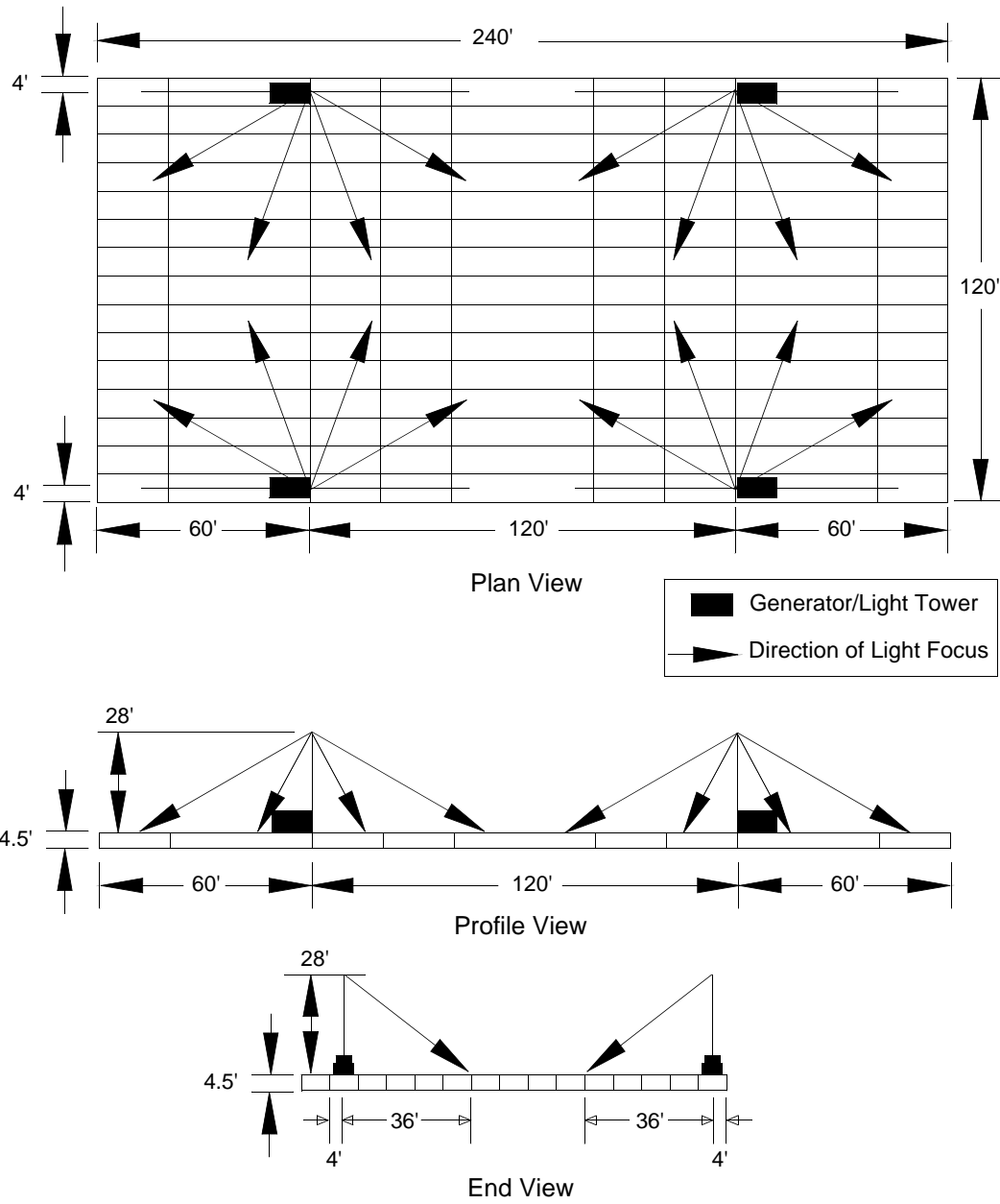
The following procedure is typical for aiming lights.

Tower lights must be correctly positioned prior to raising tower.

1. Loosen nut (44) on bolt (45) of light mounting bracket (46).



2. Loosen light bracket retention bolts (47) on both sides of light (43).
3. Rotate and pivot light (43) to desired position as required.



4. Tighten all nuts (44) and bolts (47) to prevent light (43) movement.

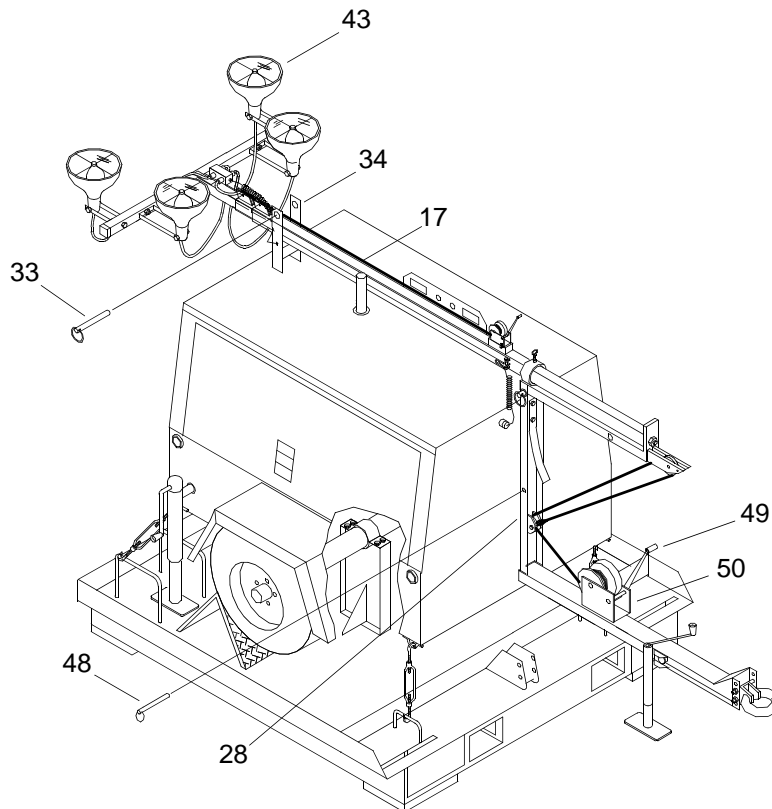
RAISE TOWER**WARNING**

Do not operate light tower with damaged cables. Damaged cables must be replaced as they may break during tower operation allowing light tower to fall. A falling light tower could cause injury or death.

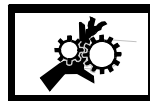
NOTE

The following procedure is typical for raising tower.

1. Remove tower rest retaining pin (33) securing tower (17) to tower rest (34).



2. Remove lock pin (48) from tower support (28).

WARNING**HEAVY PARTS****MOVING PARTS**

3. Turn hand crank (49) on drawbar winch (50) clockwise to raise tower (17).
4. Once tower (17) is vertical and rests against tower support (28), insert lock pin (48) through holes in tower (17) and tower support (28) to secure tower (17) in upright position.
5. Install tower rest retaining pin (33) in tower rest (34).

EXTEND TOWER**WARNING****HEAVY PARTS****MOVING PARTS**

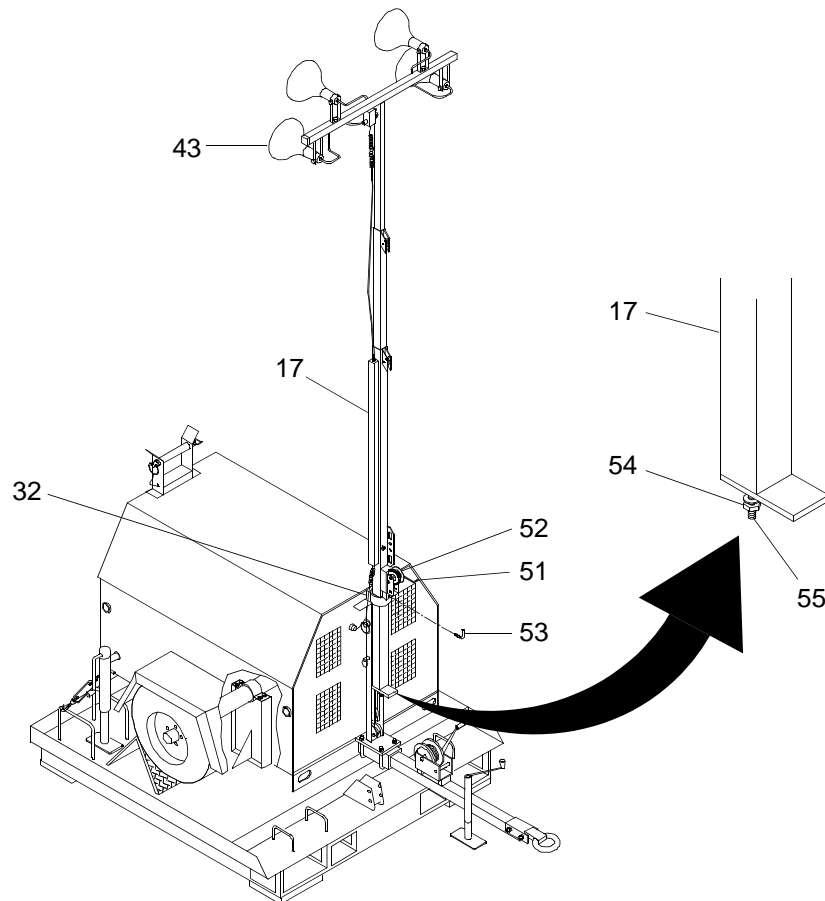
Extend, retract or use in vertical position only with no overhead obstruction within 40 ft. Falling light tower can cause severe injury or death.

NOTE

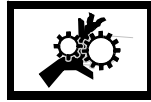
Do not extend tower past upright marks on tower inner and outer tubes.

The following steps are typical for extending tower.

1. With tower (17) in vertical position, turn hand crank (51) on tower winch (52) clockwise to extend tower (17) to approximately 28 ft above pivot support (32) collar.



WARNING

**MOVING PARTS**

2. Loosen bolt (53) on pivot support (32) collar and tower pivot support nut (54) on base stud (55) of tower (17) to rotate tower (17) for aiming lights (43) to desired location.
3. Tighten bolt (53) and tower pivot support nut (54).

NOTE

Tower must be lowered prior to readjusting any light position.

4. If adjustment of lights (43) is necessary, repeat aiming of lights procedure.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
RIGID HULL INFLATABLE BOAT (RHIB)
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Goggles, Industrial (Chipping, Chemical) (Item 26, WP 0116 00)
 Gloves, Rubber, Industrial (Item 24, WP 0116 00)
 Apron, Utility (Item 1, WP 0118 00)
 Pan, Drain (Item 42, WP 0116 00)
 Respirator, Air Filtering (Item 10, WP 0118 00)
 Funnel (Item 5, WP 0118 00)
 Pail, Utility (Item 9, WP 0118 00)

Materials/Parts

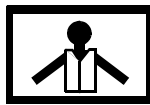
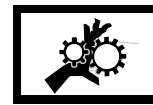
Tape (Item 45, WP 0117 00)
 2 + 4 Fuel Conditioner (Item 1, WP 0117 00)
 Kit, HPF Lube (Item 31, WP 0117 00)
 Carbon Guard (Item 6, WP 0117 00)
 Engine Tuner (Item 16, WP 0117 00)
 Carbon Removing Compound (Item 7, WP 0117 00)
 Lubricating Oil, Engine (Item 34, WP 0117 00)
 Hydraulic Fluid, Petroleum Base (Tilt/Trim and Power Steering) (Item 25, WP 0117 00)
 Gasoline, Unleaded (Item 17, WP 0117 00)
 Spill Clean-Up Kit, Hazardous Material (Item 34, WP 0116 00)

Personnel Required

Seaman 88K (5)

PREPARATION FOR USE - RIGID HULL INFLATABLE BOAT**REMOVE RHIB FROM CONTAINER**

WARNING

**VEST****HELMET PROTECTION****HEAVY PARTS****MOVING PARTS**

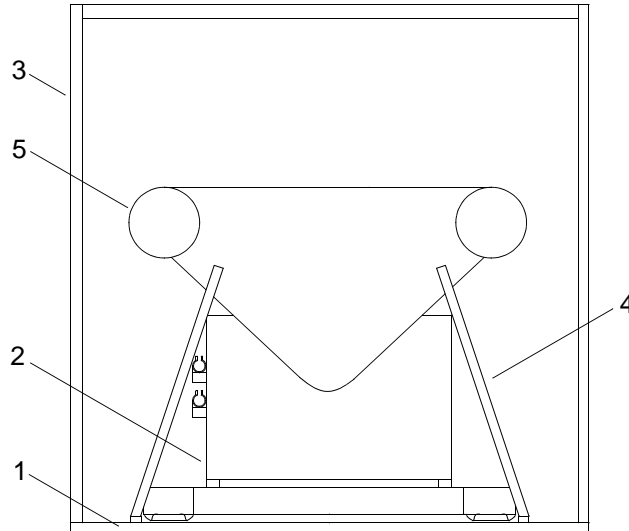
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Unlatch and open container doors.

WARNING

Doors must be secured in the open position. Failure to comply could result in death or injury to personnel.

2. Secure container doors with locking bars, pins or hooks.
3. Remove ratcheting tie down straps (1) attaching pallet (2) to container (3).



WARNING



HEAVY PARTS

4. Using forklift, remove pallet (2) from container (3).
5. Release tie down straps (4) securing RHIB (5) to pallet (2).

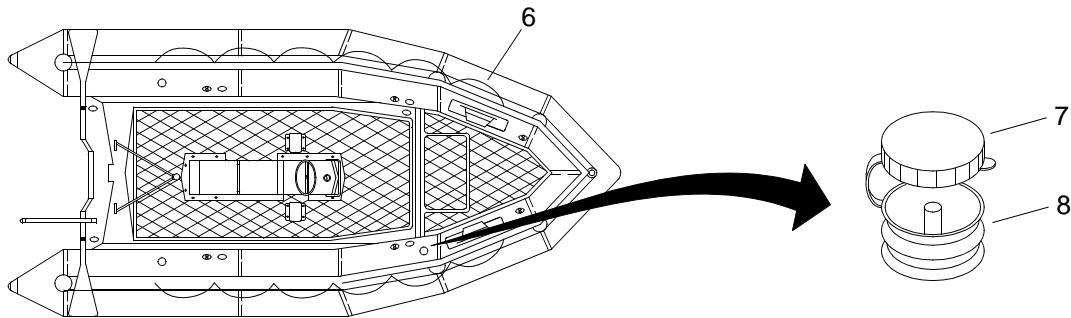
CAUTION

Tubes should be inflated with foot pump only. Tube pressure should be closely monitored if temperature or altitude increases. Overpressure can damage the tube set.

NOTE

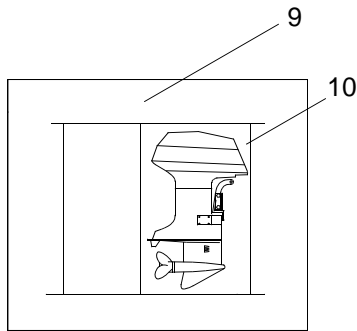
The following steps are typical for the inflation of the left, right and front pontoons.

6. Inflate collar (6) with foot pump.



- a. Remove inflation valve cover (7) by turning counterclockwise one quarter turn.
- b. Ensure valve diaphragm is in closed position by depressing center spindle and turning counterclockwise one quarter turn.
- c. Insert inflation pump hose end (comes with an adaptor) into inflation valve (8) by pushing inward.
- d. Using foot inflation pump and air pressure gage, inflate collar (6) to 2.5 PSI.
- e. Install inflation valve cover (7) to prevent foreign material from entering and possibly damaging inflation valve (8).

7. Using forklift remove toolbox pallet (9) from container (3).



WARNING



HEAVY OBJECTS

8. Using five personnel, remove RHIB motor (10) from tool box pallet (9).

WARNING



HEAVY OBJECTS

9. Install RHIB motor (10) on RHIB (5). Contact unit maintenance.

10. Place RHIB and outboard motor in service. (WP 0110 00)

WARNING



HEAVY PARTS

11. Use warping tug, lift RHIB (5) from pallet (2) and place in water.

WARNING



HEAVY PARTS

12. Using forklift, install pallet (2) in container (3).
13. Secure pallet (2) to container (3) with ratcheting tie down straps (1).
14. Remove locking bars, pins or hooks to close container doors.
15. Close and latch container doors.
16. Stow foot inflation pump on board RHIB (5).
17. Remove shackles and sling from RHIB (5).
18. Verify battery cables are connected to battery.
19. Perform PMCS. (WP 0101 00)

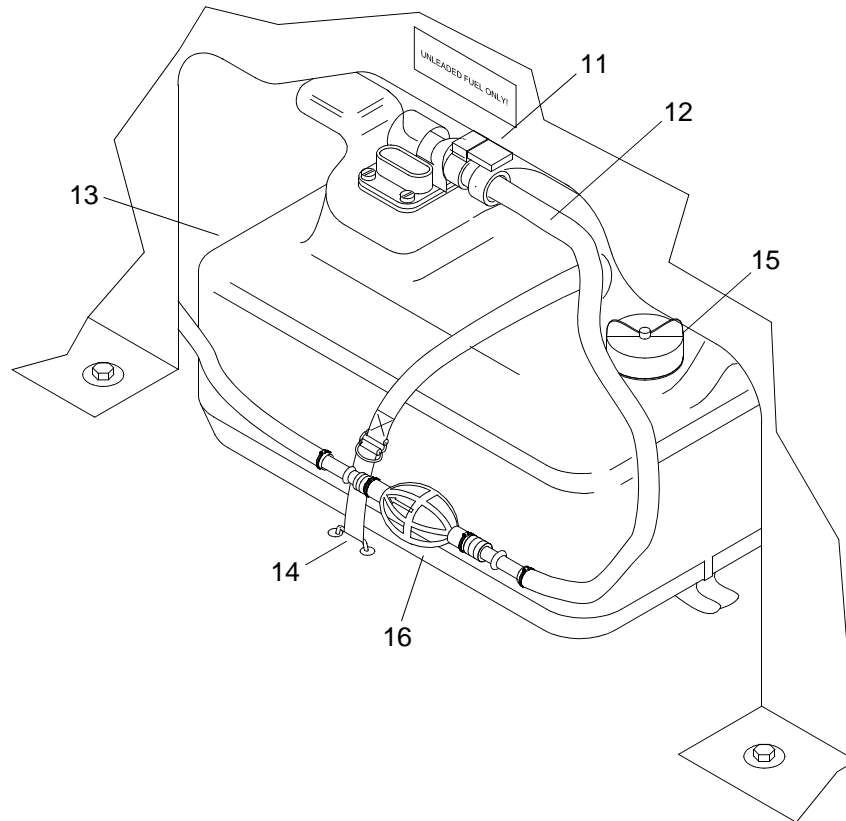
FUEL OUTBOARD MOTOR**WARNING****CHEMICAL****EYE PROTECTION****FIRE****VAPOR**

Do not refuel a running motor. Failure to comply could result in injury or death to personnel.

Never service fuel tanks while installed in the boat. Static electricity could cause an explosion resulting in injury or death to personnel.

Never smoke or allow open flame or sparks nearby when mixing or refueling. Failure to comply could result in injury or death to personnel.

1. Depress fuel hose spring flange (11) and pull back to remove fuel hose (12) from fuel tank (13).

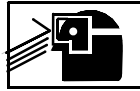


2. Release fuel tank retaining strap (14).
3. Remove fuel tank (13) from RHIB (5).
4. Remove fuel cap (15) from fuel tank (13).

WARNING



CHEMICAL



EYE PROTECTION



FIRE



VAPOR

CAUTION

Do not use ethanol fuel if the ethanol content exceeds 10 percent by volume. Failure to comply could result in damage to motor.

In addition to the oil that is injected into the cylinders, two cycle oil must be added to the fuel tank during motor break-in period or if high performance use is anticipated. Failure to comply could result in engine damage.

5. Mix engine lubricating oil and fuel.
 - a. Mix sixteen ounces of oil for six gallons of gasoline.
 - b. Mix eight ounces of oil for three gallons of gasoline.
 - c. Mix twenty milliliters of oil for each liter of gasoline.
6. Verify fuel and oil are completely mixed.

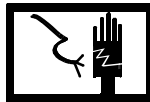
WARNING



CHEMICAL



EYE PROTECTION



ELECTRICAL



EXPLOSION



FIRE

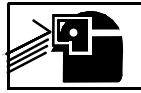


VAPOR

Maintain contact between fuel nozzle and fuel tank or metal funnel while refueling. Never use a plastic funnel while refueling. Static electricity could cause an explosion resulting in injury or death or injury to personnel.

7. Fill fuel tank (13) with gasoline having United States octane rating of 87 and an overseas octane rating of 90 RON.

WARNING

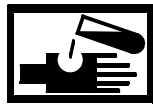
**CHEMICAL****EYE PROTECTION****VAPOR**

CAUTION

**The only additives approved are OMC 2 + 4 Fuel Conditioner and OMC Carbon Guard.
Use of other additives can result in poor engine performance or engine damage.**

8. Add fuel conditioner to fuel to help prevent gum and varnish deposits from forming in fuel system components, remove moisture from the fuel system and during any period when the engine isn't being operated on a regular basis.

WARNING

**CHEMICAL****EYE PROTECTION**

NOTE

Engines with 100 hours of service should be decarbonized with OMC Engine Tuner before using OMC Carbon Guard as a fuel additive.

9. Add carbon guard fuel additive to minimize carbon deposit buildup, reduce piston ring sticking, provide better overall performance and contribute to increased engine life.
10. Install fuel tank cap (15).
11. Install fuel tank (13) in RHIB.
12. Secure fuel tank (13) with retaining strap (14).
13. Depress spring flange (11), push fuel hose (12) on fuel tank (13) and release spring flange (11).
14. Squeeze fuel tank primer bulb (16) until fuel hose (12) is purged of air.

SERVICE OUTBOARD MOTOR OIL RESERVOIR

WARNING



EYE PROTECTION



CHEMICAL



VAPOR

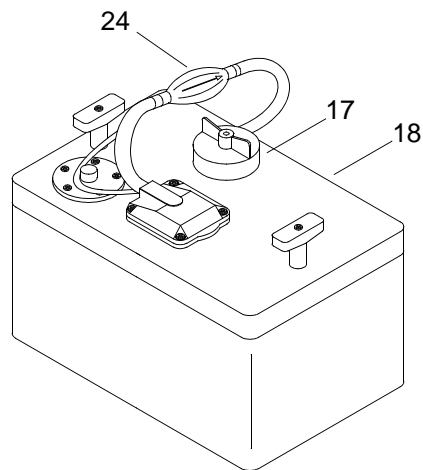
CAUTION

The oil injection system must be primed before priming the fuel system. Damage to engine could occur if oil injection system is not primed.

Any time the oil injection hose is disconnected, use a 50:1 fuel/oil mixture in the fuel tank until the oil injection system is verified to be operating properly. Failure to provide oil to the motor could cause engine damage.

To avoid serious powerhead damage, ensure that the oil tank is installed in a location that does not allow constant exposure to sunlight, rain, bilge water or spray. Periodically inspect the oil tank for presence of water. Water in the oil could cause engine damage.

1. Test oil injection system.
 - a. Remove oil filler cap (17).



WARNING



EYE PROTECTION



CHEMICAL



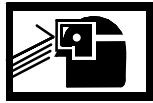
VAPOR

- b. Fill oil tank (18).

NOTE

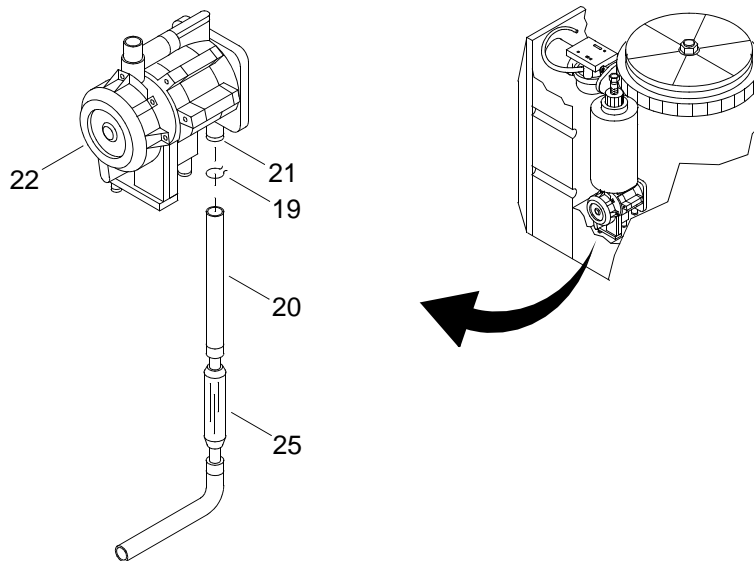
Placing tape on oil tank will be used as a reference during operation to verify that the oil injection system is operating properly.

- c. Place a piece of tape on oil tank (18) to mark oil level.
2. Install oil filler cap (17).

WARNING**EYE PROTECTION****CHEMICAL****VAPOR**

3. Prime oil system.

- a. Loosen clamp (19) securing oil injection hose (20) to oil fitting (21) on engine oil pump (22).

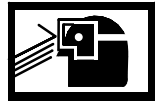
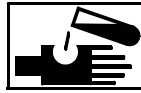


- b. Position a drain pan under engine oil pump (22).

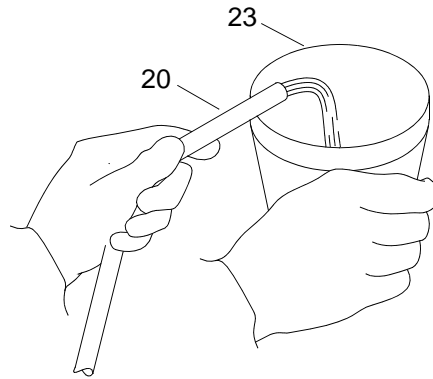
WARNING**EYE PROTECTION****CHEMICAL****VAPOR**

- c. Remove oil injection hose (20) from oil fitting (21) on engine oil pump (22).

WARNING

**EYE PROTECTION****CHEMICAL****VAPOR**

- d. Place open end of the oil injection hose (20) in utility pail (23).



WARNING

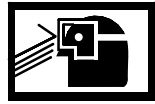
**EYE PROTECTION****CHEMICAL****VAPOR**

- e. With outlet end up, squeeze oil fill bulb (24) repeatedly until about eight ounces of oil have been pumped and oil injection hose (20) is purged of air.
- f. Feed oil injection hose (20) through oil tank cover and install on oil fitting (21).
- g. Install clamp (19) and tighten around oil injection hose (20) and oil fitting (21) to provide an air tight connection.

WARNING

**EYE PROTECTION****CHEMICAL****VAPOR**

- h. Prime oil system by squeezing oil fill bulb (24) until oil is visible in sight tube (25).
4. Prime fuel system by squeezing the fuel tank primer bulb (16) until firm to prime fuel hose (12).

WARNING

EYE PROTECTION



CHEMICAL



VAPOR

- Remove drain pan and utility pail, dispose of contents per local procedures.

WARNING

CHEMICAL



EYE PROTECTION



VAPOR



SLICK FLOOR

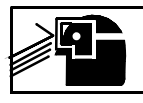
- Clean up spilled fluid with spill kit and dispose of spill kit waste per local procedures.

SERVICE GEARCASE

- Place engine in normal operating position.

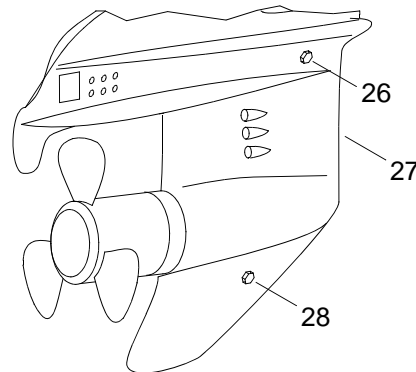
WARNING

CHEMICAL



EYE PROTECTION

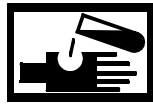
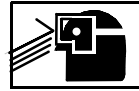
- Remove lubricant level plug (26) from side of gearcase (27).

**NOTE**

Check the color of the lubricant. If lubricant appears milky, water is leaking into the lower gearbox. Contact unit maintenance if problem exists.

- Ensure lubricant level reaches bottom of lubricant level plug (26) hole.
- If lubricant is required, position a drain pan under drain/fill plug (28).

WARNING

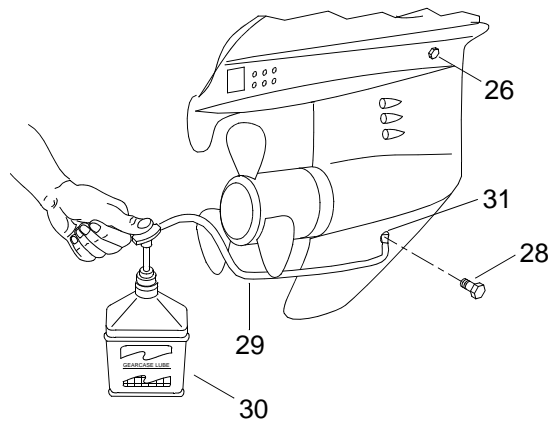
**CHEMICAL****EYE PROTECTION**

- Remove drain/fill plug (28).

WARNING

**CHEMICAL****EYE PROTECTION**

- Install tube (29) from gearcase lube bottle (30) in drain/fill plug hole (31) and fill slowly until lubricant appears at lubricant level plug (26) hole.

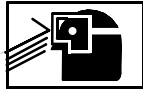


- Install lubricant level plug (26) and tighten.
- Remove lubricant bottle tube (29) from drain/fill plug hole (31).
- Install drain/fill plug (28) and tighten.

WARNING

**EYE PROTECTION****CHEMICAL****VAPOR**

- Remove drain pan and dispose of contents per local procedures.

WARNING**CHEMICAL****EYE PROTECTION****VAPOR****SLICK FLOOR**

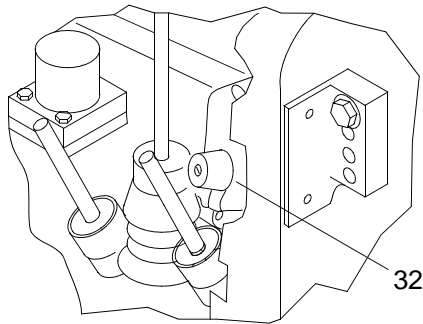
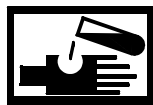
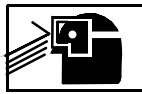
11. Clean up spilled fluid with spill kit and dispose of spill kit waste per local procedures.

SERVICE POWER TRIM/TILT RESERVOIR

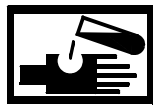
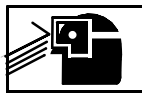
1. Tilt motor up fully and engage tilt support.
2. Position drain pan under trim/tilt reservoir filler cap (32).

WARNING**CHEMICAL****EYE PROTECTION**

3. Remove trim/tilt reservoir filler cap (32).

**WARNING****CHEMICAL****EYE PROTECTION**

4. Ensure fluid level is even with bottom of filler cap (32) hole when motor is fully tilted.

WARNING**CHEMICAL****EYE PROTECTION**

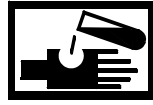
5. Add trim/tilt and power steering fluid as necessary.

6. Install power trim/tilt reservoir filler cap (32) and tighten.

WARNING



EYE PROTECTION



CHEMICAL



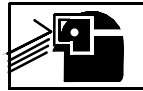
VAPOR

7. Remove drain pan and dispose of contents per local procedures.

WARNING



CHEMICAL



EYE PROTECTION



VAPOR

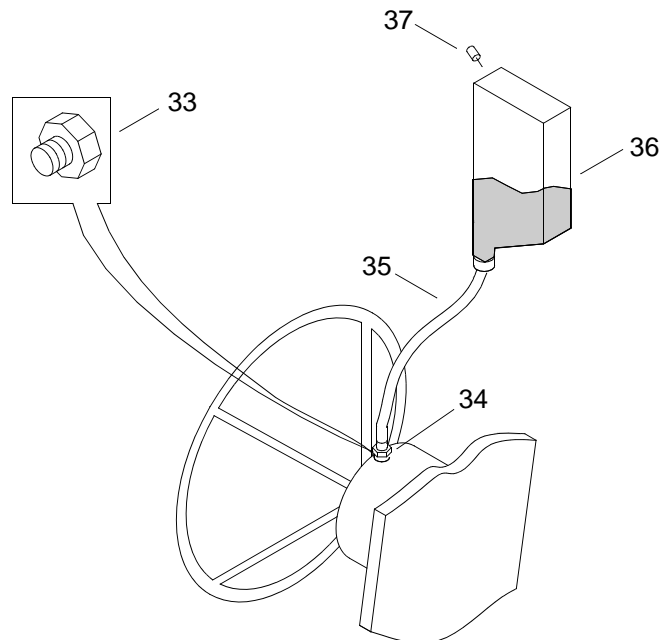


SLICK FLOOR

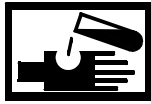
8. Clean up spilled fluid with spill kit and dispose of spill kit waste per local procedures.

SERVICE POWER STEERING RESERVOIR

1. Position a drain pan under helm power steering oil filler cap (33).



WARNING

**CHEMICAL****EYE PROTECTION**

The helm power steering reservoir is under pressure. Remove cap slowly. Failure to comply will result in injury to personnel.

2. Remove helm power steering oil filler cap (33).

WARNING

**CHEMICAL****EYE PROTECTION**

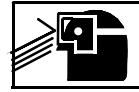
3. Ensure fluid level is at bottom of power steering oil filler plug (34) hole.

CAUTION

Never use brake fluid in place of power steering fluid. Any non-approved fluid may cause damage to power steering components and loss of steering.

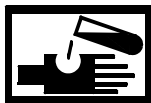
4. Screw threaded end of filler tube (35) into helm power steering reservoir filler plug hole (34).

WARNING

**CHEMICAL****EYE PROTECTION**

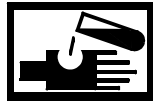
5. Remove cap from power trim/tilt and power steering fluid bottle (36) hold upright and screw filler tube (35) into power steering fluid bottle (36).

WARNING

**CHEMICAL****EYE PROTECTION**

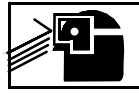
6. Invert power steering fluid bottle (36) and poke a hole in bottom of bottle with a push pin (37).

WARNING

**CHEMICAL****EYE PROTECTION**

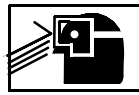
7. Fill helm power steering reservoir to bottom of power steering oil filler plug (34) hole.

WARNING

**CHEMICAL****EYE PROTECTION**

8. Position power steering fluid bottle (36) upright over drain pan.
9. Remove threaded end of filler tube (35) from helm power steering reservoir filler plug (34) hole.
10. Install helm power steering reservoir filler plug (33) and tighten.

WARNING

**CHEMICAL****EYE PROTECTION**

11. Remove drain pan and dispose of contents per local procedures.

WARNING

**CHEMICAL****EYE PROTECTION****SLICK FLOOR**

12. Clean up spilled fluid with a spill kit and dispose of spill kit waste per local procedures.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
MOORING SEALIFT VESSEL PLATFORM
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)

Personnel Required

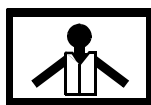
Seaman 88K

Equipment Condition

Mooring Bitts And Quick Disconnects Installed. (WP 0017 00)
 5 ft By 10 ft Fenders Installed. (WP 0021 00)
 6 ft By 12 ft Fenders Installed. (WP 0022 00)

OPERATING PROCEDURES - MOORING SEALIFT VESSEL PLATFORM**TYPICAL SIDE CONFIGURATION MOORING**

WARNING



VEST



HELMET PROTECTION



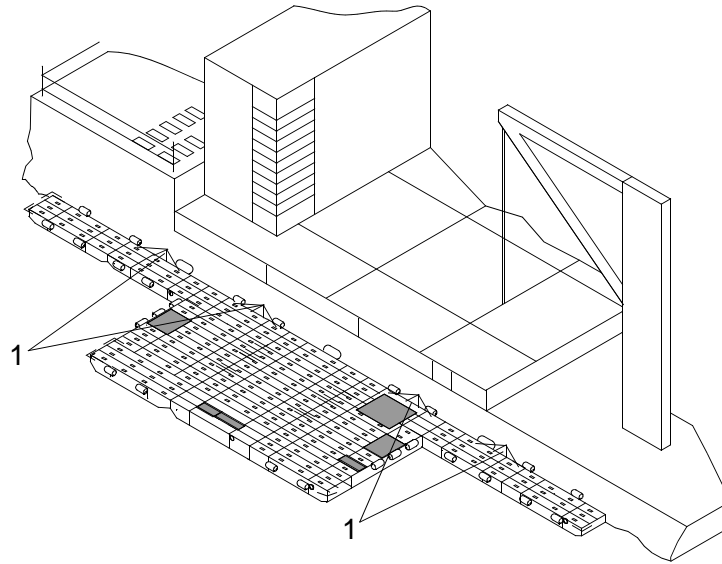
HEAVY PARTS



MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

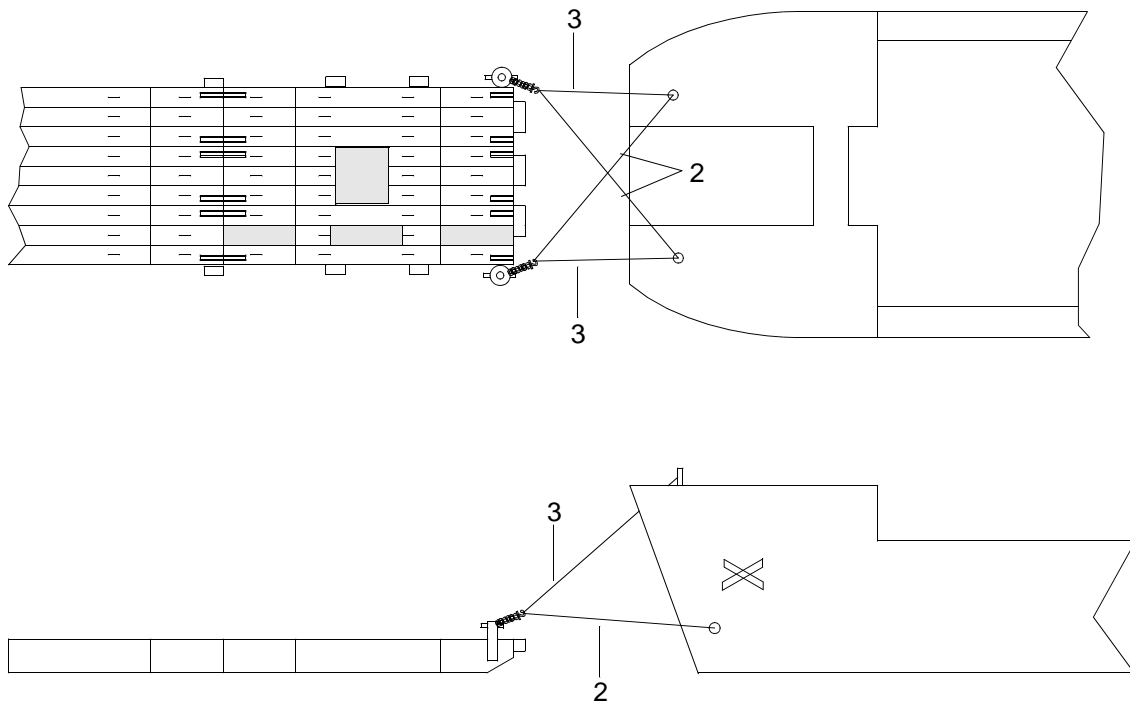
1. Remove mooring lines (1) from BII container.
2. Attach mooring lines (1) to quick disconnects and mooring bitts on RRDF.



3. Attach mooring lines (1) to side of vessel.

TYPICAL STERN CONFIGURATION MOORING

1. Attach mooring lines (2, 3) to quick disconnects and mooring bitts on RRDF.



2. Attach lower mooring lines (2) to opposite mooring points on vessel in crisscross pattern.
3. Attach diagonal mooring lines (3) to same side mounting points on vessel.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
EASY MOORING SYSTEM (EASY)
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:

Tools

- Tool Kit, General Mechanic's (Item 70, WP 0116 00)
- Life Preserver, Vest (Item 71, WP 0116 00)
- Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
- Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
- Helmet, Safety (Brown) (Item 30, WP 0116 00)
- Forklift Adaptor (Item 1, WP 0116 00)
- Sling, Lifting, 5,300 lb (Green) (Item 57, WP 0116 00)

Personnel Required

Seaman 88K

Equipment Condition

EASY Container Installed. (WP 0028 00)

OPERATING PROCEDURES - INSTALL EASY MOORING ASSEMBLY

WARNING



VEST



HELMET PROTECTION



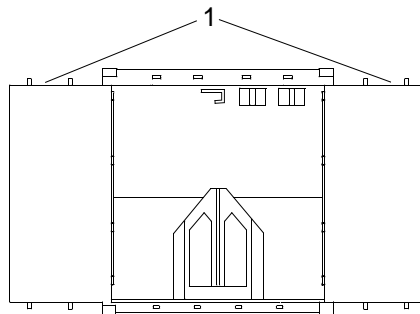
HEAVY PARTS



MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

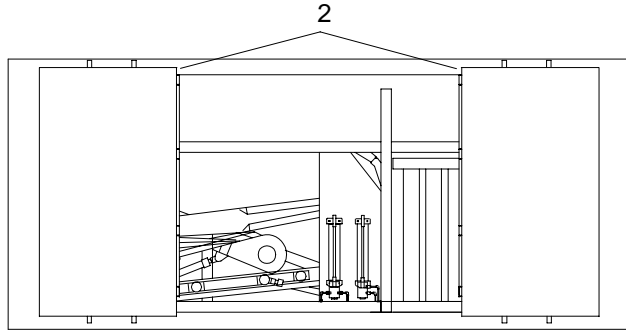
1. Unlatch and open anchor end doors (1).



WARNING

Doors must be secured and latched in the open position. Failure to comply could result in injury to personnel.

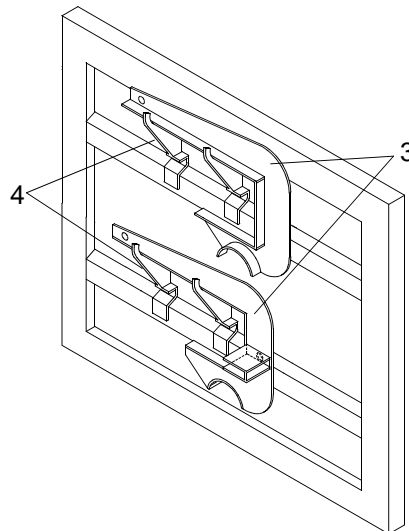
2. Secure anchor end doors (1) open with locking bars and pins.
3. Unlatch and open container pump side doors (2).



WARNING

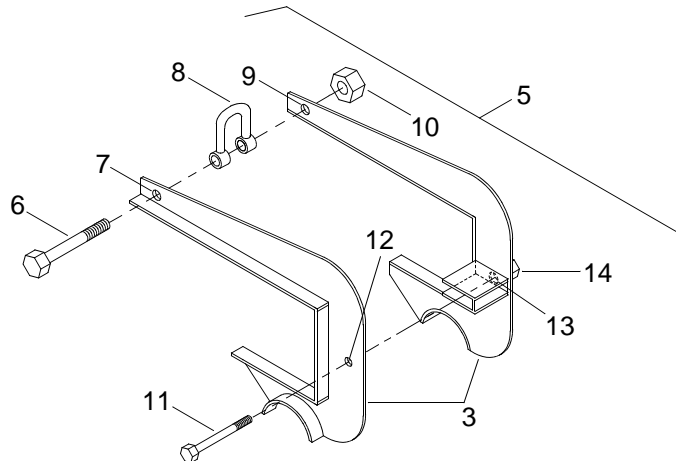
Doors must be secured and latched in the open position. Failure to comply could result in injury to personnel.

4. Secure pump side doors (2) with locking hooks.
5. Cut tie downs and remove two lifting device assembly halves (3) from container side door brackets (4).

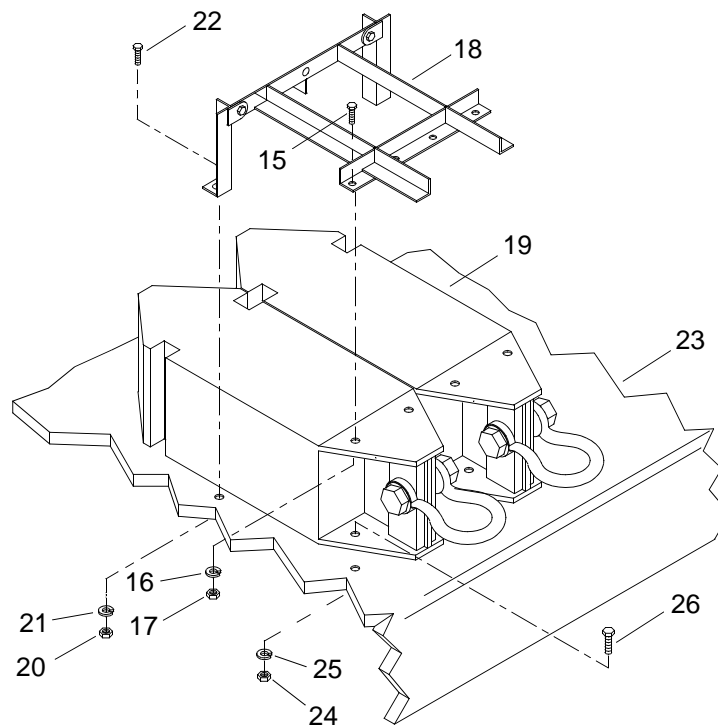


6. Remove lifting device assembly parts from toolbox.
7. Assemble lifting device assembly (5).

- a. Insert bolt (6) through left long leg hole (7), shackle (8) and right long leg hole (9).

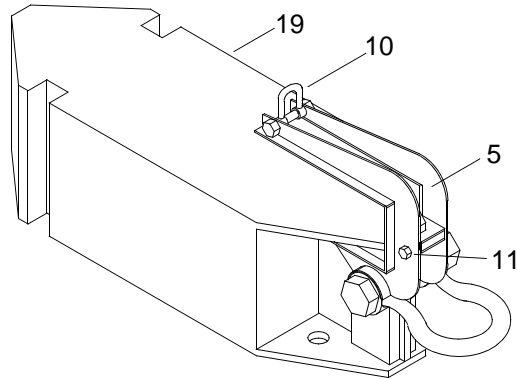


- b. Install lock nut (10) on end of bolt (6). Do not tighten nut (10).
 - c. Insert bolt (11) through left short leg hole (12) and right short leg hole (13).
 - d. Thread bolt (11) into nut (14). Do not tighten bolt (11).
8. Remove four bolts (15), lock washers (16) and upper nuts (17) securing flexor receiver insert retaining bracket (18) to two flexor receiver inserts (19).



9. Remove two lower nuts (20), lock washers (21) and bolts (22) securing flexor receiver insert retaining bracket (18) to upper shelf of container (23).
10. Remove four nuts (24), lock washers (25) and bolts (26) securing two flexor receiver inserts (19) to upper shelf of container (23).

11. Position lifting device assembly (5) over end of flexor receiver insert (19) and tighten lock nut (10) and bolt (11).

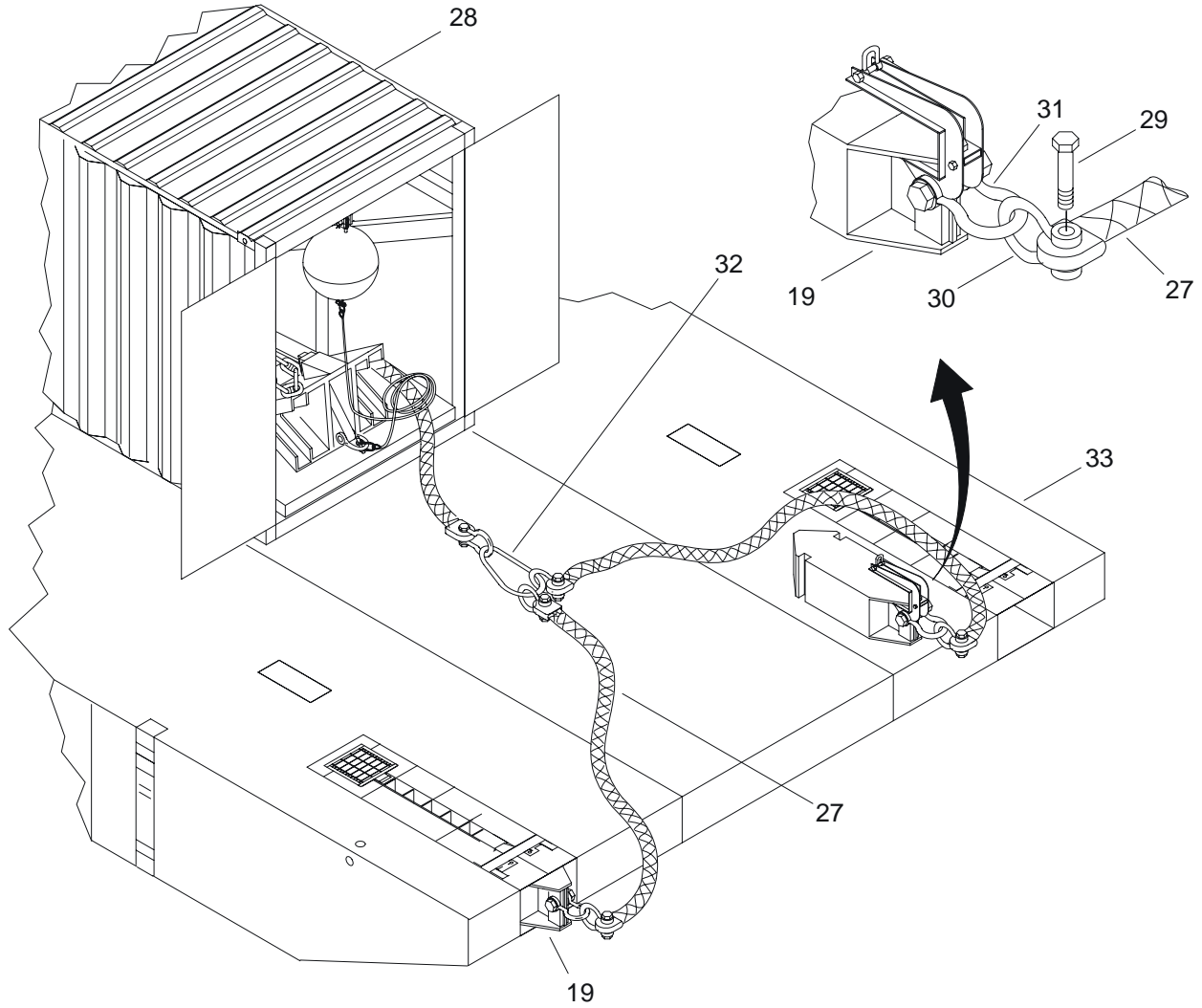


WARNING

**HEAVY PARTS**

12. Using forklift, forklift adaptor, sling and lifting device assembly (5), remove flexor receiver insert (19) and place on RRDF platform.
13. Loosen lock nut (10) and bolt (11) and remove lifting device assembly (5) from flexor receiver insert (19).
14. Repeat steps 11 through 13 for other flexor receiver insert (19).

15. Remove legs of mooring bridle (27) from container (28).



16. Place legs of mooring bridle (27) on RRDF deck near both flexor receiver inserts (19).

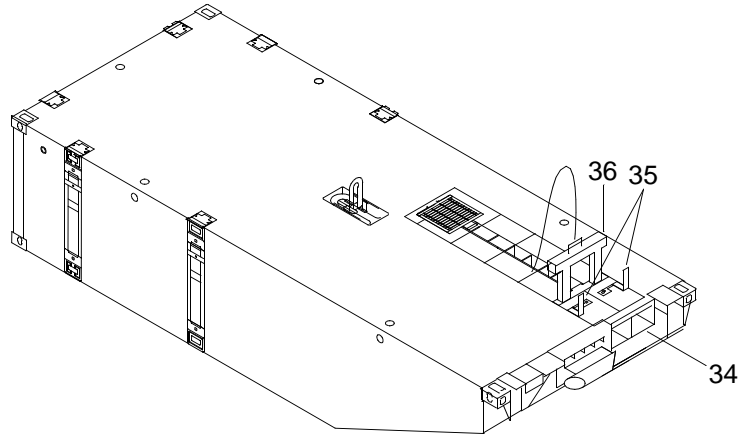
17. Remove pin (29) and shackle (30) from end of each leg of mooring bridle (27).

18. Attach shackle (30) and pin (29) to flexor receiver insert shackle (31).

NOTE

This step is typical for installation of flexor receiver inserts.

19. Install flexor receiver insert (19) in flexor receiver (34).
 - a. Secure a tag line between pear link (32) and RRDF deck to prevent slippage of mooring bridle (27) overboard.
 - b. Rotate chute bolts (35) and pull to unlocked position.



- c. Using crowbar, remove guillotine (36).
 - d. Position lifting device assembly (5) over end of flexor receiver insert (19) and tighten lock nut (10) and bolt (11).

WARNING

**HEAVY PARTS**

- e. Using a forklift, forklift adaptor, sling and lifting device assembly (5), install flexor receiver insert (19) in flexor receiver (34).
 - f. Insert guillotine (36).
 - g. Using a sledgehammer, drive guillotine (36) down into flexor receiver insert (19) slot.
 - h. Push chute bolts (35) to locked position and rotate to closed position.
 - i. Loosen lock nut (10), bolt (6) and bolt (11).
 - j. Remove lifting device assembly (5) from first flexor receiver insert (19).
20. Position lifting device assembly (5) over end of second flexor receiver insert (19) and tighten lock nut (10) and bolt (11).
21. Repeat step 19 for second flexor receiver insert (4).

-
22. Stow flexor lifting device (5) in container toolbox for use during EASY recovery.
 23. Remove locking hooks and close pump side doors (2).
 24. Latch and secure pump side doors (2).
 25. Remove locking bars and pins to close anchor end doors (1).
 26. Latch and secure anchor end doors (1).

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
GENERATOR CONTAINER BASE FUEL TANK
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Goggles, Industrial (Chipping, Chemical) (Item 26, WP 0116 00)
 Gloves, Rubber, Industrial (Item 24, WP 0116 00)

Materials/Parts

Spill Clean-Up Kit, Hazardous Material (Item 34, WP 0116 00)

Personnel Required

Seaman 88K

References

TM 9-6115-642-10

Equipment Condition

Generator Running

OPERATING PROCEDURES - REFUEL GENERATOR CONTAINER BASE FUEL TANK

WARNING



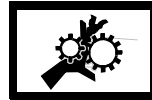
VEST



HELMET PROTECTION



HEAVY PARTS



MOVING PARTS



EXPLOSION



FIRE

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

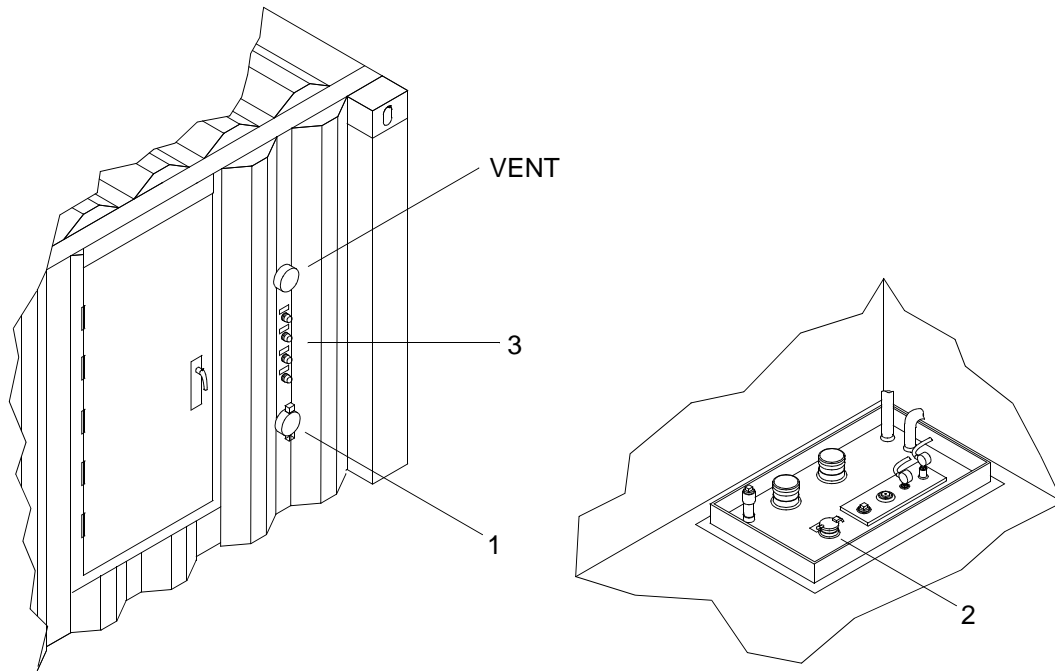
The following procedure is typical for refueling both outside and inside fill ports.

1. Before fueling, check the base tank fuel level.
2. Service base fuel tank with specified fuel. (TM 9-6115-642-10)

WARNING

The generator container, generator and fuel nozzle must be grounded before beginning refueling operation. Failure to observe these precautions could result in serious injury or death.

3. Attach fuel nozzle to fill port (1) or (2).



WARNING



EXPLOSION

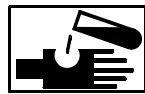


FIRE

Smoking is not permitted during refueling operations. Failure to observe these precautions could result in explosion and/or fire causing serious injury or death to personnel and/or damage to equipment.

4. While observing the four indicator lights (3), fill tank until fuel reaches desired level.
5. Detach fuel nozzle from fill port (1) or (2).

WARNING



CHEMICAL



EYE PROTECTION



SLICK FLOOR

6. Clean up spilled fluid with a spill kit and dispose of spill kit waste per local procedures.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
GENERATOR CONTAINER, TRANSFERRING FUEL FROM
GENERATOR CONTAINER BASE FUEL TANK TO DAY FUEL TANK
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Goggles, Industrial (Chipping, Chemical) (Item 26, WP 0116 00)
 Gloves, Rubber, Industrial (Item 24, WP 0116 00)
 Protector, Hearing (Item 44, WP 0116 00)

Materials/Parts

Spill Clean-Up Kit, Hazardous Material (Item 34, WP 0116 00)

Personnel Required

Seaman 88K

References

TM 9-6115-642-10

**OPERATING PROCEDURES - TRANSFERRING FUEL FROM GENERATOR CONTAINER
BASE FUEL TANK TO DAY FUEL TANK**

WARNING



VEST



HELMET PROTECTION



HEAVY PARTS



MOVING PARTS



EAR PROTECTION

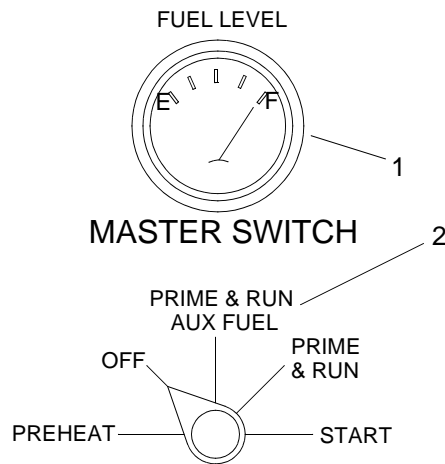
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

TRANSFER FUEL ELECTRICALLY**NOTE**

Operation of the electric (24 VDC) fuel pump is preset to automatically transfer fuel from the base tank to the day tank with the generator control panel master switch.

Running generator with master switch in PRIME & RUN position will not automatically refuel day tank.

1. Verify level of fuel in day tank on fuel gauge (1).



- If fuel level is low, rotate master switch to PRIME & RUN AUX FUEL position (2).

TRANSFER FUEL MANUALLY

WARNING



FIRE



EXPLOSION

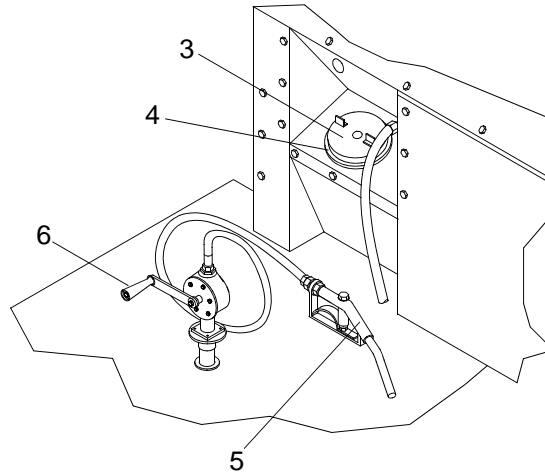
Fire extinguisher and spill kit must be present during transfer of fuel from base tank to day tank. Failure to comply could result in injury to personnel.

NOTE

The hand pump can pump 10 gallons of fuel per minute, approximately 100 revolutions of handle.

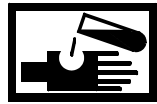
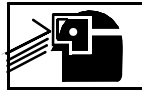
- If running, shut down generator. (TM 9-6115-642-10)
- Remove cap (3) from generator fuel inlet (4).
- Insert manual fuel pump nozzle (5) in generator fuel inlet (4).

4. While depressing handle on manual fuel pump nozzle (5), turn rotary hand pump handle (6) clockwise to transfer fuel.



5. While observing generator control panel fuel gauge (1), fill tank until fuel reaches desired level.
6. Release handle and remove manual fuel pump nozzle (5).
7. Install and tighten cap (3) on generator fuel inlet (4).
8. Check for fuel leaks.

WARNING

**CHEMICAL****EYE PROTECTION****SLICK FLOOR**

9. Clean up spilled fluid with a spill kit and dispose of spill kit waste per local procedures.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
GENERATOR CONTAINER FIRE SUPPRESSION SYSTEM
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Goggles, Industrial (Chipping, Chemical) (Item 26, WP 0116 00)
 Gloves, Rubber, Industrial (Item 24, WP 0116 00)
 Protector, Hearing (Item 44, WP 0116 00)
 Respirator, Air Filtering (Item 10, WP 0118 00)
 Apron, Utility (Item 1, WP 0118 00)

Personnel Required

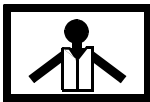
Seaman 88K

Equipment Condition

Generator Shutdown. (TM 9-6115-642-10)

**OPERATING PROCEDURES - OPERATE GENERATOR CONTAINER FIRE
SUPPRESSION SYSTEM**

WARNING



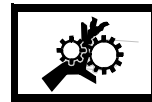
VEST



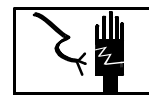
HELMET PROTECTION



HEAVY PARTS



MOVING PARTS



ELECTRICAL

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

Fire in protected compartments or accidental activation of the CO₂ system while personnel occupy compartment could result in loss of life if CO₂ is released. Personnel must listen for siren, recognize its sound and evacuate space immediately (within 20 seconds).

Do not depress fire suppression control head lever during normal maintenance. Death or injury to personnel could occur if CO₂ is inhaled.

Prior to entering the shelter after discharge of CO₂, the shelter shall be completely cleared of any CO₂ that may remain. Death or injury to personnel could occur if CO₂ is inhaled.

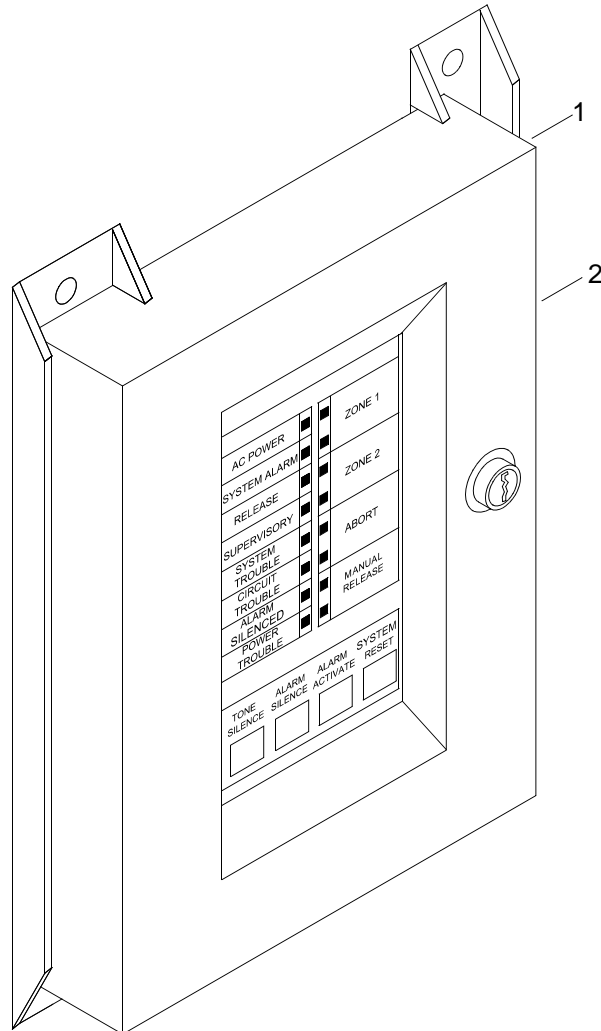
Ensure generator power is secured using proper lock-out/tag-out procedure.

VERIFICATION OF DUAL INLINE PACKAGE (DIP) SWITCH POSITIONS

NOTE

The fire alarm control panel key is located in the generator storage box.

1. On fire alarm control panel (1), unlock and open front cover (2).



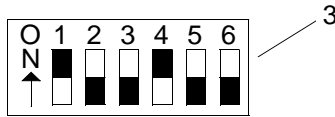
WARNING

The DIP switches are preset by the operator prior to operation of generator. Repositioning of the DIP switches will cause loss of 20 second time delay. Loss of 20 second time delay could cause death or injury to personnel.

NOTE

DIP switches are located under cover below "Alarm Activate" and "System Reset" buttons.

2. Verify DIP switches (3) are in following positions.



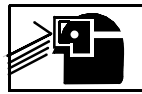
- DIP switch 1 (Cross Zone) set to on.
- DIP switch 2 (Supervisory) set to off.
- DIP switch 3 (Delay Timer) set to off.
- DIP switch 4 (Delay Timer) set to on.
- DIP switch 5 (Abort Option) set to off.
- DIP switch 6 (Abort Option) set to off.

CONNECT POWER LEADS TO INTERNAL BATTERIES

WARNING



CHEMICAL



EYE PROTECTION



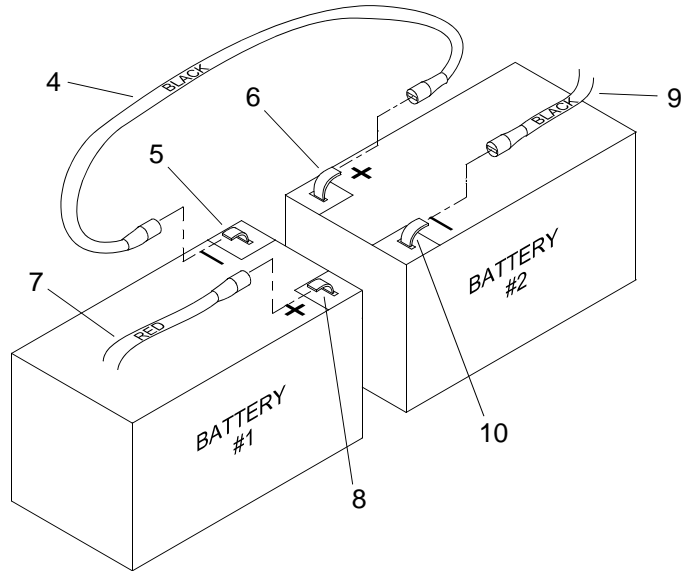
VAPOR

- Install black jumper wire (4) between battery #1 negative terminal (5) and battery #2 positive terminal (6).

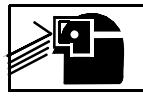
WARNING

**CHEMICAL****EYE PROTECTION****VAPOR**

2. Connect red primary battery lead (7) to battery #1 positive terminal (8).



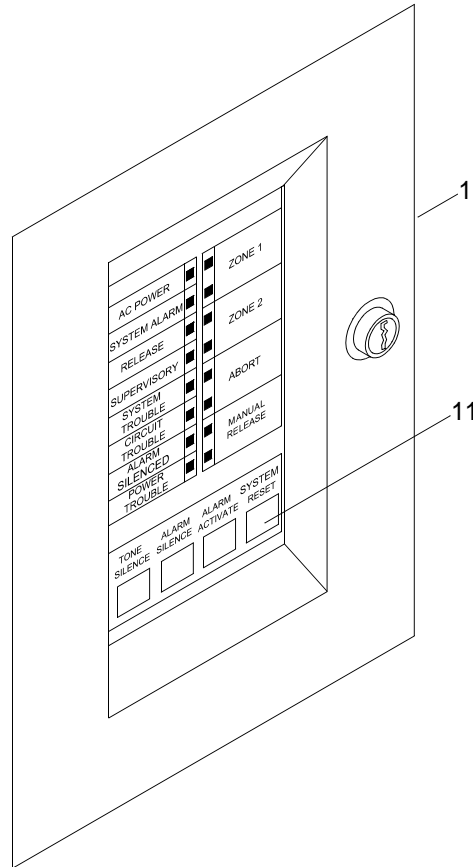
WARNING

**CHEMICAL****EYE PROTECTION****VAPOR**

3. Connect black primary battery lead (9) to battery #2 negative terminal (10).
4. Close and lock front cover (2).

TEST FIRE ALARM CONTROL PANEL LAMPS AND SOUNDER

1. Locate fire alarm control panel (1).



WARNING

**EAR PROTECTION**

2. Press and hold SYSTEM RESET button (11) to illuminate LED indicators and activate sounder.
3. Refer to troubleshooting procedures if light or sounder is inoperative. (WP 0086 00)

CANCEL ACTIVATED ALARM AND REINITIALIZE CONTROL MODULE**NOTE**

If an alarm or trouble condition still exists after pressing the SYSTEM RESET button, the alarm control panel will reactivate.

1. Locate fire alarm control panel (1).
2. Press SYSTEM RESET button (11) before fire suppression is released.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
PERSONNEL SHELTER VHF/FM HANDHELD TRANSCEIVER
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)

Personnel Required

Seaman 88K

OPERATING PROCEDURES - OPERATE THE VHF/FM HANDHELD TRANSCEIVER**INITIAL SETUP OF VHF/FM HANDHELD TRANSCEIVER**

WARNING



VEST



HELMET PROTECTION



HEAVY PARTS



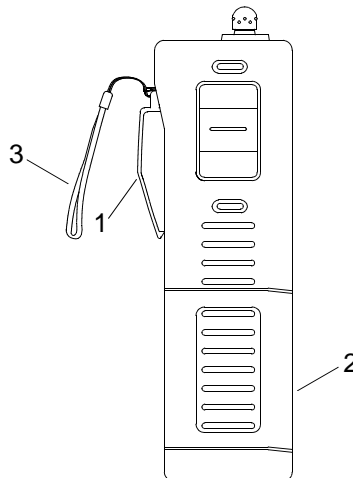
MOVING PARTS



EXPLOSION

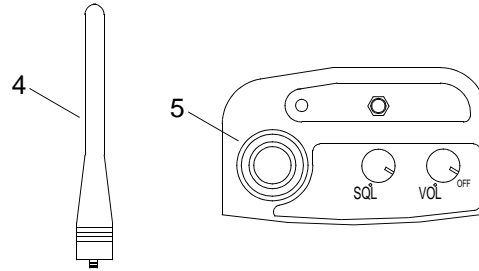
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Install belt clip (1) on transceiver (2), if desired.



2. Install nylon strap (3) on belt clip (1), if desired.

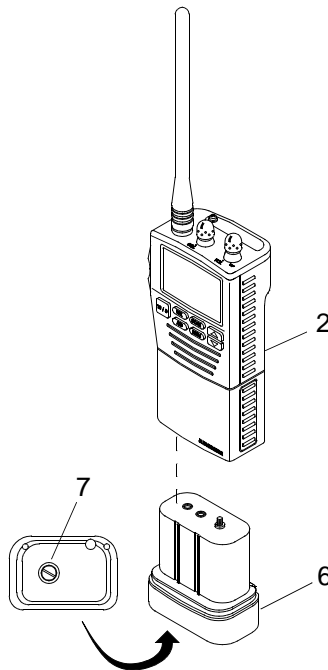
3. Install antenna (4) in transceiver antenna receptacle (5).



WARNING

A metal object shorting the terminals may cause the battery to explode. Failure to observe this precaution could result in serious injury or death.

4. Install CNB350 nickel cadmium battery pack (6) in transceiver (2).



- a. Slide battery pack (6) into battery cavity.
- b. Rotate battery lock screw (7) clockwise and tighten.

BATTERY CHARGING

WARNING

Shorting the battery terminals that charge the transceiver can cause sparks, severe overheating, burns and battery damage. Do not place an uninstalled battery pack in the vicinity of metal objects that may short the terminals. Failure to observe this precaution could result in serious injury or death.

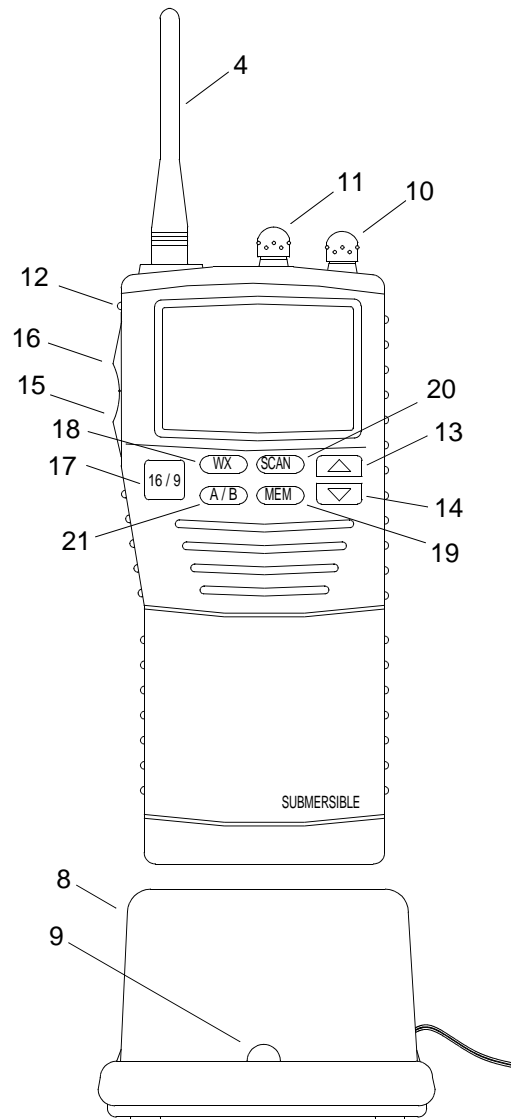
NiCad batteries must be disposed of per local procedures. Battery may explode if incinerated, causing injury or death. Contact unit supply for proper disposal instructions.

CAUTION

Never plug the power supply to the CCA250 charge adaptor except with a CAW240, CWC230 or CWC232 adaptor. Damage to power supply could occur.

Charging the transceiver battery for more than 16 hours with the battery charge system can shorten battery life and cause other components to fail. Battery packs may be left in the CSA280 chargers without harm to either the battery pack or charger.

1. Turn transceiver (2) to off position.
2. Insert transceiver (2) into charger (8) to light charge indicator (9) and to begin charging.



3. Remove transceiver (2) from charger (8) when battery charge time has elapsed.

TURNING RADIO ON

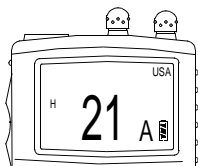
CAUTION

Never key the transceiver without the antenna attached. Damage to the transceiver will occur.

NOTE

Water resistance of the transceiver is assured only when the battery pack and antenna are attached to the transceiver.

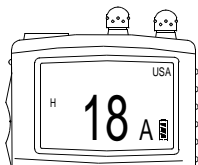
1. Turn POWER/VOLUME knob (10) clockwise.



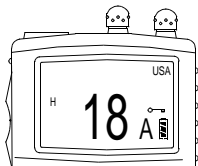
2. Rotate SQUELCH CONTROL knob (11) fully counterclockwise to SQUELCH OFF position.
3. Rotate POWER/VOLUME CONTROL knob (10) until noise or audio from the speaker can be heard.
4. Select a channel that has no voice transmissions occurring.
5. To find squelch threshold, rotate SQUELCH CONTROL knob (11) clockwise until noise stops.
6. To turn on radio light for 5 seconds, press LAMP key (12).
7. To turn off light sooner than 5 seconds, press LAMP key (12).

RECEIVING RADIO TRANSMISSIONS

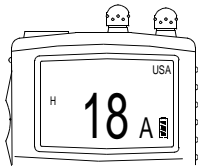
1. Press UP ARROW key (13) or DOWN ARROW key (14) to change channels.



2. Press LAMP/KEY LOCK key (12) for one second to lock channel in operating mode.
3. Ensure that key lock symbol appears on display to indicate that channel is locked.

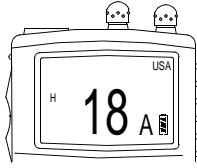


4. To unlock channel, press LAMP/KEY LOCK key (12) for one second.
5. Ensure that the key lock symbol disappears from display to indicate that channel is unlocked.

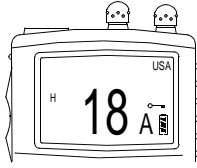


TRANSMITTING

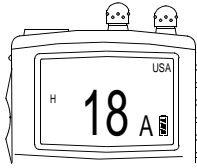
1. Press UP ARROW key (13) or DOWN ARROW key (14) to change channels.



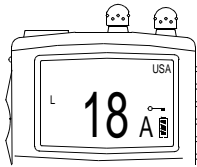
2. Adjust squelch as required.
3. Press LAMP/KEY LOCK key (12) for one second to lock channel in operating mode.



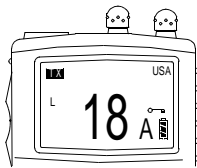
4. To unlock channel, press LAMP/KEY LOCK key (12) for one second.



5. Press H/L key (15) until L is displayed for transmissions over a short distance.



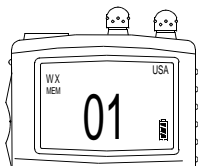
6. If low power is not effective, press H/L key (15) until H is displayed.
7. Press PTT switch (16) to transmit.



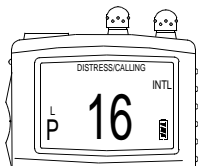
8. Release PTT switch (16) when transmission is completed.

OPERATING MODES

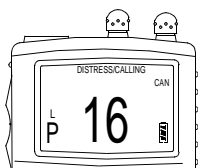
1. To access USA operating mode, hold down 16/9 key (17) and press WX key (18) to change mode of receiver to USA.



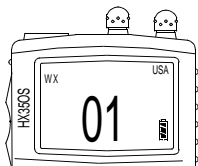
2. To access INTERNATIONAL operating mode, hold down 16/9 key (17) and press WX key (18) to change mode of receiver to INTL.



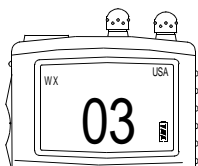
3. To access CANADIAN operating mode, hold down 16/9 key (17) and press WX key (18) to change mode of receiver to CAN.


NOAA WEATHER CHANNELS

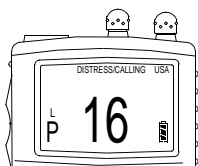
1. Press WX key (18) to receive a weather channel.



2. Press UP ARROW key (13) or DOWN ARROW key (14) to change to other weather channels.

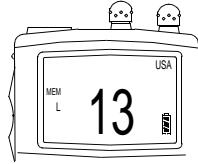


3. Press WX key (18) to exit from weather channels and return to the previous non-weather channel.



SCANNING

1. Select desired channel to be scanned using UP ARROW key (13) or DOWN ARROW key (14).
2. Press MEM key (19) to store channel into transceiver's memory.



3. Repeat steps one and two until all channels to be scanned are stored in transceiver's memory.
4. Press SCAN key (20) to start scan.
5. Press SCAN key (20) to stop scan.

DELETE SCAN MEMORY

1. To delete a channel from the transceiver's scan memory, select desired channel using UP ARROW key (13) or DOWN ARROW key (14).
2. Press MEM key (19) while channel number to be deleted from scan memory is displayed.
3. Delete complete scan memory by resetting transceiver's microprocessor.
 - a. Turn transceiver off using POWER/VOLUME knob (10).
 - b. To return to factory default settings, press SCAN key (20) and WX key (18) while turning on transceiver.

PRIORITY SCAN

1. To change from channel 16 to channel 09 and set the priority channel, hold down 16/9 key (17) and press MEM key (19).
2. Press MEM key (19) to change to channel number programmed as A channel.
3. Press MEM key (19) to change to channel number programmed as B channel.
4. Press SCAN key (20) for at least one second for priority scanning during normal scanning.

WEATHER ALERT**NOTE**

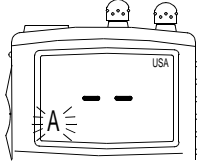
A loud tone will indicate that the transceiver is in the weather alert mode. When a weather alert is received, scanning stops and the transceiver enters the weather alert mode.

1. Press SCAN key (20) to start scanning memorized weather channels along with other regularly scanned channels.
2. Press WX key (18) to stop alert tone and receive voice information on weather channel.

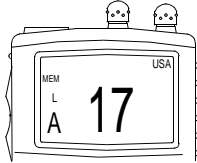
CHANNEL A/B INSTANT ACCESS**NOTE**

Ensure that a blinking letter A and dashes appear on the display to indicate that no channel has been selected for A.

1. Press A/B key (21) and turn transceiver on.



2. Using UP ARROW key (13) and DOWN ARROW key (14), enter desired channel.
3. Press MEM key (19) to stop displayed A blinking and display A channel.



4. Turn radio off and back on to return to normal radio mode.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
LIGHT TOWER
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Life Preserver, Vest (Item 71, WP 0116 00)
Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)

Helmet, Safety (Brown) (Item 30, WP 0116 00)

Protector, Hearing (Item 44, WP 0116 00)

Personnel Required

Seaman 88K

Equipment Condition

Light Tower Installed. (WP 0029 00)

OPERATING PROCEDURES - LIGHT TOWER

WARNING



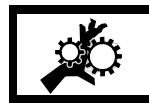
VEST



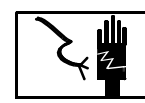
HELMET PROTECTION



HEAVY PARTS



MOVING PARTS



ELECTRICAL

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

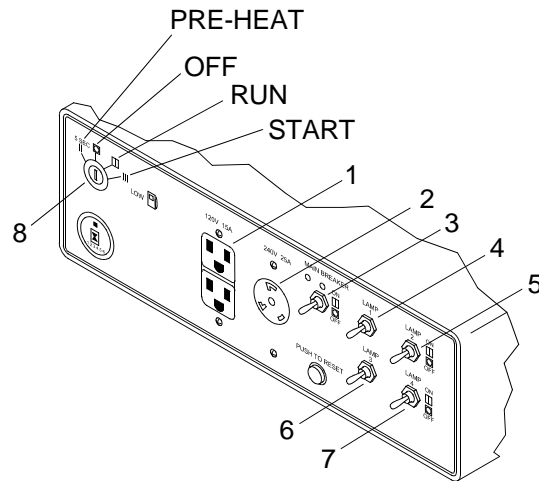
After starting light tower engine, electrical power is present. Electrical shocks could cause injury or death.

NOTE

The engine in this unit is protected with sensors for high coolant temperature and low oil pressure. Should either of these conditions occur, the engine will automatically stop causing a loss of power to all lamps and receptacles (except control panel). Before restarting the unit, check fuel level and engine/radiator thoroughly and correct the problem. The lamps should not be restarted for approximately fifteen minutes.

START LIGHT TOWER ENGINE

1. Unplug external loads from receptacles (1 and 2).



2. Position main breaker (3) to off position.
3. Position all lamp switches (4, 5, 6, and 7) to off (down) position.

CAUTION

**Do not use ether in conjunction with the glow plug preheat system.
Failure to comply will result in engine damage.**

4. Turn rotary switch (8) to PREHEAT for 5 seconds prior to starting.

WARNING



EAR PROTECTION

CAUTION

Do not crank for more than fifteen seconds without allowing starter to cool for thirty seconds. Failure to comply could result in starter damage.

5. Turn rotary switch (8) to START immediately.

CAUTION

**Keep side doors closed while running for optimum cooling of unit.
Failure to comply could result in engine damage.**

6. Release rotary switch (8) after engine continues to run.

NOTE

Allow engine to warm-up for 3-5 minutes before lamp switches (4, 5, 6, and 7) and receptacles (1 and 2) can be used.

7. If engine stops unexpectedly, refer to troubleshooting procedures. (WP 0091 00, WP 0092 00)

8. Plug external loads into receptacles as required (1 and 2).
9. Position main breaker (3) to on position.
10. Position all lamp switches (4, 5, 6, and 7) to on (up) position as required.

STOP LIGHT TOWER ENGINE

1. Position main breaker (3) to off position.
2. Unplug all external loads from receptacles as required (1 and 2).
3. Position all lamp switches (4, 5, 6, and 7) to off (down) position.
4. Turn rotary switch (8) to OFF.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
RIGID HULL INFLATABLE BOAT AND MOTOR
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)

Personnel Required

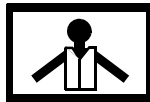
Seaman 88K

Equipment Condition

Rigid Hull Inflatable Boat Prepared For Use. (WP 0030 00)

OPERATING PROCEDURES - RIGID HULL INFLATABLE BOAT AND MOTOR**PERFORM BREAK-IN PROCEDURE**

WARNING



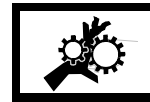
VEST



HELMET PROTECTION



HEAVY PARTS



MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

CAUTION

Failure to perform break-in procedures for first ten hours of motor operation could result in engine damage.

Perform ten hour break-in procedure with RHIB in water. Do not perform break-in procedure using a flushing device. Do not start or run motor out of the water. Do not leave running motor unattended. Failure to comply could result in engine damage.

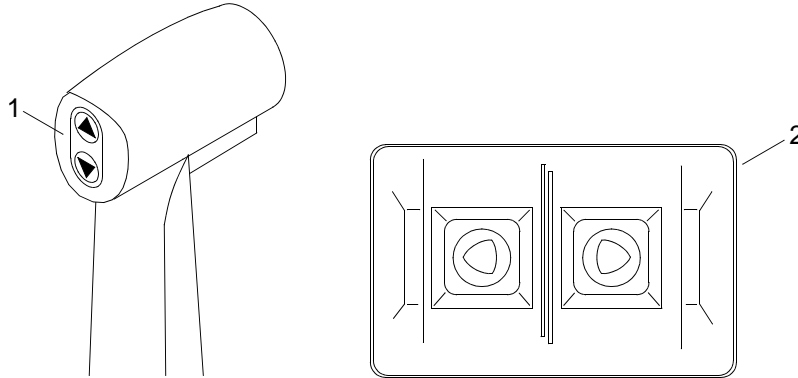
1. During first five minutes of operation, run motor in gear at slow idle (1,500 RPM) to fast idle only (2,500 RPM).
2. During first half of break-in period, run motor in gear at various speeds no faster than ½ throttle.
3. During second half of break-in period, run motor in gear at various speeds including 30 second bursts at full throttle (5,000 - 6,000 RPM).
4. After first 20 hours of operation, inspect and adjust motor performance as required. (Contact unit maintenance)

OPERATE TRAILERING BRACKET

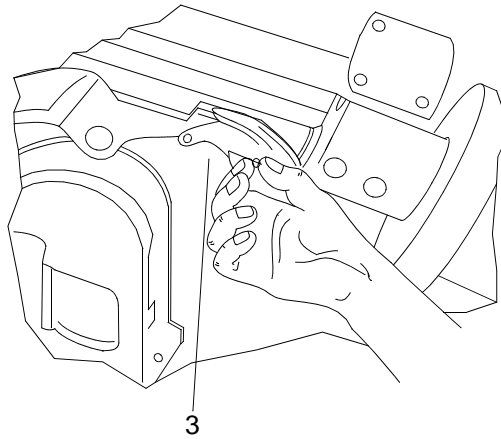
WARNING

Manually tilting motor could cause motor to fall suddenly when trailering bracket is disengaged. Failure to use the power tilt could result in serious injury.

1. Prior to operating RHIB motor, place motor in operating position.
 - a. Tilt motor up using steering and shift control handle trim/tilt switch (1) or engine housing trailering switch (2).



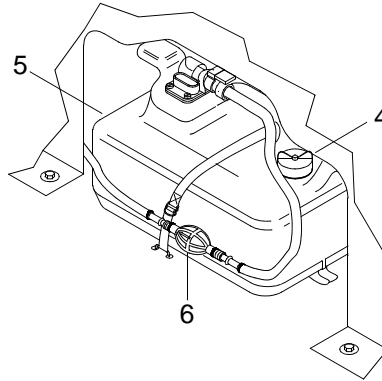
- b. Fold trailering bracket (3) up into stowed position.



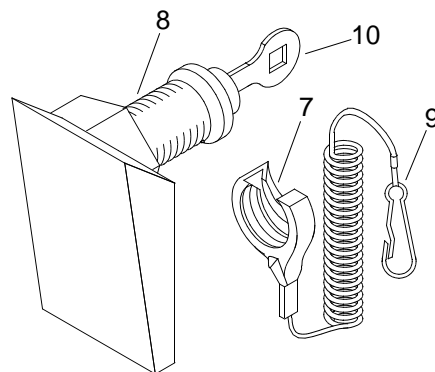
- c. Tilt motor down using steering and shift control handle trim/tilt switch (1) or engine housing trailering switch (2).
2. After RHIB motor operation, place motor in trailering position.
 - a. Tilt motor up using steering and shift control handle trim/tilt switch (1) or engine housing trailering switch (2).
 - b. Fold trailering bracket (3) down from stowed position.
 - c. Tilt motor down using steering and shift control handle trim/tilt switch (1) or engine housing trailering switch (2) until motor rests firmly against trailering bracket (3).

START MOTOR

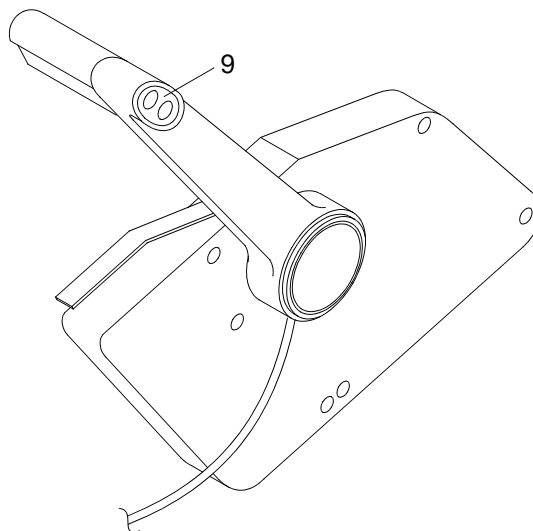
1. Open then close fuel tank cap (4) to vent pressure in fuel tank (5).



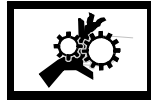
2. Verify fuel hose is connected between fuel tank (5) and motor.
3. Squeeze fuel line primer bulb (6) until it becomes firm.
4. Connect emergency stop clip (7) to key switch (8) and lanyard clip (9) on RHIB operator.



5. Verify throttle and shift control (9) is in neutral position.



WARNING

**MOVING PARTS**

Do not operate motor with motor cover off unless performing emergency starting. Keep hands, hair and clothing clear of moving parts. Contact with moving parts may cause injury or death.

CAUTION

Do not turn key to start position while motor is running. Damage to starter and flywheel will result.

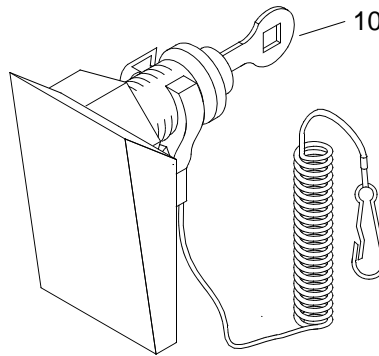
NOTE

Priming is not required when motor is warm.

Do not advance throttle for starting unless needed to clear a flooded motor.

When key is turned to ON position, an alarm horn will sound indicating warning system self-test. Verify warning lights on tachometer gage illuminate then extinguish. If light(s) remain illuminated, refer to troubleshooting procedure. (WP 0093 00, WP 0094 00)

6. Start motor.
 - a. Turn key (10) clockwise to START position and push key (10) in to prime.



- b. Crank motor no longer than 10 seconds or until motor starts.
 - c. If motor did not start, release key (10) momentarily, then try again.
 - d. If motor does not start, refer to troubleshooting procedures. (WP 0093 00, WP 0094 00)

CAUTION

If a steady stream of water is not visible discharging from rear of motor housing, stop motor immediately. Damage to engine may result.

- e. If motor runs rough, primer may be pushed in several times to make motor run smoothly.

SHIFTING AND SPEED CONTROL

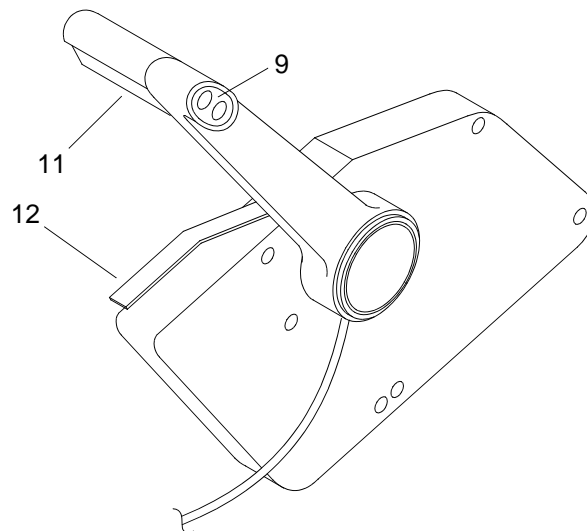
CAUTION

Allow RHIB to slow and motor to return to idle before shifting from forward to reverse or reverse to forward. Failure to comply could result in equipment damage.

NOTE

Check function of all controls and motor systems before departing RRDF platform. Do not shift into forward or reverse with motor shut off.

- 1. Shift gears.



- a. Lift the neutral locking tab (11) by squeezing hand grip on throttle and shift control (9) if locked in neutral.
 - b. To power RHIB forward, move throttle and shift control (9) forward.
 - c. Shift into reverse gear by moving throttle and shift control (9) aft.
- 2. Operate speed control.
 - a. Move throttle and shift control (9) forward while in forward gear to increase speed.
 - b. Move throttle and shift control (9) aft while in reverse gear to increase speed.
 - 3. Adjust motor fast idle.
 - a. With throttle and shift control (9) in neutral, lift fast idle lever (12).
 - b. When ready to shift gears, lower fast idle lever (12) all the way down.

STOPPING MOTOR**CAUTION**

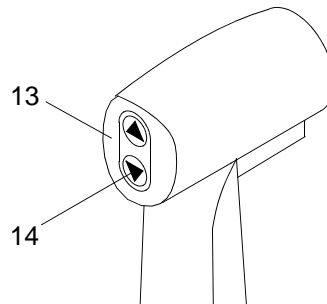
Leave key in off position when motor is not running. Failure to comply could result in battery discharging.

1. Move throttle and shift control (9) to neutral.
2. Turn key (10) to off position.

POWER TRIM**NOTE**

Adjusting motor trim will increase motor efficiency and reduce drag on bow of RHIB.

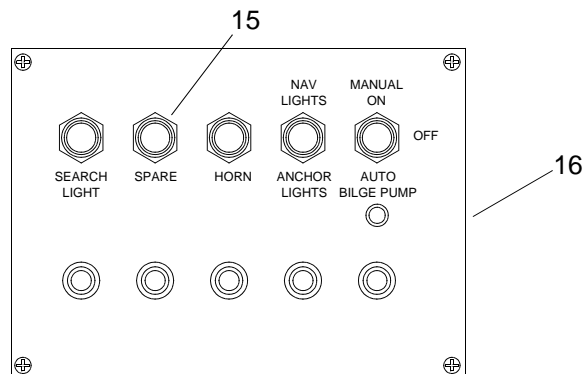
1. Press raise (13) or lower (14) buttons on steering and shift control handle trim/tilt switch (1) to adjust motor trim.



2. Once operation to RHIB is complete, return motor to normal operating position.

OPERATE AUXILIARY EQUIPMENT

1. Position associated toggle switch (15) on the operator instrument panel (16) to on to activate bow light, stern light or handheld spotlight.



