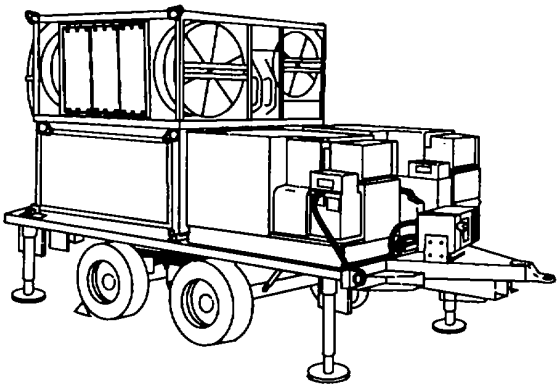
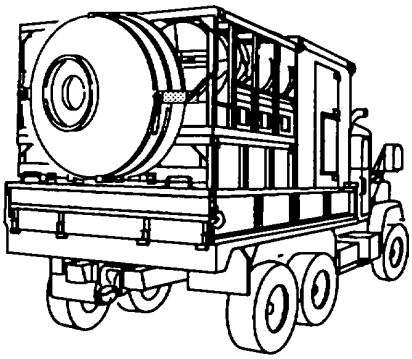
OPERATOR'S, UNIT, AND DIRECT SUPPORT MAINTENANCE MANUAL





ANTENNA SUPPORT GROUP OE-481/TRC
(NSN 5985-01-333-9688) (EIC: N/A)

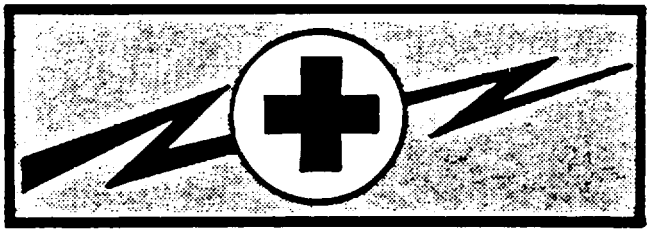
HEADQUARTERS, DEPARTMENT OF THE ARMY

1 NOVEMBER 1991

5 SAFETY STEPS TO FOLLOW IF SOMEONE IS THE VICTIM OF ELECTRICAL SHOCK

1. DO NOT TRY TO PULL OR GRAB THE INDIVIDUAL
2. IF POSSIBLE, TURN OFF THE ELECTRICAL POWER
3. IF YOU CANNOT TURN OFF THE ELECTRICAL POWER, PULL, PUSH OR LIFT THE PERSON TO SAFETY USING A DRY WOODEN POLE OR A DRY ROPE OR SOME OTHER INSULATING MATERIAL
4. SEND FOR HELP AS SOON AS POSSIBLE
5. AFTER THE INJURED PERSON IS FREE OF CONTACT WITH THE SOURCE OF ELECTRICAL SHOCK, MOVE THE PERSON A SHORT DISTANCE AWAY AND IMMEDIATELY START ARTIFICIAL RESUSCITATION

WARNING



HIGH VOLTAGE

is used in the operation of this equipment.

DEATH ON CONTACT

may result if personnel fail to observe safety precautions.

Never work on electronic equipment unless there is another person nearby who is familiar with the operation and hazards of the equipment and who is competent in administering First Aid. When a technician is aided by other personnel, they must be warned about dangerous areas.

Whenever possible, the power supply to the equipment must be shut off before working on the equipment.

Be careful not to contact high-voltage connections or 115 V ac input connections when deploying or operating this equipment.

Whenever the nature of the operation permits, keep one hand away from the equipment to reduce the hazard of current flowing through vital organs of the body.

Do not be misled by the term "low voltage". Potentials as low as 50 volts may cause death under adverse conditions.

For First Aid refer to FM-21-11.

WARNING

Trailer wheels must be blocked, brakes set and leg supports down in support position before operating the equipment. Failure to comply may result in personal injury or death.

WARNING

Do not operate generator set until it has been connected to a suitable ground. Serious injury or death by electrocution can result from operating an ungrounded generator set.

WARNING

Do not disconnect tie-down cable assemblies on both sides of trailer when completely unloading the pallet assembly. If all equipment is unloaded, such as when unloading a pallet assembly for repair, operators standing on the work platforms could cause the pallet assembly to overturn. To prevent such a hazard, keep one tie-down assembly on opposite side attached when unloading all equipment from a pallet assembly. Failure to comply with this warning may result in personal injury or death.

WARNING

Capacity of lifting device and four-point sling must be 6000 pounds or greater. Failure to use proper lifting device may result in personal injury or death.

WARNING

Two personnel are required to guide pallet during lifting procedure. Failure to control pallet during lifting may result in personal injury or death.

Technical Manual

No. 11-5985-392-13

HEADQUARTERS
DEPARTMENT OF TIE ARMY
Washington, DC, 1 November 1991

Operator's, Unit, and Direct Support Maintenance Manual Antenna Support Group OE481/TRC (NSN 59850)1-333-9688) (EIC: N/A)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual to: Commander, U.S. Army Communications - Electronics Command and Fort Monmouth, ATTN: AMSEL-LC-LM-LT, Fort Monmouth, New Jersey 07703-5007. A reply will be furnished to you.

TABLE OF CONTENTS

TABLE OF CONTENTS - Continued

HOW TO USE THIS MANUAL

This manual is designed to help you operate and maintain the equipment. All task descriptions will take you step-by-step through the procedure. Don't take shortcuts. Before you begin any task, you should read through the complete procedure, make sure you know what needs to be done, then go back and follow the steps as written.

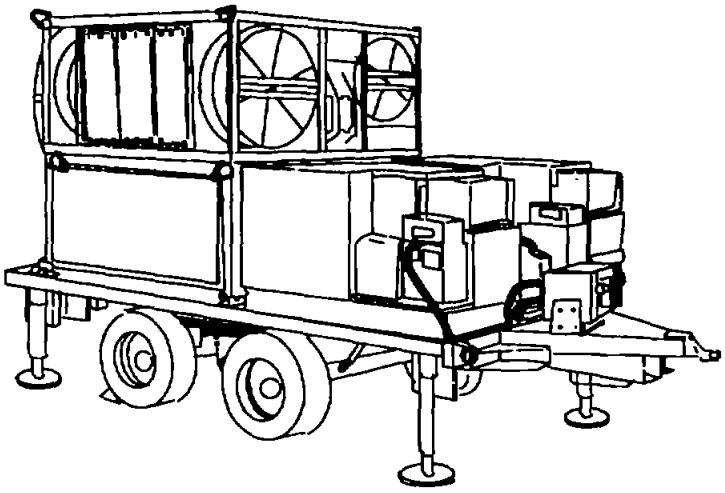
Pay particular attention to WARNINGS and CAUTIONS, as they contain information that will prevent injury to personnel or damage to equipment.

The front cover index identifies frequently used information. Each item is boxed and identified by topic and page number.

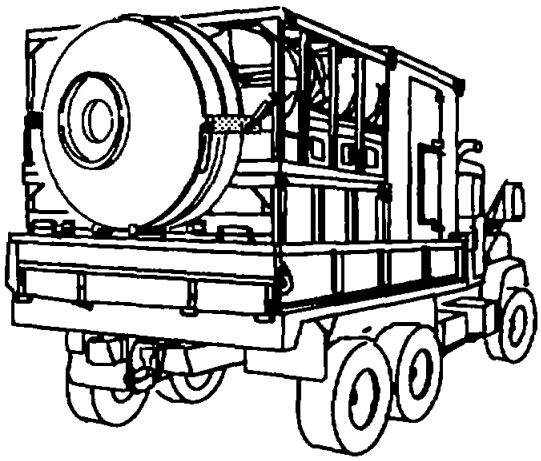
Bend the manual a bit and look at the edges of the pages. The black bars on the the cover should line up with the pages which have black edge markers.

Flip through the pages to find the black marker that matches the one on the cover for the topic you want.

If the front cover index does not help locate a topic, use the alphabetical index at the back of the manual to find it.



TRAILER-MOUNTED CONFIGURATION



TRUCK-MOUNTED CONFIGURATION

Antenna Support Group OE-481/TRC

CHAPTER 1

INTRODUCTION

Section I. GENERAL INFORMATION

1-1. SCOPE

This manual contains procedures for loading and unloading equipment and for reconfiguring Antenna Support Group OE-481/TRC for various modes of transport. The manual also contains maintenance procedures to be performed by operator, unit, and direct support maintenance personnel.

1-2. CONSOLIDATED INDEX OF ARMY PUBLICATIONS AND BLANK FORMS

Refer to the latest issue of DA Pam 25-30 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

1-3. MAINTENANCE FORMS, RECORDS, AND REPORTS

a. Reports of Maintenance and Unsatisfactory Equipment

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA Pam 738-750, as contained in Maintenance Management Update.

b. Reporting of Item and Packaging Discrepancies

Fill out and forward SF 364 [Report of Discrepancy (ROD)] as prescribed in AR 735-112JDLAR 4140.55/SECNAVINST 4355.18/AFR 400-54/MCO 4430.3J.

1-3. MAINTENANCE FORMS, RECORDS, AND REPORTS - Continued

c. Transportation Discrepancy Report (TDR)

Fill out and forward SF 361 [Transportation Discrepancy Report (TDR)], as prescribed in AR 55-38/NAVSUPINST 4610.33C/AFR 75-18/MCO P4610.19D/DLAR 4500.15.

1-4. HAND RECEIPT (-HR) MANUAL

This manual has a companion document with a TM number followed by "-HR" (which stands for Hand Receipt). The TM 11-5985-392-10-HR consists of preprinted hand receipts (DA form 2062) that list end item related equipment (i.e., COEI, BII, and AAL) you must account for. As an aid to property accountability, additional -HR manuals may be requisitioned from the Commander, U.S. Army Publications Distribution Center - St. Louis, ATTN: SFIS-APC-S-OC, 1655 Woodson Road, St. Louis, MO 63114-6181 in accordance with procedures in Chapter 3, AR 310-2.

1-5. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your equipment 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 the design or performance. Put it on an SF 368 (Product Quality Deficiency Report). Mail it to: Commander, U.S. Army Communications - Electronics Command and Fort Monmouth, ATTN: AMSEL-ED-PH, Fort Monmouth, New Jersey 07703-5000. We'll send you a reply.

1-6. DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

Destruction of Army electronics material to prevent enemy use shall be in accordance with TM 750-244-2.

1-7. ADMINISTRATIVE STORAGE

Equipment issued to and used by Army activities will have preventive maintenance performed in accordance with the Preventive Maintenance Checks and Services (PMCS) charts before being placed in administrative storage. When equipment is removed from administrative storage, PMCS should be performed to ensure operational readiness. Refer to paragraph 4-26 for preparation of equipment for storage or shipment.

1-8. WARRANTY INFORMATION

The OE-4811TRC is warranted by Harris Corporation for 3 years from date of delivery to the Government, with an extended warranty for design, performance, and interchangeability. For clarification and specific warranty information, refer to TB 11-5985-392-25.

1-9. NOMENCLATURE CROSS-REFERENCE LIST

The following list gives common names used in this manual for equipment nomenclature. Use official nomenclature when completing report forms.

Common Name	Nomenclature
Generator	Generator Set, Diesel Engine Driven, Tactical Skid Mounted 10 kW, 1 Phase - 2 Wire, 1 Phase - 3 Wire, 3 Phase - 4 Wire, 120, 120/240 and 120/208 Volts, MEP-003A
Large Antenna	Antenna AS-1425/GRC
Mast	Mast AB-1373/TRC
Noise Suppression Kit	Acoustic Suppression Kit, 10 kW, MEP-003AAS
Pallet Assembly	Antenna Support Group OE-481/TRC
Small Antenna	Antenna AS-3047/GRC-103(V)
Trailer	Trailer, Flatbed, General Purpose, 5 Ton, 4 Wheel, M1061A1 (Modified)
Truck	Truck, M923, 5 Ton

1-10. LIST OF ABBREVIATIONS

The following list defines abbreviations used in this manual.

ac	alternating current
cm	centimeter
DGM	digital group multiplexer
Hz	Hertz
kg	kilogram
km/h	kilometers per hour
kW	kilowatt
m	meter
mph	miles per hour
psi	pounds per square inch
RF	radio frequency
V	volts

1-11. GLOSSARY

Common Name	Nomenclature
Davit Assembly	Small crane mounts on pallet for use in loading and unloading heavy items.
Footprint	The size of an area required for an item to fit into and remain in its natural shape, form, and size.
Pallet	Primary structural part of the OE-481/TRC. The pallet consists of an upper pallet section and a lower pallet section.
Power Outlet Box	Four-outlet box used to provide 115 V ac power from shelter to various items of equipment. In particular, used to provide power to Mast AB-1373/TRC.
Switch Box Assembly	Power distribution box used to select output from one of two generators to power shelter.
Tarpaulin	Canvas cover for pallet assembly.
Work Platform	Two downward-opening doors located on lower pallet section. Used during loading and unloading of AB-1373/TRC components.

Section II. EQUIPMENT DESCRIPTION

1-12. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

a. Characteristics

(1) All aluminum.

(2) Footprint 87.5 by 81.75 inches.

b. Capabilities and Features

(1) Provides storage for DGM assemblage components listed in Table 1-1.

(2) Provides storage for up to three AB-1373/TRC masts. Refer to Table 1-2.

(3) Provides storage for up to three CX-11230/G coaxial cable assemblies.

(4) Provides storage for integration support items.

Table 1-1. DGM Assemblage Components
Transported By Antenna Support Group OE-481/rRC

Equipment	Quantity							
	* 138A	* 138B	* 173	* 173A	* 174	* 174A	* 175	* 175A
Cable reel containing 50-foot power cable assembly and10-foot power cable stub	1	1	1	1	1	1	1	1
Cable reel RC-453 containing 1/4-mile CX-11230/G coaxial cable	3	3	2	2	3	3	2	2
Cable, 54 foot CG-3860'TRC	9	9					6	6
RF cable 80 foot CG3443/U			4	4	6	6		
Antenna reflector	3 large	3 large	2 small	2 small	3 small	3 small	2 large	2 large
Positioner/controller transit case	3	3	2	2	3	3	2	2
Mast sections (set of 21)	3	3	2	2	3	3	2	2
Ground cable (lightning)	3	3	2	2	3	3	2	2
Top section and antenna mounting bracket (in bag)	3	3	2	2	3	3	2	2
Tripod assembly (in bag)	3	3	2	2	3	3	2	2
Guy winch (in bag)	6	6	4	4	6	6	4	4
Lifting winch (in bag)	3	3	2	2	3	3	2	2
Mast accessories (in bag)	3	3	2	2	3	3	2	2

*Number refers to the DGM systems supported; e.g., 138A refers to DGM system AN/TRC-138A.

