

**FM 4-20.158  
TO 13C7-7-61**



# **AIRDROP OF SUPPLIES AND EQUIPMENT: RIGGING WATER PURIFICATION UNITS**



**MAY 2005**

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# **Airdrop of Supplies and Equipment: Rigging Water Purification Units**

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## Preface

### SCOPE

This manual provides the latest approved doctrine for rigging the following water purification units. It is written for use by all parachute riggers.

- a. 600-gallons per hour (GPH) ROWPU on a 20-foot platform.
- b. Lightweight water purifier (LWP) on a 12-foot platform.

### NOTICE OF EXCEPTION

When an item of airdrop equipment is replaced or a rigging procedure is changed, it will be impossible to change all manuals in the field at one time. Therefore, FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 will be changed when necessary and will take precedence over the procedures in an individual rigging manual. There may be times, however, when the procedures in an individual rigging manual must be followed even though they are different from those in FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. When this occurs, a notice of exception will be printed at the beginning of each paragraph where the exception is authorized. The notice of exception will look like the following:

#### NOTICE OF EXCEPTION

The procedures in this paragraph are different from those in FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO13C7-1-5. An exception to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 is granted. The procedures in this paragraph must be followed.

### REFERENCE INFORMATION

To avoid repeating certain information and procedures, it is often necessary to reference other FMs and TMs. For example, this manual often references FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. This may seem to be contradictory in that this manual, FM 4-20.158/TO 13C7-7-61, deals with rigging water purification loads and FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 deals with rigging platform loads. However, FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 also provides general information and general procedures. Where procedures are the same or only minor differences exist it is permissible to state that the procedure is done according to or by adapting the procedures in FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

## USER INFORMATION

The proponent of this publication is HQ TRADOC. You are encouraged to report any errors or omissions and to suggest ways of making this a better manual.

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Also send an information copy of AFTO Form 22 to:

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## Introduction

### DESCRIPTION OF ITEMS

The description of the items rigged in this manual is given below.

**a. 600-Gallons Per Hour (GPH) Reverse Osmosis Water Purification Unit (ROWPU):** The ROWPU consists of a water purification unit and a 30-kilowatt generator mounted on a 5-ton, four wheel, cargo trailer. The ROWPU with supporting equipment weighs 21,780 pounds rigged. It is 230 inches long and 96 inches wide. Its height is 97 inches (reducible to 91 inches).

**b. Lightweight Water Purifier (LWP):** The lightweight water purifier consists of a loading truck, ultra-filtration module, control module, high-pressure pump module, chemical injection cleaning module, reverse osmosis element module, pump module, 3-kilowatt (KW) generator, loading ramps, 1,000 gallon collapsible fabric tank (raw water and product), hose (raw water, back-wash, high-pressure and reject), pump skid cover, components of end items (COEI) box, basic issue items (BII) box, cold weather kit (CWK) 1 box, cold weather kit (CWK) 2 box, CWK 3 box and the components of end items (COEI) cable box. The total weight of the LWP is approximately 6,140 pounds.

### SPECIAL CONSIDERATIONS

Special considerations for this manual are given below.

- a.** The 600-GPH ROWPU is technically approved for airdrop from the C-130 and C-17 aircraft.
- b.** The overall rigged height of the 600-GPH ROWPU will not exceed 101 inches for a distance of not more than 40 inches aft of the CB. All high points should be verified each time this load is placed on the aircraft.
- c.** A copy of this manual must be available to the joint airdrop inspectors during the before- and after- loading inspections.
- d.** Check fuel levels to ensure that they do not exceed the the fuel level of the specific rigging chapter.
- e.** Package, mark, and label hazardous material according to AFMAN 24-204(I)/TM 38-250.