2. Move toggle switch to off to turn equipment off.

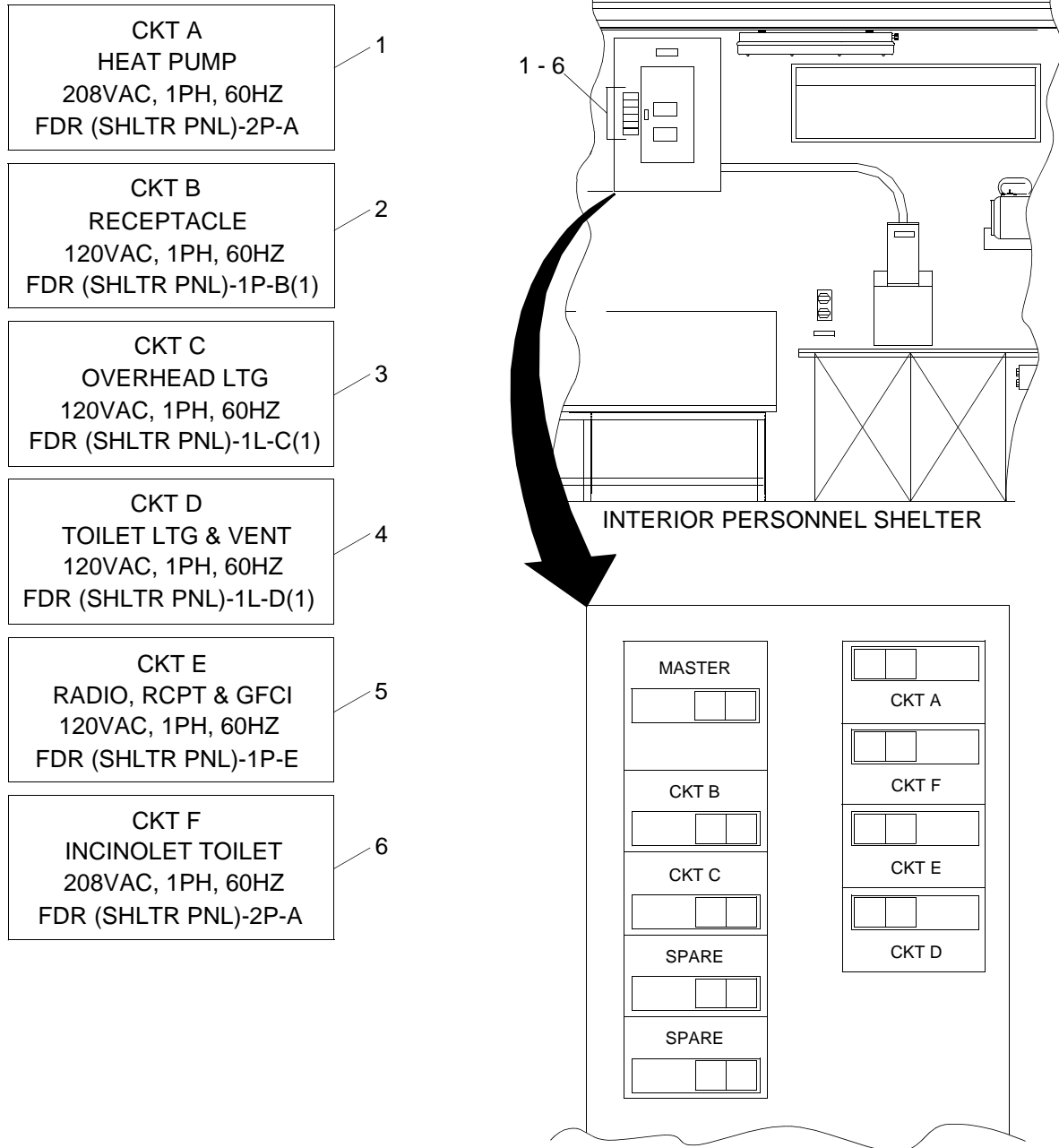
END OF WORK PACKAGE

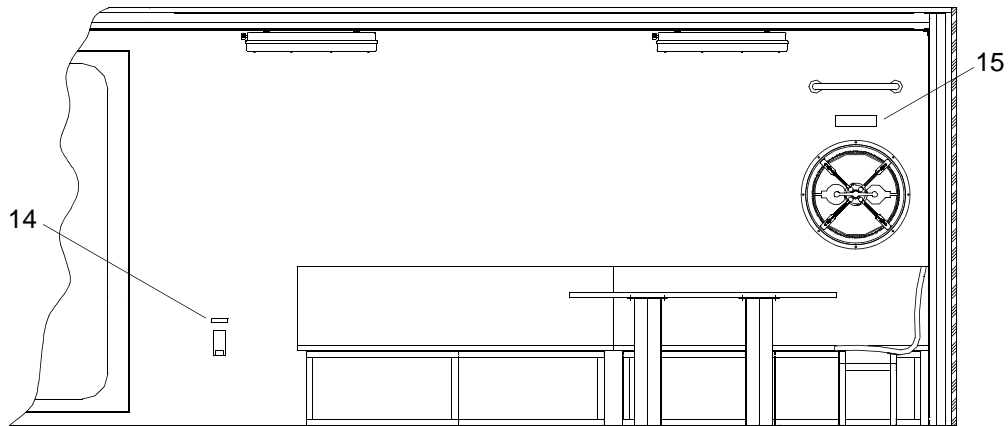
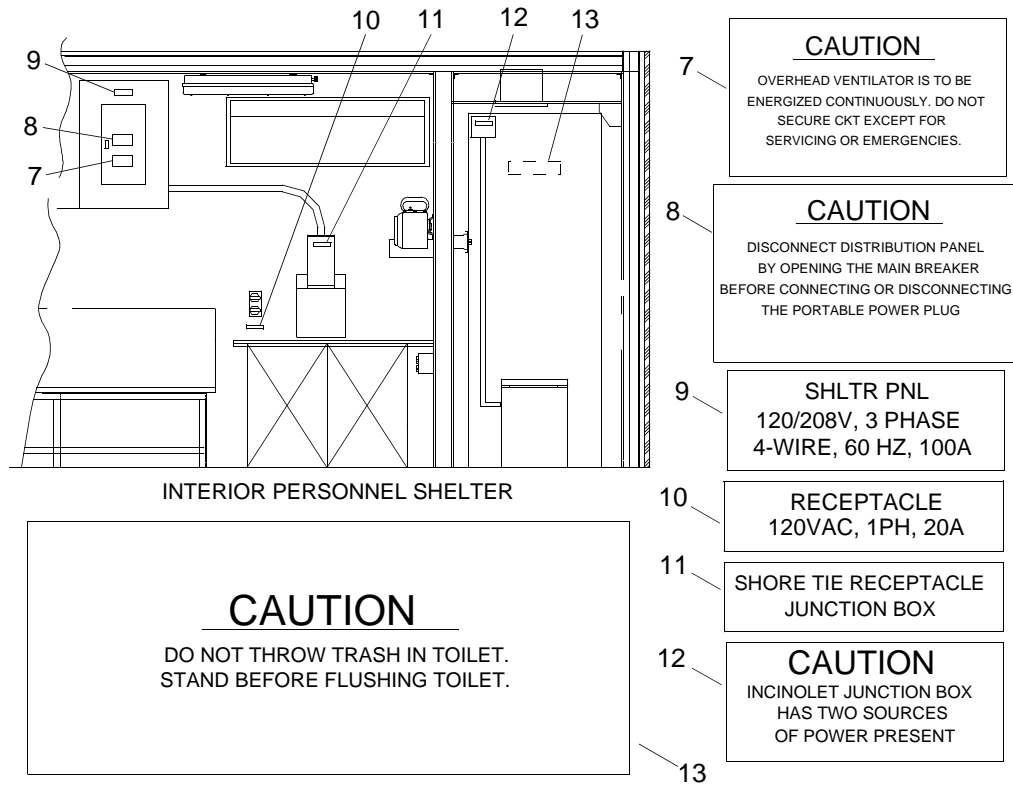
**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
DECALS AND INSTRUCTION PLATE LOCATIONS
OPERATION UNDER USUAL CONDITIONS**

OPERATING PROCEDURES - DECALS AND INSTRUCTION PLATE LOCATIONS

This work package provides location and description of decals and instruction plates. Each index number is shown twice, first to show location and second to show decal or instruction plate information.

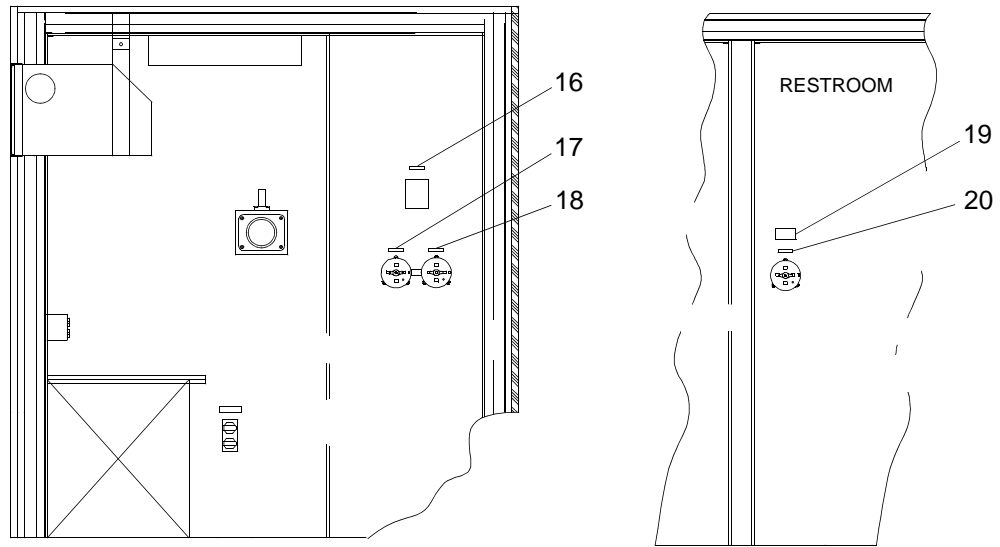
DECALS AND INSTRUCTION PLATES





14 **GCFI RECEPTACLE**
120VAC, 1PH, 20 AMP

15 **ESCAPE SCUTTLE**
ROTATE LEVER CLOCKWISE
PUSH SCUTTLE OUT
EXIT SHELTER

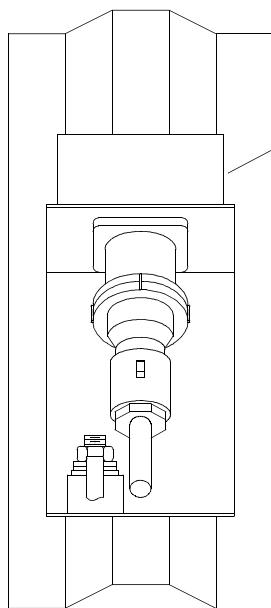


INTERIOR PERSONNEL SHELTER

- 16 THERMOSTAT
- 17 OVRHD RED LTG
- 18 OVRHD WHITE LTG

19 WHEN THE ELECTRIC TOILET IS ENERGIZED, THE OVERHEAD VENTILATOR IS DISABLED

- 20 RESTROOM LTG



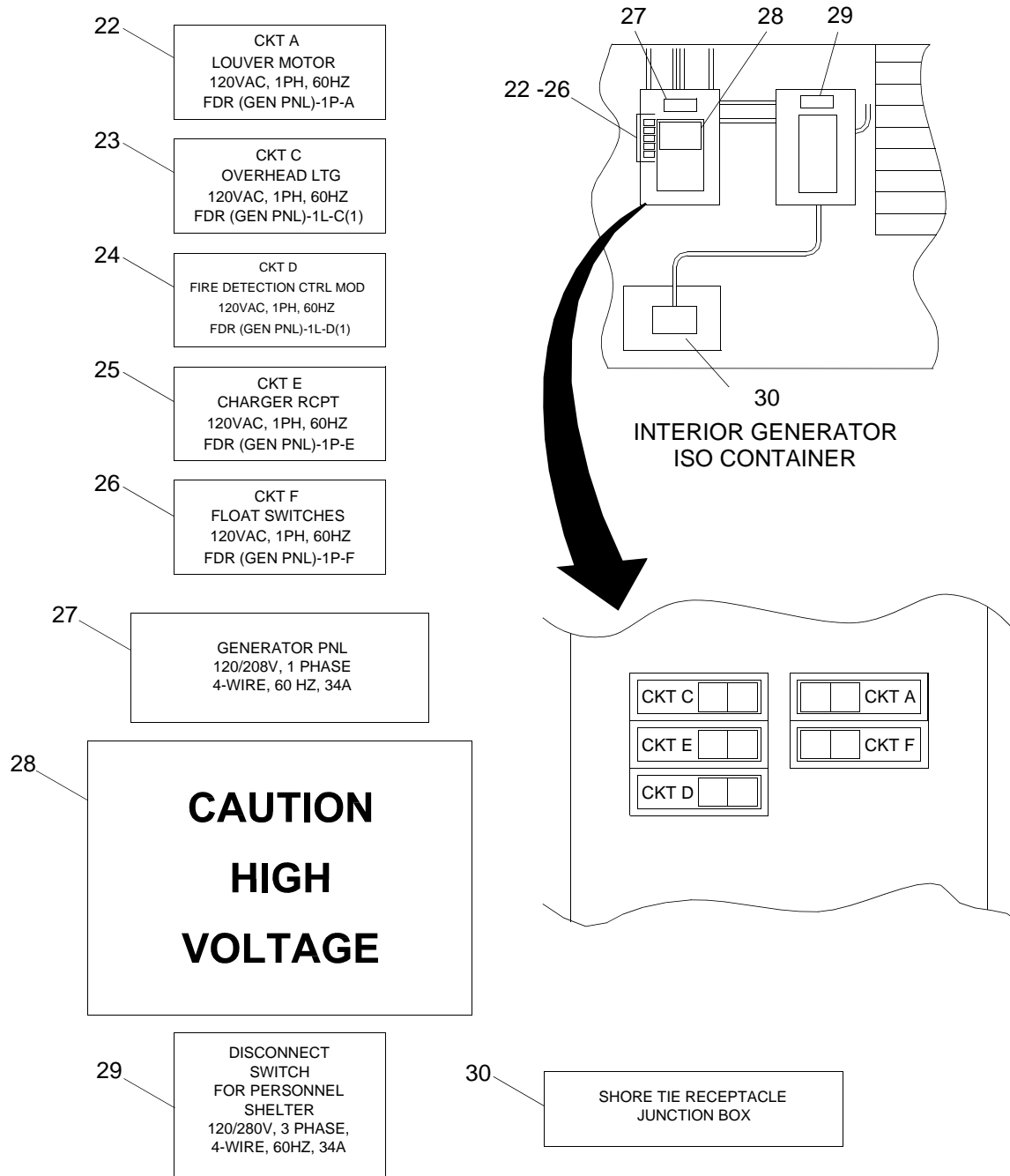
21

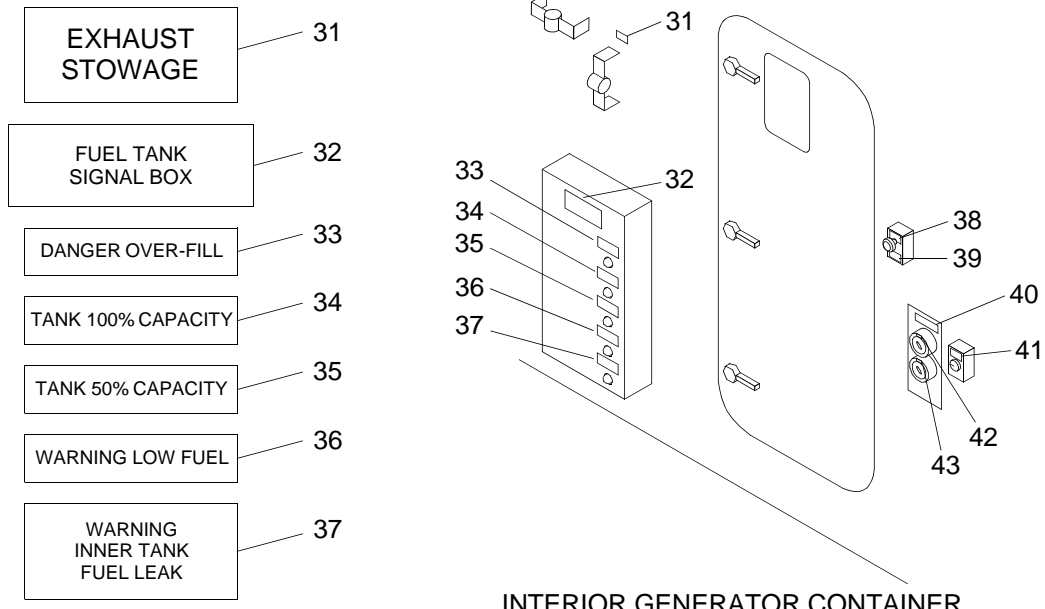
CAUTION

USE CARE WHEN CONNECTING AND DISCONNECTING THE PORTABLE POWER CABLE AND PLUG. PUSH CONNECTOR INTO THE INLET, TWIST AND LOCK.

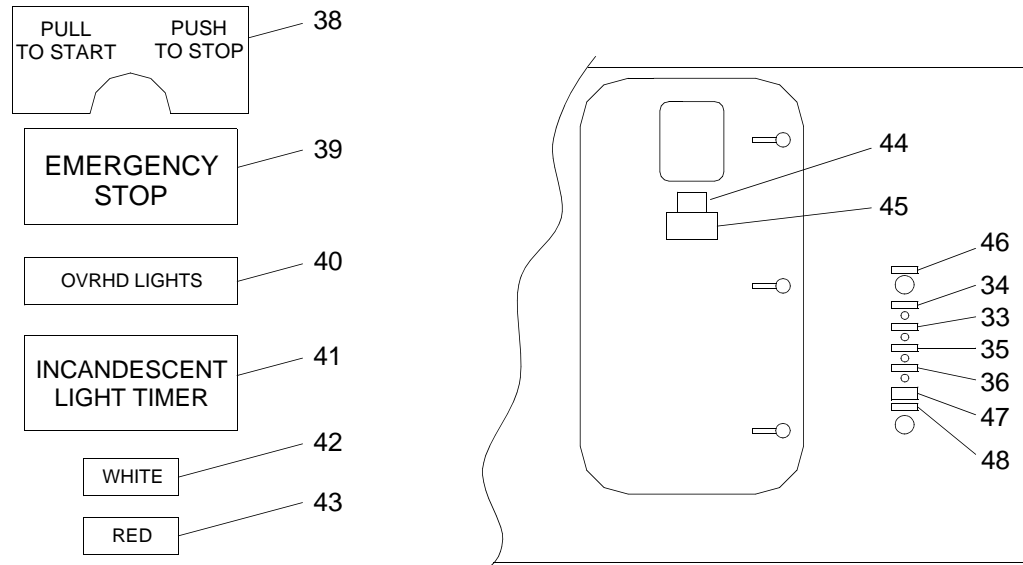
100A SHORE TIE INLET
208VAC, 52A, 3 PHASE, 60 HZ

EXTERIOR OF PERSONNEL SHELTER

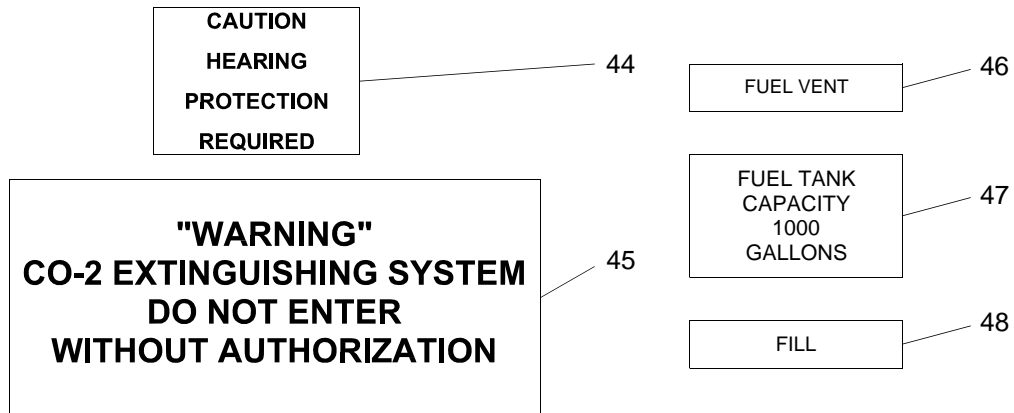


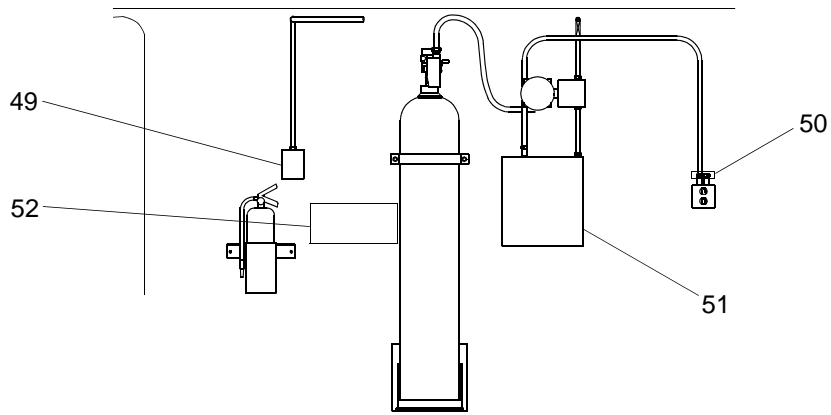


INTERIOR GENERATOR CONTAINER

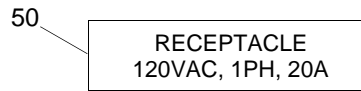
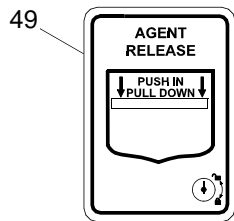


EXTERIOR GENERATOR CONTAINER





INTERIOR GENERATOR CONTAINER

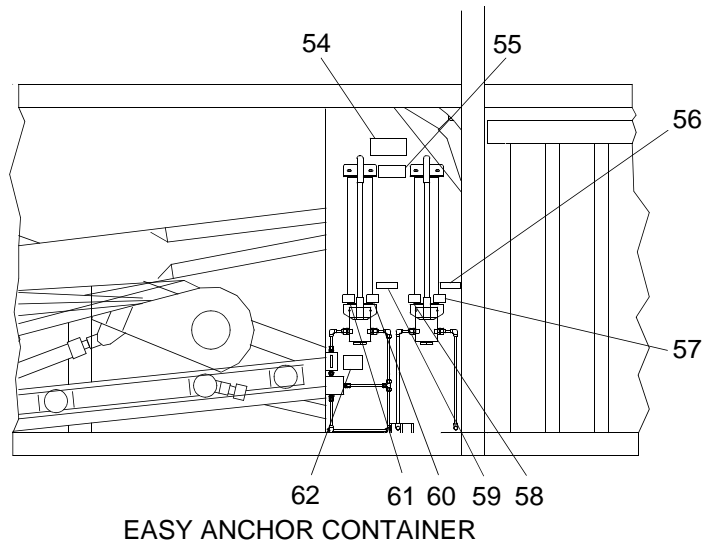
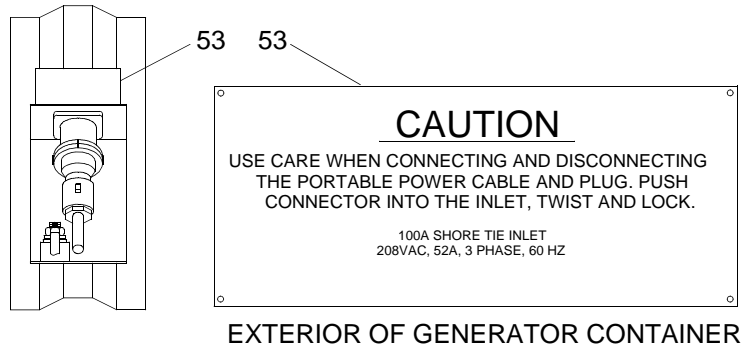


AC POWER	<input type="checkbox"/>	<input type="checkbox"/>	ZONE 1
SYSTEM ALARM	<input type="checkbox"/>	<input type="checkbox"/>	ZONE 1
RELEASE	<input type="checkbox"/>	<input type="checkbox"/>	ZONE 2
SUPERVISORY	<input type="checkbox"/>	<input type="checkbox"/>	ZONE 2
SYSTEM TROUBLE	<input type="checkbox"/>	<input type="checkbox"/>	ABORT
CIRCUIT TROUBLE	<input type="checkbox"/>	<input type="checkbox"/>	ABORT
ALARM SILENCED	<input type="checkbox"/>	<input type="checkbox"/>	MANUAL RELEASE
POWER TROUBLE	<input type="checkbox"/>	<input type="checkbox"/>	MANUAL RELEASE

TONE SILENCE	ALARM SILENCE	ALARM ACTIVATE	SYSTEM RESET
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

52

**WHEN ALARM SOUNDS
VACATE AT ONCE
CARBON DIOXIDE BEING
RELEASED**



CAUTION!

BEFORE OPERATING HYDRAULIC PUMPS:

1. OPEN CONTAINER ANCHOR END DOORS
2. REMOVE SHIPPING LINKS (4) ON ANCHOR DOOR
3. REMOVE ANCHOR SECURING BELT

CAUTION!

EXTEND ANCHOR DRAWER BEFORE ELEVATING ANCHOR SLIDE

LOWER ANCHOR SLIDE BEFORE RETRACTING ANCHOR DRAWER

ANCHOR DRAWER

OUT →

← IN

ANCHOR LIFT

DOWN →

← LIFT

OPEN ←

RAISING ANCHOR:
CLOSE VALVE, MOVE PUMP ARM TO "LIFT", PRESSURIZE PUMP.

→ **CLOSE**

LOWER ANCHOR:
OPEN VALVE, MOVE PUMP ARM TO "DOWN", PRESSURIZE PUMP.

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
DUNNAGE MATS
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

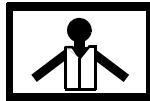
Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Socket, Socket Wrench (Item 63, WP 0116 00)
 Adapter, Socket Wrench (Item 2, WP 0116 00)
 Wrench, Pipe (24") (Item 74, WP 0116 00)

Personnel Required

Seaman 88K

PREPARATION FOR MOVEMENT - REMOVAL OF DUNNAGE MATS

WARNING



VEST



HELMET PROTECTION



HEAVY PARTS



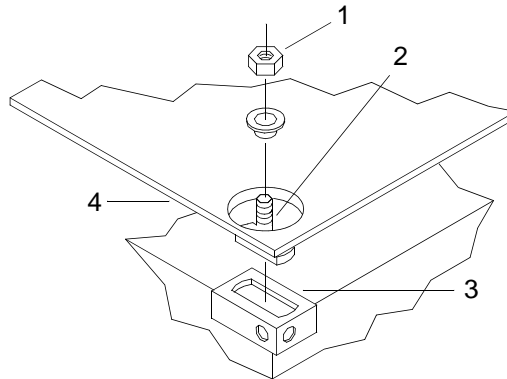
MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

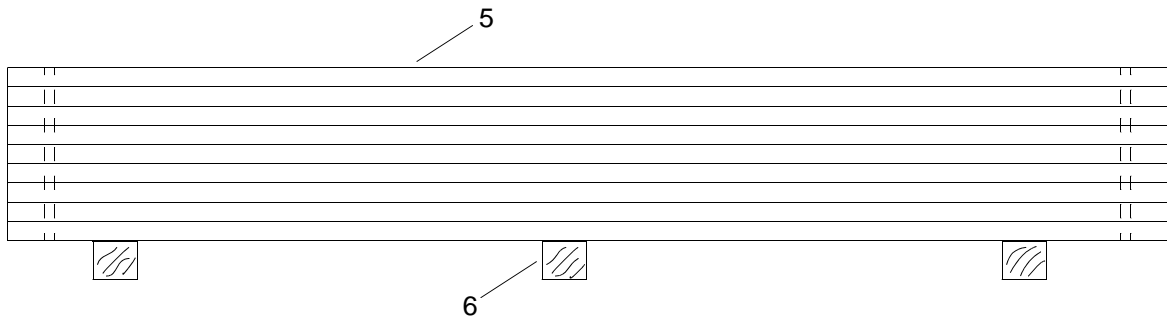
The 1 5/8 inch socket and 3/4 to 1/2 inch square drive adapter are located in the dunnage mat pallet toolbox in a canvas bag. Use these with the 1/2 inch square drive socket wrench from the tool kit.

- Using socket, adapter and wrench, loosen nut (1) on dog (2).



- Rotate dog (2) until aligned with slot in fitting (3).

3. Lift dog (2) through top hole of corner fitting (3) and dunnage mat (4).
4. Position three 4 in. X 4 in. wood beams (6) on RRDF platform in an area where dunnage mats (5) can be stacked.



WARNING

**HEAVY OBJECTS**

**Use appropriate handling equipment when lifting materials or equipment over 50 lbs.
Lifting heavy objects could cause injury to personnel.**

5. Remove dunnage mat (5) and stack on three 4 in. X 4 in. wood beams (6).

WARNING

**HEAVY OBJECTS**

6. Stack dunnage mats (5) one on top of the other, nine mats per stack.
7. Repeat above procedure for remaining dunnage mats (5).

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
LIGHT TOWER
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

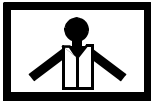
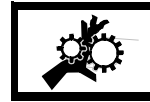
Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)

Personnel Required

Seaman 88K

PREPARATION FOR MOVEMENT - REMOVE LIGHT TOWER**LOWER TOWER**

WARNING

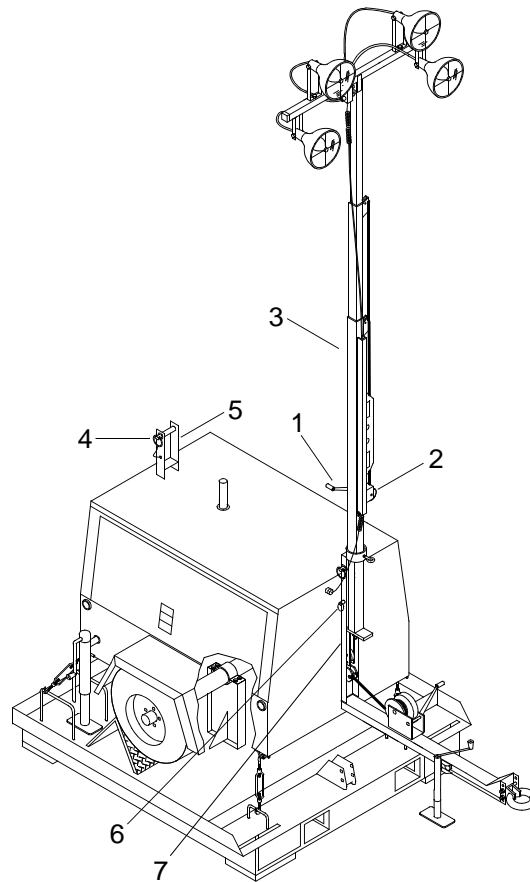
**VEST****HELMET PROTECTION****HEAVY PARTS****MOVING PARTS****HEAVY PARTS**

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the removal of the light tower from the RRDF platform.

1. Turn hand crank (1) on tower winch (2) counterclockwise to lower tower (3) from extended position.



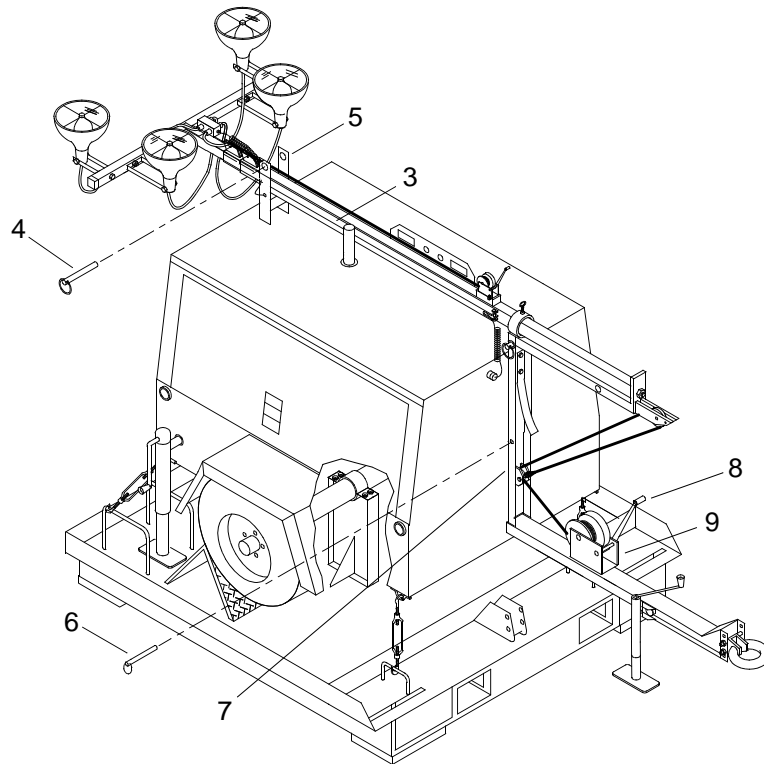
2. Remove tower rest retaining pin (4) from tower rest (5).
3. Remove lock pin (6) from tower support (7).

WARNING

**HEAVY PARTS****NOTE**

The tower crossmember must be horizontal to allow guide pin on tower rest to mate with holes in tower. If necessary, pivot tower and operate tower winch to align holes.

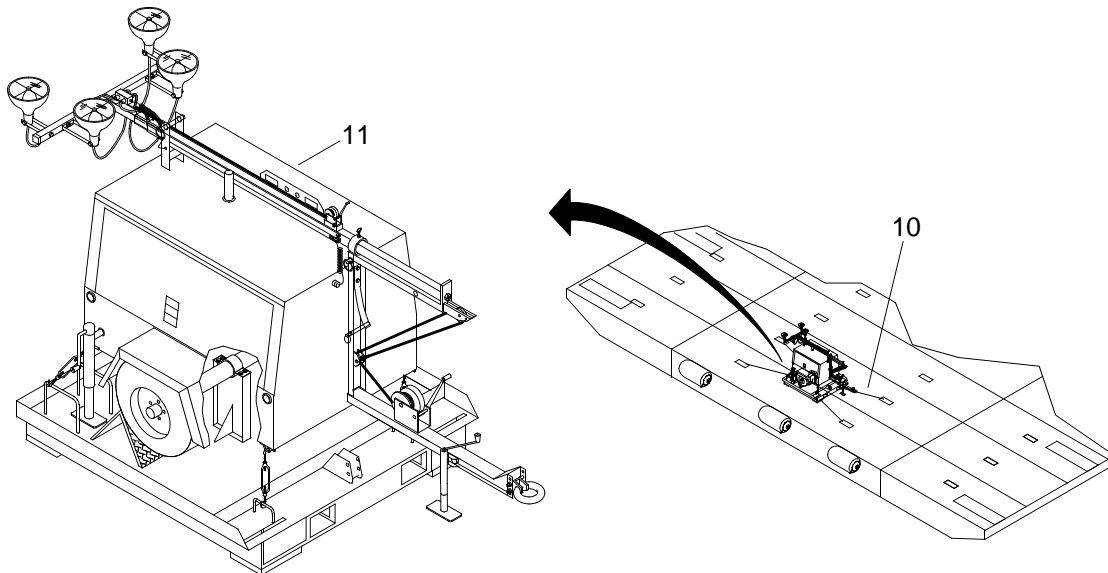
4. Turn hand crank (8) on drawbar winch (9) counterclockwise to lower tower (3) onto tower rest (5).



5. Install tower rest retaining pin (4) into tower rest (5).
6. Install lock pin (6) into tower support (7).

REMOVE LIGHT TOWER

1. Remove load restraining devices (10) securing light tower (11) to RRDF platform.



WARNING

**HEAVY PARTS**

2. Remove light tower (11) from RRDF platform or reposition as required.
3. Stow load restraining devices (10) in BII container as required.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
EMERGENCY ANCHOR SYSTEM (EASY)
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

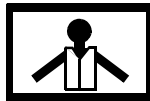
Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Forklift Adapter (Item 1, WP 0116 00)
 Crowbar (Item 68, WP 0116 00)

Personnel Required

Seaman 88K

PREPARATION FOR MOVEMENT - REMOVE EASY**REMOVE EASY CONTAINER**

WARNING

**VEST****HELMET PROTECTION****HEAVY PARTS****MOVING PARTS**

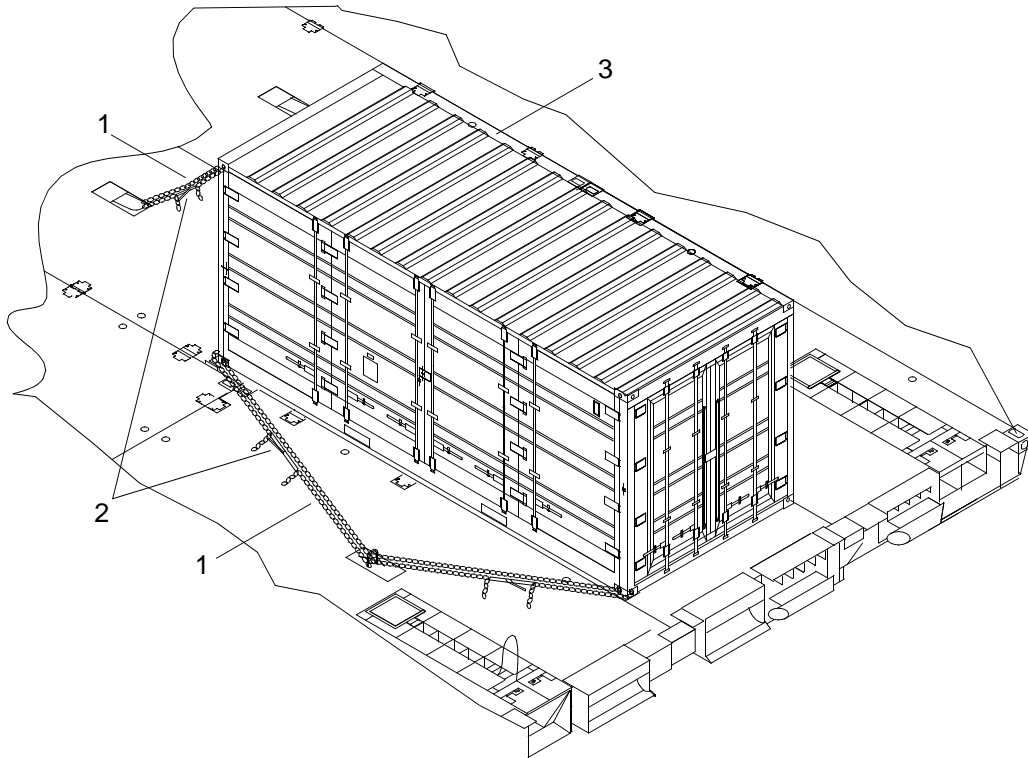
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The EASY container must be removed prior to recovering EASY mooring system to provide access to components and provide maneuvering room from component placement on RRDF platform.

Lifting device assembly must be removed from toolbox prior to off loading EASY container.

1. Unlock and remove all chain binders (1) from chains (2) securing EASY container (3) to RRDF platform.



WARNING

**HEAVY OBJECTS**

2. Remove chain binders (1) and chains (2) from RRDF platform.

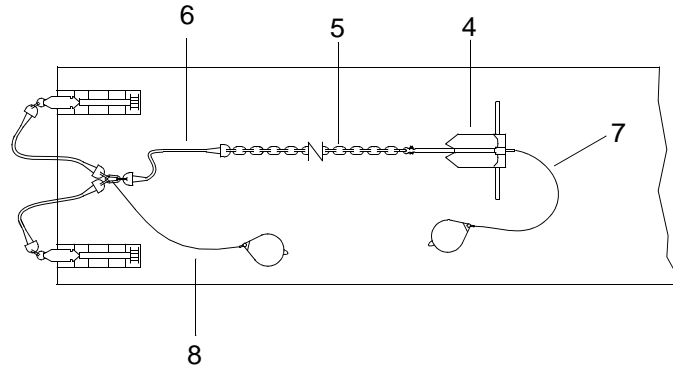
WARNING

**HEAVY PARTS**

3. Remove EASY container (3) from RRDF platform or reposition as required.

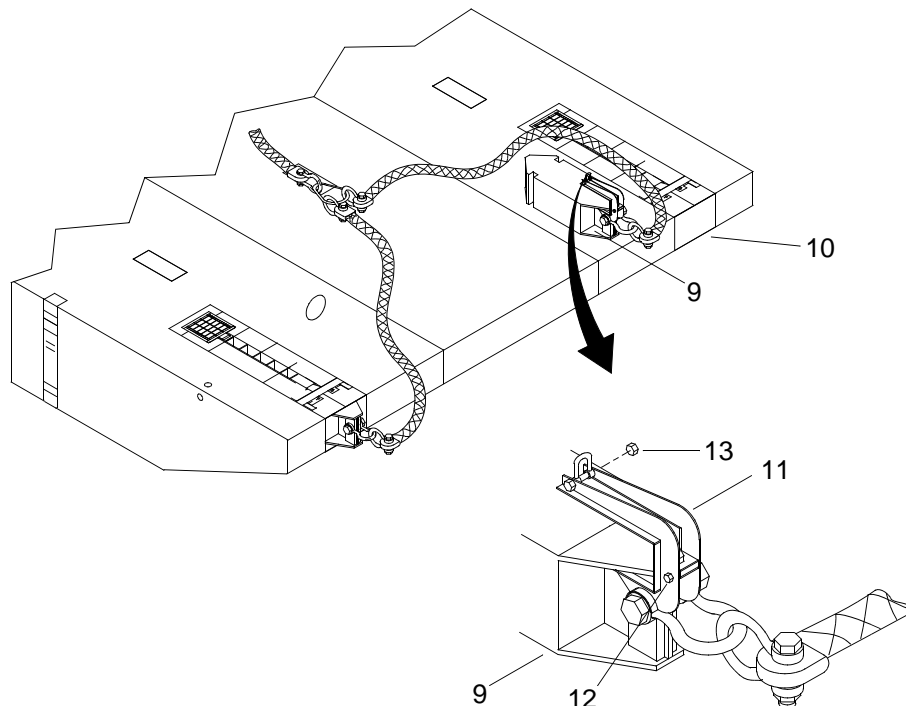
REMOVE EASY**WARNING****HEAVY PARTS**

1. Recover anchor (4), anchor chain (5), mooring bridle (6), anchor buoy with cable (7), and mooring bridle buoy with chain (8) onto RRDF platform with WT.

**NOTE**

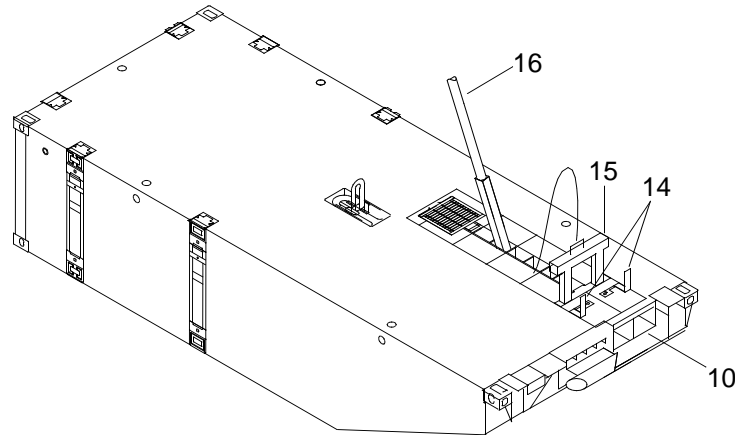
This step is typical for removal of flexor receiver inserts.

2. Remove flexor receiver insert (9) from flexor receiver (10).
 - a. Spread apart halves of lifting device assembly (11) by loosening bolt (12) and lock nut (13). Do not remove lock nut (13).



WARNING**HEAVY PARTS**

- b. Position lifting device assembly (11) on flexor receiver insert (9). Tighten bolt (12) and lock nut (13).
- c. Rotate chute bolts (14) and pull to unlocked position.



- d. Remove guillotine (15).
 - e. Attach forklift, forklift adapter and sling to lifting device assembly (11).
 - f. Using a crowbar (16), slide flexor receiver insert (9) out of flexor receiver (10).
 - g. Using forklift, forklift adapter, sling and lifting device assembly (11), position flexor receiver insert (9) on RRDF platform.
 - h. Insert guillotine (15).
 - i. Using a sledgehammer, drive guillotine (15) down into flexor receiver (10).
 - j. Push chute bolts (14) to locked position and rotate to closed position.
 - k. Loosen bolt (12) and lock nut (13) on lifting device assembly (11).
 - l. Remove lifting device assembly (11) from flexor receiver insert (10).
 - m. Repeat step 2 for second flexor receiver insert (10).
3. Remove EASY from RRDF platform or reposition as required.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
PERSONNEL SHELTER
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:

Tools

- Tool Kit, General Mechanic's (Item 70, WP 0116 00)
- Life Preserver, Vest (Item 71, WP 0116 00)
- Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
- Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
- Helmet, Safety (Brown) (Item 30, WP 0116 00)
- Gloves, Rubber, Industrial (Item 24, WP 0116 00)
- Goggles, Industrial (Chipping, Chemical) (Item 26, WP 0116 00)

Personnel Required

Seaman 88K

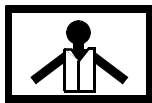
Equipment Condition

Generator Shutdown. (TM 9-6115-642-10)

PREPARATION FOR MOVEMENT - REMOVE PERSONNEL SHELTER

REMOVE SHORE TIE POWER CABLE

WARNING



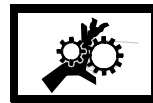
VEST



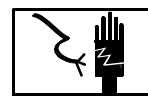
HELMET PROTECTION



HEAVY PARTS



MOVING PARTS

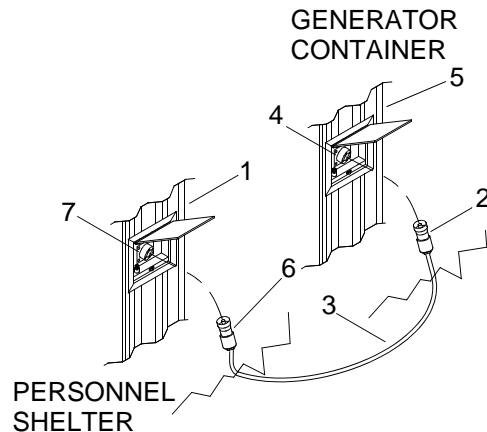


ELECTRICAL

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

Ensure generator power is secured using proper lock-out/tag-out procedure.

1. Verify circuit breakers inside personnel shelter (1) are positioned to off. (WP 0007 00)



2. Disconnect male end (2) of shore tie power cable (3) from female shore tie connector (4) on generator container (5).
3. Disconnect female end (6) of shore tie power cable (3) from male shore tie connector (7) on personnel shelter (1).

REMOVE GROUND CABLE

WARNING

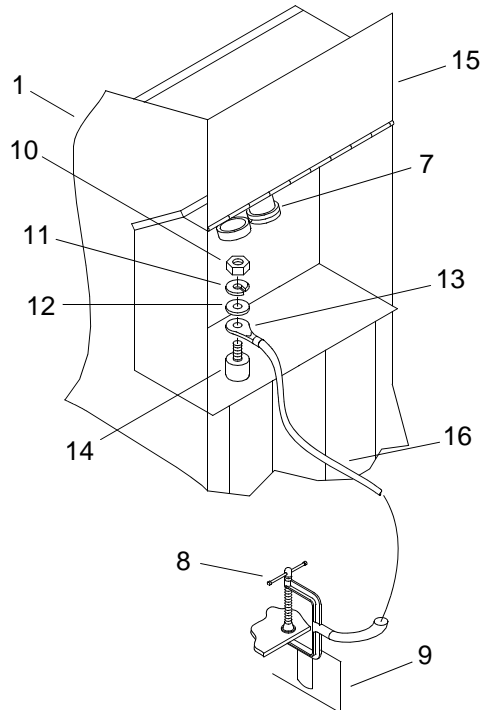


CHEMICAL

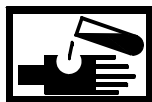


EYE PROTECTION

1. Remove C-clamp (8) from ISO fitting (9) on RRDF platform.



WARNING

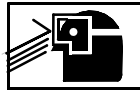


CHEMICAL



EYE PROTECTION

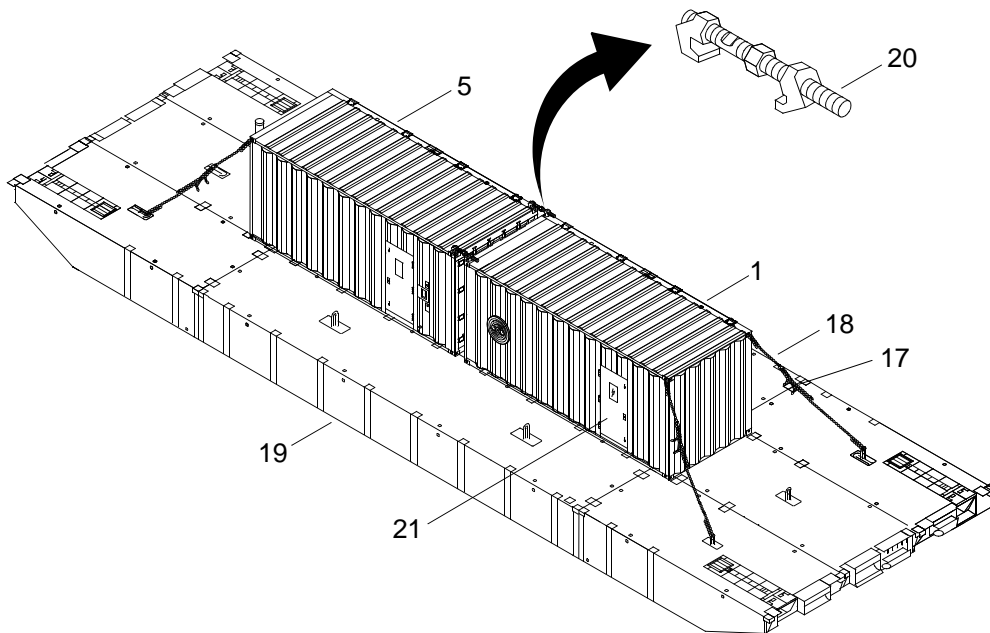
2. Remove nut (10), lock washer (11), flat washer (12) and ground cable terminal (13) from ground stud (14) on personnel shelter (1).

WARNING**CHEMICAL****EYE PROTECTION**

3. Install flat washer (12), lock washer (11) and nut (10) on ground stud (14). Tighten nut (10).
4. Shut hinged cover (15) over shore tie connector (7) and latch in closed position.

REMOVE PERSONNEL SHELTER

1. Unlock and remove all chain binders (17) and chains (18) securing the personnel shelter (1) and generator container (5) to RRDF platform (19).



2. Remove bridgelocks (20) securing personnel shelter (1) to generator container (5).

WARNING**HEAVY OBJECTS****NOTE**

The door will not secure when opened. Secure door open if necessary with a tag line.

3. Unlock, undog and open personnel shelter exterior door (21).
4. Stow shore tie power cable (3), ground cable (16), chain binders (17), chains (18) and bridgelocks (19) inside personnel shelter (1) as required.

5. Close, dog and lock door (21) on personnel shelter (1).

WARNING



HEAVY PARTS

6. Remove personnel shelter (1) from RRDF platform or reposition as required.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
GENERATOR CONTAINER
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Gloves, Rubber, Industrial (Item 24, WP 0116 00)
 Goggles, Industrial (Chipping, Chemical) (Item 26, WP 0116 00)

Personnel Required

Seaman 88K (2)

Equipment Condition

Personnel Shelter Removed. (WP 0043 00)

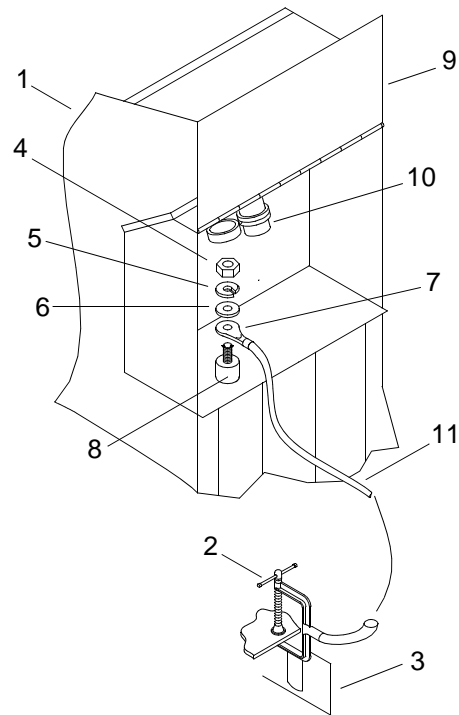
PREPARATION FOR MOVEMENT - REMOVE 10 KW GENERATOR CONTAINER**REMOVE GROUND CABLE**

WARNING

**VEST****HELMET PROTECTION****HEAVY PARTS****MOVING PARTS**

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Verify circuit breakers inside generator container (1) are positioned to off. (WP 0007 00)



WARNING



CHEMICAL



EYE PROTECTION

- Remove C-clamp (2) from ISO fitting (3) on RRDF platform.

WARNING



CHEMICAL



EYE PROTECTION

- Remove nut (4), lock washer (5), flat washer (6) and ground cable terminal (7) from ground stud (8).

WARNING



CHEMICAL

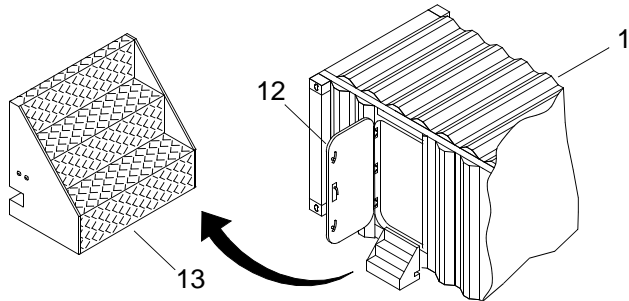


EYE PROTECTION

- Install flat washer (6), lock washer (5) and nut (4) on ground stud (8). Tighten nut (4).
- Shut hinged cover (9) over shore tie connector fitting (10) and latch in closed position.
- Remove ground cable (11).

REMOVE 10 KW GENERATOR CONTAINER

1. Unlock, undog and open generator container exterior door (12).



2. Lower steps (13) from generator container (1).
3. Stow ground cable (11) inside generator container as required.
4. Lift steps (13) into generator container (1) and secure by latching retaining hook and bracket (14).
5. Close, dog and lock generator container door (12).

WARNING

**HEAVY PARTS**

6. Remove generator container (1) from RRDF platform or reposition as required.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
3 FT BY 5 FT FENDERS
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

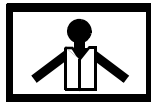
Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 2-Ton ½ in. Anchor Shackle (Item 48, WP 0116 00)

Personnel Required

Seaman 88K

PREPARATION FOR MOVEMENT - REMOVAL OF 3 FT BY 5 FT FENDERS

WARNING



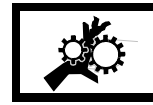
VEST



HELMET PROTECTION



HEAVY PARTS



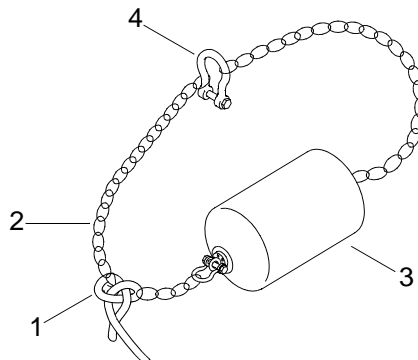
MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the removal of all 3 ft by 5 ft fenders.

1. Attach tag lines (1) to securing chains (2) on fender (3).



2. Disconnect securing chains (2) from RRDF platform.
3. Using shackle (4), secure two ends of securing chains (2) together.

WARNING

**HEAVY PARTS**

4. Using warping tug, raise fender (3) from water and position on RRDF deck.
5. Remove shackle (4) from securing chains (2).
6. Disconnect tag lines (1) from securing chains (2) on fender (3).
7. Secure fender (3) to RRDF deck as required.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
4 FT BY 12 FT FENDERS
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

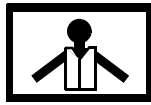
Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 2-Ton ½ in. Anchor Shackle (Item 48, WP 0116 00)

Personnel Required

Seaman 88K

PREPARATION FOR MOVEMENT - REMOVAL OF 4 FT BY 12 FT FENDERS

WARNING



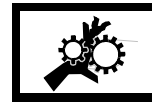
VEST



HELMET PROTECTION



HEAVY PARTS



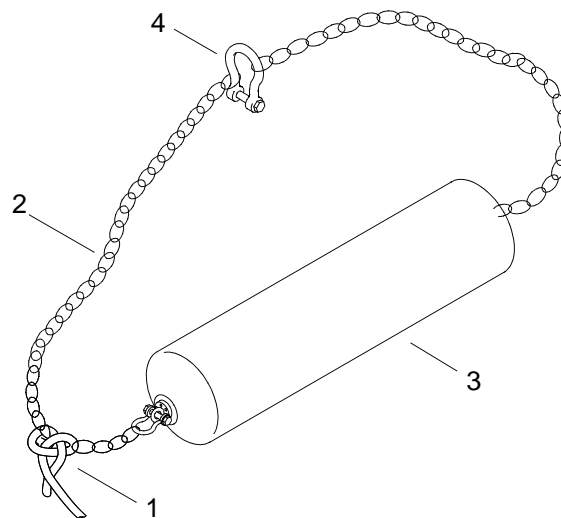
MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the removal of all 4 ft by 12 ft fenders.

1. Attach tag lines (1) to securing chains (2) on fender (3).



2. Disconnect securing chains (2) from RRDF platform.

-
- Using shackle (4), secure two ends of securing chains (2) together.

WARNING

**HEAVY PARTS**

- Using warping tug, raise fender (3) from water and position on RRDF deck.
- Remove shackle (4) from securing chains (2).
- Disconnect tag lines (1) from securing chains (2) on fender (3).
- Secure fender (3) to RRDF deck as required.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
5 FT BY 10 FT FENDERS
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

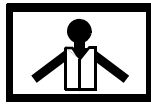
Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 2-Ton ½ in. Anchor Shackle (Item 48, WP 0116 00)

Personnel Required

Seaman 88K

PREPARATION FOR MOVEMENT - REMOVAL OF 5 FT BY 10 FT FENDERS

WARNING



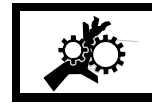
VEST



HELMET PROTECTION



HEAVY PARTS



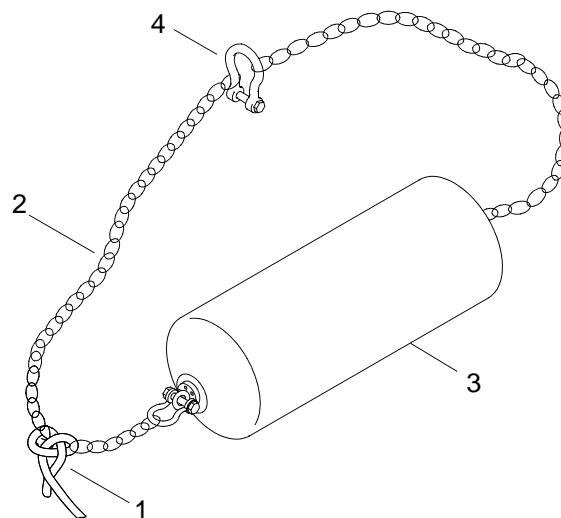
MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the removal of all 5 ft by 10 ft fenders.

1. Attach tag lines (1) to securing chains (2) on fender (3).



2. Disconnect securing chains (2) from RRDF platform.

-
- Using shackle (4), secure two ends of securing chains (2) together.

WARNING

**HEAVY PARTS**

- Using warping tug, raise fender (3) from water and position on RRDF deck.
- Remove shackle (4) from securing chains (2).
- Disconnect tag lines (1) from securing chains (2) on fender (3).
- Secure fender (3) to RRDF deck as required.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
6 FT BY 12 FT FENDERS
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

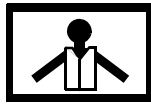
Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 2-Ton ½ in. Anchor Shackle (Item 48, WP 0116 00)

Personnel Required

Seaman 88K

PREPARATION FOR MOVEMENT - REMOVAL OF 6 FT BY 12 FT FENDERS

WARNING



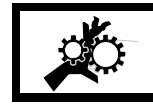
VEST



HELMET PROTECTION



HEAVY PARTS



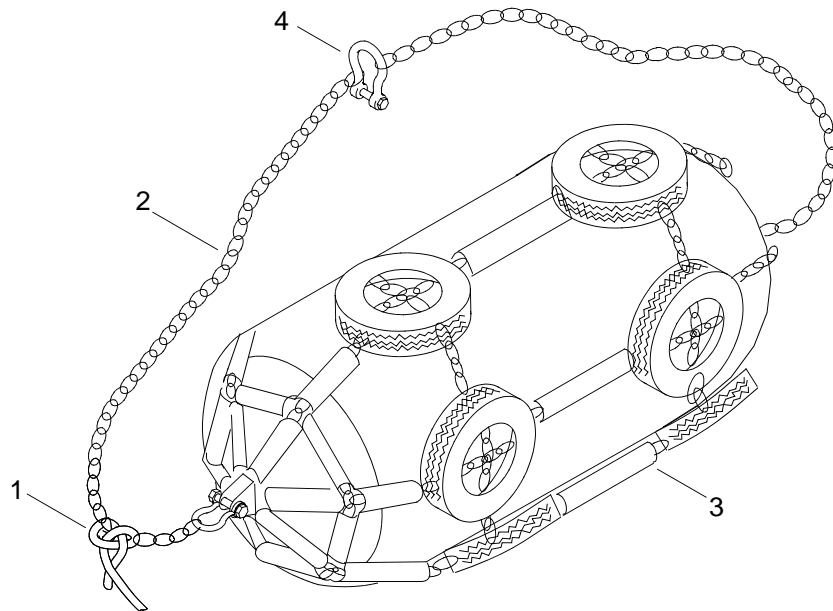
MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the removal of all 6 ft by 12 ft fenders.

1. Attach tag lines (1) to securing chains (2) on fender (3).



2. Disconnect securing chains (2) from mooring bitts.
3. Using shackle (4), secure two ends of securing chains (2) together.

WARNING

**HEAVY PARTS**

4. Using warping tug, raise fender (3) from water and position on RRDF deck.
5. Remove shackle (4) from securing chains (2).
6. Disconnect tag lines (1) from securing chains (2) on fender (3).
7. Secure fender (3) to RRDF deck as required.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
CORNER FENDERS
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

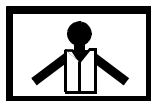
Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Socket, Socket Wrench (Item 64, WP 0116 00)
 Adapter, Socket Wrench (Item 2, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Wrench, Pipe (24") (Item 74, WP 0116 00)

Personnel Required

Seaman 88K

PREPARATION FOR MOVEMENT - REMOVAL OF CORNER FENDERS

WARNING



VEST



HELMET PROTECTION



HEAVY PARTS



MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

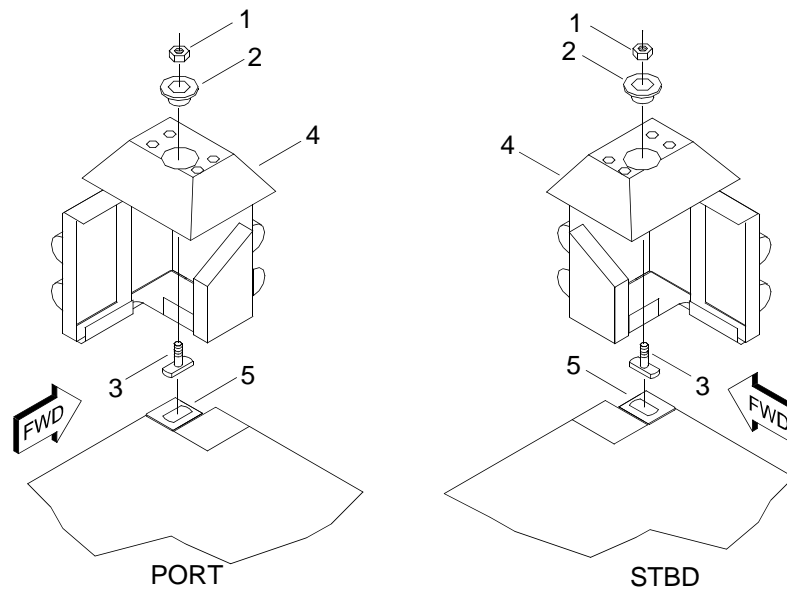
NOTE

The following procedure is typical for the removal of both port and starboard corner fenders.

NOTE

The 2 3/4 inch socket and 3/4 to 1/2 inch square drive adapter are located in the dunnage mat pallet toolbox, in a canvas bag. Use these with the 1/2 inch square drive socket wrench from the tool kit.

1. Using socket, adapter and wrench, remove nut (1) and washer (2) from tee bolt (3).



2. Remove corner fender (4) from tee bolt (3).
3. Turn tee bolt (3) until aligned with slot and remove from ISO corner fitting (5).
4. Install tee bolt (3), washer (2) and nut (1) on corner fender (4).
5. Stow corner fender (4) in 5 ft. by 10 ft. fender container. (WP 0079 00)

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
SAFETY EQUIPMENT
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

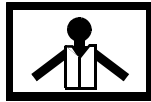
Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)

Personnel Required

Seaman 88K

PREPARATION FOR MOVEMENT - REMOVAL OF SAFETY EQUIPMENT

WARNING



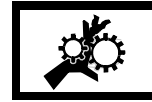
VEST



HELMET PROTECTION



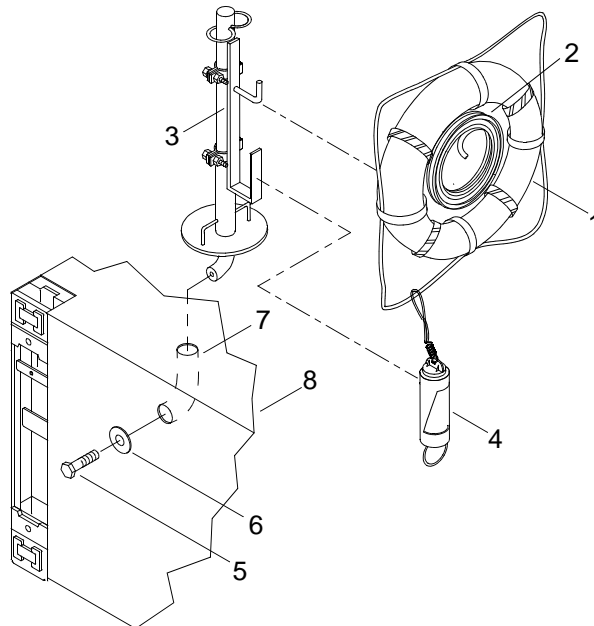
HEAVY PARTS



MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove life ring (1) and rope (2) from life ring stanchion (3).



2. Remove strobe light (4) from rope (2).

WARNING

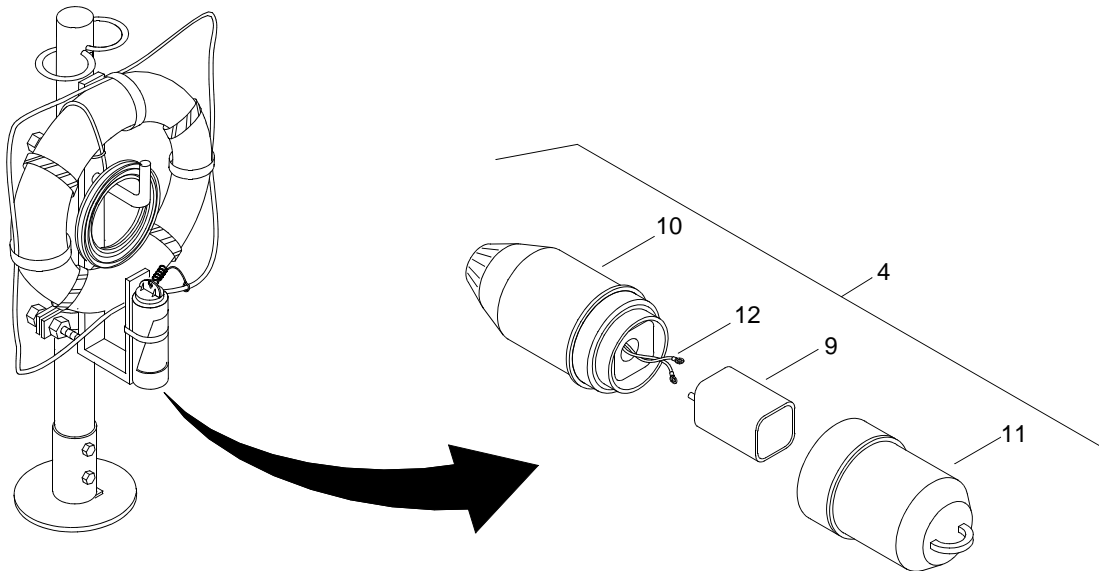
Beware of other craft or objects coming alongside while working outboard removing the keeper plate and bolt on deck fittings, as the possibility exists of falling overboard or being crushed. Failure to observe these precautions could result in death or injury to personnel.

3. Remove bolt (5) and keeper plate (6) from threaded portion of life ring stanchion (3).
4. Remove life ring stanchion (3) from turn tube (7) on module (8).
5. Install bolt (5) and keeper plate (6) in life ring stanchion (3) to prevent loss.

NOTE

Strobe light batteries are stowed in the BII container.

6. Remove strobe light batteries (9) in life ring strobe lights (4).
 - a. Unscrew strobe light housing (10) from strobe light base (11).



- b. Disconnect two battery wires (12) from battery (9).
 - c. Remove battery (9) from strobe light base (11).
 - d. Screw strobe light housing (10) and strobe light base (11) together.
 - e. Stow batteries in BII container. (WP 0074 00)
7. Rinse all life ring assembly components with fresh water before packing. Allow to thoroughly air dry.
8. Stow life ring assemblies in BII container. (WP 0074 00)

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
TOWING BRIDLE, TOWING INTERFACE AND TOWING LIGHTS
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Lifting Device Assembly (Item 7, WP 0116 00)
 Sling, Lifting, 5300 lb (Green) (Item 57, WP 0116 00)
 Forklift Adaptor (Item 1, WP 0116 00)

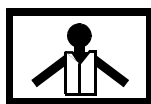
Personnel Required

Seaman 88K (3)

**PREPARATION FOR MOVEMENT - REMOVAL OF TOWING BRIDLE, TOWING
INTERFACE AND TOWING LIGHTS**

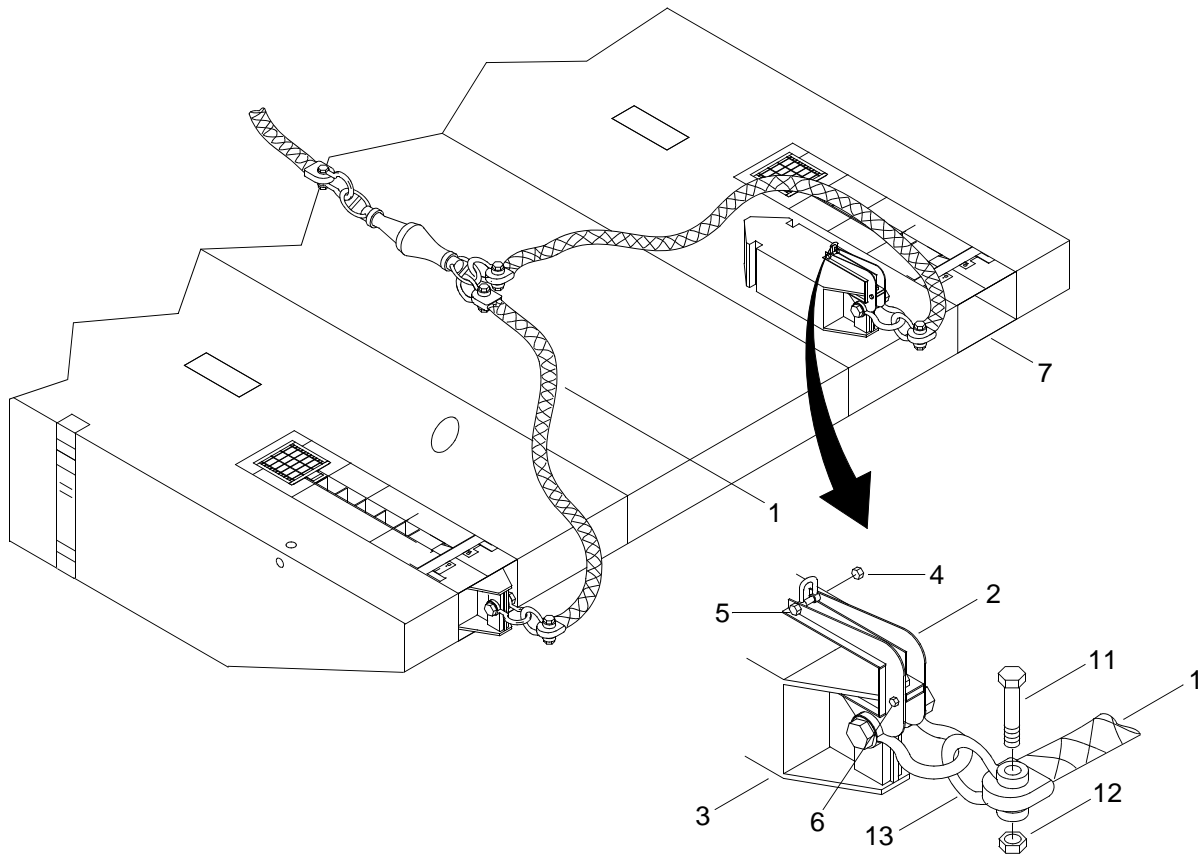
REMOVE TOWING BRIDLE AND TOWING INTERFACE

WARNING

**VEST****HELMET PROTECTION****HEAVY PARTS****MOVING PARTS**

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Recover towing bridle (1) and place it on RRDF platform.



2. Unlatch and open end door of BII container.

WARNING

Doors must be secured and latched in open position. Failure to comply could result in injury to personnel.

3. Secure BII container end door open with locking bars and pins.
4. Remove flexor insert lifting device (2) from BII container.
5. Position lifting device assembly (2) over end of flexor receiver insert (3).
6. Tighten lock nut (4) and bolt (5).
7. Tighten bolt (6).

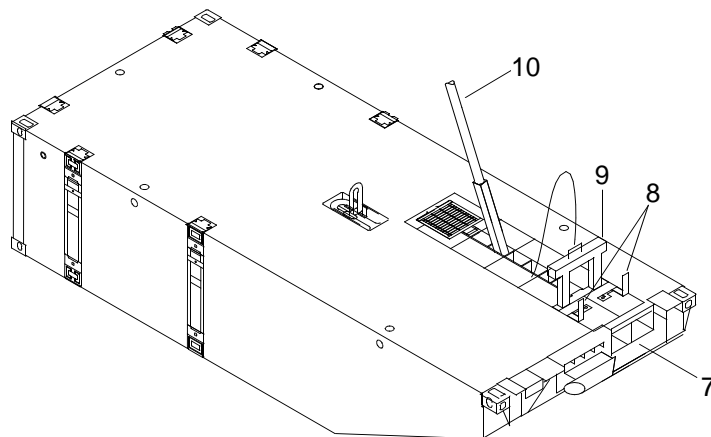
NOTE

This step is typical for removal of flexor receiver inserts.

8. Remove flexor receiver insert (3) from flexor receiver (7).

WARNING**HEAVY PARTS**

- a. Position lifting device assembly (2), on flexor receiver insert (3).
- b. Rotate chute bolts (8) and pull to unlocked position.



- c. Remove guillotine (9).
 - d. Attach forklift, forklift adapter and sling to lifting device assembly (2).
 - e. Using a crowbar (10), slide flexor receiver insert (3) out of flexor receiver (7).
 - f. Insert guillotine (9).
 - g. Using a sledgehammer, drive guillotine (9) down into flexor receiver (7).
 - h. Push chute bolts (8) to locked position and rotate to closed position.
 - i. Loosen lock nut (4), bolt (5) and bolt (6).
 - j. Remove lifting device assembly (2) from flexor receiver insert (3).
 - k. Repeat step 8 for second flexor receiver insert (3).
9. Disconnect towing bridle (1) from flexor receiver inserts (3).
 10. Remove two bolts (11) and nuts (12) from two shackles (13).
 11. Remove shackles (13) from end of each flexor receiver insert (3).
 12. Install bolts (11) and nuts (12) on shackles (13) for stowage.
 13. Rinse lifting device assembly (2) and flexor receiver inserts (3) with fresh water before packing. Allow to thoroughly air dry.

WARNING

**HEAVY PARTS**

14. Using forklift, forklift adapter, lifting device assembly (2) and sling, stow flexor receiver inserts (3) in BII container. (WP 0074 00)
15. Remove lifting device assembly (2) and sling from flexor receiver insert (3) and stow in BII container. (WP 0074 00)
16. Rinse towing bridle (1) with fresh water before packing. Allow to thoroughly air dry.

WARNING

**HEAVY PARTS**

17. Using forklift, stow towing bridle (1) in BII container. (WP 0074 00)

REMOVE TOWING LIGHTS

1. Remove batteries from towing lights. (WP 0104 00)
2. Remove towing lights from RRDF and stow towing lights in BII container. (WP 0074 00)
3. Remove locking bars and pins to close BII container end door.
4. Latch and secure BII container end door.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
MOORING BITTS AND QUICK DISCONNECTS
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

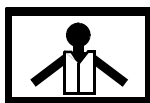
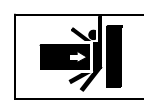
Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Crowbar (Item 68, WP 0116 00)
 Hammer, Hand (10 lb Sledge) (Item 55, WP 0116 00)
 Chain, ½ in. General Purpose (Item 4, WP 0116 00)
 Sling, Lifting, 5,300 lb (Green) (Item 57, WP 0116 00)
 2-Ton ½ in. Anchor Shackle (Item 48, WP 0116 00)

Personnel Required

Seaman 88K (4)

PREPARATION FOR MOVEMENT - REMOVAL OF MOORING BITTS AND QUICK DISCONNECTS**REMOVE QUICK DISCONNECT ASSEMBLY**

WARNING

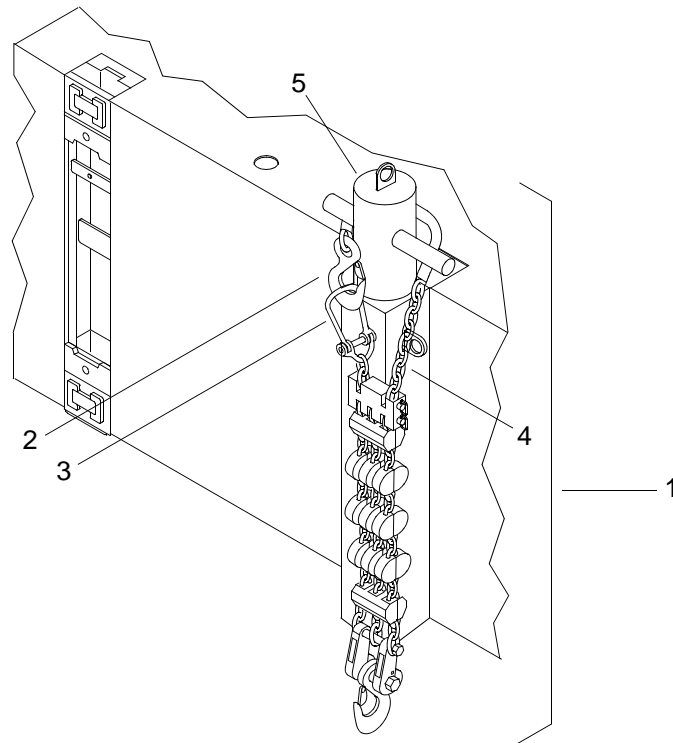
**VEST****HELMET PROTECTION****HEAVY PARTS****MOVING PARTS****HEAVY PARTS**

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

This task is typical for the removal of quick disconnects and mooring bitts.

1. Attach sling and shackle to forklift and quick disconnect assembly (1).



2. Using forklift, take up tension on sling and shackle.
3. Disconnect pelican hook (2) from half link (3).
4. Unwrap mounting chain (4) from around mooring bitt (5).

WARNING



HEAVY PARTS

5. Using forklift, sling, and shackle, remove quick disconnect assembly (1) from mooring bitt (5).
6. Remove shackle from quick disconnect assembly (1).
7. Rinse quick disconnect assembly (1) with fresh water before packing. Allow to thoroughly air dry.

WARNING



HEAVY OBJECTS

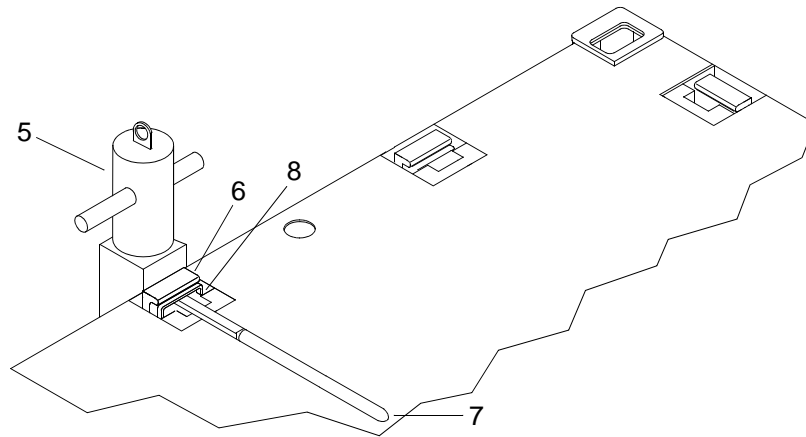
8. Using assistants, stow quick disconnect assembly (1) in BII container. (WP 0081 00)

REMOVE MOORING BITTS

WARNING

Attempting to remove mooring bitts on the RRDF in higher sea conditions than Sea State 0 could cause injury or possible death to personnel and/or damage equipment.

1. Attach shackle to mooring bitt (5).
2. Using forklift and sling, take up tension.
3. Raise female guillotine bar (6).

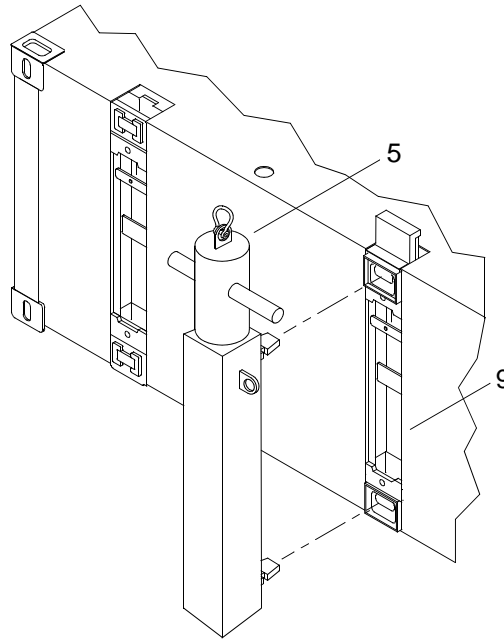


- a. Insert crowbar (7) behind spring bar (8) under female guillotine bar (6).
- b. Rotate crowbar (7) downward to clear spring bar (8) from deck overhangs and allow female guillotine bar (6) to move upward.
- c. Raise female guillotine bar (6) approximately six inches until it stops.
- d. Remove crowbar (7).

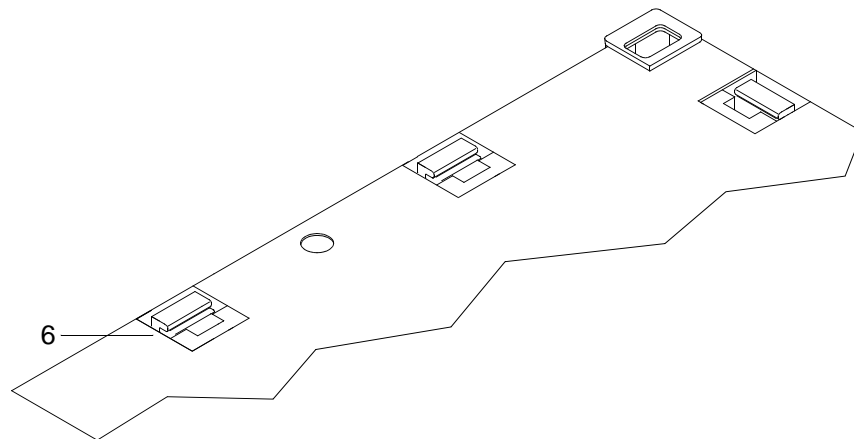
WARNING

**HEAVY PARTS**

- Using crane and sling, Remove mooring bitt (5) from female guillotine assembly (9).



- Drive female guillotine bar (6) down using a sledgehammer.



- Remove sling and shackle from mooring bitt (5).
- Stow mooring bitt (5). (WP 0081 00)

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
D-RING AND DECK CLEAT FITTINGS
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

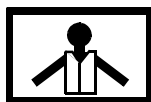
Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)

Personnel Required

Seaman 88K

PREPARATION FOR MOVEMENT - REMOVAL OF D-RING AND DECK CLEAT FITTINGS**REMOVE D-RING FITTINGS**

WARNING



VEST



HELMET PROTECTION



HEAVY PARTS

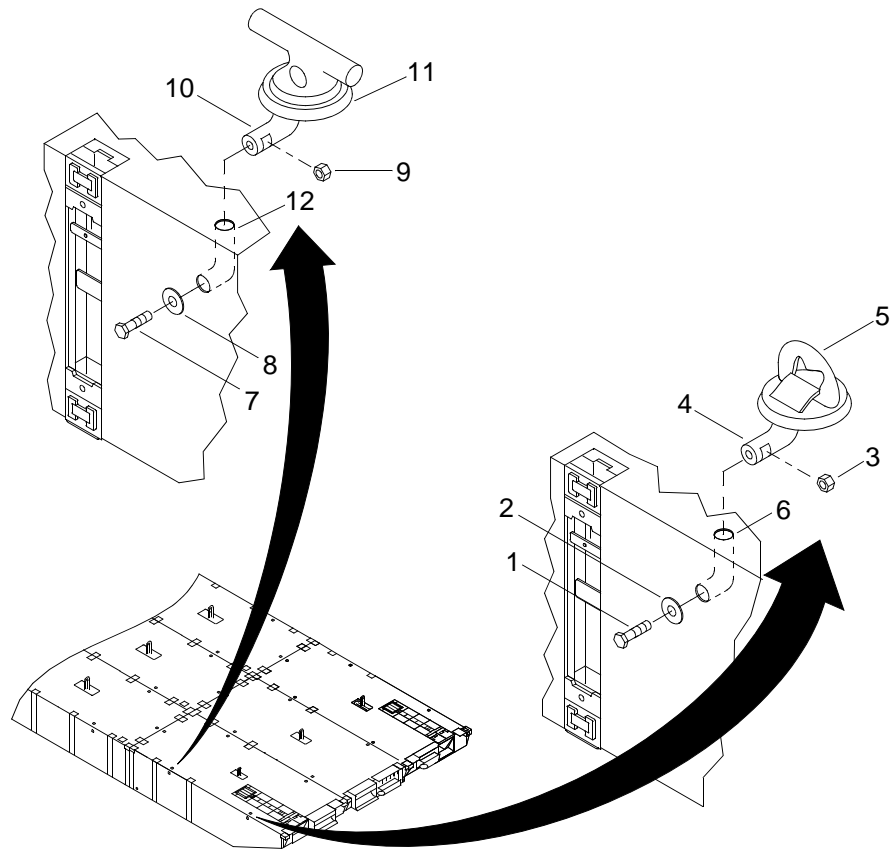


MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

Beware of other craft or objects coming alongside while working outboard removing the keeper plate and bolt on deck fittings, as the possibility exists of falling overboard or being crushed. Failure to observe these precautions could result in death or injury to personnel.

1. Remove bolt (1) and keeper plate (2) from nut (3) and tailpiece (4).



2. Remove D-ring (5) from module turn tube (6).
3. Install bolt (1) through keeper plate (2) and thread it into nut (3) in tailpiece (4).
4. Stow D-ring (5). (WP 0080 00)

REMOVE DECK CLEAT FITTINGS

1. Remove bolt (7) and keeper plate (8) from nut (9) and tailpiece (10).
2. Remove deck cleat (11) from module turn tube (12).
3. Install bolt (7) through keeper plate (8) and thread it into nut (9) and tailpiece (10).
4. Stow deck cleat (11). (WP 0080 00)

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
BII CONTAINER
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)

Personnel Required

Seaman 88K (2)

PREPARATION FOR MOVEMENT - REMOVAL OF BII CONTAINER FROM RRDF PLATFORM

WARNING



VEST



HELMET PROTECTION



HEAVY PARTS



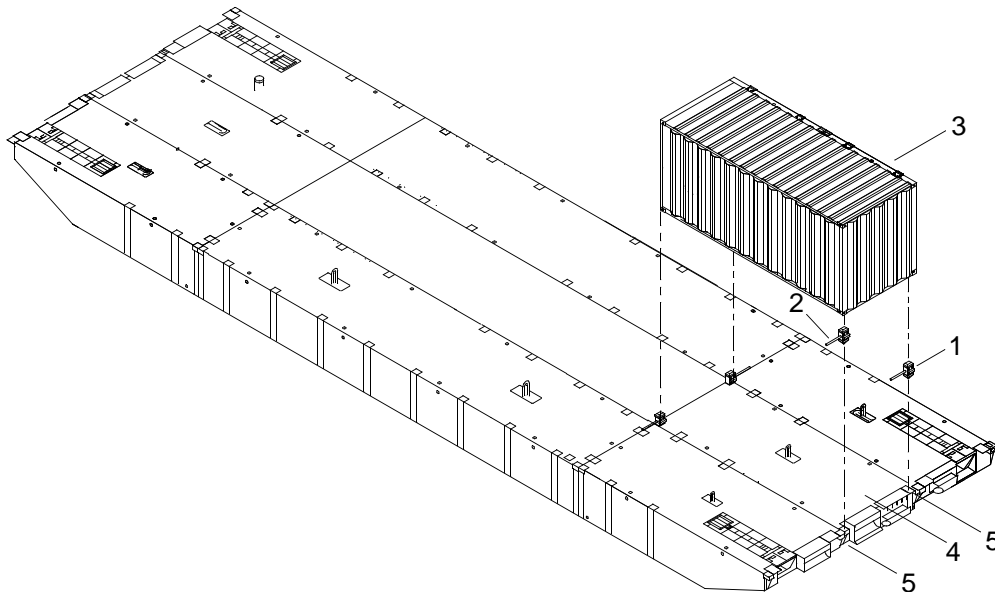
MOVING PARTS



HEAVY PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Unlock four vertical connectors (1) by rotating levers (2).



WARNING

**HEAVY PARTS**

2. Using crane, lift BII container (3) off of four vertical connectors (1) and relocate on RRDF platform.
3. Remove four vertical connectors (1) from center end rake (4) ISO corner fittings (5).
4. Unlatch and open BII container doors.

WARNING

Doors must be secured in open position. Failure to comply could result in death or injury to personnel.

5. Secure BII container doors with locking bars, pins or hooks.
6. Rinse four vertical connectors (1) with fresh water and allow to thoroughly air dry.
7. Stow four vertical connectors (1) in BII container (3).
8. Remove locking bars, pins or hooks to close container doors.
9. Close and latch container doors.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
PLATFORM
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Crowbar (Item 68, WP 0116 00)

Personnel Required

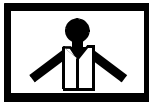
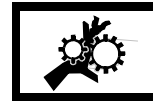
Seaman 88K

Equipment Condition

Dunnage Mats Removed. (WP 0040 00)
 Light Towers Removed. (WP 0041 00)
 Emergency Anchor System Container Removed. (WP 0042 00)
 Personnel Shelter Container Removed. (WP 0043 00)
 Generator Container Removed. (WP 0044 00)
 Fenders Removed. (WP 0045 00, WP 0046 00, WP 0047 00, WP 0048 00, WP 0049 00)
 Safety Equipment Removed. (WP 0050 00)
 Mooring Bitts And Quick Disconnects Removed. (WP 0052 00)
 BII Container Removed. (WP 0054 00)

PREPARATION FOR MOVEMENT - DISASSEMBLY OF PLATFORM

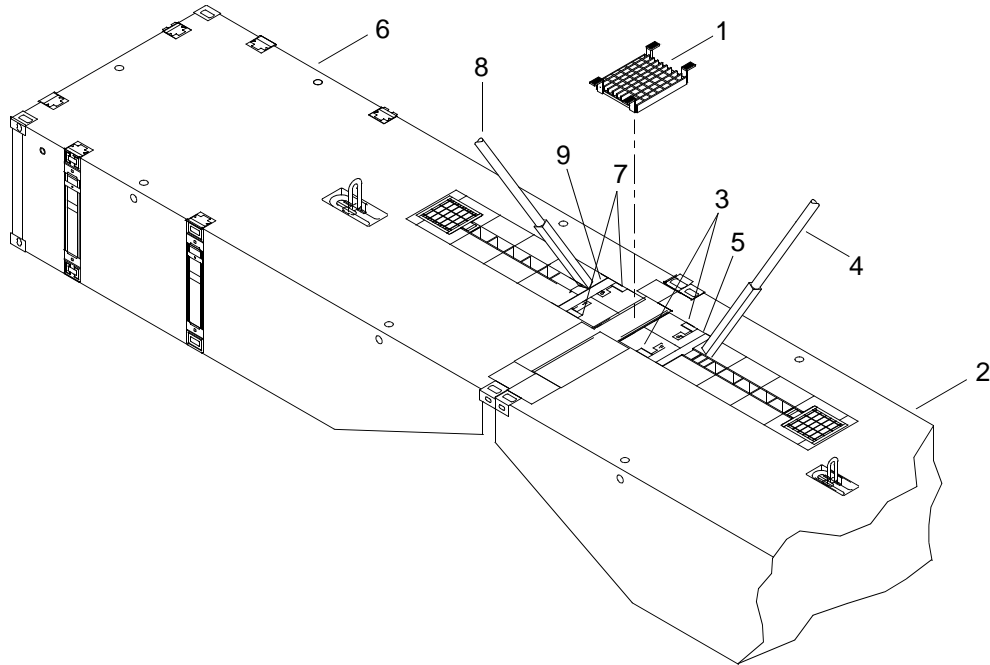
WARNING

**VEST****HELMET PROTECTION****HEAVY PARTS****MOVING PARTS**

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

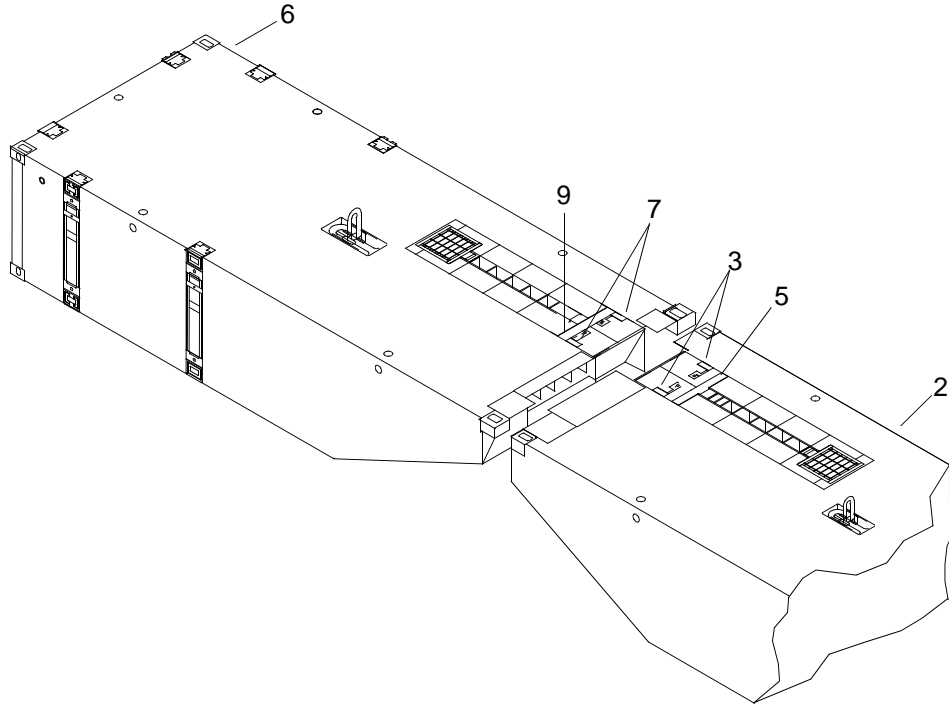
1. Secure RRDF segment to RRDF platform with line so segments to be separated are secured to platform.
2. Remove flexor well covers (1).
3. Rinse flexor well covers (1) with fresh water and allow to air dry.
4. Stow flexor well covers (1) in BII container.