Table 1-1. DGM Assemblage Components
Transported By Antenna Support Group OE-481/rRC - Continued

	Quantity							
Equipment	* **138A**	* **138B**	* **173**	* **173A**	* **174**	* **174A**	* **175**	* **175A**
Guy accessories (in bag)	9	9	6	6	9	9	6	6
Feed assembly	3 large	3 large	2 small	2 small	3 small	3 small	2 large	2 large
Cable assembly W1	3	3	2	2	3	3	2	2
Cable assembly W2	3	3	2	2	3	3	2	2
Ladder	1	1	1	1	1	1	1	1
Deicer kit	1	1	1	1				
Ground strap cable assembly - 10 ft	1	1	1	1	1	1	1	1
Ground strap cable assembly - 20 ft	2	2	1	1	1	1	2	2
Ground rod, MX-148G	2	2	2	2	2	2	2	2
8-lb. sledge hammer	1	1	1	1	1	1	1	1
Antenna AS-1729/VRC	1	1	1	1	1	1	1	1
Adapter W/G to coax	3	3					2	2
Adapter UG-1373/U			2	2	3	3		
Adapter UG-1375/U			2	2	3	3		

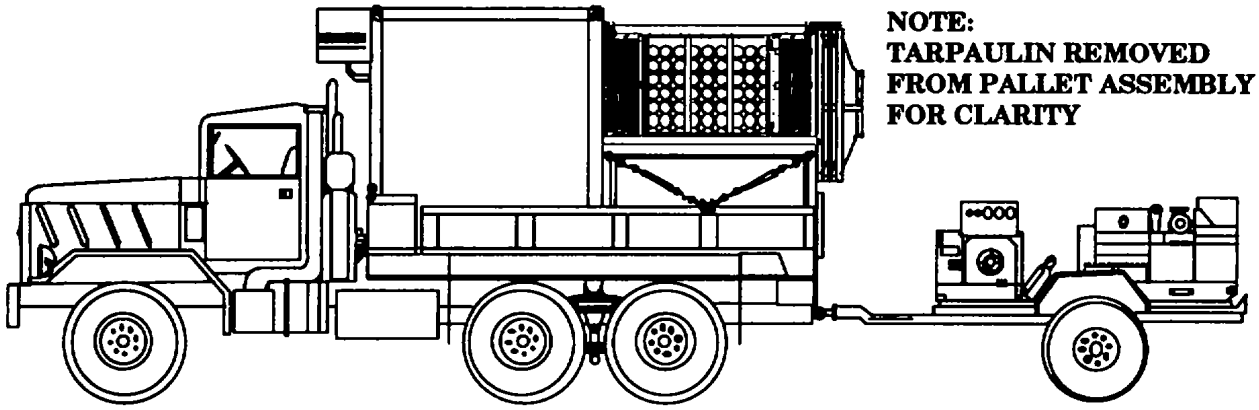
Table 1-2. DGM Assemblages Supported By OE-481/TRC

DGM Systems Supported	Mast AB-1373RC Supplied	Type of Antenna Supplied	Type of OE-481/IRC Configuration
AN/TRC-138A	3	AS-1425/GRC	Trailer-mounted
AN/TRC-138B	3	AS-1425/GRC	Truck-mounted
AN/TRC/173	2	AS-3047/GRC-103 (V)	Trailer-mounted
AN/TRC-173A	2	AS-3047/GRC-103 (V)	Truck-mounted
ANITRC-174	3	AS-3047/GRC-103 (V)	Trailer-mounted
AN/TRC-174A	3	AS-3047/GRC-103 (V)	Truck-mounted
AN/rRC-175	2	AS-1425/GRC	Trailer-mounted
AN/TRC-175A	2	AS-1425/GRC	Truck-mounted

1-13. SYSTEM CONFIGURATIONS

Antenna Support Group OE-481/TRC serves as a storage container for up to three AB-1373/TRC masts, plus integration support items. The pallet assembly is deployed in two configurations: a truck-mounted configuration and a trailer-mounted configuration.

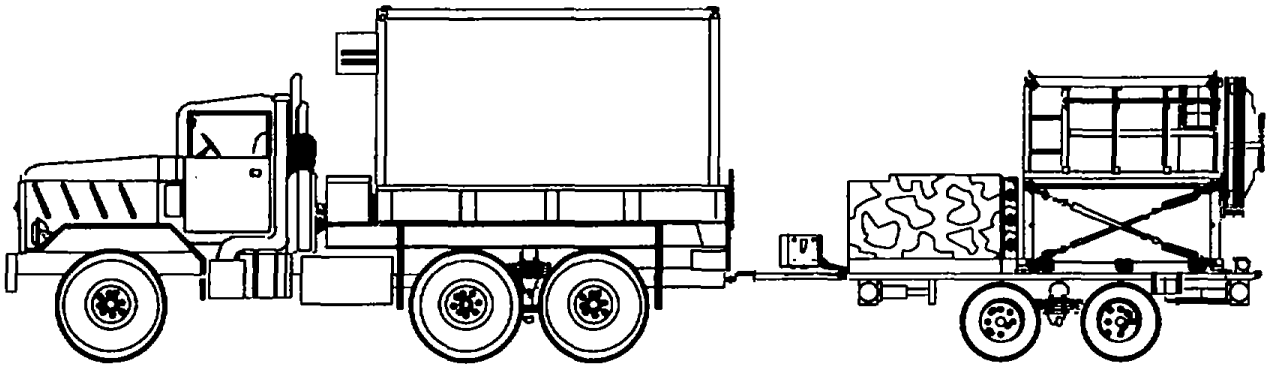
The truck-mounted configuration consists of a pallet assembly mounted on a M923 5-ton truck containing a down-sized communication shelter. The truck tows an AN/MJQ-18 power plant.



TRUCK MOUNTED CONFIGURATION

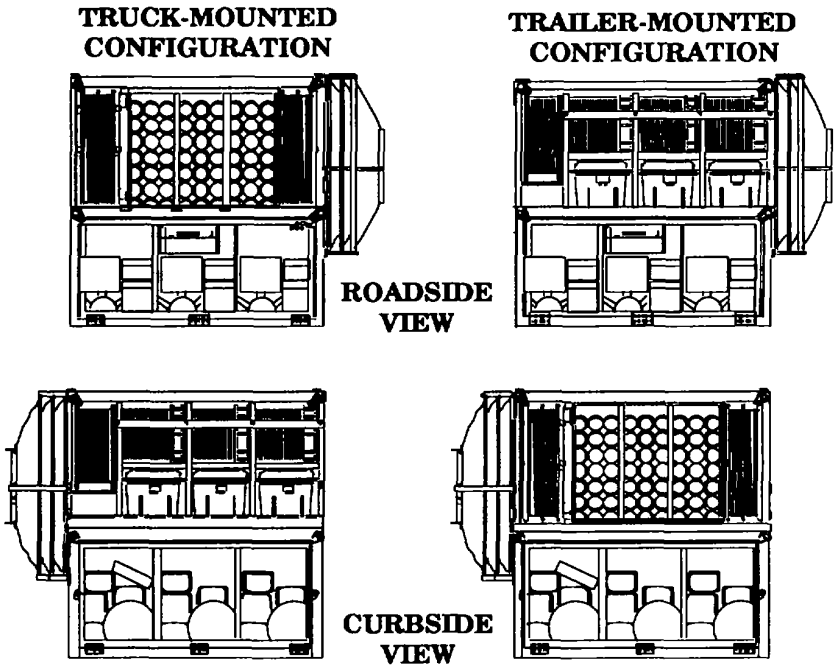
1-13. SYSTEM CONFIGURATIONS - Continued

The trailer-mounted configuration consists of a pallet assembly mounted on a modified 5-ton M1061A1 trailer assembly. The trailer assembly includes two MEP-003A diesel engine generators equipped with noise suppression kits, a power switch box assembly, fuel cans, and fire extinguishers. The trailer assembly is towed by a M923 5-ton truck transporting a full-size communications shelter.



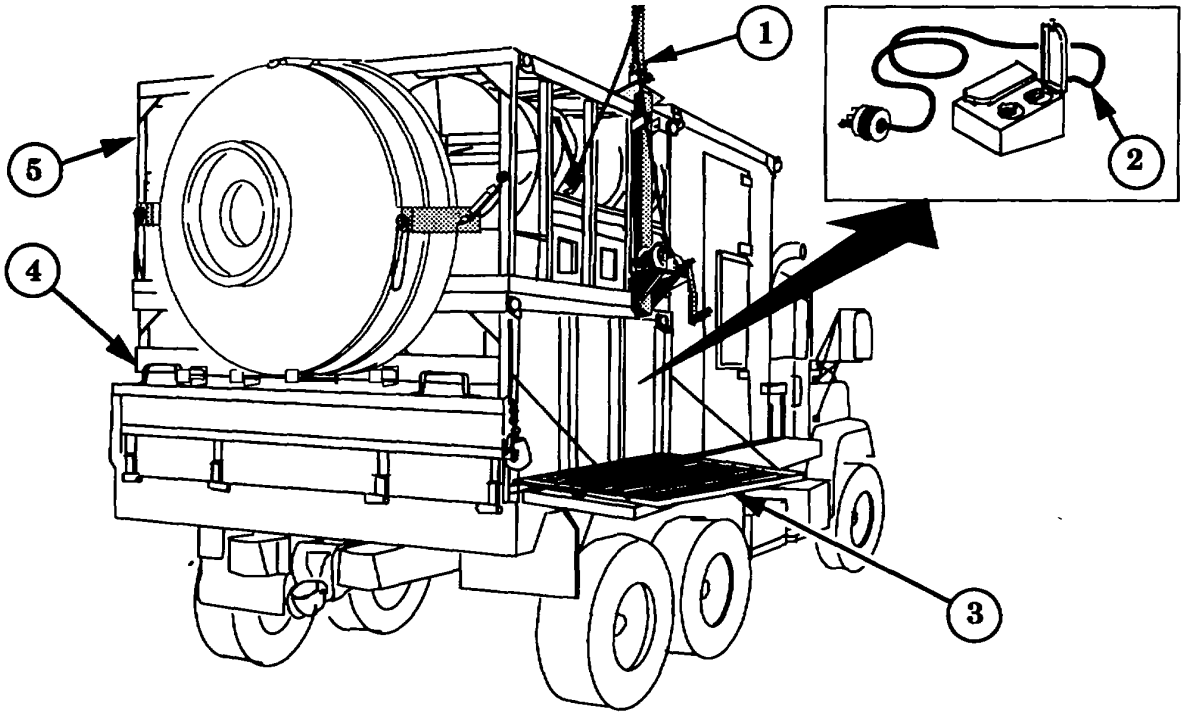
TRAILER-MOUNTED CONFIGURATION

The trailer-mounted pallet assembly includes all components of the truck-mounted pallet assembly. Roadside and curbside views of the two configurations are different because the upper pallet section for the trailer-mounted configuration is rotated 180 degrees.



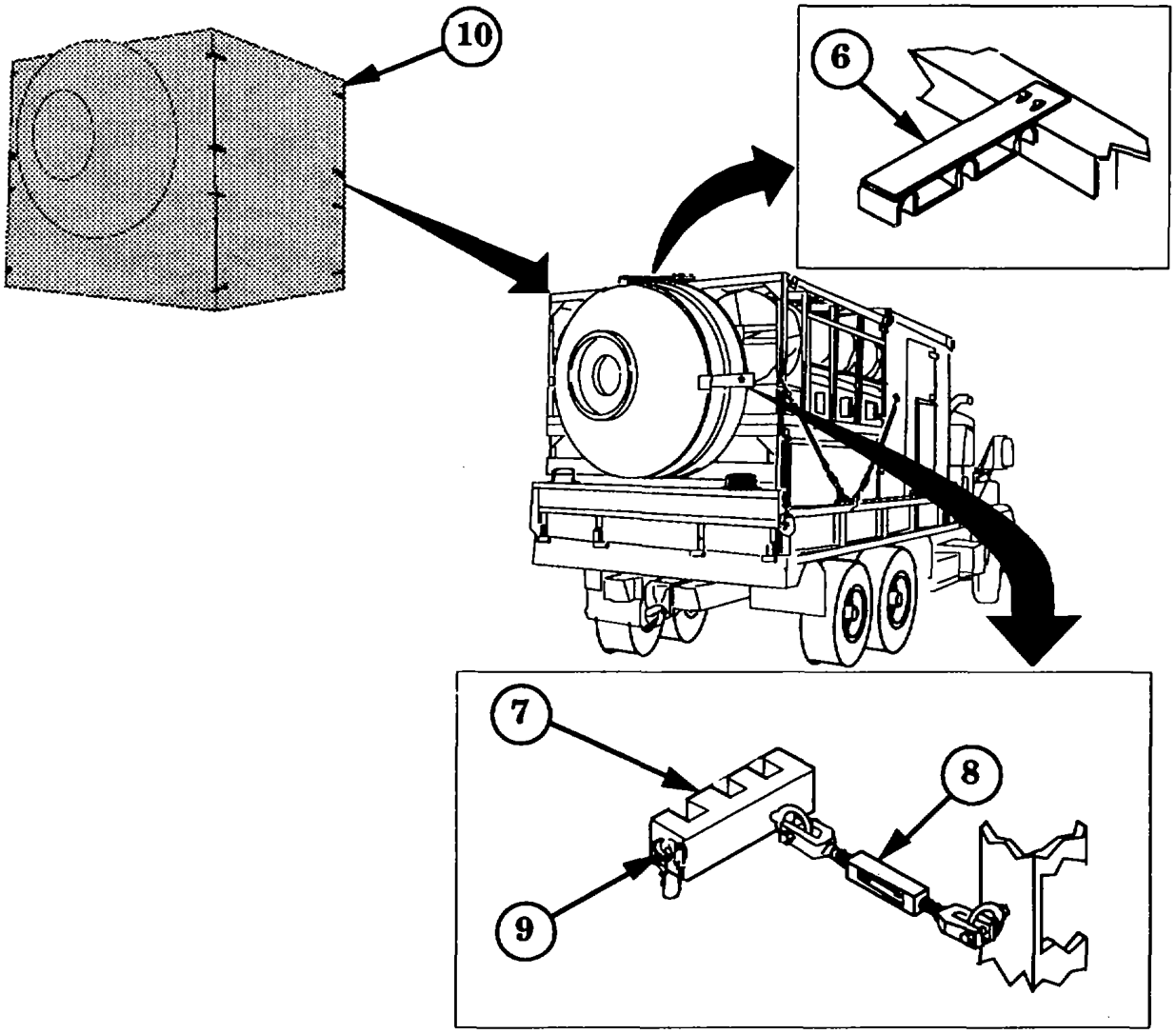
a. Truck-Mounted Configuration

(1) Major OE-481/TRC Components



Key	Name	Function
1	Davit Assembly	Hand-winch/boom for loading or unloading heavy equipment, especially CX-11230 coaxial cable assemblies.
2	Power Outlet Box	Power extension cable and connector box. One is used per pallet assembly.
3	Work Platform	Work surface used during loading or unloading of Mast AB-1373/TRC and accessories. Two work platforms are used: one on curbside, one on roadside, of lower pallet section.
4	Lower Pallet Section	Provides mounts for work platform and antennas. Storage for AB- 1373/TRC equipment bags and equipment. Support for upper pallet section.
5	Upper Pallet Section	Storage for AB-1373/TRC mast sections and for positioner/controller transit cases.