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## CHAPTER 1

# RIGGING 600-GALLONS PER HOUR (GPH) REVERSE OSMOSIS WATER PURIFICATION UNIT (ROWPU) ON A 20-FOOT, TYPE V PLATFORM FOR LOW-VELOCITY AIRDROP

### DESCRIPTION OF LOAD

1-1. The 600-gallons per hour ROWPU (Figure 1-1) is rigged on a 20-foot, type V platform. The 600-gallons per hour ROWPU consists of the equipment shown in Figure 1-1. The total rigged weight of the load is 21,780 pounds. The load is 101 inches high, 108 inches wide, 275 inches long, and the center of balance is 130 inches from the front edge of the platform. Refer to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 for the weight limitations and for the number of parachutes to be used.

### PREPARING PLATFORM

1-2. Prepare a 20-foot, type V platform as shown in Figure 1-2.

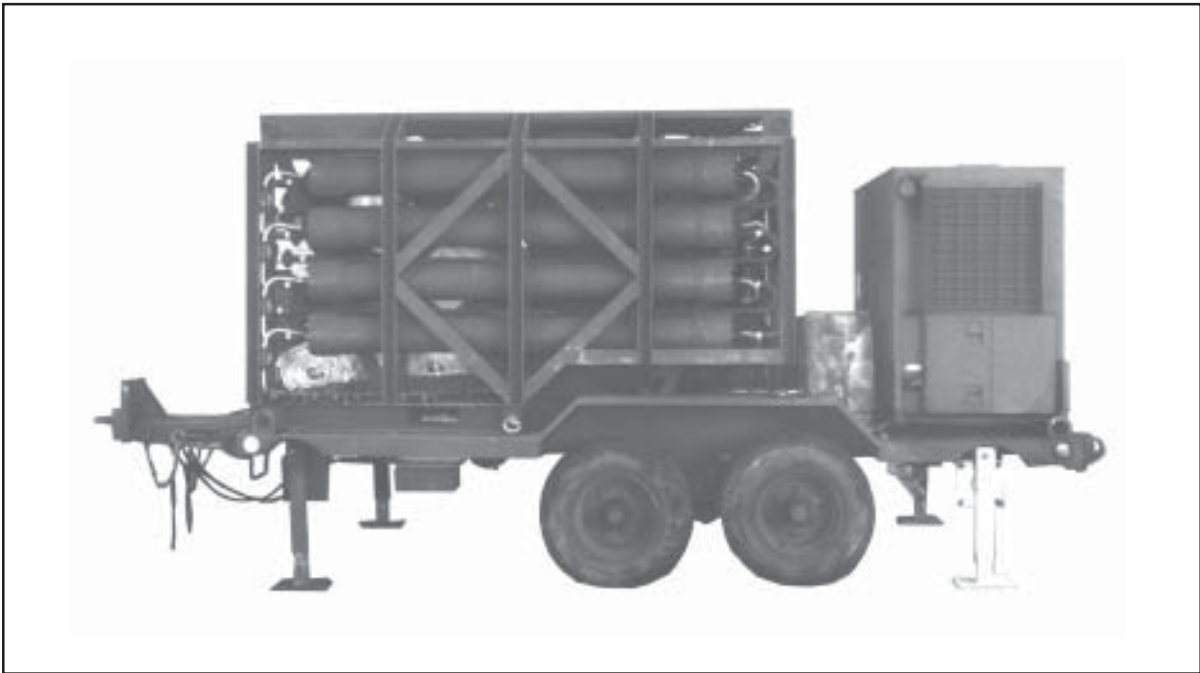
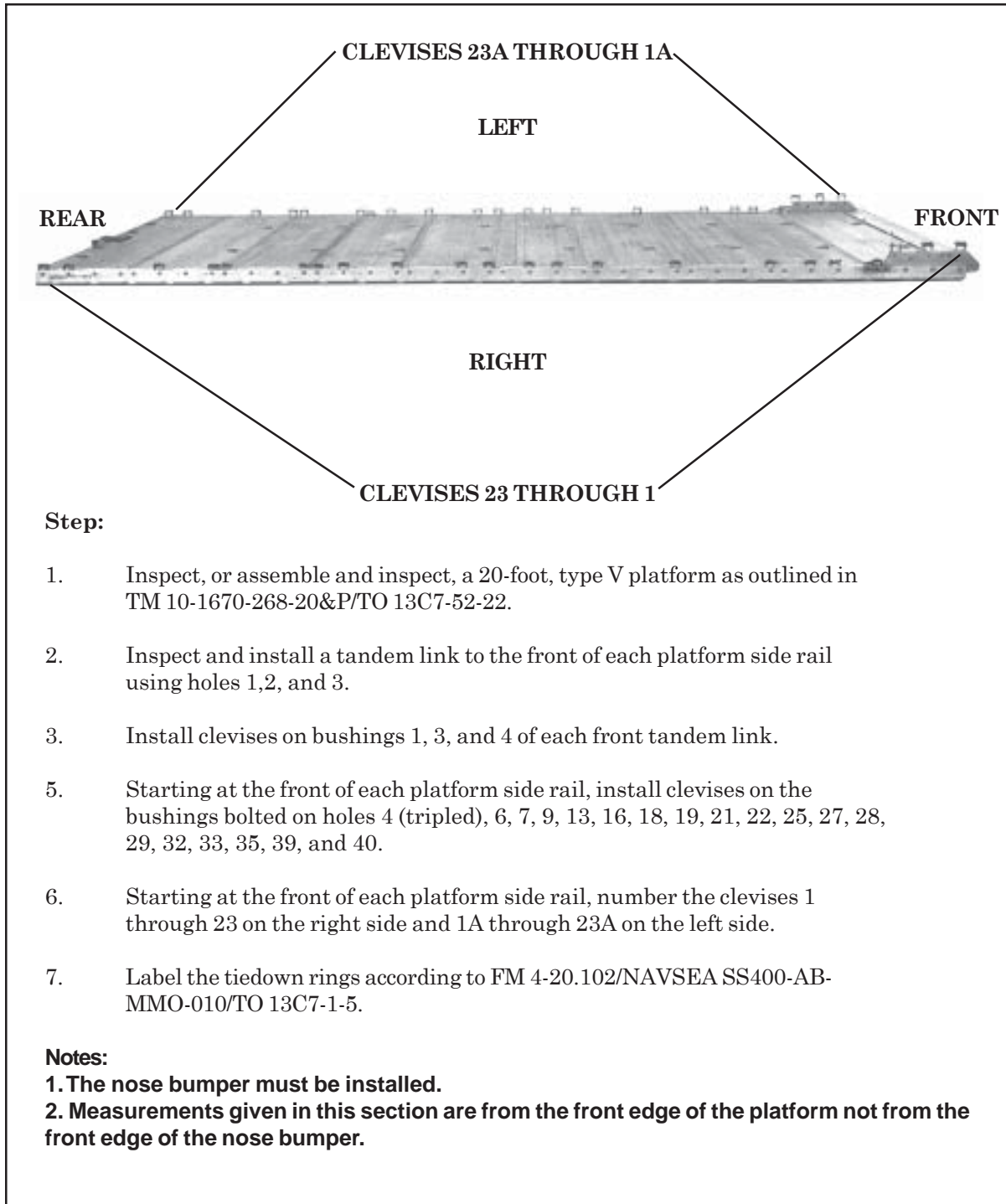


Figure 1-1. 600-Gallons Per Hour (GPH) Reverse Osmosis Water Purification Unit (ROWPU)



**Step:**

1. Inspect, or assemble and inspect, a 20-foot, type V platform as outlined in TM 10-1670-268-20&P/TO 13C7-52-22.
2. Inspect and install a tandem link to the front of each platform side rail using holes 1,2, and 3.
3. Install clevises on bushings 1, 3, and 4 of each front tandem link.
5. Starting at the front of each platform side rail, install clevises on the bushings bolted on holes 4 (tripled), 6, 7, 9, 13, 16, 18, 19, 21, 22, 25, 27, 28, 29, 32, 33, 35, 39, and 40.
6. Starting at the front of each platform side rail, number the clevises 1 through 23 on the right side and 1A through 23A on the left side.
7. Label the tiedown rings according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

**Notes:**

1. The nose bumper must be installed.
2. Measurements given in this section are from the front edge of the platform not from the front edge of the nose bumper.

**Figure 1-2. Platform Prepared**