5. Release flexor connectors on right end rakes (2).



- a. Rotate chute bolts (3) and pull chute bolts (3) to unlocked position.
 - b. Using crowbar (4), lift guillotine plates (5) up from flexor connector slots.
6. Stow flexor connectors in left hand rakes (6).
- a. Rotate chute bolts (7) and pull chute bolts (7) to unlocked position.
 - b. Using crowbar (8), lift guillotine plates (9) up from flexor connector slots.
 - c. Using crowbar (4), move flexor from right end rakes (2) into left hand rake (6) flexor connector pockets.
 - d. Align outboard guillotine slot on flexor with slot in left end rake module.

- e. Install guillotine plates (9) on left end rakes (6).



- f. Install guillotine plates (5) on right end rakes (2).
7. Using warping tugs, separate platform into RRDF segments.
 8. Untie line securing RRDF segment to RRDF platform.
 9. Separate RRDF segment.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
SEGMENT
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Crowbar (Item 68, WP 0116 00)

Personnel Required

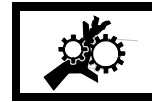
Seaman 88K

Equipment Condition

RRDF Platform Disassembled. (WP 0055 00)

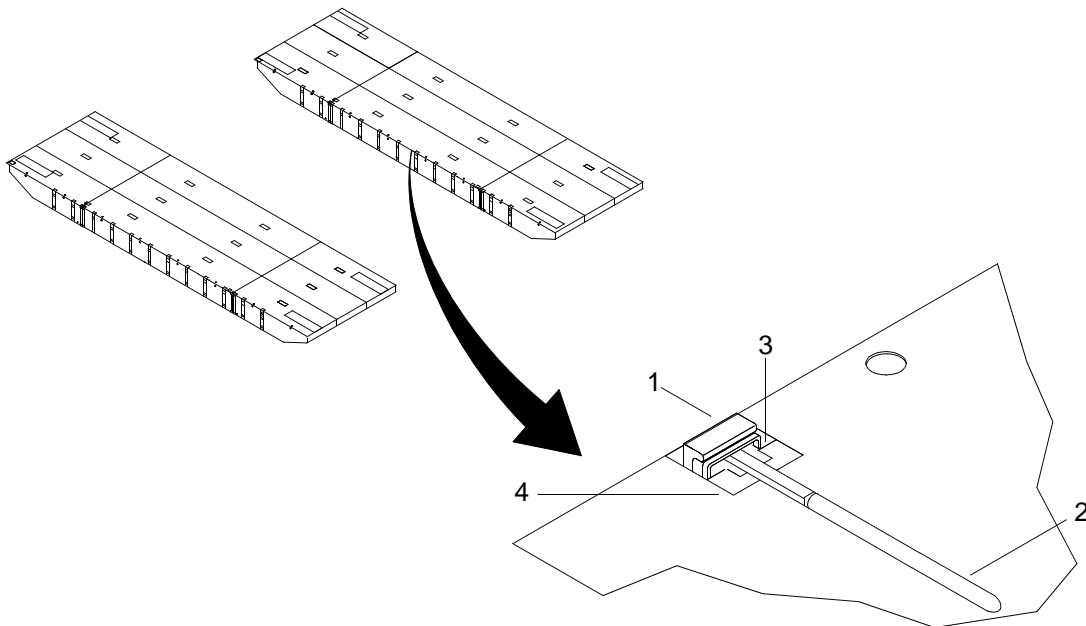
PREPARATION FOR MOVEMENT - DISASSEMBLY OF SEGMENT

WARNING

**VEST****HELMET PROTECTION****HEAVY PARTS****MOVING PARTS**

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Secure intermediate section to RRDF segment with lines.



2. Raise female guillotine connectors (1).
 - a. Insert crowbar (2) behind spring bar (3) under female guillotine connectors (1).
 - b. Rotate crowbar (2) downward to clear spring bar (3) from deck overhangs (4) and allow female guillotine connector (1) to move upward.
 - c. Raise female guillotine connectors (1) approximately six inches until it stops.
3. Using crowbar, separate segment into intermediate sections.
4. Stow male and female guillotine connectors. (WP 0060 00)

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
COMBINATION BEACH/SEA END SECTION
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Crowbar (Item 68, WP 0116 00)
 Sling, Lifting, 53,000 lb (Brown) (Item 59, WP 0116 00)
 Qty 4
 Sling, Lifting, 36,000 lb Adjustable Chain (Item 61, WP 0116 00)
 Qty 4

Personnel Required

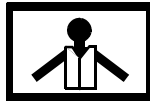
Seaman 88K

Equipment Condition

RRDF Segment Disassembled. (WP 0056 00)

**PREPARATION FOR MOVEMENT - DISASSEMBLY OF COMBINATION BEACH/SEA
END SECTION**

WARNING



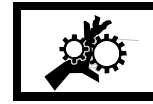
VEST



HELMET PROTECTION



HEAVY PARTS

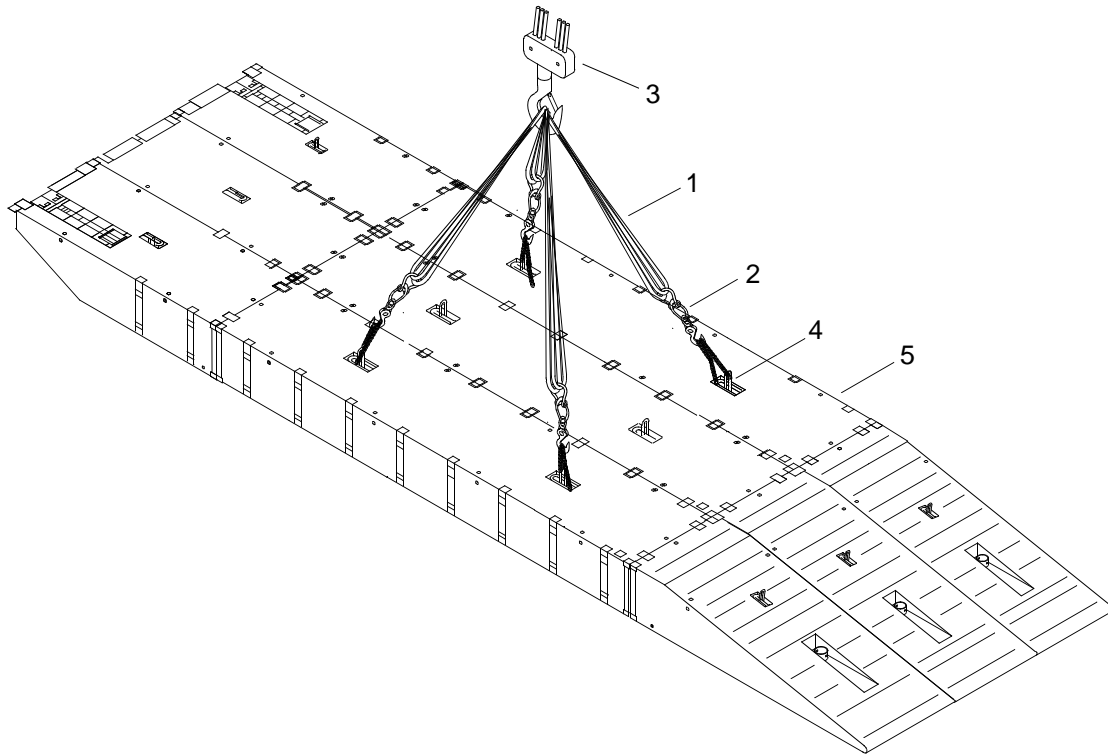


MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

**DISASSEMBLY OF COMBINATION BEACH/SEA END SECTION ON DECK OF
SEALIFT VESSEL**

1. Attach four 53,000 lb slings (1) and 36,000 lb adjustable chain slings (2) from crane (3) to padeye shackles (4) on combination beach/sea end section (5).

**WARNING****HEAVY PARTS**

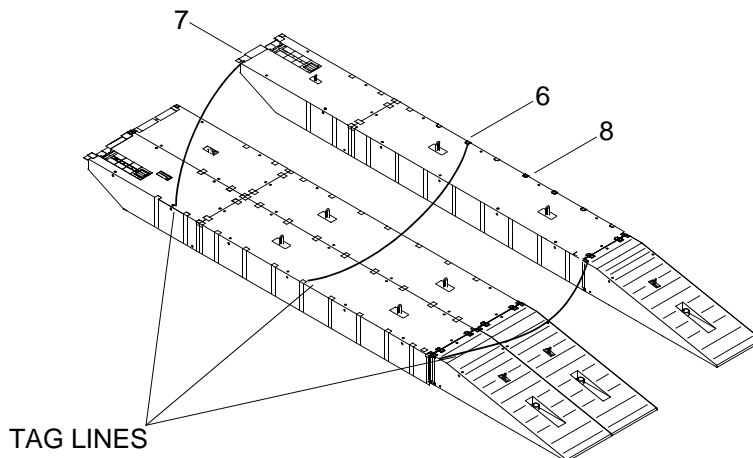
2. Using slings (1 and 2) and crane (3), lift combination beach/sea end section (5) on deck of sealift vessel.
3. Remove 36,000 lb adjustable chain slings (2) from padeye shackles (4) on intermediate section (5).
4. Remove 53,000 lb slings (1) from crane (3).
5. Operate male and female guillotine connectors. (WP 0009 00)
6. Using crowbar, separate CBSE section into module strings.
7. Disassemble module strings. (WP 0059 00)
8. Stow male and female guillotine connectors. (WP 0060 00)

DISASSEMBLY OF COMBINATION BEACH/SEA END SECTION IN WATER

NOTE

This procedure is typical of separating CBSE intermediate sections into module strings together.

1. Attach tag lines to turn tubes (6) and ISO corner fittings (7).



2. Operate male and female guillotine connectors. (WP 0009 00)
3. Using crowbar, separate CBSE sections into module strings (8).

WARNING

Place the hands on top or on the outside of ropes/lines so that in an emergency the lines can be released quickly to preclude being pulled into the equipment. Failure to observe these precautions could result in serious injury or death.

4. Using tag lines, maneuver module strings (8) into position for disassembly.
5. Stow male and female guillotine connectors. (WP 0060 00)
6. Disassemble module strings. (WP 0059 00)

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
INTERMEDIATE SECTION
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Crowbar (Item 68, WP 0116 00)
 Sling, Lifting, 53,000 lb (Brown) (Item 59, WP 0116 00)
 Qty 4
 Sling, Lifting, 36,000 lb Adjustable Chain (Item 61, WP 0116 00)
 Qty 4

Personnel Required

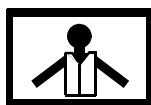
Seaman 88K

Equipment Condition

RRDF Segment Disassembled. (WP 0056 00)

PREPARATION FOR MOVEMENT - DISASSEMBLE INTERMEDIATE SECTION

WARNING



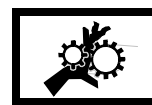
VEST



HELMET PROTECTION



HEAVY PARTS

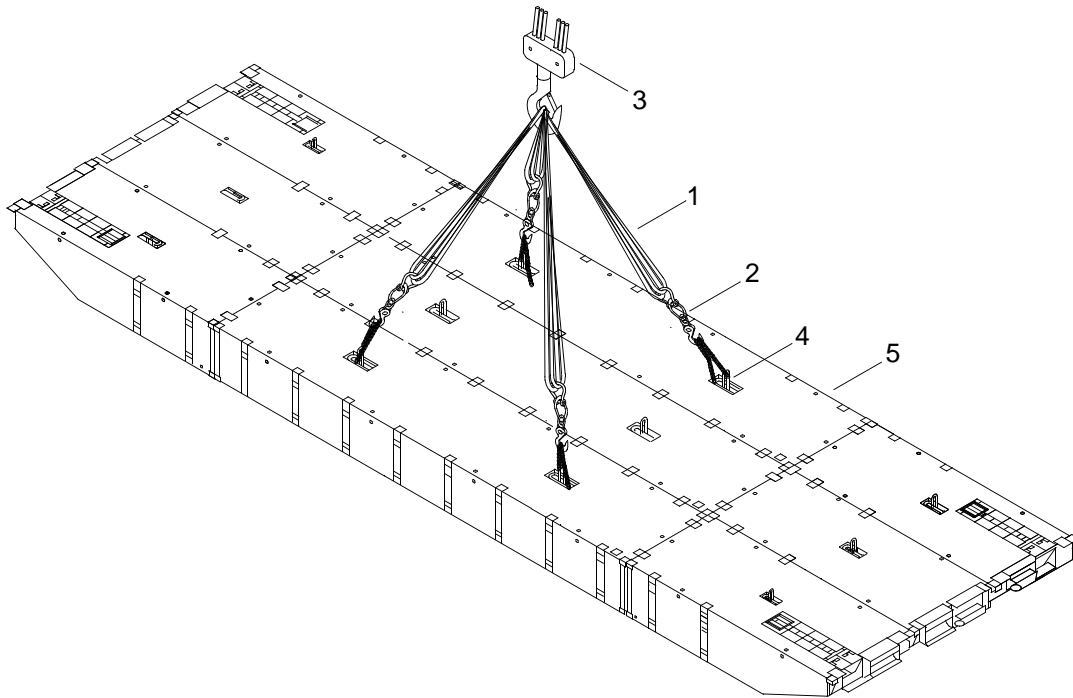


MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

DISASSEMBLE INTERMEDIATE SECTION ON DECK OF SEALIFT VESSEL

1. Attach four 53,000 lb slings (1) and 36,000 lb adjustable chain slings (2) from crane (3) to padeye shackles (4) on intermediate section (5).



WARNING

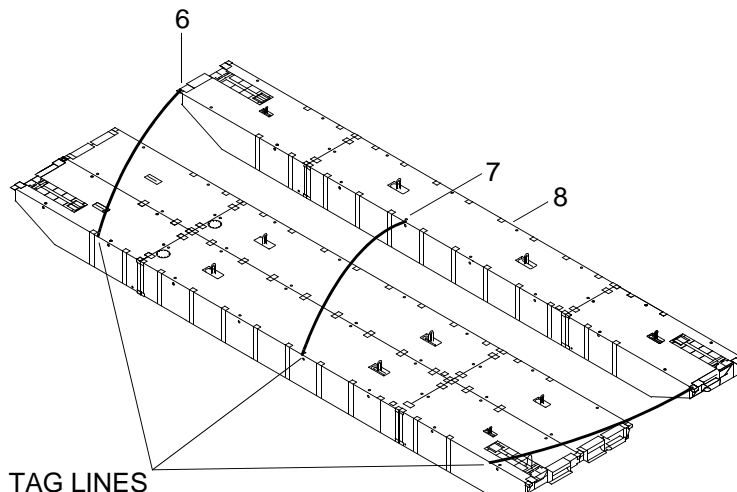
**HEAVY PARTS**

2. Using slings (1 and 2) and crane (3), lift intermediate section (5) on deck of sealift vessel.
3. Remove 36,000 lb adjustable chain slings (2) from padeye shackles (4) on intermediate section (5).
4. Remove 53,000 lb slings (1) from crane (3).
5. Operate male and female guillotine connectors. (WP 0009 00)
6. Using crowbar, separate intermediate section into strings.
7. Disassemble module strings. (WP 0059 00)
8. Stow male and female guillotine connectors. (WP 0060 00)

DISASSEMBLY OF INTERMEDIATE SECTION IN WATER**NOTE**

This procedure is typical of separating intermediate sections into module strings.

1. Attach tag lines to turn tubes (6) and ISO corner fittings (7).



2. Operate male and female guillotine connectors. (WP 0009 00)
3. Using crowbar, separate intermediate sections into module strings (8).

WARNING

Place the hands on top or on the outside of ropes/lines so that in an emergency the lines can be released quickly to preclude being pulled into the equipment. Failure to observe these precautions could result in serious injury or death.

4. Using tag lines, maneuver module strings (8) into position for disassembly.
5. Stow male and female guillotine connectors. (WP 0060 00)
6. Disassemble module strings. (WP 0059 00)

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
MODULE STRINGS
OPERATION UNDER USUAL CONDITION**

INITIAL SETUP:**Tools**

Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Crowbar (Item 68, WP 0116 00)
 Sling, Lifting, 53,000 lb (Brown) (Item 59, WP 0116 00)
 Qty 2
 Sling, Lifting, 36,000 lb Adjustable Chain (Item 61, WP 0116 00)
 Qty 2

Personnel Required

Seaman 88K

Equipment Condition

Intermediate Section Disassembled. (WP 0058 00)
 CBSE Section Disassembled. (WP 0057 00)

PREPARATION FOR MOVEMENT - DISASSEMBLY OF MODULE STRINGS

WARNING



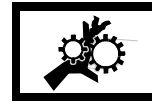
VEST



HELMET PROTECTION



HEAVY PARTS

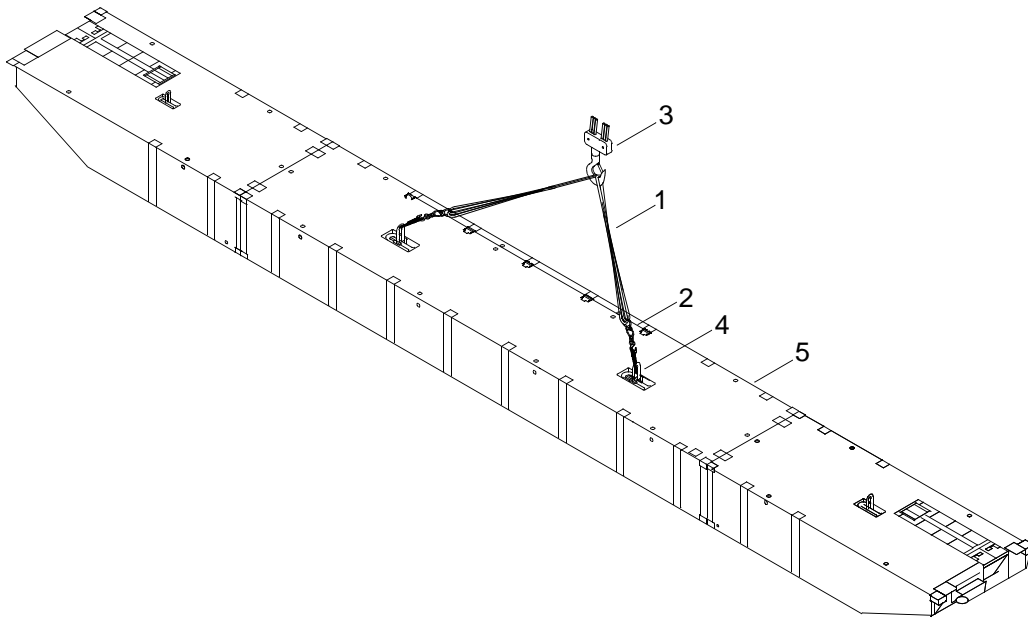


MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

DISASSEMBLY OF MODULE STRINGS ON DECK OF SEALIFT VESSEL

1. Attach two 53,000 lb slings (1) and 36,000 lb adjustable chain slings (2) from crane (3) to padeye shackles (4) on module string (5).

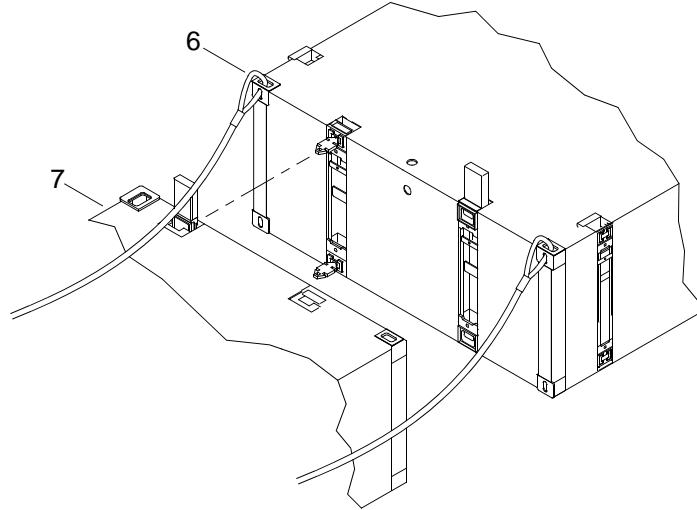
**WARNING****HEAVY PARTS**

2. Using slings (1 and 2) and crane (3), lift module string (5) on deck of sealift vessel.
3. Remove 36,000 lb adjustable chain slings (2) from padeye shackles (4) on module string (5).
4. Remove 53,000 lb slings (1) from crane (3).
5. Operate male and female guillotine connectors. (WP 0009 00)
6. Using crowbar, separate modules.
7. Assemble module ISOPAK. (WP 0061 00)
8. Stow male and female guillotine connectors. (WP 0060 00)

DISASSEMBLY OF MODULE STRINGS IN WATER**NOTE**

This procedure is typical of separating module strings.

1. Attach tag lines to ISO corner fittings (6).



2. Operate male and female guillotine connectors. (WP 0009 00)
3. Using crowbar, separate module strings.

WARNING

Place the hands on top or on the outside of ropes/lines so that in an emergency the lines can be released quickly to preclude being pulled into the equipment. Failure to observe these precautions could result in serious injury or death.

4. Using tag lines, maneuver modules (7) into position for stowage.
5. Stow male and female guillotine connectors. (WP 0060 00)

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
MALE AND FEMALE GUILLOTINE CONNECTORS
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Crowbar (Item 68, WP 0116 00)
 Pin Retraction Tool (Item 69, WP 0116 00)
 Hammer, Hand (10 lb Sledge) (Item 55, WP 0116 00)

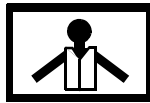
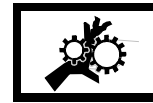
Personnel Required

Seaman 88K

**PREPARATION FOR MOVEMENT - STOWAGE OF MALE AND FEMALE
GUILLOTINE CONNECTORS**

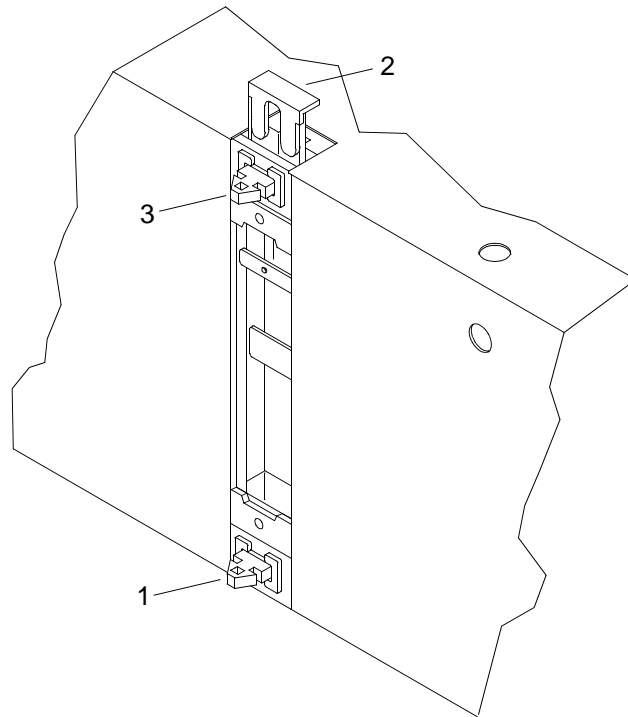
STOW MALE CONNECTORS

WARNING

**VEST****HELMET PROTECTION****HEAVY PARTS****MOVING PARTS**

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. While holding lower male guillotine connector (1) fully inward against its deployment spring, lower guillotine connector (2) with sledgehammer to partially engage and restrain lower male lock pin (1).



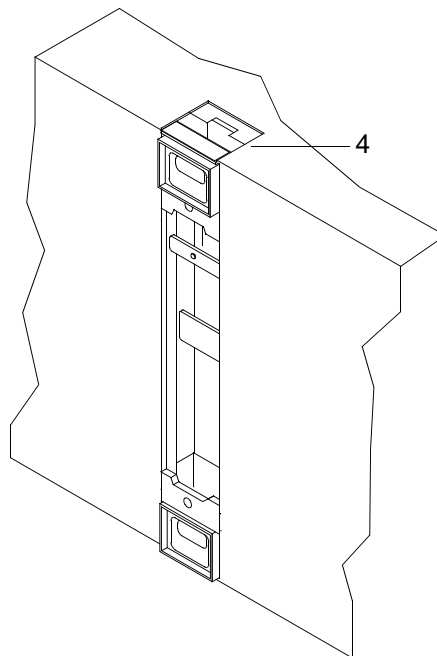
2. While holding upper male guillotine connector (3) inward against deployment spring, complete lowering guillotine connector (2) with sledgehammer to engage and restrain both pins (1, 3).

STOW FEMALE CONNECTORS

NOTE

Guillotine connectors are properly stowed when flush with module deck.

1. Using sledgehammer, strike guillotine (4) of female connectors until flush with deck.



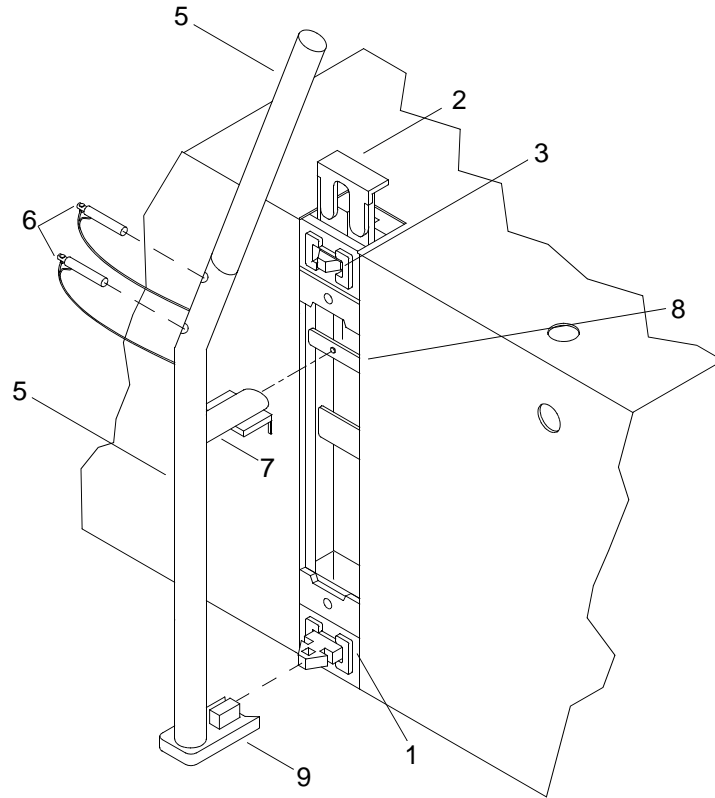
2. Verify all guillotines are flush with module deck.

STOW LOWER MALE CONNECTORS USING PIN RETRACTION TOOL

NOTE

If module is in water and lower pins (1) require stowage, use pin retraction tool (5).

1. Assemble two piece pin retraction tool (5) and secure with two quick release pins (6).



2. Rest pin retraction tool support fitting (7) on guillotine cross bracket (8).
3. Position foot (9) of pin retraction tool (5) over lower male guillotine connector (1) and press inwards by levering pin retraction tool (5) upwards.
4. Lower guillotine (2) with sledgehammer to partially engage and restrain lower male guillotine connector (1).
5. Remove pin retraction tool (5).
6. While holding upper lock male guillotine connector (3) inward against deployment spring, complete lowering guillotine connector (2) with sledgehammer to engage and restrain both male guillotine connectors (1, 3).

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
MODULE ISOPAK
OPERATION UNDER USUAL CONDITIONS**

INITIAL SETUP:**Tools**

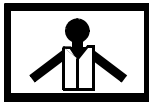
Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Crowbar (Item 68, WP 0116 00)
 Sling, Lifting, 53,000 lb (Brown) (Item 59, WP 0116 00)
 Qty 2
 Sling, Lifting, 36,000 lb Adjustable Chain (Item 61, WP 0116 00)
 Qty 4
 Sling, Lifting, 8,400 lb Adjustable Chain (Item 60, WP 0116 00)
 Qty 4

Personnel Required

Seaman 88K (2)

PREPARATION FOR MOVEMENT - ASSEMBLE MODULE ISOPAK

WARNING



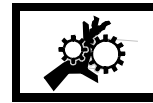
VEST



HELMET PROTECTION



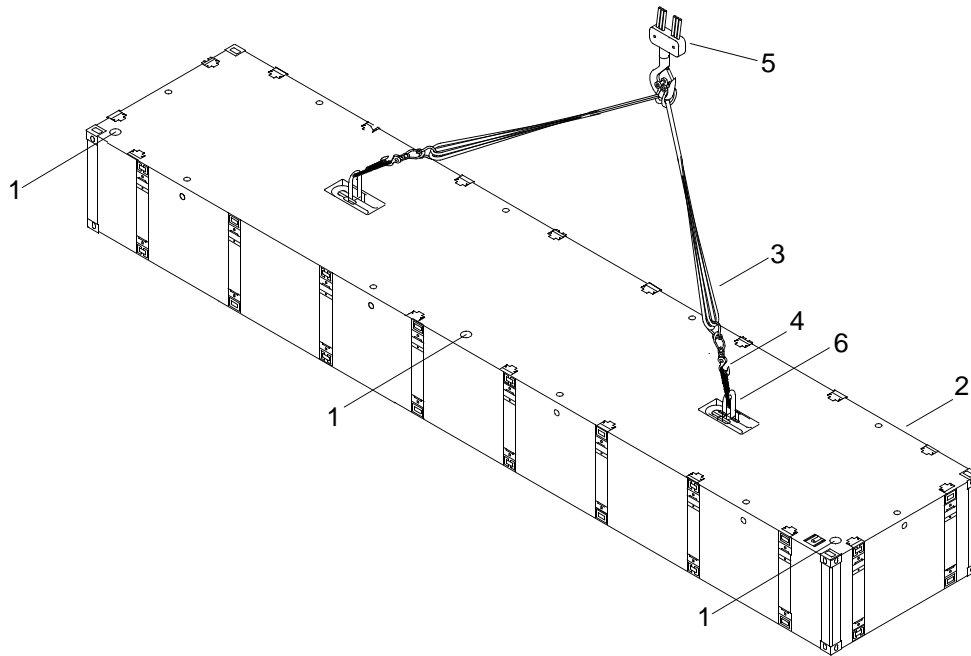
HEAVY PARTS



MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Verify drain plugs (1) on center module (2) are installed and tight.



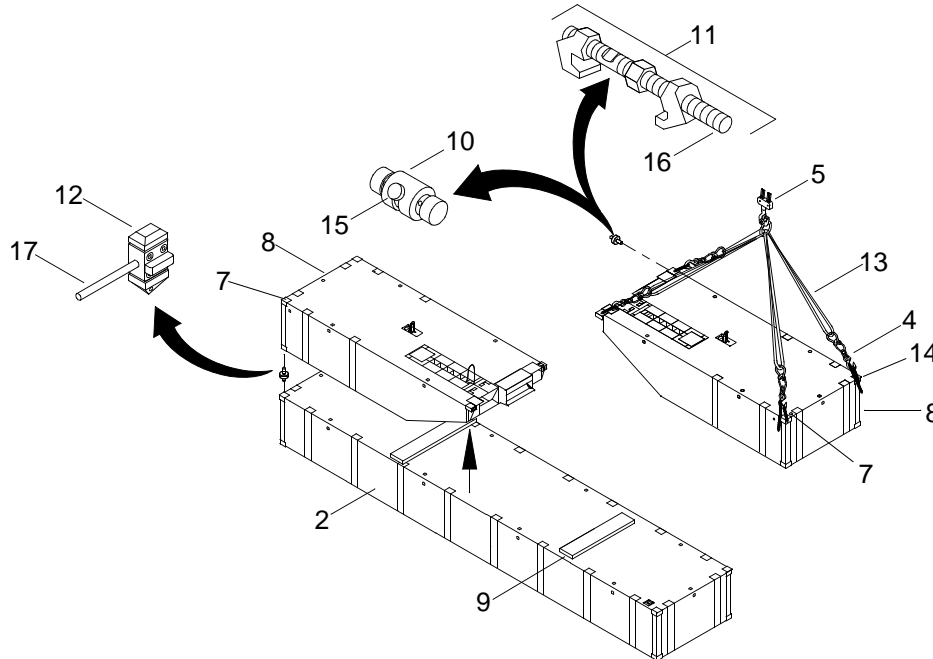
2. Attach two 53,000 lb slings (3) and 36,000 lb adjustable chain slings (4) from crane (5) to padeyes (6) on center module (2).

WARNING

**HEAVY PARTS**

3. Using slings (3 and 4) and crane (5), lift center module (2) and position for assembly.
4. Remove 36,000 lb adjustable chain slings (4) from padeyes (6) on center module (2).
5. Remove 53,000 lb slings (3) from crane (5).

6. Verify drain plugs (7) on end rake modules (8) are installed and tight.



7. Install dunnage (9) on top of center module (2).

NOTE

Either horizontal twist locks or bridge locks are used to connect two end rake modules.

8. Install two horizontal connectors (10) or bridge locks (11) into end rake modules (8).
9. Install four vertical connectors (12) into corners of center module (2).
10. Attach four 8,400 lb slings (13) and 36,000 lb adjustable chain slings (4) from crane (5) to corners (14) on end rake module (8).

WARNING



HEAVY PARTS

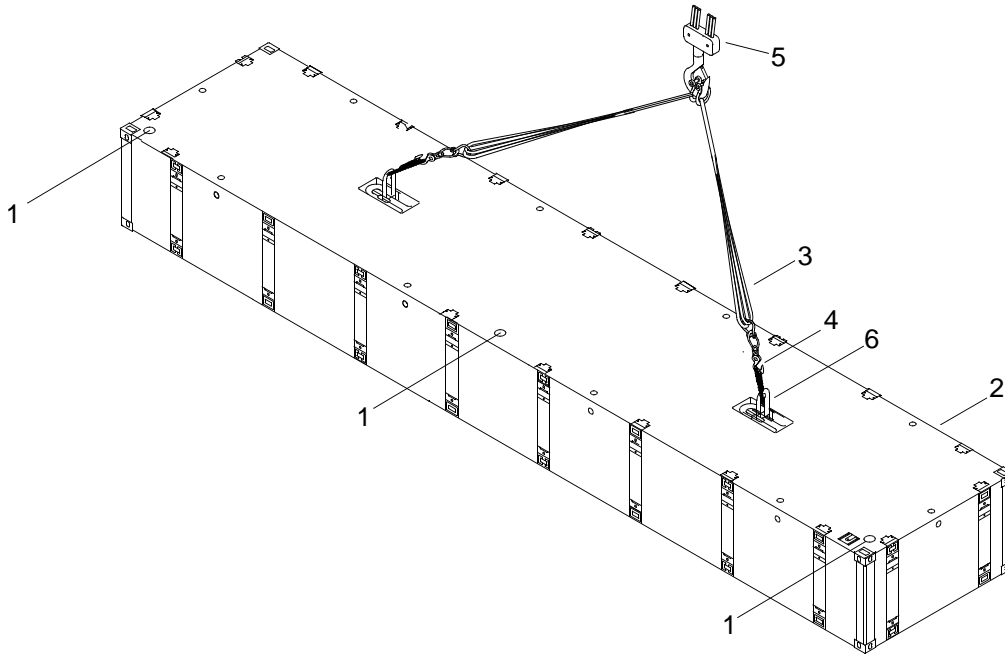
11. Using slings (4 and 13) and crane (5), lift end rake module (8) onto top of center module (2).
12. Remove 36,000 lb adjustable chain slings (4) from corners (14) on end rake module (8).
13. Attach four 8,400 lb slings (13) and 36,000 lb adjustable chain slings (4) from crane (5) to corners (14) on second end rake module (8).

WARNING**HEAVY PARTS**

14. Using slings (4 and 13) and crane (5), lift end rake module (8) onto top of center module (2).
15. Remove 36,000 lb adjustable chain slings (4) from corners (14) on end rake module (8).
16. Remove 8,400 lb slings (13) from crane (5).
17. Lock two horizontal twist locks (10) or bridge locks (11).
 - a. Lock two horizontal twist locks (10) by rotating levers (15).
 - b. Lock two bridge locks (11) by tightening jack screws (16).
18. Lock four vertical connectors (12) by rotating levers (17).

ASSEMBLE COMBINATION BEACH SEA END MODULE ISOPAK

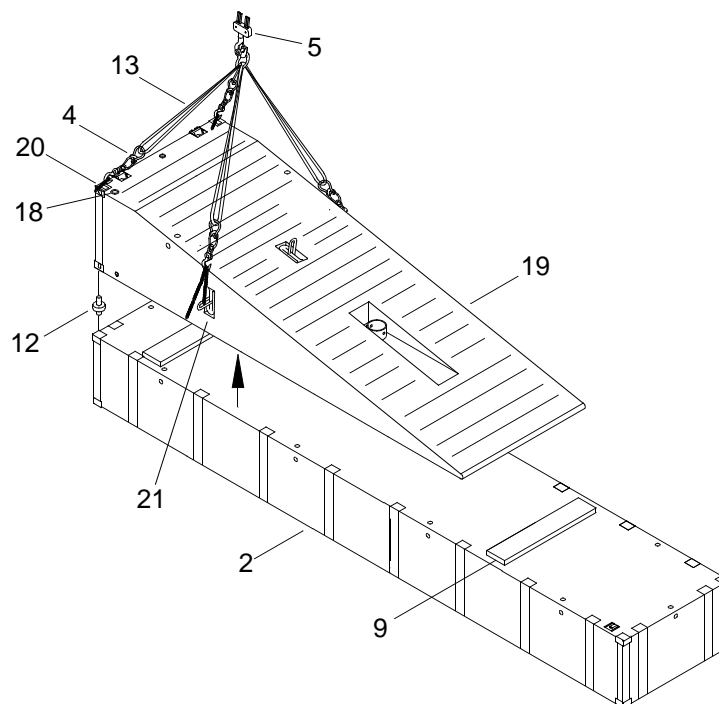
1. Verify drain plugs (1) on center module (2) are installed and tight.



2. Attach two 53,000 lb slings (3) and 36,000 lb adjustable chain slings (4) from crane (5) to padeyes (6) on center module (2).

WARNING**HEAVY PARTS**

3. Using slings (3 and 4) and crane (5), lift center module (2) and position for assembly.
4. Remove 36,000 lb adjustable chain slings (4) from padeyes (6) on center module (2).
5. Remove 53,000 lb slings (3) from crane (5).
6. Install dunnage (9) onto top of center module (2).
7. Verify drain plugs (18) on CBSE module (19) are installed and tight.

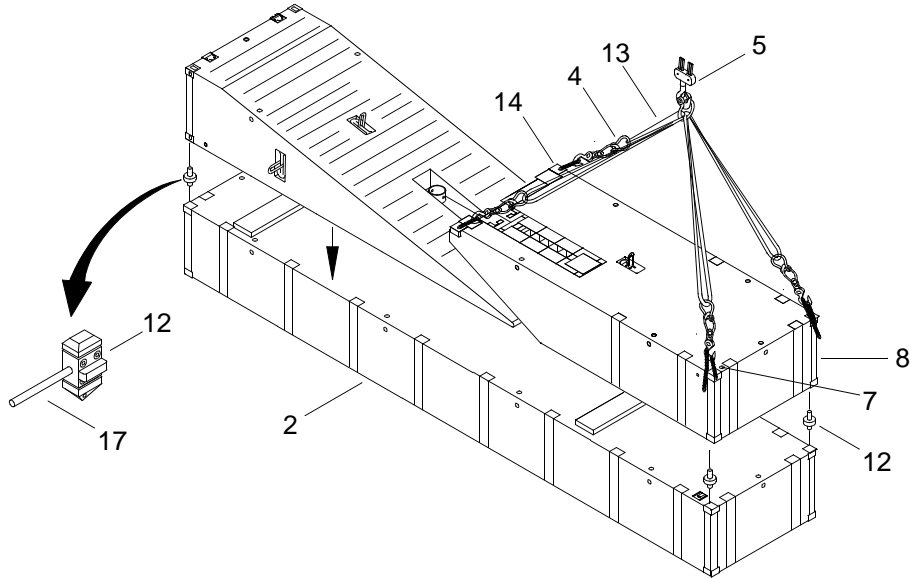


8. Attach four 8,400 lb slings (13) and 36,000 lb adjustable chain slings (4) from crane (5) to two corners (20) and two side padeyes (21) on CBSE module (19).
9. Install two vertical connectors (12) into corners of center module (2).

WARNING**HEAVY PARTS**

10. Using slings (4 and 13) and crane (5), lift CBSE module (19) onto top of center module (2).

11. Remove 36,000 lb adjustable chain slings (4) from two corners (20) and two side padeyes (21) on CBSE module (19).
12. Verify drain plugs (7) on end rake modules (8) are installed and tight.



NOTE

Either a left, right or center end rake can be mounted on the center module with a CBSE.

13. Attach four 8,400 lb slings (13) and 36,000 lb adjustable chain slings (4) from crane (5) to corners (14) on end rake module (8).
14. Install two vertical connectors (12) into corners of center module (2).

WARNING



HEAVY PARTS

15. Using slings (4 and 13) and crane (5), lift end rake module (8) onto top of center module (2).
16. Remove 36,000 lb adjustable chain slings (4) from corners (14) on end rake module (8).
17. Remove 8,400 lb slings (13) from crane (5).
18. Lock four vertical connectors (12) by rotating levers (17).

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
10 KW TACTICAL QUIET GENERATOR
OPERATION UNDER UNUSUAL CONDITIONS**

INITIAL SETUP:**Tools**

Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Protector, Hearing (Item 44, WP 0116 00)

Personnel Required

Seaman 88K

EMERGENCY PROCEDURE - EMERGENCY STOP OF 10 KW TACTICAL QUIET GENERATOR

WARNING



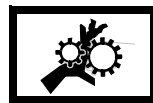
VEST



HELMET PROTECTION



HEAVY PARTS



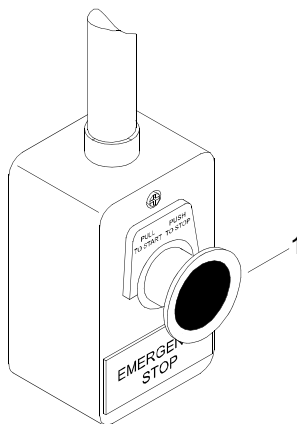
MOVING PARTS



EAR PROTECTION

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Push EMERGENCY STOP button (1) to shut down generator.



2. Pull EMERGENCY STOP button (1) to reset emergency stop switch before starting generator.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
GENERATOR CONTAINER
OPERATION UNDER UNUSUAL CONDITIONS**

INITIAL SETUP:**Tools**

Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Protector, Hearing (Item 44, WP 0116 00)

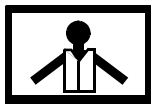
Personnel Required

Seaman 88K

**EMERGENCY PROCEDURE - MANUAL OPERATION OF 10 KW TACTICAL QUIET GENERATOR
FIRE SUPPRESSION SYSTEM**

ACTIVATE FIRE SUPPRESSION SYSTEM WITH LOCAL MANUAL RELEASE

WARNING



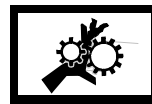
VEST



HELMET PROTECTION



HEAVY PARTS



MOVING PARTS



EAR PROTECTION

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

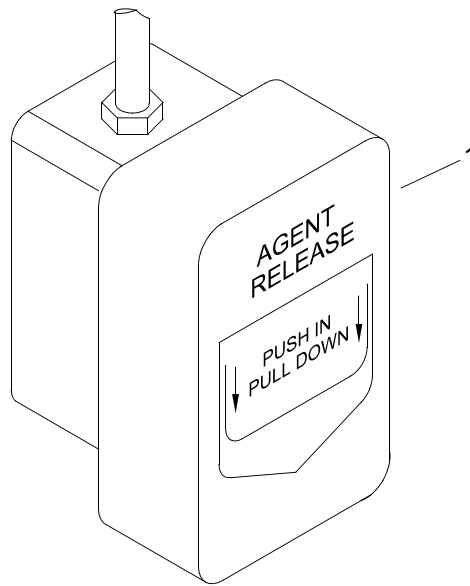
Fire in protected compartments or accidental activation of the CO₂ system while personnel occupy compartment could result in serious injury or death to personnel if CO₂ is released.

Do not depress fire suppression control head lever during normal maintenance. Serious injury or death to personnel could result if CO₂ is inhaled.

Prior to entering the shelter after discharge of CO₂, the shelter shall be completely cleared of any CO₂ that may remain. Serious injury or death to personnel could result if CO₂ is inhaled.

1. Locate fire suppression pull station in the interior of the generator container.

2. Push in and pull down lever (1) to activate fire suppression system. A twenty second delay will occur before **CO₂** is discharged.

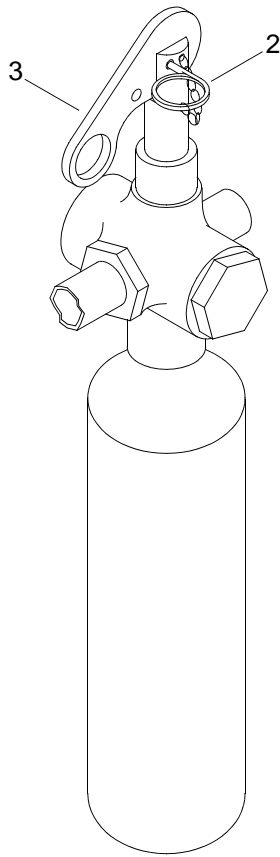


3. Immediately evacuate the generator container.

ACTIVATE FIRE SUPPRESSION SYSTEM WITH MANUAL/AUTOMATIC ACTUATOR

1. Grasp and pull ring (2) to remove safety pin.

-
2. Pull upwards on handle (3) to activate fire suppression system. A twenty second delay will occur before **CO₂** is discharged.



3. Immediately evacuate the generator container.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
PERSONNEL SHELTER
OPERATION UNDER UNUSUAL CONDITIONS**

INITIAL SETUP:**Tools**

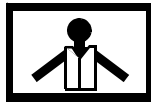
Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)

Personnel Required

Seaman 88K

EMERGENCY PROCEDURE - EMERGENCY ESCAPE OF PERSONNEL SHELTER

WARNING



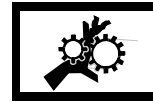
VEST



HELMET PROTECTION



HEAVY PARTS

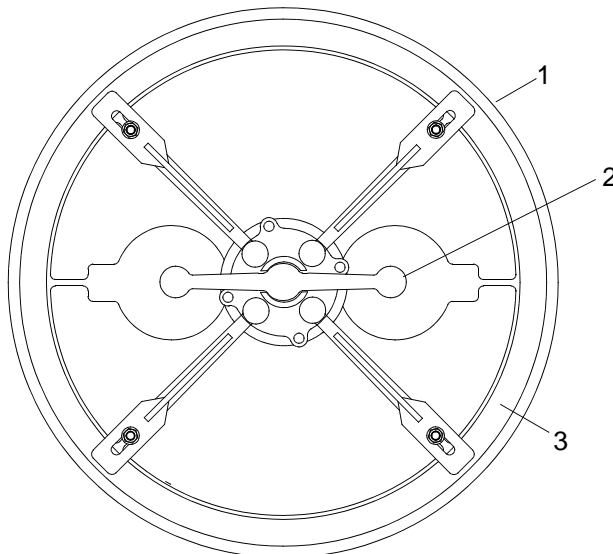


MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

The personnel shelter is not a safe haven when an Officer in Charge (OIC) or Noncommissioned Officer in Charge (NCOIC) orders cessation of operations and/or clearing of the RRDF due to unsafe weather or sea state conditions. Do not remain in the personnel shelter if ordered to evacuate the RRDF. Failure to comply will result in injury or death to personnel.

1. Locate emergency escape scuttle (1).



-
2. Grasp emergency escape scuttle handle (2), push in and turn one quarter turn clockwise to release scuttle door (3).
 3. Push scuttle door (3) open.
 4. Crawl through scuttle opening and exit personnel shelter.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
RIGID HULL INFLATABLE BOAT (RHIB)
OPERATION UNDER UNUSUAL CONDITIONS**

INITIAL SETUP:**Tools**

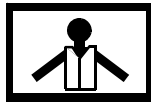
Life Preserver, Vest (Item 71, WP 0116 00)
Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
Helmet, Safety (Brown) (Item 30, WP 0116 00)

Personnel Required

Seaman 88K

EMERGENCY PROCEDURE - EMERGENCY SHUTDOWN OF RIGID HULL INFLATABLE BOAT

WARNING



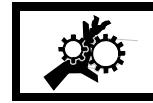
VEST



HELMET PROTECTION



HEAVY PARTS



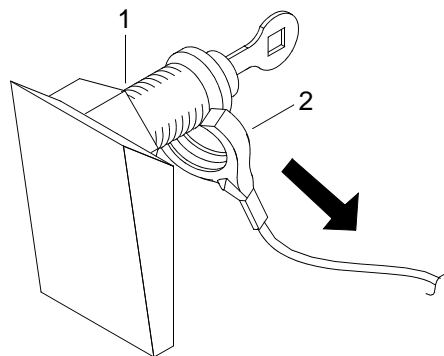
MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The ignition switch or emergency stop lanyard will not stop the boat motor if the motor wiring harness is disconnected.

1. Locate ignition switch assembly (1).



2. Turn ignition switch (1) to off position or pull emergency stop lanyard to remove emergency stop clip (2) from ignition switch.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
RIGID HULL INFLATABLE BOAT (RHIB)
OPERATION UNDER UNUSUAL CONDITIONS**

INITIAL SETUP:**Tools**

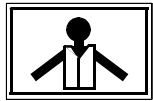
Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)

Personnel Required

Seaman 88K

EMERGENCY PROCEDURE - EMERGENCY STARTING OF BOAT MOTOR

WARNING



VEST



HELMET PROTECTION



HEAVY PARTS



MOVING PARTS



EXPLOSION



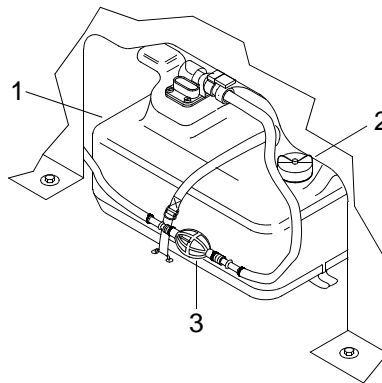
ELECTRICAL

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death to personnel.

CAUTION

Battery must be connected even if it is fully discharged. If the motor is run with a disconnected battery, damage could occur to the electrical system.

1. Vent pressure from portable fuel tank (1) if it does not have a vented cap (2).



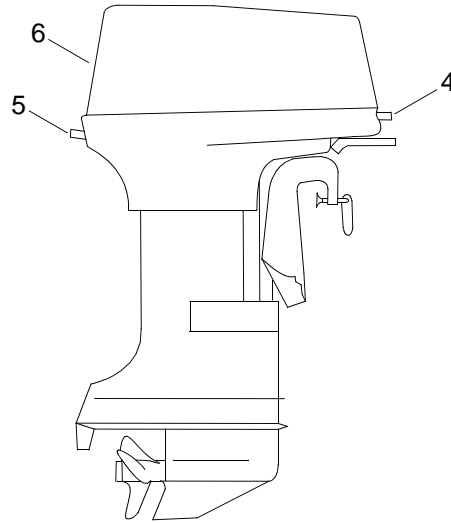
- a. Slowly loosen fuel filler cap (2) to release pressure.
- b. Tighten fuel filler cap (2).
- c. Squeeze fuel primer pump bulb (3) until firm.

WARNING

Shift lever must be in neutral to prevent sudden movement of boat when motor starts or injury to personnel may occur.

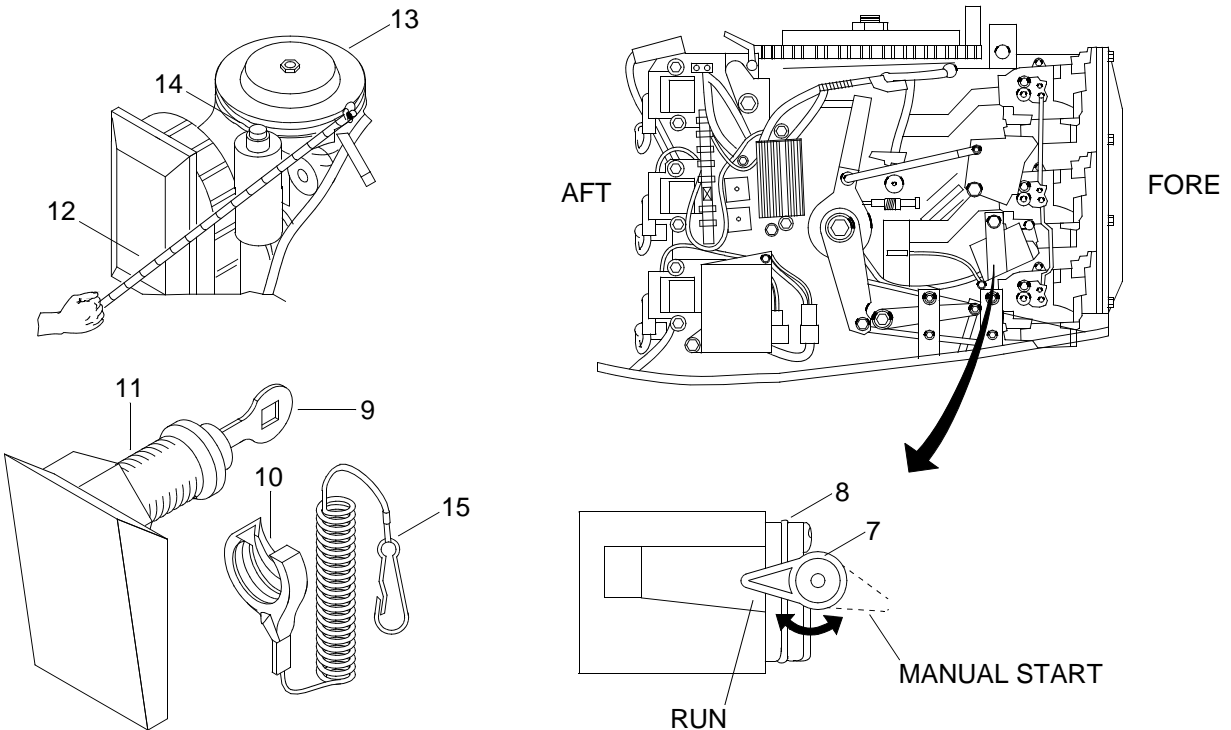
Keep hands, hair and clothing clear of moving parts. Contact with moving parts may cause serious injury or death to personnel.

- Unlatch the forward (4) and aft (5) engine cover holddown latches and remove engine cover (6).


NOTE

The primer solenoid is located on the starboard side of the engine.

- Move lever (7) on primer solenoid (8) to the manual start position.



4. Squeeze fuel primer bulb (3) one time.
5. Move lever (7) on primer solenoid (8) to the run position.
6. Turn ignition key (9) to the on position.
7. Connect emergency stop clip (10) to key switch (11).

NOTE

Starter cord must be used to turn flywheel/start motor.

8. Firmly engage knot of starter cord (12) in notch of flywheel (13).

NOTE

Starter cord knot must clear starter pinion (14).

9. Wind starter cord (12) clockwise around flywheel (13).
10. Pull lightly on starter cord (12) to remove slack.
11. Pull hard on starter cord (12) to start motor.
12. Monitor engine until it slows to a normal idle speed (approximately 950 RPM).
13. Attach safety lanyard clip (15) to operators clothing.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
EMERGENCY ANCHOR SYSTEM (EASY)
OPERATION UNDER UNUSUAL CONDITIONS**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Protector, Hearing (Item 44, WP 0116 00)

Personnel Required

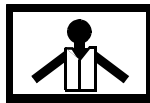
Seaman 88K (2)

Equipment Condition

EASY Mooring System Installed. (WP 0032 00)

UNUSUAL ENVIRONMENT/WEATHER - DEPLOY EASY**INSTALL ANCHOR STABILIZERS**

WARNING



VEST



HELMET PROTECTION



HEAVY PARTS



MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Remove rope securing container end doors.

WARNING

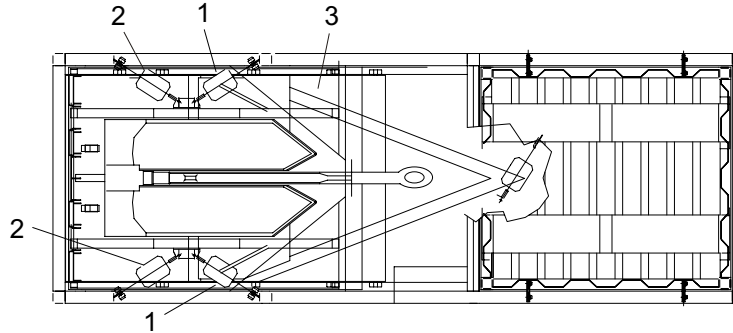
Doors must be secured in the open position. Failure to comply could result in death or serious injury to personnel.

2. Secure container end doors open with locking bars and pins.
3. Unlatch and open container pump side doors.

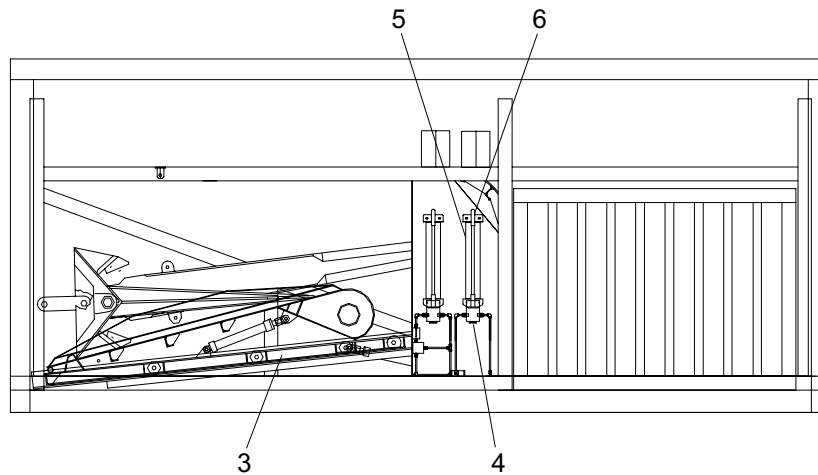
WARNING

Doors must be secured in the open position. Failure to comply could result in death or serious injury to personnel.

4. Secure container pump side doors open with locking hooks.
5. Remove two six ton chain hoists (1), two 7/8 in. 6 1/2 ton frame shackles and two 3/4 ton chain hoists (2) securing anchor drawer (3) to container frame.

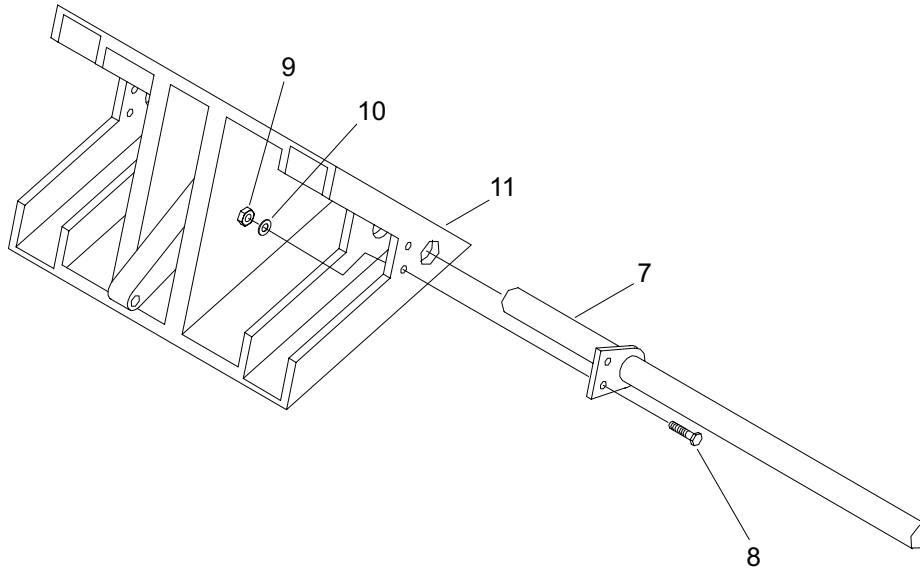


6. Extend anchor drawer (3).



- a. Move valve lever (4) on anchor drawer hand pump (5) to the OUT position (handle to right).
- b. Pump handle (6) until anchor drawer (3) extends out of container approximately two feet.

7. Remove two stabilizers (7) from container stowage box.



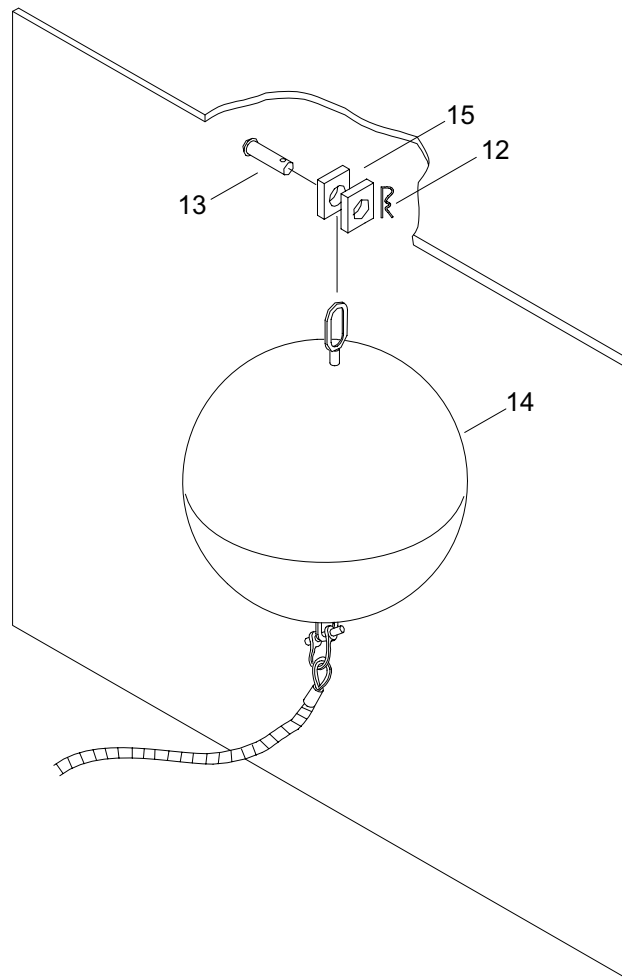
WARNING

Personnel installing anchor stabilizers must wear lifeline body belt with lanyard attached to EASY container. Failure to wear this equipment or properly attach the lanyard could result in injury or death.

8. Install anchor stabilizers (7) on anchor (11).
- Remove two bolts (8), nuts (9) and lock washers (10) from each side of anchor (11).
 - Install stabilizer (7) on each side of anchor (11) and secure with two bolts (8), lock washers (10) and nuts (9).
 - Tighten bolts (8) and nuts (9).

RELEASE ANCHOR BUOY FROM CONTAINER MOUNT

1. Remove quick release pin (12) from retaining pin (13).



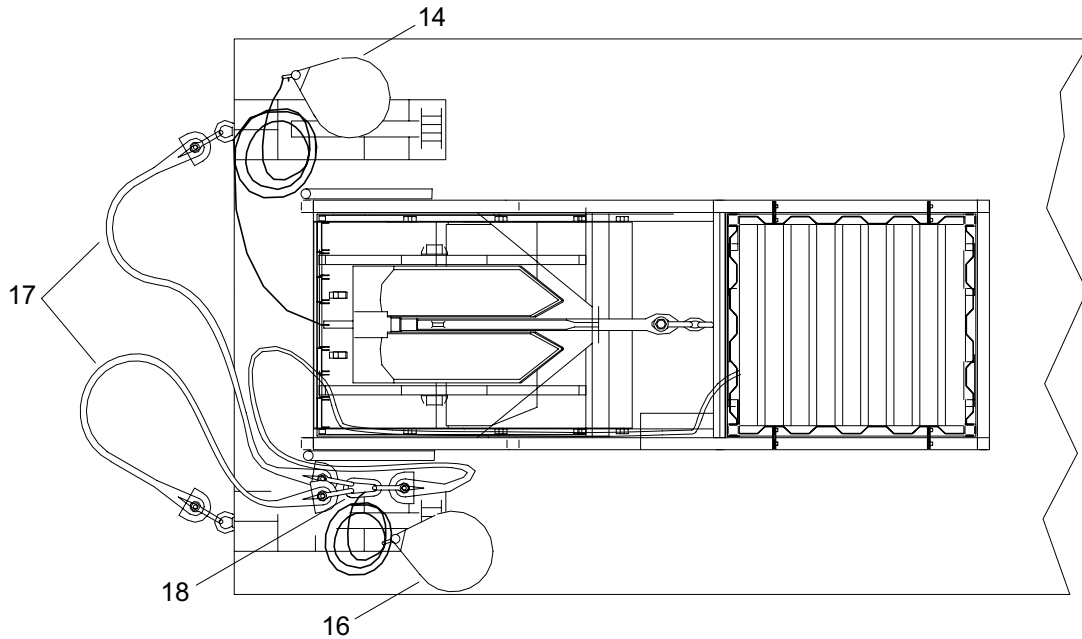
WARNING

**HEAVY OBJECTS**

2. Using assistant to support weight of anchor buoy (14), remove retaining pin (13) from container bracket (15).
3. Position anchor buoy (14) on top of anchor (11).

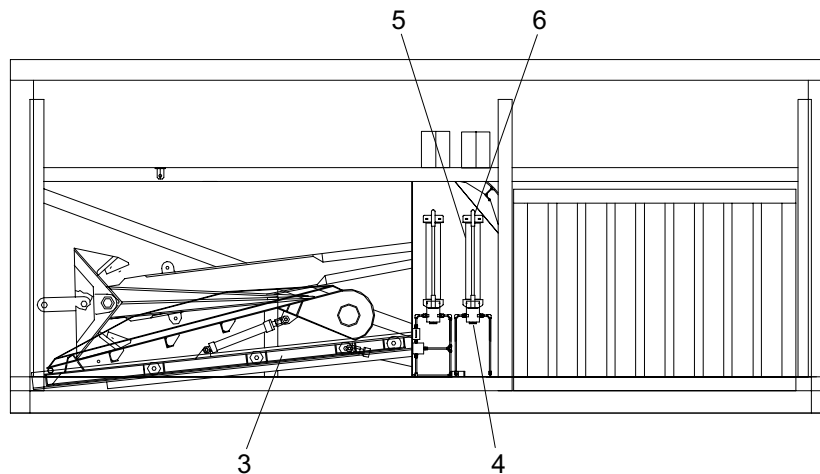
DEPLOY EASY ANCHOR**WARNING****HEAVY PARTS**

1. Remove anchor buoy (14), mooring bridle buoy (16), remaining line of mooring bridle (17) and pear link (18) from top of anchor and lay out along deck edge in direction of deployment.

**NOTE**

Hydraulic cylinder should reach end of its travel before drawer wheels contact end of track stop bolts.

2. Fully extend anchor drawer (3).



- a. Move valve lever (4) on anchor drawer hand pump (5) to the OUT position (handle to the right).
- b. Pump handle (6) until anchor drawer (3) is fully extended.

WARNING



HEAVY PARTS

3. Lower anchor buoy (14) and mooring bridle buoy (16) with associated wire ropes and pear link (18) into water.

WARNING



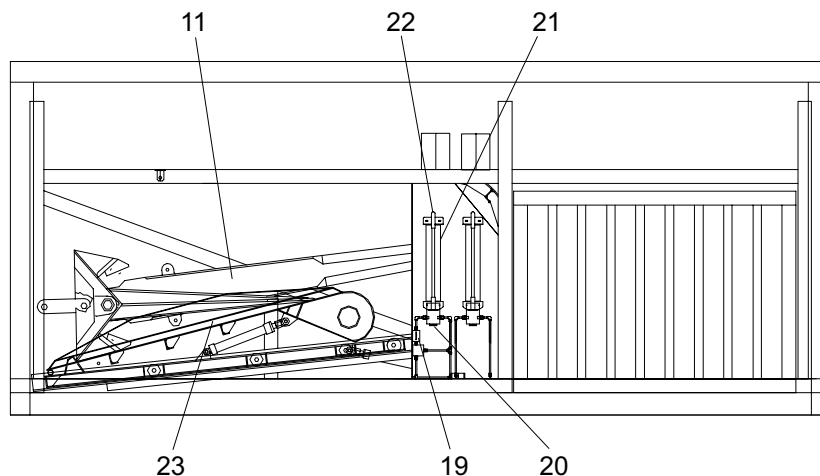
EAR PROTECTION

The 2,400 lb NAVMOOR anchor, anchor chain and mooring bridle deploy from container at a high rate of speed, dependant on depth of water and drift rate of RRDF platform. Personnel must stand clear of container end during anchor deployment. Failure to comply could result in death or serious injury to personnel.

NOTE

Anchor will slide when anchor tilt platform elevates to point where stops no longer engage anchor crown.

4. Launch EASY anchor (11).



- a. Rotate directional control valve (19) handle clockwise to close valve.
- b. Move valve lever (20) on anchor lift hand pump (21) to the LIFT position (handle to the left).
- c. Pump handle (22) until tilt platform (23) is fully tilted.

-
5. When anchor chain and mooring line is out of mooring box, lower tilt platform (23).
 - a. Rotate directional control valve (19) handle counterclockwise to open valve.
 - b. Move valve lever (20) on anchor lift hand pump (21) to the DOWN position (handle to the right).
 - c. Pump handle (22) until tilt platform (23) is fully lowered.
 6. When tilt platform (23) is lowered against anchor drawer (3), close pressure release valve (19).
 7. Move valve lever (4) on anchor drawer hand pump (5) to the IN position (handle to the left).
 8. Pump handle (6) until anchor drawer (3) retracts fully into the container.
 9. Move valve lever (4) on anchor drawer hand pump (5) to the neutral position (handle centered).
 10. Install two six ton chain hoists (1), two 7/8 in. 6 1/2 ton frame shackles and two 3/4 ton chain hoists (2) between empty platform and container frame to reduce undue stress on platform hydraulic cylinder.
 11. Remove container door locking bars, pins and locking hooks.
 12. Close and latch all container doors.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
PREPARATION FOR TOWING
OPERATION UNDER UNUSUAL CONDITIONS**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
Life Preserver, Vest (Item 71, WP 0116 00)
Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
Helmet, Safety (Brown) (Item 30, WP 0116 00)
Crowbar (Item 68, WP 0116 00)
Hammer, Hand (10 lb Sledge) (Item 55, WP 0116 00)

Personnel Required

Seaman 88K

References

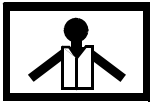
COMDTINST M16672.2D

Equipment Condition

Safety Equipment Removed. (WP 0050 00)
6 ft By 12 ft Fenders Removed. (WP 0048 00)
5 ft By 10 ft Fenders Removed. (WP 0047 00)
4 ft By 12 ft Fenders Removed. (WP 0046 00)
3 ft By 5 ft Fenders Removed. (WP 0045 00)
Corner Fenders Removed. (WP 0049 00)
Mooring Bitts And Quick Disconnects Removed. (WP 0052 00)
Generator Container Removed. (WP 0044 00)
Personnel Shelter Removed. (WP 0043 00)
EASY Container Removed. (WP 0042 00)
Light Towers Removed. (WP 0041 00)
Dunnage Mats Removed. (WP 0040 00)

UNUSUAL ENVIRONMENT/WEATHER - PREPARATION FOR TOWING**PREPARE FULL STERN RRDF FOR TOWING**

WARNING



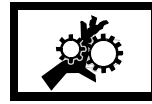
VEST



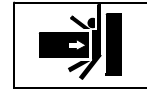
HELMET PROTECTION



HEAVY PARTS



MOVING PARTS



HEAVY PARTS

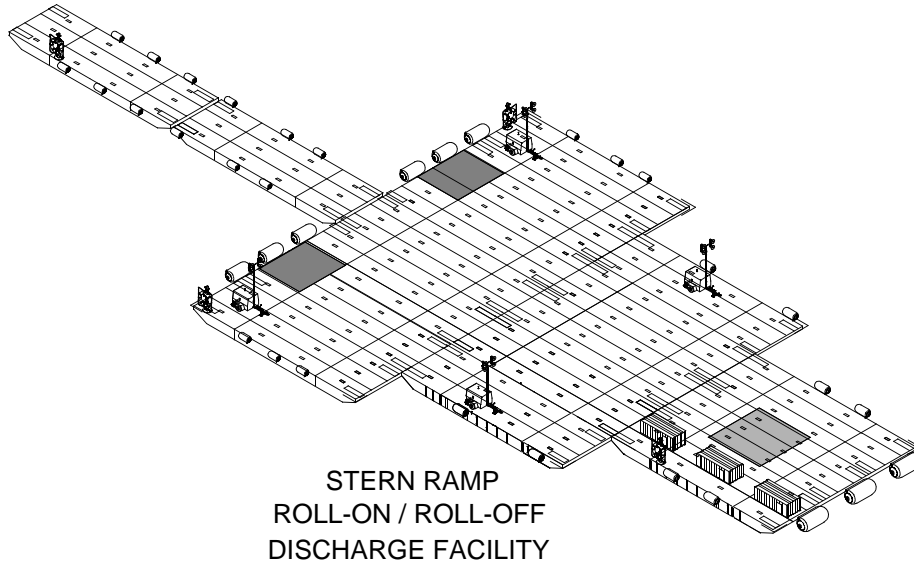
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

All equipment must be stowed or secured to the deck. Failure to comply could result in serious injury or death.

NOTE

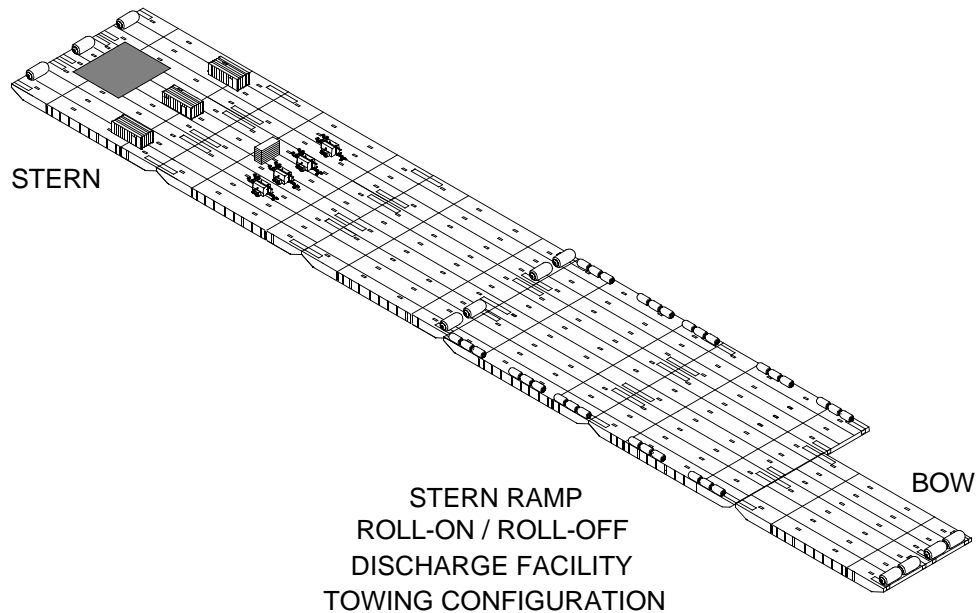
The following procedure is typical for the disassembly and reconfiguration of the RRDF platform for towing under unusual conditions.

1. Disassemble RRDF platform to allow for module movement. (WP 0055 00)



2. Secure removed safety equipment, dunnage mats, light towers, mooring bits, quick disconnects and all fenders to deck with load restraining devices to prevent movement during RRDF disassembly.
3. Relocate removed EASY, personnel shelter and generator container to balance evenly on center modules of intermediate sections and secure with load restraining devices and chains.

4. Position RRDF intermediate sections as required into the towing configuration using a WT.



5. Connect intermediate sections along sides and ends as required. (WP 0015 00)
6. Install towing bridle, towing interface and towing lights. (WP 0018 00)
7. Position towing lights on RRDF platform per U.S. Coast Guard navigation rules. (COMDTINST M16672.2D)
8. Using towing vessel, stern tow reconfigured RRDF.
9. When weather conditions warrant, return RRDF to its original configuration. (WP 0015 00)
10. Install light towers. (WP 0029 00)
11. Install EASY container. (WP 0028 00)
12. Install personnel shelter. (WP 0027 00)
13. Install generator container. (WP 0026 00)
14. Install dunnage mats. (WP 0025 00)
15. Install safety equipment. (WP 0024 00)
16. Install corner fenders. (WP 0023 00)
17. Install mooring bitts and quick disconnects. (WP 0017 00)
18. Install 3 ft by 5 ft fenders. (WP 0019 00)
19. Install 4 ft by 12 ft fenders. (WP 0020 00)
20. Install 5 ft by 10 ft fenders. (WP 0021 00)
21. Install 6 ft by 12 ft fenders. (WP 0022 00)

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
10 KW GENERATOR CONTAINER
STOWAGE**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Gloves, Rubber, Industrial (Item 24, WP 0116 00)
 Goggles, Industrial (Chipping, Chemical) (Item 26, WP 0116 00)
 Respirator, Air Filtering (Item 10, WP 0118 00)

Materials/Parts

Rag, Wiping (Item 40, WP 0117 00)

Personnel Required

Seaman 88K

Equipment Condition

Generator Container Removed. (WP 0044 00)

INTRODUCTION**Scope**

This work package covers stowage of 10 kW generator container.

General

External components used for installation of 10 kW generator container are stowed inside container.

STOWAGE OF 10 KW GENERATOR CONTAINER

WARNING



VEST



HELMET PROTECTION



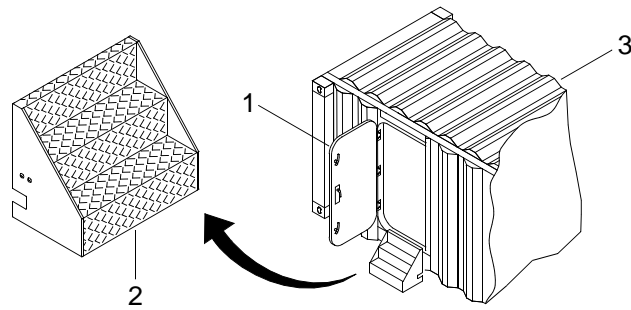
HEAVY PARTS



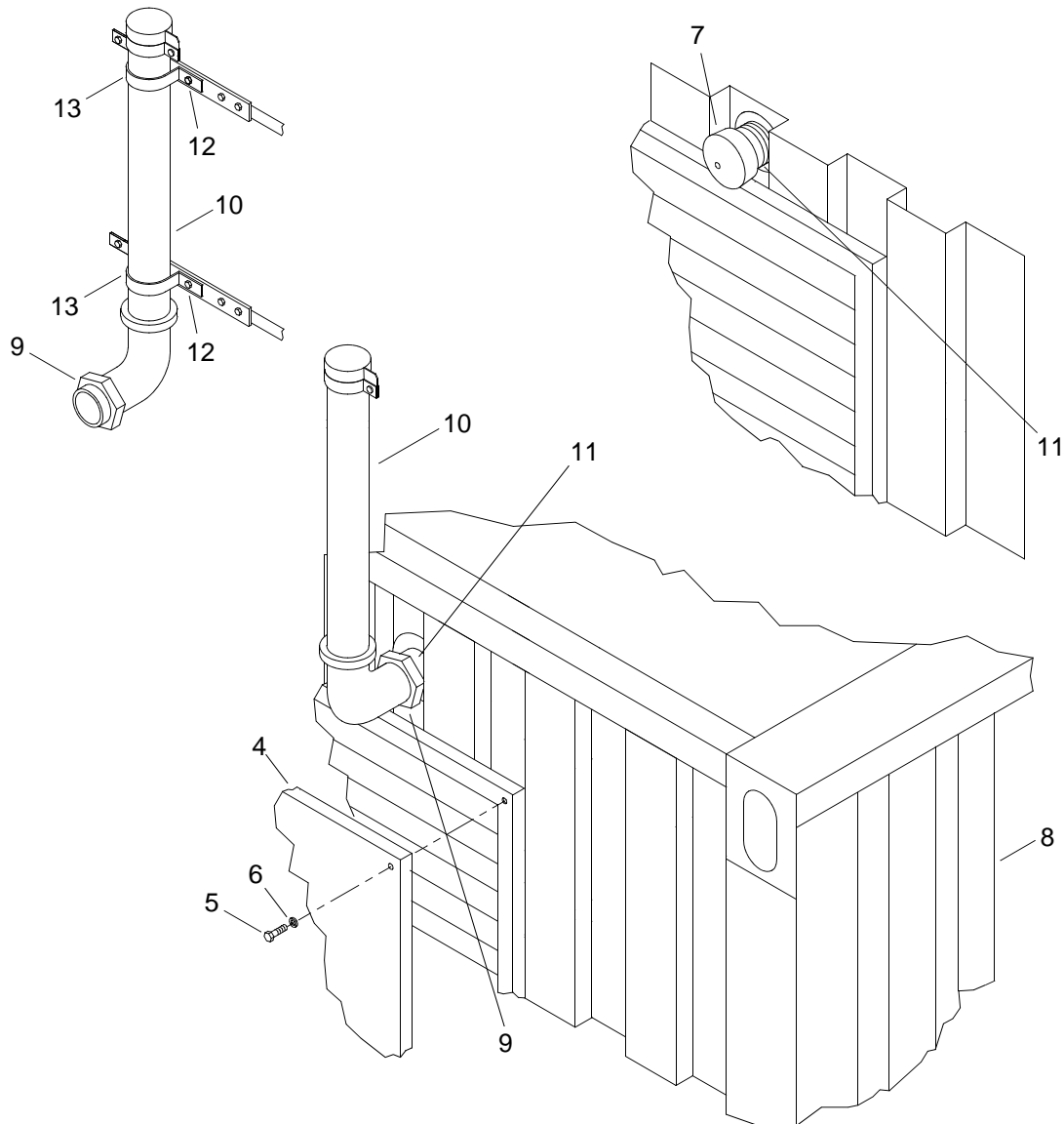
MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Unlock, undog and open generator container door (1).



2. Lower steps (2) out of generator container (3).
3. Remove two louver covers (4), hex bolts (5), lock washers (6) and protective cover (7) from inside of generator container (8).



4. Position louver covers (4) over end and rear of generator container (8) and secure each with hex bolts (5) and lock washers (6). Tighten hex bolts (5).

5. Loosen flange nut (9) and remove exhaust pipe (10) from exhaust outlet (11).
6. Use wiping rags to remove residual carbon deposits from exhaust pipe (10) and exhaust outlet (11).
7. Install protective cover (7) on exhaust outlet (11). Tighten protective cover (7).
8. Remove bolts (12) from stowage brackets (13) inside generator container (8).
9. Position exhaust pipe (10) on stowage brackets (13) and secure with bolts (12) in stowage brackets (13).

WARNING



CHEMICAL



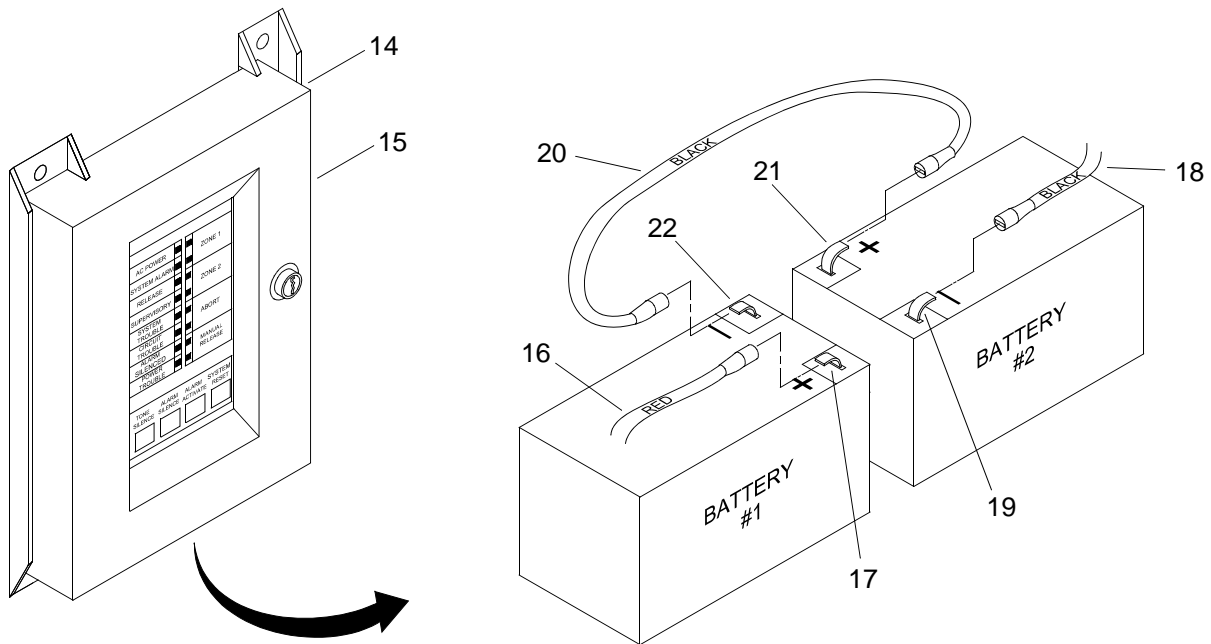
EYE PROTECTION

10. Use wiping rags to remove excess antiseize from ground cable before packing.

NOTE

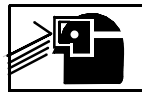
The black jumper wire between batteries #1 negative terminal and battery #2 positive terminal need not be removed to isolate battery power to the fire alarm control panel.

11. Remove battery power from fire alarm control panel (14).



- a. Unlock and open front cover (15).

WARNING

**CHEMICAL****EYE PROTECTION****VAPOR**

- b. Disconnect positive battery lead (16) from battery #1 positive terminal (17).
 - c. Disconnect negative battery lead (18) from battery #2 negative terminal (19).
 - d. Disconnect black jumper lead (20) from battery #2 positive terminal (21) and #1 negative terminal (22).
 - e. Close and lock front cover (15).
12. Prepare generator container for storage or shipment. (WP 0111 00)
 13. Lift steps (2) into generator container (3).
 14. Close, dog and lock generator container door (1).

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
PERSONNEL SHELTER
STOWAGE**

INITIAL SETUP:**Tools**

Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Gloves, Rubber, Industrial (Item 24, WP 0116 00)
 Goggles, Industrial (Chipping, Chemical) (Item 26, WP 0116 00)

Materials/Parts

Rag, Wiping (Item 40, WP 0117 00)

Personnel Required

Seaman 88K

References

TM 55-1945-219-14&P
 TM 55-1945-220-14&P

Equipment Condition

Personnel Shelter Removed. (WP 0043 00)

INTRODUCTION**Scope**

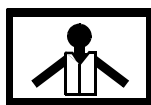
This work package covers stowage of personnel shelter.

General

External components used for installation of personnel shelter are stowed inside container.

STOWAGE OF PERSONNEL SHELTER

WARNING



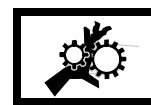
VEST



HELMET PROTECTION



HEAVY PARTS



MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Rinse chains and chain binders with fresh water before packing. Allow to dry thoroughly.

WARNING

**CHEMICAL****EYE PROTECTION**

2. Use wiping rags to remove excess antiseize from ground cable before packing.
3. Unlock, undog and open personnel shelter exterior door.
4. Stow shore tie power cable, chains, chain binders and ground cable inside personnel shelter.
5. Remove VHF/FM handheld receivers from VHF/FM handheld receiver battery charger and stow in BII container.
6. Clean incinerator toilet per TM 55-1945-219-14&P.
7. Clean air conditioner per TM 55-1945-220-14&P.
8. Sweep out interior of personnel shelter and remove debris as required.
9. Verify personnel shelter file cabinets are locked.
10. Prepare personnel shelter for storage or shipment. (WP 0111 00)
11. Position light switches to the off position. (WP 0007 00)
12. Close, dog and lock exterior door.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL OFF DISCHARGE FACILITY
LIGHT TOWER
STOWAGE**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
Life Preserver, Vest (Item 71, WP 0116 00)
Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
Helmet, Safety (Brown) (Item 30, WP 0116 00)
Push Rod (Item 6, WP 0116 00)
Sling, Lifting, 5,300 lb (Green) (Item 57, WP 0116 00)
2 Ton ½ in. Anchor Shackle (Item 48, WP 0116 00)

Materials/Parts

Pin, Cotter
PN 95928867

Personnel Required

Seaman 88K (4)

Equipment Condition

Light Towers Removed. (WP 0041 00)

INTRODUCTION**Scope**

This work package covers stowage of light tower container.

General

Prior to stowing the pallet mounted light towers, the towers are removed and stowed with lights attached on side hanger brackets inside the light tower container and secured with hitch pins. The drawbars are removed and secured beneath each light tower to the pallet with tie downs straps. Both light towers are placed in the light tower container and are secured with two adjustable tie downs straps attached to lengthwise track stops. Widthwise track stops are also installed to prevent light tower movement. Each 20 ft open end light tower container accommodates two light towers and associated equipment.

REMOVE TOWER**WARNING**

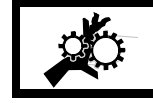
VEST



HELMET PROTECTION



HEAVY PARTS



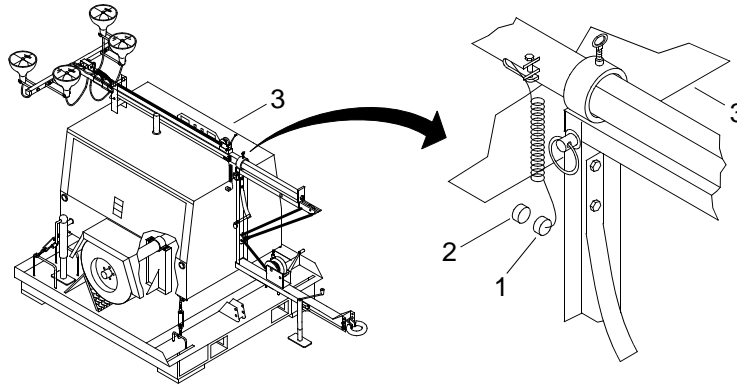
MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

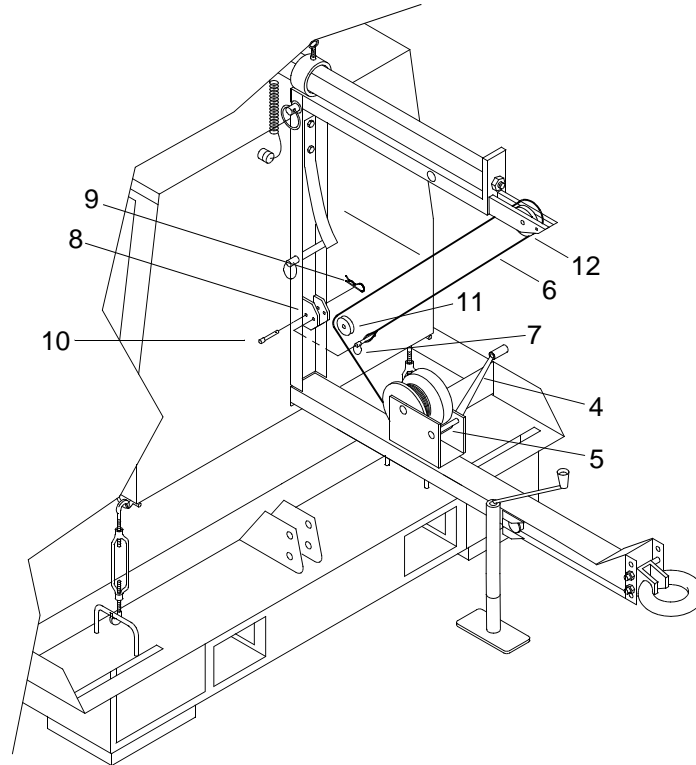
NOTE

The following procedure is typical for removal of towers.

1. Fresh water rinse all light tower components. Allow to thoroughly air dry.
2. Disconnect tower junction box electrical cable plug (1) from 125V receptacle (2) on front of light tower (3).

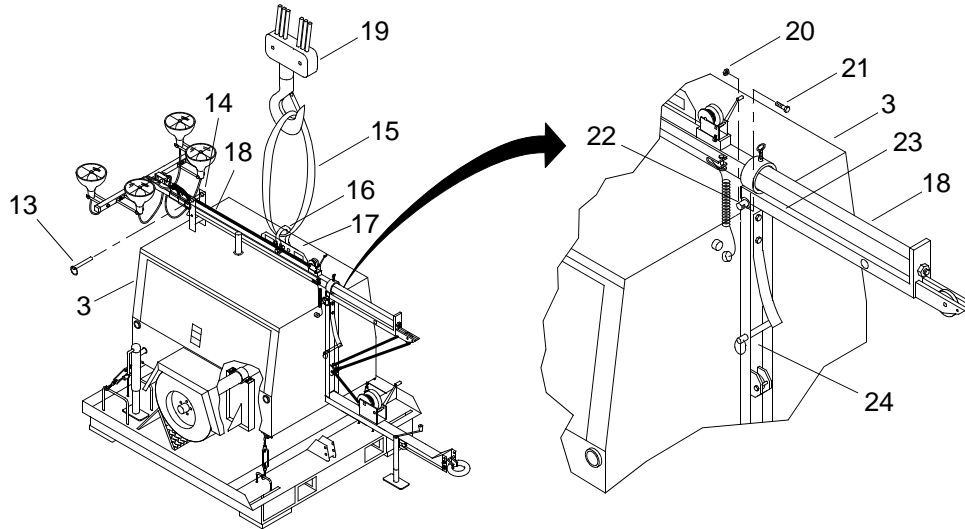


3. Turn hand crank (4) on drawbar winch (5) counterclockwise to provide slack in drawbar winch cable (6).



4. Remove quick release pin (7) from tower support pulley bracket (8) to remove end loop of drawbar winch cable (6).
5. Install quick release pin (7) in tower support pulley bracket (8).
6. Remove cotter pin (9) and pulley pin (10) securing tower support pulley (11) to tower support pulley bracket (8). Discard cotter pin (9).
7. Route drawbar winch cable (6) backwards over pivot support pulley (12) and load drawbar winch cable (6) onto drawbar winch (5) by turning hand crank (4) clockwise.
8. Position tower support pulley (11) on tower support pulley bracket (8) and secure with pulley pin (10) and new cotter pin (9).

9. Remove tower rest retaining pin (13) from tower rest (14).



10. Attach 5,300 lb sling (15) and shackle (16) to lift point (17) on tower (18).

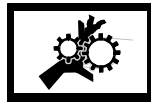
WARNING



HEAVY PARTS

11. Using crane (19), sling (15) and shackle (16), lift tower (18) off tower rest (14).
 12. Remove nut (20) and retaining bolt (21) from pivot pin (22).

WARNING



MOVING PARTS

13. Remove pivot pin (22) securing tower pivot support (23) to tower support (24).

WARNING



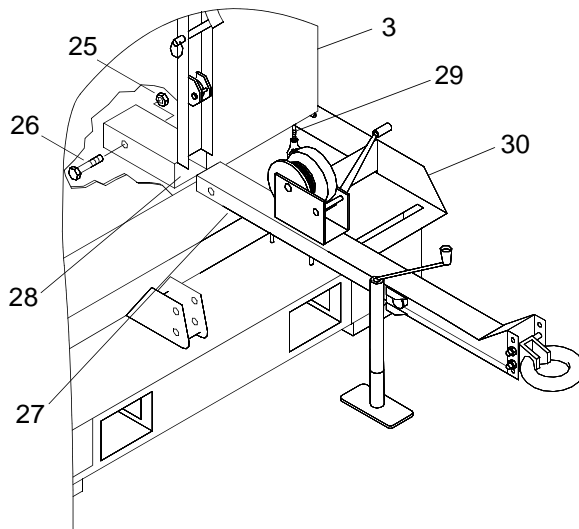
HEAVY PARTS

14. Using crane (19), sling (15) and shackle (16), lift tower (18) off light tower (3).
 15. Install pivot pin (22) in tower support (24).
 16. Install retaining bolt (21) and nut (20) on pivot pin (22). Tighten nut (20).

REMOVE AND STOW DRAWBARS**NOTE**

The following procedure is typical for the removal of drawbars.

1. Remove nut (25) and bolt (26) securing drawbar (27) to drawbar receptacle (28).



2. Loosen and remove turnbuckle (29) from light tower (3) and pallet (30).
3. Using assistant, remove drawbar (27) from light tower (3).
4. Stow drawbar (27) beneath light tower (3) and secure on both ends with tie downs to the pallet.
5. Install turnbuckle (29) on light tower (3) and pallet (30) and tighten.

STOW TOWER**NOTE**

The following procedure is typical for stowage of towers in the light tower container.