a. Truck-Mounted Configuration - Continued
(1) Major OE-481/TRC Components - Continued

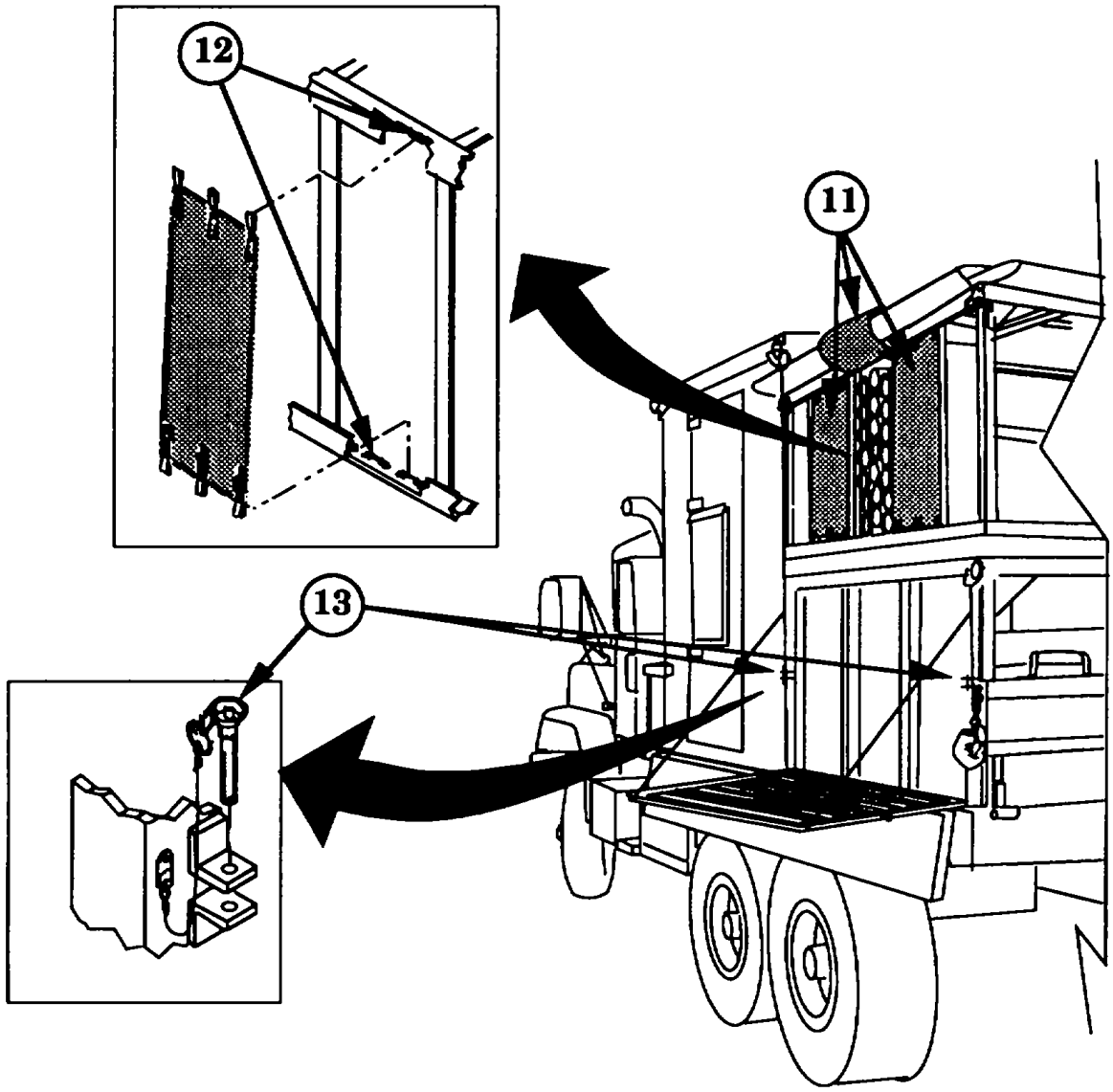


Key	Name	Function
6	Reflector Retaining	Secures three large antenna reflectors to upper pallet section at Spacer top. One spacer is used.
7	Retaining Bracket	Secures sides of three large antenna reflectors. Two brackets are used.
8	Turnbuckle	Tightens retaining bracket. Two turnbuckles are used.
9	Locking Pin	Secures retaining bracket to three large antenna reflectors. Two locking pins are used.
10	Tarpaulin	Protects pallet assembly and cargo from elements. One tarpaulin is used per pallet assembly.

1-14. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

a. Truck-Mounted Configuration - Continued

(1) Major OE-481/TRC Components - Continued



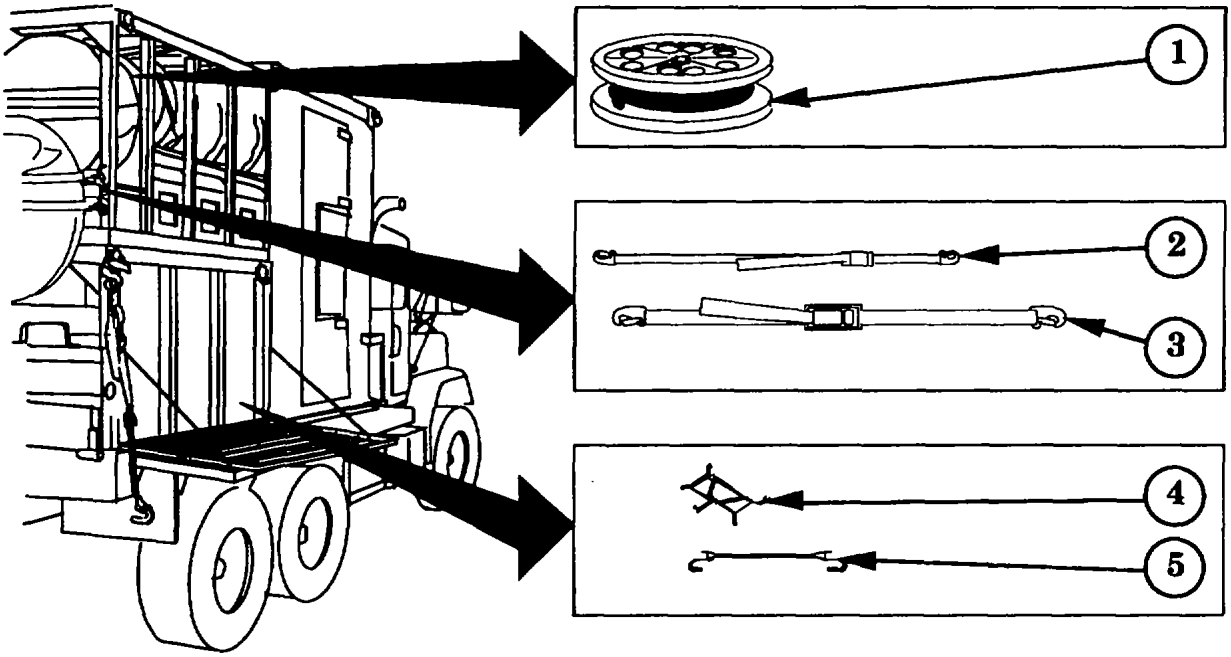
Key	Name	Function
11	Canvas Assembly	Retains mast sections in storage areas in upper pallet section. Attached to footman loops. Three canvas assemblies are used.
12	Footman Loop	Attachment for canvas assemblies to hold mast sections within upper pallet assembly. Six footman loops are used for each canvas assembly.
13	Locking Pin	Secures work platforms in closed (up) position during transport. Two locking pins are used for each work platform.

1-14. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

a. Truck-Mounted Configuration - Continued

(2) Integration Support Items

The following integration support items are included in the truck-mounted configuration.

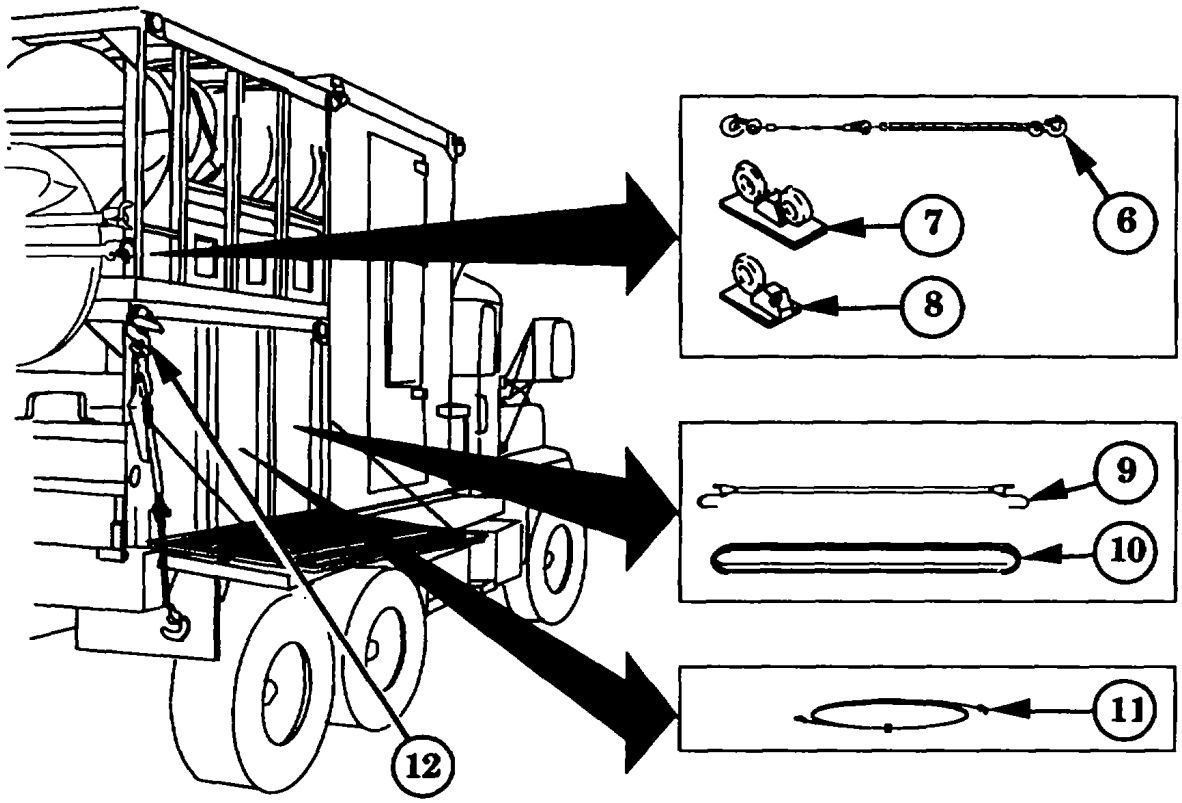


Key	Name	Function
1	Reel Assembly	Reel for RF cables. Used with AB-1373/TRC.
2	Cargo Strap Assembly	Used to fasten small antenna reflectors to rear of pallet assembly. Three cargo strap assemblies are used.
3	Cargo Strap Assembly	Used to fasten small antenna reflectors to rear of pallet assembly. One cargo strap assembly is used.
4	Hand Reel Assembly	Reel for controller power cable, 10-foot ground strap assembly, 20-foot ground strap assembly, and power outlet box. Six hand reel assemblies are used.
5	Retaining Strap (9-inch)	Used to secure power outlet box, 10-foot ground strap assembly, 20-foot ground strap assembly, deicer cable (AS-1425/GRC only), and cable assembly W2. Five retaining straps are supplied.

1-14. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

a. Truck-Mounted Configuration - Continued

(2) Integration Support Items - Continued



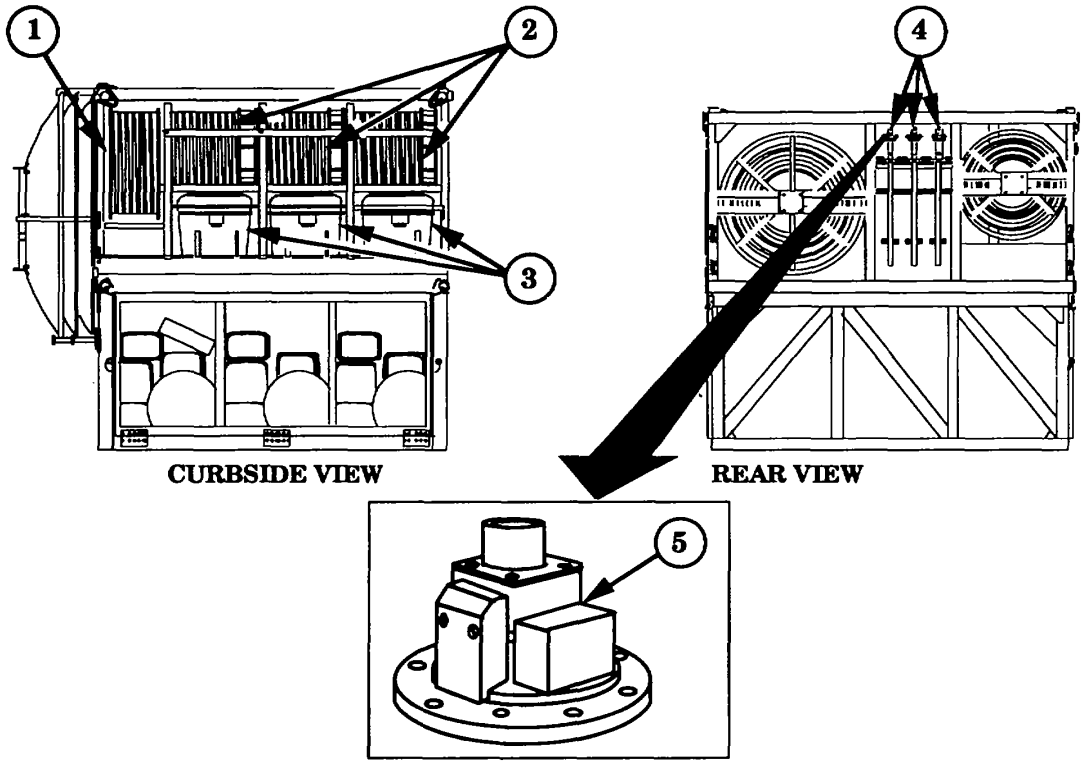
Key	Name	Function
6	Tie-down Cable Assemblies	Secures upper pallet section on truck during air or rail transport. Four tie-down cable assemblies are used.
7	Dual Eyebolt Assembly	Attachment point for tie-down cable assemblies. Two dual eyebolt assemblies are used.
8	Single Eyebolt Assembly	Secures upper pallet section to truck during air and rail shipment. Two single eyebolt assemblies are used.
9	Retaining Strap (15-inch)	Secures RF cable onto reel. Five retaining straps are supplied.
10	Cargo Strap Assembly	Connects reel assembly (RC-453 cable reel containing CX-11230 cable) to davit assembly for loading and unloading reel assembly.
11	Ground Strap Assembly	Provides ground connection between pallet and truck.
12	Tie-down Cable Assemblies	Secures pallet to truck bed. Four tie-down cable assemblies are used.

1-14. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

a. Truck-Mounted Configuration - Continued

(3) DGM Assemblage Components on OE-481/TRC

The following DGM Assemblages are in truck-mounted configurations with AS-1425/GRC antennas.

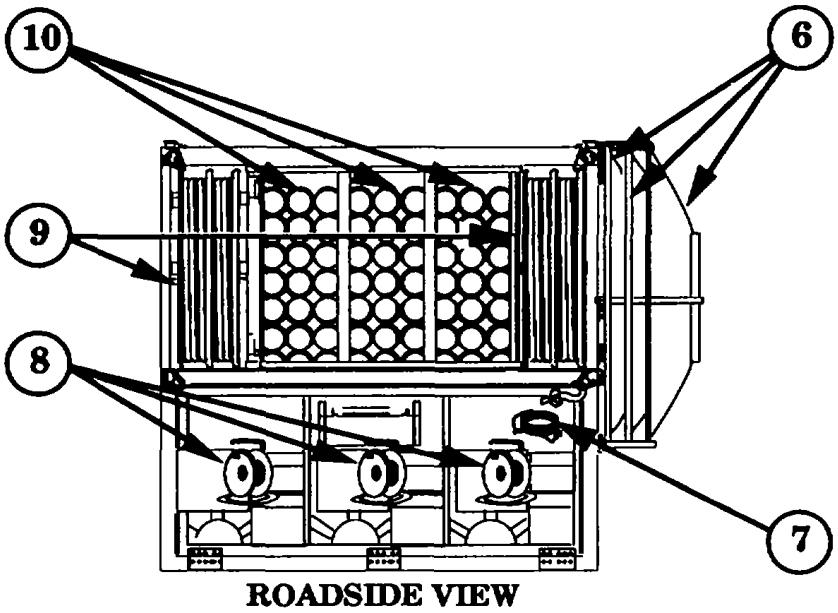


Key	Name	Function
1	50-foot Power Cable Assembly and 10-foot Power Cable Stub	Used to connect power source to the communications shelter.
2	Cable Reel RC-453 Containing 114-mile CX-11230/G Cable	Used to carry digital user signals to the communications shelter.
3	Positioner/Controller Transit Case	Contains positioner, controller and retaining ring. Part of Mast AB-1373/TRC.
4	Feedhorn Assembly	Part of antenna assembly for Radio Set AN/GRC-222.
5	Adapter Waveguide to Coaxial Cable	Used to connect CG-3860/TRC cable to antenna feedhorn assembly.

1-14. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

a. Truck-Mounted Configuration - Continued

(3) DGM Assemblage Components on OE-481/TRC - Continued



ROADSIDE VIEW

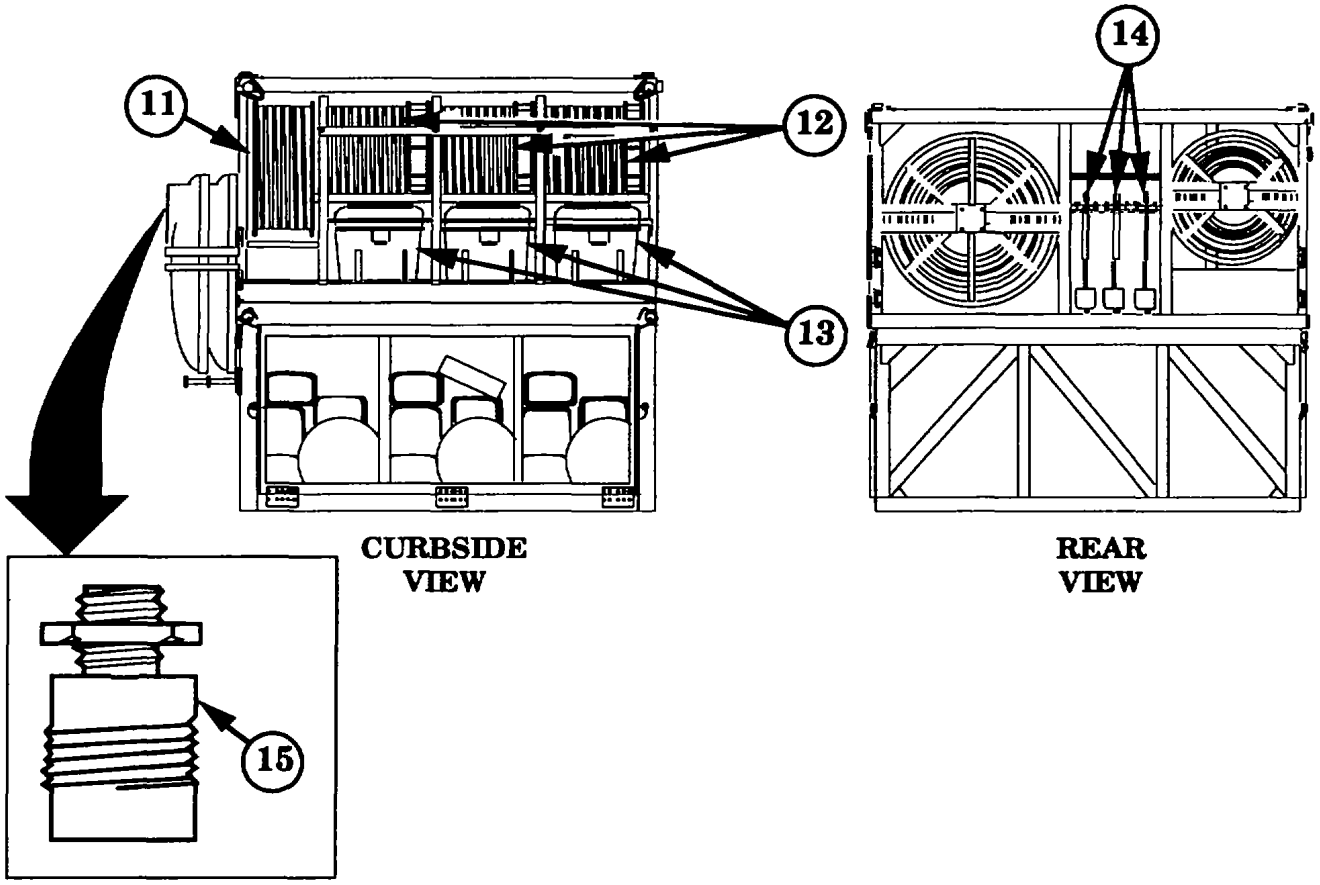
Key	Name	Function
6	Antenna Reflector AS-1425/GRC	Used to transmit and receive communications signals. Part of antenna assembly for Radio Set AN/GRC-222.
7	Deicer Kit	Part of antenna assembly for Radio Set AN/GRC-222.
8	Ground Cable (Lightning)	Provides lightning protection for mast. Part of Mast AB-1373tTRC.
9	Cable, 54 foot CG-3860/rRC	Used to connect communications shelter to antenna for passage of RF signals.
10	Mast Sections (Set of 21)	Identical 5.2-foot long components of the mast. Part of Mast AB-1373tTRC.

1-14. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

a. Truck-Mounted Configuration - Continued

(3) DGM Assemblage Components on OE-481/TRC - Continued

The following DGM Assemblages are in truck-mounted configurations with AS-3047/GRC-103(V) antennas.

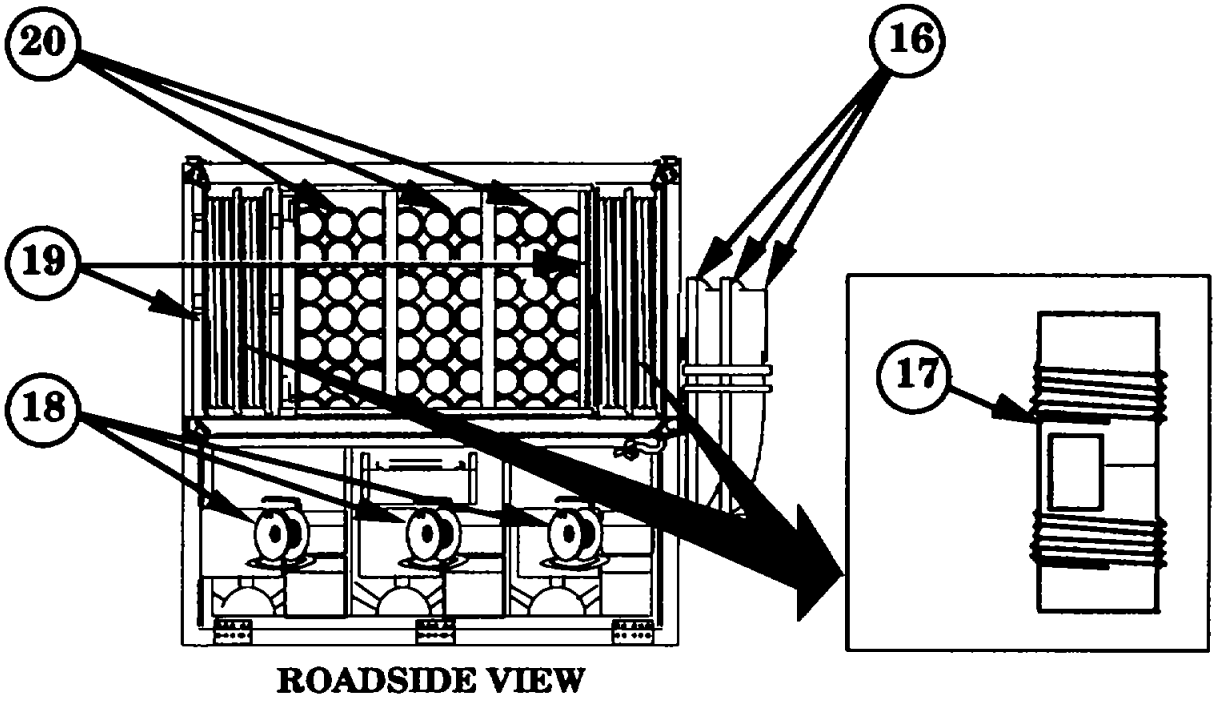


Key	Name	Function
11	50-foot Power Cable Assembly and 10-foot Power Cable Stub	Used to connect power source to the communications shelter.
12	Cable Reel RC-453 Containing 1/4-mile CX-11230/G Cable	Used to carry digital user signals to the communications shelter.
13	Positioner/Controller Transit Case	Contains positioner, controller, and retaining ring. Part of Mast AB-1373/TRC.
14	Feedborn Assembly	Part of antenna assembly for Radio Set AN/GRC-103(V).
15	Adapter UG-1375/U	Allows connection of CG-3443/U RF cable to reflector. Part of antenna assembly for Radio Set AN/GRC-103(V).

1-14. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

a. Truck-Mounted Configuration - Continued

(3) DGM Assemblage Components on OE-481/TRC - Continued

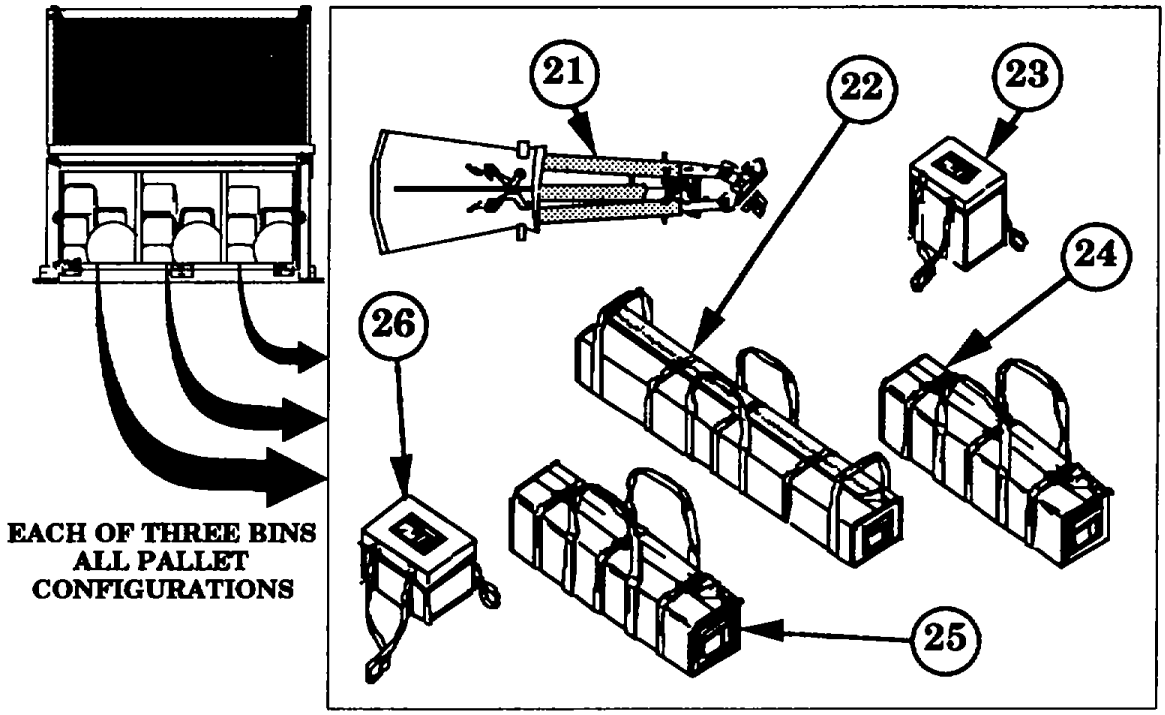


Key	Name	Function
16	Antenna Reflector AS-3047/GRC-103(V)	Used to transmit and receive communications signals. Part of antenna assembly for Radio Set AN/GRC-103(V).
17	Adapter UG-1373/U	Used to connect two sections of CG-3443/U RF cable.
18	Ground Cable (Lightning)	Provides lightning protection for mast. Part of Mast AB-1373/TRC.
19	RF Cable 80 foot CG-3443/U	Used to connect communications shelter to antenna for passage of RF signals.
20	Mast Sections (Set of 21)	Identical 5.2-foot long components of the mast. Part of Mast AB-1373/rRC.