1. Unlatch and open end doors of light tower container.

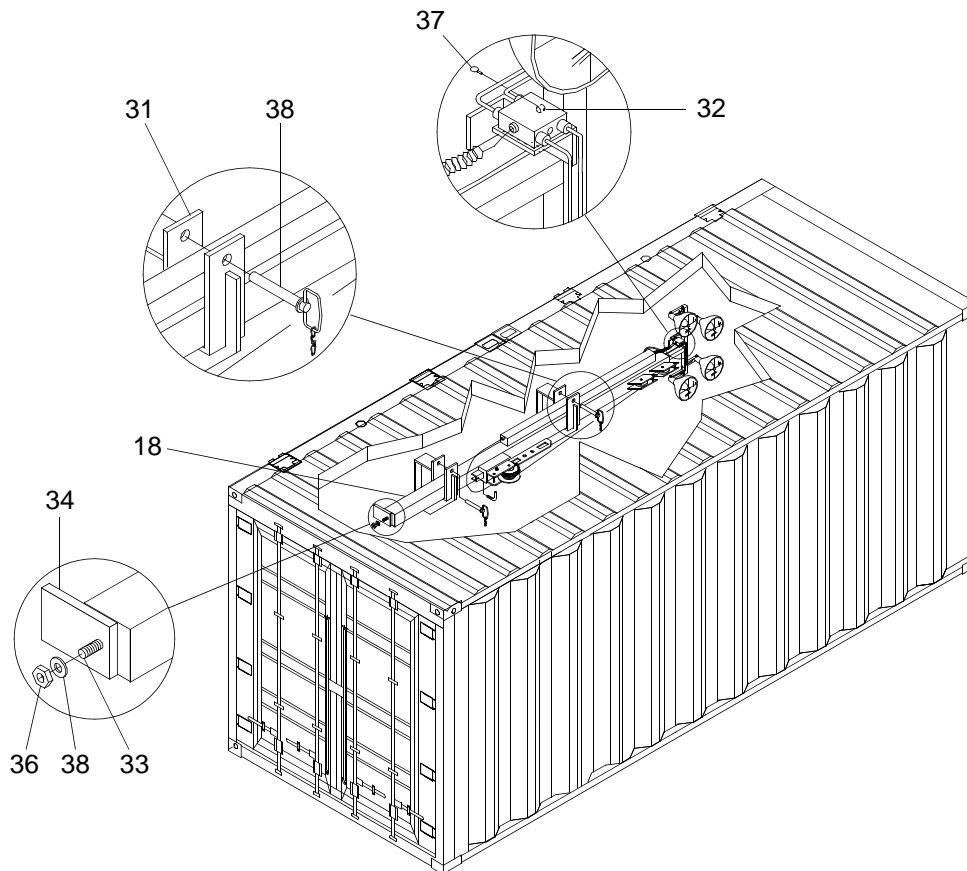
WARNING

Doors must be secured and latched in the open position. Failure to comply could result in injury to personnel.

2. Secure end doors open with locking bars and pins.

WARNING**HEAVY OBJECTS**

- Using six men, lift and position tower (18) on light tower container wall brackets (31).



- Slide tower (18) so that it engages the locator pin (32) at the upper end and the tower stud (33) engages the bracket (34) at the lower end.
- At the lower end of tower (17), install washer (35) and nut (36) on stud (33) and tighten nut (36).
- At the upper end of tower (17), install quick release pin (37) on locator pin (32).
- Install hitch pins (38) in light tower container wall brackets (31).

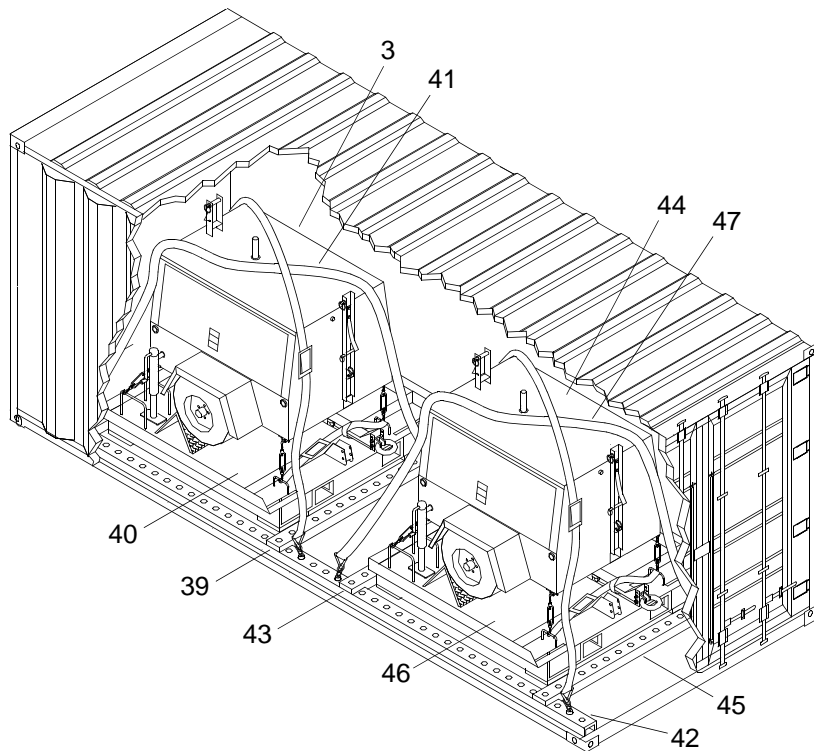
STOW LIGHT TOWER

- Prepare light towers for storage or shipment. (WP 0111 00)

WARNING**HEAVY PARTS****NOTE**

The following procedure is typical for the stowage of light towers in the light tower container.

- Using forklift, position aft light tower (3) inside light tower container.

**WARNING****HEAVY PARTS**

- Using forklift and push rod, position aft light tower (3) in rear of light tower container.
- Install forward track stop (39) in front of aft light tower pallet (40).
- Use two ratcheting tie down straps (41) to secure aft light tower (3) to light tower container longitudinal track stops (42).
- Install rear track stop (43) for forward light tower (44) placement.

WARNING

**HEAVY PARTS**

7. Using forklift, position forward light tower (44) inside light tower container.
8. Install forward track stop (45) in front of forward light tower pallet (46).
9. Use two ratcheting tie down straps (47) to secure forward light tower (44) to light tower container longitudinal track stops (42).
10. Remove locking bars and pins and latch shut light tower container end doors.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
RIGID HULL INFLATABLE BOAT (RHIB) AND MOTOR
STOWAGE**

INITIAL SETUP:**Tools**

Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)

Personnel Required

Seaman 88K (5)

INTRODUCTION**Scope**

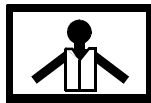
This work package covers stowage of the rigid hull inflatable boat and motor.

General

The rigid hull inflatable boat is stowed on a pallet and placed in a 20 ft open end container. The boat and pallet are then secured to the container deck tracks with four tie down straps. The boat motor is stowed in the toolbox pallet and placed in the container in front of the RHIB. The toolbox pallet is then secured to the container deck with tie down straps. Each open end container accommodates one rigid hull inflatable boat and toolbox pallet with motor.

STOWAGE OF RIGID HULL INFLATABLE BOAT AND MOTOR

WARNING

**VEST****HELMET PROTECTION****HEAVY PARTS****MOVING PARTS**

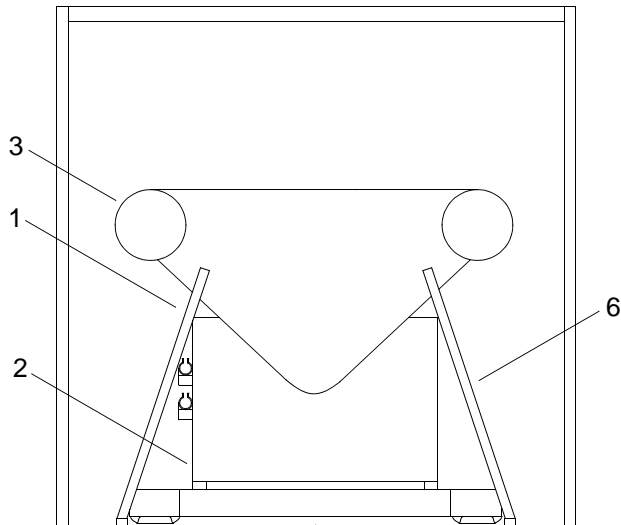
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Rinse all items to be stowed with fresh water before packing. Allow to thoroughly air dry.
2. Unlatch and open container doors.

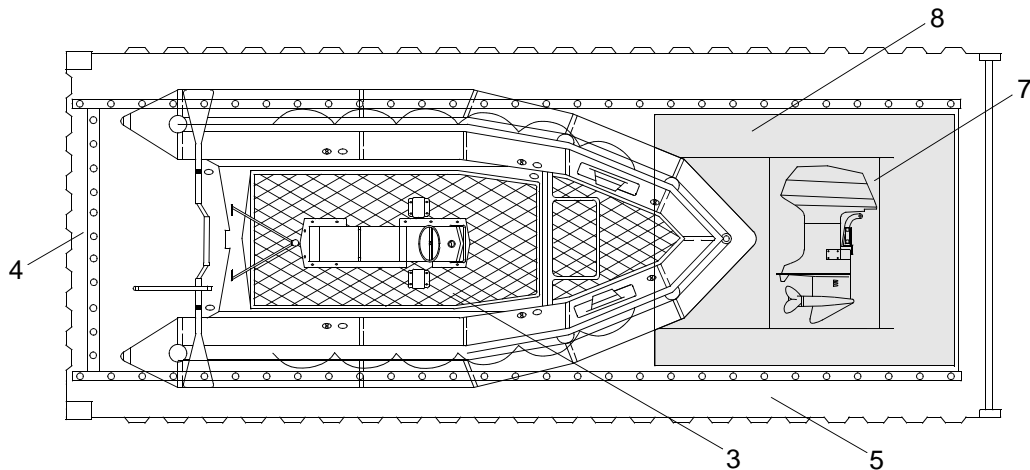
WARNING

Doors must be secured in the open position. Failure to comply could result in death or injury to personnel.

3. Secure container doors open with locking bars, pins or hooks.
4. Verify shipping cradle (1) is secured to pallet (2).



5. Prepare RHIB and outboard motor for storage or shipment. (WP 0111 00)
6. Remove RHIB motor. Contact unit maintenance.
7. Position RHIB (3) on shipping cradle (1).
8. Place a track stop bar (4) at one end of container (5).



9. Secure ratcheting tie down straps (6) to one end of track system in container (5) and lay straps on outside of track.
10. Using forklift, place pallet (2) into container (5) and secure using the deck track system at the front and rear of container (5).

-
11. Using five personnel, stow RHIB motor (7) in toolbox on pallet (8).
 12. Secure additional ratcheting tie down straps (6) in front of pallet (2) and lay straps outside of track.
 13. Using forklift, place pallet (8) with toolbox in container (5) in front of RHIB (3).
 14. Secure free end of ratcheting tie down strap (4) to track section of container (5).
 15. Place track stop bar (6) at other end of container (5).
 16. Remove locking bars, pins or hooks to close container doors.
 17. Close and latch container doors.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
EMERGENCY ANCHOR SYSTEM (EASY) CONTAINER
STOWAGE**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Forklift Adapter (Item 1, WP 0116 00)
 Sling, Lifting, 5,300 lbs (Green) (Item 57, WP 0116 00)

Materials/Parts

Twine, Fibrous (Item 47, WP 0117 00)
 Strap, Tie Down, Electrical (Item 43, WP 0117 00)

Personnel Required

Seaman 88K

Equipment Condition

Easy Anchor System Removed. (WP 0042 00)

INTRODUCTION**Scope**

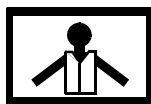
This work package covers stowage of EASY container.

General

The EASY components are stowed inside EASY container to allow for deployment when required.

DISASSEMBLE EASY

WARNING



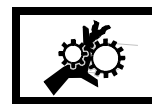
VEST



HELMET PROTECTION



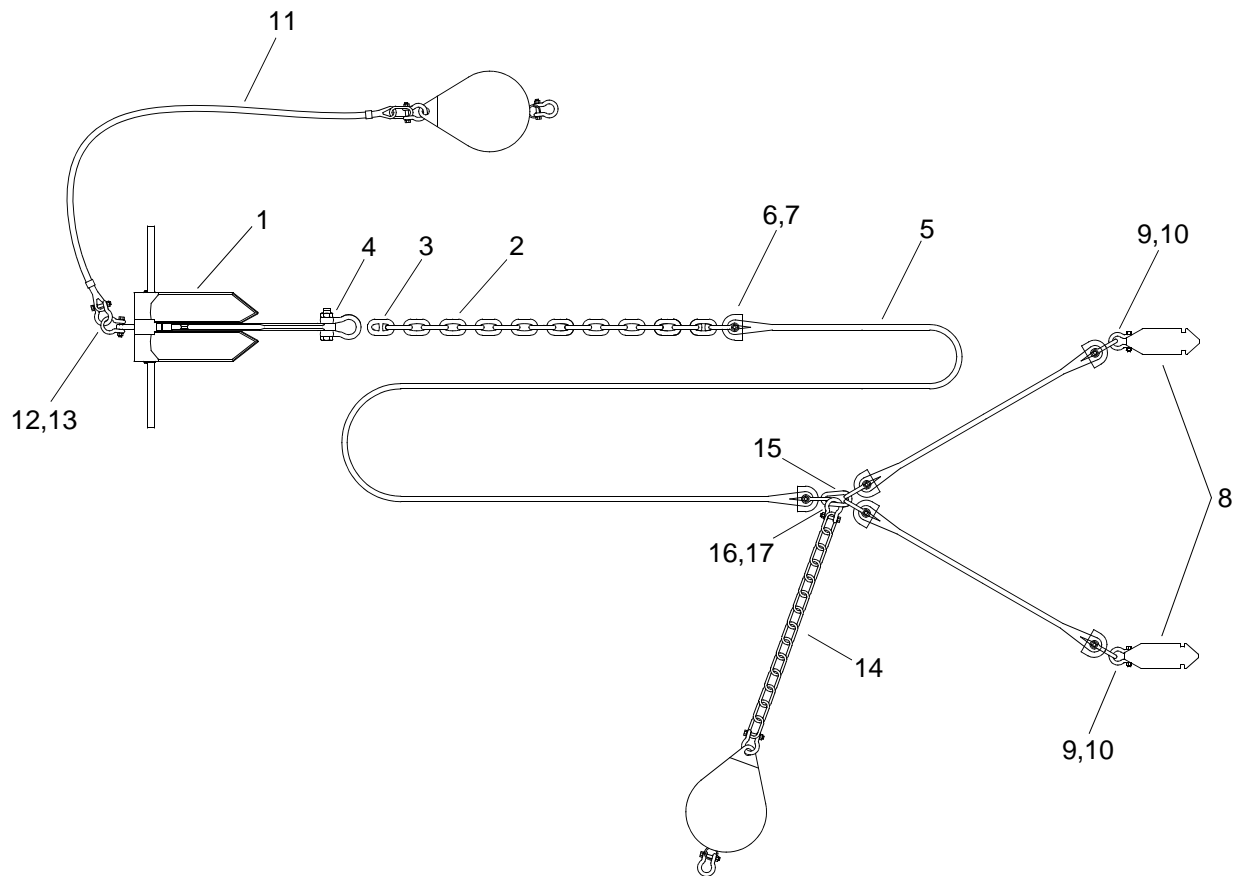
HEAVY PARTS



MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Separate anchor (1) from anchor chain (2) by removing anchor joining link (3) between anchor tongue shackle (4) and anchor chain (2).



2. Install joining link (3) on anchor tongue shackle (4).
3. Separate anchor chain (2) from mooring bridle (5) by removing nylite connector nut (6) and bolt (7).
4. Install nylite connector bolt (7) and nut (6) in mooring bridle (5).
5. Remove legs of mooring bridle (5) from flexor receiver inserts (8) by removing flexor receiver insert shackle pins (9) and shackles (10).
6. Install shackles (10) and shackle pins (9) on flexor receiver inserts (8).

NOTE

The anchor buoy cable consists of five 15 ft lengths of wire rope connected together with shackles.

7. Remove anchor buoy cable (11) from anchor (1) by removing anchor buoy shackle pin (12) and shackle (13).
8. Install shackle (13) and shackle pin (12) on anchor buoy cable (11).
9. Remove mooring bridle buoy chain (14) from pear link (15) by removing mooring bridle buoy shackle pin (16) and shackle (17).
10. Install shackle (17) and shackle pin (16) on mooring bridle buoy chain (14).
11. Rinse all EASY components with fresh water. Allow to thoroughly air dry.

12. Unlatch and open end doors of EASY container.

WARNING

Doors must be secured and latched in the open position. Failure to comply could result in injury to personnel.

13. Secure end doors open with locking bars and pins.
14. Unlatch and open container side doors of EASY container.

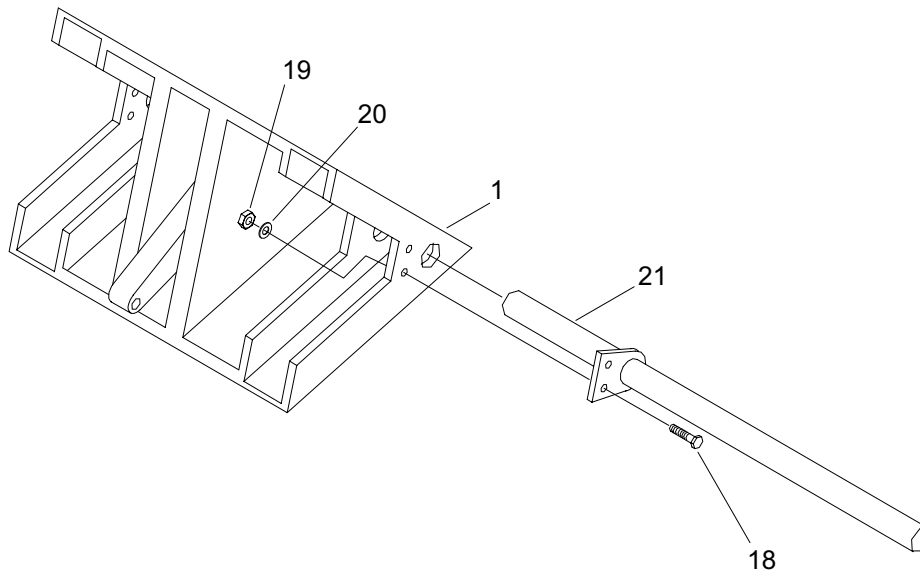
WARNING

Doors must be secured and latched in the open position. Failure to comply could result in injury to personnel.

15. Secure side doors open with locking hooks.

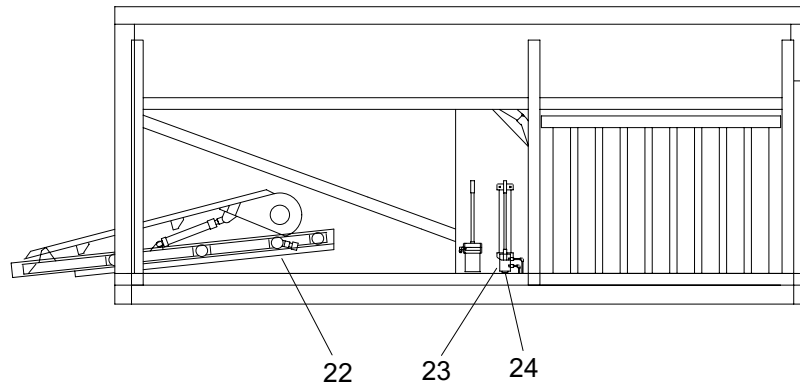
STOW ANCHOR

1. Remove ratchet and socket from interior of pump side door holder.
2. Using ratchet and socket, remove two bolts (18), nuts (19) and lock washers (20) securing each stabilizer (21) on anchor (1).

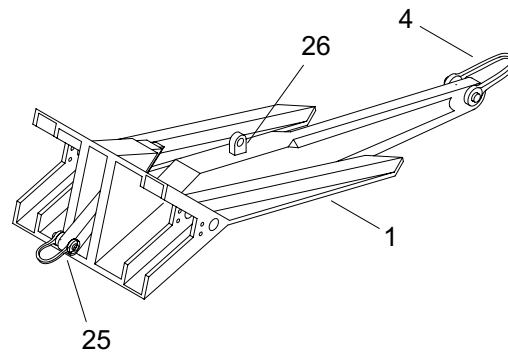


3. Install bolts (18) lock washers (20) and nuts (19) back in anchor (1).
4. Stow stabilizers (21) in EASY container toolbox.
5. Install ratchet and socket in pump side door holder.

6. Extend anchor drawer (22) by pumping extend/retract pump (23) with control valve (24) in the extend position (handle to the right).



7. Attach tag lines to anchor foot shackle (25) and anchor tongue shackle (4) to assist in positioning anchor (1) on anchor drawer (22).

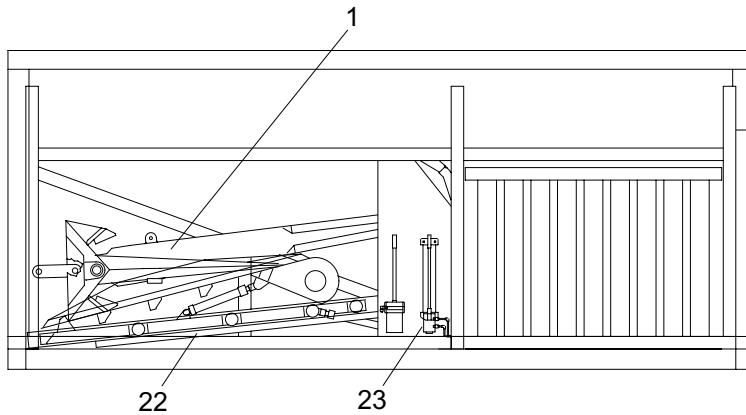


WARNING

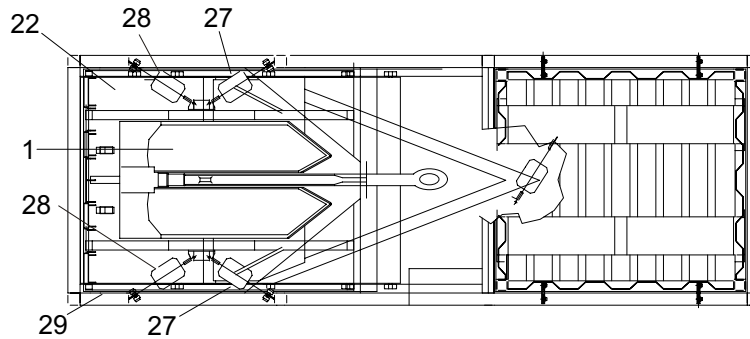
**HEAVY PARTS**

8. Using forklift and forklift adapter, lift anchor (1) by padeye crown (26) and position on anchor drawer (22).
9. Remove tag lines from anchor foot shackle (25) and anchor tongue shackle (4).

- Retract the anchor drawer (22) by pumping the extend/retract pump (23) with the control valve in the retract position (handle to the left).

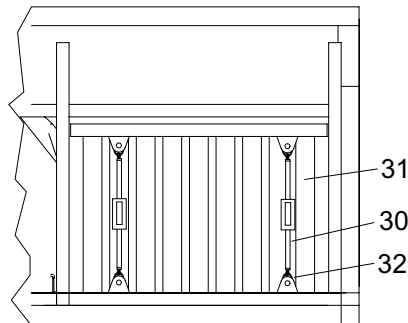


- Install two six ton chain hoists (27), two 7/8 in. 6 1/2 ton frame shackles and two 3/4 ton chain hoists (28) to secure anchor drawer (22) to EASY container frame (29).



STOW ANCHOR CHAIN AND MOORING BRIDLE

- Remove four ratcheting straps (30) securing mooring box (31) to bracket (32) on EASY container frame (29).

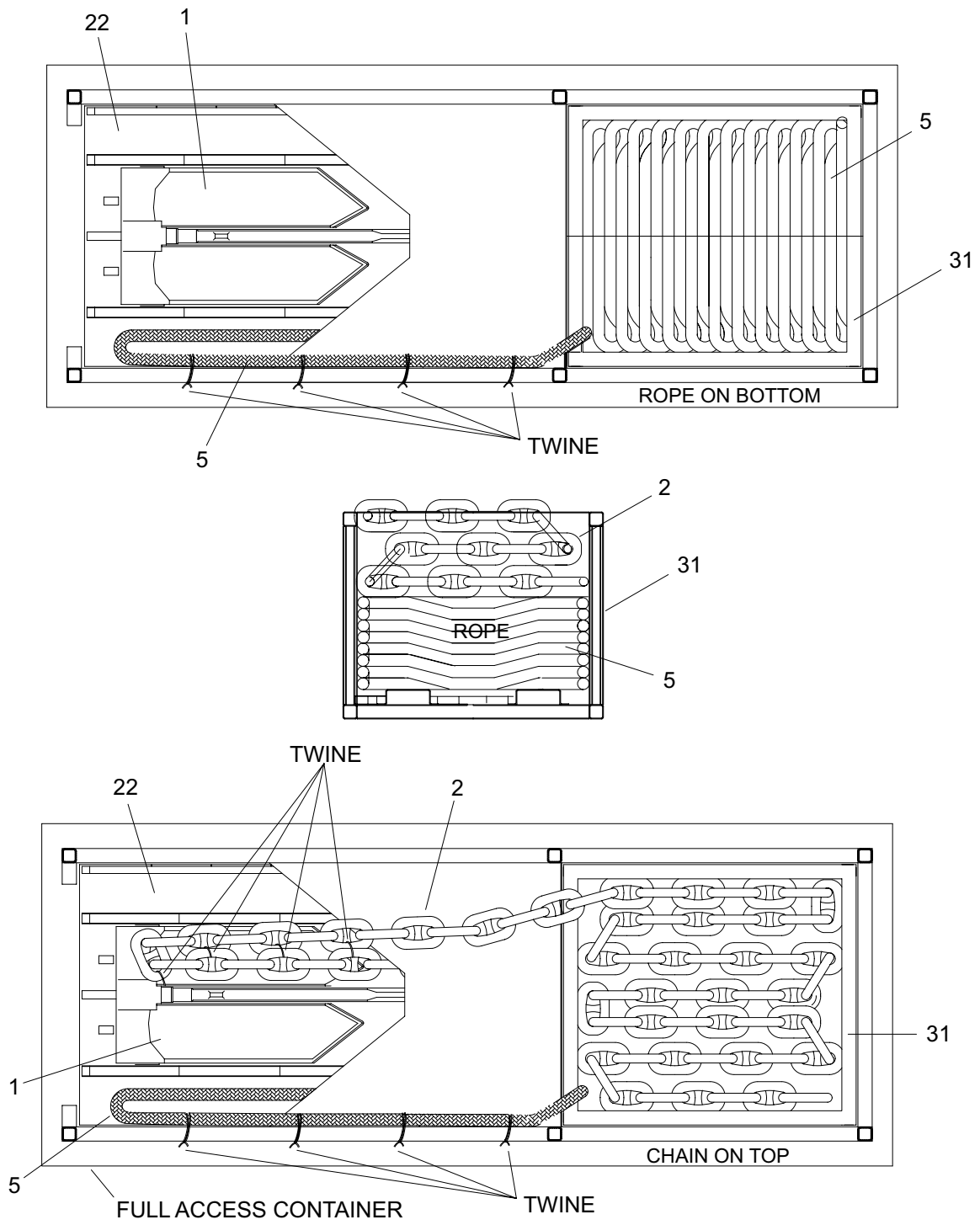


WARNING



HEAVY PARTS

- Using forklift, remove mooring box (31) from EASY container.



WARNING**HEAVY OBJECTS****NOTE**

The mooring line should be completely dry before placement in mooring box.

The 55 ft of mooring bridle left out of mooring box includes two individual 35 ft flexor rope assemblies of mooring bridle, pear link and approximately 20 ft of main rope assembly of mooring bridle.

3. Using two men, lay mooring bridle (5) in mooring box (31), leaving out approximately 55 ft.

WARNING**HEAVY PARTS**

4. Using forklift and forklift adaptor, lay anchor chain (2) in mooring box (31) on top of mooring bridle (5).
5. Remove mooring bridle nylite connector nut (6) and bolt (7) from mooring bridle (5).
6. Install mooring bridle nylite connector bolt (7) and nut (6) to connect main rope assembly of mooring bridle (5) and anchor chain (2).

WARNING**HEAVY PARTS**

7. Using forklift, install mooring box (31) in EASY container, while feeding the mooring bridle (5) into the EASY container toward the anchor (1).
8. Secure mooring box (31) to bracket (32) on EASY container frame (29) with four ratcheting straps (30).

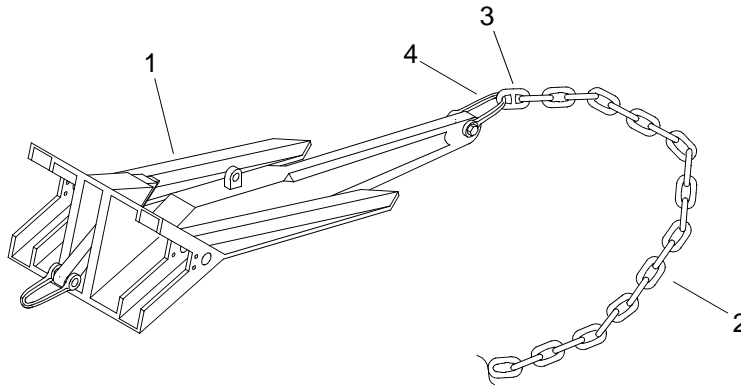
WARNING**HEAVY OBJECTS**

9. Pull approximately 30 ft of anchor chain (2) out of mooring box (31).

WARNING

**HEAVY OBJECTS**

10. Double anchor chain (2) over anchor (1).
11. Tie anchor chain (2) to anchor crown padeye (26) with twine.
12. Tie anchor links together in three places with twine to prevent anchor chain (2) from falling behind anchor drawer (22).
13. Remove anchor joining link (3) from anchor tongue shackle (4).
14. Install anchor joining link (3) between anchor tongue shackle (4) and anchor chain (2).



15. Tie portion of mooring bridle (5) to upper container frame on pump side in four places with twine.

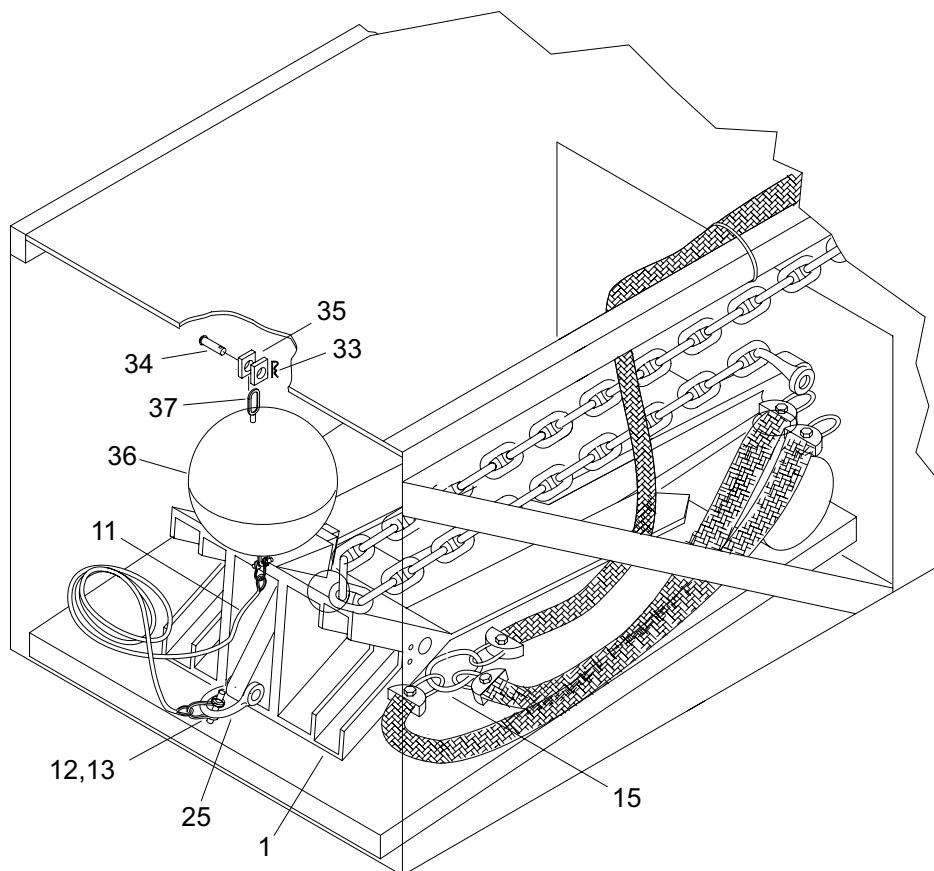
WARNING

**HEAVY OBJECTS**

16. Position pear link (15) and legs of mooring bridle (5) on top of anchor (1) and secure to anchor (1) with twine.
17. Stow excess length of mooring bridle (5) and anchor chain (2) back into mooring box (31).

STOW BUOYS

1. Remove quick release pin (33) and retaining pin (34) from end door frame bracket (35).

**WARNING****HEAVY OBJECTS**

2. Using assistant to support weight of anchor buoy (36), position retrieval pendant (37) in end door frame bracket (35).
3. Install retaining pin (34) and quick release pin (33) in end door frame bracket (35).
4. Remove anchor buoy cable pin (12) and shackle (13) from anchor buoy cable (11).
5. Install anchor buoy cable shackle (13) and pin (12) to connect anchor buoy cable (11) to anchor foot shackle (25).
6. Coil anchor buoy cable (11) on top of anchor (1) and secure with twine.

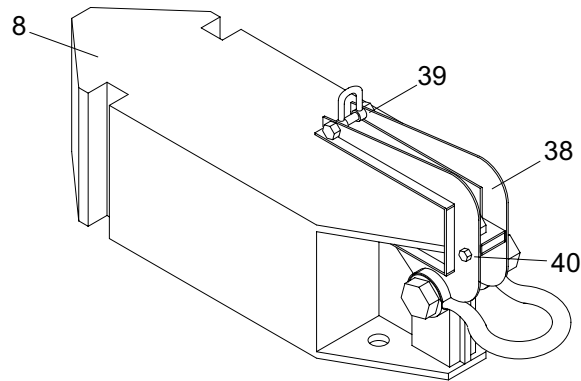
WARNING

**HEAVY OBJECTS**

7. Using assistant, place mooring bridle buoy with attached mooring bridle buoy chain (14) in mooring box (31) on top of anchor chain (2).

STOW FLEXOR RECEIVER INSERTS AND FLEXOR LIFTING DEVICE

1. Remove lifting device assembly (38) from container toolbox.

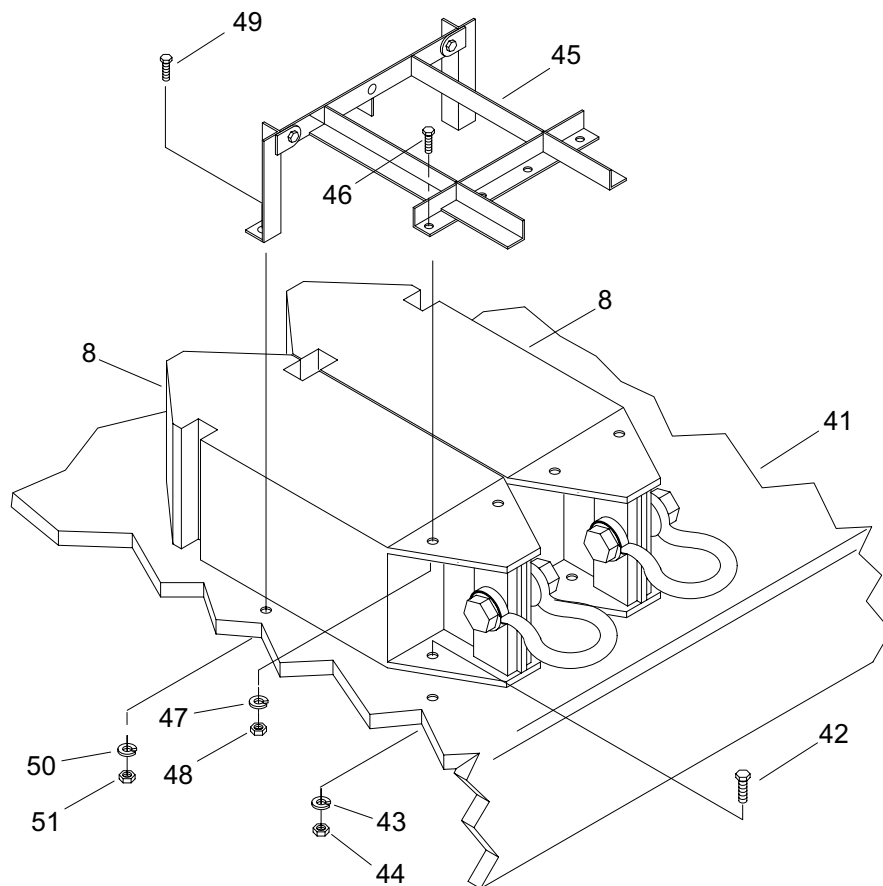


2. Loosen nut (39) and bolt (40) on lifting device assembly (38).
3. Position lifting device assembly (38) over end of flexor receiver insert (8) and tighten bolt (40) and nut (39).

WARNING

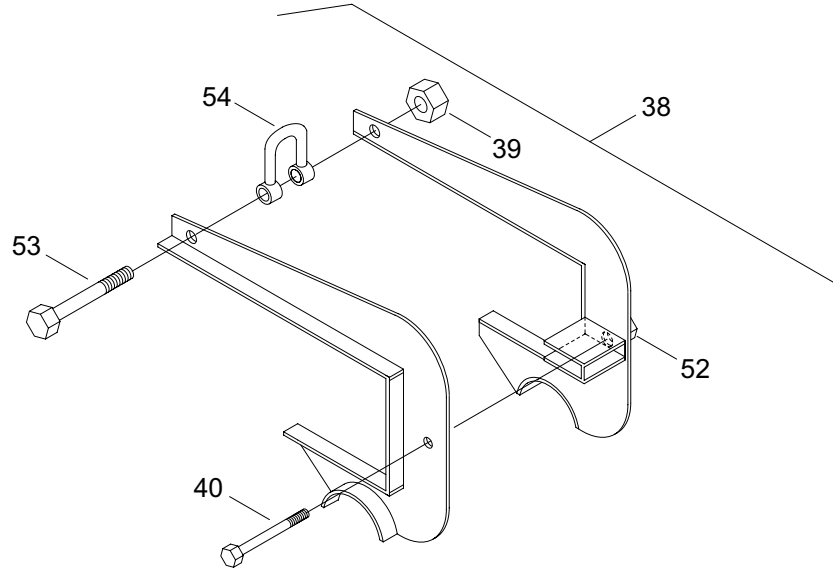
**HEAVY PARTS**

4. Using forklift, forklift adapter and lifting device assembly (38), position flexor receiver insert (8) on EASY container top shelf (41).



6. Install two bolts (42), lock washers (43) and nuts (44) to secure lower front of flexor receiver insert (8) to EASY container top shelf (41). Tighten nuts (44).
7. Loosen nut (39) and bolt (40) on lifting device assembly (38) and remove lifting device assembly (38) from flexor receiver insert (8).
8. Repeat steps 3 thru 7 for second flexor receiver insert (8).
9. Position flexor receiver insert retaining bracket (45) over both flexor receiver inserts (8).
10. Install two bolts (46), lock washers (47) and nuts (48) to secure flexor receiver insert retaining bracket (45) on upper front of flexor receiver inserts (8). Tighten nuts (48).
11. Install bolt (49), lock washer (50) and nut (51) to secure each leg of flexor receiver insert retaining bracket (45) to EASY container top shelf (41). Tighten nuts (51).

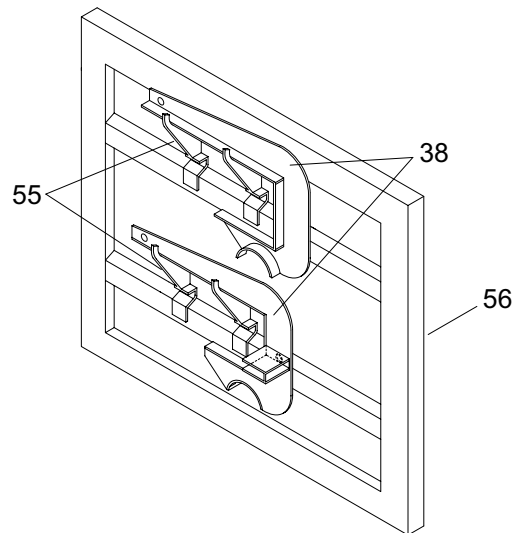
12. Stow lifting device assembly (38) in EASY container.



NOTE

The right short leg of flexor lifting device has nut welded to outer surface.

- Remove bolt (40) from welded nut (52) and bolt (53) from nut (39).
- Separate lifting device assembly (38) and stow bolts (40, 53), nut (39) and lifting device assembly shackle (54) in EASY container toolbox.
- Position halves of lifting device assembly (38) on brackets (55) mounted on interior of pump side door (56).



- Secure halves of lifting device assembly (38) to brackets (55) with tie downs.

13. Prepare EASY container for storage or shipment. (WP 0111 00)

14. Remove locking bars, pins or hooks and latch shut EASY container doors.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
BASIC ISSUE ITEMS (BII)
STOWAGE**

INTRODUCTION

Scope

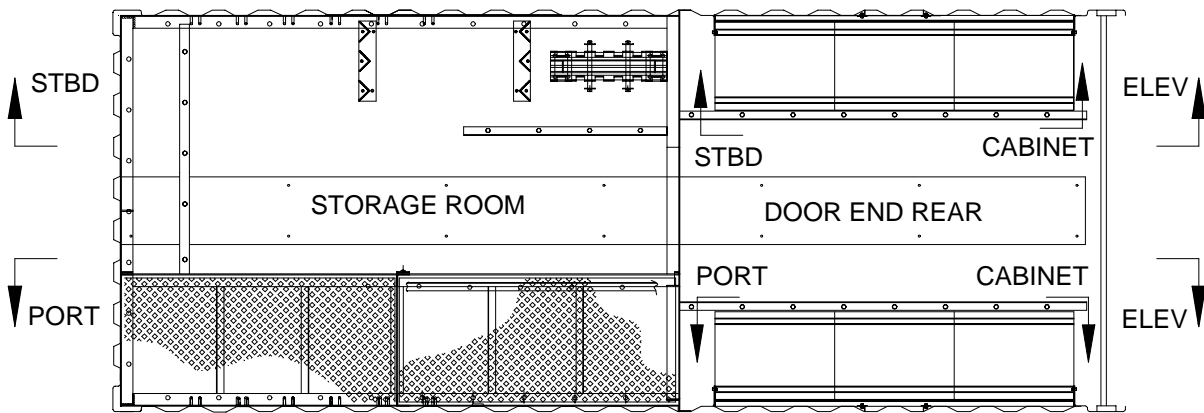
This work package covers stowage of the BII.

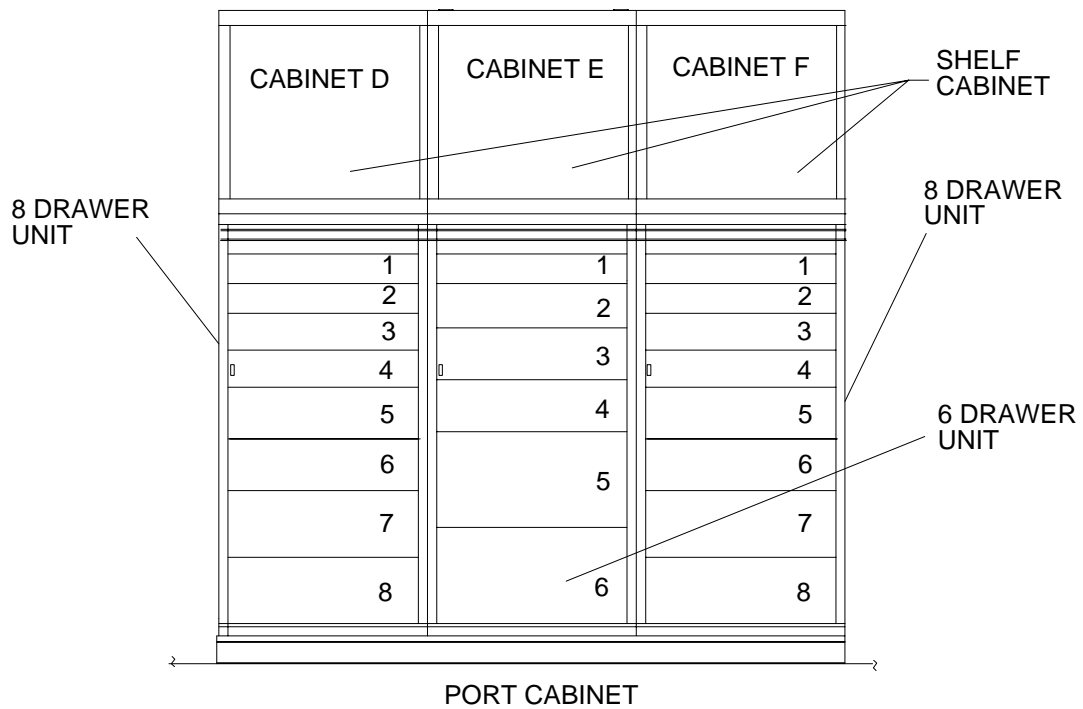
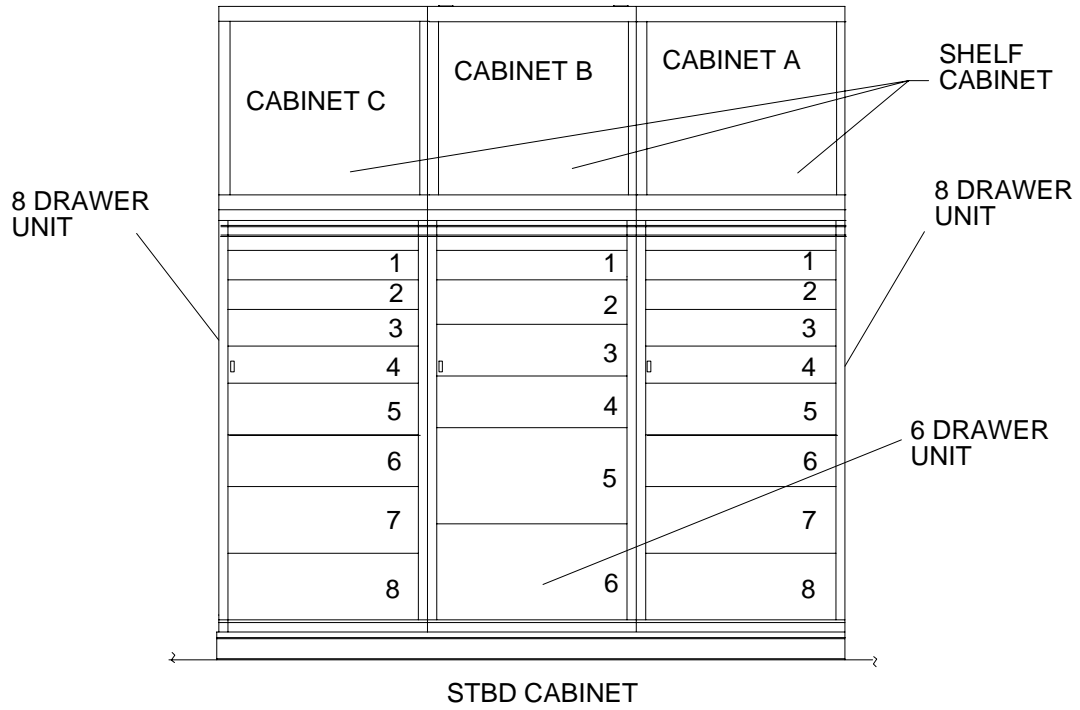
Stowage of BII

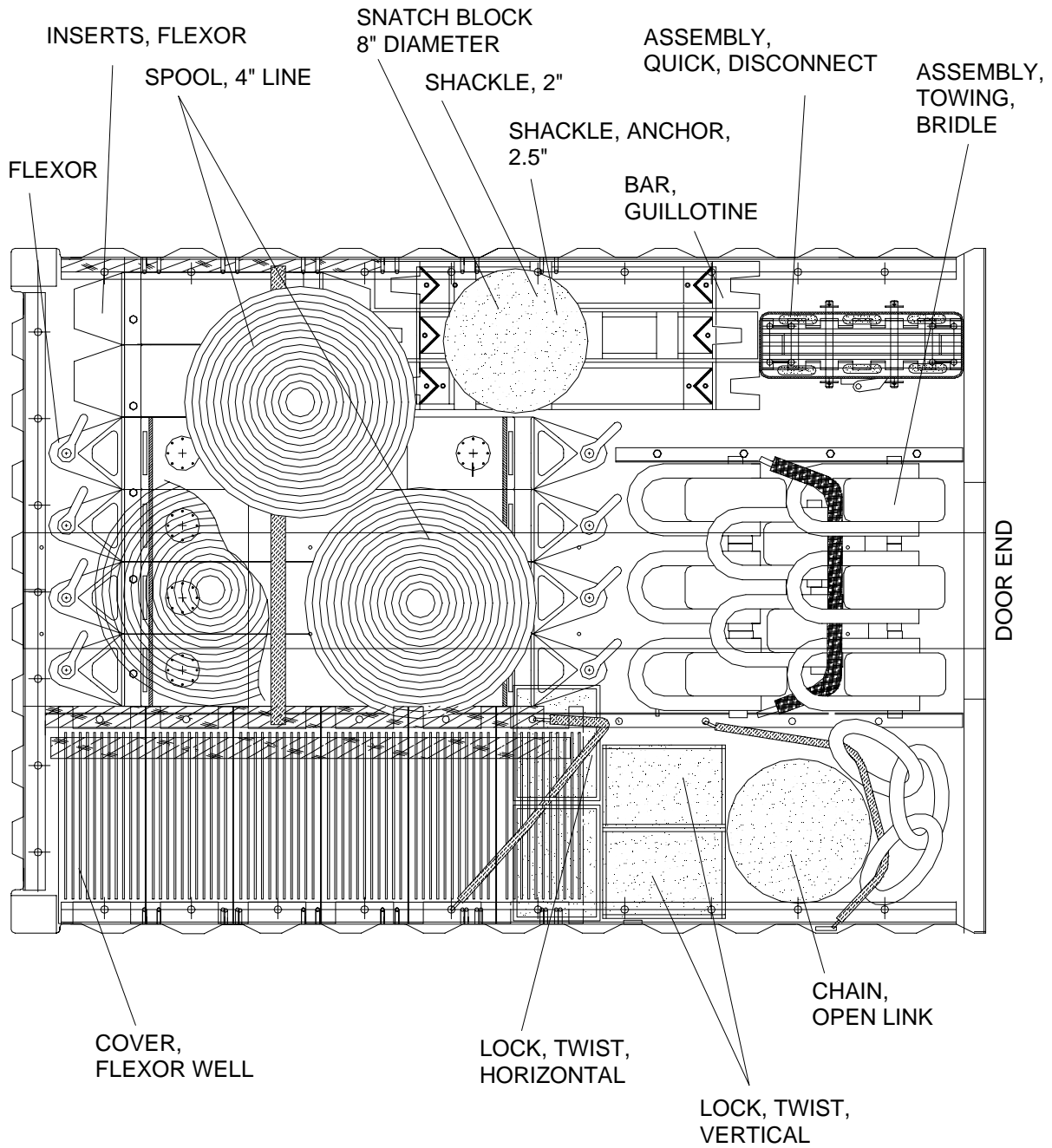
The BII for the RRDF is stowed in the BII container. The BII is stowed in two cabinets with drawers and shelves, and a storage room. The packing list in the BII container may be consulted for additional information.

Prepare BII container for storage or shipment. (WP 0111 00)

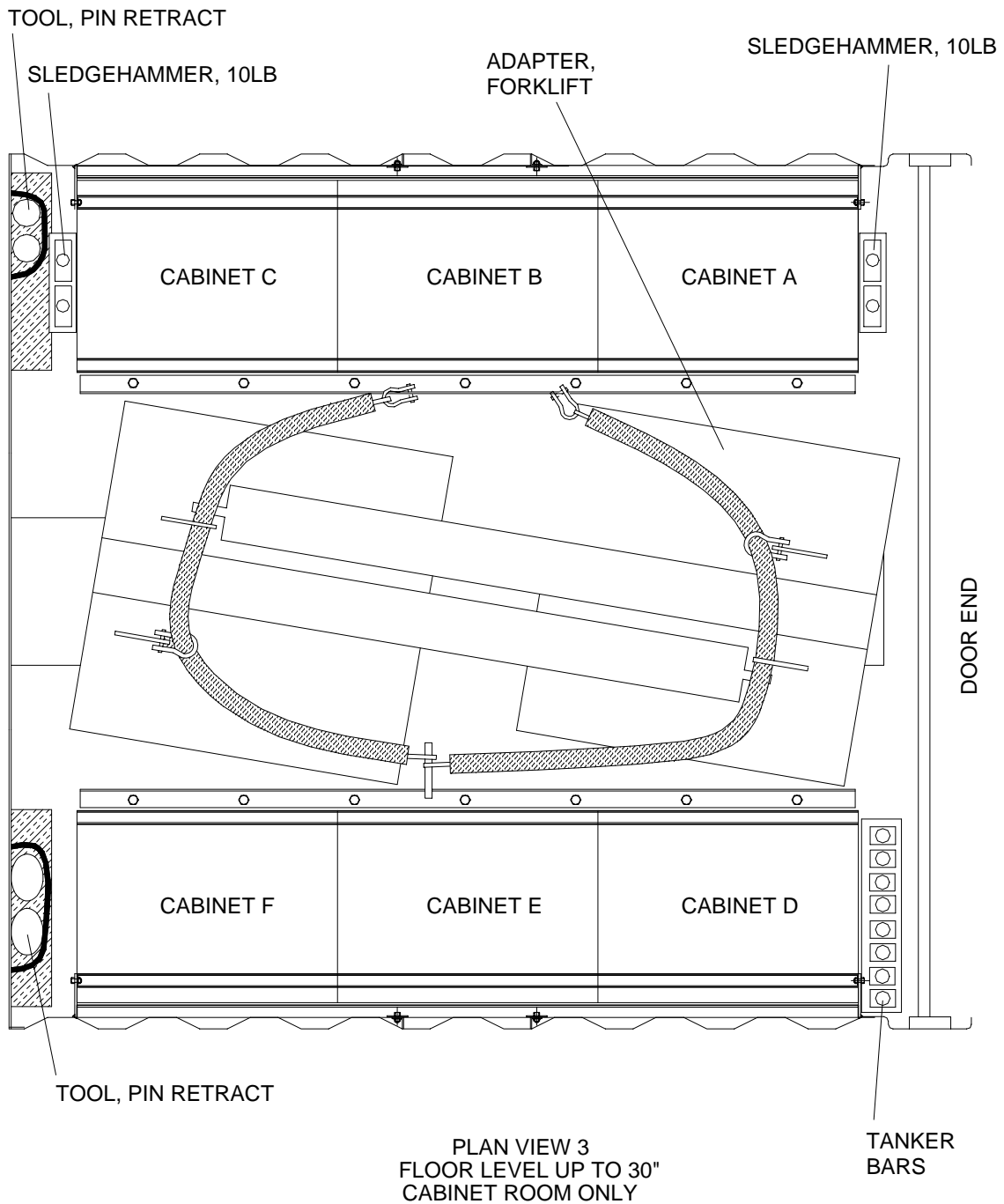
STOWAGE OF BII

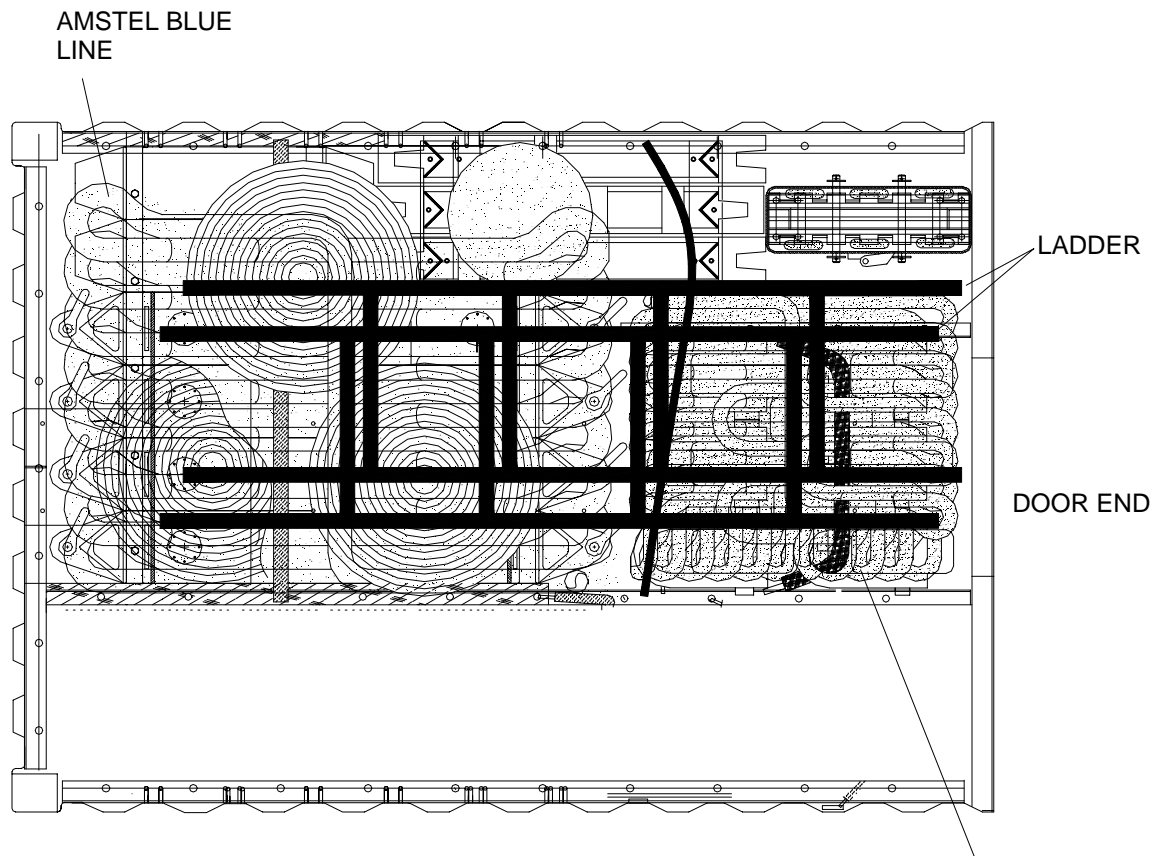






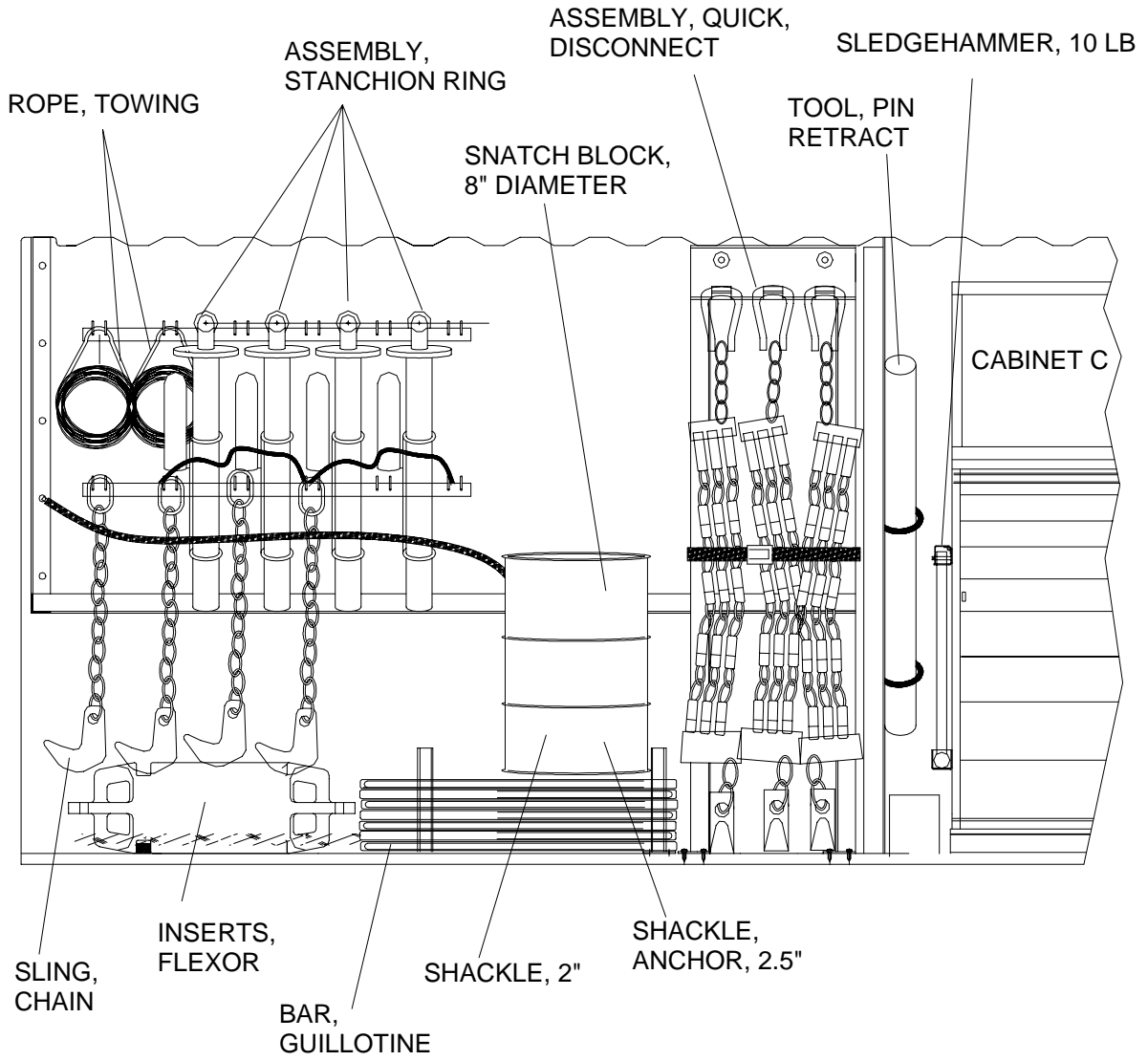
PLAN VIEW 2
FLOOR LEVEL UP TO 30"
STORAGE ROOM ONLY



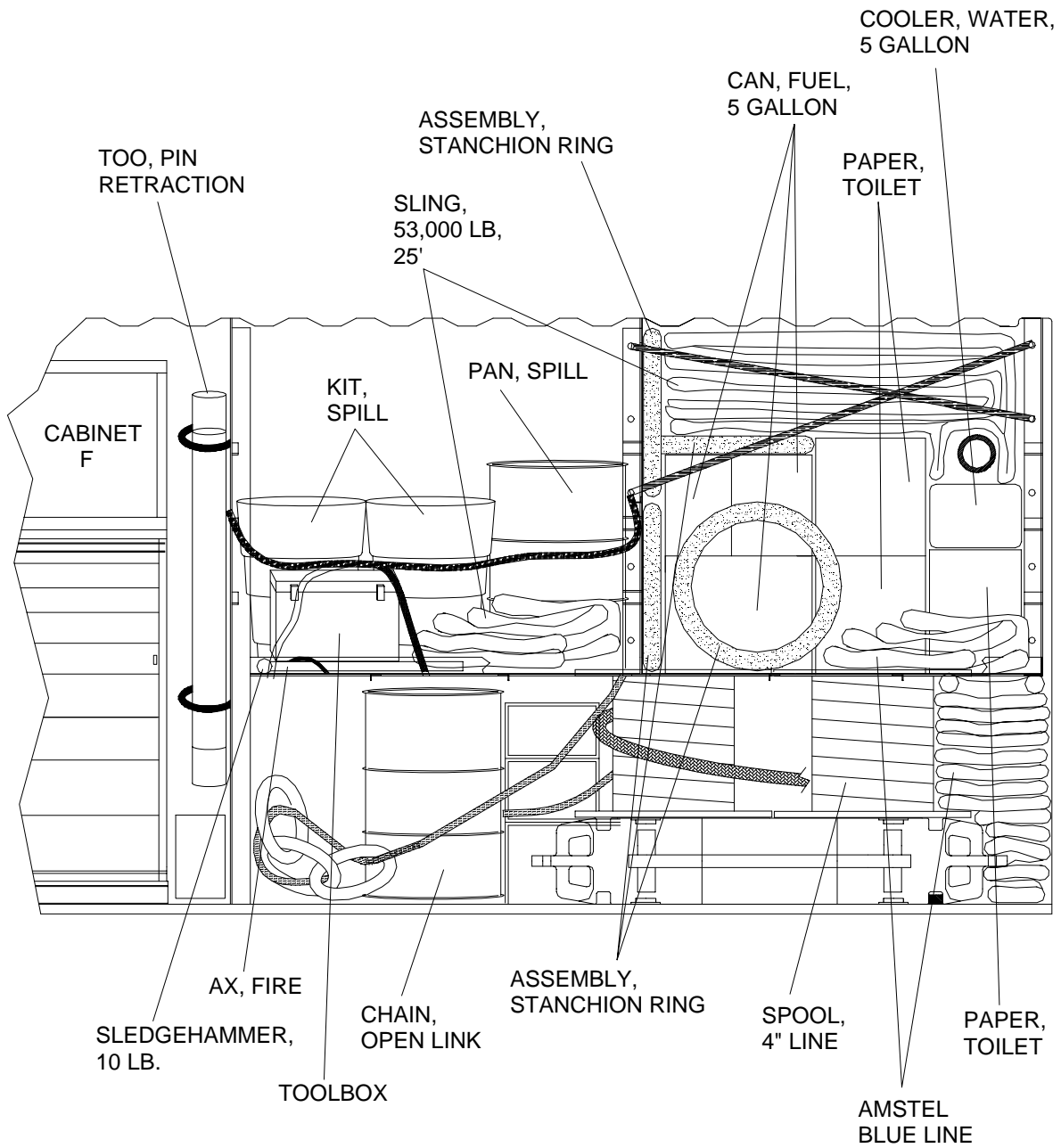


PLAN VIEW 4
FLOOR LEVEL OVER 30"
STORAGE ROOM ONLY

ROPE, TOWING



STBD ELEVATION



PORT ELEVATION

Table 1. BII Stowage Location.

DESCRIPTION	QTY	LOCATION
Adaptor, Forklift	2	Center of Storage Room
Amstel Blue Line (4 ½ in. X 250 ft) (Roll)	4 Rolls	Center of Storage Room
Antiseize Compound	8 Pints	Cabinet Drawer A4
Assembly, Anchor Chain	15	Cabinet Drawers D8, A5 & C7
Assembly, Bridle, Towing	1	Center of Storage Room
Ax, Pickhead	2	Storage Room Shelf
Bars, Guillotine	20	Storage Room Floor, Right
Battery, Nonrechargeable (6 volt)	6 Cases	Cabinet Drawers A8 & F7
Battery, Nonrechargeable (D size)	2 Boxes	Cabinet Drawer C5
Blanket, Fire (72 in. X 60 in.)	1	Cabinet Drawer F7
Block, Snatch (8 in. Diameter)	3	30-Gallon Drum in Storage Room
Bolt, Carriage, ½ in.-13UNC X 2 in.	50	Cabinet Drawer B1
Bolts, ¾ in. X 7 in. LG	12	Cabinet Drawer B1
Breaker, 20 amp (120/240 VAC)	1	Cabinet Drawer B1
Breaker, 20 amp (RS-9992)	1	Cabinet Drawer B1
Cable, 50 ft NATO Slave	1	Cabinet Drawer C8
Can, Gas, Military	8	Storage Room Shelf
Can, Water, Military	2	Storage Room Shelf
Chain, Open Link, ½ in. Open Link, 6 ft pieces	134	Drums in Storage Room
Cover, Flexor Well	26	Storage Room Shelf
Extinguisher, Fire (10 lb)	2	Cabinet Drawer D7
Flashlight	2	Cabinet Drawer C2
Flexor, Coupling, Pontoon Causeway	4	Center of Storage Room
Fuse, Cartridge	2	Cabinet Drawer B1
Gloves, Antiflash	18 Pair	Cabinet Drawer C6
Gloves, Chemical Battery	6 Pair	Cabinet Drawer D4
Gloves, Leather Palm	18 Pair	Cabinet Drawer D4

Table 1. BII Stowage Location. (Continued)

DESCRIPTION	QTY	LOCATION
Goggles, Chipping	18 Pair	Cabinet Drawer A2
Goggles, Safety	18 Pair	Cabinet Drawer A2
Grease, Automotive and Artillery	2 Cases	Cabinet Drawer C3
Grease, Outboard Motor	1	Cabinet Drawer A4
Grease, Wire Rope-Exposed Gear	1 Qt	Cabinet Drawer B6
Grip Hoist	2	Cage in Storage Room
Gun, Grease	2	Cabinet Drawer C3
Hat, Hard	10	Cabinet Drawer B5
Hydraulic Fluid, Petroleum Base (EASY)	5 Gals	Cabinet Drawer F8
Hydraulic Fluid, Petroleum Base (Tilt/Trim and Steering Fluid)	11 Ounce	Cabinet Drawer A4
Insert, Flexor	2	Storage Room Floor Rack
Kit, First Aid	2	Cabinet Drawer D1
Kit, Flare 12 ga	6	Cabinet Drawer E3
Kit, Flare Alert/Locate Deluxe	6	Cabinet Drawer D5
Kit, Flush, Outboard	1	Cabinet Drawer A4
Kit, Gearcase Lube	33 Ounce	Cabinet Drawer A4
Kit, Spill	2	Storage Room Shelf
Kit, Tarp Repair	1	Cabinet Drawer C5
Ladder	2	Center of Storage Room
Lamp, Fluorescent (20 W, T12)	5	Cabinet Drawer E1
Lamp, Incandescent (1000 W)	2	Cabinet Drawer D2
Lamp, Incandescent (75 W)	2	Cabinet Drawer D2
Lamp, Marine (12 volt)	2	Cabinet Drawer D2
Life Ring with Light and Stanchions	4	Storage Room Shelf
Light Set, Towing	2	Cabinet Drawers B3 & B4
Light, Chemiluminescent	32 Boxes	Cabinet Drawers E4, E5 & E6
Lights, White	10	Cabinets Drawers D6 & E3

Table 1. BII Stowage Location. (Continued)

DESCRIPTION	QTY	LOCATION
Line, Hawser (75 ft, 8 in dia)	14	Center of Storage Room
Lock, Twist, Horizontal	8	Storage Room Shelf, Box 2
Lock, Twist, Vertical	16	Storage Room Shelf, Boxes 3& 4
Marlinespike (16 in.)	8	Cabinet Drawer C4
Meter, Gas Free	1	Cabinet Drawer C2
Nut, Plain, Hexagon, ½ in.	50	Cabinet Drawer B1
Nut, Plain, Hexagon, ¾ in.	12	Cabinet Drawer B1
Nut, Plain, Hexagon, 1½ in.	5	Cabinet Drawer B1
Nut, Plain, Hexagon, 2 in.	2	Cabinet Drawer B1
Pan, Spill	1	Storage Room Shelf
Paper, Toilet	3 Cases	Storage Room Shelf
Pin, Connector	20	Cabinet Drawer C5, Box 1
Pin, Cotter	100	Cabinet Drawer B1
Pliers (Combination Wire Cutter)	4	Cabinet Drawer C4
Plug, Ear (Box)	1	Cabinet Drawer D3
Protector, Sound	4	Cabinet Drawer D3
Pump, Defueling (With Hoses)	1	Cabinet Drawer B6
Quick Disconnect	6	Storage Room Hanging Rack
Radio, Marine Band	4	Cabinet Drawers F1 & F2
Rope, Towing (35 ft)	2	Center of Storage Room
Shackle, ½ in., 2 Ton	18	Storage Room Shelf, Box 5
Shackle, ½ in., With Cotter Pin	330	Storage Room Shelf, Box 5
Shackle, ¾ in., 4.75 Ton	36	Storage Room Shelf, Box 6
Shackle, 1 ½ in., 30 Ton	8	Storage Room Shelf, Boxes 7 & 8
Shackle, 2 ½ in.	2	30-Gallon Drum in Storage Room
Shackle, 2 in.	2	30-Gallon Drum in Storage Room
Shackle, 5/8 in., 3.25 Ton	36	Storage Room Shelf, Box 6
Sledgehammer	8	Racks on Cabinets

Table 1. BII Stowage Location. (Continued)

DESCRIPTION	QTY	LOCATION
Sling, 5,300 lbs, 4 ft (Green)	4	Cabinet Drawer B2
Sling, 5,300 lbs, 5 ft (Green)	4	Cabinet Drawer A6
Sling, 5,300 lbs, 6 ft (Green)	4	Cabinet Drawer B2
Sling, 53,000 lbs, 25 ft (Brown)	8	Storage Room Shelf
Sling, 8,400 lbs, 20 ft (Yellow)	2	Cabinet Drawer A7
Sling, Chain	4	Storage Room Hooks
Spool, 4 in. Line	3	Center of Storage Room
Spotlight, Hand-held	2	Cabinet Drawer E3
Spout, Can, Gas	2	Cabinet Drawer A4
Spring, Pin	20	Cabinet Drawer C5, Box 1
Tanker Bars	8	Racks on Cabinets
Tool, Pin Retract	2	Storage Room Cage
Tool Kit, General Mechanic's	1	Storage Room Shelf
Vest, Work, Stearns	18	Cabinets A, B, C & E
Washer, Flat 1/2 in.	50	Cabinet Drawer B1
Washer, Flat 7/8 in.	50	Cabinet Drawer B1
Whistle	24	Cabinet Drawer C2
Wipes, Hand	4 Cases	Cabinet Drawers F5 & F6
Wire, Mousing	6	Cabinets
Worksuit, Stearns	18	Cabinets D & E
Wrench, Pipe (24 in.)	2	Cabinet Drawer C4

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
3 FT BY 5 FT FENDERS
STOWAGE**

INITIAL SETUP:**Tools**

Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 5,300 lb 6 ft Sling (Green) (Item 57, WP 0116 00)
 Qty 2
 2-Ton 1/2 in. Anchor Shackle (Item 48, WP 0116 00)
 Qty 3

Personnel Required

Seaman 88K

INTRODUCTION**Scope**

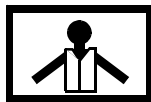
This task covers stowage of the 3 ft by 5 ft fenders in the 40 ft open top container.

General

The 3 ft by 5 ft fenders are stowed vertically, four to a pallet, with the chain and shackles on top of the pallet center pedestals. The pallets and fenders are placed in the container. The pallets are secured to the container deck tracks using ratcheting tie down straps. The container accommodates 24 fenders.

STOWAGE OF 3 FT BY 5 FT FENDERS

WARNING

**VEST****HELMET PROTECTION****HEAVY PARTS****MOVING PARTS**

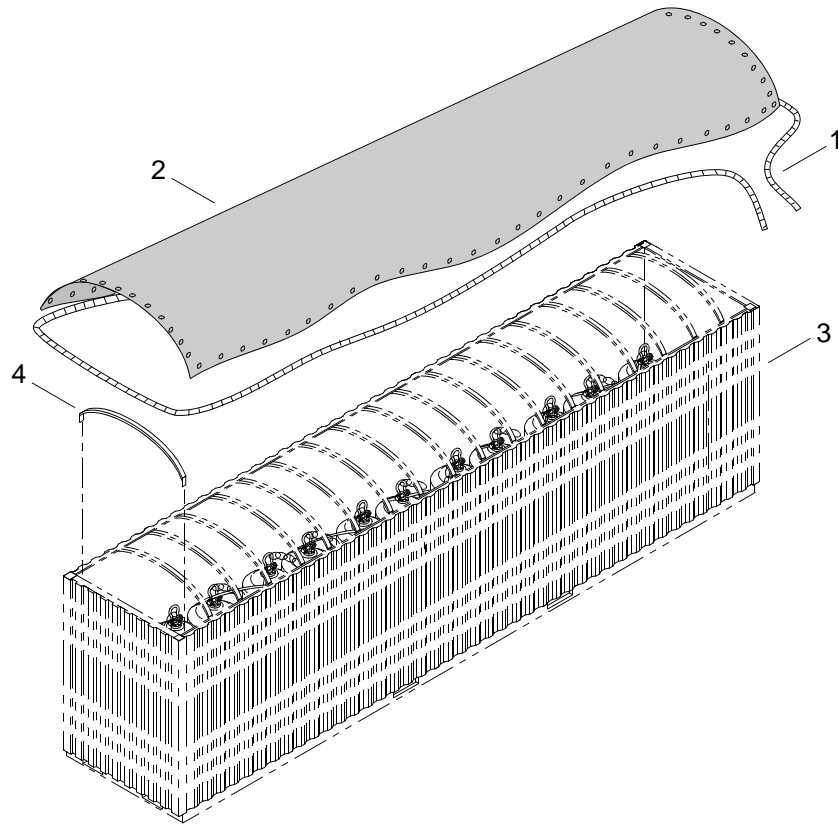
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Rinse all items to be stowed with fresh water before packing. Allow to thoroughly air dry.
2. Unlatch and open container door.

WARNING

Doors must be secured in the open position. Failure to comply could result in death or injury to personnel.

3. Secure container doors open with locking bars, pins or hooks.
4. Remove cable (1) attaching waterproof covering (2) to container (3).

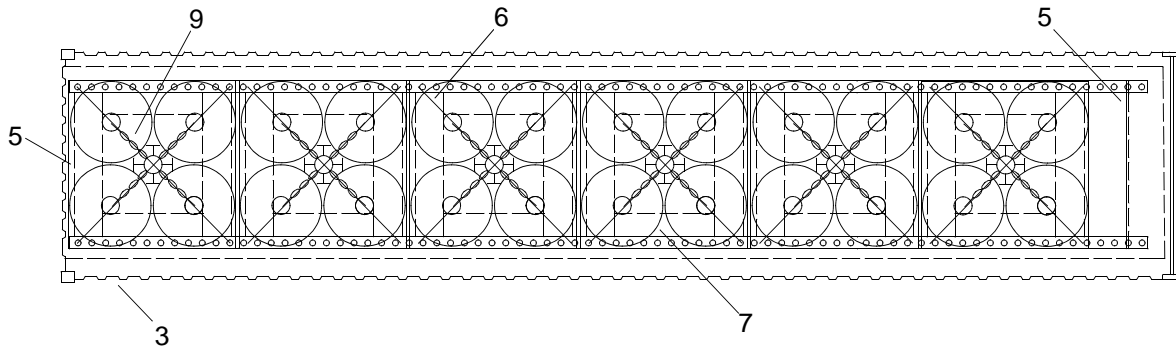


5. Remove waterproof covering (2) from bows (4).
6. Remove waterproof covering bows (4).

NOTE

The following steps are typical for storage of all 3 ft by 5 ft fenders.

7. Place a track stop (5) at end of container (3).

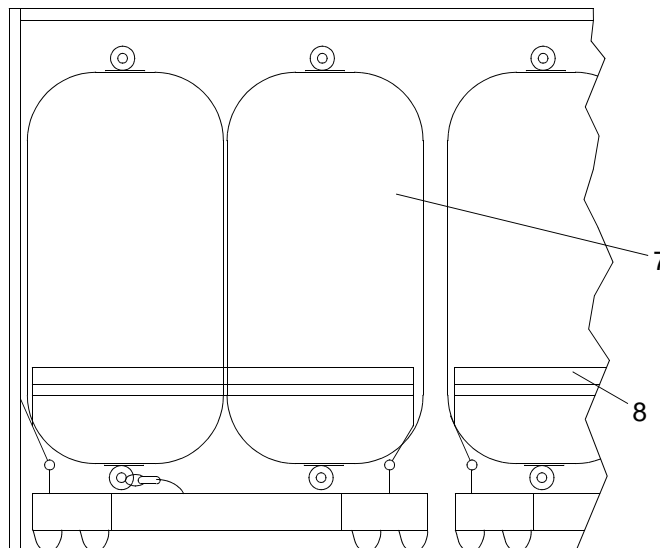


8. Secure one end of two ratcheting tie down straps (6) to back port side end of container (3) floor track.
9. Lay or hang tie down straps (6) away from deck tracks.

WARNING

HEAVY PARTS

10. Using crane, slings and shackles, load four fenders (7) into pallet (8) lengthwise and upward.



11. Position any chain (9) attached to fenders on top of center pedestal and run chain (9) through the notch in the pipe on bottom of pallet (8).

WARNING

**HEAVY PARTS**

12. Using crane, slings and shackles, load fenders (7) and pallet (8) into end of container (3).
13. Retrieve two tie down straps (6) and pull up and over pallet (8) and fenders (7) in a crisscross pattern inside of container (3) to secure free end of tie down strap (6) to container (3) floor track.
14. Tighten two tie down straps (6) to secure pallet (8) and fenders (7) to container (3).
15. Position a track stop (5) at pallet (8) nearest container (3) door.
16. Install waterproof bows (4) on container (3).
17. Install waterproof covering (2) on bows (4).
18. Install cable (1) through brackets on the side of container (3) to secure waterproof covering (2) to container (3).
19. Prepare container for storage or shipment. (WP 0111 00)
20. Remove locking bars, pins or hooks to close container doors.
21. Close and latch container door.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
4 FT BY 12 FT FENDERS
STOWAGE**

INITIAL SETUP:**Tools**

Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 5,300 lb 6 ft Sling (Green) (Item 57, WP 0116 00)
 Qty 2
 2-Ton 1/2 in. Anchor Shackle (Item 48, WP 0116 00)
 Qty 3

Personnel Required

Seaman 88K

INTRODUCTION**Scope**

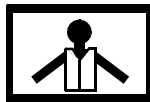
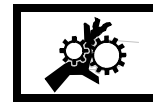
This work package covers stowage of the 4 ft by 12 ft fenders in the 40 ft open top container.

General

The 4 ft by 12 ft fenders are stowed horizontally, two to a pallet. The pallets and fenders are placed in the container. The fenders are secured to the pallet tie down pads using four tie down straps per pallet. The pallet and fenders are secured to the container deck tracks using two ratcheting tie down straps per pallet. The open top container accommodates six 4 ft by 12 ft fenders and two 3 ft by 5 ft fenders stowed in a separate pallet.

STOWAGE OF 4 FT BY 12 FT FENDERS

WARNING

**VEST****HELMET PROTECTION****HEAVY PARTS****MOVING PARTS**

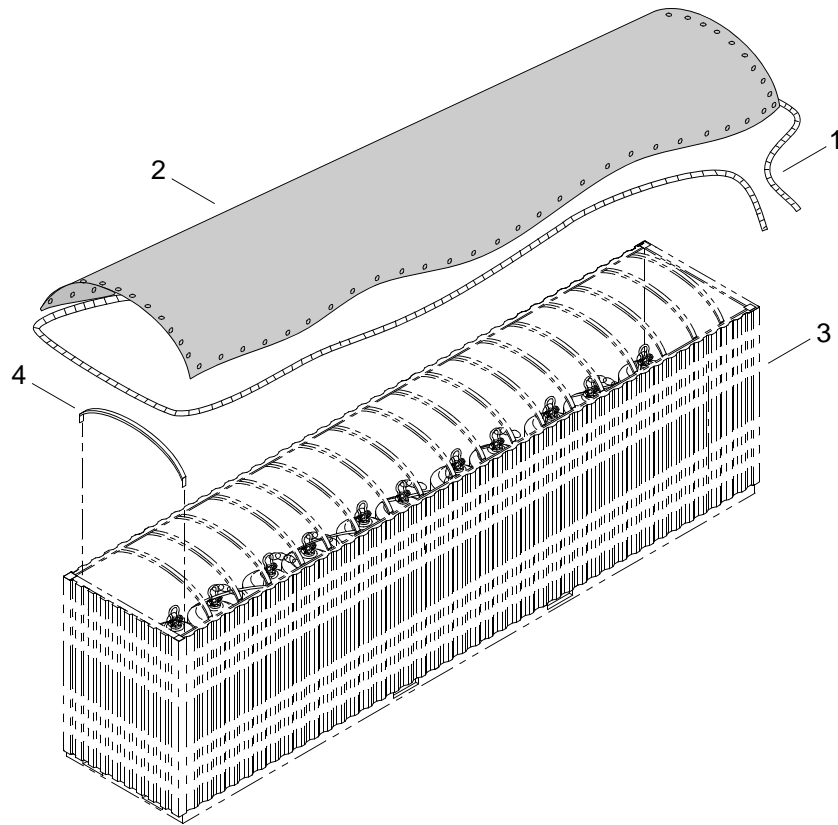
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Rinse all items to be stowed with fresh water before packing. Allow to thoroughly air dry.
2. Unlatch and open container door.

WARNING

Doors must be secured in the open position. Failure to comply could result in death or injury to personnel.

3. Secure container doors open with locking bars, pins or hooks.
4. Remove cable (1) attaching waterproof covering (2) to container (3).



5. Remove waterproof covering (2) from bows (4).

NOTE

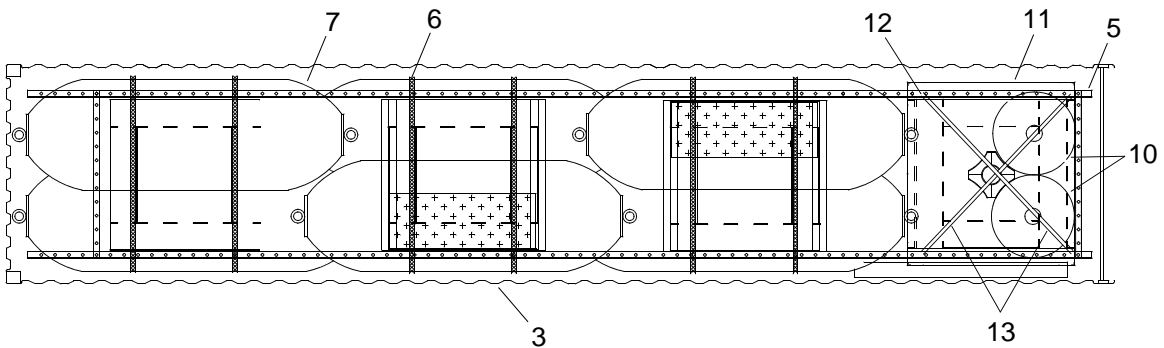
Center bow is welded and cannot be removed.

6. Remove waterproof covering bows (4).

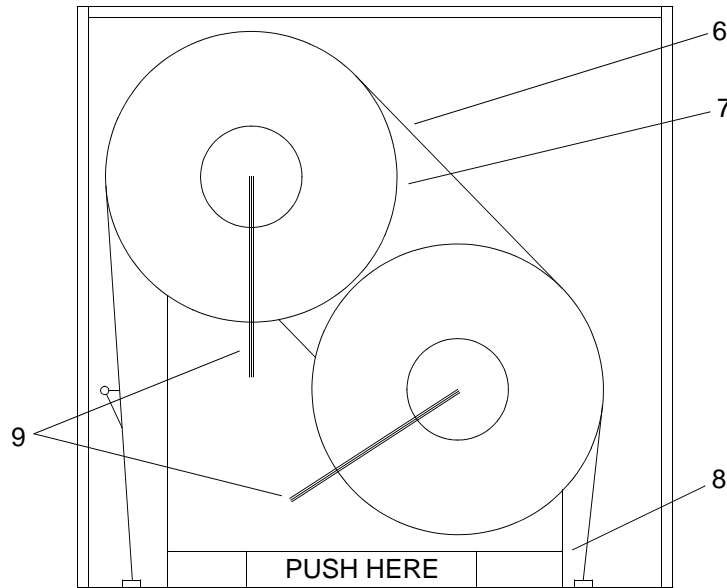
NOTE

The following steps are typical for storage of all 4 ft by 12 ft fenders.

- Place a track stop (5) at end of container (3).



- Secure one end of two ratcheting tie down straps (6) to back port side end of container (3) floor track.



- Lay or hang two ratcheting tie down straps (6) away from deck tracks.

WARNING



HEAVY PARTS

- Using crane, slings and shackles, load a fender (7) into the lowest position on pallet (8) and secure using local tie down ports (9).

WARNING

**HEAVY PARTS**

11. Using crane, slings and shackles, load second fender (7) into top position on pallet (8) and secure using local tie down ports (9).

WARNING

**HEAVY PARTS**

12. Using crane, slings and shackles, load fender (7) into end of container (3).
13. Retrieve two ratcheting tie down straps (6) and pull up and over pallet (8) and fenders (7) inside of container (3) to secure free end of tie down strap (6) to container (3) floor track.
14. Tighten two ratcheting tie down straps (6) to secure pallet (8) and fenders (7) to container (3).
15. Load two 3 ft by 5 ft fenders (10) into pallet (11) lengthwise and upward.
16. Place any chain attached to 3 ft by 5 ft fenders (10) on top of the center pedestal and through notch in pipe at bottom of pallet (11).
17. Position tie down straps (12) through shackles (13) on top of 3 ft by 5 ft fenders (10).
18. Attach ends of tie down straps (12) to container (3) floor track and tighten.
19. Position a track stop (5) at pallet (8) nearest container (3) door.
20. Install waterproof bows (4) on container (3).
21. Install waterproof covering (2) on bows (4).
22. Install cable (1) through brackets on the side of container (3) to secure waterproof covering (2) to container (3).
23. Prepare container for storage or shipment. (WP 0111 00)
24. Remove locking bars, pins or hooks to close container doors.
25. Close and latch container door.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
5 FT BY 10 FT FENDERS
STOWAGE**

INITIAL SETUP:**Tools**

Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 5,300 lb 6 ft Sling (Green) (Item 57, WP 0116 00)
 Qty 2
 2-Ton 1/2 in. Anchor Shackle (Item 48, WP 0116 00)
 Qty 3

Personnel Required

Seaman 88K

INTRODUCTION**Scope**

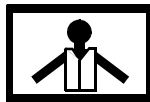
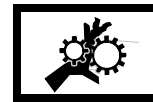
This work package covers stowage of the 5 ft by 10 ft fenders in the 40 ft open top container.

General

The 5 ft by 10 ft fenders are stowed horizontally, one to a pallet. The pallets and fenders are placed in the container. The fender is secured to the pallet tie down pads using two tie down straps per pallet. The pallet and fenders are secured to the container deck tracks using two tie down straps per pallet. The container accommodates three 5 ft by 10 ft fenders, eight corner fenders, eight D-rings, eight deck cleat fittings and a manlift basket.

STOWAGE OF 5 FT BY 10 FT FENDERS

WARNING

**VEST****HELMET PROTECTION****HEAVY PARTS****MOVING PARTS**

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Rinse all items to be stowed with fresh water before packing. Allow to thoroughly air dry.
2. Unlatch and open container door.

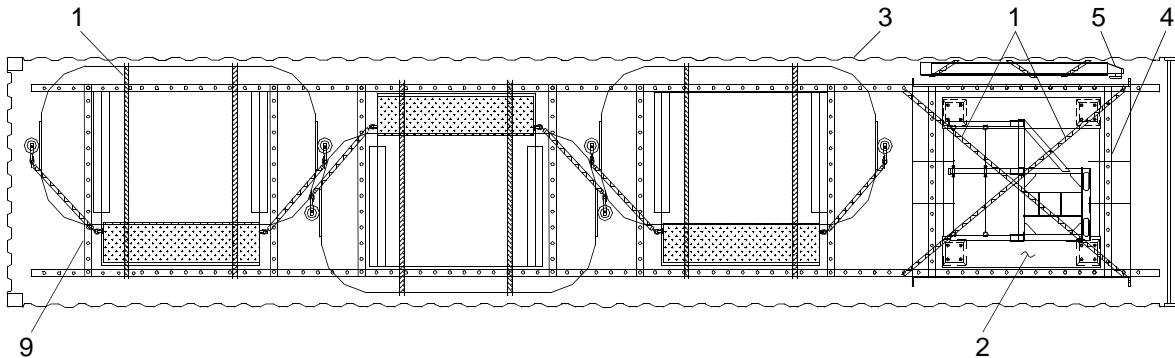
WARNING

Doors must be secured in the open position. Failure to comply could result in death or injury to personnel.

- Secure container doors open with locking bars, pins or hooks.

NOTE

The following steps are typical for storage of all 5 ft by 10 ft fenders.

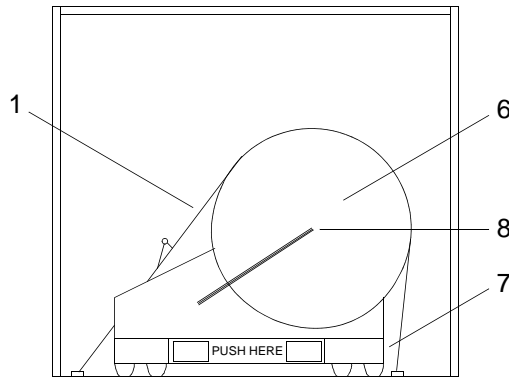


- Remove two ratcheting tie down straps (1) securing deck fittings pallet (2) to container (3).
- Remove track stop bar (4) in front of deck fittings pallet (2) nearest container (3) door.
- Using forklift, remove deck fittings pallet (2) from container (3).
- Remove remaining track stop bar (4) for rear position of deck fittings pallet (2).
- Secure one end of two ratcheting tie down straps (1) to back of starboard side of container (3) floor track.
- Lay two ratcheting tie down straps (1) toward front of container (3) outside of floor track.
- Remove push-pull rod (5) from container (3).

WARNING

**HEAVY PARTS**

11. Using crane, slings and shackles, load one fender (6) in pallet (7) and secure using tie down points (8) on pallet (7).



WARNING

**HEAVY PARTS**

12. Using forklift, position fender (6) and pallet (7) inside container (3).
13. Using forklift and push-pull rod (5), position pallet (7) against fixed track stop bar (9).
14. Install a track stop bar (4) at end of pallet (7).
15. Retrieve two ratcheting tie down straps (1) and pull up and over pallet (7) and fender (6) inside container (3) and secure free end of ratcheting tie down straps (1) to container (3) floor track.
16. Tighten two ratcheting tie down straps (1) to secure pallet (7) and fender (6) to container (3) floor track.
17. Install another track stop bar (4) in container (3) as indicated on container (3) floor.
18. Secure one end of two additional ratcheting tie down straps (1) to port side of container (3) floor track.
19. Lay two ratcheting tie down straps (1) toward front of container (3) outside of floor track.
20. Install a track stop bar (4) for rear position of deck fittings pallet (2).

WARNING

**HEAVY PARTS**

21. Using forklift, place deck fittings pallet (2) in container (3) with rear of pallet (2) against track stop bar (4).
22. Install track stop bar (4) at front of deck fittings pallet (2).
23. Secure one end of two ratcheting tie down straps (1) to container (3) floor track at rear of deck fittings pallet (2).
24. Bring the two ratcheting tie down straps (1) over the deck fittings pallet (2), crossing them to form an "X," and secure free end of ratcheting tie down straps (1) to container (3) floor track at the front of deck fittings pallet (2).
25. Tighten two ratcheting tie down straps (1) to secure deck fittings pallet (2) to container (3).
26. Prepare container for storage or shipment. (WP 0111 00)
27. Remove locking bars, pins or hooks to close container doors.
28. Close and latch container door.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
6 FT BY 12 FT FENDERS
STOWAGE**

INITIAL SETUP:**Tools**

Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 5,300 lb 6 ft Sling (Green) (Item 57, WP 0116 00)
 Qty 2
 2-Ton 1/2 in. Anchor Shackle (Item 48, WP 0116 00)
 Qty 3

Personnel Required

Seaman 88K (2)

INTRODUCTION**Scope**

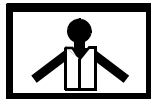
This work package covers stowage of the 6 ft by 12 ft fenders on the sealift vessel.

General

The 6 ft by 12 ft fenders are stowed horizontally on a pallet. The pallet and fenders are secured to the deck of the sealift vessel with two adjustable tie down straps.

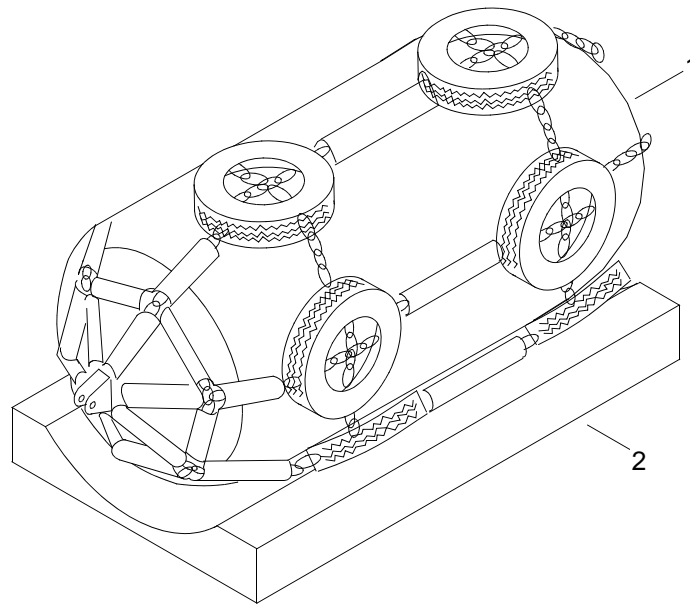
STOWAGE OF 6 FT BY 12 FT FENDERS

WARNING

**VEST****HELMET PROTECTION****HEAVY PARTS****MOVING PARTS**

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Using crane, attach slings and shackles to 6 ft by 12 ft fender (1).