1-14. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

a. Truck-Mounted Configuration - Continued

(3) DGM Assemblage Components on OE-481/TRC - Continued

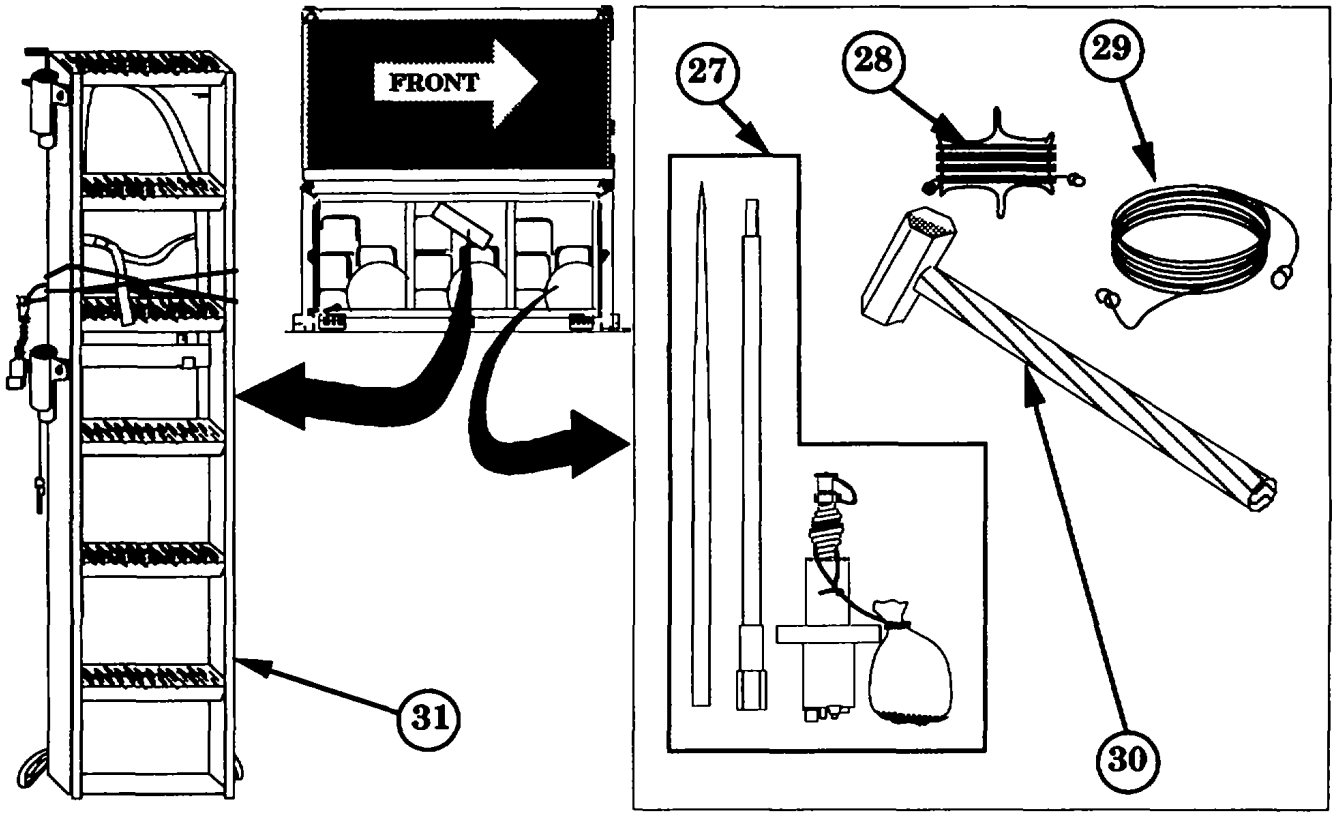


Key	Name	Function
21	Tripod Assembly (in bag)	Used to support and stabilize the mast. Part of Mast AB-1373/TRC.
22	Mast Accessories (in bag)	Equipment used in deploying mast. Part of Mast AB-1373/TRC.
23	Guy Winch (in bag) (2 each)	Used to maintain tension on guy assemblies. Part of Mast AB-1373/rRC.
24	Guy Accessories (in bag)	Equipment used in guying mast. Part of Mast AB-1373frRC. (3 each)
25	Top Section and Antenna Mounting Bracket (in bag)	Equipment used to mount antenna to mast. Part of Mast AB-1373/TRC.
26	Lifting Winch (in bag)	Used to raise mast. Part of Mast AB-1373/TRC.

1-14. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

a. Truck-Mounted Configuration - Continued

(3) DGM Assemblage Components on OE-481/TRC - Continued

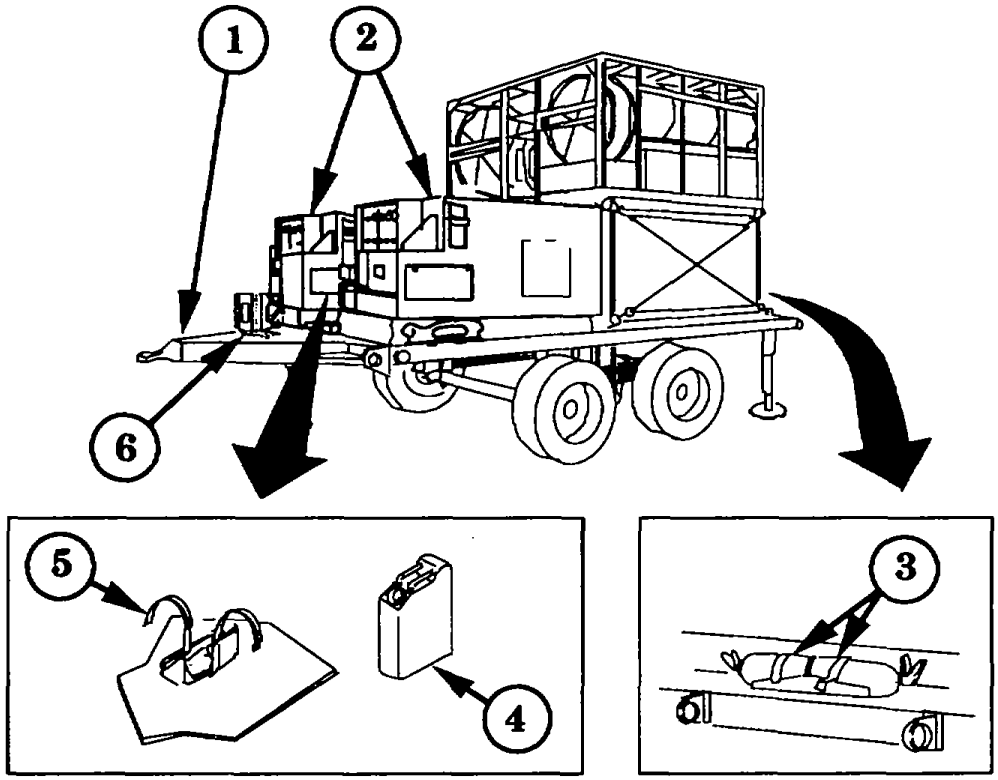


Key	Name	Function
27	Antenna AS-1729/VRC	Provides initial communications with a distant station. Part of AN/VRC-46 radio set.
28	Cable Assembly W2	Used to connect 115 V ac power source to controller. Part of Mast AB- 1373/TRC.
29	Cable Assembly W1	Used to connect controller to positioner for passage of power and signals. Part of Mast AB-1373/TRC.
30	8-lb. Sledge Hammer	Used to drive ground rods for generators and shelters.
31	Ladder	Used for personnel access to M923 truck bed.

1-14. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

b. Trailer -Mounted Configuration

(1) Major Components
The trailer-mounted configuration includes the following items in addition to those in the truck-mounted configuration.



Key	Name	Function
1	Trailer	Provides support and transport for pallet assembly.
2	Generator	Provides power to switch box assembly. Two generators with noise suppression kits are supplied.
3	Fire Extinguisher and Bracket	Safety device used to extinguish small class B and C fires. Two are supplied.
4	5-Gallon Fuel Can	Used to resupply fuel for generator. Four cans are supplied.
5	Fuel Can Bracket and Strap	Secures 5-gallon fuel can to trailer. Four are supplied.
6	Switch Box Assembly	Selects output from either generator for application to communications shelter.

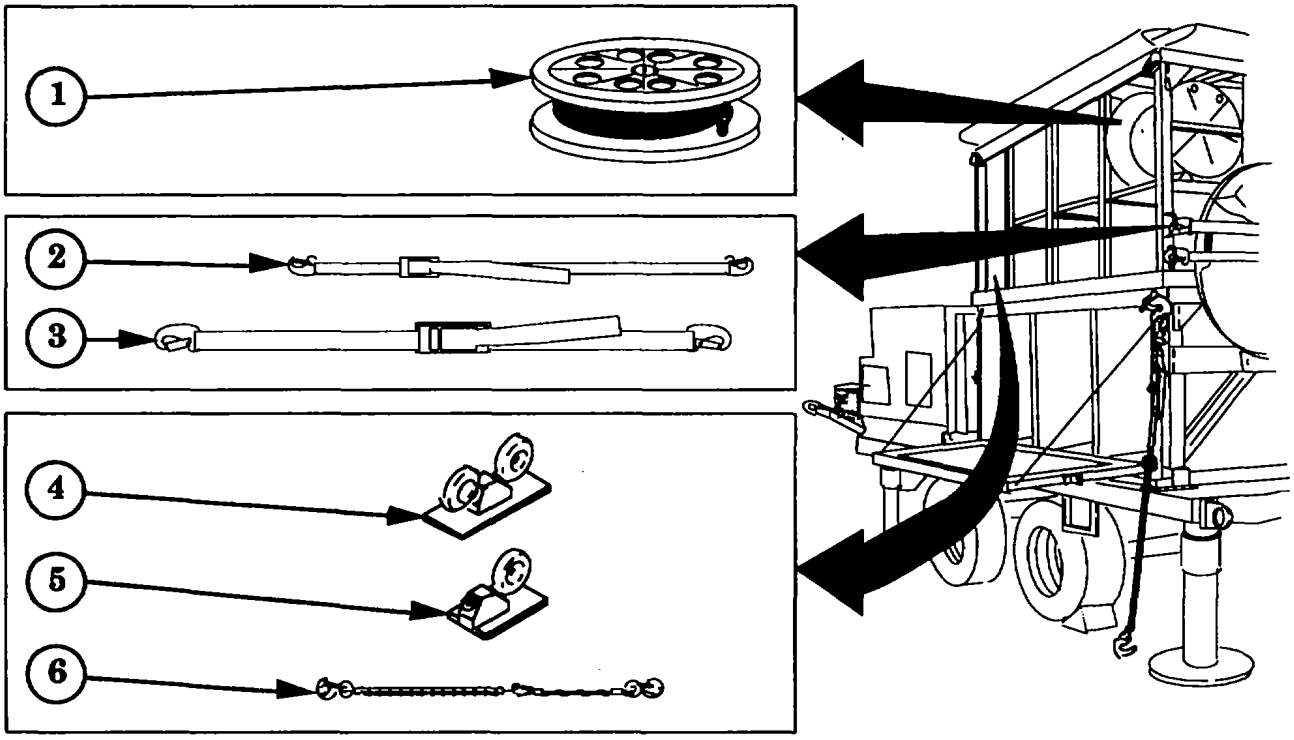
1-14. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

b. Trailer -Mounted Configuration

(1) Major Components

The trailer-mounted configuration includes the following items in addition to those in the truck-mounted configuration.

The following integration support items are included in trailer-mounted configurations.

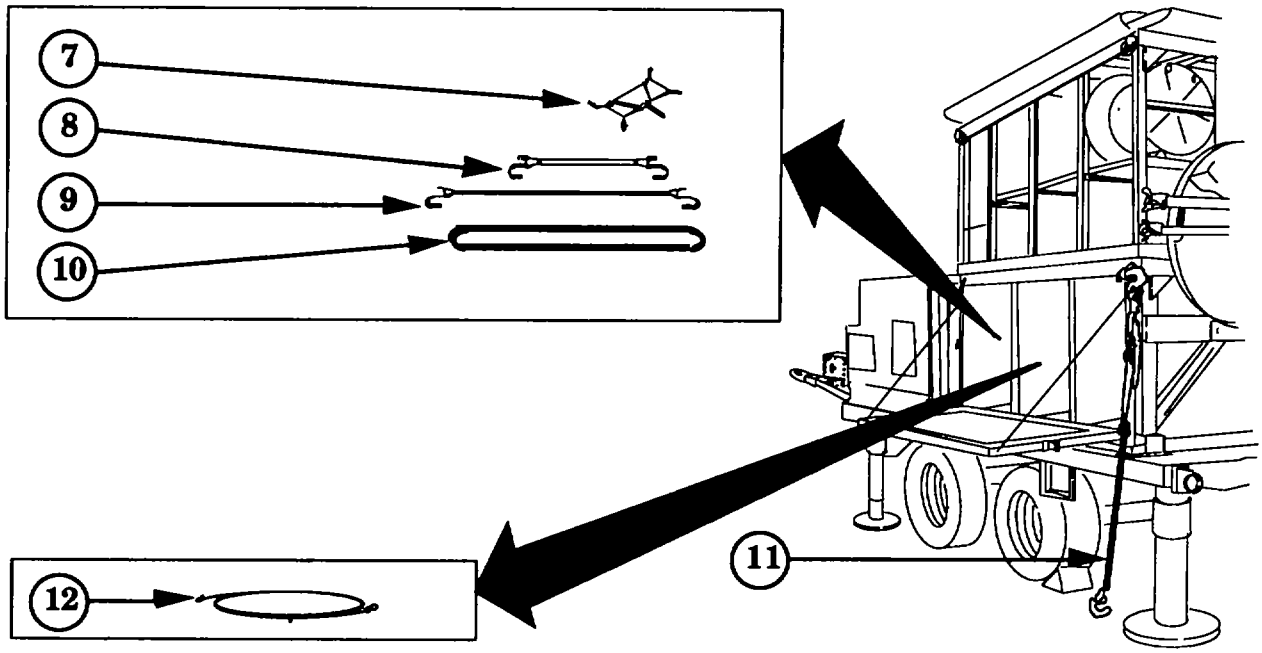


Key	Name	Function
1	Reel Assembly	Reel for RF cables. Used with AB-1373/TRC.
2	Cargo Strap Assembly	Used to fasten small antenna reflectors to rear of pallet assembly. Three cargo strap assemblies are used.
3	Cargo Strap Assembly	Used to fasten small antenna reflectors to rear of pallet assembly. One cargo strap assembly is used.
4	Dual Eyebolt Assembly	Attachment point for tie-down assemblies. Two dual eyebolt assemblies are used.
5	Single Eyebolt Assembly	Secures upper pallet section to truck during air or rail shipment. Two single eyebolt assemblies are used.
6	Tie-down Cable Assemblies	Secures upper pallet section on truck during air or rail transport. Four tie-down cable assemblies are used.

1-14. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

b. Trailer-Mounted Configuration - Continued

(2) Integration Support Items - Continued



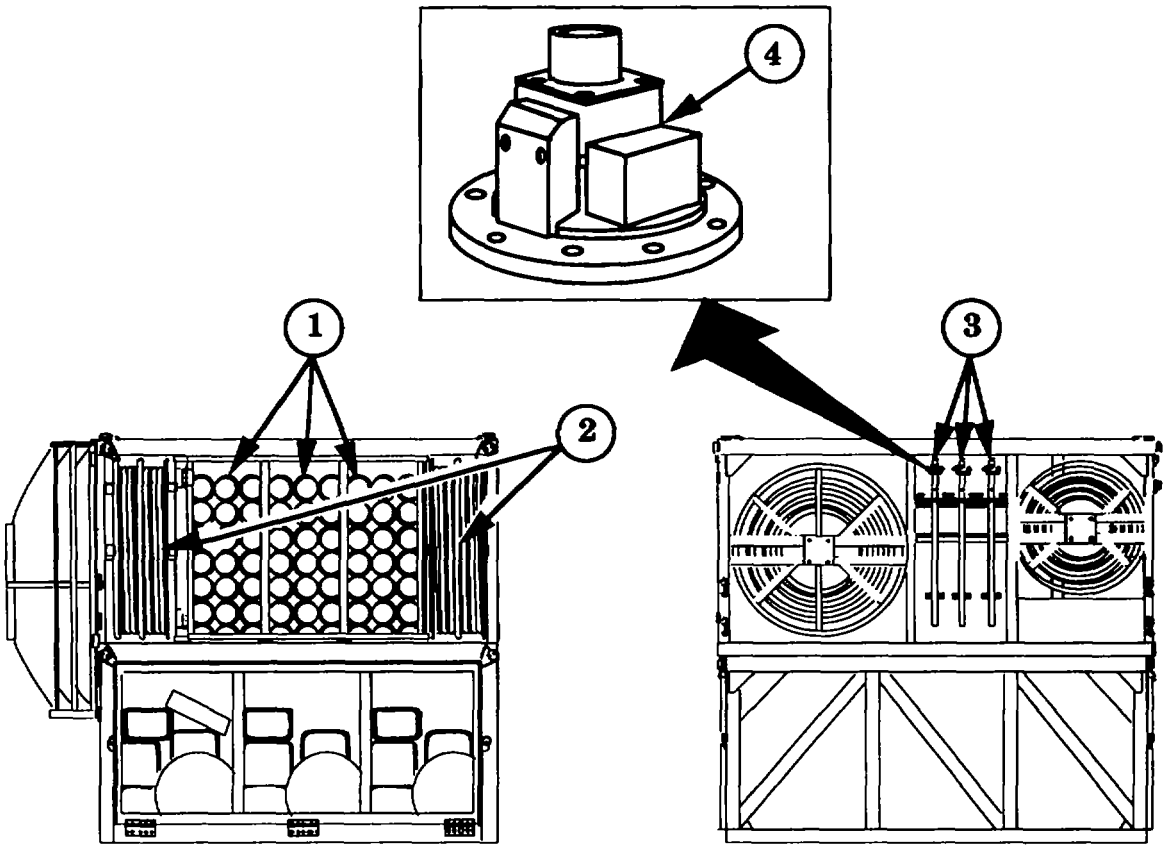
Key	Name	Function
7	Hand Reel Assembly	Reel for controller power cable, 10-foot ground strap assembly, 20-foot ground strap assembly, and power outlet box. Six hand reel assemblies are used.
8	Retaining Strap (9-inch)	Used to secure power outlet box, 10-foot ground strap assembly, 20-foot ground strap assembly, deicer cable (AS-1425/GRC only), and cable assembly W2. Five retaining straps are supplied.
9	Retaining Strap (15-inch)	Secures RF cable onto reel. Five retaining straps are supplied.
10	Cargo Strap Assembly	Connects reel assembly (RC-453 cable reel containing CX-11230 cable assembly) to davit assembly for loading and unloading reel assembly.
11	Tie-down Cable Assemblies	Secures pallet to trailer. Four tie-down cable assemblies are used.
12	Ground Strap Assembly	Provides ground connection between pallet and trailer.

1-14. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

b. Trailer-Mounted Configuration - Continued

(3) DGM Assemblage Components on OE-481/rRC

The following DGM Assemblages are in trailer-mounted configurations with AS-1425/GRC antennas.



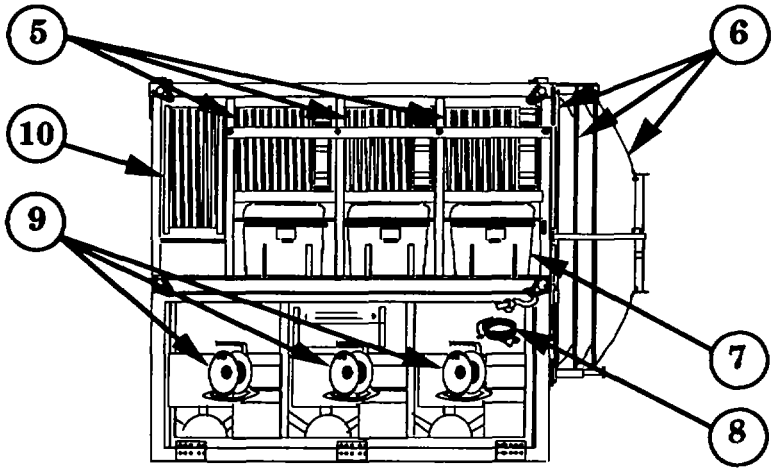
CURBSIDE VIEW FRONT VIEW

Key	Name	Function
1	Mast Sections (set of 21)	Identical 5.2-foot long components of the mast. Part of Mast AB-1373/rRC.
2	Cable 54-foot	Used to connect communications CG-3860OTRC of RF signals.
3	Feedhorn Assembly	Part of antenna assembly for Radio Set, AN/GRC-222.
4	Adapter Waveguide to Coaxial Cable	Used to connect CG-3860RTRC cable to antenna feedhorn assembly.

1-14. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

b. Trailer-Mounted Configuration - Continued

(3) DGM Assemblage Components on OE-481/TRC - Continued



ROADSIDE VIEW

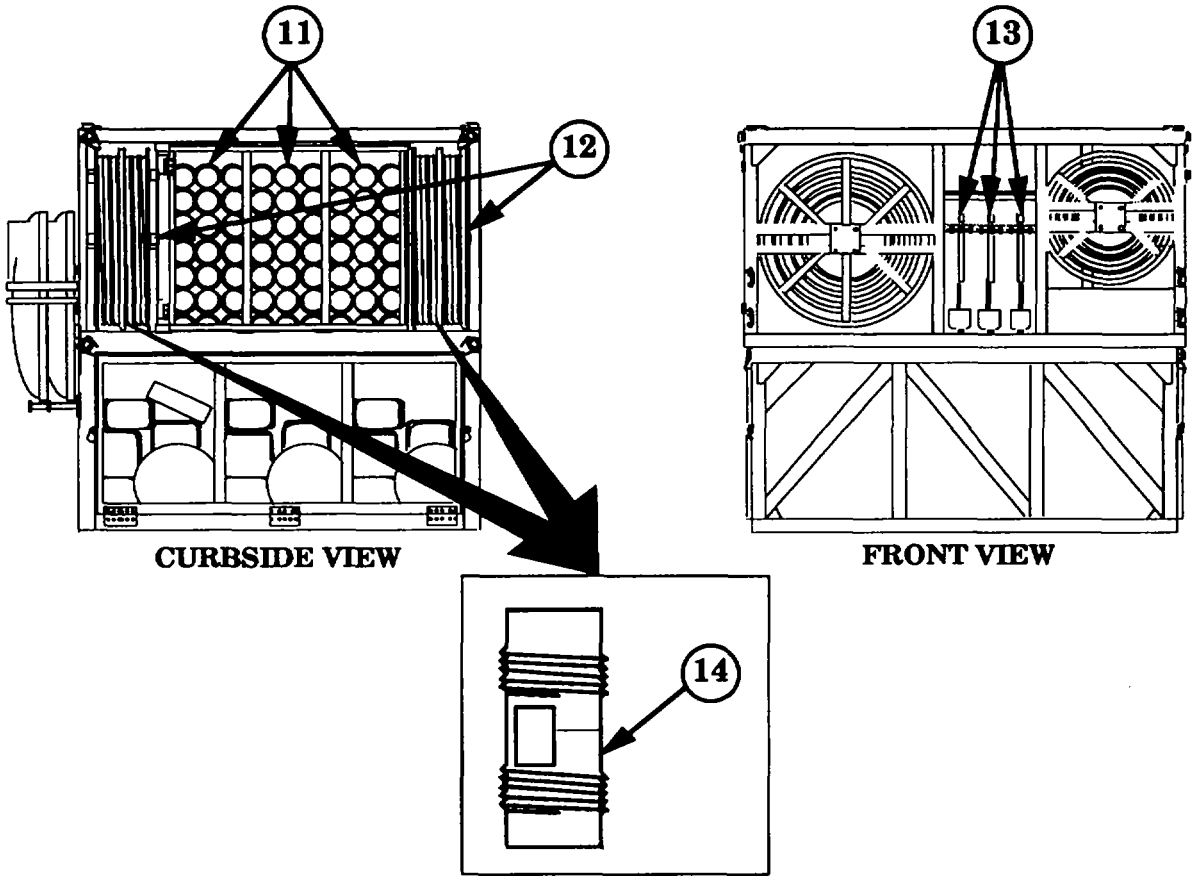
Key	Name	Function
5	Cable Reel RC-453 Containing 1Y4-mile CX-11230/G cable	Used to carry digital user signals to the communications shelter.
6	Antenna Reflector AS-1425/GRC AN/GRC-222.	Used to transmit and receive communications signals. Part of assembly for Radio Set
7	Positioner/Controller Transit Case	Contains positioner, controller and retaining ring. Part of Mast AB-1373/TRC.
8	Deicer Kit	Part of antenna assembly for Radio Set AN/GRC-222.
9	Ground Cable (Lightning)	Provides lightning protection for mast. Part of Mast AB- 1373/TRC.
10	50-foot Power Cable Assembly and 10-foot Power Cable Stub	Used to connect power source to the communications shelter.

1-14. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

b. Trailer-Mounted Configuration - Continued

(3) DGM Assemblage Components on OE-481/TRC - Continued

The following DGM Assemblages are in trailer-mounted configurations with AS-3047/GRC-103(V) antennas.

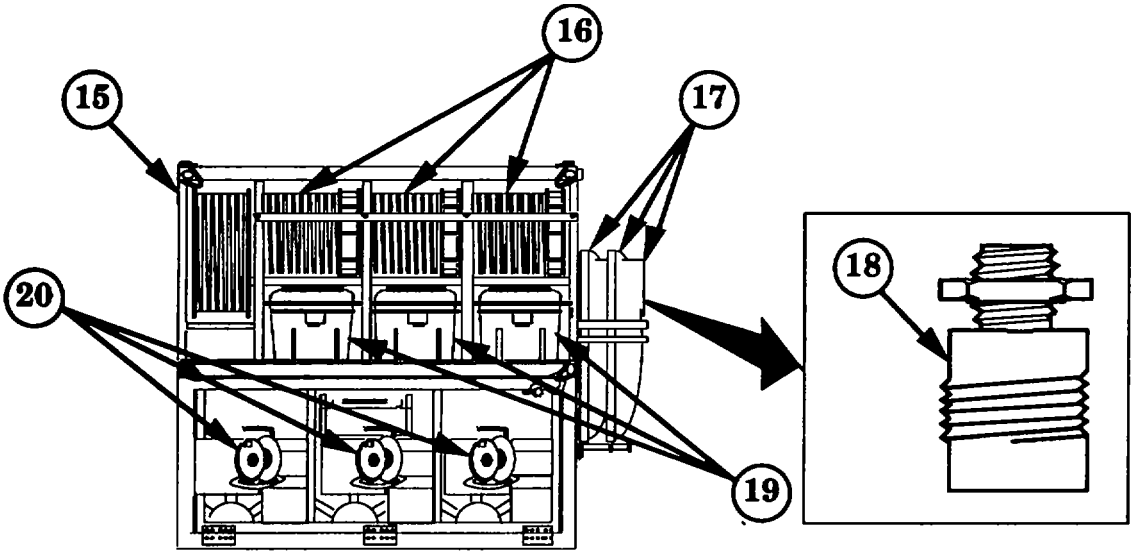


Key	Name	Function
11	Mast Sections (set of 21)	Identical 5.2-foot long components of the mast. Part of Mast AB-1373/rRC.
12	RF Cable 80 foot CG-3443/U	Used to connect communications shelter to antenna for passage of RF signals.
13	Feedhorn Assembly	Part of antenna assembly for Radio Set AN/GRC-103(V).
14	Adapter UG-1373/U	Used to connect two sections of CG3443/U RF cable.

1-14. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

b. Trailer-Mounted Configuration - Continued

(3) DGM Assemblage Components on OE-481/RC - Continued



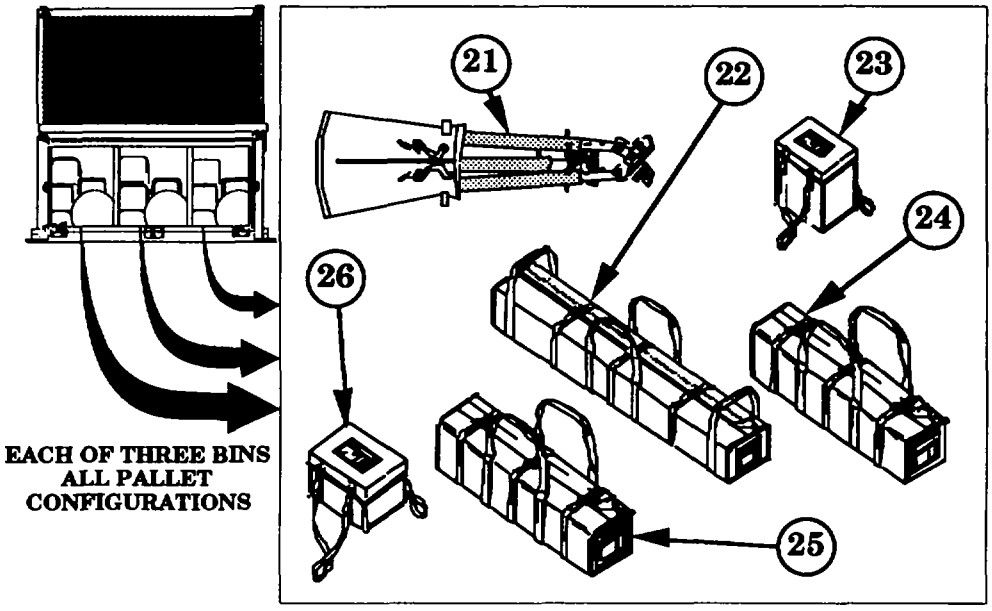
ROADSIDE VIEW

Key	Name	Function
15	50-foot Power Cable Assembly and 10-foot Power Cable Stub	Used to connect power source to the communications shelter.
16	Cable Reel RC-453, Containing 1/4-mile CX-11230/G Cable	Used to carry digital user signals to the communications shelter.
17	Antenna Reflector AS-3047/GRC-103(V)	Part of antenna assembly for radio set AN/GRC-103(V) used to transmit and receive communications signals.
18	Adapter UG-1375/U	Allows connection of CG-3443/U RF cable to reflector. Part of antenna assembly for Radio Set AN/GRC-103(V).
19	Positioner/Controller Transit Case	Provides protection for positioner, controller, and retaining ring. Part of Mast AB-1373/TRC.
20	Ground Cable (Lightning)	Provides lightning protection (part of Mast AB-13731TRC).