2. Release securing chains from 6 ft by 12 ft fender (1) and RRDF.

WARNING

**HEAVY PARTS**

3. Raise 6 ft by 12 ft fender (1) from water and place on pallet (2) on deck of vessel.
4. Stow 6 ft by 12 ft fender (1) and pallet (2) on vessel as required.
5. Using two tie down straps, secure 6 ft by 12 ft fender (1) to pallet (2).
6. Prepare container for storage or shipment. (WP 0111 00)

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
CORNER FENDERS
STOWAGE**

INITIAL SETUP:**Tools**

Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)

Personnel Required

Seaman 88K

INTRODUCTION**Scope**

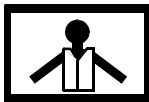
This work package covers stowage of the corner fenders in the 5 ft. by 10 ft. fender container.

General

The corner fenders are stowed in the deck fittings pallet located in the 5 ft. by 10 ft. fender container.

STOWAGE OF CORNER FENDERS

WARNING



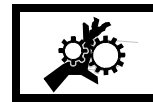
VEST



HELMET PROTECTION



HEAVY PARTS



MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

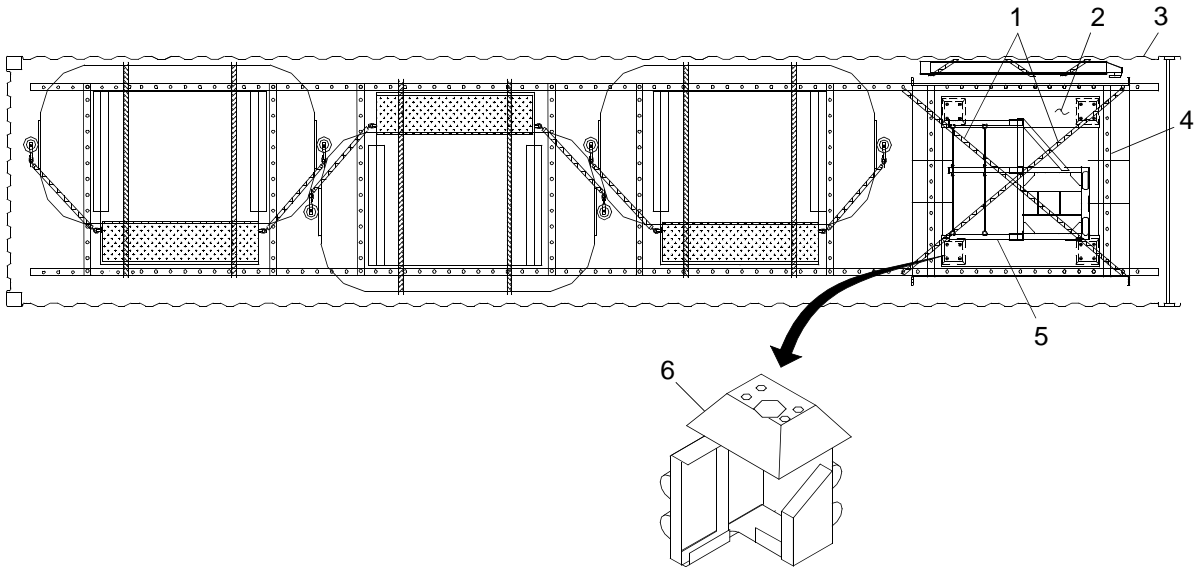
The following procedure is typical for the stowage of both port and starboard corner fenders.

1. Rinse all items to be stowed with fresh water before packing. Allow to thoroughly air dry.
2. Unlatch and open 5 ft. by 10 ft. fender container door.

WARNING

Doors must be secured in the open position. Failure to comply could result in death or injury to personnel.

3. Secure container doors open with locking bars, pins or hooks.
4. Loosen two ratcheting tie down straps (1) securing pallet (2) to container (3) and release front ends of two ratcheting tie down straps (1).



5. Lay two ratcheting tie down straps (1) to the rear of pallet (2).
6. Remove track stop (4) in front of pallet (2) nearest container (3) door.

WARNING



HEAVY PARTS

7. Using forklift, remove pallet (2) from container (3).
8. Using forklift, remove manlift basket (5).
9. Stow corner fenders (6) in pallet (2).

WARNING



HEAVY PARTS

10. Using forklift, place manlift basket (5) on top of pallet (2).
11. Using forklift, place pallet (2) in container (3).

-
12. Bring the two ratcheting tie down straps (1) over the manlift basket (5) and pallet (2), crossing them to form an "X," and secure free end of ratcheting tie down straps (1) to container (3) floor track at the front of pallet (2).
 13. Tighten two ratcheting tie down straps (1) to secure pallet (2) and manlift basket (5) to container (3).
 14. Prepare container for storage or shipment. (WP 0111 00)
 15. Remove locking bars, pins or hooks to close container doors.
 16. Close and latch container door.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
D-RING AND DECK CLEAT FITTINGS
STOWAGE**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)

Personnel Required

Seaman 88K

INTRODUCTION**Scope**

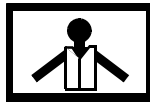
This work package covers stowage of D-ring and deck cleats fittings.

General

The D-ring and deck cleats fittings are stowed in the deck fittings pallet located in the 5 ft by 10 ft fender container.

STOWAGE OF D-RING AND DECK CLEAT FITTINGS

WARNING



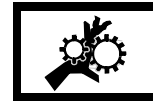
VEST



HELMET PROTECTION



HEAVY PARTS



MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes, and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

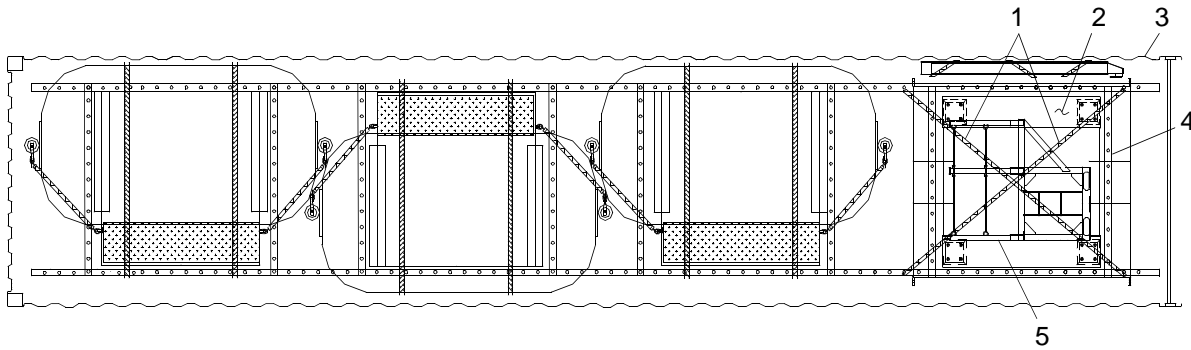
1. Rinse all D-rings and deck cleats with fresh water before packing. Allow to thoroughly air dry.
2. Unlatch and open 5 ft by 10 ft fender container doors.

WARNING

Doors must be secured in open position. Failure to comply could result in death or injury to personnel.

3. Secure container doors open with locking bars, pins or hooks.

4. Loosen two ratcheting tie down straps (1) securing pallet (2) to container (3) and release front ends of two ratcheting tie down straps (1).



5. Lay two ratcheting tie down straps (1) to the rear of pallet (2).
6. Remove track stop (4) in front of pallet (2) nearest container (3) door.

WARNING



HEAVY PARTS

7. Using forklift, remove pallet (2) from container (3).
8. Using forklift, remove manlift basket (5).
9. Stow D-ring and deck cleats fittings in pallet (2).

WARNING



HEAVY PARTS

10. Using forklift, place manlift basket (5) on top of pallet (2).
11. Using forklift, place pallet (2) in container (3).
12. Bring the two ratcheting tie down straps (1) over the manlift basket (5) and pallet (2), crossing them to form an "X," and secure free end of ratcheting tie down straps (1) to container (3) floor track at the front of pallet (2).
13. Tighten two ratcheting tie down straps (1) to secure pallet (2) and manlift basket (5) to container (3).
14. Prepare container for storage or shipment. (WP 0111 00)
15. Remove locking bars, pins or hooks to close container doors.
16. Close and latch container doors.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
MOORING BITTS AND QUICK DISCONNECTS
STOWAGE**

INITIAL SETUP:**Tools**

Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Push Rod (Item 6, WP 0116 00)

Personnel Required

Seaman 88K

INTRODUCTION**Scope**

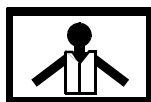
This work package covers stowage of the mooring bitts in the 20 ft open end container.

General

The mooring bitts are stowed three to a pallet, except the top pallet which will have a fourth mooring bitt stowed on top. The mooring bitts are secured with tie down straps. Once the mooring bitts are placed on the pallets and secured, they are stacked three pallets high with four mooring bitts on top. The pallets are then placed in the container. The three stacks of pallets are then secured to the container deck tracks with tie down straps. The container accommodates 30 mooring bitts.

STOWAGE OF MOORING BITTS

WARNING

**VEST****HELMET PROTECTION****HEAVY PARTS****MOVING PARTS**

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Rinse all items to be stowed with fresh water before packing. Allow to thoroughly air dry.
2. Unlatch and open container doors.

WARNING

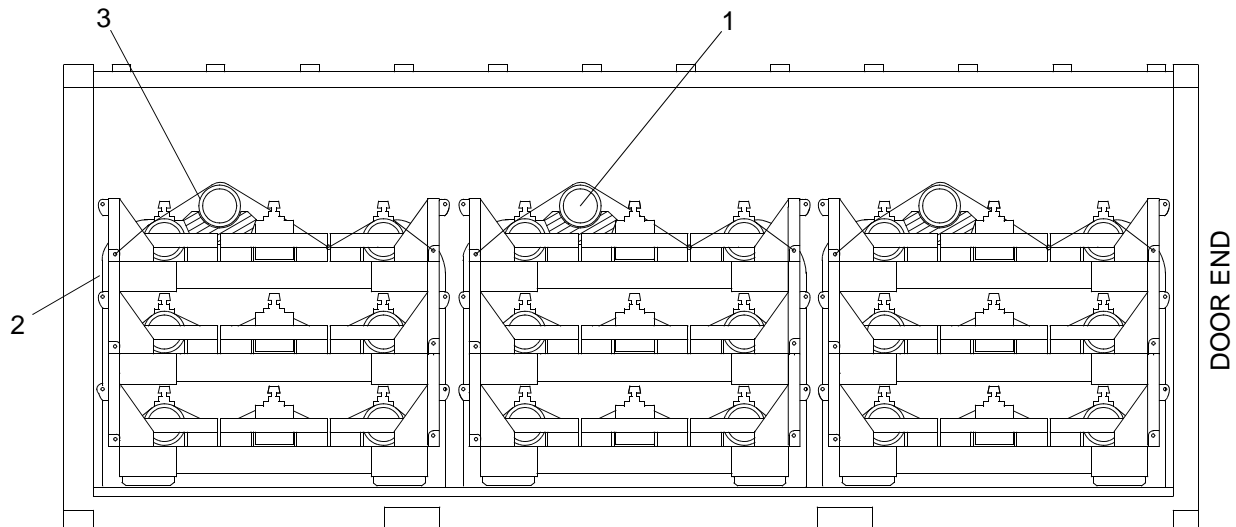
Doors must be secured in the open position. Failure to comply could result in death or injury to personnel.

- Secure container doors open with locking bars, pins or hooks.

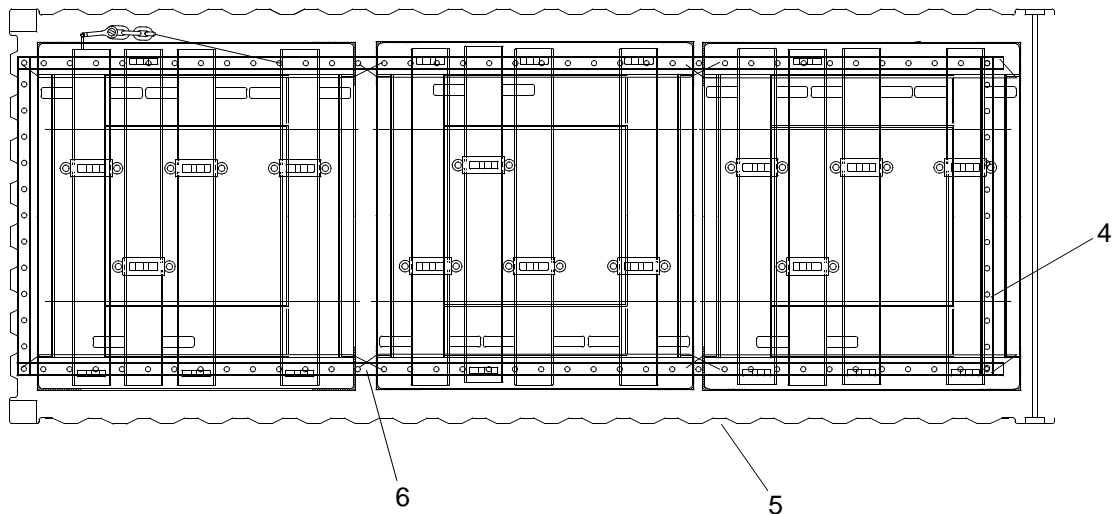
NOTE

There are a total of nine pallets. Six pallets will have three mooring bitts and three pallets will hold four mooring bitts.

- Install mooring bitts (1) into pallets (2).



- Secure one end of tie down strap (3) to pallet (2).
- Pull free end of tie down strap (3) over pallet (2) and tighten.
- Install track stop (4) at end of container (5).



- Position push bar at container (5) door.

-
9. Using forklift, stack three pallets (2) of mooring bitts (1) at container (5) door.
 10. Verify pallet (2) with nylon blocks is on bottom of stack and pallet (2) with four mooring bitts (1) is on top.
 11. Using forklift, load stack of pallets (2) containing mooring bitts (1) into container (5).
 12. Install push rod into fork of forklift, extend push bar and lock in place.
 13. Using push rod, push stack of pallets to back end of container (5).
 14. Lift tie down straps (6) up and over the top of pallet (2).
 15. Secure a track stop (4) in front of pallet (2) track stop.
 16. Secure tie down straps (6) to deck track and tighten.

NOTE

Stacks of pallets may require positioning so that lifting pads clear each other.

17. Repeat steps 5 - 16 until two remaining stacks of pallets (2) are stored inside container (5).
18. Remove locking bars, pins or hooks to close container doors.
19. Close and latch container doors.

STOWAGE OF QUICK DISCONNECTS

1. Rinse all items to be stowed with fresh water before packing. Allow to thoroughly air dry.
2. Unlatch and open BII container doors.

WARNING

Doors must be secured in the open position. Failure to comply could result in death or injury to personnel.

3. Secure container doors open with hooks.

WARNING



HEAVY OBJECTS

4. Stow quick disconnects in container.
5. Prepare container for storage or shipment. (WP 0111 00)
6. Remove hooks to close container doors.
7. Close and latch container doors.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
DUNNAGE MATS
STOWAGE**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)

Personnel Required

Seaman 88K

INTRODUCTION**Scope**

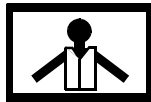
This work package covers stowage of the dunnage mats.

General

The 4 ft by 10 ft dunnage mats are stowed horizontally in four stacks with nine mats per stack. Dunnage (4 in. X 4 in. wood) is placed on the pallet and between the four stacks of mats to aid in the support of the mats while in stowage. Once stowed on the pallet, the mats are secured to the pallet with ratcheting tie down straps. The pallet is secured to deck tracks with tie down chain.

STOWAGE OF DUNNAGE MATS

WARNING

**VEST****HELMET PROTECTION****HEAVY PARTS****MOVING PARTS**

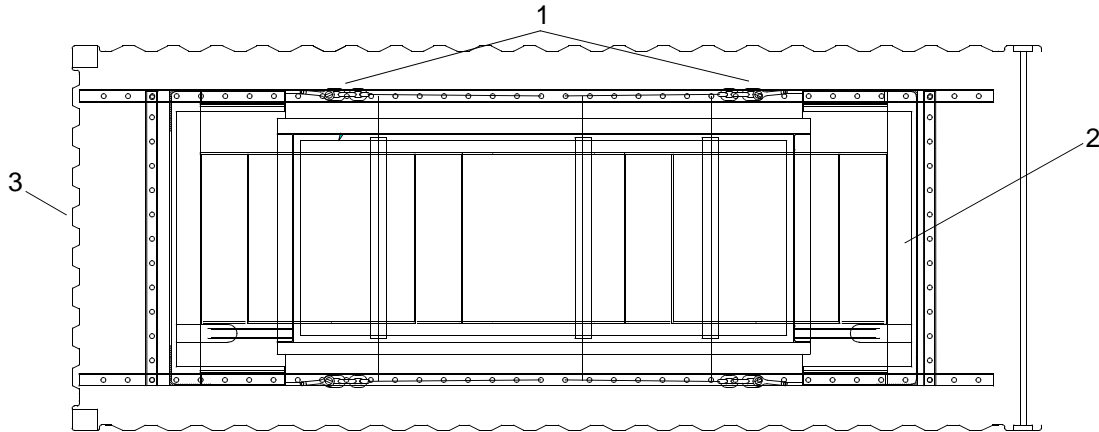
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Rinse all items to be stowed with fresh water before packing. Allow to thoroughly air dry.
2. Unlatch and open container doors.

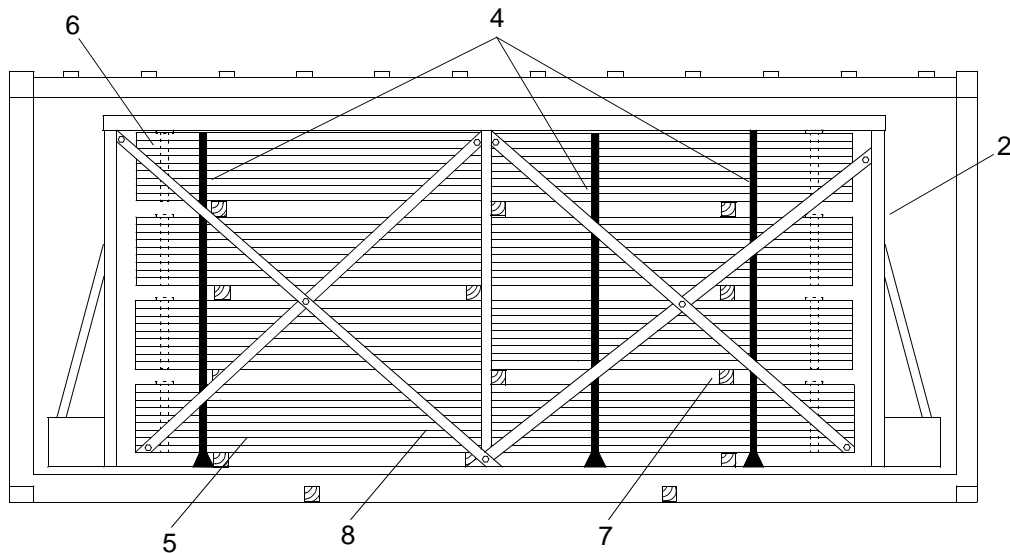
WARNING

Doors must be secured in the open position. Failure to comply could result in death or injury to personnel.

3. Secure container doors open with locking bars, pins or hooks.
4. Install tie down chain (1) in center of track system and secure to pallet (2) inside container (3).



5. Install ratcheting tie down straps (4) to tie down points opposite the open end of container (3) and allow to hang free at top of cage.



WARNING



HEAVY OBJECTS

6. Position nine sheets of dunnage mats (5) into pallet (2) with deck mat rods (6) in opposite corners.

-
7. Position three 4 in. X 4 in. wood beams (7) on top of dunnage mats (5) within close proximity to ratcheting tie down straps (4).

WARNING

**HEAVY OBJECTS**

8. Continue to stack three more levels of dunnage mats (5) with 4 in. X 4 in. wood beams (7).
9. Shim between dunnage mats (5) and framework (8) as necessary.
10. Retrieve ratcheting tie down straps (4) and pull up and over pallet (2) and secure.
11. Bolt additional framework (8) to open end of pallet (2) as required.
12. Prepare container for storage or shipment. (WP 0111 00)
13. Remove locking bars, pins or hooks to close container doors.
14. Close and latch container doors.

END OF WORK PACKAGE

CHAPTER 3

**TROUBLESHOOTING PROCEDURES
FOR
MODULAR CAUSEWAY SYSTEM (MCS)
ROLL-ON/ROLL-OFF DISCHARGE FACILITY (RRDF)**

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
TROUBLESHOOTING PROCEDURES INDEX**

MALFUNCTION/SYMP TOM**TROUBLESHOOTING PROCEDURE****EMERGENCY ANCHOR SYSTEM (EASY)**

Easy Anchor Slide Will Not Elevate WP 0098 00

Easy Anchor Drawer Will Not Extend WP 0099 00

GENERATOR CONTAINER

Electric Fuel Transfer Pump Inoperative WP 0085 00

Fire Suppression System Inoperative WP 0086 00

Fluorescent Lights Do Not Operate WP 0087 00

Tactical Quiet Generator (Reference Only) WP 0084 00

LIGHT TOWER CONTAINER

Light Tower (Reference Only) WP 0091 00

Light Tower Engine (Reference Only) WP 0092 00

PERSONNEL SHELTER

Air Conditioner and Heat Pump (Reference Only) WP 0088 00

Fluorescent Lights Do Not Operate WP 0090 00

Incinerator Toilet (Reference Only) WP 0089 00

RHIB CONTAINER

RHIB (Reference Only) WP 0093 00

Outboard Motor (Reference Only) WP 0094 00

VHF/FM TRANSCEIVER

VHF/FM Transceiver Has No Power WP 0095 00

VHF/FM Transceiver Does Not Receive WP 0096 00

VHF/FM Transceiver Does Not Transmit WP 0097 00

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
TACTICAL QUIET GENERATOR
TROUBLESHOOTING PROCEDURES**

INITIAL SETUP:

Personnel Required

Engineer 88L

References

TM 9-6115-642-10

TROUBLESHOOTING PROCEDURE

TACTICAL QUIET GENERATOR - REFERENCE ONLY

Refer to TM 9-6115-642-10 for 10 kW Tactical Quiet Generator for troubleshooting procedures.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
GENERATOR CONTAINER
TROUBLESHOOTING PROCEDURES**

INITIAL SETUP:**Personnel Required**Engineer 88L

TROUBLESHOOTING PROCEDURE

ELECTRIC FUEL TRANSFER PUMP INOPERATIVE

SYMPTOM

Fuel transfer pump is inoperative.

MALFUNCTION

No power to fuel transfer pump.

CORRECTIVE ACTION

Contact unit maintenance.

MALFUNCTION

Fuel transfer pump malfunctioning.

CORRECTIVE ACTION

Contact unit maintenance.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
GENERATOR CONTAINER
TROUBLESHOOTING PROCEDURES**

INITIAL SETUP:

Personnel Required

Engineer 88L

TROUBLESHOOTING PROCEDURE

FIRE SUPPRESSION SYSTEM INOPERATIVE

SYMPTOM

Fire suppression system does not work.

MALFUNCTION

No continuity in the fire suppression system.

CORRECTIVE ACTION

Contact Specialized Repair Activity.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
GENERATOR CONTAINER
TROUBLESHOOTING PROCEDURES**

INITIAL SETUP:**Personnel Required**Seaman 88K

TROUBLESHOOTING PROCEDURE

FLUORESCENT LIGHTS DO NOT OPERATE

SYMPTOM

Fluorescent lights will not illuminate.

MALFUNCTION

Light switch is not turned on.

CORRECTIVE ACTION

Position light switch to on. (WP 0007 00)

Perform operational check on generator container. (WP 0109 00)

MALFUNCTION

OVERHEAD LTG circuit breaker C is not turned on.

CORRECTIVE ACTION

Position OVERHEAD LTG circuit breaker C in electrical distribution panel to on. (WP 0007 00)

Perform operational check on generator. (WP 0109 00)

MALFUNCTION

Fluorescent light bulb(s) burned out.

CORRECTIVE ACTION

Replace fluorescent light bulb(s). (WP 0102 00)

MALFUNCTION

Fluorescent lights still will not illuminate.

CORRECTIVE ACTION

Contact unit maintenance.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
AIR CONDITIONER AND HEAT PUMP
TROUBLESHOOTING PROCEDURES**

INITIAL SETUP:

Personnel Required

Engineer 88L

References

TM 55-1945-220-14&P

TROUBLESHOOTING PROCEDURE

AIR CONDITIONER AND HEAT PUMP - REFERENCE ONLY

Refer to TM 55-1945-220-14&P for packaged terminal air conditioner and heat pump troubleshooting procedures.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
INCINERATOR TOILET
TROUBLESHOOTING PROCEDURES**

INITIAL SETUP:

Personnel Required

Engineer 88L

References

TM 55-1945-219-14&P

TROUBLESHOOTING PROCEDURE

INCINERATOR TOILET - REFERENCE ONLY

Refer to TM 55-1945-219-14&P for incinerator toilet troubleshooting procedures.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
PERSONNEL SHELTER
TROUBLESHOOTING PROCEDURES**

INITIAL SETUP:**Personnel Required**Seaman 88K

TROUBLESHOOTING PROCEDURE

FLUORESCENT LIGHTS DO NOT OPERATE

SYMPTOM

Fluorescent lights will not illuminate.

MALFUNCTION

Light switch is not turned on.

CORRECTIVE ACTION

Position light switch to on. (WP 0007 00)

Perform operational check on personnel shelter. (WP 0109 00)

MALFUNCTION

OVERHEAD LTG circuit breaker C is not turned on.

CORRECTIVE ACTION

Position OVERHEAD LTG circuit breaker C in electrical distribution panel to on. (WP 0007 00)

Perform operational check on personnel shelter. (WP 0109 00)

MALFUNCTION

MASTER circuit breaker in electrical panel is not turned on.

CORRECTIVE ACTION

Position MASTER circuit breaker in electrical distribution panel to on. (WP 0007 00)

Perform operational check on personnel shelter. (WP 0109 00)

MALFUNCTION

Personnel shelter main switching panel in generator container is not turned on.

CORRECTIVE ACTION

Position personnel shelter main switching panel in generator container to on. (WP 0007 00)

Perform operational check on personnel shelter. (WP 0109 00)

MALFUNCTION

Fluorescent light bulb(s) burned out.

CORRECTIVE ACTION

Replace fluorescent light bulb(s). (WP 0103 00)

MALFUNCTION

Fluorescent lights still will not illuminate.

CORRECTIVE ACTION

Contact unit maintenance.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
LIGHT TOWER
TROUBLESHOOTING PROCEDURES**

INITIAL SETUP:

Personnel Required

Engineer 88L

References

TM 55-1945-217-14&P

TROUBLESHOOTING PROCEDURE

LIGHT TOWER - REFERENCE ONLY

Refer to TM 55-1945-217-14&P for light tower troubleshooting procedures.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
LIGHT TOWER ENGINE
TROUBLESHOOTING PROCEDURES**

INITIAL SETUP:

Personnel Required

Engineer 88L

References

TM 55-1945-218-14&P

TROUBLESHOOTING PROCEDURE

LIGHT TOWER ENGINE - REFERENCE ONLY

Refer to TM 55-1945-218-14&P for light tower engine troubleshooting procedures.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
RIGID HULL INFLATABLE BOAT
TROUBLESHOOTING PROCEDURES**

INITIAL SETUP:

Personnel Required

Engineer 88L

References

TM 55-1945-224-14&P

TROUBLESHOOTING PROCEDURE

RIGID HULL INFLATABLE BOAT - REFERENCE ONLY

Refer to TM 55-1945-224-14&P for RHIB troubleshooting procedures.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
RIGID HULL INFLATABLE BOAT OUTBOARD MOTOR
TROUBLESHOOTING PROCEDURES**

INITIAL SETUP:

Personnel Required

Engineer 88L

References

TM 55-1945-221-14&P

TROUBLESHOOTING PROCEDURE

RIGID HULL INFLATABLE BOAT OUTBOARD MOTOR - REFERENCE ONLY

Refer to TM 55-1945-221-14&P for RHIB outboard motor troubleshooting procedures.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
VHF/FM HANDHELD TRANSCEIVER
TROUBLESHOOTING PROCEDURES**

INITIAL SETUP:**Personnel Required**Seaman 88K

TROUBLESHOOTING PROCEDURE

VHF/FM TRANSCEIVER HAS NO POWER

SYMPTOM

Transceiver has no power.

MALFUNCTION

Transceiver power/volume knob turned off.

CORRECTIVE ACTION

Turn power/volume knob clockwise to turn transceiver on. (WP 0036 00)

MALFUNCTION

Battery discharged.

CORRECTIVE ACTION

Replace battery. (WP 0036 00)

MALFUNCTION

Transceiver defective.

CORRECTIVE ACTION

Replace transceiver.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
VHF/FM HANDHELD TRANSCEIVER
TROUBLESHOOTING PROCEDURES**

INITIAL SETUP:**Personnel Required**Seaman 88K

TROUBLESHOOTING PROCEDURE

VHF/FM TRANSCEIVER DOES NOT RECEIVE

SYMPTOM

Transceiver does not receive.

MALFUNCTION

Transceiver has no power.

CORRECTIVE ACTION

Turn power/volume knob clockwise to turn transceiver on. (WP 0036 00)

MALFUNCTION

Low battery indicator displayed on transceiver.

CORRECTIVE ACTION

Remove battery. Install a fully charged battery. (WP 0036 00)

MALFUNCTION

Transceiver antenna damaged or missing.

CORRECTIVE ACTION

Contact unit maintenance.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
VHF/FM HANDHELD TRANSCEIVER
TROUBLESHOOTING PROCEDURES**

INITIAL SETUP:**Personnel Required**Seaman 88K

TROUBLESHOOTING PROCEDURE

VHF/FM TRANSCEIVER DOES NOT TRANSMIT

SYMPTOM

Transceiver does not transmit.

MALFUNCTION

Transceiver has no power.

CORRECTIVE ACTION

Turn the power/volume knob clockwise to turn the transceiver on. (WP 0036 00)

MALFUNCTION

Low battery indicator displayed on transceiver.

CORRECTIVE ACTION

Remove battery. Install a fully charged battery. (WP 0036 00)

MALFUNCTION

Transceiver antenna damaged or missing.

CORRECTIVE ACTION

Contact unit maintenance.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
EASY ANCHOR SYSTEM
TROUBLESHOOTING PROCEDURES**

INITIAL SETUP:**Personnel Required**Engineer 88L

TROUBLESHOOTING PROCEDURE

EMERGENCY ANCHOR SYSTEM (EASY) - EASY ANCHOR SLIDE WILL NOT ELEVATE

SYMPTOM

Cylinder does not complete its stroke or extends slowly with spurts.

MALFUNCTION

Fluid level in hydraulic pump reservoir low.

CORRECTIVE ACTION

Service reservoir. (WP 0101 00)

Perform operational check of EASY anchor system. (WP 0109 00)

MALFUNCTION

Hand pump release valve open.

CORRECTIVE ACTION

Close release valve. (WP 0067 00)

Perform operational check of EASY anchor system. (WP 0109 00)

MALFUNCTION

Hydraulic line loose.

CORRECTIVE ACTION

Contact unit maintenance.

SYMPTOM

Cylinder loses pressure after fully extended.

MALFUNCTION

Hydraulic line loose.

CORRECTIVE ACTION

Contact unit maintenance.

SYMPTOM

Cylinder does not complete its stroke or operates slowly.

MALFUNCTION

Hand pump release valve closed.

CORRECTIVE ACTION

Open release valve. (WP 0067 00)

Perform operational check of EASY anchor system. (WP 0109 00)

MALFUNCTION

Pump reservoir overfull.

CORRECTIVE ACTION

Contact unit maintenance.

MALFUNCTION

Hydraulic line loose.

CORRECTIVE ACTION

Contact unit maintenance.

MALFUNCTION

Internal diameter of hydraulic line too small.

CORRECTIVE ACTION

Contact unit maintenance.

MALFUNCTION

Air in hydraulic lines.

CORRECTIVE ACTION

Contact unit maintenance.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
EASY ANCHOR SYSTEM
TROUBLESHOOTING PROCEDURES**

INITIAL SETUP:**Personnel Required**Engineer 88L

TROUBLESHOOTING PROCEDURE

EMERGENCY ANCHOR SYSTEM (EASY) - EASY ANCHOR DRAWER WILL NOT EXTEND

SYMPTOM

Cylinder does not complete its stroke or extends slowly with spurts.

MALFUNCTION

Fluid level in hydraulic pump reservoir low.

CORRECTIVE ACTION

Service reservoir. (WP 0101 00)

Perform operational check of EASY anchor system. (WP 0109 00)

MALFUNCTION

Hand pump release valve open.

CORRECTIVE ACTION

Close release valve. (WP 0067 00)

Perform operational check of EASY anchor system. (WP 0109 00)

MALFUNCTION

Hydraulic line loose.

CORRECTIVE ACTION

Contact unit maintenance.

MALFUNCTION

Air in hydraulic lines.

CORRECTIVE ACTION

Contact unit maintenance.

END OF WORK PACKAGE

CHAPTER 4

**MAINTENANCE INSTRUCTIONS
FOR
MODULAR CAUSEWAY SYSTEM (MCS)
ROLL-ON/ROLL-OFF DISCHARGE FACILITY (RRDF)**

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)
PROCEDURES INTRODUCTION**

INTRODUCTION

General

Preventive Maintenance Checks and Services (PMCS) are performed to keep the RRDF equipment in operating condition. The checks are used to find, correct or report problems. Crew members are to do the PMCS as shown in the PMCS table. PMCS is performed every day the equipment is operated, using the PMCS table. Pay attention to WARNING and CAUTION statements. A WARNING means someone could be hurt. A CAUTION means equipment could be damaged.

Before you begin operating the equipment, do "Before PMCS".

During operation, do "During PMCS".

After operation, do "After PMCS".

Do "Monthly PMCS" once a month. If the equipment has not been operated in a month, also do "After PMCS" at the same time.

If you are operating the equipment for the first time, do the "Monthly PMCS" the first time you do your "Before PMCS".

If you find something wrong when performing PMCS, fix it if you can, using troubleshooting procedures and/or maintenance procedures.

The right-hand column of the PMCS table list conditions that make the vessel not fully mission capable. Write up items not fixed on DA Form 2404 for unit maintenance. For further information on how to use this form, see DA PAM 738-750.

Leakage Definition

CAUTION

Equipment operation is allowed with minor leakages (Class I or II) except for fuel leaks. Of course, consideration must be given to the fluid capacity of the item or system being checked. When in doubt, ask your supervisor. Failure to maintain proper fluid levels could result in damage to equipment.

When operating with Class I or II leaks, continue to check fluid levels as required in your PMCS.

Class III leaks should be reported immediately to your supervisor.

It is necessary to know how fluid leakage affects the status of the equipment. The following are definitions of the classes of leakage an operator or crew member needs to know to be able to determine the condition of the leak. Learn and then be familiar with them, and REMEMBER: WHEN IN DOUBT, ASK YOUR SUPERVISOR.

Leakage definitions for Crew/Operator PMCS.

CLASS I - Seepage of fluid (as indicated by wetness or discoloration) not great enough to form drops.

CLASS II - Leakage of fluid great enough to form drops, but not enough to cause drops to drip from item being checked.

CLASS III - Leakage of fluid great enough to form drops that fall from the item being checked.

Inspection

Look for signs of a problem or trouble. Senses help here. You can feel, smell, hear or see many problems. Be alert when on the equipment.

Inspect to see if items are in good condition. Are they correctly assembled, stowed, secured, excessively worn, leaking, corroded or properly lubricated? Correct any problems found or notify unit maintenance.

There are some common items to check all over the equipment. These include the following:

1. Bolts, clamps, nuts and screws: Continuously check for looseness. Look for chipped paint, bare metal, rust or corrosion around bolt and screw heads and nuts. Tighten them when you find them loose. If tools are not available, contact unit maintenance.
2. Welds: Many items on the equipment are welded. To check these welds, look for chipped paint, rust, corrosion or gaps. When these conditions exist, notify unit maintenance on DA Form 2404.
3. Electrical wires, connectors and harnesses: Tighten loose connectors. Look for cracked or broken insulation, bare wires and broken connectors. If any are found, notify unit maintenance.
4. Hoses and fluid lines: Look for wear, damage and leaks, and make sure clamps and fittings are tight. Wet spots mean a leak. A stain by a fitting or connector can also mean a leak. When you find a leak, notify unit maintenance.

Lubrication Service Intervals - Normal Conditions

For safer, more trouble free operations, make sure that your equipment is serviced when it needs it. For the proper lubrication and service intervals, see the PMCS section of this manual.

Lubrication Service Intervals - Unusual Conditions

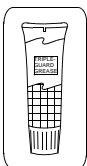
Your equipment will require extra service and care when you operate under unusual conditions. High or low temperatures, long periods of hard use, or continued use in sand, mud, or snow will break down the lubricant, requiring you to add or change lubricant more often.

Lubrication Symbols

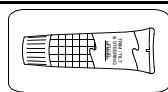
The following lubrication symbols are used in this manual:



Grease, Cindol (Starter and Pinion Lube) (Item 20, WP 0117 00)



Grease, Outboard Motor (Item 22, WP 0117 00)



Hydraulic Fluid, Petroleum Base (Trim/Tilt and Power Steering) (Item 25, WP 0117 00)



Kit, HPF Lube (Item 31, WP 0117 00)

GAA Grease, Automotive and Artillery (Item 19, WP 0117 00)

Oil Filters

Oil filters shall be serviced/cleaned/changed, as applicable, at prescribed hard time intervals.

Army Oil Analysis Program (AOAP)

The components of the RRDF are not enrolled in the AAOP. Hardtime intervals apply.

Warranty Information

For equipment under manufacturer's warranty, hard time oil service intervals shall be followed. Intervals shall be shortened if lubricants are known to be contaminated or if operation is under adverse conditions, such as longer than usual operating hours, extended idling period or extreme dust.

Cleaning And Lubrication

Proper cleaning and lubrication can aid in avoiding possible problems or trouble, so make it a habit to do the following:

CAUTION

Follow all cleaning and lubrication instructions carefully. Failure to do so could result in damage to equipment.

1. Thoroughly wash all equipment exposed to salt spray with clean, fresh water.
2. Clean parts to be lubricated with Cleaner, Type II (Item 8, WP 0117 00), or equivalent. Do not use fluid or semi-fluid lubricant on SFD coated surface. Wipe surface dry before lubricating.
3. Clean grease fittings before lubrication.
4. Lubricate all equipment at conclusion of the operation before equipment storage.
5. Always use the PMCS lubrication instructions as a guide.
6. Never use too much lubricant.
7. Never use the wrong type or grade of lubricant.
8. Lubricate more during constant use and less during inactive periods.

9. Use the correct grade of lubricant for seasonal temperature expected.

Corrosion Prevention and Control (CPC)

CPC of Army materiel is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items.

Corrosion is typically associated with rusting of metals or galvanic corrosion which produces a white powder. The category of corrosion also includes deterioration of other materials, such as rubber and plastic. Unusual cracking, softening, swelling or breaking of the materials may be a corrosion problem. If a corrosion problem is identified, it can be reported using SF 368, Product Quality Deficiency Report. Use of key words, such as "corrosion", "rust", "deterioration" or "cracking", will ensure that the information is identified as a CPC problem. The form should be submitted to the address specified in DA PAM 738-750.

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)
AND LUBRICATION PROCEDURES**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
Life Preserver, Vest (Item 71, WP 0116 00)
Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
Helmet, Safety (Brown) (Item 30, WP 0116 00)
Gloves, Rubber, Industrial (Item 24, WP 0116 00)
Goggles, Industrial (Chipping, Chemical) (Item 26, WP 0116 00)
Protector, Hearing (Item 44, WP 0116 00)
Lubricating Gun, Hand (Item 29, WP 0116 00)
Respirator, Air Filtering (Item 10, WP 0118 00)
Apron, Utility (Item 1, WP 0118 00)
Mop, Wet (Item 7, WP 0118 00)
Gage, Tire Pressure (Item 6, WP 0118 00)
Brush, Wire Scratch (Item 3, WP 0118 00)
Brush, Stencil (Item 2, WP 0118 00)
Compressor Unit, Reciprocating (Item 4, WP 0118 00)

Materials/Parts

Antifreeze (Item 2, WP 0117 00)
Antiseize Compound (Item 9, WP 0117 00)
Cleaner, Type II (Item 8, WP 0117 00)
Corrosion, Preventive Compound, Grade I (Item 10, WP 0117 00)
Corrosion, Preventive Compound, Grade II (Item 11, WP 0117 00)
Grease, Aircraft, (General Purpose, Wide Temperature Range) (Item 18, WP 0117 00)
Grease, Outboard Motor (Item 22, WP 0117 00)
Grease, Automotive and Artillery (Item 19, WP 0117 00)
Grease, Cindol (Starter and Pinion Lube) (Item 20, WP 0117 00)
Hydraulic Fluid, Petroleum Base (Tilt/Trim and Power Steering) (Item 25, WP 0117 00)
Kit, HPF Lube (Item 31, WP 0117 00)
Lubricating Oil, Engine, 15W40 Grade (Item 34, WP 0117 00)
Water, Distilled (Item 15, WP 0117 00)
Rag, Wiping (Item 40, WP 0117 00)

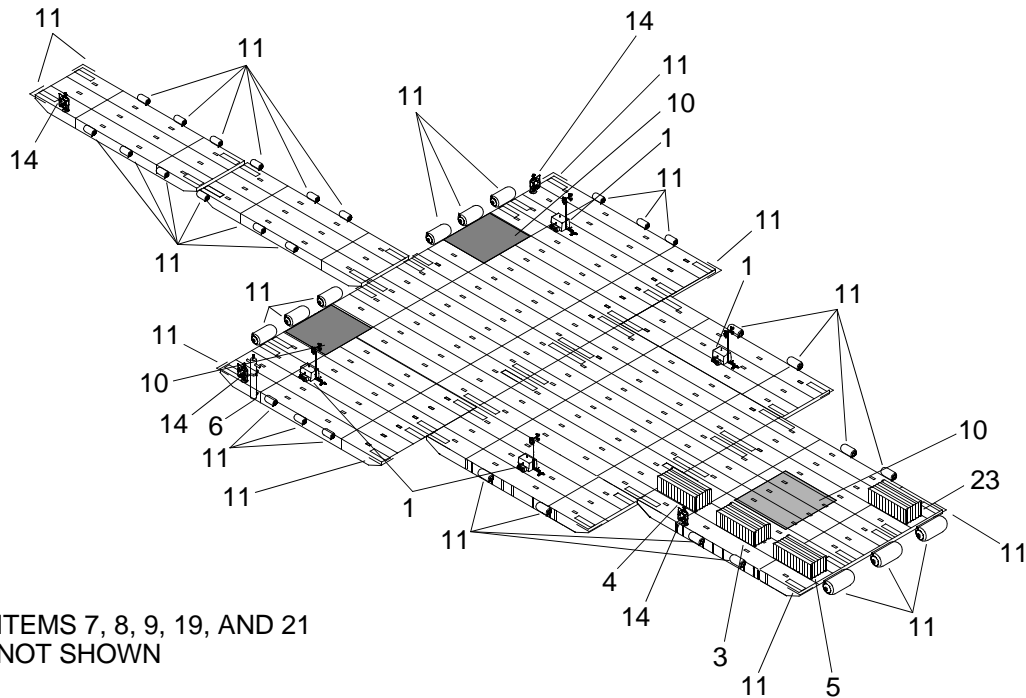
Personnel Required

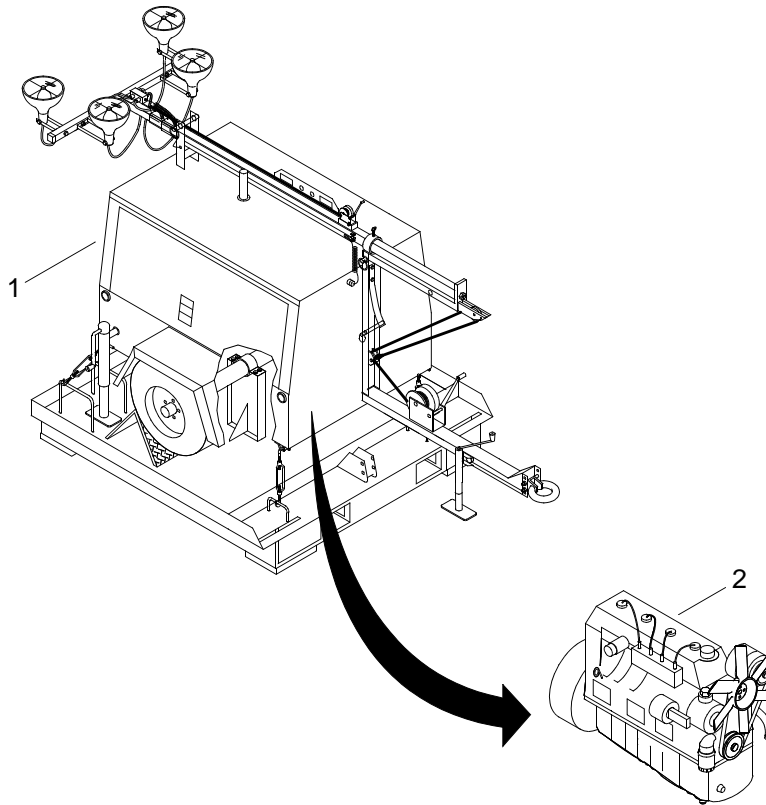
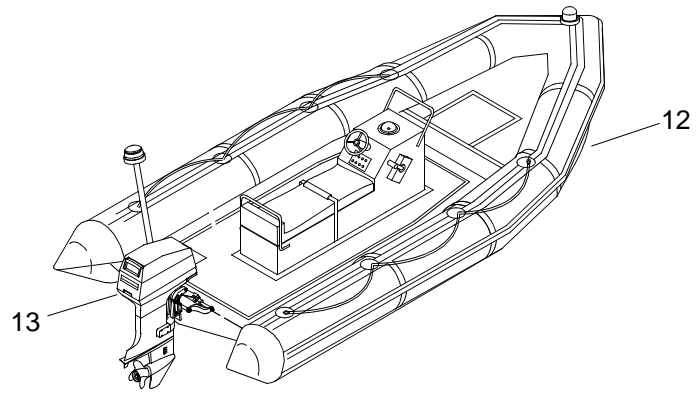
Seaman 88K
Engineer 88L

References

29 CFR
46 CFR
TM 9-6115-642-10
TM 55-1945-219-14&P
TM 55-1945-217-14&P
TM 55-1945-220-14&P

1. Light Tower
2. Light Tower Engine
3. 10 kW Generator Container
4. Personnel Shelter
5. EASY
6. Mooring Bitts
7. Towing Bridle
8. Towing Interface
9. Towing Lights
10. Dunnage Mats
11. Fenders
12. Rigid Hull Inflatable Boat
13. RHIB Outboard Motor
14. Life Ring Stanchions
15. Deck Fittings
16. Lift Shackles
17. Flexors
18. Non-Powered Modules
19. Lifting Slings
20. Horizontal and Vertical Connectors
21. Steel Weight Lifting Chains, Rings, Hooks, Shackles and Swivels
22. Module Interlock Connector and Spring
23. BII Container





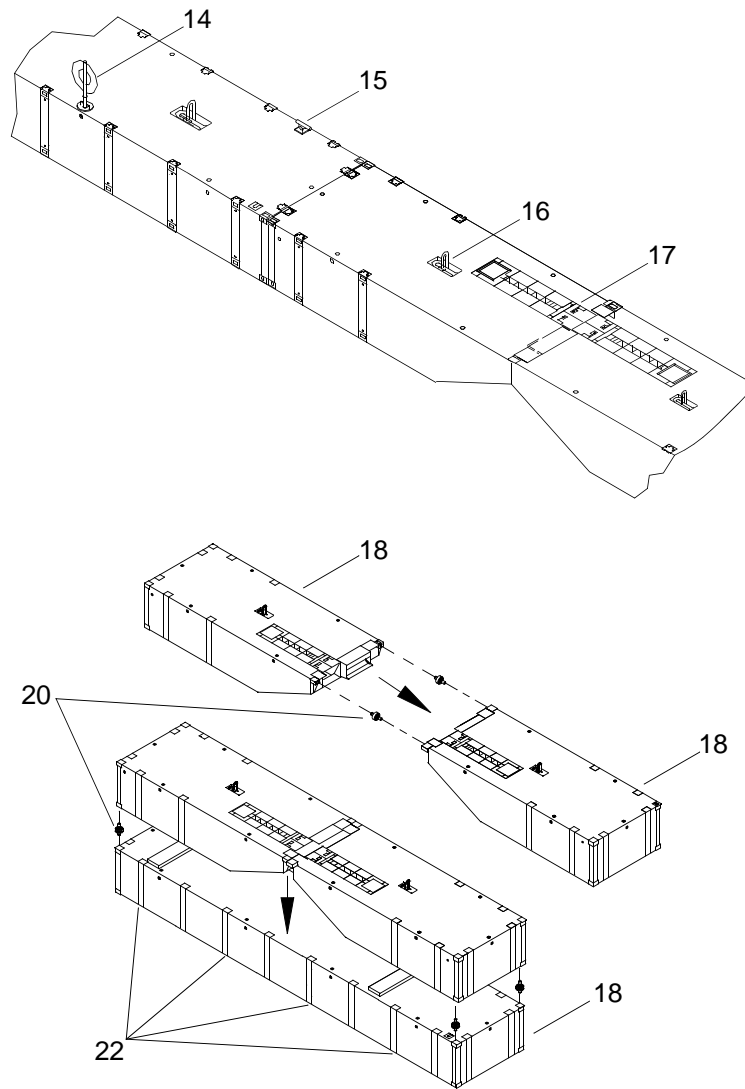


Table 1. Preventive Maintenance Checks and Services.

ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
1	Before	.1	Light Tower	1. Check winch cables to ensure ends are securely attached. Check cables for fraying and other damage. If cables are frayed or damaged, contact unit maintenance. 2. Check cable pulleys for damage. If pulleys are damaged, contact unit maintenance.	

Table 1. Preventive Maintenance Checks and Services. (Continued)

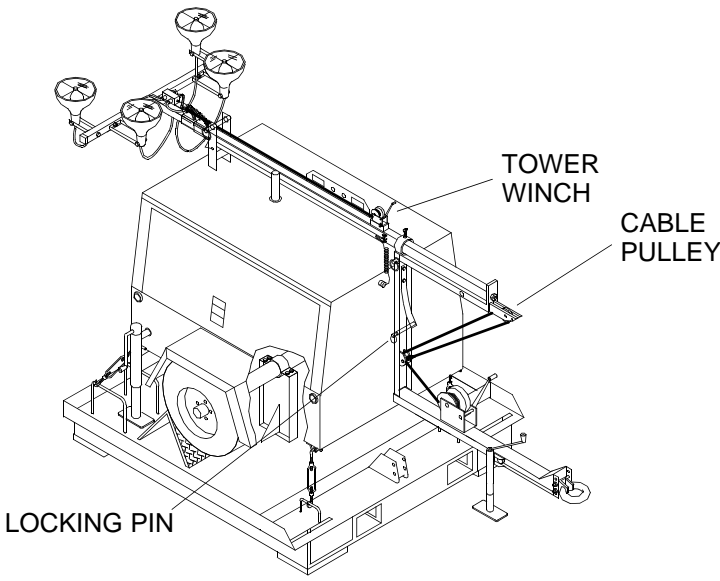
ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
1	Before	.1	Light Tower (Cont'd)	3. Check for missing tower locking pins. If locking pins are missing, contact unit maintenance.	
					
				<p>4. Check for flat tires. Check tire inflation with tire pressure gage. Tires should be inflated to 32 PSI. If tires are flat, contact unit maintenance.</p> <p>5. Check the electrical control compartment for damaged or burned wiring. If wiring is damaged or burned, contact unit maintenance.</p> <p>6. Check for damaged or faded warning and caution decals. If decals are damaged or faded, contact unit maintenance.</p> <p>7. Clear air vents of obstructions.</p> <p>8. Check acoustic material on light set enclosure panels for damage or missing material. If panels are damaged or missing, contact unit maintenance.</p>	

Table 1. Preventive Maintenance Checks and Services. (Continued)

ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
1	Before	.1	Light Tower (Cont'd)	<p>9. Check for evidence of arcing on electrical terminals. If arcing is found, contact unit maintenance.</p> <p>10. Inspect electrical wiring to ensure that it is securely connected, clean and undamaged. If wiring is not securely connected, dirty or damaged, contact unit maintenance.</p> <p>11. Check all accessible fuse terminal blocks and connections to see that they are securely connected and supported, that insulation is not cracked or chafed and that conduit and shielding are secure and in good condition. If terminal blocks are not securely connected or supported, insulation is cracked or chafed or shielding is damaged, contact unit maintenance.</p>	

WARNING

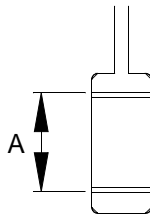


CHEMICAL



EYE PROTECTION

2	Before	.4	Light Tower Engine	<p>1. Check engine oil level.</p> <p>a. Verify oil level registers FULL on dipstick. Engine must be cool when reading level. If hot, allow to cool for 20 minutes. If necessary, add Lubricating Oil, Engine, 15W40 Grade, to achieve desired level. DO NOT OVER FILL. Use a rag to wipe up any spillage that may occur.</p>	
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A: ENGINE OIL LEVEL WITHIN THIS RANGE IS PROPER

Table 1. Preventive Maintenance Checks and Services. (Continued)





ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
2	Before	.4	Light Tower Engine (Cont'd)	b. Make a visual inspection for oil leaks around filters and external oil lines. If oil leaks are found, contact unit maintenance.	Class III oil leaks are found.
WARNING					
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  CHEMICAL </div> <div style="text-align: center;">  EYE PROTECTION </div> <div style="text-align: center;">  FIRE </div> <div style="text-align: center;">  SLICK FLOOR </div> </div> <p style="text-align: center;">Use approved procedures when cleaning up fuel spills. Take proper precautions when removing or installing any fuel system component. Failure to comply may result in serious injury to death to personnel.</p>					
				<p>2. Check fuel system.</p> <p>a. Check for leaks around fuel tank and fuel lines. If leaks are found, contact unit maintenance.</p> <p>b. Examine fuel lines and flexible hoses for leaks. Check that fittings, clamps and ties are secure. Hoses must not be resting on or touching shafts, couplings, heated surfaces, sharp edges or other areas that might sever or rupture fuel system parts. If fuel leaks, fittings, clamps and ties are not secure or hoses are resting on or touching shafts, couplings, heated surfaces or sharp edges, contact unit maintenance.</p> <p>c. Verify fuel tank is full by checking sight level or using a fuel stick. If necessary, add fuel. (TM 55-1945-217-14&P) DO NOT OVER FILL. Tank capacity is 30 gallons (114 liters). Fill to 95%.</p>	<p>Class I fuel leakage is found.</p> <p>Class I fuel leakage is found.</p>

Table 1. Preventive Maintenance Checks and Services. (Continued)





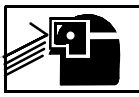

ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
<p>WARNING</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  CHEMICAL </div> <div style="text-align: center;">  EYE PROTECTION </div> <div style="text-align: center;">  POISON </div> </div>					
2	Before	.4	Light Tower Engine (Cont'd)	<p>3. Check cooling system fluid level. Add coolant as necessary. Service with antifreeze.</p> <p>4. Check for missing or damaged components. If components are damaged or missing, contact unit maintenance.</p> <p>5. Check for cut, frayed or damaged electrical wiring. If electrical wiring is cut, frayed or damaged, contact unit maintenance.</p>	
<p>WARNING</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  CHEMICAL </div> <div style="text-align: center;">  EYE PROTECTION </div> <div style="text-align: center;">  EXPLOSION </div> </div> <p>Do not reverse battery polarity. Reversing polarity may cause explosion or sudden discharge of electrolyte. Failure to comply could result in injury or death.</p>					
				<p>6. Inspect battery system for damage. If battery is damaged, contact unit maintenance.</p> <p style="margin-left: 20px;">a. Check electrolyte level in battery. Level should be above plates in cells. Add distilled water as necessary.</p> <p style="margin-left: 20px;">b. Ensure all battery cable clamps and hold downs are tight. Make sure all are secure and free of corrosion. Tighten and clean if necessary.</p>	<p>Battery will not start light tower.</p> <p>Battery will not start light tower.</p> <p>Battery will not start light tower.</p>

Table 1. Preventive Maintenance Checks and Services. (Continued)

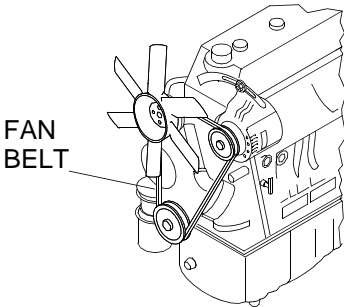
ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
2	Before	.4	Light Tower Engine (Cont'd)	<p>7. Check for dirt and foreign objects in radiator fins. Clean as necessary with wiping rags.</p> <p>8. Check fan belts for looseness or fraying. Fan belt should not move more than ½ inch when pushed at the center of the belt. If belts are frayed or loose, contact unit maintenance.</p>	
					
3	Before	.2	Generator Container	<p>1. Check exterior of container for damage. If damage is found, contact unit maintenance.</p> <p>2. Check personnel access door for proper operation, damaged seal or broken glass. If door does not operate properly or seal or glass is damaged, contact unit maintenance.</p> <p>3. Check AC lighting system for operation and burned out bulbs. If lighting system does not operate or bulbs are burned out, contact unit maintenance.</p> <p>4. Check DC lighting system for operation. If DC lighting system does not operate, contact unit maintenance.</p> <p style="padding-left: 20px;">a. Check DC lighting system for burned out bulbs. If DC lighting system bulbs are burned out, contact unit maintenance.</p>	

Table 1. Preventive Maintenance Checks and Services. (Continued)

ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
3	Before	.2	Generator Container (Cont'd)	<p>b. Check electrolyte level in DC lighting system battery. Level should be above plates in cells. Add distilled water as necessary.</p> <p>c. Ensure DC lighting battery cable clamps and hold downs are tight. Make sure all are secure and free of corrosion. Tighten and clean if necessary.</p> <p>d. Check DC lighting system battery charger for frayed wires and proper operation. If DC lighting system battery charger has frayed wires or does not operate, contact unit maintenance.</p>	

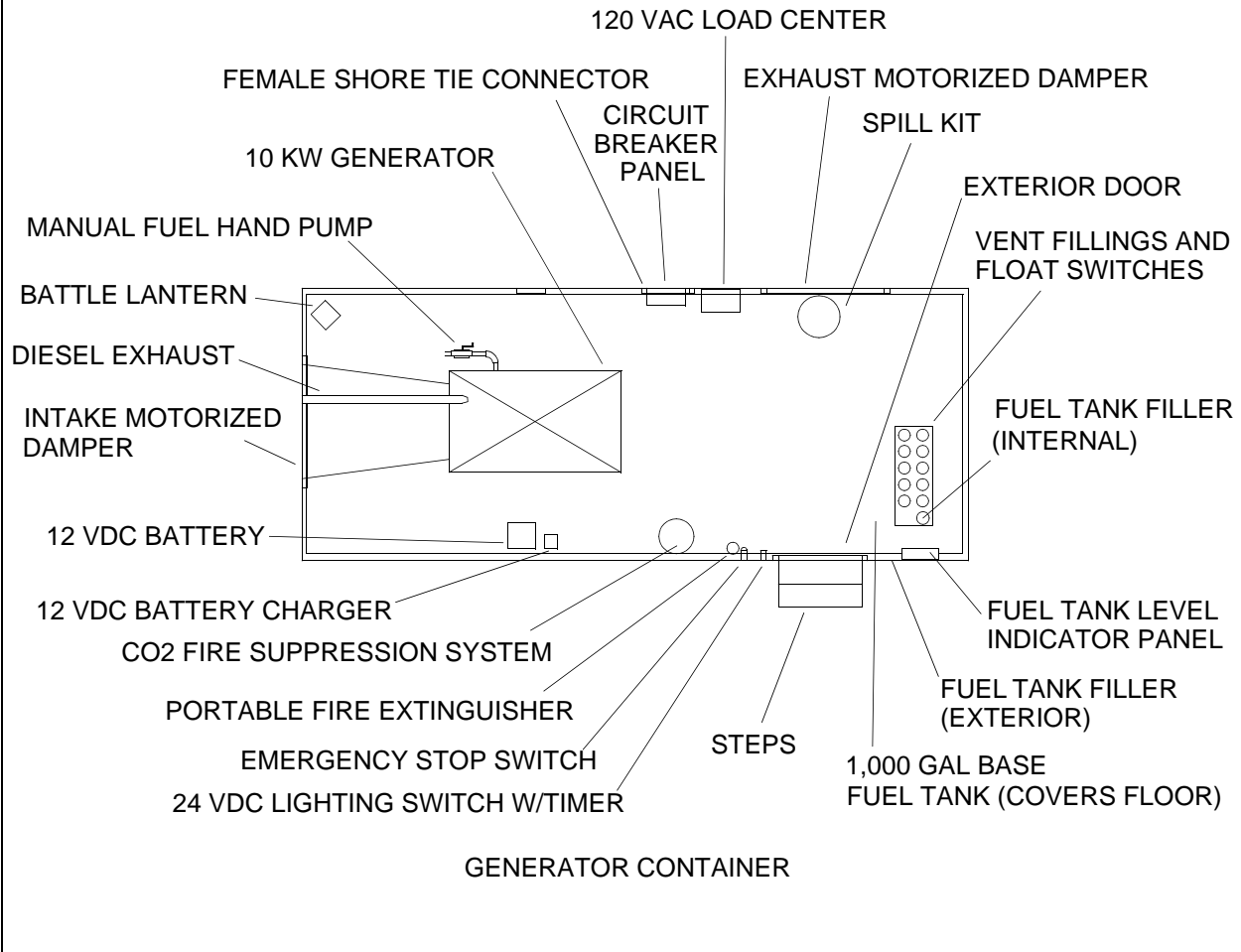


Table 1. Preventive Maintenance Checks and Services. (Continued)

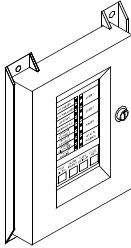




ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
<p>WARNING</p> <p>Use extreme care when inspecting or servicing fire suppression system. Failure to comply could result in injury or death.</p>					
3	Before	.2	Generator Container (Cont'd)	<p>5. Check fire suppression system for proper operation. (WP 0035 00)</p> <p>a. AC power Light Emitting Diode (LED) should be lit on control panel when generator is operating. (WP 0007 00) If inoperative, contact unit maintenance.</p>	<p>Fire suppression system is inoperative.</p> <p>Yellow or red LED is illuminated.</p>
					
				<p>b. Inspect for discharge, leakage or expansion. Look for damaged or broken seals. If discharge, leakage, expansion or damaged or broken seals are found, contact unit maintenance.</p>	
<p>WARNING</p>					
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>CHEMICAL</p> </div> <div style="text-align: center;">  <p>EYE PROTECTION</p> </div> <div style="text-align: center;">  <p>FIRE</p> </div> <div style="text-align: center;">  <p>SLICK FLOOR</p> </div> </div>					
<p>Use approved procedures when cleaning up fuel spills. Take proper precautions when removing or installing any fuel system component. Failure to comply may result in serious injury or death to personnel.</p>					
				<p>6. Check 1,000 gallon fuel tank and fuel pumps for evidence of fuel leakage. If evidence of fuel leakage is found, contact unit maintenance.</p>	<p>Class I fuel leakage is found.</p>

Table 1. Preventive Maintenance Checks and Services. (Continued)

ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
3	Before	.2	Generator Container (Cont'd)	<p>a. Check for leaks around fuel tank and fuel lines. If evidence of fuel leakage is found, contact unit maintenance.</p> <p>b. Examine fuel lines and flexible hoses for leaks. Check that fittings, clamps and ties are secure. If evidence of leaks, loose fittings, clamps or ties are found, contact unit maintenance.</p> <p>c. Verify fuel tank is full by checking sight level or using a fuel stick. If necessary, add fuel. (TM 9-6115-642-10) DO NOT OVER FILL. Tank capacity is 30 gallons (114 liters). Fill to 95%.</p> <p>7. Inspect portable fire extinguisher for discharge nozzle obstruction, proper mounting, tag signed within last month and that all seals and pins are in place. If discharge nozzle obstruction, improper mounting is found or seals or pins are missing, contact unit maintenance.</p> <p>8. Perform PMCS on generator. (TM 9-6115-642-10)</p>	<p>Class I fuel leakage is found.</p> <p>Class I fuel leakage is found.</p> <p>Fire extinguisher is inoperative.</p>
4	Before	.1	Personnel Shelter	<p>1. Check exterior of container for damage. If damage is found, contact unit maintenance.</p> <p>2. Check personnel access door, seal and glass for proper operation. If door does not operate properly or seal or glass is damaged, contact unit maintenance.</p> <p>3. Check personnel escape scuttle seals and latches for damage. If scuttle seals or latches are damaged, contact unit maintenance.</p>	

Table 1. Preventive Maintenance Checks and Services. (Continued)

ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
4	Before	.1	Personnel Shelter (Cont'd)	<p>4. Inspect portable fire extinguisher for discharge nozzle obstruction, proper mounting, tag signed within last month and that all seals and pins are in place. If discharge nozzle obstruction or improper mounting is found or seals or pins are missing, contact unit maintenance.</p> <p>5. Check shelter lighting for operation and burned out bulbs. If lighting does not operate or bulbs are burned out, replace burned out bulbs. (WP 0103 00)</p> <p>6. Check heating and air conditioning system for proper operation. (TM 55-1945-217-14&P) If heating and air conditioning system does not operate, contact unit maintenance.</p> <p>7. Check incinerator toilet for proper operation. (TM 55-1945-219-14&P) If incinerator toilet does not operate, contact unit maintenance.</p> <p>8. Functionally test battle lantern for proper operation. If battle lantern does not operate, contact unit maintenance.</p>	Fire extinguisher is inoperative.

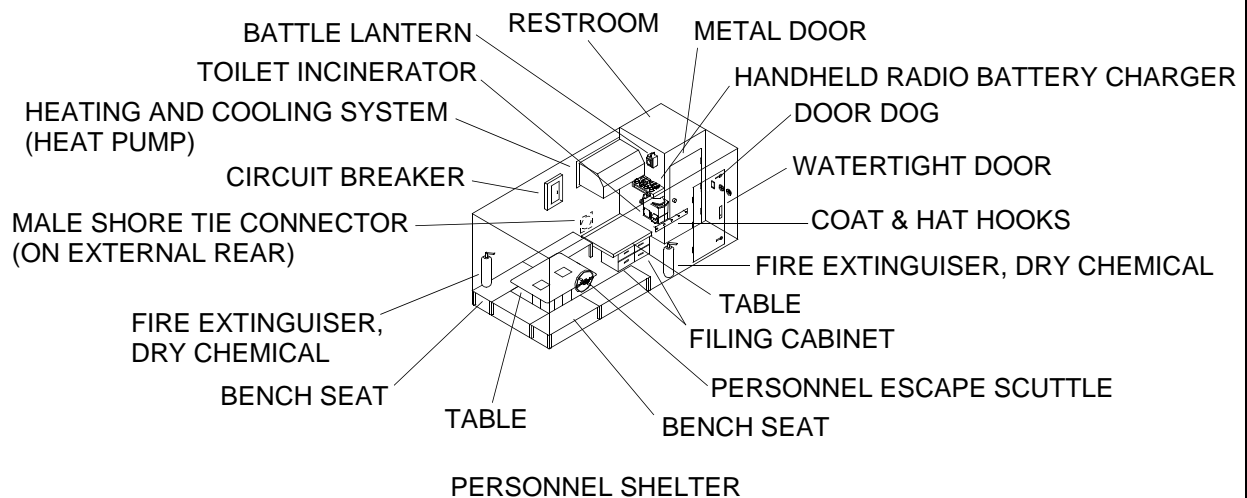


Table 1. Preventive Maintenance Checks and Services. (Continued)

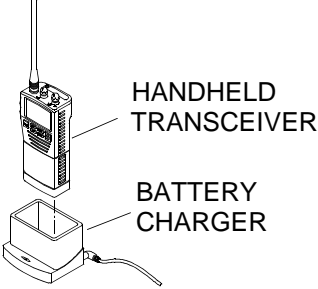
ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
4	Before	.1	Personnel Shelter (Cont'd)	<p>9. Check for damaged or missing handheld transceiver batteries. If damage is found or batteries are missing, contact unit maintenance.</p> <p>10. Check for missing or damaged handheld transceiver knobs. If damage is found or knobs are missing, contact unit maintenance.</p> <p>11. Check for handheld transceiver damage that would prevent operation. If damage is found, contact unit maintenance.</p> <p>12. Functionally check handheld transceivers and chargers for proper operation. (WP 0036 00) If handheld transceivers do not operate, contact unit maintenance.</p>	
					
5	Before	.1	EASY	<p>1. Check exterior of container for damage. If container is damaged, contact unit maintenance.</p> <p>2. Check for damage to anchor system components. If anchor system components are damaged, contact unit maintenance.</p>	

Table 1. Preventive Maintenance Checks and Services. (Continued)



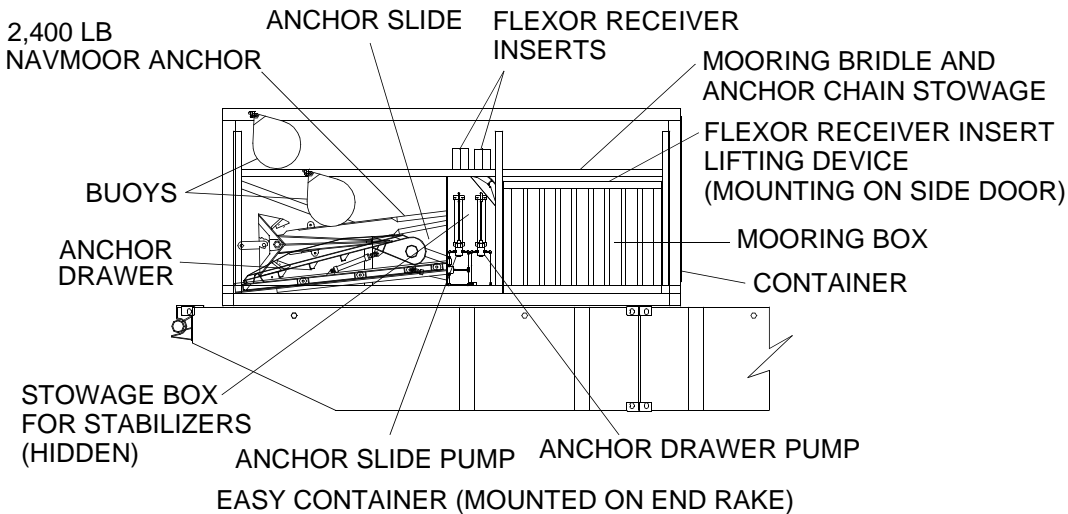
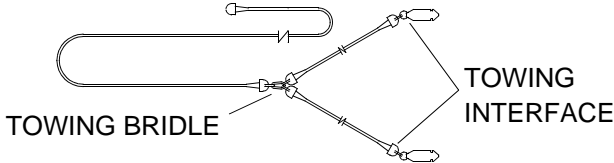
ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
WARNING					
 					
<p>CHEMICAL EYE PROTECTION</p>					
5	Before	.1	EASY (Cont'd)	3. Check anchor drawer and anchor slide hand pumps, cylinders and lines for hydraulic fluid leakage. If fluid leakage is found, contact unit maintenance.	Any Class III fluid leakage is found.
					
6	Before	.05	Mooring Bitts	Check for cracked, loose or damaged mooring bitts. If mooring bitts are cracked, loose or bent, contact unit maintenance.	
7	Before	.05	Towing Bridle	Check for damage. If towing bridle is damaged, contact unit maintenance.	
8	Before	.05	Towing Interface	Check for damage. If towing interface is damaged, contact unit maintenance.	
					

Table 1. Preventive Maintenance Checks and Services. (Continued)

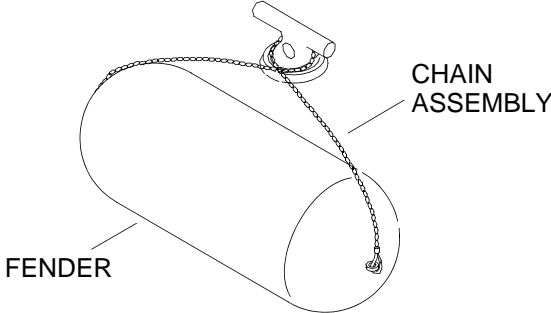
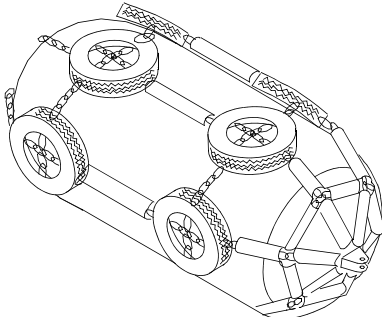
ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
9	Before	.05	Towing Lights	Check for damage and operation. If towing lights are damaged or do not operate, contact unit maintenance.	
10	Before	.05	Dunnage Mats	Check dunnage mats for tears or missing pieces. If dunnage mats are damaged, contact unit maintenance.	
11	Before	.3	Fenders	1. Inspect 3 ft by 5 ft, 4 ft by 12 ft and 5 ft by 10 ft fender, shackles and chains for damage or wear. If damage is found, contact unit maintenance.	
					
				2. Inspect 6 ft by 12 ft fenders for damage to tire mounting chains, deep gouges in fenders and missing tires. If tire mounting chains or fender damage is found or tires are missing, contact unit maintenance.	
					
				3. Inspect corner fenders for damage or wear. If damage is found, contact unit maintenance.	

Table 1. Preventive Maintenance Checks and Services. (Continued)





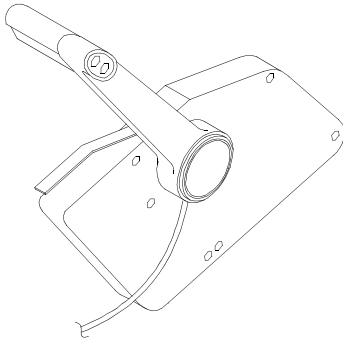



ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:	
<p>WARNING</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  CHEMICAL </div> <div style="text-align: center;">  EYE PROTECTION </div> <div style="text-align: center;">  FIRE </div> <div style="text-align: center;">  SLICK FLOOR </div> </div> <p>Use approved procedures when cleaning up fuel spills. Take proper precautions when removing or installing any fuel system component. Failure to comply may result in serious injury to death to personnel.</p>						
12	Before	.3	Rigid Hull Inflatable Boat	<ol style="list-style-type: none"> 1. Check fuel tank, fuel lines and motor for evidence of fuel leaks. If fuel leaks are found, contact unit maintenance. 2. Check oil tank and oil lines for evidence of oil leaks. If oil leaks are found, contact unit maintenance. 3. Check shifting/speed control handle for binding and freedom of movement. If binding is found, contact unit maintenance. 	<p>Class I fuel leakage is found.</p> <p>Class III oil leakage is found.</p>	
						
<p>WARNING</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  CHEMICAL </div> <div style="text-align: center;">  EYE PROTECTION </div> <div style="text-align: center;">  EXPLOSION </div> </div> <p>Do not reverse battery polarity. Failure to comply could result in injury or death.</p>						
				<ol style="list-style-type: none"> 4. Inspect battery system for damage. 		

Table 1. Preventive Maintenance Checks and Services. (Continued)

ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
12	Before	.3	Rigid Hull Inflatable Boat (Cont'd)	<p>a. Check battery electrolyte level. Fill with distilled water to 3/16 inch above cell plates.</p> <p>b. Ensure all battery cable clamps and hold downs are tight. Make sure all are secure and free of corrosion. Tighten and clean if necessary.</p> <p>5. Check steering hydraulic lines for leakage. If oil leaks are found, contact unit maintenance.</p> <p>6. Turn key to ON position for powered checks.</p> <p>a. Check warning lights. All warning lights should illuminate and warning horn should sound. If warning lights do not illuminate or warning horn does not sound, contact unit maintenance.</p> <p>b. Operate trim/tilt switch on shifting/speed control handle for proper operation. If control handle does not operate properly, contact unit maintenance.</p>	<p>Battery is inoperative.</p> <p>Battery is inoperative.</p> <p>Any Class III oil leakage is found.</p>

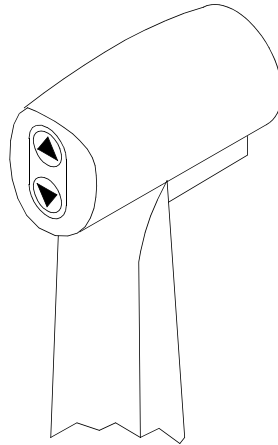


Table 1. Preventive Maintenance Checks and Services. (Continued)

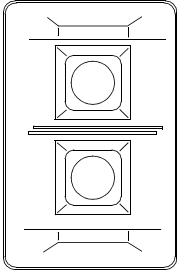
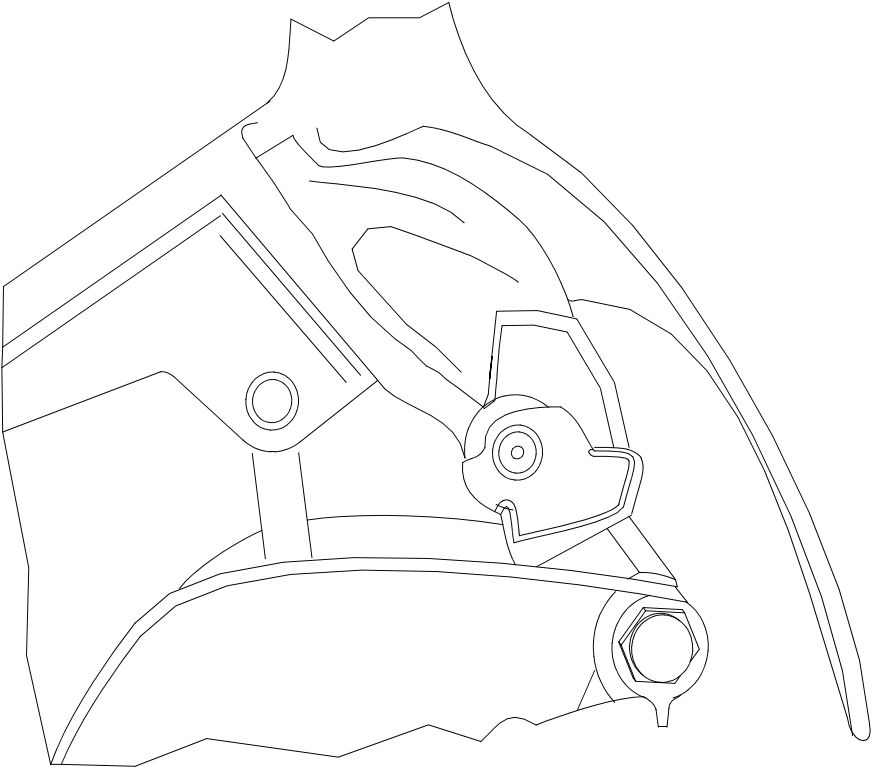
ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
12	Before	.3	Rigid Hull Inflatable Boat (Cont'd)	<p>c. Operate trailering tilt switch. If trailering tilt switch does not operate, contact unit maintenance.</p>	
					
				<p>d. Operate navigation lights. If navigation lights do not operate, contact unit maintenance.</p> <p>e. Check tilt support lever for proper operation. If tilt support lever does not operate, contact unit maintenance.</p>	
					

Table 1. Preventive Maintenance Checks and Services. (Continued)

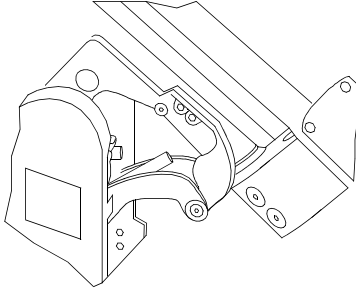
ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
12	Before	.3	Rigid Hull Inflatable Boat (Cont'd)	f. Check trailering bracket for proper operation. If trailering bracket does not operate, contact unit maintenance.	
					
				<p>7. Check hull for damage. If hull is damaged, contact unit maintenance.</p> <p>8. Check pontoons for proper air pressure. Use pressure gage to ensure air pressure is a minimum of 2.0 PSI. If pressure is below 2.0 PSI, inflate pontoons. (WP 0030 00)</p> <p>9. Inspect portable fire extinguisher for broken seal, damage to nozzle or RED zone indication on gage. If seal is broken, nozzle is damaged or a RED zone indication is found on gage, contact unit maintenance.</p>	Fire extinguisher is inoperative.
13	Before	.05	Rigid Hull Inflatable Boat Outboard Motor	Check propeller for damage. If propeller damage is found, contact unit maintenance.	
14	Before	.2	Life Ring Stanchions	<p>1. Check life rings for damage. If damage is found that would prevent proper operation of life rings, contact unit maintenance.</p> <p>2. Check life ring strobes for proper operation. If strobes do not operate, contact unit maintenance.</p>	

Table 1. Preventive Maintenance Checks and Services. (Continued)

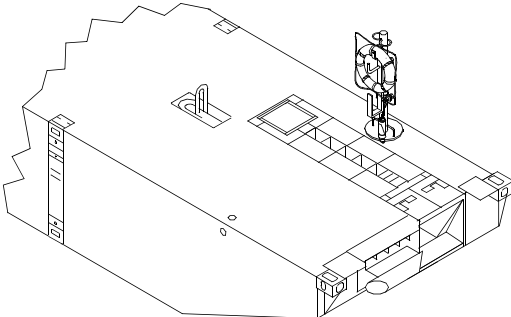
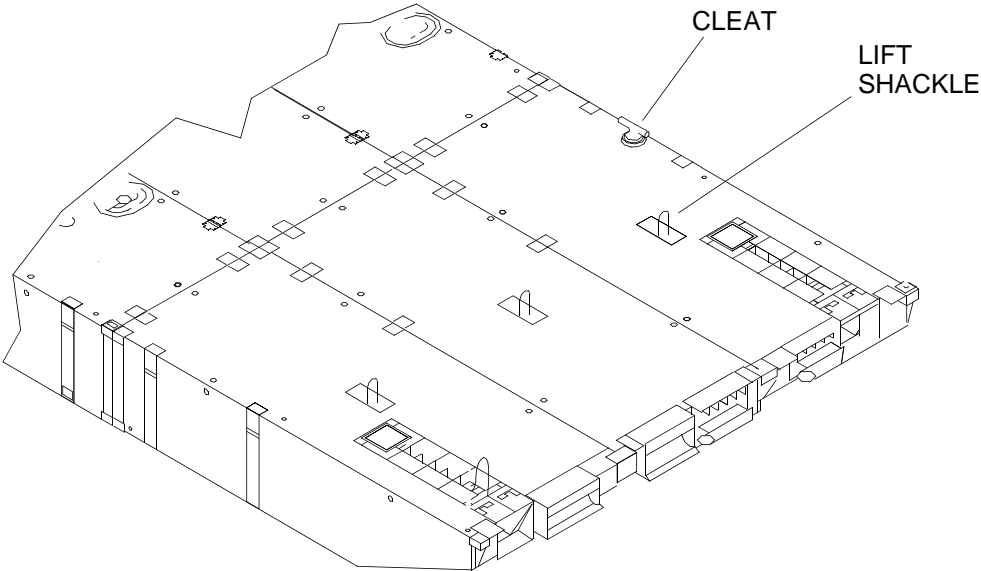
ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
14	Before	.2	Life Ring Stanchions (Cont'd)	3. Inspect life ring stanchions for broken welds, missing or broken bolts and broken connectors. If broken welds or broken connectors are found or bolts are broken or missing, contact unit maintenance.	
					
15	Before	.1	Deck Fittings	Inspect deck fittings for corrosion, breakage or missing parts. If corrosion or breakage is found or parts are missing, contact unit maintenance.	
16	Before	.05	Lift Shackles	Check for presence of water in lift shackle padeyes. If present, contact unit maintenance.	
					

Table 1. Preventive Maintenance Checks and Services. (Continued)




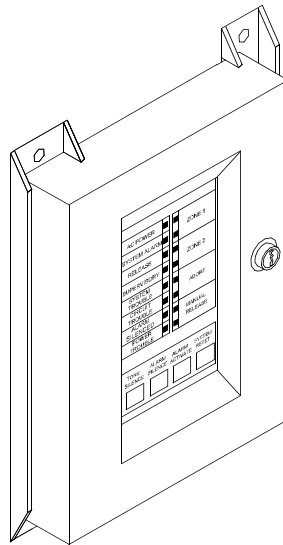
ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
17	Before	0.5	Flexors	1. Inspect uninstalled flexors for separation of polyurethane material in the center. If separation of polyurethane material in center of flexor is found, contact unit maintenance. 2. Inspect uninstalled flexors for cracks in external weldments on ends. If cracks in external weldments on ends of flexor are found, contact unit maintenance.	Separation of polyurethane material in center of flexor is found. Cracks are discovered in external weldments on ends of flexor.
<p>The diagram shows a perspective view of a long, cylindrical flexor component. It has a central section with a textured surface, labeled 'POLYURETHANE SECTION'. Both ends of the component are attached to metal brackets with circular holes, labeled 'METAL END'.</p>					
18	Before	1.0	Non-Powered Modules	Inspect modules for broken welds, cracks, punctures and corrosion. If found, contact unit maintenance.	Broken welds, cracks or punctures are present.
1	During	.05	Light Tower	Check tower lights for operation. If lights do not operate, contact unit maintenance.	
<p>WARNING</p>					
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>CHEMICAL</p> </div> <div style="text-align: center;">  <p>EYE PROTECTION</p> </div> <div style="text-align: center;">  <p>FIRE</p> </div> </div>					
2	During	.05	Light Tower Engine	1. Check fuel level. If necessary, service with diesel fuel. (TM 55-1945-217-14&P)	

Table 1. Preventive Maintenance Checks and Services. (Continued)

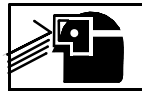
ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
2	During	.05	Light Tower Engine (Cont'd)	2. Check for proper gage indications on control panel. (WP 0037 00) If gages do not have proper indication, contact unit maintenance.	
3	During	.05	Generator Container	1. Check fire suppression system for proper operation. AC power LED should be illuminated on control panel when generator is operating. (WP 0035 00) If AC power light is not illuminated, contact unit maintenance.	Fire suppression system is inoperative. Yellow or red LED is illuminated.



WARNING



CHEMICAL



EYE PROTECTION



FIRE

				2. Check fuel level in fuel tank. If necessary, service with diesel fuel. (TM 9-6115-642-10)	
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Table 1. Preventive Maintenance Checks and Services. (Continued)

ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
4	During	.05	Personnel Shelter	<p>1. Check incinerator toilet for proper operation. (TM 55-1945-219-14&P) If incinerator toilet does not operate properly, contact unit maintenance.</p> <p>2. Inspect fire extinguisher for broken seal, damage to nozzle or RED zone indication on gage. If seal is broken, nozzle is damaged or RED zone indication is on gage, contact unit maintenance.</p> <p>3. Check for red light while radios are placed in chargers. (WP 0036 00) If red light is not on, contact unit maintenance.</p>	Fire extinguisher is inoperative.
5	During	.05	EASY	Check anchor hand pumps for operation. If anchor pumps are inoperative, contact unit maintenance.	
6	During	.05	Mooring Bitts	Check for cracked, loose or bent mooring bitts. If mooring bitts are cracked, loose or bent, contact unit maintenance.	
11	During	.3	Fenders	<p>1. Inspect 3 ft by 5 ft, 4 ft by 12 ft and 5 ft by 10 ft fender, shackles and chains for damage or wear. If damage is found, contact unit maintenance.</p> <p>2. Inspect 6 ft by 12 ft fenders for damage to tire mounting chains, deep gouges in fenders and missing tires. If tire mounting chains or fender damage is found or tires are missing, contact unit maintenance.</p>	

Table 1. Preventive Maintenance Checks and Services. (Continued)

ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
12	During	.05	Rigid Hull Inflatable Boat	Check for motor warning lights. (TM 55-1945-224-14&P) If warning lights illuminate, contact unit maintenance.	
12, 13	During	.05	Rigid Hull Inflatable Boat and Outboard Motor	1. Check for water coming out of water pump discharge port on motor for system flow. If water is not coming out of discharge port, shut down motor immediately and contact unit maintenance. 2. Check for oil consumption from oil tank. If oil is not being consumed from oil tank, contact unit maintenance.	
17	During	.5	Flexors	1. Inspect visible portions of installed flexors for separation of polyurethane material in center. If found, flexor must be replaced after exercise or operation is completed. 2. Inspect visible portions of installed flexors for cracks in external weldments on ends. If found, flexor must be replaced immediately.	Separation of polyurethane material in center of flexor is found. Cracks are discovered in external weldments on ends of flexor.

The diagram shows a perspective view of a flexor component. It consists of a long, cylindrical central section labeled 'POLYURETHANE SECTION'. At each end of this section, there is a metal fitting labeled 'METAL END'. The metal ends have a complex, multi-faceted shape with various ports and a hook-like structure at the very end.

1	After	1.0	Light Tower	Wash exterior of light tower with water and a mild soap.	
2	After	1.0	Light Tower Engine	1. Prior to cleaning engine and generator, cover air cleaner intake, generator air intake, exhaust opening, rear of control panel box, generator output electrical connection box and battery charging alternator. (TM 55-1945-217-14&P)	

Table 1. Preventive Maintenance Checks and Services. (Continued)







ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
<p>WARNING</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  CHEMICAL </div> <div style="text-align: center;">  EYE PROTECTION </div> <div style="text-align: center;">  SLICK FLOOR </div> <div style="text-align: center;">  FIRE </div> </div> <p>Do not use petroleum products (solvents, fuel oils or gasoline) under high pressure as this can penetrate the skin and result in serious illness.</p> <p>CAUTION</p> <p>Do not use high pressure water, steam or solvent on the exterior finish of the unit housing. This could result in damage to equipment.</p>					
2	After	1.0	Light Tower Engine (Cont'd)	<p>2. Wash exterior of engine and generator with Type II cleaner.</p> <p>3. Rinse engine and generator with water at a moderate pressure.</p>	
<p>WARNING</p> <div style="text-align: center;">  EYE PROTECTION </div>					
				<p>4. Dry engine and generator with compressed air.</p> <p>5. Remove covering installed to seal out water and Type II cleaner.</p>	
<p>WARNING</p> <div style="text-align: center;">  EAR PROTECTION </div>					
				<p>6. Start engine and run until normal operating temperature is reached.</p>	

Table 1. Preventive Maintenance Checks and Services. (Continued)


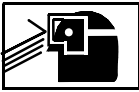




ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
<p>WARNING</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>CHEMICAL</p> </div> <div style="text-align: center;">  <p>EYE PROTECTION</p> </div> <div style="text-align: center;">  <p>FIRE</p> </div> <div style="text-align: center;">  <p>SLICK FLOOR</p> </div> </div> <p>Use approved procedures when cleaning up fuel spills. Take proper precautions when removing or installing any fuel system component. Failure to comply may result in serious injury to death to personnel.</p>					
2	After	1.0	Light Tower Engine (Cont'd)	<p>7. Check for leaks around fuel tank and fuel lines. If any leaks are found, contact unit maintenance.</p> <p style="margin-left: 20px;">a. Examine fuel lines and flexible hoses for leaks. Check that fittings, clamps and ties are secure. If lines or hoses are leaking or fittings, clamps or ties are not secure, contact unit maintenance.</p> <p style="margin-left: 20px;">b. Verify fuel tank is full by checking sight level or using a fuel stick. If necessary, add fuel. (TM 55-1945-217-14&P) DO NOT OVER FILL. Tank capacity is 30 gallons (114 liters). Fill to 95%.</p>	<p>Class I fuel leakage is found.</p> <p>Class I fuel leakage is found.</p>
<p>WARNING</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>CHEMICAL</p> </div> <div style="text-align: center;">  <p>EYE PROTECTION</p> </div> </div>					
				<p>8. Check for oil leaks. If oil leaks are found, contact unit maintenance.</p>	<p>Class III oil leakage is found.</p>

Table 1. Preventive Maintenance Checks and Services. (Continued)

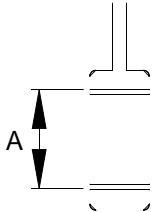




ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
2	After	1.0	Light Tower Engine (Cont'd)	<p>a. Verify that it registers FULL on the dipstick. Engine must be cool when reading level. If hot, allow to cool for 20 minutes. If necessary, add Lubricating Oil, Engine, 15W40 Grade, to achieve desired level. DO NOT OVER FILL.</p>	
			 <p>A: ENGINE OIL LEVEL WITHIN THIS RANGE IS PROPER</p>		
3	After	.4	Generator Container	<p>b. Make a visual inspection for oil leaks around the filters and the external oil lines. If found contact unit maintenance.</p> <p>9. Check for damage that may have occurred during operation. If damage is found, contact unit maintenance.</p> <p>1. Check exterior of container for damage. If damage is found, contact unit maintenance.</p>	Class III oil leakage is found.
WARNING					
					
		CHEMICAL	EYE PROTECTION	FIRE	SLICK FLOOR
<p>Use approved procedures when cleaning up fuel spills. Take proper precautions when removing or installing any fuel system component. Failure to comply may result in serious injury to death to personnel.</p>					
				<p>2. Check 1,000 gallon fuel tank and fuel pumps for evidence of fuel leakage. If fuel leakage is found, contact unit maintenance.</p>	Class I fuel leakage is found.

Table 1. Preventive Maintenance Checks and Services. (Continued)


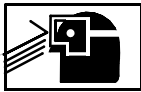

ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
3	After	.4	Generator Container (Cont'd)	<p>a. Check for leaks around fuel tank and fuel lines. If fuel leakage is found, contact unit maintenance.</p> <p>b. Examine fuel lines and flexible hoses for leaks. Check that fittings, clamps and ties are secure. If fuel leakage is found or loose fittings, clamps or ties are found, contact unit maintenance.</p>	<p>Class I fuel leakage is found.</p> <p>Class I fuel leakage is found.</p>
WARNING					
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>CHEMICAL</p> </div> <div style="text-align: center;">  <p>EYE PROTECTION</p> </div> <div style="text-align: center;">  <p>FIRE</p> </div> </div>					
4	After	.1	Personnel Shelter	<p>c. Verify fuel tank is full by checking sight level or using a fuel stick. If necessary, add fuel. (TM 9-6115-642-10) DO NOT OVER FILL. Tank capacity is 30 gallons (114 liters). Fill to 95%.</p> <p>3. Perform PMCS on generator. (TM 9-6115-642-10)</p> <p>4. Clean generator container.</p> <p style="padding-left: 20px;">a. Clean exterior of shelter with clean water.</p> <p style="padding-left: 20px;">b. Clean interior floor with a mop and clean water.</p> <p style="padding-left: 20px;">c. Clean fire suppression system components with a clean dry wiping rag.</p> <p>1. Check exterior of container for damage. If damage is found, contact unit maintenance.</p>	

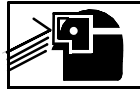
Table 1. Preventive Maintenance Checks and Services. (Continued)

ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
4	After	.1	Personnel Shelter (Cont'd)	<p>2. Inspect portable fire extinguishers for broken seal, damage to nozzle or RED zone indication on gage. If broken seal, damaged nozzle or RED zone indication on gage is found, contact unit maintenance.</p> <p>3. Clean personnel shelter.</p> <p>a. Clean VHF/FM transceivers with a soft bristled brush to remove all dirt.</p> <p>b. Clean surface of heating and air conditioning unit with a wiping rag.</p> <p>c. Clean benches and table with clean water.</p>	Fire extinguisher is inoperative.
5	After	2.0	EASY	<p>1. Check exterior of container for damage. If damage is found, contact unit maintenance.</p>	

WARNING



CHEMICAL



EYE PROTECTION

2. Clean EASY components.
- a. Using wiping rags soaked with Type II cleaner, remove debris from all components.
- b. Using clean water, remove Type II cleaner residue from all components.
- c. Air dry all components.
- d. Clean all wire ropes using a wire brush and Type II cleaner.
- e. Dispose of contaminated rags in accordance with local procedures.