1-14 LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

b. Trailer-Mounted Configuration - Continued

(3) DGM Assemblage Components on OE-481fTRC - Continued

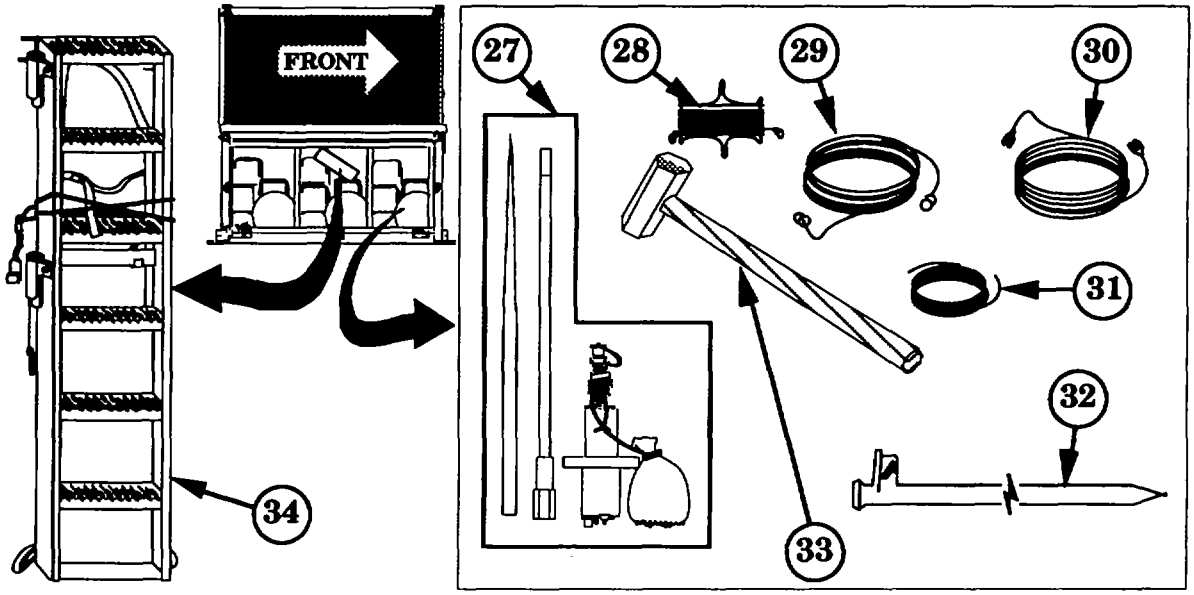


Key	Name	Function
21	Tripod Assembly (in bag) AB-1373tTRC.	Used to support and stabilize the mast. Part of Mast
22	Mast Accessories (in bag) AB-1373/rRC.	Equipment used in deploying mast. Part of Mast
23	Guy Winch (in bag) (2 each)	Used to maintain tension on guy assemblies. Part of Mast AB-1373/TRC.
24	Guy Accessories (in bag) (3 each)	Equipment used in guying mast. Part of Mast AB-1373/TRC.
25	Top Section and Antenna Mounting Bracket (in bag)	Equipment used to mount antenna to mast. Part of Mast AB-1373iTRC.
26	Lifting Winch (in bag)	Used to raise mast. Part of Mast AB-1373/TRC.

1-14. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

b. Trailer-Mounted Configuration - Continued

(3) DGM Assemblage Components on OE-481/RC - Continued



Key	Name	Function
27	Antenna AS-1729/VRC	Provides initial communications with a distant station. Part of ANIVRC-46 radio set.
28	Cable Assembly W2	Used to connect 115 V ac power source to controller. Part of Mast AB-1373/TRC.
29	Cable Assembly W1	Used to connect controller to positioner for passage of power and signals. Part of Mast AB-1373/TRC.
30	Ground Strap Cable Assembly - 20 foot	Provides ground connection between communications shelter and ground rod.
31	Ground Strap Cable Assembly - 10 foot	Provides ground connection between ground rod and generator.
32	Ground Rod MX-148/G	Provides ground for communications shelter.
33	8-lb Sledge Hammer	Used to drive ground rods for generators and shelter.
34	Ladder	Used for personnel access to M923 truck bed.

1-15. EQUIPMENT DATA

This listing provides operational data on the overall OE-481/TRC and all individual major components comprising the OE-481/TRC.

a. Pallet Assembly (Truck-Mounted or Trailer-Mounted)

Upper Pallet Section:

Length	81.75 in. (208 cm)
Width	88.00 in. (224 cm)
Height	44.13 in. (112 cm)
Weight - Empty	680 lbs (308 kg)
Fully Loaded	2750 lbs (1247 kg)

Lower Pallet Section:

Length	81.75 in. (208 cm)
Width	87.5 in. (222 cm)
Height	38.0 in. (97 cm)
Weight - Empty	560 lbs (254 kg)
Fully Loaded	2800 lbs (1270 kg)

Combined Pallet Sections:

Length	81.75 in. (208 cm)
Width	88.0 in. (224 cm)
Height	82.13 in. (209 cm)
Weight - Empty	1240 lbs (562 kg)
Fully Loaded	5550 lbs (2517 kg)

b. Trailer-Mounted Equipment

Generator Set (Engine/Generator):

Length	62 in. (157.5 cm)
Width	32 in. (81.3 cm)
Height	37 in. (94.0 cm)
Weight (dry)	1220 lbs (553 kg)
Output	10 kW, 60 Hz 120 V ac, 1-phase, 2-wire 120/240 V ac, 1-phase, 3-wire 120/208 V ac, 3-phase, 4-wire (See Note)

NOTE

The OE-481fTRC uses only 120/208 V ac, 3-phase output. There are five wires used to provide power and ground to the DGM assemblages.

1-15. EQUIPMENT DATA - Continued

b. Trailer-Mounted Equipment - Continued

Switch Box Assembly:

Length	17.50 in. (44.45 cm)
Width	13.25 in. (33.66 cm)
Height	14.75 in. (37.47 cm)
Weight	90 lbs (40.82 kg)

Ladder:

Length	72 in. (182.88 cm)
Weight	33 lbs (15 kg)

Fire Extinguisher (with bracket):

Length	18 in. (45.7 cm)
Width	7 in. (17.8 cm)
Height	9 in. (22.9 cm)
Weight - Empty	10 lbs (4.54 kg)
Full	15 lbs (6.80 kg)

Fuel Can:

Length	14 in. (35.6 cm)
Width	6 in. (15.2 cm)
Height	18 in. (45.7 cm)
Weight - Empty	12 lbs (5.4 kg)
Full	72 lbs (32.7 kg)

c. Trailer

Model Number	M1061A1 (XM1061E1)
Towing Vehicle	5-ton, M809 series, M939 series, or M923
Angle of Departure	22 degrees
Total Weight	15,850 lbs (7188 kg)
Chassis	5850 lbs (2853 kg)
Payload	10,000 lbs (4535 kg)

Dimensions

Ground Clearance	15.0 in. (38.1 m)
Height	
Unloaded	37.0 in. (93.98 cm)
Loaded	36.25 in. (92.08 cm)
Width	96.0 in. (243.84 cm)
Total Length	242.62 in. (616.3 cm)
Deck Size	168.00 in. x 96.00 in. (426.7 cm x 243.8 cm)

NOTE

Towed load limit on M923 truck is 15,000 lbs (6802.7 kg). Payload is limited to 9150 lbs (4149.7 kg).

1-15. EQUIPMENT DATA - Continued

c. Trailer- Continued

Maximum Towed Speed

Cross-Country	10 mph (16.1 kph)
Highway	50 mph (80.6 kph)

Maximum Tire Pressure

Cross-Country	65 psi
Highway	65 psi

Section III. PRINCIPIES OF OPERATION

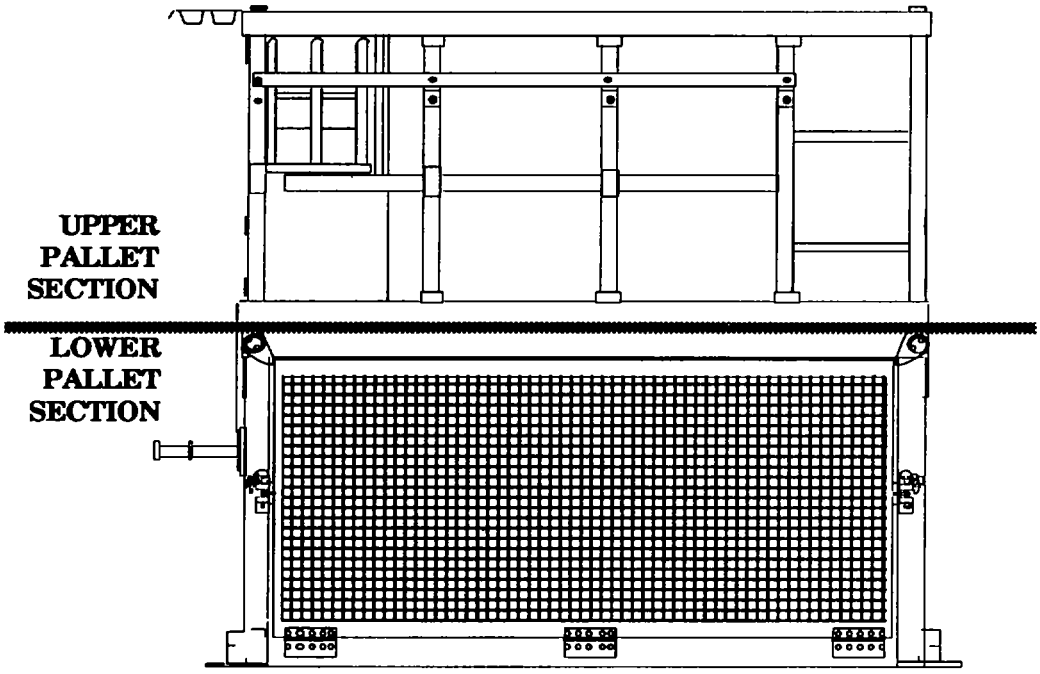
1-16. GENERAL

Upper and lower pallet sections provide storage for mast sections, cable reels, mast equipment bags, and integration support items.

A davit assembly provides for lifting heavy cable reels off the upper pallet section.

Two diesel engine generators provide power to the shelter. A switch box assembly on the trailer-mounted OE-481DRC configuration provides the ability to select between the generators.

1-17. UPPER PALLET SECTION

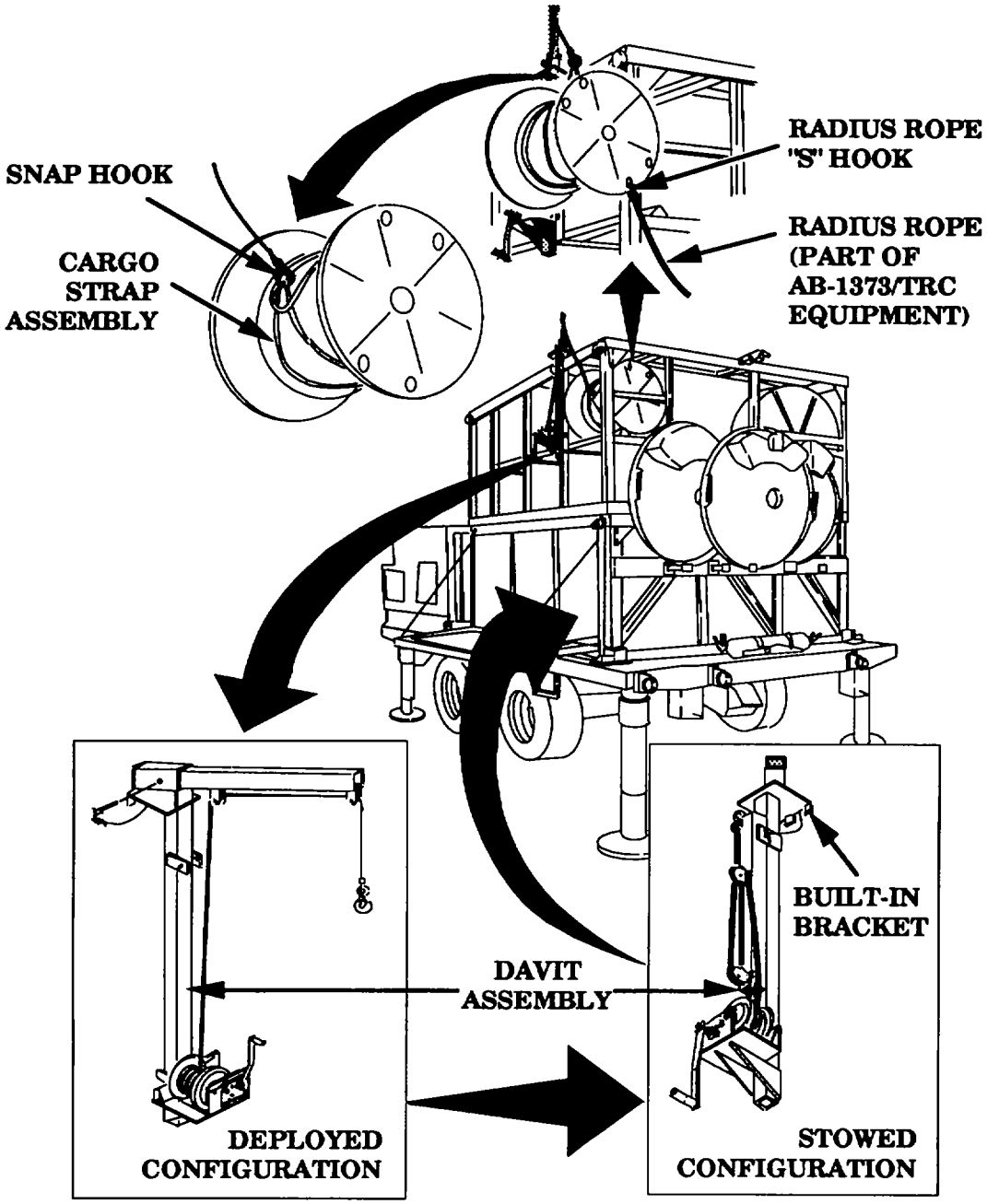


The upper pallet section consists of an aluminum cage fitted to hold cable reels, mast sections, positioner/controller assemblies, antenna reflectors, and RF feedhorns for transit. Mast sections are retained in the pallet section by canvas assemblies. Straps retain other items, which are attached to the pallet assembly or stowed in equipment bags and transit cases. The upper pallet section is bolted to the lower pallet section to form the pallet assembly. The pallet assembly is grounded to the truck or trailer using a 14-foot ground strap assembly. The switch box assembly is grounded to the trailer using a 40-inch ground strap assembly.