Table 1. Preventive Maintenance Checks and Services. (Continued)












ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
WARNING					
 					
CHEMICAL EYE PROTECTION					
5	After	2.0	EASY (Cont'd)	3. Check anchor hand pump for hydraulic fluid leakage. If found, contact unit maintenance.	Class III oil leak is found.
WARNING					
  					
VAPOR EYE PROTECTION CHEMICAL					
				4. Preserve wire ropes by coating with Corrosion Preventive Compound, Grade I.	
WARNING					
  					
CHEMICAL EYE PROTECTION VAPOR					
				5. Coat wire rope unplated ferrous fittings with Corrosion Preventive Compound, Grade II. 6. Preserve shackles and associated hardware.	
WARNING					
  					
CHEMICAL EYE PROTECTION VAPOR					
				a. Coat all unplated threads and exposed fittings with Corrosion Preventive Compound, Grade II.	

Table 1. Preventive Maintenance Checks and Services. (Continued)





ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
WARNING					
 					
CHEMICAL EYE PROTECTION					
5	After	2.0	EASY (Cont'd)	b. Coat all internal bearing surfaces with Antiseize Compound.	
WARNING					
 					
CHEMICAL EYE PROTECTION					
6	After	.05	Mooring Bitts	7. Preserve anchors. a. Coat and preserve all shackle bolts and stabilizer arm bolts with Antiseize Compound. b. Coat the opening in the anchor shank and the trunnion bearing surface with Antiseize Compound.	
7	After	.05	Towing Bridle	Check for cracked, loose or bent mooring bitts. If cracked, loose or bent mooring bitts are found, contact unit maintenance.	
7	After	.05	Towing Bridle	Check for damage. If damage is found, contact unit maintenance.	

Table 1. Preventive Maintenance Checks and Services. (Continued)

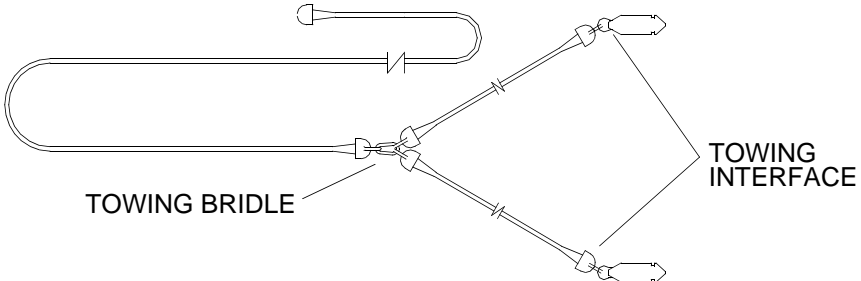
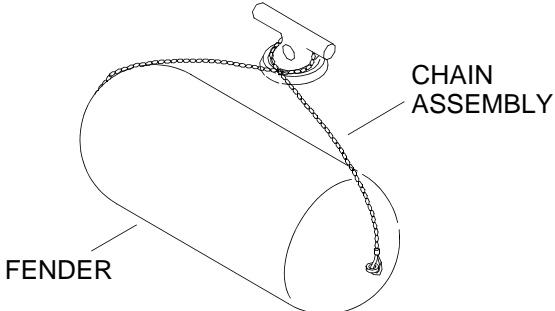
ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
8	After	.05	Towing Interface	Check for damage. If damaged towing interface is found, contact unit maintenance.	
					
9	After	.05	Towing Lights	Check for damage. If damaged towing lights are found, contact unit maintenance.	
10	After	.05	Dunnage Mats	Check dunnage mats for tears or missing pieces. If damaged dunnage mats are found, contact unit maintenance.	
11	After	.3	Fenders	1. Inspect 3 ft by 5 ft, 4 ft by 12 ft and 5 ft by 10 ft fender, shackles and chains for damage or wear. If damage is found, contact unit maintenance.	
					
				2. Inspect 6 ft by 12 ft fenders for damage to tire mounting chains, deep gouges in fenders and missing tires. If tire mounting chains or fender damage is found or tires are missing, contact unit maintenance.	

Table 1. Preventive Maintenance Checks and Services. (Continued)

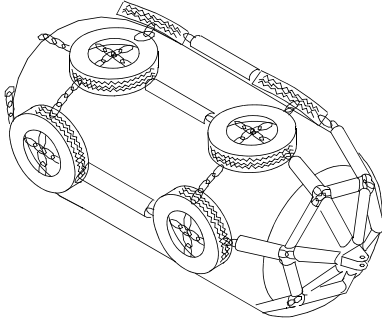
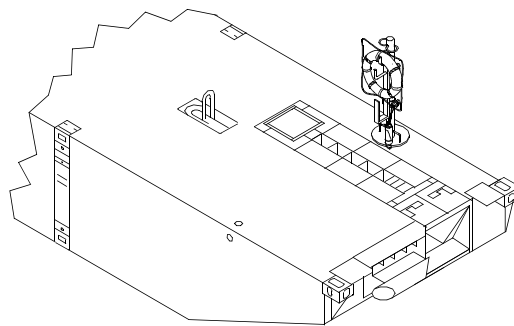
ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
					
11	After	.3	Fenders (Cont'd)	3. Inspect corner fenders for damage or wear. If damage is found, contact unit maintenance.	
12	After	.3	Rigid Hull Inflatable Boat	<p>1. Check hull for damage. If hull is damaged, contact unit maintenance.</p> <p>2. Check pontoons for proper air pressure. Use pressure gage to ensure air pressure is a minimum of 2.0 PSI. If pressure is below 2.0 PSI, inflate pontoons. (WP 0030 00)</p> <p>3. Inspect portable fire extinguisher for broken seal, damage to nozzle or RED zone indication on gage. If seal is broken, nozzle is damaged, or a RED zone indication is found on gage, contact unit maintenance.</p> <p>4. Wash hull and engine with clean water. Remove dirt and residue with a soft bristle brush. Inspect hull for cracks. If found, contact unit maintenance.</p>	Fire extinguisher is inoperative.
13	After	.05	Rigid Hull Inflatable Boat Outboard Motor	Check propeller for damage. If propeller damage is found, contact unit maintenance.	

Table 1. Preventive Maintenance Checks and Services. (Continued)

ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
14	After	.2	Life Ring Stanchions	<p>1. Check life rings for damage. If damage is found that would prevent proper operation of life rings, contact unit maintenance.</p> <p>2. Check life ring strobes for proper operation. If strobes do not operate, contact unit maintenance.</p> <p>3. Inspect life ring stanchions for broken welds, missing or broken bolts and broken connectors. If broken welds or broken connectors are found or bolts are broken or missing, contact unit maintenance.</p>	



16	After	.1	Lift Shackles	<p>Check for presence of water in lift shackle padeyes. If present, contact unit maintenance.</p>	
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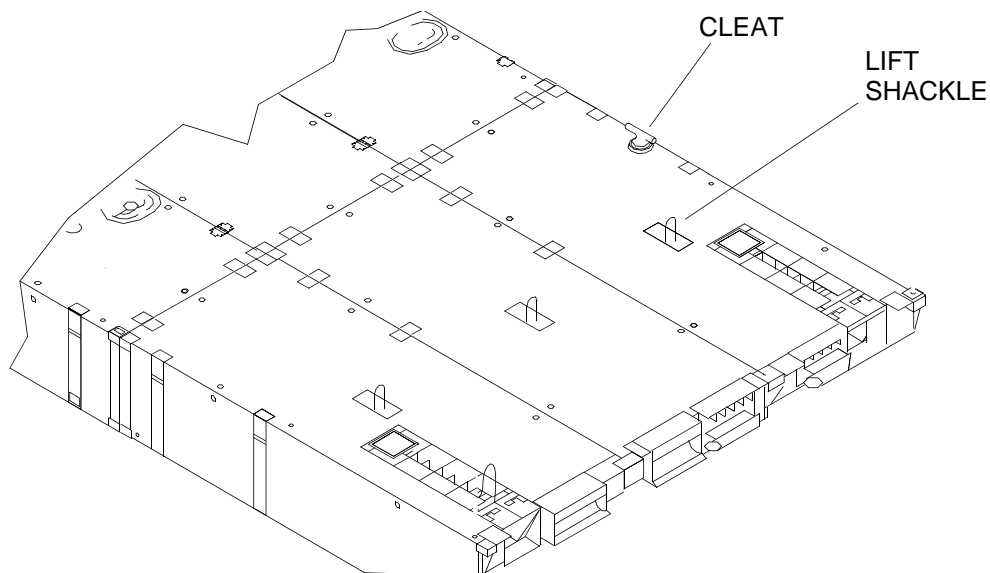


Table 1. Preventive Maintenance Checks and Services. (Continued)

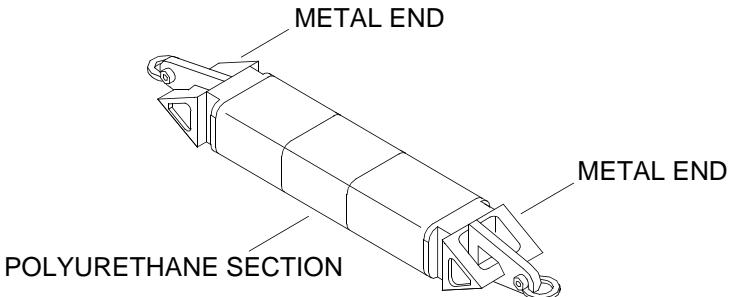
ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
17	After	1.0	Flexors	<p>1. Inspect uninstalled flexors for separation of polyurethane material in center. If found, flexor must be replaced.</p> <p>2. Inspect uninstalled flexors for cracks in external weldments on ends. If found, flexor must be replaced.</p>	<p>Separation of polyurethane material in center of flexor is found.</p> <p>Cracks are discovered in external weldments on ends of flexor.</p>
					
18	After	.4	Non-Powered Modules	Inspect modules for broken welds, cracks, punctures and corrosion. If found, contact unit maintenance.	Broken welds, cracks or punctures are present.
19	After	0.2	Lifting Slings	Check lifting slings for cuts, loose stitching and fraying. If slings are cut, frayed or have loose stitching, contact unit maintenance.	Slings are cut, have loose stitching or are frayed.
23	After	0.5	BII Container	<p>1. Check BII container interior for loose or damaged equipment. If loose or damaged equipment is found, contact unit maintenance.</p> <p>2. Check BII container exterior for rust, cracks, indentions or splits that would impair waterproofing or serviceability. If container damage is found, contact unit maintenance.</p>	
2	Weekly During Operational Periods	.5	Light Tower Engine	Start engine. If light tower engine cannot be started, contact unit maintenance.	Engine will not start.

Table 1. Preventive Maintenance Checks and Services. (Continued)

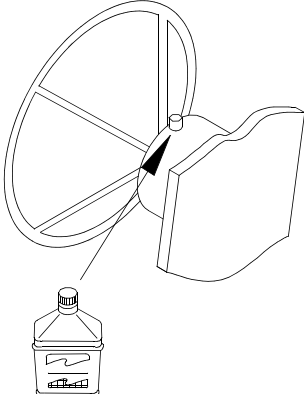
ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
4	Weekly During Operational Periods	.1	Personnel Shelter	1. Empty the incinerator toilet ashpan. (TM 55-1945-219-14&P) 2. Clean outer stainless steel surfaces with clean water.	
12	Weekly During Operational Periods	.3	Rigid Hull Inflatable Boat	1. Inspect battery system for damage. 2. Check battery electrolyte level. Fill with distilled water to 3/16 inch above cell plates. 3. Ensure all battery cable clamps and hold downs are tight. Make sure all are secure and free of corrosion. Tighten and clean if necessary. 4. Check power steering fluid level. If fluid level is low, add fluid. (WP 0030 00)	Battery is inoperative. Battery is inoperative.
					
13	Weekly During Operational Periods	.3	Rigid Hull Inflatable Boat Outboard Motor	Fresh water flush outboard motor. Contact unit maintenance.	

Table 1. Preventive Maintenance Checks and Services. (Continued)


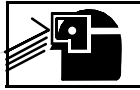
ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
19	Monthly	1.0	Lifting Slings	Using lubricating gun, lubricate padeye lifting shackles with Grease, Aircraft.	
3	Monthly	.5	Generator Container	1. Test fire suppression control panel LED indicators and sounder. (WP 0035 00) If LED or sounders is inoperative, contact unit maintenance. 2. Remove fire extinguisher and agitate dry chemical by turning extinguisher upside down and shaking. Sign and date fire extinguisher inspection tag.	Fire suppression system is inoperative. Yellow or red LED is illuminated. Fire extinguisher is inoperative.
4	Monthly	.5	Personnel Shelter	1. Remove fire extinguisher and agitate dry chemical by turning extinguisher upside down and shaking. Sign and date fire extinguisher inspection tag. 2. Clean indoor air inlet filters. (TM 55-1945-220-14&P)	Fire extinguisher is inoperative.
WARNING					
					
		CHEMICAL		EYE PROTECTION	
12	Monthly	.3	Rigid Hull Inflatable Boat	Inspect portable fire extinguisher for broken seal, damage to nozzle or RED zone indication on gage. If seal is broken, nozzle is damaged or a RED zone indication is found on gage, contact unit maintenance.	Fire extinguisher is inoperative.

Table 1. Preventive Maintenance Checks and Services. (Continued)



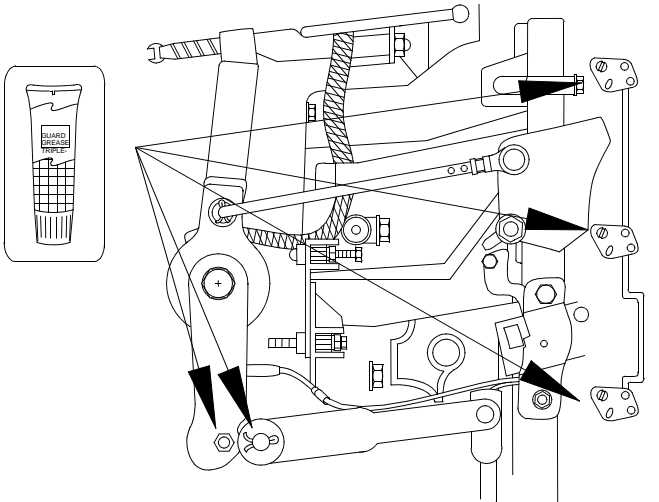
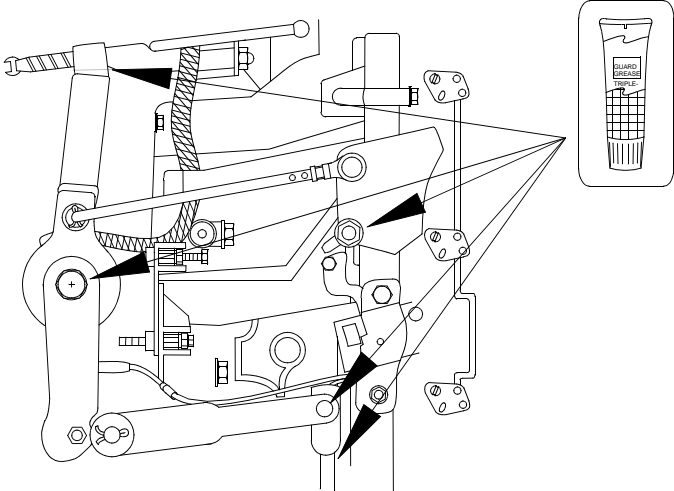
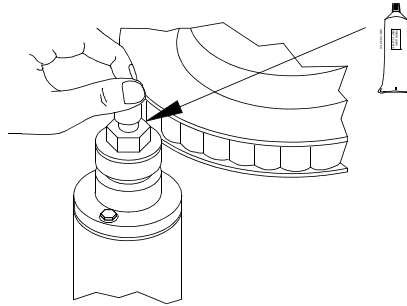
ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
WARNING					
 					
CHEMICAL EYE PROTECTION					
13	Monthly	.3	Rigid Hull Inflatable Boat Outboard Motor	1. Grease shift and throttle linkage and carburetor linkage.	
					
					

Table 1. Preventive Maintenance Checks and Services. (Continued)

ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
13	Monthly	.3	Rigid Hull Inflatable Boat Outboard Motor (Cont'd)	2. Grease starter drive.	



WARNING



CHEMICAL



EYE PROTECTION

3. Grease tilt support swivel bracket.

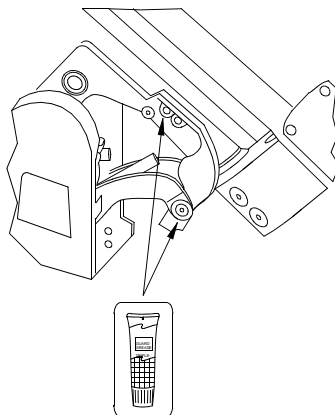
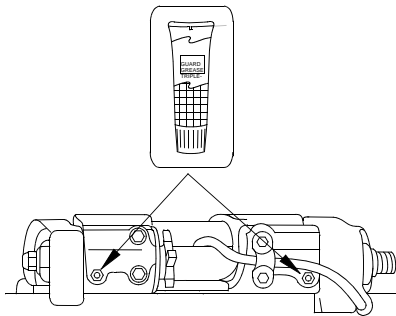


Table 1. Preventive Maintenance Checks and Services. (Continued)



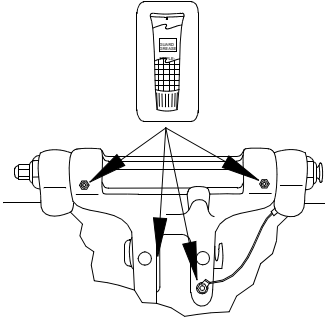
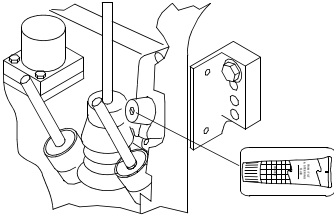


ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
<p>WARNING</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>CHEMICAL</p> </div> <div style="text-align: center;">  <p>EYE PROTECTION</p> </div> </div>					
13	Monthly	.3	Rigid Hull Inflatable Boat Outboard Motor (Cont'd)	4. Grease the upper tilt cylinder pivot.	
					
				5. Check oil level in power trim and tilt reservoir. If oil level is low, add oil. (WP 0030 00)	
					
<p>WARNING</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>CHEMICAL</p> </div> <div style="text-align: center;">  <p>EYE PROTECTION</p> </div> </div>					
				6. Lubricate motor cover latches.	

Table 1. Preventive Maintenance Checks and Services. (Continued)

ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
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WARNING



CHEMICAL



EYE PROTECTION

13

Monthly

.3

Rigid Hull Inflatable Boat Outboard Motor (Cont'd)

7. Lubricate swivel bracket, tilt/run lever and shaft/reverse lock.

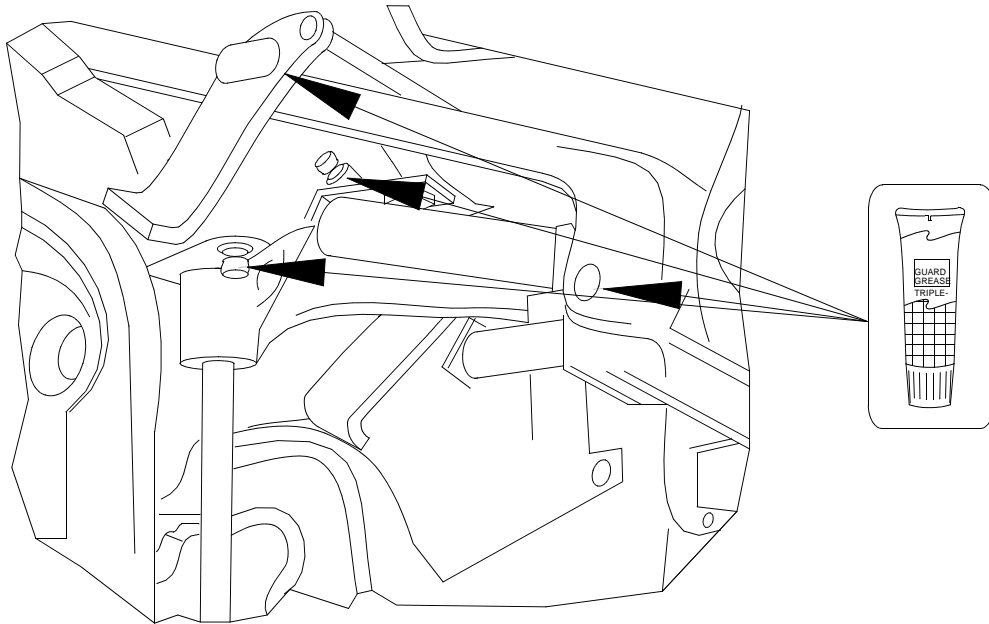


Table 1. Preventive Maintenance Checks and Services. (Continued)

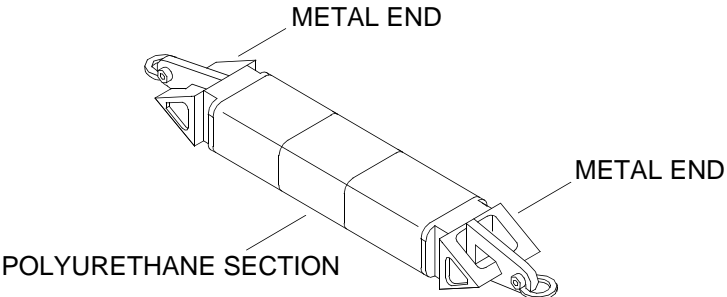
ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
17	Monthly	1.0	Flexors	1. Inspect uninstalled flexors for separation of polyurethane material in center. If found, contact unit maintenance. 2. Inspect uninstalled flexors for cracks in external welds on ends. If found, contact unit maintenance.	Separation of polyurethane material in center of flexor is found. Cracks are discovered in external weldments on ends of flexor.
 <p>The diagram shows a perspective view of a flexor assembly. It consists of a central rectangular section labeled 'POLYURETHANE SECTION' and two metal end fittings labeled 'METAL END'. The metal ends are connected to the polyurethane section via a complex mechanical joint.</p>					
19	Monthly	.5	Lifting Slings	Check lifting slings for cuts, loose stitching and fraying. If cuts, fraying or loose stitching is found, contact unit maintenance.	
22	Monthly	5.0	Module Interlock Connector (Male Locking Pin)	1. Check male connector pin for deformation, twisting, bending and flatness. If any deformation of pin is present, remove pin from service. Contact unit maintenance. 2. Check contact area where pins seat against guillotine bars for wear. If excessive wear is present, remove pin from service. Contact unit maintenance. 3. Check pin to ensure stop bar is attached. If stop bar is removed, remove pin from service and replace stop bar. Contact unit maintenance. 4. Check connector pin for cracks and/or unusual damage (missing material, notches, etc.). If any cracks and/or unusual damage is present, remove pin from service. Contact unit maintenance.	Any deformation of the pin is present. Excessive wear is present. If stop bar is removed. If any cracks and/or unusual damage is present.

Table 1. Preventive Maintenance Checks and Services. (Continued)





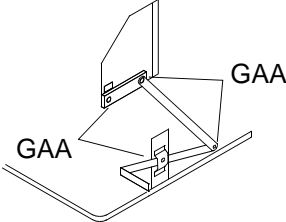
ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
<p>WARNING</p> <div style="display: flex; justify-content: space-around;">   </div> <p>CHEMICAL EYE PROTECTION</p>					
3	Quarterly	1.0	Generator Container	Lubricate generator container door hinges. Lubricate with Grease, Aircraft. Grease by hand.	
<p>WARNING</p> <div style="display: flex; justify-content: space-around;">   </div> <p>CHEMICAL EYE PROTECTION</p>					
4	Quarterly	.5	Personnel Shelter	<ol style="list-style-type: none"> 1. Lubricate personnel shelter door hinges. Lubricate with Grease, Aircraft. Grease by hand. 2. Clean incinerator toilet interior of dust and paper bits. (TM 55-1945-219-14&P) 3. Grease all moving parts of incinerator toilet flushing assembly and foot pedal. (TM 55-1925-219-14&P) 	
					
				4. Clean blower assembly, blower housing and vent line elbow. (TM 55-1945-219-14&P)	

Table 1. Preventive Maintenance Checks and Services. (Continued)







ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
WARNING					
 					
CHEMICAL EYE PROTECTION					
5	Quarterly	.5	EASY	Lubricate EASY door hinges. Lubricate with Grease, Aircraft. Grease by hand.	
13	Quarterly	.3	Rigid Hull Inflatable Boat Outboard Motor	Check propeller for damage. If propeller damage is found, contact unit maintenance.	
3	Annually	2.5	Generator Container	Inspect fire suppression system in accordance with 46 CFR Parts 91.25-20 and 97.15-60. Contact Specialized Repair Activity (SRA).	Fire suppression system is inoperative.
4	Annually	.5	Personnel Shelter	1. Inspect incinerator toilet catalyst level. (TM 55-1945-219-14&P). 2. Clean outdoor vent filter, fan and outdoor coil, blower wheel, blower scroll, electric heater and all drain passages. (TM 55-1945-220-14&P)	
WARNING					
   					
CHEMICAL EYE PROTECTION FIRE SLICK FLOOR					
Use approved procedures when cleaning up fuel spills. Take proper precautions when removing or installing any fuel system component. Failure to comply may result in serious injury to death to personnel.					
20	Annually	.1 each connector	Horizontal and Vertical Connectors	Lubricate annually and on condition (before and after operation). Service with Grease, Aircraft. Grease by hand.	

Table 1. Preventive Maintenance Checks and Services. (Continued)

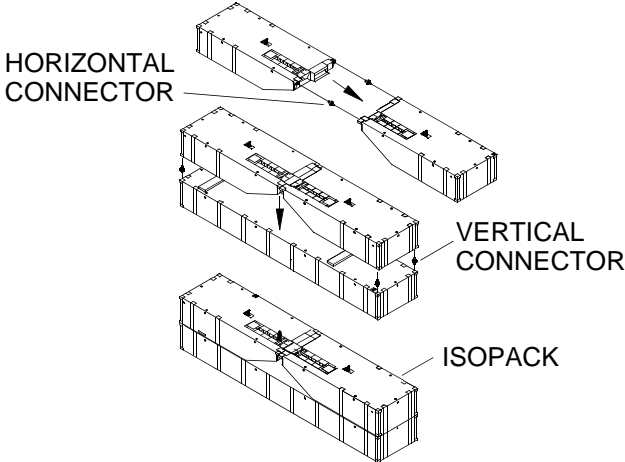


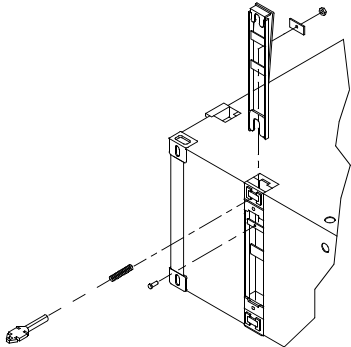
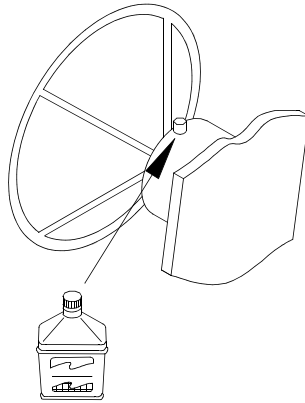
ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
 <p>HORIZONTAL CONNECTOR</p> <p>VERTICAL CONNECTOR</p> <p>ISOPACK</p> <p>HORIZONTAL AND VERTICAL CONNECTORS - MODULES</p>					
21	Annually	2.0	Steel Weight Lifting Chains, Rings, Hooks, Shackles and Swivels	Anneal all steel weight lifting chains, rings, hooks, shackles and swivels per 29 CFR Parts 1919.16 and 1919.36. Contact Specialized Repair Activity (SRA).	
<p>WARNING</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>CHEMICAL</p> </div> <div style="text-align: center;">  <p>EYE PROTECTION</p> </div> </div>					
22	Annually	.3 each assembly	Module Interlock Connector and Spring	Lubricate annually and on condition (before and after operation). Service with Grease, Aircraft. Grease by hand. If damaged, contact unit maintenance.	
 <p>INTERLOCK CONNECTOR SPRING PIN</p>					

Table 1. Preventive Maintenance Checks and Services. (Continued)

ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
12, 13	After First 20 Hours of Operation	1.0	Rigid Hull Inflatable Boat and Outboard Motor	Check power steering fluid level. If fluid level is low, add fluid. (WP 0030 00)	



WARNING



CHEMICAL



EYE PROTECTION

13	After First 20 Hours of Operation	1.0	Rigid Hull Inflatable Boat Outboard Motor	1. Lubricate outboard motor cover.
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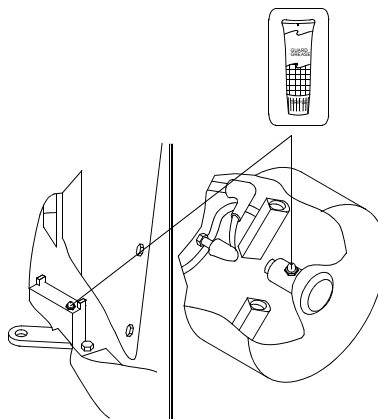


Table 1. Preventive Maintenance Checks and Services. (Continued)

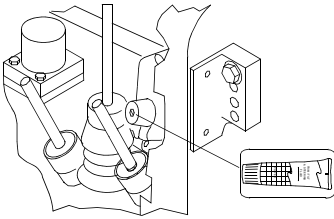
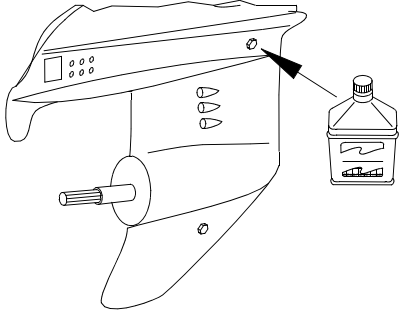
ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
13	After First 20 Hours of Operation	1.0	Rigid Hull Inflatable Boat Outboard Motor (Cont'd)	2. Check fluid level in power trim/tilt reservoir. If fluid level is low, add fluid. (WP 0030 00)	
					
				<p>3. Check propeller and shaft for damage. If damage to propeller or shaft is found, contact unit maintenance.</p> <p>4. Check lubricant level in gearcase. If lubricant level is low, add lubricant. (WP 0030 00)</p>	
					
1	Every 100 Hours of Operation	.1	Light Tower	<p>1. Check all hinges, nuts, bolts clamps, rivets and latches for looseness. If loose hinges, nuts, bolts clamps, rivets or latches are found, contact unit maintenance.</p> <p>2. Check all enclosure panels for warping, bending and tearing and for positive sealing. If warping, bending, tearing or defective seals are found, contact unit maintenance.</p>	

Table 1. Preventive Maintenance Checks and Services. (Continued)



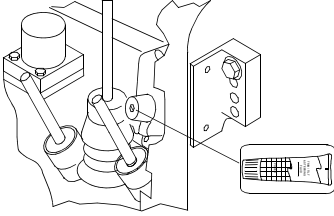
ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
2	Every 100 Hours of Operation	.1	Light Tower Engine	Check engine intake and exhaust systems for loose, damaged or deteriorated components. If loose, damaged or deteriorated components are found, contact unit maintenance.	
12	Every 100 Hours of Operation	2.0	Rigid Hull Inflatable Boat	Check battery connections for security. If battery connections are loose, contact unit maintenance.	Battery is inoperative.
13	Every 100 Hours of Operation	2.0	Rigid Hull Inflatable Boat Outboard Motor	<p>1. Check anti-corrosion anodes for remaining material. If anti-corrosion anodes are deteriorated, contact unit maintenance.</p> <p>2. Check ignition wires and electrical connections for damage. If ignition wires or electrical connections are damaged, contact unit maintenance.</p>	
<p style="text-align: center;">WARNING</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>CHEMICAL</p> </div> <div style="text-align: center;">  <p>EYE PROTECTION</p> </div> </div> <p>3. Wash external surface of motor with Type II cleaner and clean water.</p> <p>4. Check screws, nuts and clamps on motor for looseness. If screws, nuts or clamps are loose, contact unit maintenance.</p> <p>5. Check mounting hardware, screws and clamps for looseness. If mounting hardware, screws or clamps are loose, contact unit maintenance.</p> <p>6. Check fluid level in power trim/tilt reservoir. If fluid level is low, add fluid. (WP 0030 00)</p>					

Table 1. Preventive Maintenance Checks and Services. (Continued)

ITEM NO.	INTERVAL	MAN-HOURS	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
					
13	Every 100 Hours of Operation	2.0	Rigid Hull Inflatable Boat Outboard Motor (Cont'd)	<p>7. Check propeller and shaft for damage. If damage to propeller or shaft is found, contact unit maintenance.</p> <p>8. Decarbonize engine. (WP 0030 00)</p>	
2	Every 150 Hours of Operation	.2	Light Tower Engine	Check air intake hoses for damage. If hoses are damaged, contact unit maintenance.	
2	Every 250 Hours of Operation	.3	Light Tower Engine	Check radiator and oil cooler. Ensure unrestricted airflow is maintained through radiator and oil cooler. If airflow is restricted, clean radiator or oil cooler.	
3	6 Years	1.0	Generator Container	Hydrostatically test portable fire extinguisher and replace o-rings. Contact Specialized Repair Activity (SRA).	
4	6 Years	1.0	Personnel Shelter	Hydrostatically test portable fire extinguisher and replace o-rings. Contact Specialized Repair Activity (SRA).	

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
GENERATOR CONTAINER FLUORESCENT LIGHT BULBS
REPLACEMENT**

INITIAL SETUP:**Materials/Parts**

Bulb, Fluorescent
PN 04-6677-22352-9

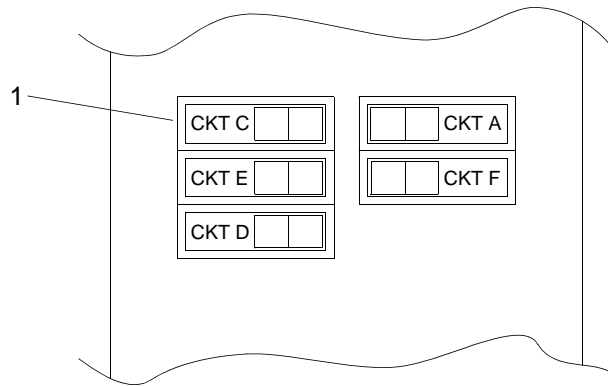
Personnel Required

Seaman 88K

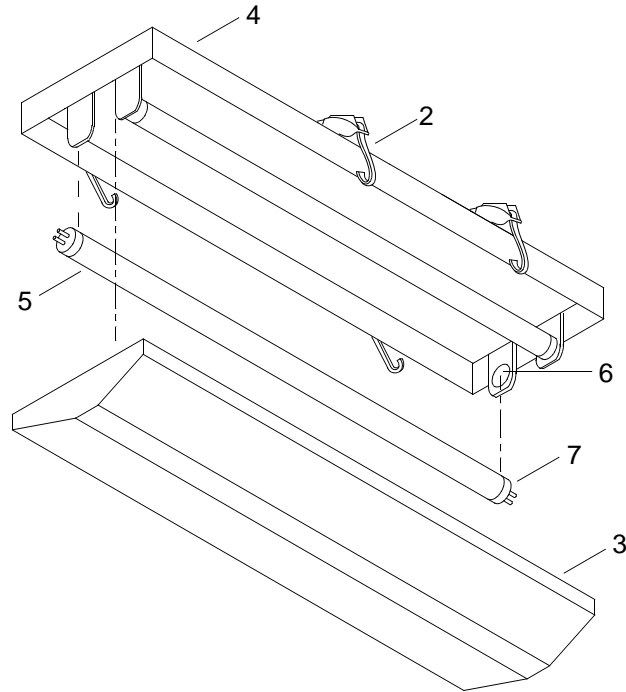
REMOVE GENERATOR CONTAINER FLUORESCENT LIGHT BULBS**NOTE**

This task is typical for the removal and installation of generator container fluorescent light bulbs.

1. Verify CKT C circuit breaker (1) in electrical distribution panel is positioned to off (open).



2. Disengage four latches (2) holding light cover (3) on light fixture (4).



3. Remove light cover (3).
4. Grasp light bulb (5) and turn 90° clockwise.
5. Pull down on light bulb (5) and remove from receptacle (6).

INSTALL GENERATOR CONTAINER FLUORESCENT LIGHT BULBS

1. Position new light bulb (5) near receptacle (6).
2. Slide light bulb pins (7) into receptacle (6).
3. Turn light bulb (5) 90° until tube clicks into place.
4. Position light cover (3) over light fixture (4).
5. Engage four latches (2).
6. Perform operational check of generator shelter overhead lighting. (WP 0109 00)

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
PERSONNEL SHELTER FLUORESCENT LIGHT BULBS
REPLACEMENT**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)

Materials/Parts

Bulb, Fluorescent
PN 04-6677-22352-9

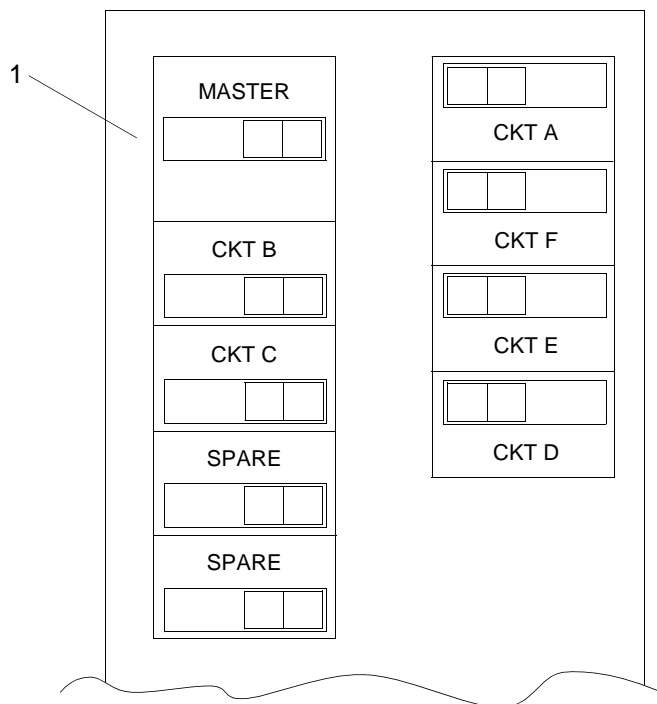
Personnel Required

Seaman 88K

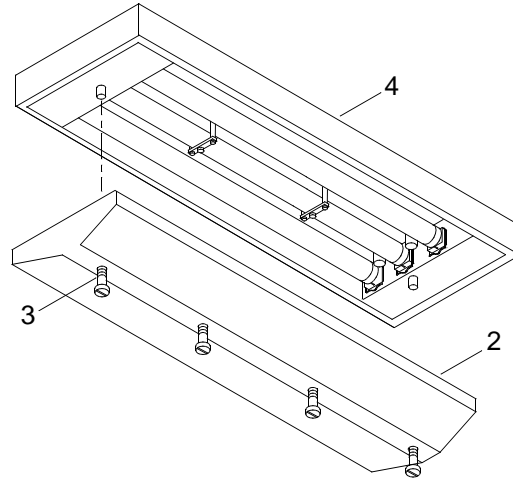
REMOVE PERSONNEL SHELTER FLUORESCENT LIGHT BULBS**NOTE**

This task is typical for the removal and installation of personnel shelter fluorescent light bulbs.

1. Verify MASTER circuit breaker (1) in electrical distribution panel is positioned to off (open).

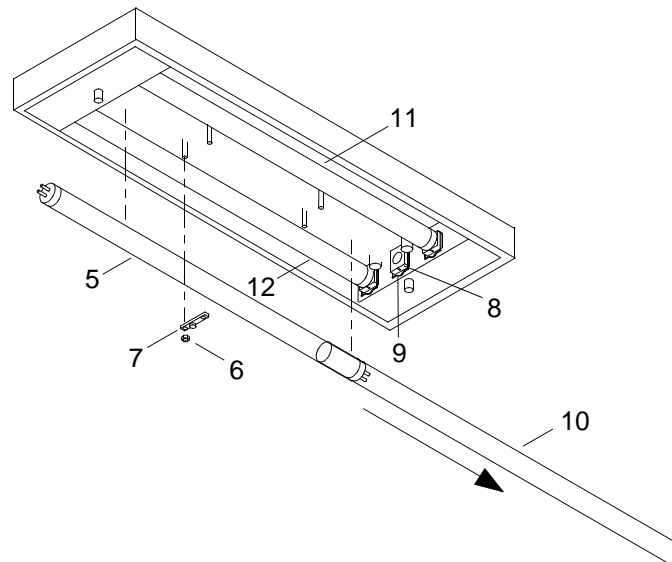


2. Remove light cover (2).



- a. Loosen four captive screws (3) holding light cover (2) on light fixture (4).
- b. Remove light cover (2).

3. Remove middle light bulb (5).



- a. Loosen screws (6) from brackets (7) on middle light bulb (5).
- b. Remove brackets (7).
- c. Disengage light bulb lock (8) from each end of middle light bulb (5) that requires replacement.
- d. Grasp middle light bulb (5) and turn 90° clockwise.
- e. Pull down on middle light bulb (5) and remove from receptacle (9).

NOTE

If middle light bulb is to be replaced, the red sleeve will be reused.

4. Remove sleeve (10) from middle light bulb (5).
5. Remove outer light bulbs (11, 12).
 - a. Disengage outer light bulb lock (8) from each end of outer light bulb (11, 12) that requires replacement.
 - b. Grasp outer light bulb (11, 12) and turn outer light bulb 90° clockwise.
 - c. Pull down on outer light bulb (11, 12) and remove from receptacle (9).

INSTALL PERSONNEL SHELTER FLUORESCENT LIGHT BULBS

1. Install middle light bulbs (5).
 - a. Slide sleeve (10) onto middle light bulb (5).
 - b. Position middle light bulb (5) near receptacle (9).
2. Slide end of middle light bulb (5) into receptacle (9).
3. Turn middle light bulb (5) 90° until middle light bulb (5) clicks into place.
4. Install brackets (7) and screws (6) over middle light bulb (5).
5. Install outer light bulbs (11, 12).
 - a. Position outer light bulb (11, 12) near receptacle (9).
 - b. Slide end of outer light bulb (11, 12) into receptacle (9).
 - c. Turn outer light bulb (11, 12) 90° until outer light bulb (11, 12) clicks into place.
6. Position light cover (2) over light fixture (4).
7. Tighten four captive screws (3) hand tight.
8. Perform operational check of personnel shelter overhead lights. (WP 0109 00)

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
TOWING LIGHT BATTERIES
REPLACEMENT**

INITIAL SETUP:**Tools**

Life Preserver, Vest (Item 71, WP 0116 00)
Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
Helmet, Safety (Brown) (Item 30, WP 0116 00)
Gloves, Rubber, Industrial (Item 24, WP 0116 00)
Goggles, Industrial (Chipping, Chemical) (Item 26, WP 0116 00)

Materials/Parts

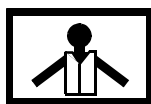
Battery, Non-Rechargeable (Item 5, WP 0117 00)

Personnel Required

Engineer 88L

REMOVE TOWING LIGHT BATTERIES

WARNING



VEST



HELMET PROTECTION



HEAVY PARTS



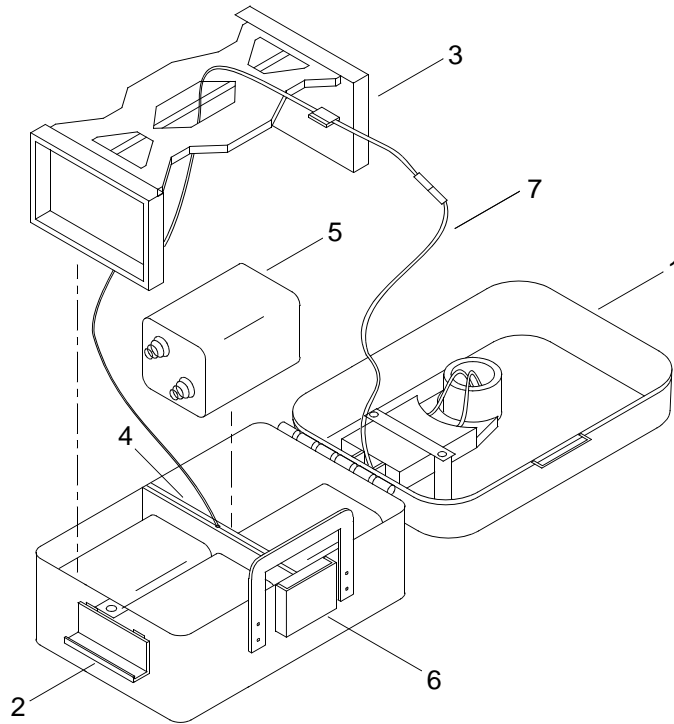
MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

This task is typical for the removal and installation of towing light batteries.

1. Open towing light cover (1) by unlatching clasp (2).

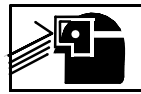


2. Remove battery bracket (3).
3. Remove conductor plate (4).

WARNING



CHEMICAL



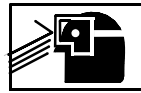
EYE PROTECTION

4. Remove four batteries (5) from stub assembly mast light (6).

WARNING



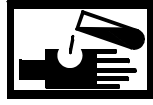
CHEMICAL



EYE PROTECTION

5. Dispose of batteries per local procedures.

INSTALL TOWING LIGHT BATTERIES

WARNING**CHEMICAL****EYE PROTECTION**

1. Install four new batteries (5) in stub assembly mast light (6).
2. Install conductor plate (4).
3. Install battery bracket (3).
4. Position wire (7) away from edges of stub assembly mast light (6).
5. Close towing light cover (1) and latch clasp (2).

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
TOWING LIGHT INCANDESCENT BULB
REPLACEMENT**

INITIAL SETUP:**Tools**

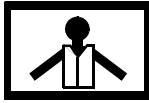
Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)

Personnel Required

Engineer 88L

REMOVE TOWING LIGHT INCANDESCENT BULB

WARNING



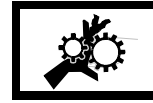
VEST



HELMET PROTECTION



HEAVY PARTS



MOVING PARTS

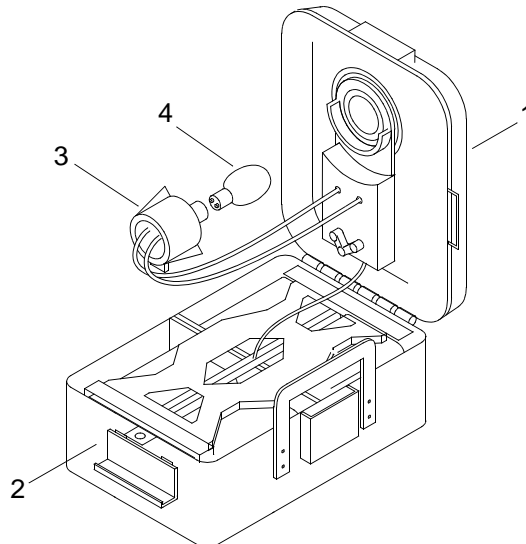
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the removal and installation of towing light incandescent bulbs.

A spare bulb is located in each towing light.

1. Open towing light cover (1) by unlatching clasp (2).



2. Remove bulb holder (3) from towing light cover (1) by rotating counterclockwise and pulling out.
3. Remove bulb (4) from bulb holder (3) by pushing down, rotating counterclockwise and pulling out. Discard bulb (4).

INSTALL TOWING LIGHT INCANDESCENT BULB

1. Install new bulb (4) into bulb holder (3) by pushing down and rotating clockwise.
2. Install bulb holder (3) into towing light cover (1) by pushing down and rotating clockwise.
3. Close towing light cover (1) and latch clasp (2).

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
LIFE RING STROBE LIGHT BATTERY
REPLACEMENT**

INITIAL SETUP:**Tools**

Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Gloves, Rubber, Industrial (Item 24, WP 0116 00)
 Goggles, Industrial (Chipping, Chemical) (Item 26, WP 0116 00)

Materials/Parts

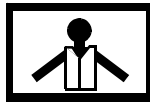
Battery, Non-Rechargeable (Item 5, WP 0117 00)

Personnel Required

Engineer 88L

REMOVE LIFE RING STROBE LIGHT BATTERY

WARNING



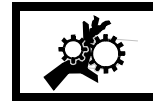
VEST



HELMET PROTECTION



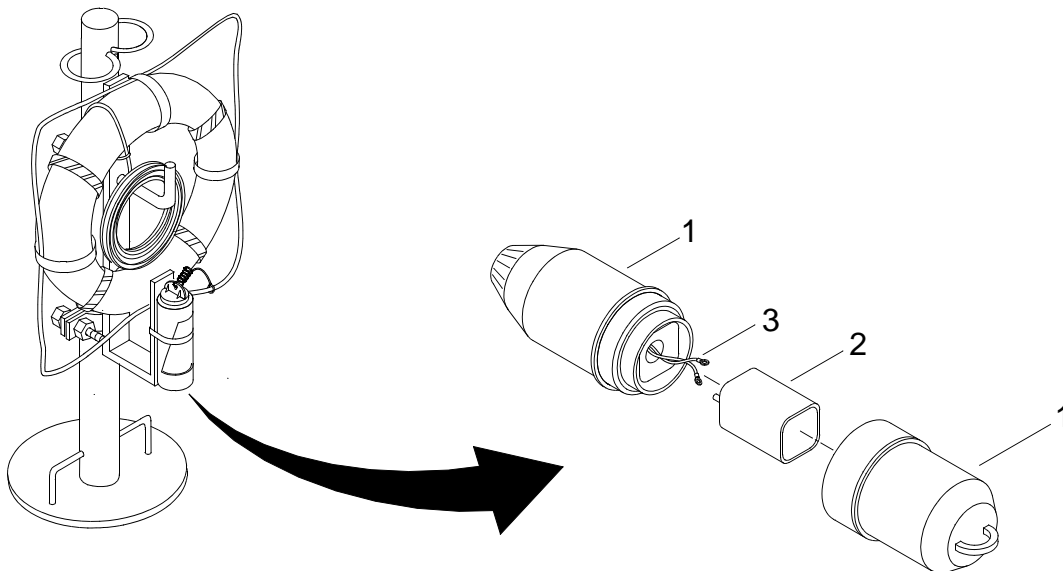
HEAVY PARTS



MOVING PARTS

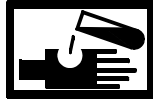
All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

1. Unscrew strobe light housing (1) to expose battery (2).



-
2. Disconnect two wires (3) from battery (2).

WARNING



CHEMICAL



EYE PROTECTION

3. Remove battery (2) and dispose of per local procedures.

INSTALL LIFE RING STROBE LIGHT BATTERY

WARNING



CHEMICAL



EYE PROTECTION

1. Position new battery (2) inside strobe light housing (1).
2. Connect two wires (3) to battery (2).
3. Position both sides of the strobe light housing (1) together and screw shut. Tighten strobe light housing (1).

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
HAND LANTERN BATTERIES
REPLACEMENT**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
 Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Gloves, Rubber, Industrial (Item 24, WP 0116 00)
 Goggles, Industrial (Chipping, Chemical) (Item 26, WP 0116 00)

Materials/Parts

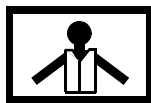
Battery, Non-Rechargeable (Item 5, WP 0117 00)

Personnel Required

Engineer 88L

REMOVE HAND LANTERN BATTERIES

WARNING



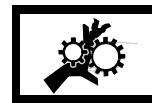
VEST



HELMET PROTECTION



HEAVY PARTS



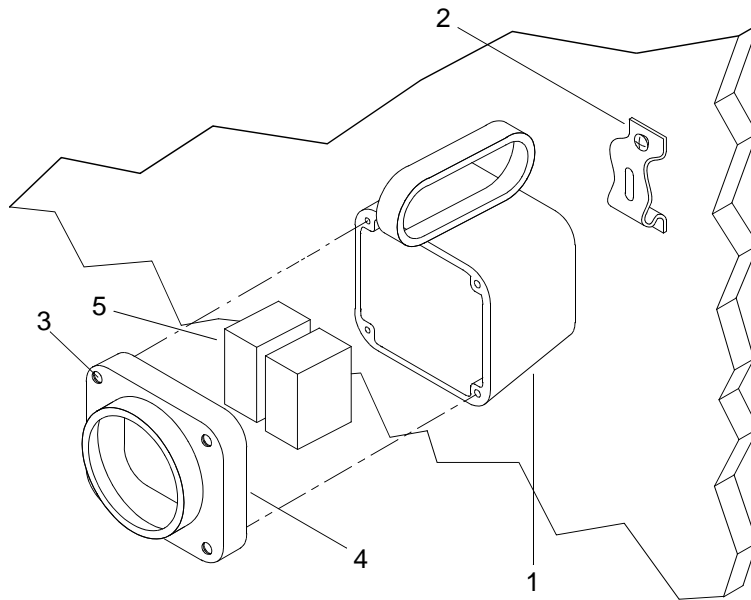
MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

The following procedure is typical for the removal and installation of hand lantern batteries.

1. Rotate hand lantern (1) 90° and remove from mounting bracket (2).



2. Loosen four captive screws (3) on cover (4).
3. Remove cover (4) and position hand lantern (1) face up on work bench.

WARNING



CHEMICAL

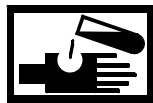


EYE PROTECTION

4. Remove two batteries (5) from hand lantern (1) and dispose of per local procedures.

INSTALL HAND LANTERN BATTERIES

WARNING



CHEMICAL



EYE PROTECTION

1. Install two new batteries (5) in hand lantern (1).
2. Position cover (4) on hand lantern (1).
3. Tighten four captive screws (3) to secure cover (4) to hand lantern (1).
4. Position hand lantern (1) on mounting bracket (2) and rotate 90°.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
ANCHOR LIGHT BATTERIES
REPLACEMENT**

INITIAL SETUP:**Tools**

Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Gloves, Rubber, Industrial (Item 24, WP 0116 00)
 Goggles, Industrial (Chipping, Chemical) (Item 26, WP 0116 00)

Materials/Parts

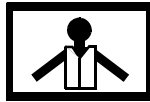
Battery, Non-Rechargeable (Item 5, WP 0117 00)

Personnel Required

Engineer 88L

REMOVE ANCHOR LIGHT BATTERIES

WARNING



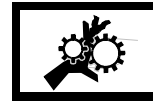
VEST



HELMET PROTECTION



HEAVY PARTS



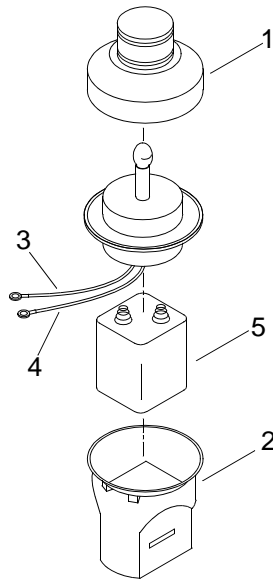
MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

NOTE

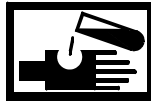
The following procedure is typical for the removal and installation of anchor light batteries.

1. Remove anchor light top (1) from housing (2) by pulling up.

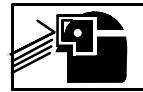


2. Disconnect positive (3) and negative (4) leads from battery (5).

WARNING



CHEMICAL



EYE PROTECTION

3. Remove battery (5) and dispose of per local procedures.

INSTALL ANCHOR LIGHT BATTERIES

WARNING



CHEMICAL



EYE PROTECTION

1. Install new battery (5) into housing (2).
2. Connect positive (3) and negative (4) leads to battery (5).
3. Install anchor light top (1) onto housing (2) by pushing down.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
OPERATIONAL CHECKOUT PROCEDURES**

INITIAL SETUP:**Tools**

Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)

Personnel Required

Seaman 88K

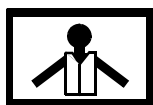
References

TM 9-6115-642-10
 TM 55-1945-219-14&P
 TM 55-1945-220-14&P
 TM 55-1945-217-14&P
 TM 55-1945-218-14&P
 TM 55-1945-224-14&P
 TM 55-1945-221-14&P

INTRODUCTION

Operational checkout procedures provide a verification process to be used after troubleshooting a problem or a corrective/maintenance action has been performed on equipment associated with the RRDF.

WARNING



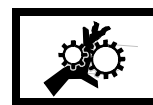
VEST



HELMET PROTECTION



HEAVY PARTS



MOVING PARTS

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

PERFORM OPERATIONAL CHECKOUT OF GENERATOR CONTAINER

1. Verify circuit breakers in electrical distribution panel are positioned to on.
2. Operate overhead lights switch to verify lights illuminate.
3. Refer to TM 9-6115-642-10 for 10 kW generator operational checkout procedures.

PERFORM OPERATIONAL CHECKOUT OF PERSONNEL SHELTER

1. Verify circuit breakers in electrical distribution panel are positioned to on.
2. Operate overhead lights switch to verify lights illuminate.
3. Refer to TM 55-1945-220-14&P for packaged terminal air conditioner and heat pump operational checkout procedures.
4. Refer to TM 55-1945-219-14&P for incinerator toilet operational checkout procedures.

PERFORM OPERATIONAL CHECKOUT OF EASY CONTAINER

1. Operate handle on anchor drawer hydraulic pump (green) with control valve in extend position (handle to right) to verify hydraulic cylinder deploys anchor drawer.
2. Operate handle on anchor drawer hydraulic pump (green) with control valve in retract position (handle to left) to verify hydraulic cylinder retrieves anchor drawer.
3. Operate handle on anchor lift platform hydraulic pump (yellow) with vent valve closed to verify hydraulic cylinder tilts anchor lift platform.
4. Carefully open vent valve to verify hydraulic cylinder lowers anchor lift platform.

PERFORM OPERATIONAL CHECKOUT OF VHF/FM HANDHELD TRANSCEIVER

1. Rotate POWER/VOLUME knob on top of transceiver clockwise to verify battery power is at full charge and turns on unit.
2. If power is adequate to turn on unit, replace battery with new battery and repeat step 1.

PERFORM OPERATIONAL CHECKOUT OF LIGHT TOWER AND LIGHT TOWER ENGINE

1. Refer to TM 55-1945-217-14&P for light tower operational checkout procedures.
2. Refer to TM 55-1945-218-14&P for light tower engine operational checkout procedures.

PERFORM OPERATIONAL CHECKOUT OF RHIB AND RHIB OUTBOARD MOTOR

1. Refer to TM 55-1945-224-14&P for RHIB operational checkout procedures.
2. Refer to TM 55-1945-221-14&P for RHIB outboard motor operational checkout procedures.

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
PLACING IN SERVICE**

INITIAL SETUP:**Tools**

Life Preserver, Vest (Item 71, WP 0116 00)
 Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
 Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
 Helmet, Safety (Brown) (Item 30, WP 0116 00)
 Gloves, (Chemical) (Item 24, WP 0116 00)
 Goggles, Industrial (Chipping, Chemical) (Item 26, WP 0116 00)

Personnel Required

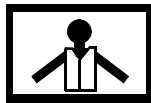
Engineer 88L

References

DA Form 2258
 TM 9-6115-642-10
 TM 55-1945-219-14&P
 TM 55-1945-220-14&P
 TM 55-1945-224-14&P
 TM 55-1945-221-14&P
 TM 55-1945-217-14&P
 TM 55-1945-218-14&P

PLACE RRDF SYSTEM EQUIPMENT IN SERVICE**RRDF EQUIPMENT NOT REQUIRING DE-PRESERVATION**

WARNING

**VEST****HELMET PROTECTION****HEAVY PARTS****MOVING PARTS**

All personnel must wear personal flotation device, hard hat, safety shoes and gloves during RRDF operations and maintenance. Failure to observe these precautions could result in serious injury or death.

Intermediate Section ISOPAKs

- Combination Beach/Sea End Section ISOPAKs
- 5 ft by 10 ft Fendering System Containers
- 4 ft by 12 ft and 3 ft by 5 ft Fendering System Containers
- 3 ft by 5 ft Lighter Fendering System Containers
- Heavy Duty Mooring Bitt Containers
- Dunnage Matt Containers

- BII Container
- EASY Container

DE-PRESERVE 10 KW GENERATOR CONTAINER

1. Refer to DA Form 2258 and TM 9-6115-642-10 for de-preservation procedures on 10 kW generator.
2. Remove caution tags, desiccants and corrosion inhibitors from the following electrical components.
 - a. Fuel tank level indicator panel.
 - b. 120 VAC load center.
 - c. Three-pole disconnect switch.
 - d. Fire alarm control panel.
 - e. Stow desiccants and corrosion inhibitors in containers in BII container. (WP 0074 00)

DE-PRESERVE PERSONNEL SHELTER

1. Refer to TM 55-1945-220-14&P for specific de-preservation procedures on package terminal air conditioner and heat pump.
2. Refer to TM 55-1945-219-14&P for specific de-preservation procedures on toilet.
3. Remove caution tag, desiccants and corrosion inhibitors from electrical distribution panel.
4. Stow desiccants and corrosion inhibitors in containers in BII container. (WP 0074 00)

DE-PRESERVE RHIB AND OUTBOARD MOTOR

1. Refer to TM 55-1945-224-14&P for specific de-preservation procedures on RHIB.
2. Refer to TM 55-1945-221-14&P for specific de-preservation procedures on outboard motor.

DE-PRESERVE LIGHT TOWERS

1. Verify coolant levels and test consistency in radiator and reserve reservoir. Replenish with water and antifreeze (50/50 mixture). (TM 55-1945-217-14&P)
2. Install a fresh battery equivalent to battery removed during preservation. (TM 55-1945-217-14&P)
3. Check fuel/water separator and drain if necessary. (TM 55-1945-217-14&P)
4. Drain engine preservation oil and replace with operating oil. (TM 55-1945-217-14&P)
5. Replace engine oil filter. (TM 55-1945-217-14&P)
6. Fill the fuel tank. (TM 55-1945-217-14&P)
7. Bleed the fuel system. (TM 55-1945-217-14&P)

END OF WORK PACKAGE

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
PREPARATION FOR STORAGE OR SHIPMENT**

INITIAL SETUP:**Tools**

Tool Kit, General Mechanic's (Item 70, WP 0116 00)
Life Preserver, Vest (Item 71, WP 0116 00)
Gloves, Men's and Women's (Leather Palm) (Item 25, WP 0116 00)
Goggles, Sun, Wind and Dust (Safety) (Item 27, WP 0116 00)
Helmet, Safety (Brown) (Item 30, WP 0116 00)
Gloves, (Chemical) (Item 24, WP 0116 00)
Goggles, Industrial (Chipping, Chemical) (Item 26, WP 0116 00)
Apron, Utility (Item 1, WP 0118 00)
Respirator, Air Filtering (Item 10, WP 0118 00)
Pan, Drain (Item 42, WP 0116 00)

Materials/Parts

Barrier Material (Item 3, WP 0117 00)
Desiccant, Silica Gel (80 Unit Size) (Item 14, WP 0117 00)
Desiccant, Silica Gel (1/2 Unit Size) (Item 12, WP 0117 00)
Desiccant, Silica Gel (1 Unit Size) (Item 13, WP 0117 00)
Inhibitor, Corrosion, Foam Block (Item 27, WP 0117 00)
Inhibitor, Corrosion, Foam Block (Item 28, WP 0117 00)
Lubricating Oil, 80W90 Grade (Item 37, WP 0117 00)
Grease, Outboard Motor (Triple Guard Grease) (Item 22, WP 0117 00)
Indicator, Humidity, Card (Item 28, WP 0117 00)
Window, Observation (Item 48, WP 0117 00)
Lubricating Oil, Exposed Gear (Item 36, WP 0117 00)
Hydraulic Fluid, Petroleum Base (EASY) (Item 24, WP 0117 00)
Hydraulic Fluid, Petroleum Base (Item 25, WP 0117 00)
Lubricating Oil, Engine, 10 Grade (Item 33, WP 0117 00)
Lubricating Oil, Engine, 15W40 Grade (Item 34, WP 0117 00)
Lubricating Oil, Engine, 30 Grade (Item 35, WP 0117 00)
Shrink Wrap, Corrosion Intercept (Item 41, WP 0117 00)
Stabilizer Additive, Diesel Fuel (Item 42, WP 0117 00)
Stretch Wrap, Corrosion Intercept (Item 44, WP 0117 00)
Tape, Pressure Sensitive Adhesive (Item 46, WP 0117 00)
2 + 4 Fuel Conditioner (Item 1, WP 0117 00)
Rag, Wiping (Item 40, WP 0117 00)
Spill Clean-Up Kit, Hazardous Material (Item 34, WP 0116 00)
Grease, Aircraft, (General Purpose, Wide Temperature Range) (Item 18, WP 0117 00)
Lubricating Oil, (General Purpose, Water Displacing) (Item 38, WP 0117 00)

Personnel Required

Cargo Specialist 88H
Engineer 88L

References

DA Form 2258
TB 43-0144
TM 9-6140-200-14
TM 9-6115-642-10
TM 55-1945-219-14&P

TM 55-1945-220-14&P
TM 55-1945-224-14&P
TM 55-1945-221-14&P
TM 55-1945-217-14&P
TM 55-1945-217-14&P
LO 9-6115-642-12
MIL-HDBK-138

PREPARE RRDF SYSTEM EQUIPMENT FOR STORAGE OR SHIPMENT

NOTE

Short Term Storage - Shipment within continental United States (CONUS) or storage up to 90 days.

Long Term Level A - Storage in non-humidity controlled environment for up to 36 months, such as above deck storage on an ocean going vessel.

Long Term Level B - Storage in a humidity controlled environment for up to 36 months, such as may be found below deck in an ocean going vessel where humidity is restricted to less than 50%.

PRESERVE INTERMEDIATE SECTION MODULES FOR LONG TERM STORAGE OR SHIPMENT (Level-A & -B)

1. Remove rust, corrosion and marine growth from external surfaces. (TB 43-0144)
2. Wash and dry.
3. Paint all disturbed exterior surfaces of the modules. (TB 43-0144)
4. Lubricate connector pins and springs with aircraft grease.
5. Spray water displacing lubricating oil onto moving parts and exposed surfaces of flexors, lifting shackle padeyes, and guillotine assemblies.

PRESERVE COMBINATION BEACH/SEA END SECTION MODULES FOR LONG TERM STORAGE OR SHIPMENT (LEVEL-A & -B)

1. Remove rust, corrosion and marine growth from external surfaces. (TB 43-0144)
2. Wash and dry.
3. Paint all disturbed exterior surfaces of the modules. (TB 43-0144)
4. Lubricate connector pins and springs with aircraft grease.
5. Spray water displacing lubricating oil onto moving parts and exposed surfaces of flexors, lifting shackle padeyes, and guillotine assemblies.

PRESERVE 5 FT BY 10 FT SHIP FENDERING SYSTEMS AND CONTAINER FOR LONG TERM STORAGE OR SHIPMENT (LEVEL-A & -B)

1. Inspect ISO container. (MIL-HDBK-138)

2. Remove rust and corrosion from surfaces of pallets and containers. (TB 43-0144)
3. Paint surfaces of pallets and containers. (TB 43-0144)

WARNING



CHEMICAL



EYE PROTECTION

4. Lubricate fender chains, end swivels and shackles with lubricating oil (exposed gear).

PRESERVE 4 FT BY 12 FT AND 3 FT BY 5 FT SHIP FENDERING SYSTEMS AND CONTAINER FOR LONG TERM STORAGE OR SHIPMENT (LEVEL-A & -B)

1. Inspect ISO container. (MIL-HDBK-138)
2. Remove rust and corrosion from surfaces of pallets and containers. (TB 43-0144)
3. Paint surfaces of pallets and containers. (TB 43-0144)

WARNING



CHEMICAL



EYE PROTECTION

4. Lubricate fender chains, end swivels and shackles with lubricating oil (exposed gear).

PRESERVE 3 FT BY 5 FT LIGHTER FENDERING SYSTEMS AND CONTAINERS FOR LONG TERM STORAGE OR SHIPMENT (LEVEL-A & -B)

1. Inspect ISO container. (MIL-HDBK-138)
2. Remove rust and corrosion from surfaces of pallets and containers. (TB 43-0144)
3. Paint surfaces of pallets and containers. (TB 43-0144)

WARNING



CHEMICAL



EYE PROTECTION

4. Lubricate fender chains, end swivels and shackles with lubricating oil (exposed gear).

**PRESERVE 6 FT BY 12 FT SHIP FENDERING SYSTEMS FOR LONG TERM STORAGE
OR SHIPMENT (LEVEL-A)**

WARNING

**CHEMICAL****EYE PROTECTION**

1. Lubricate fender chains, end swivels and shackles with lubricating oil (exposed gear).
2. Wrap with Corrosion Intercept Shrink Wrap per established procedures with a minimum of 2 layers.

**PRESERVE 6 FT BY 12 FT SHIP FENDERING SYSTEMS FOR LONG TERM STORAGE
OR SHIPMENT (LEVEL-B)**

WARNING

**CHEMICAL****EYE PROTECTION**

1. Lubricate fender chains, end swivels and shackles with lubricating oil (exposed gear).

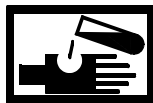
**PRESERVE HEAVY DUTY MOORING BITTS AND CONTAINER FOR LONG TERM STORAGE
OR SHIPMENT (LEVEL-A & -B)**

1. Inspect ISO container. (MIL-HDBK-138)
2. Remove rust and corrosion from surfaces of heavy duty mooring bits, pallets and containers. (TB 43-0144)
3. Paint surfaces of heavy duty mooring bits, pallets and containers. (TB 43-0144)

**PRESERVE DECK MATTS AND CONTAINER FOR LONG TERM STORAGE OR
SHIPMENT (LEVEL-A & -B)**

1. Inspect ISO container. (MIL-HDBK-138)
2. Remove rust and corrosion from surfaces of pallets and containers. (TB 43-0144)
3. Paint surfaces of pallets and containers. (TB 43-0144)

WARNING

**CHEMICAL****EYE PROTECTION**

4. Lubricate lockdowns with lubricating oil (exposed gear).

**PRESERVE BII CONTAINER FOR LONG TERM STORAGE OR SHIPMENT
(LEVEL-A)**

1. Inspect ISO container. (MIL-HDBK-138)
2. Remove rust and corrosion from surfaces of pallets and containers. (TB 43-0144)
3. Paint surfaces of containers. (TB 43-0144)
4. Remove 6 VDC batteries.
5. Remove D-sized batteries.
6. Fully charge battery packs prior to installing in marine band radios. (WP 0036 00)
7. Store high pressure sodium lamps in protective cardboard sheaths. Use additional packing materials to protect lamps in cabinet drawers.
8. Store 75 W incandescent lamps in protective coverings. Use additional packing materials to protect lamps in cabinet drawers.
9. Store 20 W fluorescent lamps in protective coverings. Use additional packing materials to protect lamps in cabinet drawers.
10. Preserve the grip hoist
 - a. Open release lever.

WARNING

**CHEMICAL****EYE PROTECTION****NOTE**

An excess of lubrication will not cause the wire rope to slip; there is no risk of overlubricating.

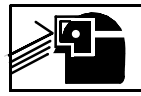
- b. Thoroughly lubricate internal mechanisms by pouring lubricating oil (80W90) inside the machine through its casing openings (lever openings and oil hole).
 - c. Alternately operate forward lever and reversing lever.
 - d. Close release lever.
 - e. Lubricate accompanying wire rope on metal reel with a rag soaked in lubricating oil (15W40).
 - f. Lubricate hook latch at one end of wire rope with lubricating oil (15W40).
11. Remove batteries from towing lights. (WP 0104 00)
 12. Remove batteries from hand lanterns. (WP 0107 00)

13. Remove batteries from anchor lights. (WP 0108 00)
14. Remove batteries from watertight flashlights.
15. Remove batteries from life ring strobe lights. (WP 0106 00)

WARNING



CHEMICAL

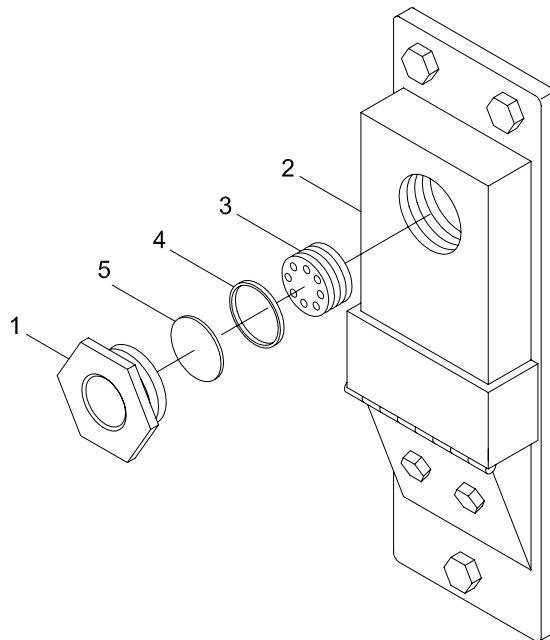


EYE PROTECTION

16. Lubricate quick disconnects with lubricating oil (exposed gear).
17. Place eight 80 unit size silica gel desiccant bags inside container on floor.
18. Close container doors and seal with tape.
19. Install humidity indicator cards in observation windows.

NOTE

This procedure is typical for both vent cover assemblies.



- a. Locate vent cover assembly with observation window (1) in upper exterior of container.
- b. Unscrew observation window (1) from vent cover (2).

NOTE

When removing lock screw and teflon spacer from inside of observation window, ensure loose transparent window and retaining seal remain seated in the bottom of the observation window.

-
- c. Using 1/2 in. hex head wrench, unthread lock screw (3) from inside of observation window (1).
 - d. Remove lock screw (3) and teflon spacer (4) from observation window (1).
 - e. Situate humidity indicator card (5) down inside the observation window (1) with text facing down. Ensure rubber seal immediately beneath the indicator card (5) and the transparent window beneath the seal are properly situated in the observation window.
 - f. Position teflon spacer (4) on top of the indicator card (5).
 - g. Thread lock screw (3) into observation window (1), compressing the teflon spacer (4) and indicator card (5) against the rubber seal and transparent window.
 - h. Using the 1/2 in. hex head wrench, apply approx. 30 in-lbs. of torque to the lock screw (3), providing a seal against outside air.
 - i. Screw the observation window (1) into the vent cover (2) with about 30 in-lbs. of torque.

PRESERVATION EXERCISES DURING LONG TERM STORAGE OR SHIPMENT OF BII CONTAINER (LEVEL-A)

1. Monthly, inspect reversible humidity indicator cards.
 - a. The humidity indicator card is divided into three equal pie sectors showing 20, 40 and 60 percent relative humidity values. The current relative humidity inside the container may be roughly determined by observing the coloration of the indicator card. Blue coloration of a pie sector indicates the internal humidity level is below the value shown in the sector. Lavender sector color indicates the humidity level is approaching the sector humidity value. Pink sector color indicates the relative humidity is at or has exceeded the sector value.
 - b. The internal humidity level should not exceed 50%. As long as the "60" pie sector is blue, or only slightly lavender, the internal relative humidity has not yet reached 50%.

NOTE

Saturated desiccant may be reactivated or "dried out" for reuse. Reactivated desiccant should retain 80% of its original water vapor adsorption rate and 90% of its original adsorption capacity.

Refer to the reactivation instructions attached to each bag for information on the temperature and time interval over which reactivation occurs.

The humidity indicator cards are most accurate for temperatures around 75° F. Temperatures significantly higher or lower require a small adjustment factor (only about 2% for each 10° F). For high temperatures in excess of 75° F, the card will indicate a lower humidity than is actually the case; for temperatures significantly below 75° F the card will indicate a higher humidity level than is actually the case.

The humidity indicator cards are reversible. When container relative humidity falls, the coloration of the disk sector will change from pink, to lavender, to blue.

If entry into container is required and doors are difficult to open, relieve container vacuum pressure by opening the vent at the bottom of the vent cover assembly.

- c. When the "60" pie sector turns lavender or slightly pink, the internal relative humidity is around 50% or higher. Replace desiccant as necessary to bring the humidity level back down below 50%.

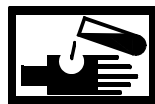
NOTE

If entry into container is required and doors are difficult to open, relieve container vacuum pressure by opening the vent at the bottom of the vent cover assembly.

2. Annually, open container and inspect equipment.

PRESERVE BII CONTAINER FOR LONG TERM STORAGE OR SHIPMENT (LEVEL-B)

1. Inspect ISO container. (MIL-HDBK-138)
2. Remove rust and corrosion from surfaces of pallets and containers. (TB 43-0144)
3. Paint surfaces of containers. (TB 43-0144)
4. Remove 6 VDC batteries.
5. Remove D-sized batteries.
6. Fully charge battery packs prior to installing in marine band radios. (WP 0036 00)
7. Store high pressure sodium lamps in protective cardboard sheaths. Use additional packing materials to protect lamps in cabinet drawers.
8. Store 75 W incandescent lamps in protective coverings. Use additional packing materials to protect lamps in cabinet drawers.
9. Store 20 W fluorescent lamps in protective coverings. Use additional packing materials to protect lamps in cabinet drawers.
10. Preserve the grip hoist
 - a. Open release lever.

WARNING**CHEMICAL****EYE PROTECTION****NOTE**

An excess of lubrication will not cause the wire rope to slip; there is no risk of overlubricating.

- b. Thoroughly lubricate internal mechanisms by pouring lubricating oil (80W90) inside the machine through its casing openings (lever openings and oil hole).
- c. Alternately operate forward lever and reversing lever.
- d. Close release lever.
- e. Lubricate accompanying wire rope on metal reel with a rag soaked in lubricating oil (15W40).

-
- f. Lubricate hook latch at one end of wire rope with lubricating oil (15W40).
11. Remove batteries from hand lanterns. (WP 0107 00)
 12. Remove batteries from anchor lights. (WP 0108 00)
 13. Remove batteries from watertight flashlights.
 14. Remove batteries from life ring strobe lights. (WP 0106 00)

WARNING



CHEMICAL



EYE PROTECTION

15. Lubricate quick disconnects with lubricating oil (exposed gear).

PRESERVATION EXERCISES DURING LONG TERM STORAGE OR SHIPMENT OF BII CONTAINER (LEVEL-B)

NOTE

If entry into container is required and doors are difficult to open, relieve container vacuum pressure by opening the vent at the bottom of the vent cover assembly.

1. Annually, open container and inspect equipment.

PRESERVE BII CONTAINER FOR SHORT TERM STORAGE OR SHIPMENT

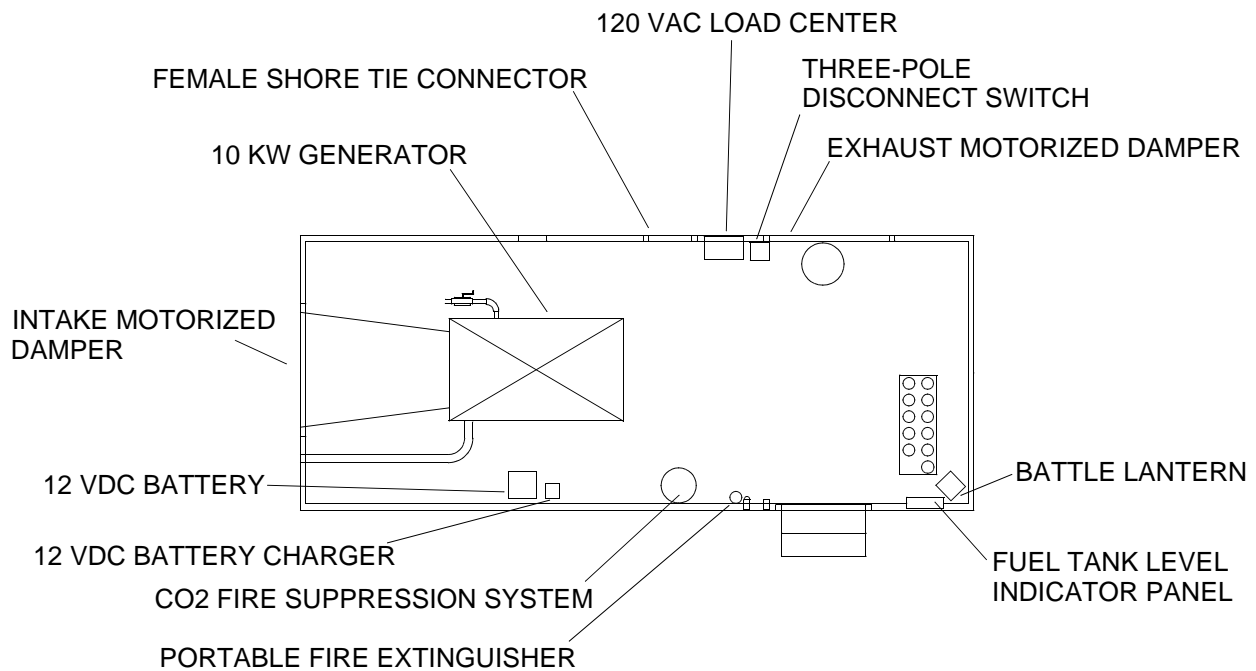
1. Inspect ISO container. (MIL-HDBK-138)
2. Fully charge battery packs prior to installing in marine band radios. (WP 0036 00)
3. Store high pressure sodium lamps in protective cardboard sheaths. Use additional packing materials to protect lamps in cabinet drawers.
4. Store 75 W incandescent lamps in protective coverings. Use additional packing materials to protect lamps in cabinet drawers.
5. Store 20 W fluorescent lamps in protective coverings. Use additional packing materials to protect lamps in cabinet drawers.
6. Preserve the grip hoist
 - a. Open release lever.

WARNING

**CHEMICAL****EYE PROTECTION****NOTE**

An excess of lubrication will not cause the wire rope to slip; there is no risk of overlubricating.

- b. Thoroughly lubricate internal mechanisms by pouring lubricating oil (80W90) inside the machine through its casing openings (lever openings and oil hole).
- c. Alternately operate forward lever and reversing lever.
- d. Close release lever.
- e. Lubricate accompanying wire rope on metal reel with a rag soaked in lubricating oil (15W40).
- f. Lubricate hook latch at one end of wire rope with lubricating oil (15W40).

PRESERVE 10 KW GENERATOR CONTAINER FOR LONG TERM STORAGE OR SHIPMENT (LEVEL-A)


1. Inspect ISO container. (MIL-HDBK-138)
2. Remove rust and corrosion from surfaces of container. (TB 43-0144)
3. Paint surfaces of container. (TB 43-0144)

4. Preserve the generator engine.

WARNING



CHEMICAL



EYE PROTECTION

- a. Drain engine oil.

WARNING



CHEMICAL



EYE PROTECTION

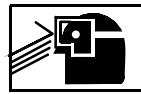
- b. Fill engine to operating level with 30W preservative lubricating oil. (MIL-PRF-21260 Grade 2)
- c. Attach a tag to the unit in a visible location that states the following:

“ENGINE OIL IN UNIT FOR PRESERVATION OR SHORT ENGINE ‘EXCERSIZING’ DURING STORAGE ONLY. BEFORE PLACING UNIT INTO OPERATION, OIL MUST BE DRAINED AND REPLACED WITH OPERATING OIL.”

WARNING



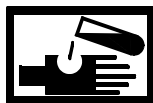
CHEMICAL



EYE PROTECTION

- d. Drain cooling system.

WARNING



CHEMICAL



EYE PROTECTION

- e. Fill cooling system with equal parts antifreeze and water.

WARNING



CHEMICAL



EYE PROTECTION

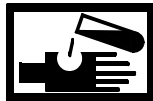
- f. Disconnect fuel intake line at fuel tank fitting.

WARNING**CHEMICAL****EYE PROTECTION**

- g. Disconnect fuel return line from the fuel tank and allow fuel to drain into drain pan.

WARNING**CHEMICAL****EYE PROTECTION**

- h. Fill a container with operating fuel.

WARNING**CHEMICAL****EYE PROTECTION**

- i. Fill a container with preservation oil. (P-10, MIL-PRF-21260 Grade 10)
- j. Place the fuel intake line in the container holding fuel.
- k. Start the engine and run for four minutes.

NOTE

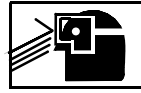
Note any color difference between the preservation oil and the operating fuel as an aid to determining when preservation oil is exiting the fuel return line.

- l. Move the fuel intake line to the container holding the preservation oil and shut down engine when preservation oil is seen exiting the fuel return line.
- m. Connect fuel intake line at fuel tank fitting.
- n. Connect fuel return line to the fuel tank.

NOTE

To avoid engine hydrostatic lockup when preserving combustion chambers and valves, do not atomize more than one ounce of preservation oil per cylinder (four ounces total).

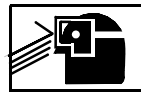
- o. Preserve combustion chambers and valves.
- {1} Remove air inlet tube from intake manifold inlet.

WARNING**CHEMICAL****EYE PROTECTION****NOTE**

Do not exceed 25 psi for atomizing spray pressure.

Atomize 1/2 of the total of one ounce of preservation oil per cylinder (two ounces total).

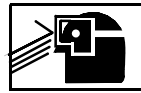
- {2} Spray atomized preservation oil (PE-10, MIL-PRF-21260 Grade 10) into air inlet while turning engine over for one minute.
- {3} Install air inlet tube on intake manifold inlet.
- {4} Remove the air cleaner element.

WARNING**CHEMICAL****EYE PROTECTION****NOTE**

Do not exceed 25 psi for atomizing spray pressure.

Atomize 1/4 of the total of one ounce of preservation oil per cylinder (one ounce total).

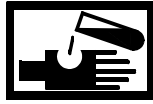
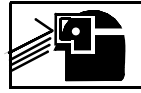
- {5} Spray atomized preservation oil (P-10, MIL-PRF-21260 Grade 10) through air cleaner housing while turning engine over for 30 seconds.
- {6} Install air cleaner element.

WARNING**CHEMICAL****EYE PROTECTION****NOTE**

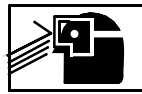
Do not exceed 25 psi for atomizing spray pressure.

Atomize 1/4 of the total of one ounce of preservation oil per cylinder (one ounce total).

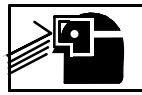
- {7} Spray atomized preservation oil (P-10, MIL-PRF-21260 Grade 10) into muffler outlet for 30 seconds.
- p. Seal all engine openings with tape. (ASTM D5486 Type IV)

WARNING**CHEMICAL****EYE PROTECTION**

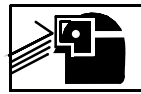
- q. Spray all rubber hoses and electric cables with silicone. (G623)
- r. Attach a tag to the unit in a visible location that states the following:
“ENGINE PRESERVED — DO NOT OPERATE WITHOUT DE-PRESERVATION”

WARNING**CHEMICAL****EYE PROTECTION****VAPOR**

- s. Remove drain pan and dispose of contents in accordance with local procedures.

WARNING**CHEMICAL****EYE PROTECTION****VAPOR****SLICK FLOOR**

- t. Clean up spilled fluid with a spill kit and dispose of spill kit waste and wiping rags per local procedures.
5. Preserve the fuel storage tank.

WARNING**CHEMICAL****EYE PROTECTION**

- a. Drain the fuel tank.

WARNING**CHEMICAL****EYE PROTECTION**

- b. Spray inside of tank with atomized preservation oil. (P-10, MIL-PRF-21260 Grade 10)
- c. Remove two tank breather vents.

-
- d. Seal tank breather openings with tape. (ASTM D5486 Type IV)
 - 6. Release drive belt tension.
 - 7. Paint any worn or unpainted surfaces on the drive belt pulleys with primer. (SSPC-PAINT25)
 - 8. Coat all hinges, latches and other moving metal parts with preservative oil. (exposed gear)
 - 9. Secure all 10 KW generator access doors with tape. (ASTM D5486 Type IV)

WARNING



CHEMICAL



EYE PROTECTION

- 10. Lubricate chains and binders used for securing container to RRDF with lubricating oil (exposed gear).
- 11. Remove generator batteries and turn into unit maintenance per local procedures.

WARNING



CHEMICAL



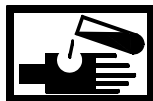
EYE PROTECTION

- 12. Spray generator battery cables with silicone. (G623)
- 13. Install a tag on the unit in a visible location that states:

GENERATOR BATTERIES REMOVED. INSTALL BATTERIES AT STARTUP.

- 14. Remove 12 VDC light battery and turn into unit maintenance per local procedures.

WARNING



CHEMICAL



EYE PROTECTION

- 15. Spray 12 VDC light battery cables with silicone. (G623)
- 16. Install a tag near the battery containment box in a visible location that states:

12 VDC LIGHTING BATTERY REMOVED. INSTALL BATTERY AT DEPRESERVATION.

- 17. Attach the two damper cover plates to the exterior of the container with the appropriate hardware.
- 18. Attach the limited access cover to the exterior of the container with the appropriate hardware.

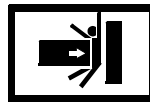
19. Open shore tie access cover and preserve interior with one 1 unit size silica gel desiccant bag and one corrosion inhibitor.
20. Attach the shore tie female receptacle cover.
21. Close and secure the shore tie access cover.
22. Open fuel system electrical junction box and preserve interior with one 1/2 unit size silica gel desiccant bag and one corrosion inhibitor.
23. Open 120 VAC panel board and preserve interior with one 1 unit size silica gel desiccant bag and one corrosion inhibitor.
24. Open three-pole disconnect switch and preserve interior with one 1 unit size silica gel desiccant bag and one corrosion inhibitor.
25. Open agent releasing control panel and preserve interior with one 1 unit size silica gel desiccant bag and one corrosion inhibitor.
26. Attach a tag to the electrical enclosures and shore tie access cover that states:

“CAUTION: REMOVE INTERNAL DESICCANTS AND CORROSION INHIBITORS BEFORE APPLYING POWER.”
27. Preserve fire suppression system.

WARNING



VAPOR



HEAVY PARTS

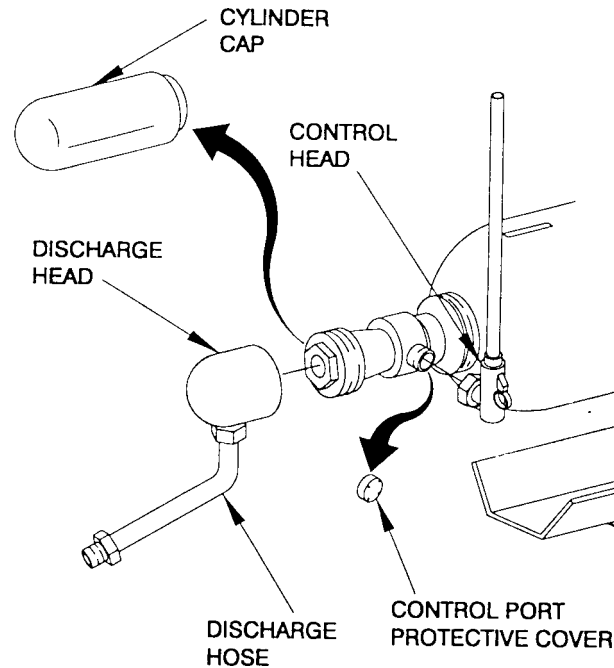
All personnel shall be clear of the generator container and the container shall be left open while CO₂ disconnects are being made. The carbon dioxide gas used in this system is stored in cylinders under extremely high pressure, equipped with high rate discharge valves, which when actuated, will open, remain open, and cannot be closed. An uncontrolled release of this high pressure gas from an accidental discharge, improper handling, or damage to parts can result in a violent and rapid propulsion of the cylinder(s), capable of causing severe equipment damage, personal injury, or death to personnel. Use extreme caution.

Because CO₂ reduces the available oxygen in the atmosphere, it will not support life. Extreme caution must be used when handling components in this system. Accidental discharge of this agent can cause serious injury or death to personnel.

Fire in protected compartments or accidental activation of the CO₂ system while personnel occupy compartment could result in loss of life if CO₂ is released. Personnel must listen for siren, recognize its sound and evacuate space immediately (within 20 seconds).

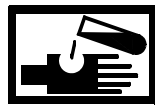
Prior to entering the shelter after discharge of CO₂, the shelter shall be completely cleared of any CO₂ that may remain. Death or injury to personnel could occur if CO₂ is inhaled.

- a. Disconnect the cable control head from the CO₂ cylinder.



- b. Rotate the control head upward and secure to overhead piping.
- c. Attach the control port protective cover over the control port
- d. Remove the lever control discharge head from the CO₂ cylinder, leaving the discharge hose attached.
- e. Put the discharge head in a bag and secure it to overhead piping.
- f. Screw the cylinder cap onto the cylinder.
- g. Remove the batteries located in the agent releasing control panel and turn into unit maintenance per local procedures.

WARNING



CHEMICAL



EYE PROTECTION

- h. Spray agent releasing control panel battery cables with silicone. (G623)
- i. Install a red tag that states:

RECONNECT THE LEVER CONTROL HEAD, THE DISCHARGE HEADS, AND THE DISCHARGE HOSES PRIOR TO OPERATION. INSTALL TWO BATTERIES IN THE AGENT RELEASING CONTROL PANEL.

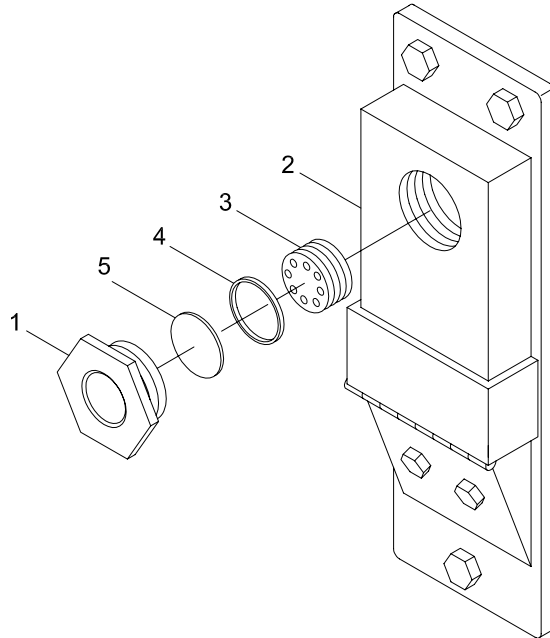
28. Remove 6 VDC battery from battle lantern and turn into unit maintenance per local procedures. (WP 0107 00)

29. Place twenty 80 unit size silica gel desiccant bags on floor.

30. Seal around the edges of two damper cover plates, limited access cover plate, shore tie access cover, and entry door with tape (ASTM D 5486 Type IV).
31. Install humidity indicator cards in observation windows.

NOTE

This procedure is typical for both vent cover assemblies.



- a. Locate vent cover assembly with observation window (1) in upper exterior of container.
- b. Unscrew observation window (1) from vent cover (2).

NOTE

When removing lock screw and teflon spacer from inside of observation window, ensure loose transparent window and retaining seal remain seated in the bottom of the observation window.

- c. Using 1/2 in. hex head wrench, unthread lock screw (3) from inside of observation window (1).
- d. Remove lock screw (3) and teflon spacer (4) from observation window (1).
- e. Situate humidity indicator card (5) down inside the observation window (1) with text facing down. Ensure rubber seal immediately beneath the indicator card (5) and the transparent window beneath the seal are properly situated in the observation window.
- f. Position teflon spacer (4) on top of the indicator card (5).
- g. Thread lock screw (3) into observation window (1), compressing the teflon spacer (4) and indicator card (5) against the rubber seal and transparent window.
- h. Using the 1/2 in. hex head wrench, apply approx. 30 in-lbs. of torque to the lock screw (3), providing a seal against outside air.

-
- i. Screw the observation window (1) into the vent cover (2) with about 30 in-lbs. of torque.

PRESERVATION EXERCISES DURING LONG TERM STORAGE OR SHIPMENT OF 10 KW GENERATOR CONTAINER (LEVEL-A)

1. Monthly, inspect reversible humidity indicator cards.
 - a. The humidity indicator card is divided into three equal pie sectors showing 20, 40 and 60 percent relative humidity values. The current relative humidity inside the container may be roughly determined by observing the coloration of the indicator card. Blue coloration of a pie sector indicates the internal humidity level is below the value shown in the sector. Lavender sector color indicates the humidity level is approaching the sector humidity value. Pink sector color indicates the relative humidity is at or has exceeded the sector value.
 - b. The internal humidity level should not exceed 50%. As long as the "60" pie sector is blue, or only slightly lavender, the internal relative humidity has not yet reached 50%.

NOTE

Saturated desiccant may be reactivated or "dried out" for reuse. Reactivated desiccant should retain 80% of its original water vapor adsorption rate and 90% of its original adsorption capacity.

Refer to the reactivation instructions attached to each bag for information on the temperature and time interval over which reactivation occurs.

The humidity indicator cards are most accurate for temperatures around 75° F. Temperatures significantly higher or lower require a small adjustment factor (only about 2% for each 10° F). For high temperatures in excess of 75° F, the card will indicate a lower humidity than is actually the case; for temperatures significantly below 75° F the card will indicate a higher humidity level than is actually the case.

The humidity indicator cards are reversible. When container relative humidity falls, the coloration of the disk sector will change from pink, to lavender, to blue.

If entry into container is required and doors are difficult to open, relieve container vacuum pressure by opening the vent at the bottom of the vent cover assembly.

- c. When the "60" pie sector turns lavender or slightly pink, the internal relative humidity is around 50% or higher. Replace desiccant as necessary to bring the humidity level back down below 50%.

NOTE

If entry into container is required and doors are difficult to open, relieve container vacuum pressure by opening the vent at the bottom of the vent cover assembly.

2. Annually, replace electrical enclosure corrosion inhibitors.

NOTE

If entry into container is required and doors are difficult to open, relieve container vacuum pressure by opening the vent at the bottom of the vent cover assembly.

3. Annually, open container and inspect equipment.

**PRESERVE 10 KW GENERATOR CONTAINER FOR LONG TERM STORAGE OR SHIPMENT
(LEVEL-B)**

1. Inspect ISO container. (MIL-HDBK-138)
2. Remove rust and corrosion from surfaces of container. (TB 43-0144)
3. Paint surfaces of container. (TB 43-0144)
4. Preserve the generator engine.

WARNING



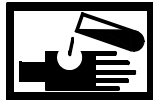
CHEMICAL



EYE PROTECTION

- a. Drain engine oil.

WARNING



CHEMICAL

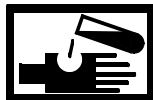


EYE PROTECTION

- b. Fill engine to operating level with 30W preservative lubricating oil. (MIL-PRF-21260 Grade 2)
- c. Attach a tag to the unit in a visible location that states the following:

“ENGINE OIL IN UNIT FOR PRESERVATION OR SHORT ENGINE ‘EXCERSIZING’ DURING STORAGE ONLY. BEFORE PLACING UNIT INTO OPERATION, OIL MUST BE DRAINED AND REPLACED WITH OPERATING OIL.”

WARNING



CHEMICAL



EYE PROTECTION

- d. Drain cooling system.

WARNING



CHEMICAL



EYE PROTECTION

- e. Fill cooling system with equal parts antifreeze and water.

WARNING

**CHEMICAL****EYE PROTECTION**

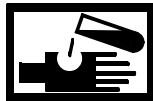
- f. Disconnect fuel intake line at fuel tank fitting.

WARNING

**CHEMICAL****EYE PROTECTION**

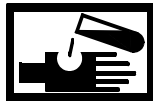
- g. Disconnect fuel return line from the fuel tank and allow fuel to drain into drain pan.

WARNING

**CHEMICAL****EYE PROTECTION**

- h. Fill a container with operating fuel.

WARNING

**CHEMICAL****EYE PROTECTION**

- i. Fill a container with preservation oil. (P-10, MIL-PRF-21260 Grade 10)
- j. Place the fuel intake line in the container holding fuel.
- k. Start the engine and run for four minutes.

NOTE

Note any color difference between the preservation oil and the operating fuel as an aid to determining when preservation oil is exiting the fuel return line.

- l. Move the fuel intake line to the container holding the preservation oil and shut down engine when preservation oil is seen exiting the fuel return line.
- m. Connect fuel intake line at fuel tank fitting.
- n. Connect fuel return line to the fuel tank.

NOTE

To avoid engine hydrostatic lockup when preserving combustion chambers and valves, do not atomize more than one ounce of preservation oil per cylinder (four ounces total).

- o. Preserve combustion chambers and valves.

{1} Remove air inlet tube from intake manifold inlet.

WARNING



CHEMICAL



EYE PROTECTION

NOTE

Do not exceed 25 psi for atomizing spray pressure.

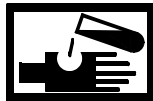
Atomize 1/2 of the total of one ounce of preservation oil per cylinder (two ounces total).

{2} Spray atomized preservation oil (PE-10, MIL-PRF-21260 Grade 10) into air inlet while turning engine over for one minute.

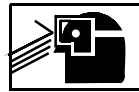
{3} Install air inlet tube on intake manifold inlet.

{4} Remove the air cleaner element.

WARNING



CHEMICAL



EYE PROTECTION

NOTE

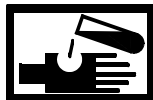
Do not exceed 25 psi for atomizing spray pressure.

Atomize 1/4 of the total of one ounce of preservation oil per cylinder (one ounce total).

{5} Spray atomized preservation oil (P-10, MIL-PRF-21260 Grade 10) through air cleaner housing while turning engine over for 30 seconds.

{6} Install air cleaner element.

WARNING



CHEMICAL



EYE PROTECTION

NOTE

Do not exceed 25 psi for atomizing spray pressure.

Atomize 1/4 of the total of one ounce of preservation oil per cylinder (one ounce total).

{7} Spray atomized preservation oil (P-10, MIL-PRF-21260 Grade 10) into muffler outlet for 30 seconds.

- p. Seal all engine openings with tape. (ASTM D5486 Type IV)

WARNING



CHEMICAL

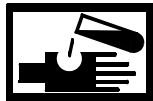


EYE PROTECTION

- q. Spray all rubber hoses and electric cables with silicone. (G623)
- r. Attach a tag to the unit in a visible location that states the following:

“ENGINE PRESERVED — DO NOT OPERATE WITHOUT DE-PRESERVATION”

WARNING



CHEMICAL



EYE PROTECTION



VAPOR

- s. Remove drain pan and dispose of contents in accordance with local procedures.

WARNING



CHEMICAL



EYE PROTECTION



VAPOR



SLICK FLOOR

- t. Clean up spilled fluid with a spill kit and dispose of spill kit waste and wiping rags per local procedures.
5. Preserve the fuel storage tank.

WARNING



CHEMICAL



EYE PROTECTION

- a. Drain the fuel tank.

WARNING

**CHEMICAL****EYE PROTECTION**

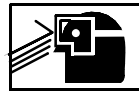
- b. Spray inside of tank with atomized preservation oil. (P-10, MIL-PRF-21260 Grade 10)
 - c. Remove two tank breather vents.
 - d. Seal tank breather openings with tape. (ASTM D5486 Type IV)
- 6. Release drive belt tension.
 - 7. Paint any worn or unpainted surfaces on the drive belt pulleys with primer. (SSPC-PAINT25)
 - 8. Coat all hinges, latches and other moving metal parts with preservative oil. (exposed gear)
 - 9. Secure all 10 KW generator access doors with tape (ASTM D5486 Type IV)

WARNING

**CHEMICAL****EYE PROTECTION**

- 10. Lubricate chains and binders used for securing container to RRDF with lubricating oil (exposed gear).
- 11. Remove generator battery and turn into unit maintenance per local procedures.

WARNING

**CHEMICAL****EYE PROTECTION**

- 12. Spray generator battery cables with silicone. (G623)
- 13. Install a tag on the unit in a visible location that states:

GENERATOR BATTERIES REMOVED. INSTALL BATTERIES AT STARTUP.

- 14. Remove 12 VDC light battery and turn into unit maintenance per local procedures.

WARNING

**CHEMICAL****EYE PROTECTION**

15. Spray 12 VDC light battery cables with silicone. (G623)
16. Install a tag near the battery containment box in a visible location that states:

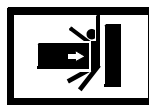
12 VDC LIGHTING BATTERY REMOVED. INSTALL BATTERY AT DEPRESERVATION.
17. Attach the two damper cover plates to the exterior of the container with the appropriate hardware.
18. Attach the limited access cover to the exterior of the container with the appropriate hardware.
19. Open shore tie access cover and preserve interior with one 1 unit size silica gel desiccant bag and one corrosion inhibitor.
20. Attach the shore tie female receptacle cover.
21. Close and secure the shore tie access cover.
22. Open fuel system electrical junction box and preserve interior with one 1/2 unit size silica gel desiccant bag and one corrosion inhibitor.
23. Open 120 VAC panel board and preserve interior with one 1 unit size silica gel desiccant bag and one corrosion inhibitor.
24. Open three-pole disconnect switch and preserve interior with one 1 unit size silica gel desiccant bag and one corrosion inhibitor.
25. Open agent releasing control panel and preserve interior with one 1 unit size silica gel desiccant bag and one corrosion inhibitor.
26. Attach a tag to the electrical enclosures and shore tie access cover that states:

“CAUTION: REMOVE INTERNAL DESICCANTS AND CORROSION INHIBITORS BEFORE APPLYING POWER.”
27. Preserve fire suppression system.

WARNING



VAPOR



HEAVY PARTS

All personnel shall be clear of the generator container and the container shall be left open while CO₂ disconnects are being made. The carbon dioxide gas used in this system is stored in cylinders under extremely high pressure, equipped with high rate discharge valves, which when actuated, will open, remain open, and cannot be closed. An uncontrolled release of this high pressure gas from an accidental discharge, improper handling, or damage to parts can result in a violent and rapid propulsion of the cylinder(s), capable of causing severe equipment damage, personal injury, or death to personnel. Use extreme caution.

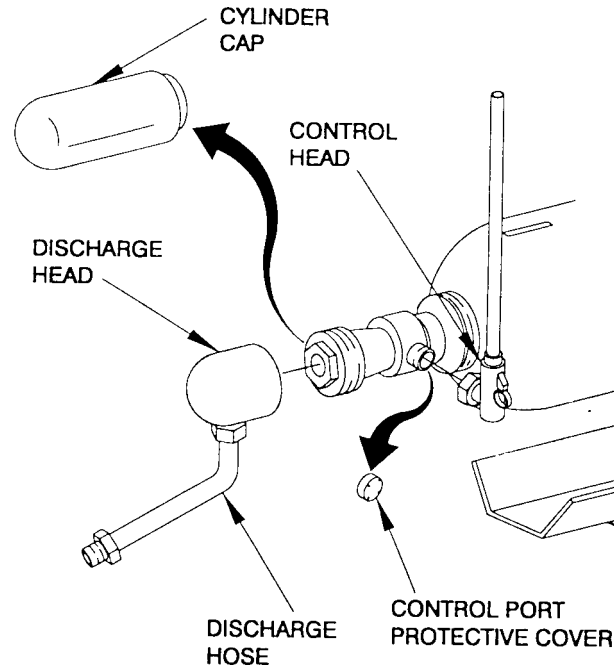
Because CO₂ reduces the available oxygen in the atmosphere, it will not support life. Extreme caution must be used when handling components in this system.

Accidental discharge of this agent can cause serious injury or death to personnel.

Fire in protected compartments or accidental activation of the CO₂ system while personnel occupy compartment could result in loss of life if CO₂ is released. Personnel must listen for siren, recognize its sound and evacuate space immediately (within 20 seconds).

Prior to entering the shelter after discharge of CO₂, the shelter shall be completely cleared of any CO₂ that may remain. Death or injury to personnel could occur if CO₂ is inhaled.

- a. Disconnect the cable control head from the CO₂ cylinder.



- b. Rotate the control head upward and secure to overhead piping.
- c. Attach the control port protective cover over the control port
- d. Remove the lever control discharge head from the CO₂ cylinder, leaving the discharge hose attached.
- e. Put the discharge head in a bag and secure it to overhead piping.
- f. Screw the cylinder cap onto the cylinder.
- g. Remove the batteries located in the agent releasing control panel and turn into unit maintenance per local procedures.

WARNING



CHEMICAL



EYE PROTECTION

-
- h. Spray agent releasing control panel battery cables with silicone. (G623)
 - i. Install a red tag that states:

RECONNECT THE LEVER CONTROL HEAD, THE DISCHARGE HEADS, AND THE DISCHARGE HOSES PRIOR TO OPERATION. INSTALL TWO BATTERIES IN THE AGENT RELEASING CONTROL PANEL.

28. Remove 6 VDC battery from battle lantern and turn into unit maintenance per local procedures. (WP 0107 00)

PRESERVATION EXERCISES DURING LONG TERM STORAGE OR SHIPMENT OF 10 KW GENERATOR CONTAINER (LEVEL-B)

NOTE

If entry into container is required and doors are difficult to open, relieve container vacuum pressure by opening the vent at the bottom of the vent cover assembly.

1. Annually, replace electrical enclosure corrosion inhibitors.

NOTE

If entry into container is required and doors are difficult to open, relieve container vacuum pressure by opening the vent at the bottom of the vent cover assembly.

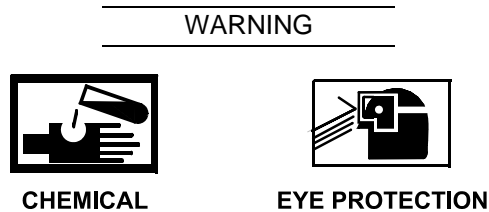
2. Annually, open container and inspect equipment.

PRESERVE 10 KW GENERATOR CONTAINER FOR SHORT TERM STORAGE OR SHIPMENT

1. Preserve generator engine.
 - a. Ensure engine oil is full.
 - b. Ensure cooling system is full. Fill with equal parts of antifreeze and water.
2. Attach the two damper cover plates to the exterior of the container with the appropriate hardware.
3. Attach the limited access cover to the exterior of the container with the appropriate hardware.
4. Open shore tie access cover and preserve interior with one 1 unit size silica gel desiccant bag and one corrosion inhibitor.
5. Attach the shore tie female receptacle cover.
6. Close and secure the shore tie access cover.
7. Open fuel system electrical junction box and preserve interior with one 1/2 unit size silica gel desiccant bag and one corrosion inhibitor.
8. Open 120 VAC panel board and preserve interior with one 1 unit size silica gel desiccant bag and one corrosion inhibitor.
9. Open three-pole disconnect switch and preserve interior with one 1 unit size silica gel desiccant bag and one corrosion inhibitor.

10. Open agent releasing control panel and preserve interior with one 1 unit size silica gel desiccant bag and one corrosion inhibitor.
11. Attach a tag to the electrical enclosures and shore tie access cover that states:

“CAUTION: REMOVE INTERNAL DESICCANTS AND CORROSION INHIBITORS BEFORE APPLYING POWER.”



12. Drain 1,000 GAL fuel tank.
13. Preserve fire suppression system.



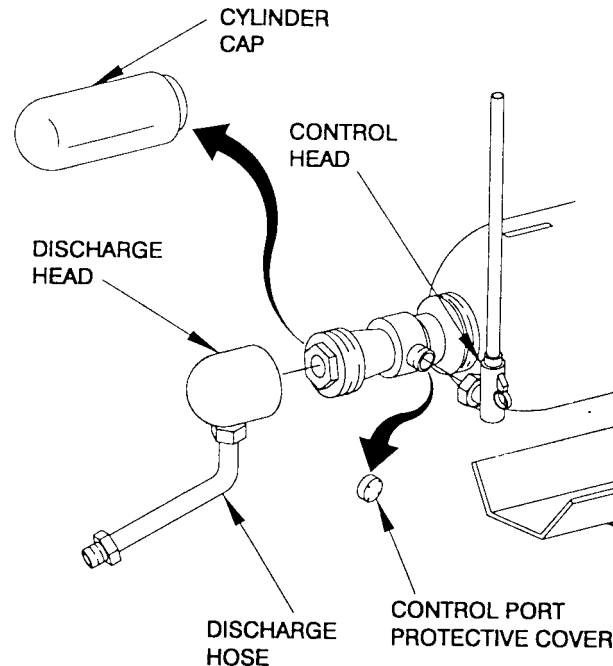
All personnel shall be clear of the generator container and the container shall be left open while CO₂ disconnects are being made. The carbon dioxide gas used in this system is stored in cylinders under extremely high pressure, equipped with high rate discharge valves, which when actuated, will open, remain open, and cannot be closed. An uncontrolled release of this high pressure gas from an accidental discharge, improper handling, or damage to parts can result in a violent and rapid propulsion of the cylinder(s), capable of causing severe equipment damage, personal injury, or death to personnel. Use extreme caution.

Because CO₂ reduces the available oxygen in the atmosphere, it will not support life. Extreme caution must be used when handling components in this system. Accidental discharge of this agent can cause serious injury or death to personnel.

Fire in protected compartments or accidental activation of the CO₂ system while personnel occupy compartment could result in loss of life if CO₂ is released. Personnel must listen for siren, recognize its sound and evacuate space immediately (within 20 seconds).

Prior to entering the shelter after discharge of CO₂, the shelter shall be completely cleared of any CO₂ that may remain. Death or injury to personnel could occur if CO₂ is inhaled.

- a. Disconnect the cable control head from the CO₂ cylinder.



- b. Rotate the control head upward and secure to overhead piping.
- c. Attach the control port protective cover over the control port
- d. Remove the lever control discharge head from the CO₂ cylinder, leaving the discharge hose attached.
- e. Put the discharge head in a bag and secure it to overhead piping.
- f. Screw the cylinder cap onto the cylinder.
- g. Charge the batteries located in the agent releasing control panel.
- h. Install a red tag that states:

RECONNECT THE LEVER CONTROL HEAD, THE DISCHARGE HEADS, AND THE DISCHARGE HOSES PRIOR TO OPERATION.

14. Charge generator batteries.
15. Charge 12 VDC incandescent light battery.

DEPRESERVATION INSTRUCTIONS FOR GENERATOR CONTAINER

1. Remove tape from around the edges of two damper cover plates, limited access cover plate, shore tie access cover, and entry door.
2. Drain 30W preservative lubricating oil. (MIL-PRF-21260 Grade 2) from 10 KW generator engine.
3. Fill engine with lubricating oil in accordance with Lubrication Order (LO 9-6115-642-12).
4. Remove tape from all engine openings.

5. Remove tape from tank breather openings.
6. Install two tank breather vents.
7. As required, fill base fuel tank.
8. Tension generator drive belt.
9. Remove tape from all 10 KW generator access doors.
10. Install one twelve volt battery on each side of the 10 KW generator.
11. Attach generator battery cables to batteries.
12. Install 12 VDC light battery.
13. Attach 12 VDC light battery cables to battery.
14. Remove two damper cover plates.
15. Remove limited access cover.

NOTE

The desiccant may be reactivated or "dried out" for future use.

Refer to reactivation instructions attached to each bag for information on the temperature and time interval over which reactivation occurs.

16. Open shore tie access cover and remove one 1 unit size silica gel desiccant bag and one corrosion inhibitor.

NOTE

The desiccant may be reactivated or "dried out" for future use.

Refer to reactivation instructions attached to each bag for information on the temperature and time interval over which reactivation occurs.

17. Open fuel system electrical junction box and remove one 1/2 unit size silica gel desiccant bag and one corrosion inhibitor.

NOTE

The desiccant may be reactivated or "dried out" for future use.

Refer to reactivation instructions attached to each bag for information on the temperature and time interval over which reactivation occurs.

18. Open 120 VAC panel board and remove one 1 unit size silica gel desiccant bag and one corrosion inhibitor.

NOTE

The desiccant may be reactivated or "dried out" for future use.

Refer to reactivation instructions attached to each bag for information on the temperature and time interval over which reactivation occurs.

19. Open three-pole disconnect switch and remove one 1 unit size silica gel desiccant bag and one corrosion inhibitor.

NOTE

The desiccant may be reactivated or "dried out" for future use.

Refer to reactivation instructions attached to each bag for information on the temperature and time interval over which reactivation occurs.

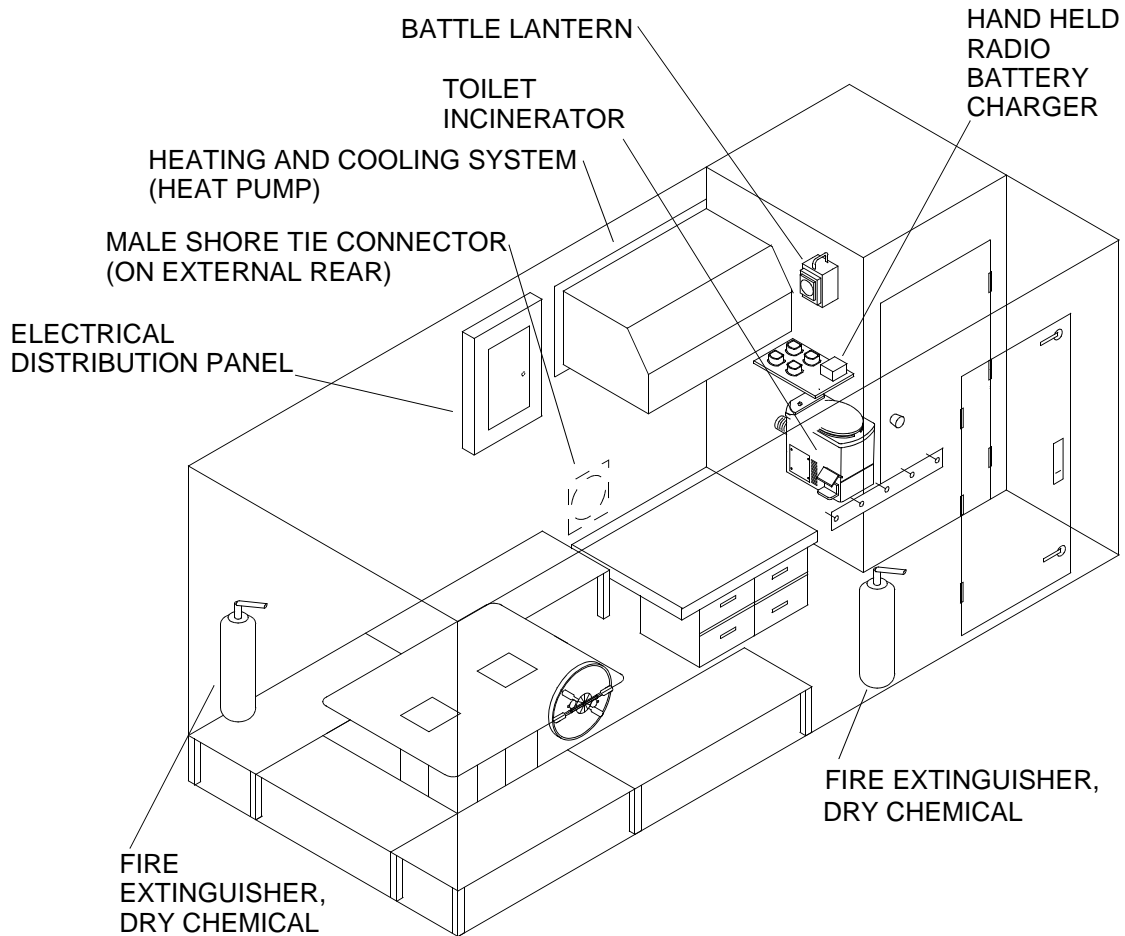
20. Open agent releasing control panel and remove one 1 unit size silica gel desiccant bag and one corrosion inhibitor.
21. Remove and stow cylinder cap from CO₂ cylinder.
22. Reconnect fire suppression lever control head, discharge heads, and discharge hoses.
23. Install 6 VDC battery in battle lantern.
24. Install two batteries in the agent releasing control panel.

NOTE

The desiccant may be reactivated or "dried out" for future use.

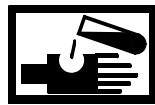
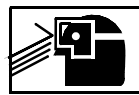
Refer to reactivation instructions attached to each bag for information on the temperature and time interval over which reactivation occurs.

25. Remove twenty 80 unit size silica gel desiccant bags from floor of container.

**PRESERVE PERSONNEL SHELTER FOR LONG TERM STORAGE OR SHIPMENT
(LEVEL-A)**


1. Inspect ISO container. (MIL-HDBK-138)
2. Remove rust and corrosion from surfaces of container. (TB 43-0144)
3. Paint surfaces of container. (TB 43-0144)

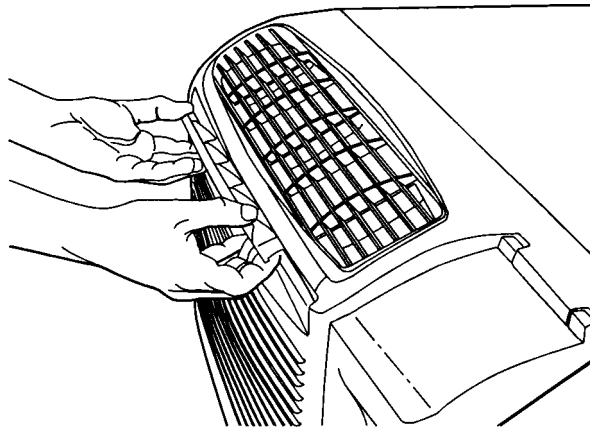
WARNING

**CHEMICAL****EYE PROTECTION**

4. Lubricate chains and binders used for securing container to RRDF with lubricating oil (exposed gear).
5. Open shore tie access cover and preserve interior with one 1 unit size silica gel desiccant bag and one corrosion inhibitor.
6. Attach the shore tie female receptacle cover.

7. Close and secure the shore tie access cover.
8. Install head exhaust vent cover on exterior of container with supplied hardware.
9. Install heat pump vent cover on exterior of container with supplied hardware.
10. Open electrical distribution panel and preserve interior with one 1 unit size silica gel desiccant bag and two corrosion inhibitors.
11. Hang a caution tag from electrical distribution panel stating:

“CAUTION: REMOVE INTERNAL DESICCANTS AND CORROSION INHIBITORS BEFORE APPLYING POWER.”
12. Preserve the heat pump.
 - a. Grasp the filter with both hands.



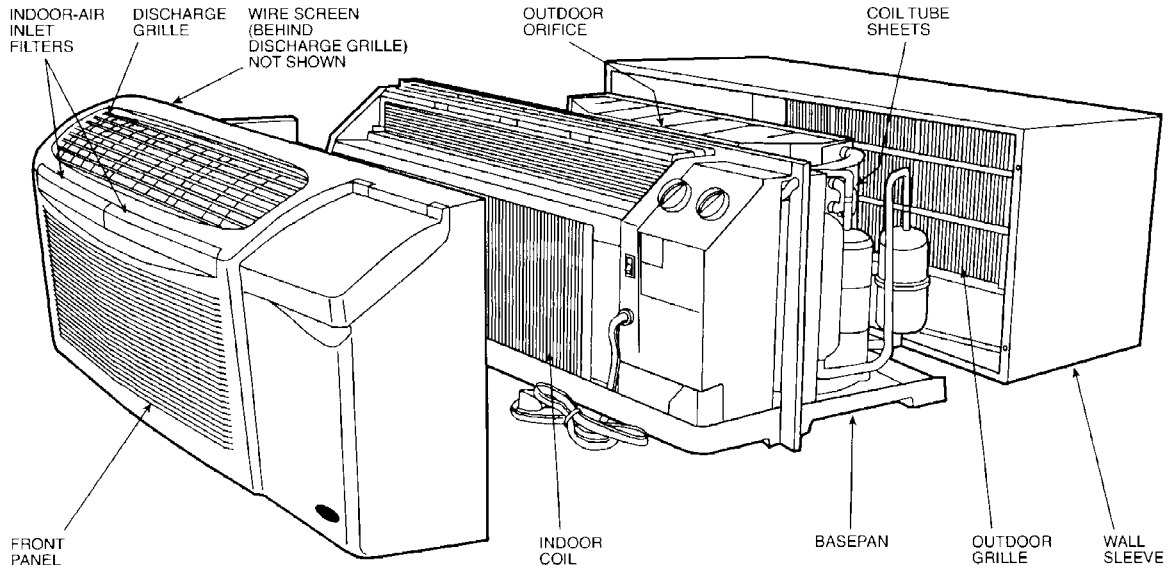
- b. Gently pull the filter up and away from the unit

NOTE

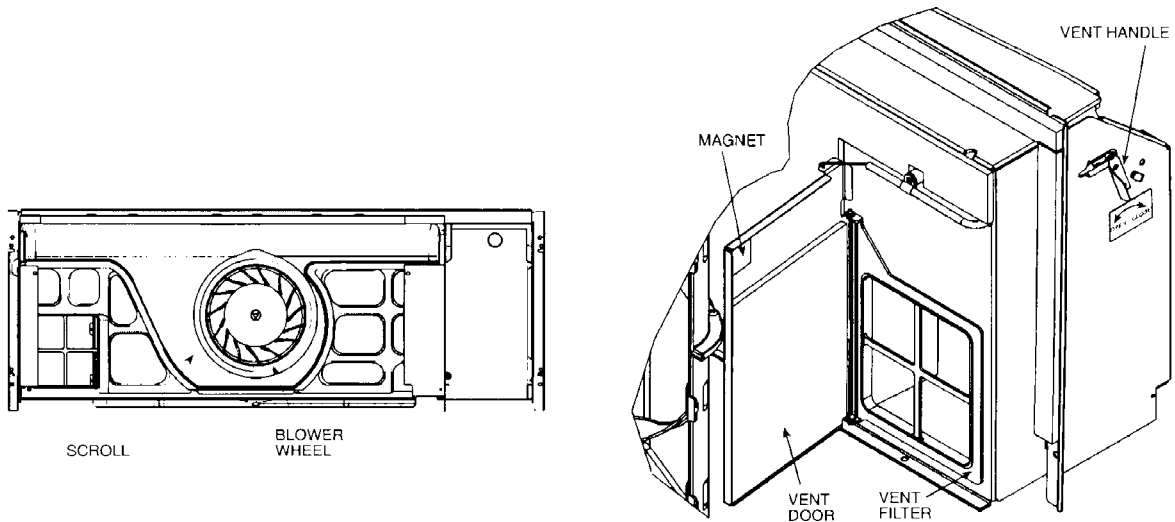
If detergent is used, remove any detergent residue with a gentle stream of clean water

- c. To clean the filter, use a vacuum or soft bristle brush with a small amount of mild detergent.
 - d. Allow filters to air dry.
 - e. Re-insert dry filters back into front panel.

- f. Clean the indoor and outdoor refrigeration coils.



- g. Clean the basepan.
- h. Clean the wire screen.
- i. Clean the outdoor orifice and fan.
- j. Clean the wall sleeve internal surfaces.
- k. Clean the outdoor grille.
- l. Clean the indoor blower wheel.



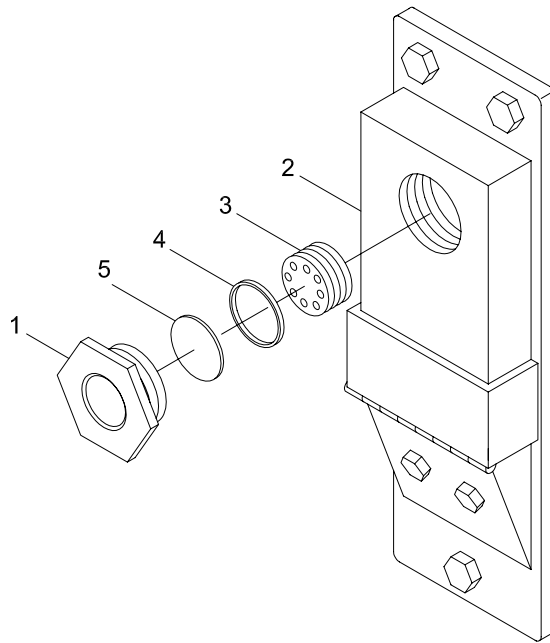
- m. Clean the scroll.
- n. Clean the outdoor vent filter.

13. Lubricate drawer guides on the desk drawers. (exposed gear)

-
14. Secure drawers closed with tape. (ASTM D5486 Type IV)
 15. Preserve Incinolet toilet.
 - a. Remove top of the toilet complete with bowl sections. Clean interior.
 - b. Lightly grease all moving joints of the flushing assembly and foot pedal.
 - c. Clean blower assembly and blower wheels
 - d. Inspect level of catalyst and add if low.
 16. Remove 6 VDC batteries from battle lantern. (WP 0107 00)
 17. Place twenty 80 unit size silica gel desiccant bags on floor.
 18. Close entrance door and seal door gap and all container openings with tape (ASTM D5486 Type IV).
 19. Install humidity indicator cards in observation windows.

NOTE

This procedure is typical for both vent cover assemblies.



- a. Locate vent cover assembly with observation window (1) in upper exterior of container.
- b. Unscrew observation window (1) from vent cover (2).

NOTE

When removing lockscrew and teflon spacer from inside of observation window, ensure loose transparent window and retaining seal remain seated in the bottom of the observation window.

-
- c. Using 1/2 in. hex head wrench, unthread lock screw (3) from inside of observation window (1).
 - d. Remove lock screw (3) and teflon spacer (4) from observation window (1).
 - e. Situate humidity indicator card (5) down inside the observation window (1) with text facing down. Ensure rubber seal immediately beneath the indicator card (5) and the transparent window beneath the seal are properly situated in the observation window.
 - f. Position teflon spacer (4) on top of the indicator card (5).
 - g. Thread lock screw (3) into observation window (1), compressing the teflon spacer (4) and indicator card (5) against the rubber seal and transparent window.
 - h. Using the 1/2 in. hex head wrench, apply approx. 30 in-lbs. of torque to the lock screw (3), providing a seal against outside air.
 - i. Screw the observation window (1) into the vent cover (2) with about 30 in-lbs. of torque.

PRESERVATION EXERCISES DURING LONG TERM STORAGE OR SHIPMENT OF PERSONNEL SHELTER (LEVEL-A)

1. Monthly, inspect reversible humidity indicator cards.
 - a. The humidity indicator card is divided into three equal pie sectors showing 20, 40 and 60 percent relative humidity values. The current relative humidity inside the container may be roughly determined by observing the coloration of the indicator card. Blue coloration of a pie sector indicates the internal humidity level is below the value shown in the sector. Lavender sector color indicates the humidity level is approaching the sector humidity value. Pink sector color indicates the relative humidity is at or has exceeded the sector value.
 - b. The internal humidity level should not exceed 50%. As long as the "60" pie sector is blue, or only slightly lavender, the internal relative humidity has not yet reached 50%.

NOTE

Saturated desiccant may be reactivated or "dried out" for reuse. Reactivated desiccant should retain 80% of its original water vapor adsorption rate and 90% of its original adsorption capacity.

Refer to the reactivation instructions attached to each bag for information on the temperature and time interval over which reactivation occurs.

The humidity indicator cards are most accurate for temperatures around 75° F. Temperatures significantly higher or lower require a small adjustment factor (only about 2% for each 10° F). For high temperatures in excess of 75° F, the card will indicate a lower humidity than is actually the case; for temperatures significantly below 75° F the card will indicate a higher humidity level than is actually the case.

The humidity indicator cards are reversible. When container relative humidity falls, the coloration of the disk sector will change from pink, to lavender, to blue.

If entry into container is required and doors are difficult to open, relieve container vacuum pressure by opening the vent at the bottom of the vent cover assembly.

- c. When the "60" pie sector turns lavender or slightly pink, the internal relative humidity is around 50% or higher. Replace desiccant as necessary to bring the humidity level back down below 50%.

NOTE

If entry into container is required and doors are difficult to open, relieve container vacuum pressure by opening the vent at the bottom of the vent cover assembly.

2. Annually, replace electrical enclosure corrosion inhibitors.

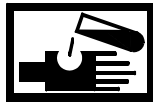
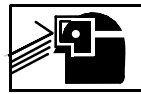
NOTE

If entry into container is required and doors are difficult to open, relieve container vacuum pressure by opening the vent at the bottom of the vent cover assembly.

3. Annually, open container and inspect equipment.

PRESERVE PERSONNEL SHELTER FOR LONG TERM STORAGE OR SHIPMENT (LEVEL-B)

1. Inspect ISO container. (MIL-HDBK-138)
2. Remove rust and corrosion from surfaces of container. (TB 43-0144)
3. Paint surfaces of container. (TB 43-0144)

WARNING**CHEMICAL****EYE PROTECTION**

4. Lubricate chains and binders used for securing container to RRDF with lubricating oil (exposed gear).
5. Open shore tie access cover and preserve interior with one 1 unit size silica gel desiccant bag and one corrosion inhibitor.
6. Attach the shore tie female receptacle cover.
7. Close and secure the shore tie access cover.
8. Install head exhaust vent cover on exterior of container with suitable hardware.
9. Install heat pump vent cover on exterior of container with suitable hardware.
10. Open electrical distribution panel and preserve interior with one 1 unit size silica gel desiccant bag and two corrosion inhibitors.
11. Hang a caution tag from electrical distribution panel stating:

“CAUTION: REMOVE INTERNAL DESICCANTS AND CORROSION INHIBITORS BEFORE APPLYING POWER.”
12. Preserve the heat pump.
 - a. Grasp the filter with both hands.
 - b. Gently pull the filter up and away from the unit

NOTE

If detergent is used, remove any detergent residue with a gentle stream of clean water

- c. To clean the filter, use a vacuum or soft bristle brush with a small amount of mild detergent.
 - d. Allow filters to air dry.
 - e. Re-insert dry filters back into front panel.
 - f. Clean the indoor and outdoor refrigeration coils.
 - g. Clean the basepan.
 - h. Clean the wire screen.
 - i. Clean the outdoor orifice and fan.
 - j. Clean the wall sleeve internal surfaces.
 - k. Clean the outdoor grille.
 - l. Clean the indoor blower wheel.
 - m. Clean the scroll.
 - n. Clean the outdoor vent filter.
13. Lubricate drawer guides on the desk drawers. (exposed gear)
14. Secure drawers closed with tape. (ASTM D5486 Type IV)
15. Preserve Incinolet toilet.
- a. Remove top of the toilet complete with bowl sections. Clean interior.
 - b. Lightly grease all moving joints of the flushing assembly and foot pedal.
 - c. Clean blower assembly and blower wheels
 - d. Inspect level of catalyst and add if low.

16. Remove 6 VDC batteries from battle lantern. (WP 0107 00)

PRESERVATION EXERCISES DURING LONG TERM STORAGE OR SHIPMENT OF PERSONNEL SHELTER (LEVEL-B)**NOTE**

If entry into container is required and doors are difficult to open, relieve container vacuum pressure by opening the vent at the bottom of the vent cover assembly.

1. Annually, replace electrical enclosure corrosion inhibitors.

NOTE

If entry into container is required and doors are difficult to open, relieve container vacuum pressure by opening the vent at the bottom of the vent cover assembly.

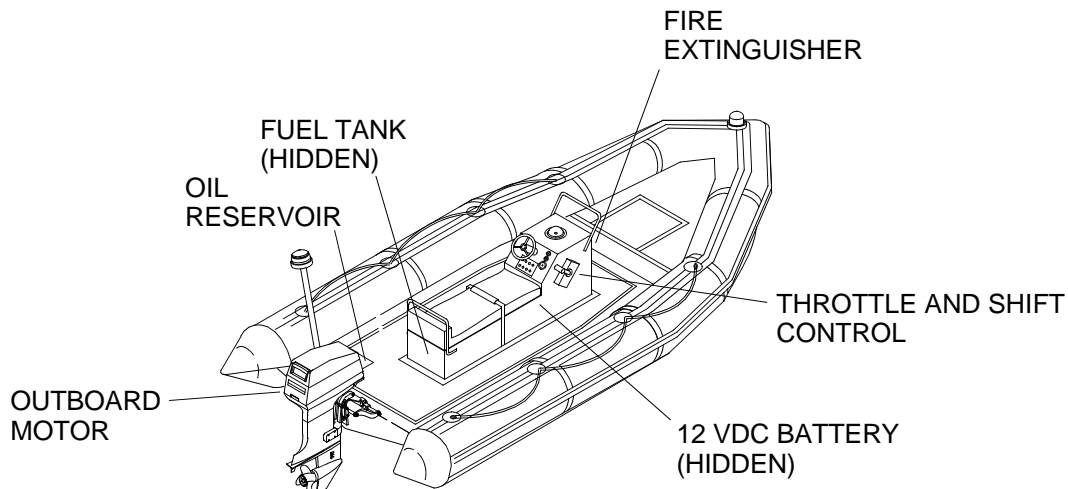
2. Annually, open container and inspect equipment.

PRESERVE PERSONNEL SHELTER FOR SHORT TERM STORAGE OR SHIPMENT

1. Open shore tie access cover and preserve interior with one 1 unit size silica gel desiccant bag and one corrosion inhibitor.
2. Attach the shore tie female receptacle cover.
3. Close and secure the shore tie access cover.
4. Install head exhaust vent cover on exterior of container with suitable hardware.
5. Install heat pump vent cover on exterior of container with suitable hardware.
6. Open electrical distribution panel and preserve interior with one 1 unit size silica gel desiccant bag and two corrosion inhibitors.
7. Hang a caution tag from electrical distribution panel stating:

“CAUTION: REMOVE INTERNAL DESICCANTS AND CORROSION INHIBITORS BEFORE APPLYING POWER.”

8. Preserve Incinolet toilet.
 - a. Empty ash pan.
 - b. Disconnect from electrical power source.
 - c. Clean surfaces with detergent and water. Do not hose down.

PRESERVE RHIB AND OUTBOARD MOTOR FOR LONG TERM STORAGE OR SHIPMENT (LEVEL-A)

-
1. Inspect ISO container. (MIL-HDBK-138)
 2. Remove rust and corrosion from surfaces of container. (TB 43-0144)
 3. Paint surfaces of container. (TB 43-0144)
 4. Verify RHIB interior and exterior surfaces are clean of debris. (TM 55-1945-224-14&P)
 5. Verify outboard motor exterior surface is clean of debris. (TM 55-1945-221-14&P)
 6. Flush the outboard motor. (TM 55-1945-221-14&P)
 7. Drain the outboard motor. (TM 55-1945-221-14&P)
 8. Lubricate the outboard motor. (TM 55-1945-221-14&P)
 9. Preserve outboard motor for off-season storage. (TM 55-1945-221-14&P)
 10. Verify cavity and bilge sumps are dry and drain plugs are installed. (TM 55-1945-224-14&P)
 11. Verify gasoline tanks are completely empty. (TM 55-1945-224-14&P)
 12. Spray inside of each tank with atomized preservation oil. (P-10, MIL-PRF-21260 Grade 10)
 13. Disconnect quick-release fuel line from fuel tank. Wrap hose end in protective covering to prevent contamination.
 14. Verify oil tank is completely full. (TM 55-1945-224-14&P)
 15. Lubricate the RHIB. (TM 55-1945-224-14&P)
 16. Disconnect battery and turn into unit maintenance per local procedures.
 17. Apply grease to exposed ends of battery cables. (Triple-Guard Grease)
 18. Inspect and touch-up or repair fiberglass surfaces of RHIB. Contact unit maintenance.
 19. Inspect and repair inflatable hull. Contact unit maintenance.
 20. Relieve pressure on inflatable collar.

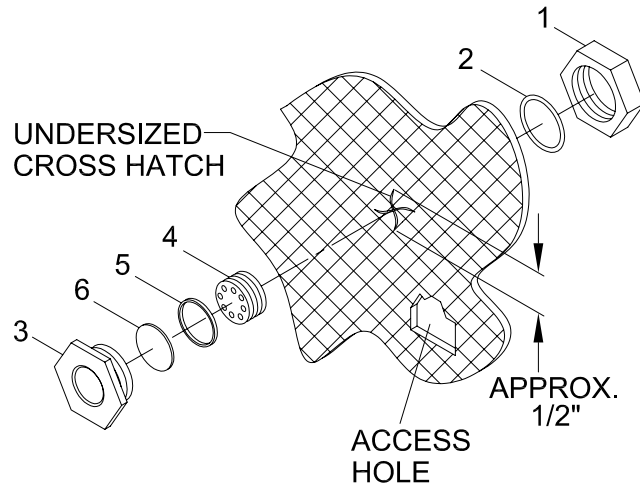
NOTE

Inflatable boat collar is not equipped with overpressure relief valves. Increases in temperature may result in tube expansion causing collar damage.

- a. For each collar inflatable chamber, remove inflation valve cover cap by turning counterclockwise one quarter turn.
 - b. Release chamber pressure at each chamber inflation valve.
 - c. Reinstall each inflation valve cover cap.
21. Wrap RHIB and motor with Corrosion Intercept Stretch Wrap per the procedures at the end of this work package.
 22. Place six 80 unit size silica gel desiccant bags inside barrier wrap encasing RHIB and motor.

23. Install reversible humidity indicator card inside barrier wrap encasing RHIB and motor.

- a. Cut an undersized cross hatch through barrier wrap (approx. 1/2 in. long).



- b. Cut access hole into barrier wrap sufficiently large to pass hand through.
 c. Remove outer nut (1) and gasket (2) from observation window (3).

NOTE

When removing lock screw and teflon spacer from inside of observation window, ensure loose transparent window and retaining seal remain seated in the bottom of the observation window.

- d. Using 1/2 in. hex head wrench, unthread lock screw (4) from inside of observation window (3).
 e. Remove lock screw (4) and teflon spacer (5) from observation window (3).
 f. Situate humidity indicator card (6) down inside the observation window (3) with text facing down. Ensure rubber seal immediately beneath the indicator card (6) and the transparent window beneath the seal are properly situated in the observation window.
 g. Position teflon spacer (5) on top of the indicator card (6).
 h. Thread lock screw (4) into observation window (3), compressing the teflon spacer (5) and indicator card (6) against the rubber seal and transparent window.
 i. Using the 1/2 in. hex head wrench, apply approx. 30 in-lbs. of torque to the lock screw (4), providing a seal against outside air.
 j. Carefully insert the assembled observation window (3) through the undersized cross hatch for a snug fit.
 k. Holding the assembled observation window (3) with one hand, reach through the access hole with the other hand and slide the gasket (2) and outer nut (1) onto the observation window (3) threads.
 l. Snug the outer nut (1) onto the observation window (3).
 m. Seal the access hole with tape.

PRESERVATION EXERCISES DURING LONG TERM STORAGE OR SHIPMENT OF RHIB AND OUTBOARD MOTOR (LEVEL-A)

1. Monthly, inspect reversible humidity indicator card.
 - a. The humidity indicator card is divided into three equal pie sectors showing 20, 40 and 60 percent relative humidity values. The current relative humidity inside the container may be roughly determined by observing the coloration of the indicator card. Blue coloration of a pie sector indicates the internal humidity level is below the value shown in the sector. Lavender sector color indicates the humidity level is approaching the sector humidity value. Pink sector color indicates the relative humidity is at or has exceeded the sector value.
 - b. The internal humidity level should not exceed 50%. As long as the "60" pie sector is blue, or only slightly lavender, the internal relative humidity has not yet reached 50%.

NOTE

Saturated desiccant may be reactivated or "dried out" for reuse. Reactivated desiccant should retain 80% of its original water vapor adsorption rate and 90% of its original adsorption capacity.

Refer to the reactivation instructions attached to each bag for information on the temperature and time interval over which reactivation occurs.

The humidity indicator cards are most accurate for temperatures around 75° F. Temperatures significantly higher or lower require a small adjustment factor (only about 2% for each 10° F). For high temperatures in excess of 75° F, the card will indicate a lower humidity than is actually the case; for temperatures significantly below 75° F the card will indicate a higher humidity level than is actually the case.

The humidity indicator cards are reversible. When container relative humidity falls, the coloration of the disk sector will change from pink, to lavender, to blue.

If access to the desiccant inside the barrier wrap is required, it will be necessary to cut an access hole in the barrier wrap, or to remove the barrier wrap completely. When finished, seal the hole with tape, or reapply the barrier wrap.

- c. When the "60" pie sector turns lavender or slightly pink, the internal relative humidity is around 50% or higher. Replace desiccant as necessary to bring the humidity level back down below 50%.
2. Annually, open container and inspect equipment.

PRESERVE RHIB OUTBOARD MOTOR AND CONTAINER FOR LONG TERM STORAGE OR SHIPMENT (LEVEL-B)

1. Inspect ISO container. (MIL-HDBK-138)
2. Remove rust and corrosion from surfaces of container. (TB 43-0144)
3. Paint surfaces of container. (TB 43-0144)
4. Verify RHIB interior and exterior surfaces are clean of debris. (TM 55-1945-224-14&P)
5. Verify outboard motor exterior surface is clean of debris. (TM 55-1945-221-14&P)
6. Flush the outboard motor. (TM 55-1945-221-14&P)

-
7. Drain the outboard motor. (TM 55-1945-221-14&P)
 8. Lubricate the outboard motor. (TM 55-1945-221-14&P)
 9. Preserve outboard motor for off-season storage. (TM 55-1945-221-14&P)
 10. Verify cavity and bilge sumps are dry and drain plugs are installed. (TM 55-1945-224-14&P)
 11. Verify gasoline tanks are completely empty. (TM 55-1945-224-14&P)
 12. Spray inside of each tank with atomized preservation oil. (P-10, MIL-PRF-21260 Grade 10)
 13. Disconnect quick-release fuel line from fuel tank. Wrap hose end in protective covering to prevent contamination.
 14. Verify oil tank is completely full. (TM 55-1945-224-14&P)
 15. Lubricate the RHIB. (TM 55-1945-224-14&P)
 16. Disconnect battery and turn into unit maintenance per local procedures.
 17. Apply grease to exposed ends of battery cables. (Triple-Guard Grease)
 18. Inspect and touch-up or repair fiberglass surfaces of RHIB. Contact unit maintenance.
 19. Inspect and repair inflatable hull. Contact unit maintenance.
 20. Relieve pressure on inflatable collar.

NOTE

Inflatable boat collar is not equipped with overpressure relief valves. Increases in temperature may result in tube expansion causing collar damage.

- a. For each collar inflatable chamber, remove inflation valve cover cap by turning counterclockwise one quarter turn.
- b. Release chamber pressure at each chamber inflation valve.
- c. Reinstall each inflation valve cover cap.

PRESERVATION EXERCISES DURING LONG TERM STORAGE OR SHIPMENT OF RHIB, OUTBOARD MOTOR AND CONTAINER (LEVEL-B)

1. Annually, open container and inspect equipment.

PRESERVE RHIB, OUTBOARD MOTOR AND CONTAINER FOR SHORT TERM STORAGE OR SHIPMENT

1. Verify RHIB interior and exterior surfaces are clean of debris. (TM 55-1945-224-14&P)
2. Verify outboard motor exterior surface is clean of debris. (TM 55-1945-221-14&P)
3. Flush the outboard motor. (TM 55-1945-221-14&P)
4. Drain the outboard motor. (TM 55-1945-221-14&P)

-
5. Verify gasoline tanks are completely empty. (TM 55-1945-224-14&P)
 6. Spray inside of each tank with atomized preservation oil. (P-10, MIL-PRF-21260 Grade 10)
 7. Verify battery fluid levels and replenish with distilled water. (TM 55-1945-224-14&P)
 8. Verify battery charge level and recharge. (TM 9-6140-200-14)
 9. Apply grease to exposed areas of battery posts and cable ends. Cover the connections. (Triple-Guard Grease)
 10. Verify oil tank is completely full. (TM 55-1945-224-14&P)
 11. Verify RHIB high capacity drains are open. (TM 55-1945-224-14&P)
 12. Lower RHIB high capacity drain trunk. (TM 55-1945-224-14&P)
 13. Relieve pressure on inflatable collar.

NOTE

Inflatable boat collar is not equipped with overpressure relief valves. Increases in temperature may result in tube expansion causing collar damage.

- a. For each collar inflatable chamber, remove inflation valve cover cap by turning counterclockwise one quarter turn.
- b. Release chamber pressure at each chamber inflation valve.
- c. Reinstall each inflation valve cover cap.

RHIB AND OUTBOARD MOTOR DEPRESERVATION

1. Remove Corrosion Intercept Stretch Wrap.

NOTE

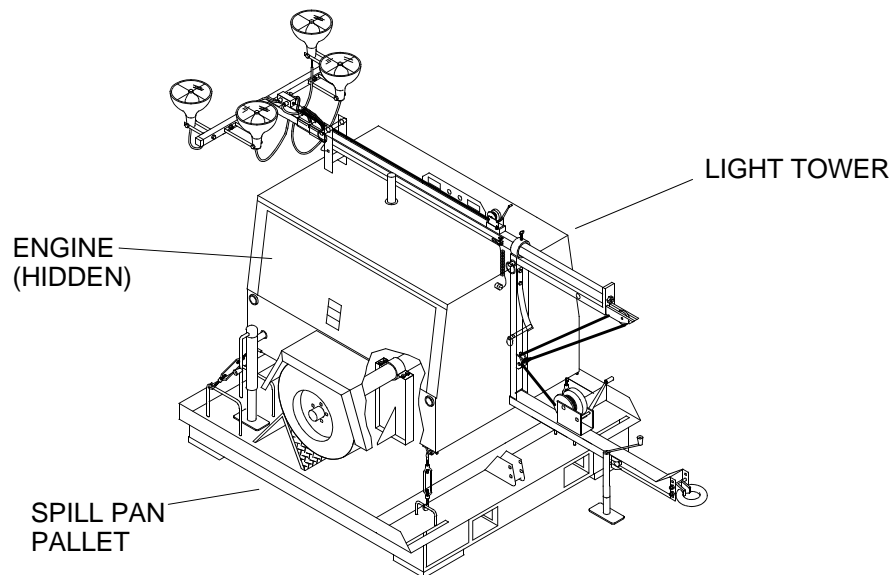
The desiccant may be reactivated or "dried out" for future use.

Refer to reactivation instructions attached to each bag for information on the temperature and time interval over which reactivation occurs.

2. Remove six 80 unit size silica gel desiccant bags.
3. Ensure fire extinguisher is ready for operation.
 - a. Check to see that the extinguisher is properly charged. The pointer on the pressure indicator **MUST** be in the green section. If the pointer is in the red or white section, the extinguisher is **NOT** ready for use.
 - b. Be sure the lock pin is firmly in place.
 - c. Check for dents, scratches, corrosion, or any other damage.
 - d. Check the discharge nozzle. Make sure it is clean and free of obstructions.
4. Remove protective covering from quick release fuel line. Connect the line to the gasoline tank

5. Install 12v, xxAH, marine starting battery (TM 55-1945-224-14&P).
 - a. Attach the leads to the battery (TM 55-1945-224-14&P).
 - b. Check battery fluid level (TM 55-1945-224-14&P).
 - c. Check battery state of charge (TM 55-1945-224-14&P).
 - d. Apply OMC Triple-Guard grease to exposed areas of battery posts and cable ends to prevent corrosion (TM 55-1945-224-14&P).
6. Confirm that the inflatable collar is at correct operating pressure (TM 55-1945-224-14&P).
7. Raise the high capacity drain trunks (TM 55-1945-224-14&P).

PRESERVE LIGHT TOWERS, POWER UNITS AND CONTAINERS FOR LONG TERM STORAGE OR SHIPMENT (LEVEL-A)



1. Inspect ISO containers. (MIL-HDBK-138)
2. Remove rust and corrosion from surfaces of containers, light towers and power units. (TB 43-0144)
3. Paint surfaces of containers, light towers and power units. (TB 43-0144)
4. Replace crankcase oil with preservation oil (MIL-PRF-21260E). (TM 55-1945-217-14&P)
5. Attach a tag to the unit in a visible location that states the following:

“CAUTION: ENGINE OIL IN UNIT FOR PRESERVATION OR SHORT ENGINE “EXERCISING” DURING STORAGE ONLY. BEFORE PLACING UNIT INTO OPERATION, OIL MUST BE DRAINED AND REPLACED WITH OIL CONFORMING TO MIL-PRF-2104G OR HAVING PROPERTIES OF API CLASSIFICATION CD/CE GRADES.”
6. Replace engine oil filter. (TM 55-1945-218-14&P)

7. Verify coolant levels and test consistency in radiator and reserve reservoir. Replenish with water and antifreeze (50/50 mixture). (TM 55-1945-217-14&P)
8. Preserve fuel system.

WARNING



CHEMICAL



EYE PROTECTION

- a. Disconnect engine fuel intake line from fuel supply tank (TM 55-1945-217-14&P).

WARNING



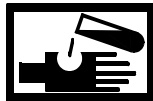
CHEMICAL



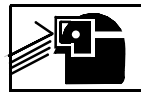
EYE PROTECTION

- b. Disconnect injector fuel return line at the fuel tank and allow fuel to drain into drain pan (TM 55-1945-217-14&P).

WARNING



CHEMICAL



EYE PROTECTION

- c. Fill a container with operating fuel.

WARNING



CHEMICAL



EYE PROTECTION

- d. Fill a container with preservation oil (P-10, MIL-PRF-21260 Grade 10).
- e. Place the fuel intake line in the container holding fuel.
- f. Start engine and operate at fast idle until thoroughly warm.
- g. Accelerate engine to 3/4 speed.

NOTE

Note any color difference between the preservation oil and the operating fuel as an aid to determining when preservation oil is exiting the fuel return line.

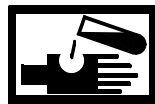
- h. While operating engine at 3/4 speed, move fuel intake line to container holding preservation oil. Run engine until preservation oil is observed exiting fuel return line.
- i. Stop engine.
- j. Reconnect engine fuel intake line at fuel supply tank (TM 55-1945-217-14&P).
- k. Reconnect injector fuel return line at fuel tank (TM 55-1945-217-14&P).

NOTE

To avoid engine hydrostatic lockup when preserving combustion chambers and valves, do not atomize more than 1/2 ounce of preservation oil per cylinder (1-1/2 ounces total).

9. Preserve combustion chambers and valves.
 - a. Allow engine to cool to cylinder head temperature of 100° F or less, measured at injector nozzle flange area surfaces of each cylinder.
 - b. Remove intake manifolds, exhaust manifolds, and rocker arm covers (TM 55-1945-218-14&P).
 - c. Completely close fuel throttle.

WARNING



CHEMICAL



EYE PROTECTION

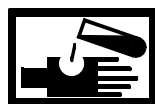
NOTE

Do not exceed 25 psi for atomizing spray pressure.

Atomize 1/4 of the total of 1/2 ounce of preservation oil per cylinder (3/8 ounce total).

- d. Manually depress and hold open each intake valve while spraying 1/4 of total atomized preservation oil (PE-10, MIL-PRF-21260 Grade 10) into each cylinder through open intake port (TM 55-1945-218-14&P).

WARNING



CHEMICAL



EYE PROTECTION

NOTE

Do not exceed 25 psi for atomizing spray pressure.

Atomize 1/4 of the total of 1/2 ounce of preservation oil per cylinder (3/8 ounce total).

- e. Manually depress and hold open each exhaust valve while spraying 1/4 of total atomized preservation oil (PE-10, MIL-PRF-21260 Grade 10) into each cylinder through open exhaust port (TM 55-1945-218-14&P).

NOTE

To reduce likelihood of engine firing and running on preservation oil, avoid continuous rotation of engine crankshaft with starting motor.

- f. Rock engine crankshaft with starting motor until all pistons have completed a full cycle.
- g. Repeat steps d and e above, using all remaining preservation oil (PE-10, MIL-PRF-21260 Grade 10). Do not repeat step f.

NOTE

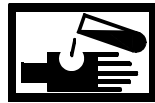
Replace gaskets if original gaskets evidence damage.

- h. Replace exhaust and intake manifolds (TM 55-1945-218-14&P).
- i. Spray atomized preservation oil (PE-10, MIL-PRF-21260 Grade 10) onto rocker arm assemblies, springs, guides, valve stems, push rods and the insides of rocker arm covers (TM 55-1945-218-14&P).

NOTE

Replace gaskets if original gaskets evidence damage.

- j. Install rocker arm covers (TM 55-1945-218-14&P).
10. Attach a tag to the unit in a visible location that states the following:
- “ENGINE PRESERVED - DO NOT OPERATE WITHOUT DEPRESERVATION.”
11. Remove air cleaner assembly (TM 55-1945-218-14&P).

WARNING**CHEMICAL****EYE PROTECTION**

12. Spray one ounce of atomized preservation oil (MIL-PRF-21260, Grade 30) into air intake tube.
13. Open air cleaner assembly and remove air filter element (TM 55-1945-218-14&P).

WARNING**CHEMICAL****EYE PROTECTION****NOTE**

Exercise care to prevent preservative oil from contacting nonmetallic elements.

14. Spray unpainted, uncoated interior air cleaner metal surfaces with atomized preservation oil (MIL-PRF-21260, Grade 30).

-
15. Reinstall air filter element in air cleaner assembly (TM 55-1945-218-14&P).
 16. Reinstall air cleaner assembly (TM 55-1945-218-14&P).
 17. Relieve drive belt tension (TM 55-1945-218-14&P).
 18. Attach a tag to the unit in a visible location that states the following:

“BELT TENSION RELIEVED - ADJUST PRIOR TO STARTING ENGINE”

WARNING



CHEMICAL

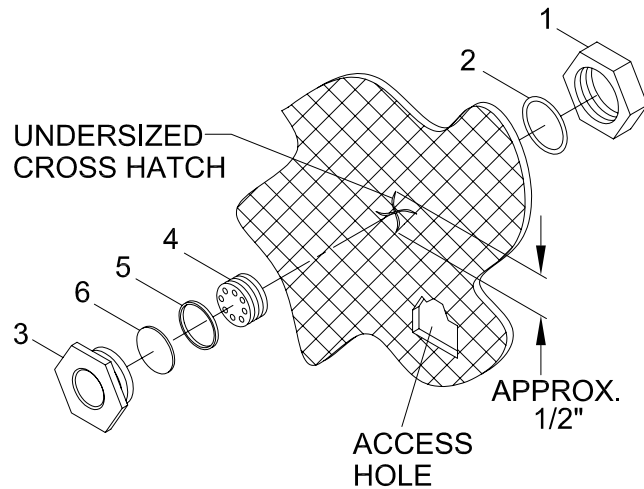


EYE PROTECTION

19. Spray interior surfaces of exhaust piping with atomized preservation oil (MIL-PRF-21260, Grade 30) (TM 55-1945-217-14&P).
20. Disconnect battery and turn into unit maintenance per local procedures. Attach a tag to the power unit stating the following:

“BATTERY REMOVED FOR STORAGE. INSTALL BATTERY UPON DEPRESERVATION.”
21. Drain the fuel tank. (TM 55-1945-217-14&P)
22. Lubricate tower and drawbar winch ropes. (TM 55-1945-217-14&P)
23. Spray all exposed rubber and electrical connections with silicone. (G623)
24. Seal all engine openings with tape (ASTM D5486 Type IV).
25. Wrap each light tower power unit with Corrosion Intercept Stretch Wrap per the procedures at the end of this work package.
26. Place three 80 unit size silica gel desiccant bags inside barrier wrap encasing each light tower power unit.
27. Install humidity indicator card inside barrier wrap encasing each light tower power unit.

- a. Cut an undersized cross hatch through barrier wrap (approx. 1/2 in. long).



- b. Cut access hole into barrier wrap sufficiently large to pass hand through.
 c. Remove outer nut (1) and gasket (2) from observation window (3).

NOTE

When removing lock screw and teflon spacer from inside of observation window, ensure loose transparent window and retaining seal remain seated in the bottom of the observation window.

- d. Using 1/2 in. hex head wrench, unthread lock screw (4) from inside of observation window (3).
 e. Remove lock screw (4) and teflon spacer (5) from observation window (3).
 f. Situate humidity indicator card (6) down inside the observation window (3) with text facing down. Ensure rubber seal immediately beneath the indicator card (6) and the transparent window beneath the seal are properly situated in the observation window.
 g. Position teflon spacer (5) on top of the indicator card (6).
 h. Thread lock screw (4) into observation window (3), compressing the teflon spacer (5) and indicator card (6) against the rubber seal and transparent window.
 i. Using the 1/2 in. hex head wrench, apply approx. 30 in-lbs. of torque to the lock screw (4), providing a seal against outside air.
 j. Carefully insert the assembled observation window (3) through the undersized cross hatch for a snug fit.
 k. Holding the assembled observation window (3) with one hand, reach through the access hole with the other hand and slide the gasket (2) and outer nut (1) onto the observation window (3) threads.
 l. Snug the outer nut (1) onto the observation window (3).
 m. Seal the access hole with tape.

**PRESERVATION EXERCISES DURING LONG TERM STORAGE OR SHIPMENT OF
POWER UNITS, LIGHT TOWERS AND CONTAINERS (LEVEL-A)**

1. Monthly, inspect reversible humidity indicator cards.
 - a. The humidity indicator card is divided into three equal pie sectors showing 20, 40 and 60 percent relative humidity values. The current relative humidity inside the container may be roughly determined by observing the coloration of the indicator card. Blue coloration of a pie sector indicates the internal humidity level is below the value shown in the sector. Lavender sector color indicates the humidity level is approaching the sector humidity value. Pink sector color indicates the relative humidity is at or has exceeded the sector value.
 - b. The internal humidity level should not exceed 50%. As long as the "60" pie sector is blue, or only slightly lavender, the internal relative humidity has not yet reached 50%.

NOTE

Saturated desiccant may be reactivated or "dried out" for reuse. Reactivated desiccant should retain 80% of its original water vapor adsorption rate and 90% of its original adsorption capacity.

Refer to the reactivation instructions attached to each bag for information on the temperature and time interval over which reactivation occurs.

The humidity indicator cards are most accurate for temperatures around 75° F. Temperatures significantly higher or lower require a small adjustment factor (only about 2% for each 10° F). For high temperatures in excess of 75° F, the card will indicate a lower humidity than is actually the case; for temperatures significantly below 75° F the card will indicate a higher humidity level than is actually the case.

The humidity indicator cards are reversible. When container relative humidity falls, the coloration of the disk sector will change from pink, to lavender, to blue.

If access to the desiccant inside the barrier wrap is required, it will be necessary to cut an access hole in the barrier wrap, or to remove the barrier wrap completely. When finished, seal the hole with tape, or reapply the barrier wrap.

- c. When the "60" pie sector turns lavender or slightly pink, the internal relative humidity is around 50% or higher. Replace desiccant as necessary to bring the humidity level back down below 50%.
2. Annually, verify coolant levels and test consistency in radiator and reserve reservoir. Replenish with water and antifreeze (50/50 mixture). (TM 55-1945-217-14&P)
 3. Annually, lubricate valve guides and valve stem seals with engine oil before starting the engine. Run engine under no load for approximately five minutes. (TM 55-1945-218-14&P)

**PRESERVE POWER UNITS, LIGHT TOWERS AND CONTAINERS FOR LONG TERM
STORAGE OR SHIPMENT (LEVEL-B)**

1. Inspect ISO containers. (MIL-HDBK-138)
2. Remove rust and corrosion from surfaces of containers, power units and light towers. (TB 43-0144)
3. Paint surfaces of containers, power units and light towers. (TB 43-0144)
4. Replace crankcase oil with preservation oil (MIL-PRF-21260E). (TM 55-1945-217-14&P)

5. Attach a tag to the unit in a visible location that states the following:

“CAUTION: ENGINE OIL IN UNIT FOR PRESERVATION OR SHORT ENGINE “EXERCISING” DURING STORAGE ONLY. BEFORE PLACING UNIT INTO OPERATION, OIL MUST BE DRAINED AND REPLACED WITH OIL CONFORMING TO MIL-PRF-2104G OR HAVING PROPERTIES OF API CLASSIFICATION CD/CE GRADES.”

6. Replace engine oil filter. (TM 55-1945-218-14&P)
7. Verify coolant levels and test consistency in radiator and reserve reservoir. Replenish with water and antifreeze (50/50 mixture). (TM 55-1945-217-14&P)
8. Preserve fuel system.

WARNING



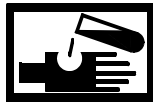
CHEMICAL



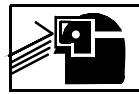
EYE PROTECTION

- a. Disconnect engine fuel intake line from fuel supply tank (TM 55-1945-217-14&P).

WARNING



CHEMICAL



EYE PROTECTION

- b. Disconnect injector fuel return line at the fuel tank and allow fuel to drain into drain pan (TM 55-1945-217-14&P).

WARNING



CHEMICAL



EYE PROTECTION

- c. Fill a container with operating fuel.

WARNING



CHEMICAL



EYE PROTECTION

- d. Fill a container with preservation oil (P-10, MIL-PRF-21260 Grade 10).
- e. Place the fuel intake line in the container holding fuel.

-
- f. Start engine and operate at fast idle until thoroughly warm.
 - g. Accelerate engine to 3/4 speed.

NOTE

Note any color difference between the preservation oil and the operating fuel as an aid to determining when preservation oil is exiting the fuel return line.

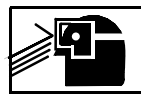
- h. While operating engine at 3/4 speed, move fuel intake line to container holding preservation oil. Run engine until preservation oil is observed exiting fuel return line.
- i. Stop engine.
- j. Reconnect engine fuel intake line at fuel supply tank (TM 55-1945-217-14&P).
- k. Reconnect injector fuel return line at fuel tank (TM 55-1945-217-14&P).

NOTE

To avoid engine hydrostatic lockup when preserving combustion chambers and valves, do not atomize more than 1/2 ounce of preservation oil per cylinder (1-1/2 ounces total).

- 9. Preserve combustion chambers and valves.
 - a. Allow engine to cool to cylinder head temperature of 100° F or less, measured at injector nozzle flange area surfaces of each cylinder.
 - b. Remove intake manifolds, exhaust manifolds, and rocker arm covers (TM 55-1945-218-14&P).
 - c. Completely close fuel throttle.

WARNING

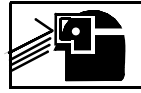
**CHEMICAL****EYE PROTECTION****NOTE**

Do not exceed 25 psi for atomizing spray pressure.

Atomize 1/4 of the total of 1/2 ounce of preservation oil per cylinder (3/8 ounce total).

- d. Manually depress and hold open each intake valve while spraying 1/4 of total atomized preservation oil (PE-10, MIL-PRF-21260 Grade 10) into each cylinder through open intake port (TM 55-1945-218-14&P).

WARNING

**CHEMICAL****EYE PROTECTION****NOTE**

Do not exceed 25 psi for atomizing spray pressure.

Atomize 1/4 of the total of 1/2 ounce of preservation oil per cylinder (3/8 ounce total).

- e. Manually depress and hold open each exhaust valve while spraying 1/4 of total atomized preservation oil (PE-10, MIL-PRF-21260 Grade 10) into each cylinder through open exhaust port (TM 55-1945-218-14&P).

NOTE

To reduce likelihood of engine firing and running on preservation oil, avoid continuous rotation of engine crankshaft with starting motor.

- f. Rock engine crankshaft with starting motor until all pistons have completed a full cycle.
- g. Repeat steps d and e above, using all remaining preservation oil (PE-10, MIL-PRF-21260 Grade 10). Do not repeat step f.

NOTE

Replace gaskets if original gaskets evidence damage.

- h. Replace exhaust and intake manifolds (TM 55-1945-218-14&P).
- i. Spray atomized preservation oil (PE-10, MIL-PRF-21260 Grade 10) onto rocker arm assemblies, springs, guides, valve stems, push rods and the insides of rocker arm covers (TM 55-1945-218-14&P).

NOTE

Replace gaskets if original gaskets evidence damage.

- j. Install rocker arm covers (TM 55-1945-218-14&P).
10. Attach a tag to the unit in a visible location that states the following:
- “ENGINE PRESERVED - DO NOT OPERATE WITHOUT DEPRESERVATION.”
11. Remove air cleaner assembly (TM 55-1945-218-14&P).

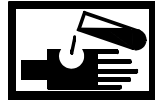
WARNING

**CHEMICAL****EYE PROTECTION**

- 12. Spray one ounce of atomized preservation oil (MIL-PRF-21260, Grade 30) into air intake tube.

-
13. Open air cleaner assembly and remove air filter element (TM 55-1945-218-14&P).

WARNING



CHEMICAL



EYE PROTECTION

NOTE

Exercise care to prevent preservative oil from contacting nonmetallic elements.

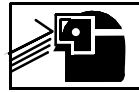
14. Spray unpainted, uncoated interior air cleaner metal surfaces with atomized preservation oil (MIL-PRF-21260, Grade 30).
15. Reinstall air filter element in air cleaner assembly (TM 55-1945-218-14&P).
16. Reinstall air cleaner assembly (TM 55-1945-218-14&P).
17. Relieve drive belt tension (TM 55-1945-218-14&P).
18. Attach a tag to the unit in a visible location that states the following:

“BELT TENSION RELIEVED - ADJUST PRIOR TO STARTING ENGINE”

WARNING



CHEMICAL



EYE PROTECTION

19. Spray interior surfaces of exhaust piping with atomized preservation oil (MIL-PRF-21260, Grade 30) (TM 55-1945-217-14&P).
20. Disconnect battery and turn into unit maintenance per local procedures. Attach a tag to the power unit stating the following:
- “BATTERY REMOVED FOR STORAGE. INSTALL BATTERY UPON DEPRESERVATION.”
21. Drain the fuel tank. (TM 55-1945-217-14&P)
22. Lubricate tower and drawbar winch ropes. (TM 55-1945-217-14&P)
23. Spray all exposed rubber and electrical connections with silicone. (G623)
24. Seal all engine openings with tape (ASTM D5486 Type IV).

PRESERVATION EXERCISES DURING LONG TERM STORAGE OR SHIPMENT OF POWER UNITS, LIGHT TOWERS AND CONTAINERS (LEVEL-B)

1. Annually, verify coolant levels and test consistency in radiator and reserve reservoir. Replenish with water and antifreeze (50/50 mixture). (TM 55-1945-217-14&P)

2. Annually, lubricate valve guides and valve stem seals with engine oil before starting the engine. Run engine under no load for approximately five minutes. (TM 55-1945-218-14&P)

PRESERVE POWER UNITS, LIGHT TOWERS AND CONTAINERS FOR SHORT TERM STORAGE OR SHIPMENT

1. Verify crankcase oil level is full. (TM 55-1945-217-14&P)
2. Verify radiator coolant level is full. (TM 55-1945-217-14&P)
3. Verify battery fluid levels and replenish with distilled water. (TM 55-1945-217-14&P)
4. Verify battery charge level and recharge. (TM 9-6140-200-14)
5. Verify battery connections are clean and secure. (TM 55-1945-217-14&P)
6. Verify fuel tank is empty. (TM 55-1945-217-14&P)

DEPRESERVATION INSTRUCTIONS FOR POWER UNITS AND LIGHT TOWERS

1. Remove Corrosion Intercept Stretch Wrap from power unit.

NOTE

The desiccant may be reactivated or "dried out" for future use.

Refer to reactivation instructions attached to each bag for information on the temperature and time interval over which reactivation occurs.

2. Remove three 80 unit size silica gel desiccant bags.

NOTE

Do not use No. 2 diesel fuel, as the Army has experienced fuel line fouling from bio-growth. This Kubota engine has not been tested with JP-8 fuel; use of this fuel is not recommended.

Important: Be sure to use a strainer when filling the fuel tank, or dirt or sand in the fuel may cause trouble in the fuel injection pump.

3. Fill fuel tank, using JP-5 fuel. The tank capacity is 30 US gallons.
4. Verify coolant levels and test consistency in radiator and reserve reservoir. Replenish with water and antifreeze (50/50 mixture). (TM 55-1945-217-14&P)
5. Install fresh 12 V battery.
6. Ensure the battery posts and attached cables are clean, using a wire brush if required. Apply a light coat of grease found in the BII to the terminals and cable ends. Use either the supplied grease gun with a 10 oz. tube, or grease from the 1 qt. pail.
7. Inspect the level of water in the battery. If required, add only distilled water (TM 55-1945-217-14&P).
8. Charge Battery to full charge (TM 55-1945-217-14&P).
9. Check the fuel/water separator on the engine. Drain any accumulated water (TM 55-1945-218-14&P).

-
10. Bleed the fuel system (TM 55-1945-217-14&P)
 11. Drain engine preservation oil and replace with oil conforming to MIL-PRF-2104G, or having properties of API classification CD/CE grades (TM 55-1945-217-14&P).
 12. Replace engine oil filter. (TM 55-1945-218-14&P)
 13. Adjust drive belt tension (TM 55-1945-218-14&P).
 14. Remove tape (ASTM D5486 Type IV) from all engine openings.

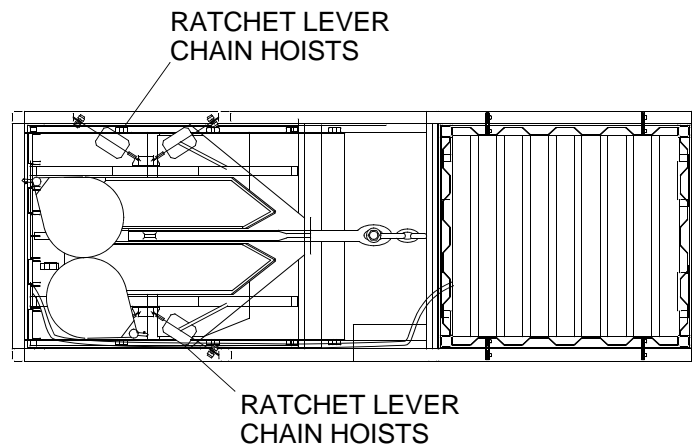
**PRESERVE EASY CONTAINER FOR LONG TERM STORAGE OR SHIPMENT
(LEVEL-A & -B)**

WARNING

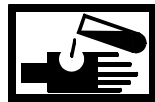


EYE PROTECTION

1. Clean chains of ratchet lever hoists with wire brush to remove corrosion.



WARNING



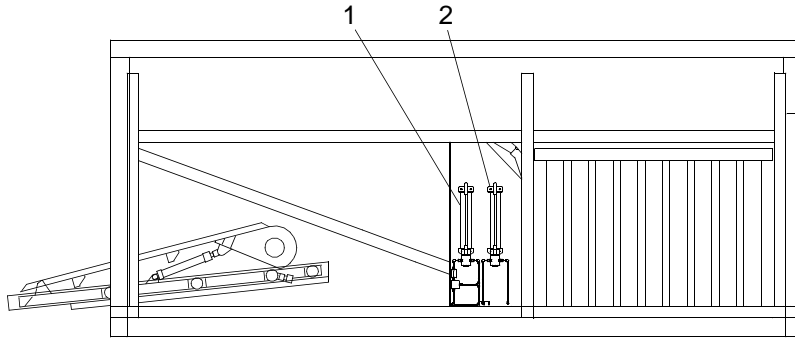
CHEMICAL



EYE PROTECTION

2. Apply lubricating oil (exposed gear) to chains, rotation section of bottom hooks and chain guides.

3. Change oil in anchor lift pump (1). (TM 55-1945-216-24)

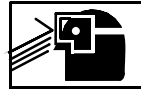


4. Change oil in anchor drawer pump (2). (TM 55-1945-216-24)

WARNING



CHEMICAL



EYE PROTECTION

5. Lubricate chains and binders used for securing EASY container to RRDF with lubricating oil (exposed gear).
6. Deflate buoys.
7. Inspect ISO container. (MIL-HDBK-138)
8. Remove rust and corrosion from surfaces of anchor, chain, mooring box, anchor drawer, lift platform, launch frame and container. (TB 43-0144)
9. Paint surfaces of anchor, chain, mooring box, anchor drawer, lift platform, launch frame and container. (TB 43-0144)

PRESERVE EASY CONTAINER FOR SHORT TERM STORAGE OR SHIPMENT

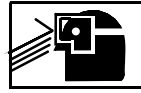
WARNING



EYE PROTECTION

1. Clean chains of ratchet lever hoists with wire brush to remove corrosion.

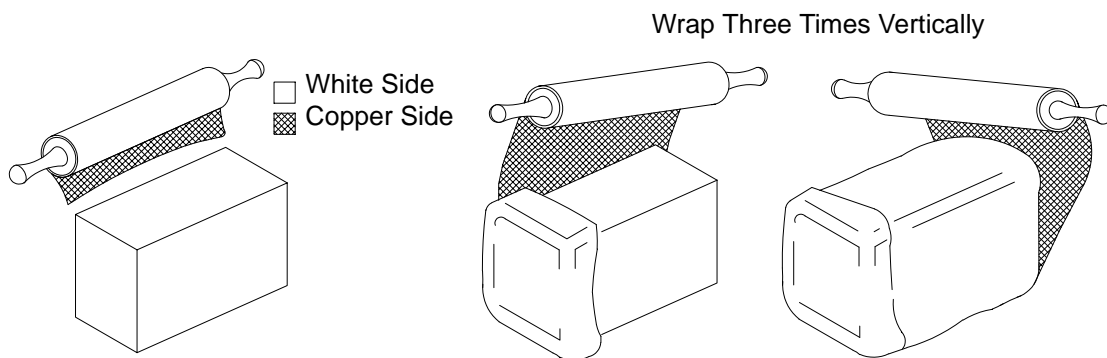
WARNING

**CHEMICAL****EYE PROTECTION**

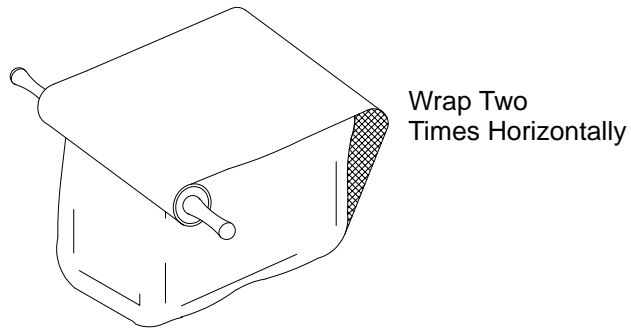
2. Apply lubricating oil (exposed gear) to chains, rotation section of bottom hooks and chain guides.

CORROSION INTERCEPT STRETCH WRAP PROCEDURES

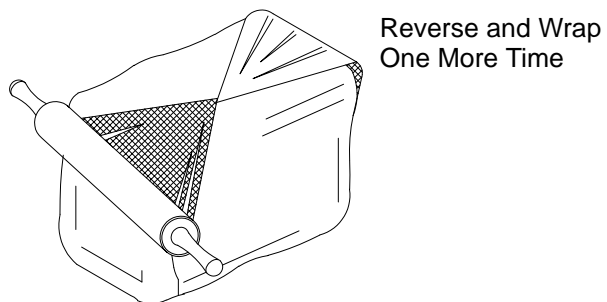
1. Make sure the item to be wrapped is clean, dry, and free from oil, fingerprints and alkaline residue. Wrap the item as soon as possible after cleaning.
2. Place three wraps in a vertical direction with the *copper* side facing the item being wrapped.



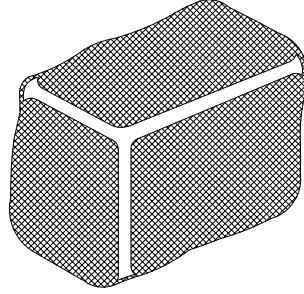
3. Wrap two times in the horizontal direction with the *copper* side facing the item being wrapped.



4. Start another wrap and reverse twist the film so that the *white* side is facing the product, then continue to wrap the item until it completely covered.



5. The properly wrapped item will have the *copper* side of the film facing out, away from the item.



END OF WORK PACKAGE

CHAPTER 5

**SUPPORTING INFORMATION
FOR
MODULAR CAUSEWAY SYSTEM (MCS)
ROLL-ON/ROLL-OFF DISCHARGE FACILITY (RRDF)**

**UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
REFERENCES**

SCOPE

This work package lists all field manuals, forms, technical manuals and miscellaneous publications referenced in this manual.

ARMY REGULATIONS

AR 700-138 Army Logistics Readiness and Sustainability

CODE OF FEDERAL REGULATIONS

29 CFR Labor, Parts 1911 to 1925

46 CFR Shipping, Parts 90 to 139

DA PAMPHLETS

DA PAM 738-750 Functional Users Manual for the Army Maintenance Management Systems (TAMMS)

FIELD MANUAL

FM 3-5 NBC, Decontamination

FORMS

DA Form 2028 Recommended Changes to Publications and Blank Forms

DA Form 2258 Depreservation Guide for Vehicles and Equipment

DA Form 2404 Equipment Inspection and Maintenance Worksheet

SF 368 Product Quality Deficiency Report

MISCELLANEOUS

ASME Y14.38-1999 The American Society of Mechanical Engineers Abbreviations and Acronyms

COMDTINST M16672.2D Navigation Rules, International-Inland

CTA 8-100 Common Table of Allowances, Army Medical Department Expendable/Durable Items

CTA 50-970 Common Table of Allowances, Expendable/Durable Items (Except Medical, Class V Repair Parts, and Heraldic Items)

MIL-HDBK-138 Guide to Container Inspection for Commercial and Military Intermodal Containers

LO 9-6115-642-12 Lubrication Order, Generator Set, Skit Mounted Tactical Quiet 10 kW, 60 and 400 hz

SUPPLY CATALOGS

SC 4910-95-A68	Shop Equipment, Automotive Maintenance and Repair, Field Maintenance, Wheeled Vehicles, Post, Camp and Station, Set C, Less Power
SC 4910-95-A72	Shop Equipment, Automotive Maintenance and Repair, Organizational Maintenance, Common No. 2
SC 4940-95-A64	Shop Equipment, Welding, Shelter Mounted
SC 5180-95-N26	Shop Equipment, General Mechanic's Automotive

TECHNICAL BULLETINS

TB 43-0144	Painting of Watercraft
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TECHNICAL MANUALS

TM 5-2815-258-24	Unit, Direct Support and General Maintenance Manual for Detroit Diesel Engine Series 53
TM 5-805-7	Welding: Design, Procedures and Inspection, for Minor Weld Repairs
TM 9-6115-642-10	Generator Set (10 KW), Skid Mounted, Tactical Quiet
TM 9-6115-642-24	Unit, Direct Support and General Maintenance Manual for Generator Set, Skid Mounted, Tactical Quiet 10 KW
TM 9-6140-200-14	Unit, Direct and General Support Maintenance Manual for Lead-Acid Storage Batteries
TM 55-1945-216-10-HR	Hand Receipt, Covering Contents of Components of End Item (COEI), Basic Issue Items (BII) and Additional Authorization List (AAL) for Roll-On/Roll-Off Discharge Facility
TM 55-1945-217-14&P	Operator, Unit, Direct Support and General Support Maintenance Manual (including Repair Parts and Special Tools List) for Light Tower (Ingersol-Rand)
TM 55-1945-218-14&P	Operator, Unit, Direct Support and General Support Maintenance Manual (including Repair Parts and Special Tools List) for Light Tower Engine (Kubota)
TM 55-1945-219-14&P	Operator, Unit, Direct Support and General Support Maintenance Manual for Incinerator Toilet (Incinolet)
TM 55-1945-220-14&P	Operator, Unit, Direct Support and General Support Maintenance Manual (including Repair Parts and Special Tools List) for Packaged Terminal Air Conditioner and Heat Pump (Carrier)
TM 55-1945-221-14&P	Operator, Unit, Direct Support and General Support Maintenance Manual (including Repair Parts and Special Tools List) for Outboard Motor (Johnson)
TM 55-1945-224-14&P	Operator, Unit, Direct Support and General Support Maintenance Manual (including Repair Parts and Special Tools List) for Rigid Hull Inflatable Boat (Zodiac)
TM 750-244-6	Destruction of TACOM Equipment

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
MAINTENANCE ALLOCATION CHART (MAC)**

INTRODUCTION

The Army Maintenance System MAC

This introduction provides a general explanation of all maintenance and repair functions authorized at various maintenance levels under the standard Army Maintenance System concept.

The MAC (immediately following the introduction) designates overall authority and responsibility for the performance of maintenance functions on the identified end item or component. The application of the maintenance functions to the end item or component shall be consistent with the capacities and capabilities of the designated maintenance levels, which are shown on the MAC in column (4) as:

Unit - includes two subcolumns, C (operator/crew) and O (unit) maintenance.

Direct Support - includes an F subcolumn.

General Support - includes an H subcolumn.

Depot - includes a D subcolumn.

The tools and test equipment requirements (immediately following the MAC) list the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from the MAC.

The remarks (immediately following the tools and test equipment requirements) contain supplemental instructions and explanatory notes for a particular maintenance function.

Maintenance Functions

Maintenance functions are limited to and defined as follows:

1. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel). This includes scheduled inspection and gaging, and evaluation of cannon tubes.
2. Test. To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards on a scheduled basis, i.e., load testing of lift devices and hydrostatic testing of pressure hoses.
3. Service. Operations required periodically to keep an item in proper operating condition; e.g., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases. This includes scheduled exercising and purging of recoil mechanisms.
4. Adjust. To maintain or regulate, within prescribed limits, by bringing into proper position, or by setting the operating characteristics to specified parameters.
5. Align. To adjust specified variable elements of an item to bring about optimum or desired performance.
6. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test, measuring, and diagnostic equipment used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

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7. Remove/Install. To remove and install the same item when required to perform service or other maintenance functions. Install may be the act of emplacing, seating, or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.
 8. Replace. To remove an unserviceable item and install a serviceable counterpart in its place. "Replace" is authorized by the MAC and assigned maintenance level is shown as the third position code of the Source, Maintenance and Recoverability (SMR) code.
 9. Repair. The application of the maintenance services, including fault location/troubleshooting, removal/installation, disassembly/assembly procedures, and maintenance actions to identify troubles and restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

NOTE

The following definitions are applicable to the "repair" maintenance function:

Services — Inspect, test, service, adjust, align, calibrate, and/or replace.

Fault location/troubleshooting — The process of investigating and detecting the cause of equipment malfunctioning; the act of isolating a fault within a system or Unit Under Test (UUT).

Disassembly/assembly — The step-by-step breakdown (taking apart) of a spare/functional group coded item to the level of its least component, that is assigned an SMR code for the level of maintenance under consideration (i.e., identified as maintenance significant).

Actions — Welding, grinding, riveting, straightening, facing, machining, and/or resurfacing.

10. Overhaul. That maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.
11. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (e.g., hours/miles) considered in classifying Army equipment/components.

Explanation of Columns in the MAC

Column (1) — Group Number. Column (1) lists FGC numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules with the Next Higher Assembly (NHA).

Column (2) — Component/Assembly. Column (2) contains the item names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

Column (3) — Maintenance Function. Column (3) lists the functions to be performed on the item listed in column (2). (For a detailed explanation of these functions refer to "Maintenance Functions" outlined above.)

Column (4) — Maintenance Level. Column (4) specifies each level of maintenance authorized to perform each function listed in column (3), by indicating work time required (expressed as manhours in whole hours or decimals) in the appropriate subcolumn. This work time figure represents the active time required to perform that maintenance function at the indicated level of maintenance. If the number or complexity of the tasks within the listed maintenance function varies at different maintenance levels, appropriate work time figures are to be shown for each level. The work time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time (including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the MAC. The symbol designations for the various maintenance levels are as follows:

- C — Operator or crew maintenance
- O — Unit maintenance
- F — Direct support maintenance
- L — Specialized Repair Activity (SRA)
- H — General support maintenance
- D — Depot maintenance

NOTE

The "L" maintenance level is not included in column (4) of the MAC. Functions to this level of maintenance are identified by a work time figure in the "H" column of column (4), and an associated reference code is used in the REMARKS column (6). This code is keyed to the remarks and the SRA complete repair application is explained there.

Column (5) — Tools and Equipment Reference Code. Column (5) specifies, by code, those common tool sets (not individual tools), common Test, Measurement and Diagnostic Equipment (TMDE), and special tools, special TMDE and special support equipment required to perform the designated function. Codes are keyed to the entries in the tools and test equipment table.

Column (6) — Remarks Code. When applicable, this column contains a letter code, in alphabetical order, which is keyed to the remarks table entries.

Explanation of Columns in the Tools and Test Equipment Requirements

Column (1) — Tool or Test Equipment Reference Code. The tool or test equipment reference code correlates with a code used in column (5) of the MAC.

Column (2) — Maintenance Level. The lowest level of maintenance authorized to use the tool or test equipment.

Column (3) — Nomenclature. Name or identification of the tool or test equipment.

Column (4) — National Stock Number (NSN). The NSN of the tool or test equipment.

Column (5) — Tool Number. The manufacturer's part number, model number, or type number.

Explanation of the Columns in the Remarks

Column (1) — Remarks Code. The code recorded in column (6) of the MAC.

Column (2) — Remarks. This column lists information pertinent to the maintenance function being performed as indicated in the MAC.

**UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
MAINTENANCE ALLOCATION CHART**

MAINTENANCE ALLOCATION CHART

Table 1. Maintenance Allocation Chart (MAC) for Roll-On/Roll-Off Discharge Facility (RRDF)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE	
			UNIT		DS	GS			DEPOT
			C	O	F	H			D
00	MODULAR CAUSEWAY SYSTEM (MCS)								
01	CAUSEWAY FERRY (CF)								
02	ROLL-ON/ROLL-OFF DISCHARGE FACILITY (RRDF)								
0201	INTERMEDIATE SECTION	Inspect	1.0					P	
		Service		1.5			5		
		Repair		4.0		20.0	1, 3, 4, 6	A, B	
020101	NON-POWERED MODULE EXTERIOR	Inspect	1.0					P	
		Test		6.0			1, 3, 4, 6		
		Service		1.5			5		
		Repair		4.0		20.0	1, 3, 4, 6	A, B	
		Overhaul						C, D	
02010101	GUILLOTINE	Inspect	0.5	48.0				P	
		Service	1.5	1.5			4	P	
		Adjust		1.0					
		Replace		1.0			4		
		Repair		3.0			4		

Table 1. Maintenance Allocation Chart (MAC) for Roll-On/Roll-Off Discharge Facility (RRDF) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
02010102	CONNECTOR	Inspect	0.5						P
		Replace		1.0					
02010103	SPRING PIN	Inspect	0.5						P
		Service	1.5						P
		Replace		1.0				4	
02010104	LOCK PLATE	Inspect	0.5						P
		Replace		1.0				4	
02010105	D-RING MOORING ASSEMBLY	Inspect	0.5						P
		Replace	1.0					4	
02010106	FLEXOR CONNECTOR ASSEMBLY	Inspect	1.0						P
		Replace	1.0						
		Repair				30.0			C, D
02010107	CLEAT MOORING ASSEMBLY	Inspect	0.5						P
		Replace	1.0					4	
0202	BEACH SEA END SECTION	Inspect	1.0						P
		Service		1.5				5	
		Repair		4.0		20.0		1, 3, 4, 6	A, B

Table 1. Maintenance Allocation Chart (MAC) for Roll-On/Roll-Off Discharge Facility (RRDF) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
020201	NON-POWERED MODULES EXTERIOR	Inspect	1.0						P
		Test		6.0				1, 3, 4, 6	
		Service		1.5				5	
		Repair		4.0		20.0		1, 3, 4, 6	A, B
		Overhaul				20.0			C, D
02020101	GUILLOTINE	Inspect	0.5	48.0					P
		Service	1.5	1.5				5	P
		Adjust		1.0				4	
		Replace		1.0				4	
		Repair		3.0				4	
02020102	CONNECTOR	Inspect	0.5						P
		Replace		1.0				4	
02020103	SPRING PIN	Inspect	0.5						P
		Service	1.5	1.5					P
		Replace		1.0					
02020104	LOCK PLATE	Inspect	0.5						P
		Replace		1.0				4	
02020105	FLEXOR CONNECTOR ASSEMBLY	Inspect	1.0						P
		Replace	1.0						
		Repair				30.0			C, D
02020106	D-RING MOORING ASSEMBLY	Inspect	0.5						P
		Replace	1.0					4	

Table 1. Maintenance Allocation Chart (MAC) for Roll-On/Roll-Off Discharge Facility (RRDF) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
020200107	CLEAT MOORING ASSEMBLY	Inspect	0.5						P
		Replace	1.0				4		
02020108	RHINO HORN ASSEMBLY	Inspect	0.5						P
		Replace	0.5				4		
0203	CONTAINERIZATION	Inspect	0.5						P
		Service	1.0						P
		Repair			4.0				B, D
020301	SHIP FENDERING (5 FT BY 10 FT)	Inspect	0.5						P
		Repair				20.0			C, D
02030101	40 FT OPEN TOP CONTAINER	Inspect	2.0						P
		Service	1.0						P
		Repair			4.0				B, D
02030102	FENDER (5 FT BY 10 FT)	Inspect	0.5						P
		Repair				20.0			C, D
02030103	CORNER FENDER (LT & RT)	Inspect	0.2						
		Replace		0.3					
020302	SHIP FENDERING (4 FT BY 12 FT & 3 FT BY 5 FT)	Inspect	0.5						P
		Repair				20.0			C, D

Table 1. Maintenance Allocation Chart (MAC) for Roll-On/Roll-Off Discharge Facility (RRDF) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
02030201	40 FT OPEN TOP CONTAINER	Inspect	2.0						P
		Service	1.0						P
		Repair			4.0				B, D
02030202	FENDER (4 FT BY 12 FT)	Inspect	2.0						P
		Repair				20.0			C, D
02030203	FENDER (3 FT BY 5 FT)	Inspect	1.0						P
		Repair				20.0			C, D
02030204	FENDER (6 FT BY 12 FT)	Inspect	0.5						P
		Repair				40.0			D
020303	LIGHTER FENDERING SYSTEM	Inspect	0.5						P
		Repair				20.0			C, D
02030301	40 FT OPEN TOP CONTAINER	Inspect	2.0						P
		Service	1.0						P
		Repair			4.0				B, D
02030302	FENDERS (3 FT BY 5 FT)	Inspect	1.0						P
		Repair				20.0			C, D
020304	LIGHTING SYSTEM	Inspect	0.5						P
		Repair			4.0			4	C, D

Table 1. Maintenance Allocation Chart (MAC) for Roll-On/Roll-Off Discharge Facility (RRDF) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
02030401	20 FT END OPEN CONTAINER	Inspect	2.0						P
		Service	1.0						P
		Repair			4.0				B, D
02030402	TURNBUCKLE	Inspect	0.5						P
02030403	LIGHT TOWER	Service	0.5						P
		Replace		1.0				4	
		Repair			1.0	30.0		4	C, D
0203040301	ELECTRICAL SYSTEM	Inspect			0.5				P
		Test			1.0			1, 4	E
		Repair			6.0			1, 4	E
020304030101	BATTERIES	Inspect	0.5						P
		Test		1.0				1	F
		Replace		2.0				4, 7	E
020304030102	OIL PRESSURE UNIT	Test			1.0			1	E, G
		Replace			1.5			4	E, G
		Repair			1.0			4	E, G
020304030103	STARTING CIRCUIT	Replace			3.0			4	E, G
		Repair			2.0				E, G
020304030104	ENGINE TEMPERATURE UNIT	Test			1.0			1	E, G
		Replace			2.5			4	E, G
		Repair			2.0			4	E, G

Table 1. Maintenance Allocation Chart (MAC) for Roll-On/Roll-Off Discharge Facility (RRDF) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
020304030105	HOURMETER UNIT	Replace			2.0			4	E
		Repair			1.5			4	E
020304030106	SHUTDOWN CIRCUIT	Replace			4.0			4	E, G
		Repair			2.0			4	E, G
020304030107	LAMP SYSTEM	Test			1.0			1	E
		Replace			6.0			4	E
		Repair			2.0			4	E
020304030108	LAMP BALLAST SYSTEM	Test			0.5			1	E
		Replace			3.0			4	E
		Repair			2.0			4	E
0203040302	GENERATOR	Inspect		2.0					E
		Service		2.0					E
		Replace			2.0			4	E
		Repair				10.0			C
020304030201	CONTROL PANEL	Inspect	1.0						P
		Replace			4.5			4	E
		Repair			3.0			4	E
0203040303	DIESEL ENGINE	Inspect	1.0						P
		Service	2.0					29, 30	P
		Adjust		2.0				4, 31	E
		Replace			16.0			4	E
		Overhaul				16.0			C, D

Table 1. Maintenance Allocation Chart (MAC) for Roll-On/Roll-Off Discharge Facility (RRDF) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
020304030301	ENGINE FUEL SYSTEM	Inspect	1.0					32	P
		Replace			8.0			4	G
		Repair		4.0				4	G
02030403030101	FUEL PUMP	Inspect	1.0						P
		Replace			5.0			4	G
		Repair				4.0		4	G
02030403030102	FUEL TANK	Inspect	1.0						P
		Service	2.0						P
		Replace		2.0				4	E
		Repair		2.0				4	E
020304030302	ENGINE AIR SYSTEM	Inspect	1.0						P
		Replace		4.0				4	G
		Repair		2.0				4	G
020304030303	ENGINE COOLING SYSTEM	Inspect	1.0	1.0				33	P
		Replace				5.0		4	F, G
		Repair		3.0				4	F, G
02030403030301	FAN ASSEMBLY	Inspect	0.5						P
		Replace		2.0				4	G
		Repair		1.5					G
02030403030302	COOLING WATER PUMP	Inspect	1.0						P
		Replace		5.0				4	G
		Repair		4.0				4	G

Table 1. Maintenance Allocation Chart (MAC) for Roll-On/Roll-Off Discharge Facility (RRDF) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
02030403030303	RADIATOR	Inspect	1.0						P
		Service	1.0	4.0					P
		Replace			3.0			4	E
		Repair				4.0		4	E
02030403030304	COOLING SYSTEM HOSES	Inspect	.05						P
		Replace		1.0				4	E, G
020304030304	ENGINE ELECTRICAL SYSTEM	Inspect	0.5						P
		Replace		0.5				4	G
		Repair			2.0				G
02030403030401	ALTERNATOR	Inspect	0.5						P
		Test			2.0			1	G
		Replace		1.5				4	G
		Repair			5.0			4	G
02030403030402	STARTER	Inspect	0.5						P
		Test			2.0			1	G
		Replace		2.5				4	G
		Repair			5.0			4	G
020304030305	CYLINDER HEAD	Inspect		1.0					G
		Adjust				8.0		37, 38	C
		Repair				5.0			C
		Replace				4.0			C

Table 1. Maintenance Allocation Chart (MAC) for Roll-On/Roll-Off Discharge Facility (RRDF) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
020304030306	ENGINE LUBRICATION SYSTEM	Test		0.5				1, 34, 39	G
		Repair		1.0					G
020304030307	VIBRATION DAMPER	Replace				4.0			C
020304030308	EXHAUST SYSTEM	Inspect	1.0						P
		Service		1.5				4	E, G
		Replace		5.0				4	E, G
		Repair		3.0				4	E, G
020304030309	CRANKSHAFT	Inspect				4.0		34, 35, 36	C
		Repair				8.0		34, 35, 36	C
020304030310	PISTON	Inspect				4.0		35	C
		Replace				4.0		35	C
		Repair				4.0			C
0203040304	RUNNING GEAR	Service		2.0				4	E
		Replace			8.0			4	E
		Repair		2.0	2.0			4	H
0203040305	TIRES	Inspect	0.5						P
		Replace			3.0			4	E
		Repair			1.0			4	E
0203040306	SUPPORT TOWER	Inspect	0.5						P
		Service	1.0						P
		Replace			6.0			4	E
		Repair			2.0			4	E

Table 1. Maintenance Allocation Chart (MAC) for Roll-On/Roll-Off Discharge Facility (RRDF) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
0203040307	TOWER RAISING ASSEMBLY	Inspect	0.5						P
		Replace			3.0			4	E
		Repair			1.0			4	E
0203040308	ENCLOSURE	Inspect	0.5						P
		Replace			6.0			4	E
		Repair			2.0			4	E
020305	RHIB STOWAGE	Inspect	0.5						P
		Repair			4.0				B, D
02030501	20 FT FULL ACCESS CONTAINER	Inspect	2.0						P
		Service	1.0						P
		Repair			4.0				B, D
02030502	RHIB W/CRADLE	Inspect	0.5						P
		Repair			4.0				D
0203050201	SHIFT CONTROL & THROTTLE	Inspect	1.0						P
		Replace			8.0			4	I
		Repair			4.0			4	I
0203050202	STEERING SYSTEM	Inspect	1.0						P
		Service	0.5						P
		Replace			3.0			4	I
		Repair				5.0		4	I
0203050203	POWER TRIM/TILT ELECTRICAL	Replace			3.0			4	I
		Repair			3.0			4	I

Table 1. Maintenance Allocation Chart (MAC) for Roll-On/Roll-Off Discharge Facility (RRDF) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
0203050204	POWER TRIM/TILT HYDRAULIC	Inspect	0.5						P
		Service	0.5						P
		Replace				5.0		4	I
		Repair				5.0		4	I
0203050205	FUEL SYSTEM TANK & FILTER	Inspect	1.0						P
		Service	1.0						P
		Replace		1.0				4	I
		Repair		2.0				4	I
0203050206	FUEL HOSE AND PRIMER BULB	Replace	1.0					4	I
		Repair		2.0				4	I
0203050207	OIL SYSTEM TANK	Inspect	0.5						P
		Service	1.0						P
		Replace		2.0				4	I
0203050208	BATTERY	Inspect	0.5						P
		Test		1.0				1, 4	F
		Service	1.0						P
		Replace		1.0				4	I
020305020801	BATTERY CABLES	Inspect	0.5						P
		Replace		1.0				4	I
0203050209	CONTROL PANEL	Inspect			2.0				I
		Replace			6.0			4	I
		Repair			2.0			4	I

Table 1. Maintenance Allocation Chart (MAC) for Roll-On/Roll-Off Discharge Facility (RRDF) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
0203050210	BOAT HULL	Inspect	1.0						P
		Test		1.0					I
		Repair		1.0		20.0			D, I, J, K
0203050211	NAVIGATION SYSTEMS	Inspect	0.5						P
		Replace		2.0				4	I
0203050212	OUTBOARD ENGINE	Inspect	0.5						P
		Test		4.0				1, 16, 17, 18, 19, 20	L
		Service	1.0						P
		Replace		4.0				4, 13, 14, 15, 16	L
		Repair				12.0			C
		Rebuild				12.0			C, D
		020305021201	ENGINE COVER	Inspect	1.0				
		Replace		2.0			4	L	
020305021202	LOWER ENGINE COVER	Inspect	1.0					P	
		Replace			8.0		4	L	
020305021203	ELECTRICAL STARTER	Replace		3.0				4, 21	L
		Repair			2.0			4, 21	L
020305021204	IGNITION	Replace				8.0			C
		Repair				8.0			C

Table 1. Maintenance Allocation Chart (MAC) for Roll-On/Roll-Off Discharge Facility (RRDF) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
020305021205	INTAKE MANIFOLD	Inspect			1.0				L
		Replace			3.0			4	L
		Repair			3.0			4	L
020305021206	CARBURETOR	Adjust		1.0				4, 17, 22, 23	L
		Replace			3.0			4, 17, 22, 23	L
		Repair			3.0			4	L
020305021207	ELECTRIC PRIMER SYSTEM	Replace			2.0			4	L
		Repair			3.0			4, 25, 26	L
020305021208	FUEL/OIL PUMP	Replace			2.0			4	L
		Repair			2.0			4, 17, 22, 24, 26, 27, 28	L
020305021209	CRANKSHAFT & PISTON	Inspect				6.0			C
		Replace				8.0			C
		Repair				8.0			C
020305021210	CYLINDER & CRANKCASE	Inspect				6.0			C
		Replace				8.0			C
		Rebuild				16.0			C
020305021211	EXHAUST HOUSING	Inspect	1.0						P
		Replace			3.0			4	L
		Repair			3.0			4	L

Table 1. Maintenance Allocation Chart (MAC) for Roll-On/Roll-Off Discharge Facility (RRDF) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
020305021212	GEARCASE	Inspect			3.0				L
		Replace				8.0			C
		Repair				8.0			C
02030502121201	BEARING HOUSING ASSEMBLY	Inspect				2.0			C
		Replace				3.0			C
		Repair				3.0			C
02030502121202	PROPELLER SHAFT ASSEMBLY	Inspect				2.0			C
		Replace				3.0			C
		Repair				4.0			C
02030502121203	IMPELLER ASSEMBLY	Inspect				4.0			C
		Replace				4.0			C
		Repair				4.0			C
02030502121204	WATER PUMP ASSEMBLY	Inspect				4.0			C
		Replace				4.0			C
		Repair				4.0			C
		Rebuild				8.0			C
0203050213	FIRE EXTINGUISHER	Replace	2.0						
020306	MOORING BITT STOWAGE	Inspect	0.5						P
		Repair			4.0				B, D

Table 1. Maintenance Allocation Chart (MAC) for Roll-On/Roll-Off Discharge Facility (RRDF) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
02030601	20 FT OPEN END CONTAINER	Inspect	2.0						P
		Service	1.0						P
		Repair			4.0				B, D
02030602	MOORING BITT	Inspect	0.5						P
		Replace	1.0						
020307	DECK MAT STOWAGE	Inspect	0.5						P
		Repair			4.0				D
02030701	20 FT SIDE OPEN CONTAINER	Inspect	2.0						P
		Service	1.0						P
		Repair			4.0				B
02030702	DECK MATTING	Inspect	0.5						P
		Replace	2.0						
020308	BASIC ISSUE ITEMS	Inspect	0.5						P
		Repair			4.0				D
02030801	20 FT END OPEN CONTAINER	Inspect	2.0						P
		Service	1.0						
		Repair			4.0				B, D
02030802	SAFETY EQUIPMENT LIFERING BOUY & STANCHION ASSEMBLY	Inspect	0.3						
		Repair		0.5					

Table 1. Maintenance Allocation Chart (MAC) for Roll-On/Roll-Off Discharge Facility (RRDF) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
020309	GENERATOR CONTAINER	Inspect	0.5						P
		Repair			4.0				D
02030901	20 FT CONTAINER	Inspect	2.0						P
		Service	1.0						P
		Repair			4.0				B, D
02030902	SHORE TIE HINGED PENETRATION COVER	Inspect	0.5						P
		Replace			2.0			1, 2, 8	
02030902	DOUBLE PANEL WATERTIGHT DOOR	Inspect	0.5						P
		Replace		1.5				4	
		Repair		1.0				4	
02030903	LIGHT FIXTURE (OVERHD LGHTS)	Inspect	0.5						P
		Test			1.0				
		Repair			1.0			4	
02030904	HAND OPERATED TRANSFER PUMP	Inspect	0.5						P
		Service	0.5						P
		Replace		0.5				4	
02030905	ELECTRICAL SYSTEM	Inspect	0.5						P
		Test			1.0			1	
		Repair	1.0		1.0			4	

Table 1. Maintenance Allocation Chart (MAC) for Roll-On/Roll-Off Discharge Facility (RRDF) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
02030906	FUEL INDICATOR ALARM PANEL	Inspect	0.5						P
		Test			1.0			1	
		Repair			1.0			4	
02030907	ROTARY SWITCH (OVERHD LGHTS)	Replace			1.0			4	
02030908	FUEL TANK	Inspect	1.0						P
		Service	1.0						P
		Repair			5.0			2, 4	B
02030909	DAMPER ASSEMBLIES	Inspect	0.5						P
		Replace		3.0				4	
0203090901	DAMPER	Inspect	1.0						P
		Service	1.0						P
		Replace		3.0				4	
0203090902	DAMPER ACTUATORS	Inspect	1.0						P
		Replace		2.0				4	
02030910	FIRE SUPPRESSION SYSTEM	Inspect	1.0						P
		Test	1.0						
		Replace				4.0			C
02030911	WEATHERTIGHT EXTERIOR DOOR	Replace			3.0			4	
0203091101	DOOR DOGS	Replace			1.0			4	
0203091102	DOOR SEAL	Inspect	0.5						
		Replace			1.0			4	

Table 1. Maintenance Allocation Chart (MAC) for Roll-On/Roll-Off Discharge Facility (RRDF) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
0203091103	DOOR WINDOW	Inspect	0.1						
		Replace			4.0			4	
02030912	DISCONNECT SWITCH	Replace		1.0				4, 9	
02030913	BATTERY CHARGER	Replace		1.0				4	
02030914	BATTERY BOX & BATTERY	Inspect	0.5						P
		Test		1.0				1	F
		Replace		2.0				4	
02030915	EMERGENCY STOP	Test	0.5						
		Replace		1.0				4	
02030916	DC LIGHTING W/TIMER	Inspect	0.5						P
		Test		0.5				1	
		Replace		1.0				4	
02030917	10 KW GENERATOR SET								M
020310	EASY ANCHOR SYSTEM	Inspect	2.0						P
		Service		1.0					P
		Repair			4.0			2, 4, 12	
		Replace			6.0			4, 10, 11	
02031001	FULL ACCESS CONTAINER	Inspect	2.0						P
		Service	1.0						P
		Repair			4.0			4	B

Table 1. Maintenance Allocation Chart (MAC) for Roll-On/Roll-Off Discharge Facility (RRDF) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
020311	PERSONNEL SHELTER	Inspect	1.0						P
		Repair			4.0			4	D
02031101	ISO CONTAINER	Inspect	2.0						P
		Service	1.0						P
		Repair			4.0				B, D
02031102	WEATHERTIGHT EXTERIOR DOOR	Replace			3.0			4	
0203110201	DOOR DOGS	Replace			1.0			4	
0203110202	DOOR SEAL	Inspect	0.5						P
		Replace			1.0			4	
0203110203	DOOR WINDOW	Inspect	0.1						
		Replace			4.0			4	
02031103	INCINERATOR TOILET	Inspect	0.5						P, N
		Replace			2.0			4	
		Repair			2.0			4	
0203110301	INCINERATOR EXHAUST	Replace			1.0			4	
02031104	VENTILATOR	Inspect	0.5						P
		Service		0.5					
		Replace		1.0				4	
02031105	ELECTRICAL DISTRIBUTION PANEL	Inspect	0.5						P
		Replace		1.0				4	
		Repair		1.0				4	

Table 1. Maintenance Allocation Chart (MAC) for Roll-On/Roll-Off Discharge Facility (RRDF) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
0203110501	CIRCUIT BREAKERS	Inspect	0.5						P
		Replace		1.0				4	
02031106	LIGHT FIXTURE (OVERHEAD)	Inspect	0.5						P
		Repair		1.0					
0203110601	LIGHT BULB	Replace	0.5						
02031107	ROTARY SWITCH	Inspect	0.5					4	P
		Replace		1.0				4	
02031108	LIGHT FIXTURE (HEAD)	Inspect	0.5						P
		Repair		1.0					
0203110801	LIGHT BULB	Replace	0.5						
02031109	ROTARY SWITCH	Inspect	0.5						P
		Replace		1.0				4	
02031110	HEAT PUMP THERMOSTAT	Inspect	0.5						P
		Replace			2.0			4	O
02031111	INCINERATOR JUNCTION BOX	Inspect	0.5						P
		Repair			2.0			4	
02031112	AC/HEAT PUMP	Inspect	0.5						P
		Replace		1.0				4	O
		Repair			2.0			1, 4	O
02031113	WATERTIGHT SCUTTLE	Inspect	0.5						P
0203111301	SCUTTLE SEAL	Inspect	0.5						P
		Replace			1.0			4	

Table 1. Maintenance Allocation Chart (MAC) for Roll-On/Roll-Off Discharge Facility (RRDF) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
02031114	INTERIOR DOOR	Replace			3.0			4	
0203111401	LOCKSET	Replace			1.0			4	
02031115	HAND HELD LANTERN	Inspect	0.5						P
		Repair		0.5				4	
		Replace		0.5				4	
0203111501	LANTERN MOUNTING BRACKET	Replace		0.5				4	
02031116	ELECTRICAL RECEPTACLE	Inspect	0.5						P
		Replace		1.0				4	
02031117	GFCI RECEPTACLE	Inspect	0.5						P
		Replace		1.0				4	
02031118	OUTLET BOX	Inspect	0.5						P
		Replace		1.0				4	
02031119	VHF/FM HANDHELD TRANSCEIVER	Inspect	1.0						P
		Replace		1.0					
0203111901	ANTENNA	Replace		1.0					
0203111902	CONTROL KNOBS	Replace		1.0					
0203111903	RECHARGEABLE BATTERY PACK	Inspect	0.5						P
		Replace		1.0					
020311190301	ALKALINE BATTERY PACK	Replace	0.5						

Table 1. Maintenance Allocation Chart (MAC) for Roll-On/Roll-Off Discharge Facility (RRDF) (Continued)

(1) GROUP NO.	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIP REF CODE	(6) REMARKS CODE
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
0203111904	BATTERY CHARGER	Inspect	0.5						P
		Replace		1.0				4	

Table 2. Tools and Test Equipment for Roll-On/Roll-Off Discharge Facility (RRDF).

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
1	O	Shop Equipment, Automotive Maintenance and Repair, Field Maintenance, Wheeled Vehicles, Post, Camp and Station, Set C, Less Power	4910-00-348-7698	SC 4910-95-A68
2	O	Shop Equipment, Automotive Maintenance and Repair, Organizational Maintenance, Common No. 2	4910-00-754-0650	SC 4910-95-A72
3	O	Shop Equipment, Welding, Shelter Mounted	4940-00-290-6240	SC 4940-95-A64
4	O	Shop Equipment, General Mechanic's Automotive	5180-00-177-7033	SC 5180-95-N26
5	O	Cleaner, Power Washer	4940-01-457-6854	PC4-20321
6	O	Test Set, Compartment Air	6685-00-327-2957	805-1749233
7	O	Brush, Battery Terminal	5120-00-926-5175	AGH3024
8	F	Drill, Electric, Portable, 115 Volt	5130-00-477-0206	358
9	O	Puller, Fuse	5120-00-224-9453	34-001
10	O	Sling, Lifting, 5,300 lb		EN60X4FT
11	O	Shackle, 1/2 in., 2 ton		1019472
12	O	Shackle, 3/4 in., 4.75 ton	4030-00-343-5433	1019515
13	O	Universal Puller Kit	5120-00-110-4564	378103
14	O	Lifting Eye- 40-55		321537
15	O	Temperature Gun		772018
16	O	Test Propeller	2010-01-370-4936	386665
17	O	Float Gauge	5120-01-218-4342	324891
18	O	Piston Stop	5120-00-343-0139	384887
19	O	Starter Rope, Threading Tool	2805-00-243-9534	378774
20	O	Starter Spring Winder and Installer	5360-01-150-1063	392093

Table 2. Tools and Test Equipment for Roll-On/Roll-Off Discharge Facility (RRDF). (Continued)

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
21	O	Pliers, Retaining Ring	5120-00-924-5600	
22	O	Orifice Plug Screwdriver	5120-00-341-6198	317002
23	O	Tie Strap Installation Tool	5120-01-258-7589	323716
24	O	Nipple Cleaning Tool	5120-01-234-6637	326623
25	F	Electric Fuel Primer	2910-01-465-2595	174651
26	F	Hose Clamp Wrench	5120-01-258-7595	325043
27	F	Manual Filter Primer Assembly	2710-00-126-3679	398540
28	F	Cap Holder		329661
29	O	Compression Tester	4910-01-131-7773	99-800
30	O	Diesel Engine Compression Tester	5120-01-177-9313	C-400
31	O	Mechanical Use Puller Set	5120-01-486-5065	07916-09032
32	O	Nozzle Tester		07909-31361
33	O	Radiator Tester		07909-31551
34	O	Press Gage		07909-30241
35	H	Connecting Rod Alignment Tool	5120-01-479-5832	07909-31661
36	H	Flywheel Puller		07916-32011
37	O	Red Check (Crack Check Liquid)		07909-31371
38	O	Valve Seat Cutter Set		07909-33102
39	O	Oil Pressure Tester		07916-32031

Table 3. Remarks for Roll-On/Roll-Off Discharge Facility (RRDF).

REMARKS CODE	REMARKS
A	Repair limited to guillotines, connectors, spring pins, locking plates and minor weld repairs.
B	Refer to TM 5-805-7, Welding: Design, Procedures and Inspection, for minor weld repairs.
C	Repair at Specialized Repair Activity (SRA)
D	Disposition at Specialized Repair Activity (SRA)
E	Refer to Commercial Off the Shelf (COTS) Manual for Light Tower (TM 55-1945-217-14&P)
F	Refer to Unit, Direct and General Support Maintenance Manual for Lead-Acid Storage Batteries (TM 9-6140-200-14)
G	Refer to Commercial Off the Shelf (COTS) Manual for Light Tower Engine (TM 55-1945-218-14&P)
H	Organizational Repair Limited to Replacement of Wheel and Tire Assembly, Grease Seals and Greasing of Wheel Bearings
I	Refer to Commercial Off the Shelf (COTS) Manual for Rigid Hull Inflatable Boat (RHIB) (TM 55-1945-224-14&P)
J	Organizational repair limited to inflatable collar.
K	Direct Support repair limited to Type-1 thru Type-3 hull repairs.
L	Refer to Commercial Off the Shelf (COTS) Manual for Rigid Hull Inflatable Boat (RHIB) Outboard Motor (TM 55-1945-221-14&P)
M	Refer to 10 kW Generator Technical Manual (TM 9-6115-642-10)
N	Refer to Commercial Off the Shelf (COTS) Incinolet Manual (TM 55-1945-219-14&P)
O	Refer to Commercial Off the Shelf (COTS) Packaged Terminal Air Conditioner and Heat Pump Manual (TM 55-1945-220-14&P)
P	Limited to Preventative Maintenance Checks and Services (PMCS)

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
COMPONENTS OF END ITEM (COEI) LIST**

INTRODUCTION

Scope

This work package lists COEI for the RRDF to help you inventory items for safe and efficient operation of the equipment.

General

This list is for information purposes only and is not authority to requisition replacements. These items are part of the RRDF. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Items of COEI are removed and separately packaged for transportation or shipment only when necessary. Illustrations are furnished to help you find and identify the items.

Explanation of Columns in the COEI List

Column (1) - Illus Number. Gives you the number of the item illustrated.

Column (2) - National Stock Number (NSN). Identifies the stock number of the item to be used for requisitioning purposes.

Column (3) - Description, CAGEC, and Part Number. Identifies the Federal item name followed by a minimum description when needed. The stowage location of COEI is also included in this column. The last line below the description is the CAGEC (commercial and government entity code) (in parentheses) and the part number.

Column (4) - Usable on Code. When applicable, gives you a code if the item you need is not the same for different models of equipment.

Column (5) - Unit of Measure (U/M). Indicates the physical measurement or count of the item as issued per the National Stock Number shown in column (2).

Column (6) - Qty Rqd. Indicates the quantity required.

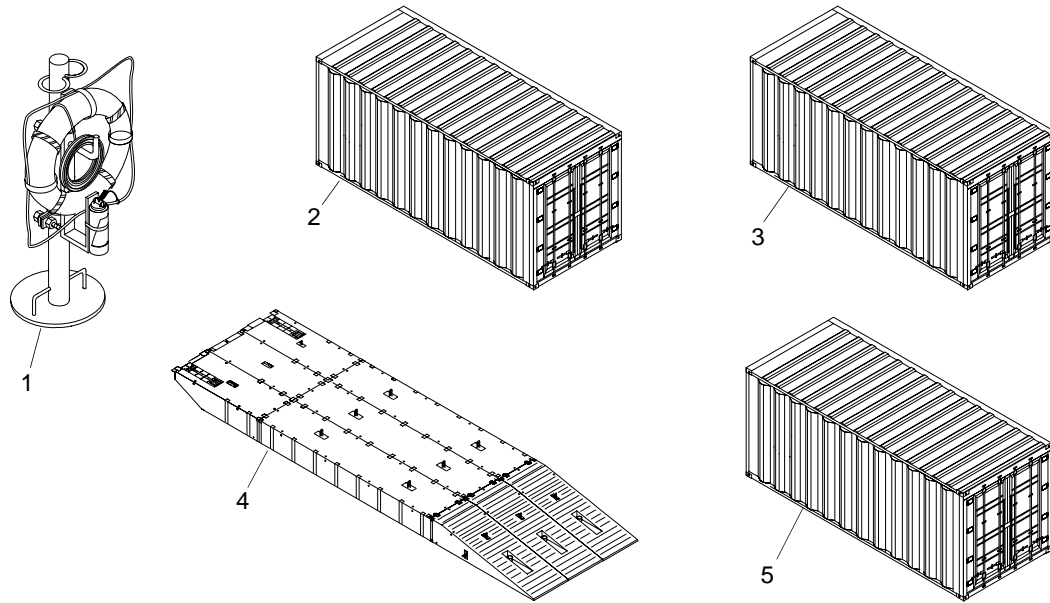


Table 1. Component of End Item. (COEI)

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC AND PART NUMBER	(4) USABLE ON CODE	(5) U/I	(6) QTY RQD
1	No NSN assigned	ASSEMBLY, STANCHION, RING (BII container) (34712) E38873 Consisting of: Ring, Buoy, Life Saving (7T351) JB-0-30 Light, Strobe (18560) SM-2 Hanger, Bracket (34712) E34682 Assembly, Stanchion (34712) E38203 Rope (39428) 3856T18		EA	4
2	No NSN assigned	BASIC ISSUE ITEMS (BII)		EA	1
3	No NSN assigned	BITT, MOORING HEAVY DUTY, STOWAGE ARRANGEMENT (20 ft. x 8 ft. 6 in. x 8 ft. ISO cargo container, open end) (34712) E33445		EA	1
4	No NSN assigned	CBSE SECTION (85 ft. x 24 ft. x 4.5 ft.) (34712) E19183		EA	1
5	No NSN assigned	CONTAINER, GENERATOR (10 KW) (20 ft. x 8 ft. 6 in. x 8 ft. ISO cargo container, open end) (34712) E33228		EA	1

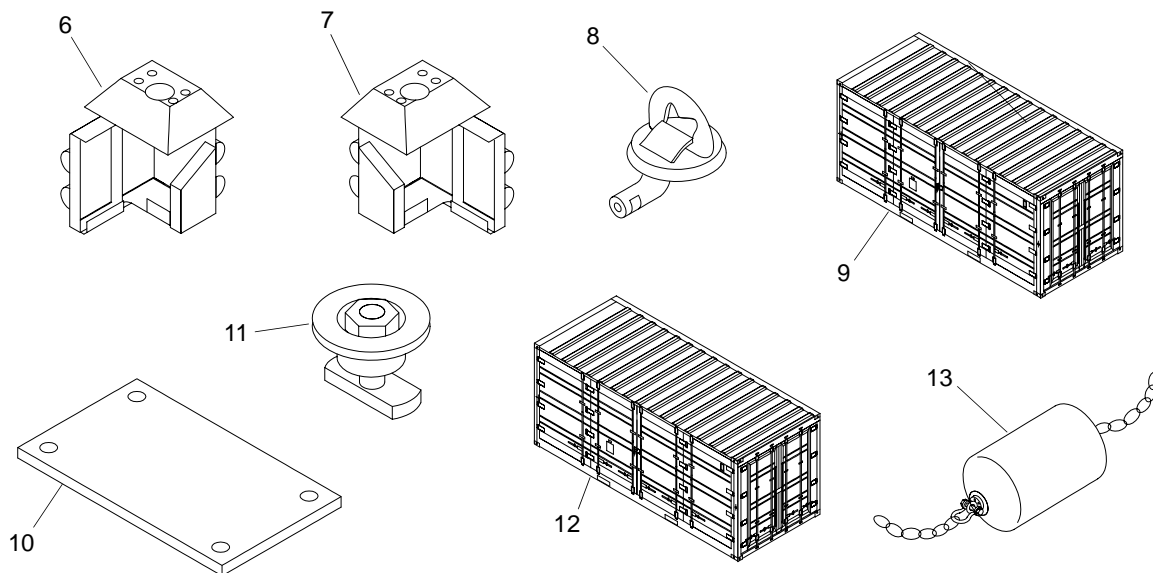


Table 1. Component of End Item. (COEI) (Continued)

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC AND PART NUMBER	(4) USABLE ON CODE	(5) U/I	(6) QTY RQD
6	No NSN assigned	CORNER FENDER ASSEMBLY, LH (34712) E34793		EA	4
7	No NSN assigned	CORNER FENDER ASSEMBLY, RH (34712) E34553		EA	4
8	No NSN assigned	D-RING FITTINGS (34712) E07803		EA	8
9	No NSN assigned	DECK MATT STOWAGE ARRANGEMENT (20 ft. x 8 ft. 6 in. x 8 ft. ISO cargo container, all access full opening) (34712) E33395		EA	1
10	No NSN assigned	DUNNAGE MATT (4 ft. x 10 ft. x 1.5 in.) (34712) E33811		EA	36
11	No NSN assigned	DUNNAGE MATT LOCK DOWN DOG ASSEMBLY (34712) E33823		EA	40
12	No NSN assigned	EMERGENCY ANCHOR SYSTEM (EASY) (34712) E32748		EA	1
13	No NSN assigned	FENDER ASSEMBLY (3 ft. by 5 ft. marine fender) (59990) G03X05-2579		EA	50

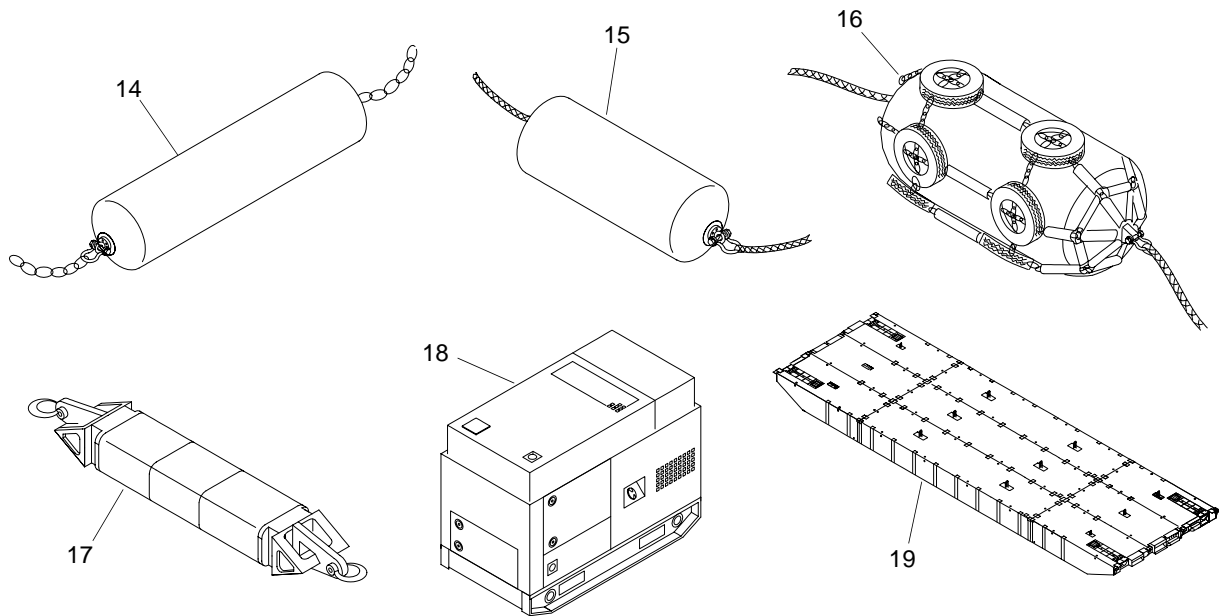


Table 1. Component of End Item. (COEI) (Continued)

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC AND PART NUMBER	(4) USABLE ON CODE	(5) U/I	(6) QTY RQD
14	No NSN assigned	FENDER ASSEMBLY (4 ft. by 12 ft. marine fender) (59990) G04X12-2456		EA	6
15	No NSN assigned	FENDER ASSEMBLY (5 ft. by 10 ft. marine fender) (59990) G05X10-2237		EA	3
16	2040-01-495-7784	FENDER ASSEMBLY (6 ft. by 12 ft. marine fender) (5R766) MG-6x12		EA	3
17	2040-01-092-3081	FLEXOR COUPLING, PONTOON CAUSEWAY (2 per section) (34712) E02783		EA	35
18	6155-01-275-5061	GENERATOR SET, DIESEL ENGINE (10 kW) (30554) MEP 803A		EA	1
19	No NSN assigned	INTERMEDIATE SECTION (80 ft. x 24 ft. x 4.5 ft.) (34712) E19193		EA	17

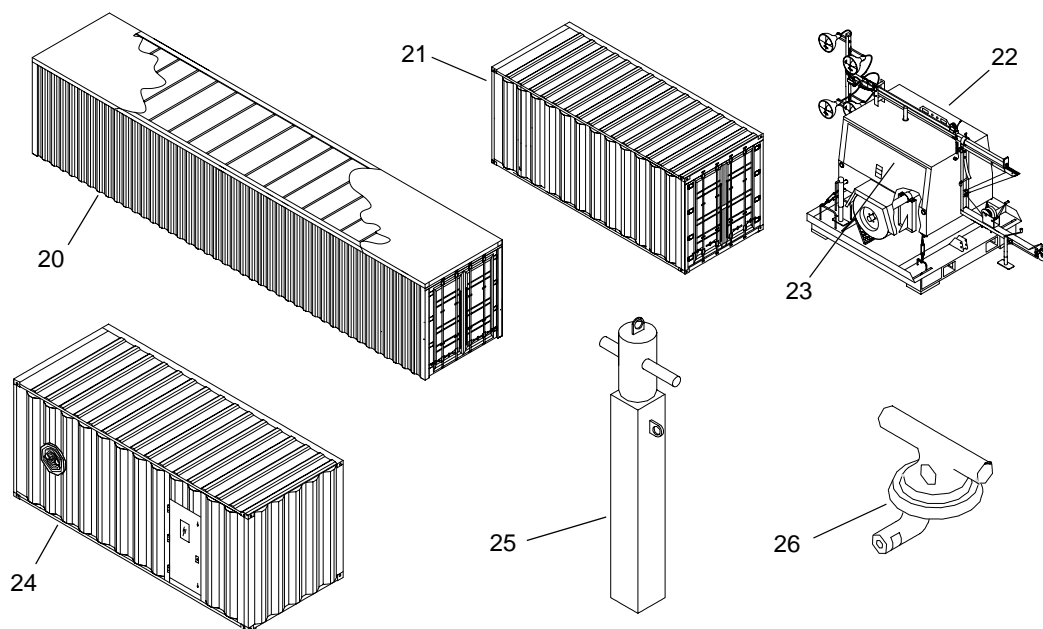


Table 1. Component of End Item. (COEI) (Continued)

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC AND PART NUMBER	(4) USABLE ON CODE	(5) U/I	(6) QTY RQD
20	No NSN assigned	LIGHTER FENDERING SYSTEM STOWAGE ARRANGEMENT (40 ft. x 8 ft. 6 in. x 8 ft. ISO cargo container, open top) (34712) E33555		EA	2
21	No NSN assigned	LIGHTING SYSTEM STOWAGE CONTAINER ARRANGEMENT (20ft. x 8 ft. 6 in. x 8 ft. ISO cargo container, open end) (34712) E33585		EA	2
22	6220-01-505-1610	LIGHT TOWER (34712) E35658		EA	4
23	2815-01-505-1614	LIGHT TOWER ENGINE (0XWR1) MODEL D905-B		EA	4
24	No NSN assigned	MCS PERSONNEL SHELTER ARRANGEMENT (20 ft. x 8 ft. 6 in. x 8 ft. ISO cargo container, open end) (34712) E32708		EA	1
25	No NSN assigned	MOORING BITT (34712) E32718		EA	30
26	No NSN assigned	MOORING CLEAT ASSEMBLY (deck cleats) (34712) E07723		EA	8

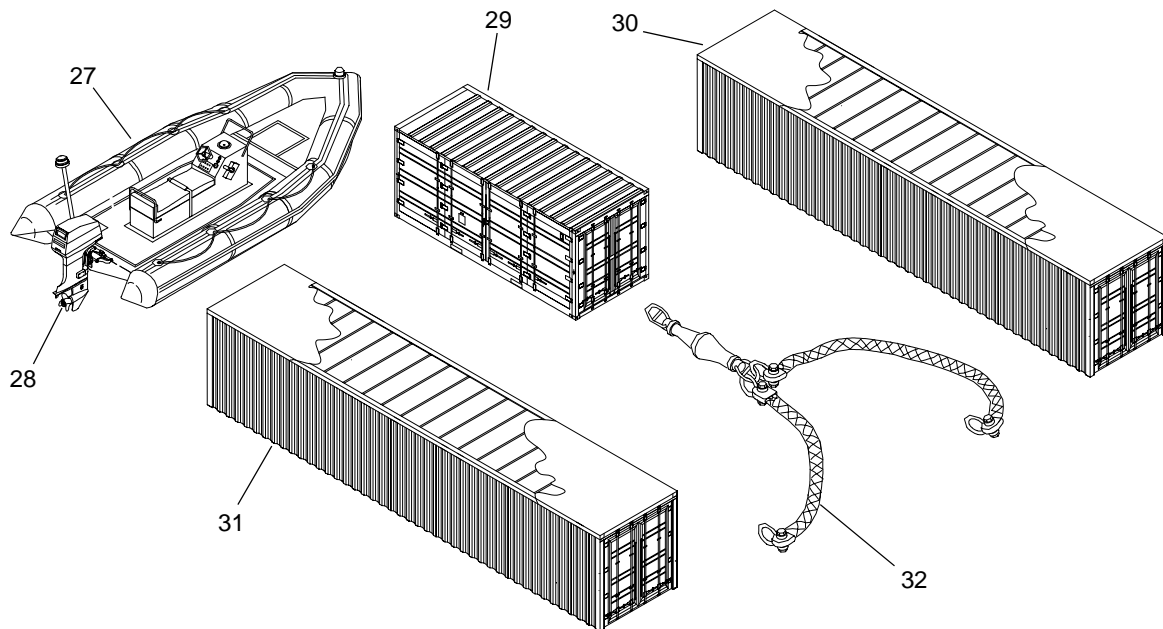


Table 1. Component of End Item. (COEI) (Continued)

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC AND PART NUMBER	(4) USABLE ON CODE	(5) U/I	(6) QTY RQD
27	1940-01-505-1621	RHIB (rigid hull inflatable boat) (34712) E34298		EA	1
28	2805-01-505-1613	RHIB OUTBOARD MOTOR (80256) MODEL 70		EA	1
29	No NSN assigned	RHIB STOWAGE ARRANGEMENT (20 ft. x 8 ft. 6 in. x 8 ft. ISO cargo container, all access full opening) (34712) E33295		EA	1
30	No NSN assigned	SHIP FENDERING SYSTEM, (5 X 10) STOWAGE ARRANGEMENT (40 ft. x 8 ft. 6 in. x 8 ft. ISO cargo container, open top) (34712) E33635		EA	1
31	No NSN assigned	SHIP FENDERING SYSTEM, (4 X 12 & 3 X 5) STOWAGE ARRANGEMENT (40 ft. x 8 ft. 6 in. x 8 ft. ISO cargo container, open top) (34712) E33595		EA	1
32	No NSN assigned	TOWING BRIDLE (BII container) (34712) E34993 ITEMS 3-8		SET	1

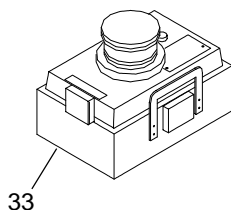


Table 1. Component of End Item. (COEI) (Continued)

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC AND PART NUMBER	(4) USABLE ON CODE	(5) U/I	(6) QTY RQD
33	No NSN assigned	TOWING LIGHTS (34712) E53528 Set contains the following items:		SET	2
	6220-01-501-6439	LIGHT, NAVIGATIONAL, MARINE (incandescent with base magnet, red lens, steady illumination) (0AGB3) 98-23804M		EA	1
	6220-01-501-6441	LIGHT, NAVIGATIONAL, MARINE (incandescent with base magnet, green lens, steady illumination) (0AGB3) 98-23805M		EA	1
	6220-01-501-6430	LIGHT, NAVIGATIONAL, MARINE (incandescent with base magnet, amber lens, steady illumination) (0AGB3) 98-23400M		EA	1
	No NSN assigned	LIGHT, NAVIGATIONAL, MARINE (incandescent with base magnet, white lens, steady illumination) (0AGB3) 98-23803M		EA	1

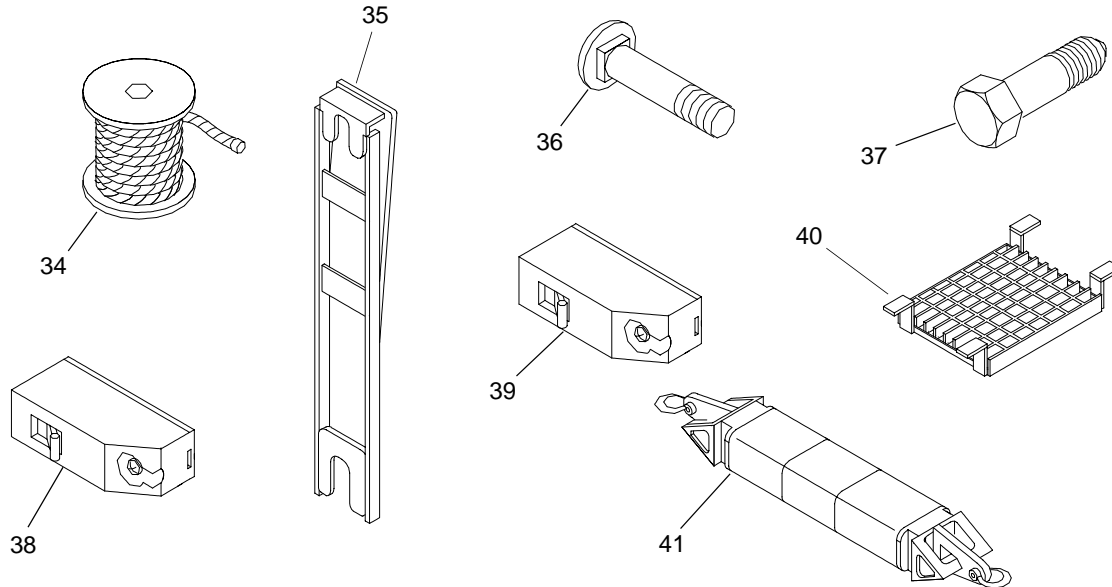


Table 1. Component of End Item. (COEI) (Continued)

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC AND PART NUMBER	(4) USABLE ON CODE	(5) U/I	(6) QTY RQD
ON BOARD SPARES					
34	4020-01-500-1232	AMSTEL BLUE LINE, 4 1/2 in. circ. x 250 ft. (BII container) (5A457) 830		RL	2
35	1945-01-495-5249	BAR, GUILLOTINE (BII container) (34712) E04282		EA	20
36	NSN pending	BOLT, CARRIAGE (1/2 in. -13UNC x 2 in. lg.) (BII container) (39428) 93548A720		PG	50
37	NSN pending	BOLT, 3/4 in. X. 7 in. LG (BII container) (39428) 91465A266		EA	12
38	5925-00-844-4132	BREAKER, 20 AMP (BII container) (56303) QO220		EA	1
39	5925-00-583-7941	CIRCUIT BREAKER (20 AMP, 120/240 VAC) (BII container) (56365) QO120		EA	1
40	NSN pending	COVER, FLEXOR WELL (34712) E32782		EA	2
41	2040-01-092-3081	FLEXOR COUPLING, PONTOON CAUSEWAY (34712) E02783		EA	4

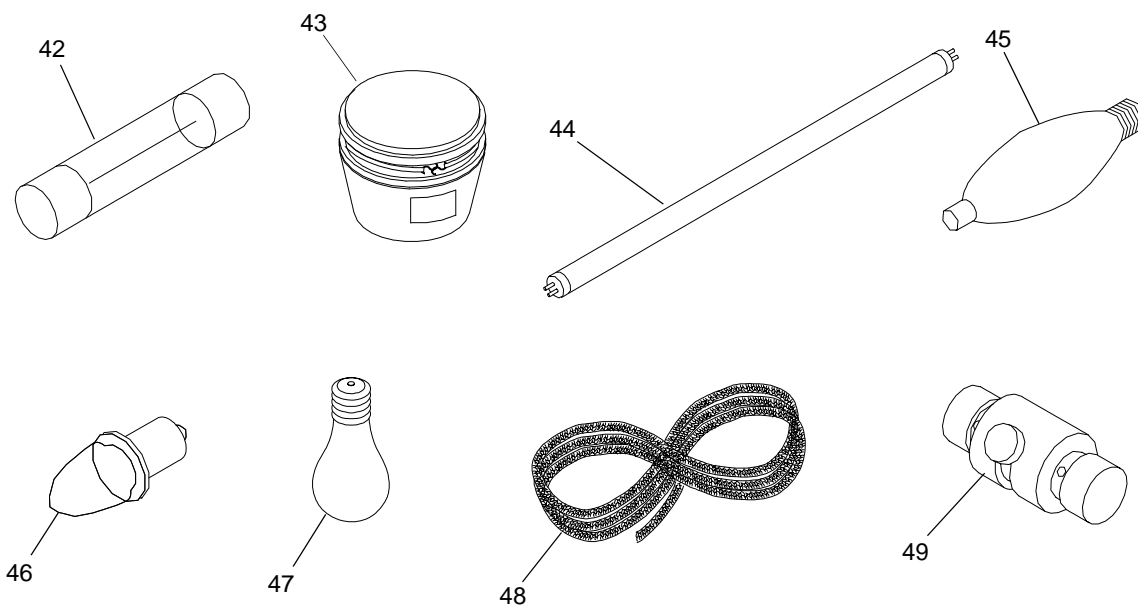


Table 1. Component of End Item. (COEI) (Continued)

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC AND PART NUMBER	(4) USABLE ON CODE	(5) U/I	(6) QTY RQD
42	NSN pending	FUSE, CARTRIDGE (fuse, time delay, class rk5, 70 amp) (BII container) (75915) FLNR070		EA	2
43	4235-01-416-8465	KIT, SPILL (BII container) (50378) P-SKFL31		KT	1
44	6240-01-460-4076	LAMP, FLUORESCENT (20 W, T12) (BII container) (62607) 046677-22154-9		EA	5
45	NSN pending	LAMP, INCANDESCENT (High Pressure Sodium 1000W) (BII container) (33968) 36847747		EA	2
46	6240-01-419-2503	LAMP, INCANDESCENT (6 volt) (BII container) (62607) 04-6677-21183-9		EA	2
47	NSN pending	LAMP, MARINE (12 volt) (BII container) (39428) 8357K16		EA	2
48	NSN pending	LINE, HAWSER (75 ft. long with 3 ft. eyes, 8 in. circ.) (BII container) (5A457) W6		RL	4
49	5325-01-500-7235	LOCK, TWIST, HORIZONTAL (BII container) (059E5) BLR1212		EA	8

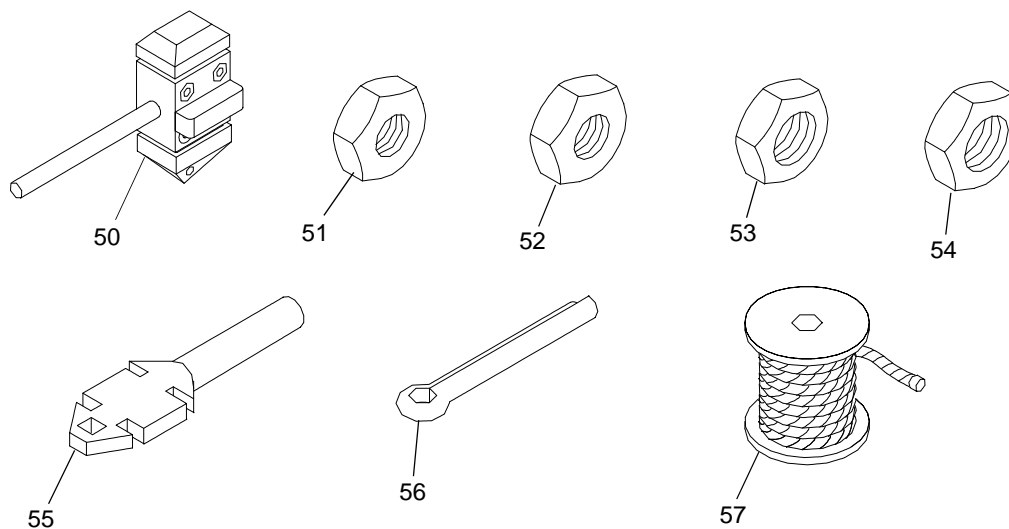


Table 1. Component of End Item. (COEI) (Continued)

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC AND PART NUMBER	(4) USABLE ON CODE	(5) U/I	(6) QTY RQD
50	NSN pending	LOCK, TWIST, VERTICAL (BII container) (0SW64) C5AM-DF		EA	16
51	5310-00-765-2280	NUT, PLAIN, HEXAGON (1/2 in.) (BII container) (0BDC6) D7760D		EA	50
52	5310-00-763-8921	NUT, PLAIN, HEXAGON (3/4 in.) (BII container) (96906) MS51967-23		EA	12
53	5310-00-762-6223	NUT, PLAIN, HEXAGON (1-1/2 in.) (BII container) (53711) 5277671		EA	5
54	5310-00-880-8188	NUT, PLAIN, HEXAGON (2 in.) (BII container) (96906) MS51967-47		EA	2
55	NSN pending	PIN, CONNECTOR (BII container) (34712) E04222		EA	20
56	5315-00-899-4116	PIN, COTTER (3/16 in.) (BII container) (81348) FFP386		HD	100
57	4020-00-752-8879	SPOOL, 4 IN. LINE (BII container) (81349) MIL-R-17343-4CRCM		RL	1

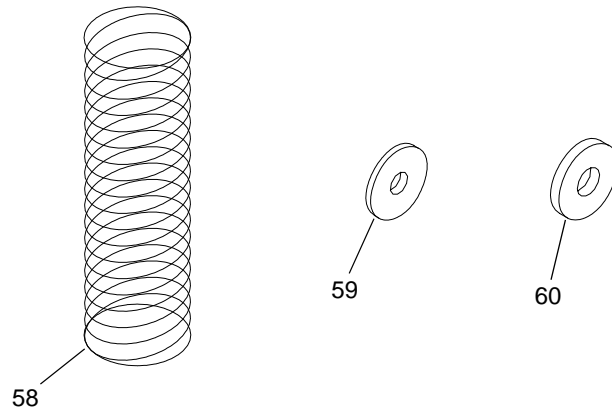


Table 1. Component of End Item. (COEI) (Continued)

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC AND PART NUMBER	(4) USABLE ON CODE	(5) U/I	(6) QTY RQD
58	NSN pending	SPRING, PIN (BII container) (34712) E04251		EA	20
59	5310-00-809-5997	WASHER, FLAT (1/2 in.) (BII container) (51563) 145-4510923-104		HD	50
60	5310-00-982-6584	WASHER, FLAT (7/8 in.) (BII container) (81348) FF-W-92		EA	50

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
BASIC ISSUE ITEMS LIST (BII)**

INTRODUCTION

Scope

This work package lists BII for the RRDF to help you inventory items for safe and efficient operation of the equipment.

General

These essential items are required to place the RRDF in operation, operate it, and to do emergency repairs. Although shipped separately packaged, BII must be with the RRDF during operation and when it is transferred between property accounts. Listing these items is your authority to request/requisition them for replacement based on authorization of the end item by the TOE/MTOE. Illustrations are furnished to help you find and identify the items.

Explanation of Columns in the BII List

Column (1) - Illus Number. Gives you the number of the item illustrated.

Column (2) - National Stock Number (NSN). Identifies the stock number of the item to be used for requisitioning purposes.

Column (3) - Description, CAGEC, and Part Number. Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The last line below the description is the CAGEC (commercial and government entity code) (in parentheses) and the part number.

Column (4) - Usable on Code. When applicable, gives you a code if the item you need is not the same for different models of equipment.

Column (5) - Unit of Measure (U/M). Indicates the physical measurement or count of the item as issued per the National Stock Number shown in column (2).

Column (6) - Qty Rqd. Indicates the quantity required.

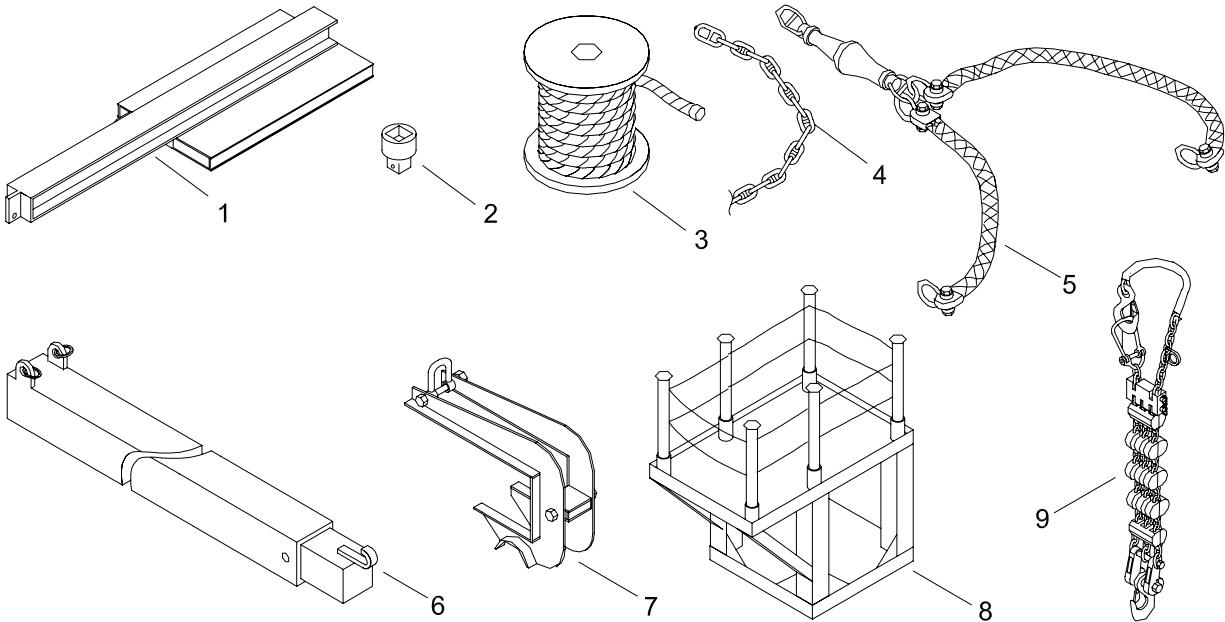


Table 1. Basic Issue Items (BII).

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC AND PART NUMBER	(4) USABLE ON CODE	(5) U/I	(6) QTY RQD
1	3930-01-499-8041	ADAPTER, FORKLIFT (06101) MCS-673-99-001-167		EA	2
2	5120-00-144-5207	ADAPTER, SOCKET WRENCH (07BY4) 5523A38		EA	1
3	4020-01-500-1232	AMSTEL BLUE LINE, 4 1/2 in. x 250 ft (5A457) 830		RL	2
4	4010-01-477-0497	ASSEMBLY, ANCHOR CHAIN (30 FT.) (23755) 20489		EA	15
5	NSN pending	ASSEMBLY, BRIDLE, TOWING (60 ft. towing ropes) (34712) E34993 ITEMS 3-8		EA	1
6	NSN pending	ASSEMBLY, CONTAINER PUSH ROD (push- pull) (34712) E35863		EA	1
7	NSN pending	ASSEMBLY, LIFTING DEVICE (flexor) (34712) E49591		EA	1
8	NSN pending	ASSEMBLY, MANLIFT (1PL62) 1001064		EA	1
9	NSN pending	ASSEMBLY, QUICK DISCONNECT (94658) ASC20-1		EA	6

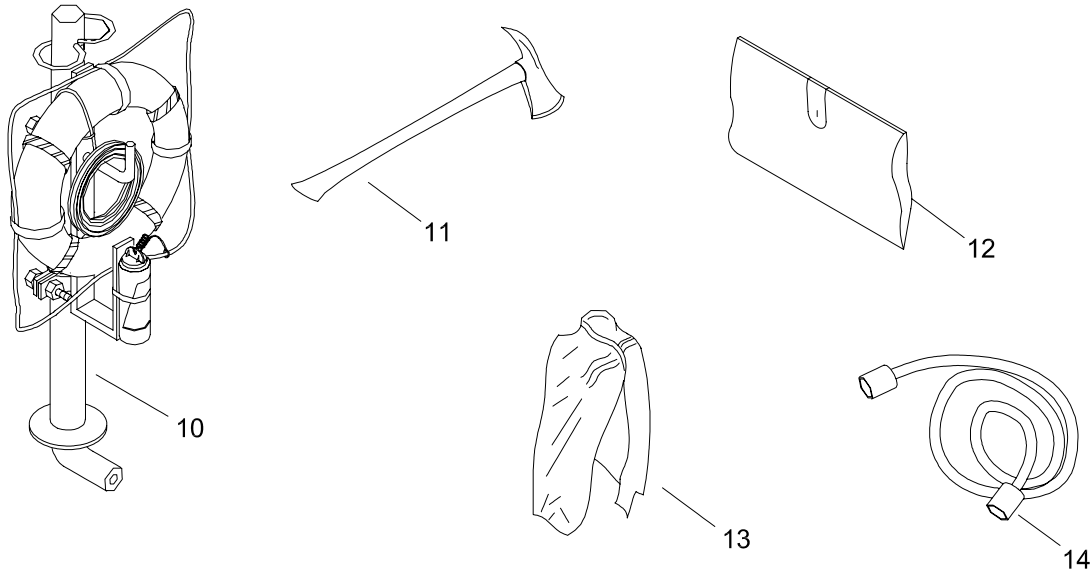


Table 1. Basic Issue Items (BII). (Continued)

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC AND PART NUMBER	(4) USABLE ON CODE	(5) U/I	(6) QTY RQD
10	No NSN assigned	ASSEMBLY, STANCHION, RING (34712) E38873 Consisting of: Ring, Buoy, Life Saving (7T351) JB-0-30 Light, Strobe (18560) SM-2 Hanger, Bracket (34712) E34682 Assembly, Stanchion (34712) E38203 Rope (39428) 3856T18		EA	4
11	4210-00-142-4949	AX, FIRE (76109) GGGA296TYPE2		EA	2
12	8105-01-438-9279	BAG, TOOLS AND SPARE PARTS (39428) 6565A11		EA	1
13	6510-01-439-0862	BLANKET, FIRE (72 in. x 60 in.) (1BJ97) 7260C		PG	1
14	NSN pending	CABLE, 50 FT NATO SLAVE (connector, plug, electrical) (61090) TGC2336-2		EA	1

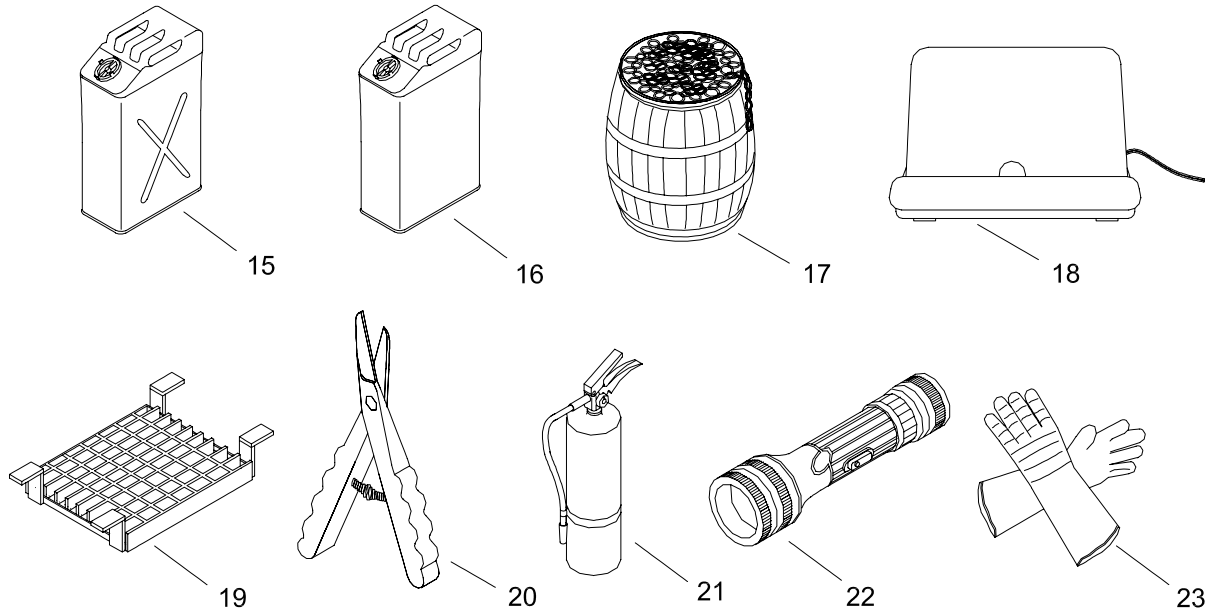


Table 1. Basic Issue Items (BII). (Continued)

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC AND PART NUMBER	(4) USABLE ON CODE	(5) U/I	(6) QTY RQD
15	7240-01-337-5269	CAN, GAS, MILITARY (5 gal fuel) (56161) 10502788		EA	8
16	7240-00-089-3827	CAN, WATER, MILITARY (5 gal water) (81349) MIL-C-43613 TYPE 1		EA	2
17	NSN pending	CHAIN, OPEN LINK (6 ft.) (75535) SPECTRUM 8		PC	134
18	NSN pending	CHARGER, RADIO (marine band radio) (1SU04) CSA280		EA	4
19	NSN pending	COVER, FLEXOR WELL (34712) E32782		EA	24
20	5110-01-423-8503	CUTTER, WIRE (55719) 659ACP		EA	4
21	4210-00-889-2491	EXTINGUISHER, FIRE (10 lb) (80244) A-A-393 TY1CL1SZ10		EA	2
22	6230-00-264-8261	FLASHLIGHT (watertight) (80063) MX991U		EA	2
23	NSN pending	GLOVES, ANTIFLASH (7J761) GUAP201524416		PR	18

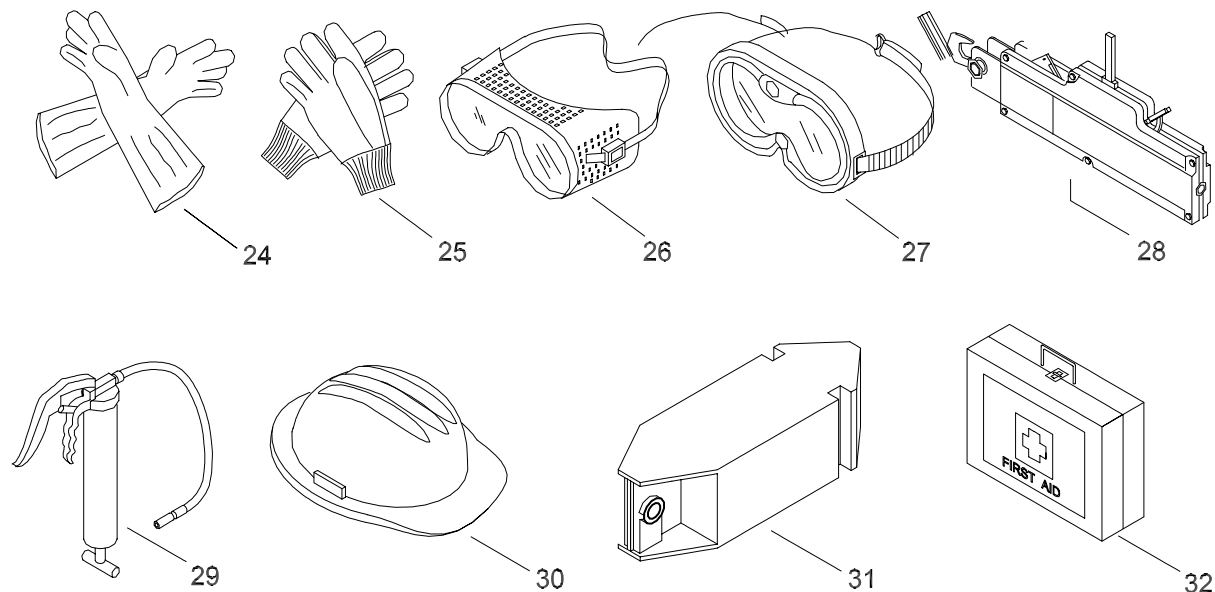


Table 1. Basic Issue Items (BII). (Continued)

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC AND PART NUMBER	(4) USABLE ON CODE	(5) U/I	(6) QTY RQD
24	NSN pending	GLOVES, CHEMICAL BATTERY (85953) CGC9636-12		PR	6
25	8415-00-634-4658	GLOVES, LEATHER PALM (58536) A-A-50021		PR	18
26	4240-00-052-3776	GOGGLES, CHIPPING (80204) ANSI Z87.1		PR	18
27	NSN pending	GOGGLES, SAFETY (7J761) CRE2230R		PR	18
28	3950-01-495-8333	GRIP HOIST (12708) TU-32		EA	2
29	4930-00-965-0288	GUN, GREASE (77335) 30415		EA	2
30	8415-00-935-3135	HAT, HARD (80204) ISEA/ANSI Z89.1		EA	10
31	NSN pending	INSERT, FLEXOR (34712) E34712		EA	2
32	6545-00-116-1410	KIT, FIRST AID (64616) UA-68-1371		EA	2

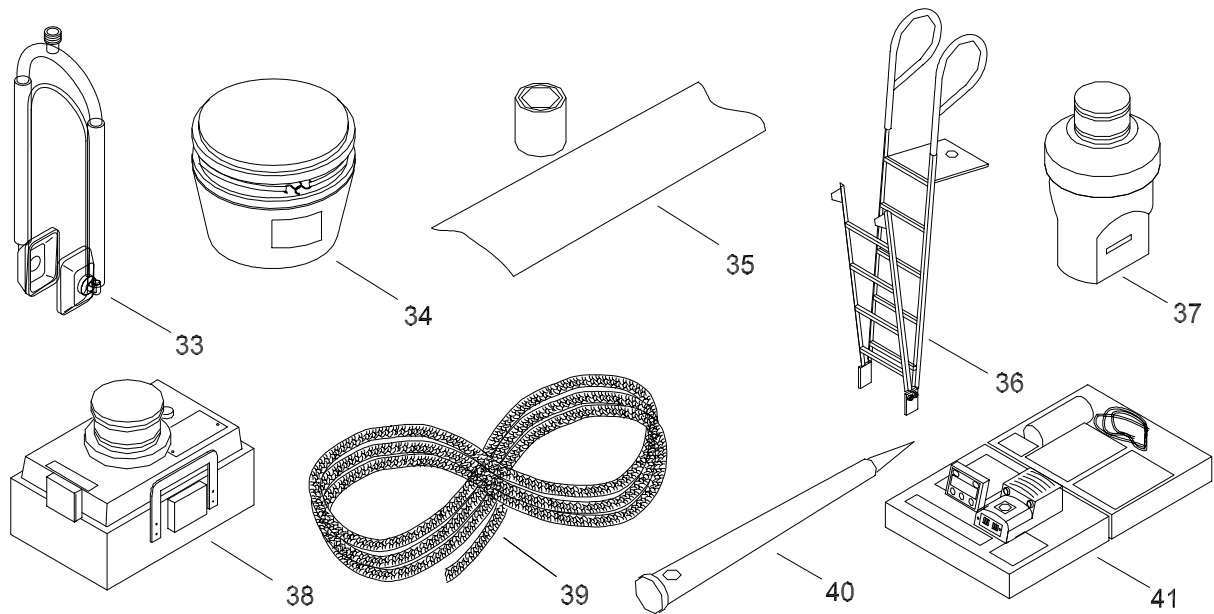


Table 1. Basic Issue Items (BII). (Continued)

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC AND PART NUMBER	(4) USABLE ON CODE	(5) U/I	(6) QTY RQD
33	NSN pending	KIT, FLUSH, OUTBOARD (8C297) 380160		EA	1
34	4235-01-416-8465	KIT, SPILL (50378) P-SKFL31		KT	1
35	8340-01-501-5741	KIT, TARP REPAIR (1B651) A149		EA	1
36	5440-01-499-8039	LADDER (06101) MCS-99-673-001-128		EA	2
37	6220-01-495-5953	LIGHT, WHITE (50818) 556-60-14		EA	10
38	NSN pending	LIGHTS, TOWING (34712) E53528		SET	2
39	NSN pending	LINE, HAWSER (75 ft., 8 in. circ.) (5A457) W6		RL	10
40	NSN pending	MARLINESPIKE (16 in.) (ORA00) 16IMS		EA	8
41	6680-01-499-8403	METER, GAS-FREE (7J761) US ARMY-112160		EA	1

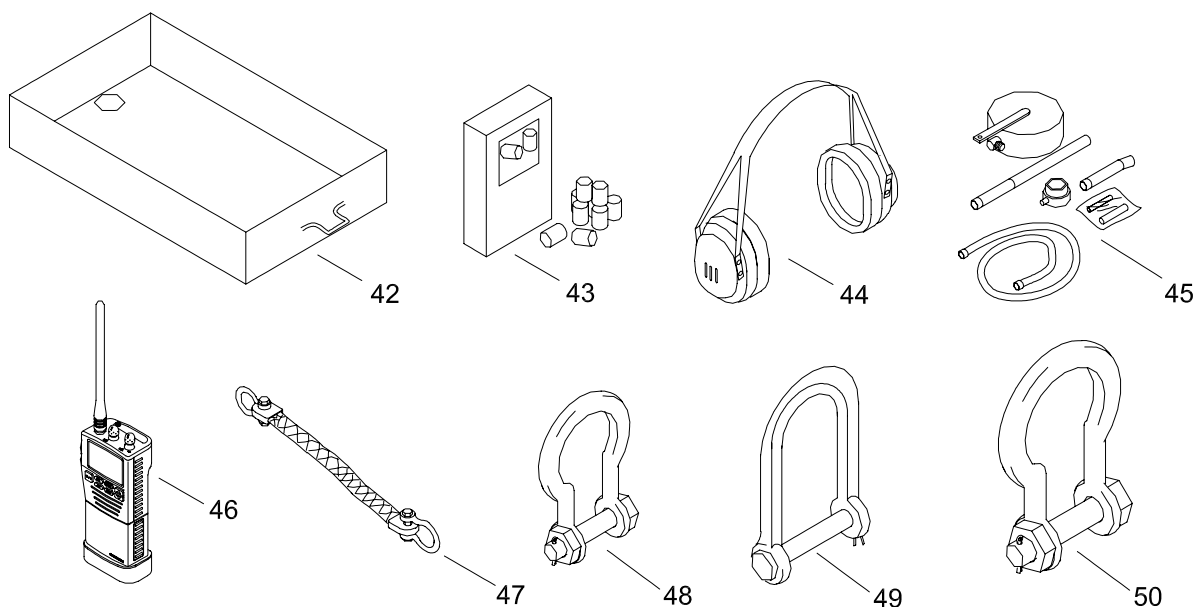


Table 1. Basic Issue Items (BII). (Continued)

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC AND PART NUMBER	(4) USABLE ON CODE	(5) U/I	(6) QTY RQD
42	NSN pending	PAN, SPILL (7J761) BRE8308		EA	1
43	6515-00-137-6345	PLUG, EAR (89875) 4-375		BX	1
44	4240-00-022-2946	PROTECTOR, SOUND (58536) A-A-58084		EA	4
45	4320-01-500-9383	PUMP AND HOSES, DEFUELING (08915) FR112		EA	1
46	NSN pending	RADIO, MARINE BAND (1SU04) HX350SAS		EA	4
47	NSN pending	ROPE, TOWING (35 ft.) (34712) E35011		EA	2
48	4030-01-499-9284	SHACKLE, 1/2 in., 2-TON (75535) 1019472		EA	330
49	4030-01-499-9284	SHACKLE, 1/2 in., 2-TON (75535) 1019472		EA	18
50	NSN pending	SHACKLE, 1-1/2 in., 30-TON (75535) 1021110		EA	8

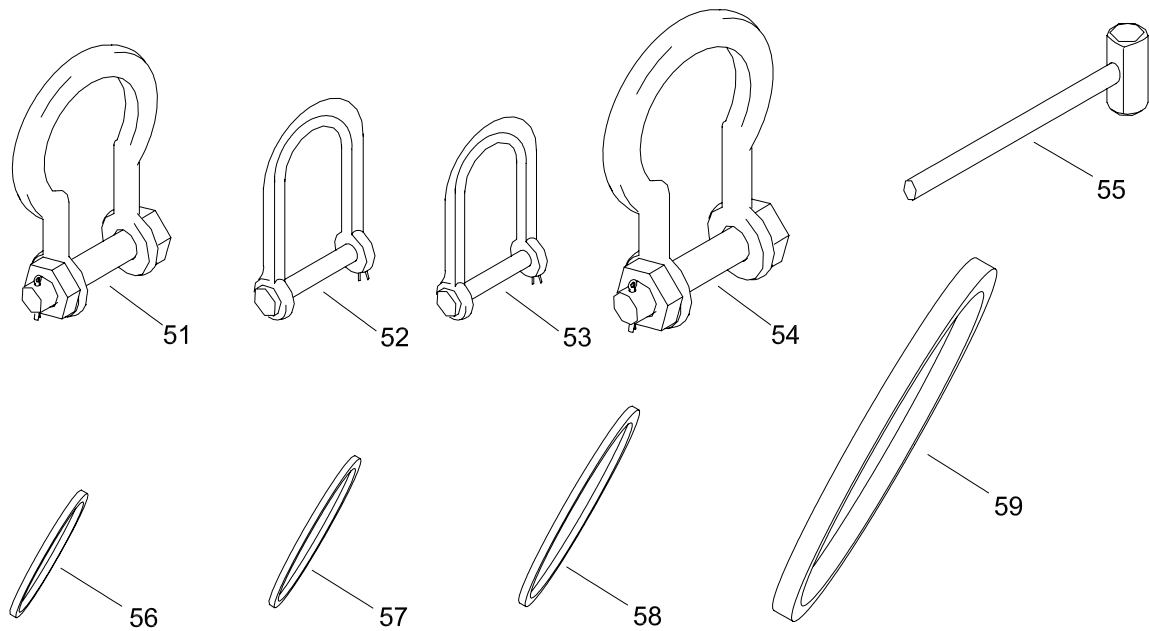


Table 1. Basic Issue Items (BII). (Continued)

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC AND PART NUMBER	(4) USABLE ON CODE	(5) U/I	(6) QTY RQD
51	NSN pending	SHACKLE, 2 in. (75535) 1019677		EA	2
52	4030-00-343-5433	SHACKLE, 3/4 in., 4-3/4 TON (75535) 1019515		EA	36
53	4030-01-251-7677	SHACKLE, 5/8 in., 3-1/4 TON (39428) 8966T52		EA	36
54	4030-01-175-3570	SHACKLE, ANCHOR, 2-1/2 in. (75535) 1019695		EA	2
55	5120-00-243-2957	SLEDGEHAMMER, 10 LB (66080) 75H-01116		EA	8
56	3940-01-501-0980	SLING, 5,300 lb., 4 ft. (green) (OVNA1) EN60X4FT		EA	4
57	3940-01-501-0972	SLING, 5,300 lb., 6 ft. (green) (OVNA1) EN60X6FT		EA	4
58	3940-01-501-1220	SLING, 5,300 lb., 5 ft. (green) (OVNA1) EN60X5FT		EA	4
59	3940-01-501-1210	SLING, 53,000 lb., 25 ft. (brown) (OVNA1) EN600X25FT		EA	8

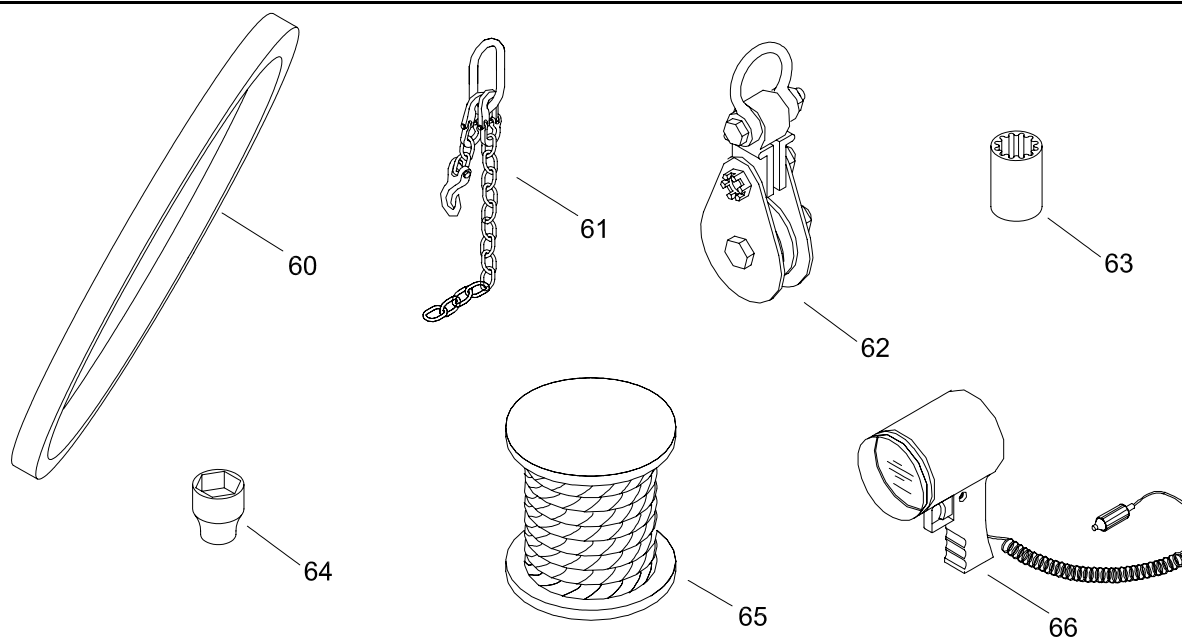


Table 1. Basic Issue Items (BII). (Continued)

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC AND PART NUMBER	(4) USABLE ON CODE	(5) U/I	(6) QTY RQD
60	3940-01-501-1216	SLING, 8,400 lb., 20 ft. (yellow) (OVNA1) EN90X20FT		EA	2
61		SLING, CHAIN Consisting Of:		EA	4
	4010-01-477-8666	One of Link, Master 1-1/4 in. (75535) 1014342			
	4030-01-500-9386	One of Chain, 5/8 in. (54 in.) (75535) SPECTRUM 8 One of 5/8 in. Clevis Grab Hook (75535) 1027695 Two of Lokalloy, Connecting Link, 5/8 in. (75535) 1015145			
62	3940-01-500-1241	SNATCH BLOCK, 8 in. dia. (75535) 121022		EA	3
63	5120-00-199-7765	SOCKET, SOCKET WRENCH (07BY4) 5547A24		EA	1
64	5120-01-514-2231	SOCKET, SOCKET WRENCH (45225) 1923		EA	1
65	4020-00-752-8879	SPOOL, 4 IN. LINE (81349) MIL-R-17343-4CRCM		RL	2
66	6230-01-315-8506	SPOTLIGHT, HAND-HELD (1XRW6) 2206		SET	2

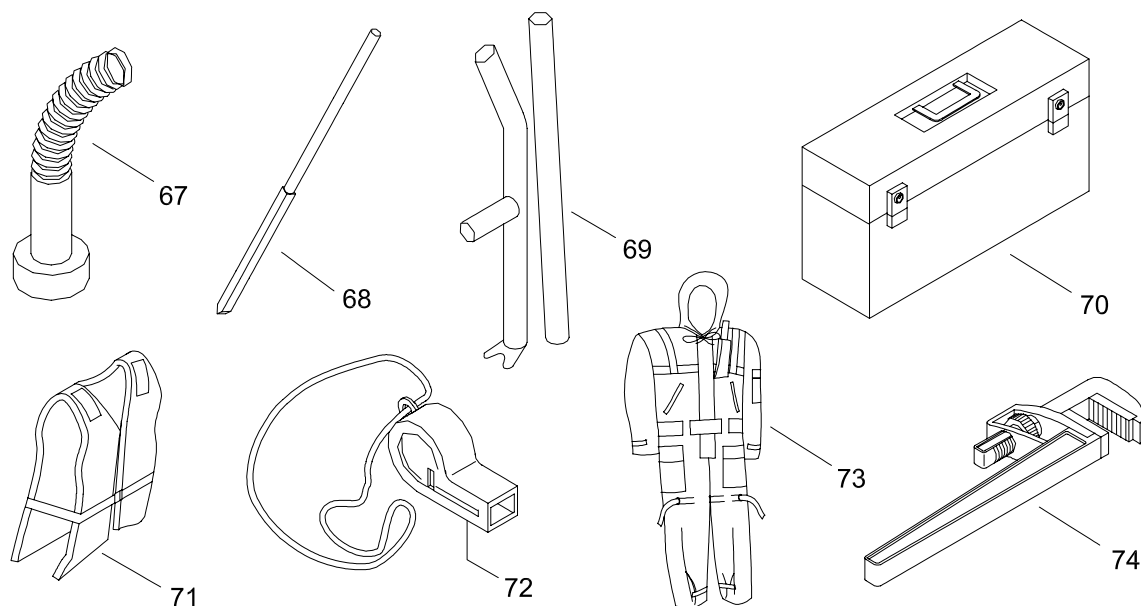


Table 1. Basic Issue Items (BII). (Continued)

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC AND PART NUMBER	(4) USABLE ON CODE	(5) U/I	(6) QTY RQD
67	7240-00-177-6154	SPOUT, CAN, GAS (19207) 11677020		EA	2
68	5120-00-224-1390	TANKER BAR (56161) 10501985		EA	8
69	5120-01-501-6717	TOOL, PIN RETRACT (06101) MCS-99-673-001-132		EA	2
70	5180-00-629-9783	TOOL KIT, GENERAL MECHANIC'S (hand tools) (50980) SC 5180-90-CL-N55		EA	1
71	NSN pending	VEST, WORK, STEARNS (6D887) 290EFRT		EA	18
72	8465-00-254-8803	WHISTLE (58536) A-A-55106		EA	24
73	NSN pending	WORKSUIT, STEARNS (6D887) I580OXL		EA	18
74	5120-00-277-1462	WRENCH, PIPE (24 in.) (19204) TKCX1D		EA	2

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
EXPENDABLE AND DURABLE ITEMS LIST (EDIL)**

INTRODUCTION

Scope

This work package lists expendable and durable items that you will need to operate and maintain the Roll-On/Roll-Off Discharge Facility. This list is for information only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V Repair Parts, and Heraldic Items), or CTA 8-100, Army Medical Department Expendable/Durable Items.

Explanation of Columns in the Expendable/Durable Items List

Column (1) - Item Number. This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the item (e.g., Use antiseize compound. (Item 9, WP 0117 00)).

Column (2) - Level. This column identifies the lowest level of maintenance that requires the listed item. (C = Operator/Crew, O = Unit/AVUM, F = Direct Support/AVUM, H = General Support, D = Depot)

Column (3) - National Stock Number (NSN). This is the NSN assigned to the item which you can use to requisition it.

Column (4) - Item Name, Description, Commercial and Government Entity Code (CAGEC), and Part Number (PN). This column provides the other information you need to identify the item.

Column (5) - Unit of Measure (U/M). This code shows the physical measurement or count of an item, such as gallon, dozen, gross, etc.

EXPENDABLE AND DURABLE ITEMS LIST

Table 1. Expendable and Durable Items List. (EDIL)

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) ITEM NAME, DESCRIPTION, CAGEC AND PART NUMBER	(5) U/M
1	C		2 + 4 Fuel Conditioner (0HBE8) 509765	BT
2	C	6850-01-446-9125	Antifreeze 1 gallon liquid (58536) A-A-52624 TY I RECYCLED	GL
3	C	8135-00-224-8885	Barrier Material, Greaseproofed-Waterproofed, Flexible (81349) MIL-PRF-121	ROLL
4	C	6135-01-333-6737	Battery, non-rechargeable (6 volt) (80205) 908A	PKG
5	C	6135-00-835-7210	Battery, non-rechargeable (D size) (90303) AL2	PKG
6	C		Carbon Guard (0HBE8) 772048	BT

Table 1. Expendable and Durable Items List. (EDIL) (Continued)

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) ITEM NAME, DESCRIPTION, CAGEC AND PART NUMBER	(5) U/M
7	C	6850-01-085-1423	Carbon Removing Compound (58011) 2+2 GUMCUTTER B101	CN
8	C	6850-01-431-9025	Cleaner, Type II (81349) MIL-C-29602	CO
9	C	8030-01-275-5050	Compound, Antiseize (71984) MOLYKOTE G-N	CONT
10	C	8030-00-231-2345	Corrosion Preventive Compound, Class I, grade I preservative (81349) MIL-C-16173	GL
11	C	8030-00-244-1297	Corrosion Preventive Compound, Class I, grade II preservative (81349) MIL-C-16173	GL
12	C		Desiccant, Silica Gel, 1/2 Unit Size (16210) 1/2UNITSPS	GR
13	C		Desiccant, Silica Gel, 1 Unit Size (16210) 1UNITSPS	GR
14	C		Desiccant, Silica Gel, 80 Unit Size (16210) 03610730169	DR
15	C	6550-01-310-1677	Distilled Water, Reagent, Four 1 Gallon (07TA6) C4350-1A	PG
16	C		Engine Tuner (0HBE8) 771297	CN
17	C	9139-01-089-6745	Gasoline, Unleaded (80738) UNLEADED	GAL
18	C	9150-00-145-0268	Grease, Aircraft, General Purpose (81349) 001450268	CN
19	C	9150-01-197-7693	Grease, Automotive and Artillery, 14 oz. cartridge (81349) M-10924-2-F	CA
20	F		Grease, Cindol, (Starter and Pinion) (1T4E6) 2321	TU
21	C	9150-00-929-7946	Grease, General Purpose, (lubriplate TU 1200-2) (76736) Dura-Lith Grease EP 2	CA
22	C	9150-01-307-6848	Grease, Outboard Motor, (Triple-Guard Grease) (7H063) 508298	TU

Table 1. Expendable and Durable Items List. (EDIL) (Continued)

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) ITEM NAME, DESCRIPTION, CAGEC AND PART NUMBER	(5) U/M
23	C	9150-00-530-6814	Grease, Wire Rope-Exposed Gear, 35 lb can, petroleum oil based (81349) MIL-G-18458	CN
24	C	9150-01-462-3234	Hydraulic Fluid, Petroleum Base, (EASY) (26952) HF-101	GAL
25	C		Hydraulic Fluid, Petroleum Base, (tilt/trim and power steering) (7H063) 174997	CN
26	C	6665-00-878-0797	Indicator, Carbon Monoxide (55799) 803943	BX
27	C		Inhibitor, Corrosion, Foam Block (44695) A-HCIIDV	EA
28	O	6685-01-280-3475	Indicator, Humidity, Card, MIL-I-8835 08992 TA356-HC-246P	EA
29	C		Kit, Flare Alert (OURT0) 291222	KT
30	C		Kit, Flare Alert (OURT0) 291420	KT
31	C		Kit, Gearcase Lube (7H063) 509952	KT
32	C	6260-01-334-4274	Light, Chemiluminescent (83289) 95277-80	BX
33	C	9150-00-111-3199	Lubricating Oil, Engine, 10W Grade (81349) MIL-PRF-21260	CN
34	C	9150-01-293-7696	Lubricating Oil, Engine, 15W40 Grade (81349) MIL-PRF-21260	CN
35	C	9150-00-111-0209	Lubricating Oil, Engine, 30 Grade (81349) MIL-PRF-21260	CN
36	C	9150-00-234-5197	Lubricating Oil, Exposed Gear (81348) VVL751	CN
37	C	9150-01-035-5392	Lubricating Oil, Gear, 80W90 Grade (81349) M2105-1-80W90	QT
38	C	9150-00-231-9045	Lubricating Oil, General Purpose, Penetrating, Water Displacing (81349) MIL-PRF-32033	GL

Table 1. Expendable and Durable Items List. (EDIL) (Continued)

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) ITEM NAME, DESCRIPTION, CAGEC AND PART NUMBER	(5) U/M
39	C	8540-00-530-3770	Paper, Toilet (81348) UU-P-00556	BX
40	C	7920-00-148-9666	Rag, Wiping (80244) 7920-00-148-9666	LB
41	C		Shrink Wrap, Corrosion Intercept (48884) ISF-14-175	ROLL
42	C	6850-01-167-4789	Stabilizer Additive, Diesel Fuel (81349) MIL-S-53021	CN
43	C	5975-00-074-2072	Strap, Tiedown, Electrical (65664) L-7-50-9	HD
44	C		Stretch Wrap, Corrosion Intercept (3BVZ5) CI-STR-181000	ROLL
45	C	5970-00-240-0617	Tape, Insulation, Electrical, Black (75037) SCOTCH 23 3/4 IN. BLACK	ROLL
46	C	7510-00-074-4952	Tape, Pressure Sensitive Adhesive (81346) ASTM D 5486 Type IV	ROLL
47	C	4020-00-231-5886	Twine, Fibrous (80063) SCD28054B	EA
48	O	9330-01-143-7788	Window, Observation (08992) TA456	EA
49	C	8520-00-782-3554	Wipes, Hand (81348) UU-T-1790	BX
50	C	9525-00-803-3044	Wire, Mousing (81348) QQ-N-281	RL

**OPERATOR MAINTENANCE
ROLL-ON/ROLL-OFF DISCHARGE FACILITY
TOOL IDENTIFICATION LIST (TIL)**

INTRODUCTION**Scope**

This work package lists all common tools and supplements and special tool/fixtures needed to maintain the Roll-On/Roll-Off Discharge Facility.

Explanation of Columns in the Tool Identification List

Column (1) - Item Number. This number is assigned to the entry in the list and is referenced in the initial setup to identify the item (e.g., Respirator (Item 10, WP 0118 00)).

Column (2) - Item Name. This column lists the item by noun nomenclature and descriptive features (e.g. Gage, belt tension).

Column (3) - National Stock Number. This is the National Stock Number (NSN) assigned to the item; use it to requisition the item.

Column (4) - Part Number/CAGEC. Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity) which controls design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items. The manufacturer's Commercial and Government Entity Code (CAGEC) is also included.

Column (5) - Reference. This column identifies the authorizing supply catalog or RPSTL for items listed in this work package.

TOOL IDENTIFICATION LIST**Table 1. Tool Identification List. (TIL)**

(1) ITEM NO.	(2) ITEM NAME	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER/ CAGEC	(5) REFERENCE
1	Apron, utility	8415-00-082-6108	A-A-55063 (58536)	SC 4910-95-A72
2	Brush, stencil (soft bristle)	7520-00-223-8000	A-A2903 (58536)	SC 4910-95-A72
3	Brush, wire scratch	7920-00-291-5815	7920002915815 (83421)	SC 4910-95-A72
4	Compressor unit, reciprocating, power drive	4310-00-861-9820	MILC13874 (81349)	SC 4940-95-A64
5	Funnel, with strainer (1gal)	7240-00-223-4482	605 (0T115)	SC 4910-95-A72
6	Gage, tire pressure, 10 to 50 PSI	4910-01-117-2994	YA106 (55719)	SC 4910-95-A72
7	Mop, wet, fixed handle	7920-00-224-8726	7920-00-224-8726 (83421)	SC 4910-95-A68

Table 1. Tool Identification List. (TIL) (Continued)

(1) ITEM NO.	(2) ITEM NAME	(3) NATIONAL STOCK NUMBER	(4) PART NUMBER/ CAGEC	(5) REFERENCE
8	Oiler, hand	4930-00-274-5713	A-A-50477B (58536)	SC 4910-95-A72
9	Pail, utility, stainless steel	7240-01-252-7075	4486T4 (39428)	SC 4910-95-A72
10	Respirator, air filtering	4240-01-088-8546	14130047 (79687)	SC 4910-95-A68

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- Warning Summary a

These are the instructions for sending an electronic 2028.

The following format must be used if submitting an electronic 2028. The subject line must be exactly the same and all fields must be included; however, only the following fields are mandatory: 1, 3, 4, 5, 6, 7, 8, 9, 10, 13, 15, 16, 17 and 27.

From: "Whomever" whomever@avma27.army.mil
To: whomever@avma27.army.mil
To: TACOM-TECH-PUBS@ria.army.mil

Subject: DA Form 2028

1. **From:** Joe Smith
2. **Unit:** home
3. **Address:** 4300 Park
4. **City:** Hometown
5. **St.:** MO
6. **Zip:** 77777
7. **Date Sent:** 19-OCT-93
8. **Pub no:** 55-1915-200-10
9. **Pub Title:** TM
10. **Publication Date:** 11-APR-88
11. **Change Number:** 12
12. **Submitter Rank:** MSG
13. **Submitter Name:** Joe
14. **Submitter FName:** T
15. **Submitter Lname:** Smith
16. **Submitter Phone:** 123-123-1234
17. **Problem:** 1
18. **Page:** 1
19. **Paragraph:** 3
20. **Line:** 4
21. **NSN:** 5
22. **Reference:** 6
23. **Figure:** 7
24. **Table:** 8
25. **Item:** 9
26. **Total:** 123
27. **Text:**

This is the text for the problem below line 27.

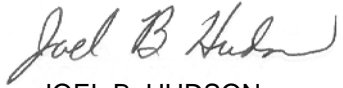
RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is OAASA						Use Part II (<i>reverse</i>) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).	DATE
TO: (<i>Forward to proponent of publication or form</i>) (<i>Include ZIP Code</i>)						FROM: (<i>Activity and location</i>) (<i>Include ZIP Code</i>)	
PART I - ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS							
PUBLICATION/FORM NUMBER						DATE	TITLE
ITEM	PAGE	PARA-GRAPH	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON	
<i>* Reference to line numbers within the paragraph or subparagraph.</i>							
TYPED NAME, GRADE OR TITLE					TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION		SIGNATURE

TO: <i>(Forward direct to addressee listed in publication)</i>			FROM: <i>(Activity and location) (Include ZIP Code)</i>				DATE	
PART II - REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS								
PUBLICATION NUMBER				DATE			TITLE	
PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION
PART III - REMARKS <i>(Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)</i>								
TYPED NAME, GRADE OR TITLE				TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION			SIGNATURE	

By Order of the Secretary of the Army:

PETER J. SCHOOMAKER
General, United States Army
Chief of Staff

Official:



JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
0316902

To be distributed in accordance with the initial distribution number (IDN) 256773 requirements for TM 55-1945-216-10.

The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
 1 decimeter = 10 centimeters = 3.94 inches
 1 meter = 10 decimeters = 39.37 inches
 1 dekameter = 10 meters = 32.8 feet
 1 hectometer = 10 dekameters = 328.08 feet
 1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
 1 decigram = 10 centigrams = 1.54 grains
 1 gram = 10 decigrams = .035 ounce
 1 dekagram = 10 grams = .35 ounce
 1 hectogram = 10 dekagrams = 3.52 ounces
 1 kilogram = 10 hectograms = 2.2 pounds
 1 quintal = 100 kilograms = 220.46 pounds
 1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce
 1 deciliter = 10 centiliters = 3.38 fl. ounces
 1 liter = 10 deciliters = 33.81 fl. ounces
 1 dekaliter = 10 liters = 2.64 gallons
 1 hectoliter = 10 dekaliters = 26.42 gallons
 1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
 1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
 1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
 1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
 1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
 1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

<i>To change</i>	<i>To</i>	<i>Multiply by</i>	<i>To change</i>	<i>To</i>	<i>Multiply by</i>
inches	centimeters	2.540	ounce-inches	newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29.573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	newton-meters	1.356	kilograms	short tons	1.102
pound-inches	newton-meters	.11296	metric tons		

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C
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