1-18. LOWER PALLET SECTION

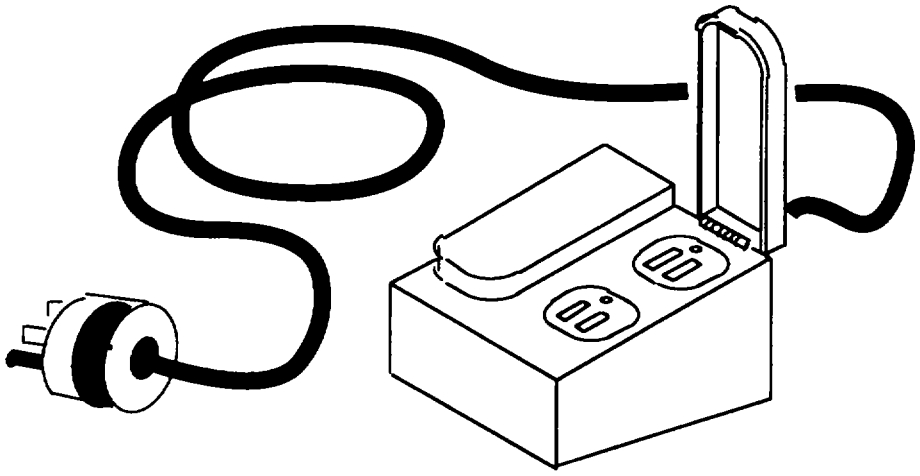
The lower pallet section is fastened to the trailer or truck bed by tie-down cable assemblies with load binders. The lower pallet section holds up to three sets of eight bags of mast equipment, mast tripods, cables, one davit assembly, and integration support items. Doors lower to form work platforms. They raise and latch to secure the contents of the lower pallet section.

1-19. DAVIT ASSEMBLY



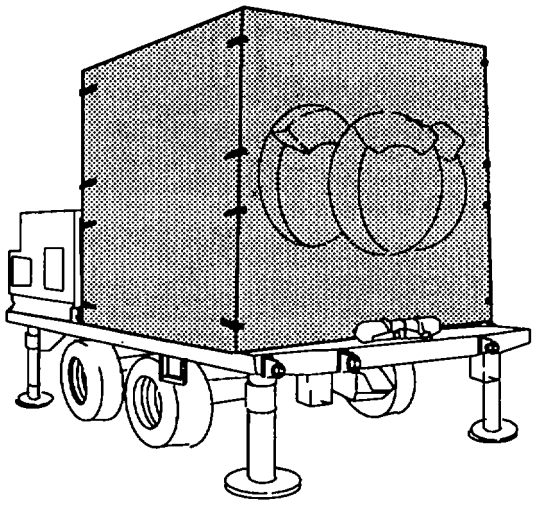
The davit assembly is a hand winch/boom used for loading or unloading heavy cable reels from the upper pallet section. The davit assembly is installed on the upper pallet section using a built-in bracket on the top rear of the davit assembly. The bracket hooks onto the top rail of the upper pallet section and rests against the side rail. A radius rope is used to control the reels during loading or unloading. The davit assembly collapses into the stowed configuration and is then stowed in the lower pallet section.

1-20. POWER OUTLET BOX



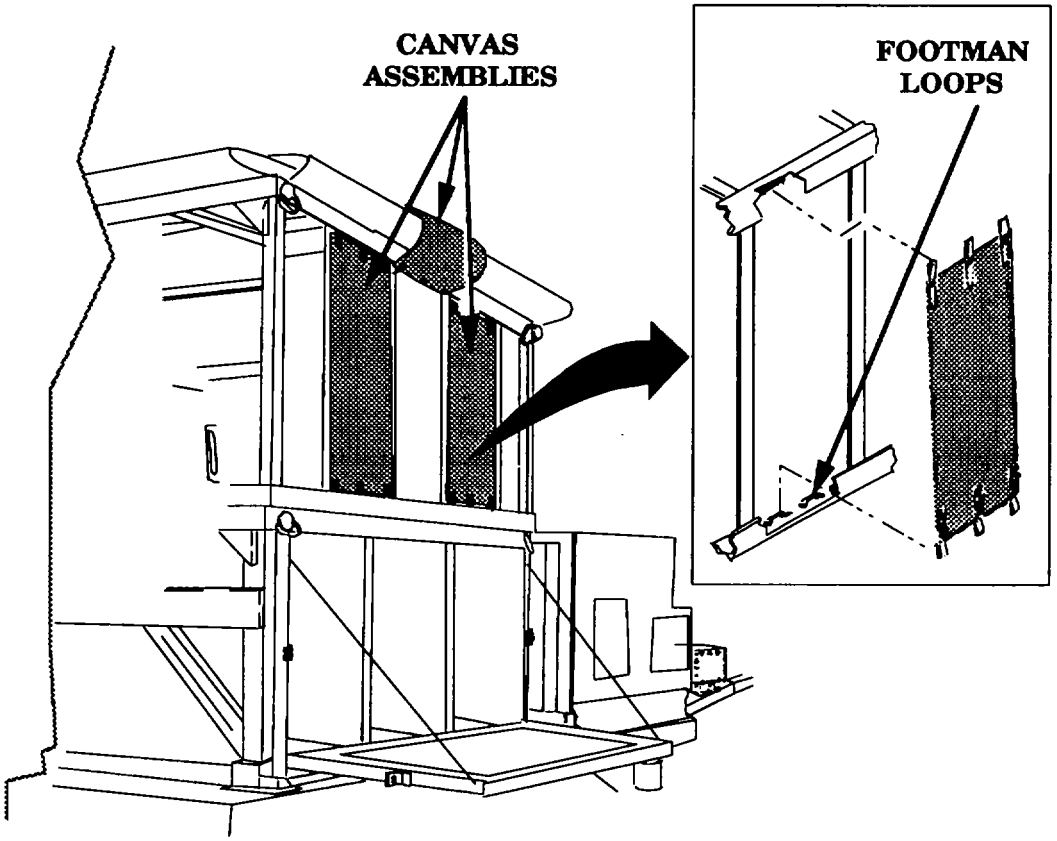
The power outlet box consists of a four-outlet box and a 6-foot power cord with a standard 115 V ac, 3-prong connector.

1-21. TARPAULIN



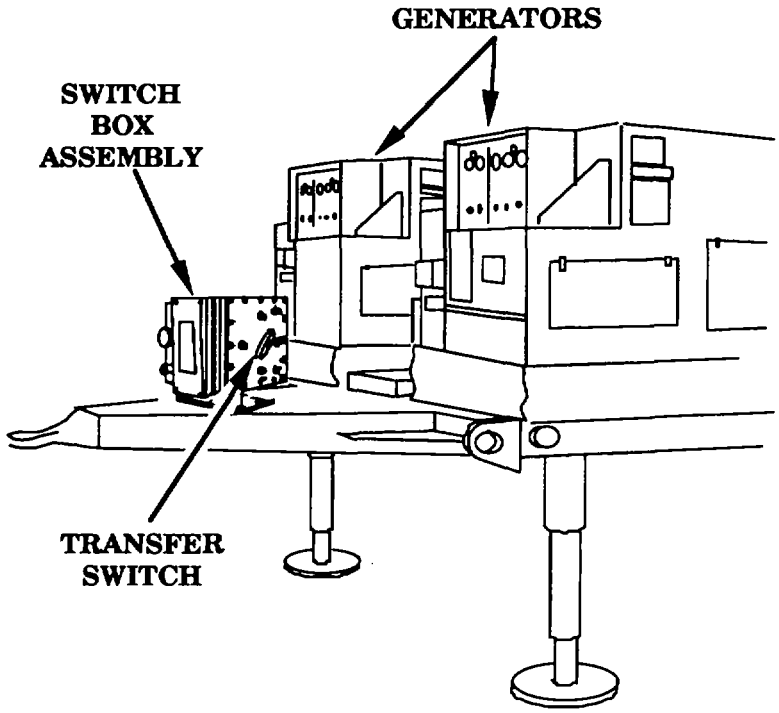
The tarpaulin is a form-fitted removable canvas cover for the pallet assembly and attached antennas. The tarpaulin protects the pallet assembly and cargo during transit and storage. The tarpaulin can be removed if desired, or straps may be loosened and one or more of the flaps can be folded onto the top of the pallet to provide access to the pallet cargo.

1-22. CANVAS ASSEMBLIES



The canvas assemblies secure mast sections in place when the mast sections are stored in the upper pallet section. Three canvas assemblies are attached by six built-in straps (three upper and three lower) to six footman loops on the upper pallet section.

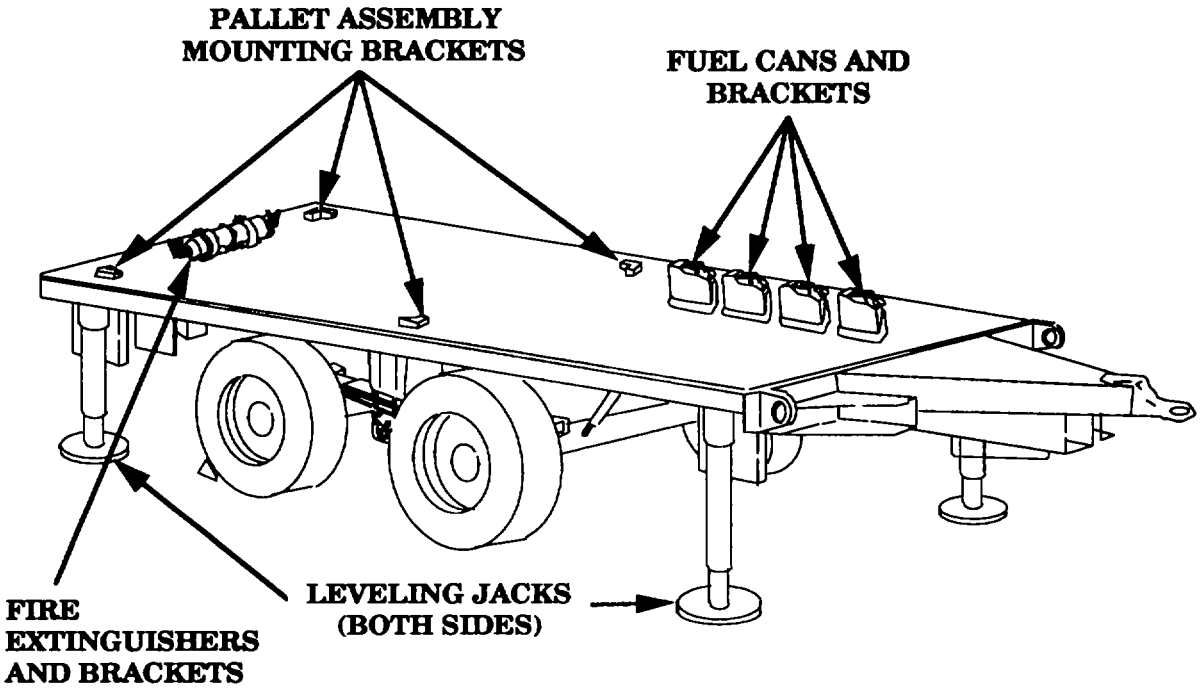
1-23. GENERATORS AND SWITCH BOX ASSEMBLY (TRAILER-MOUNTED CONFIGURATION)



Two MEP-003A diesel engine generators provide 120/208 V ac, 3-phase, 10-KW, 60 Hz utility power for the shelter. Each generator is equipped with a noise suppression kit. Generator output is connected by cable assemblies W1 and W2 to the switch box assembly. A transfer switch on the switch box assembly is used to select the generator to supply power. The switch box is grounded to the trailer by a ground strap assembly.

Refer to TM 5-6115-585-12 for operation and maintenance instructions for the MEP-003A diesel engine driven generator.

1-24. TRAILER ASSEMBLY



Leveling jacks at the four trailer corners provide stability during loading or unloading. A handbrake system applies brakes when the trailer is not coupled to prime mover. (Refer to TM 9-2330-376-14&P for further information on the M1061A1 trailer.)

Trailer modifications consist of drilled holes that allow mounting of:

a. Diesel generators and switch box assembly.

b. Brackets for positioning the pallet assembly.

c. Fuel can brackets and fuel cans to provide fuel for the generators.

d. Two fire extinguishers and fire extinguisher mounting brackets.

Refer to Appendix G for trailer hole pattern.

CHAPTER 2

OPERATING INSTRUCTIONS

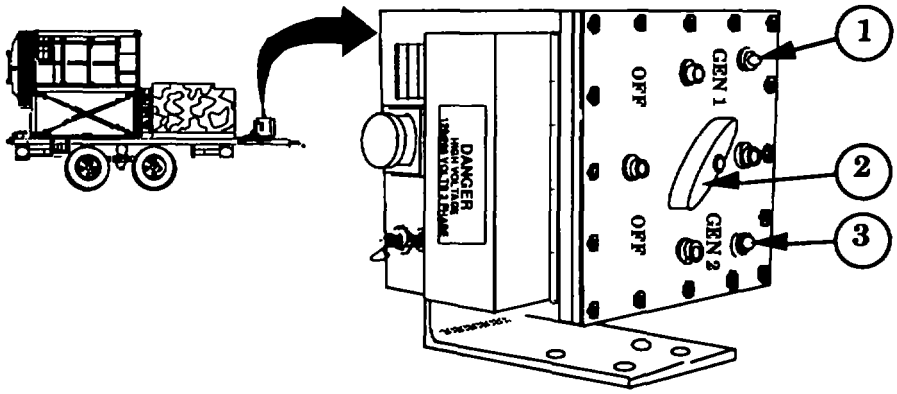
Section I. DESCRIPTION AND USE OF OPERATOR CONTROIS AND INDICATORS

2-1. SCOPE

This section describes operator controls and indicators for Antenna Support Group OE-48 11RC.

2-2. CONTROLS AND INDICATORS

OE-481lTRC electrical controls and indicators are located on the switch box assembly and generators. Refer to TM 5-6115-585-12 for data on generator controls and indicators.



Key	Name	Type	Function
1	GEN 1	Indicator Lamp	Indicates that power from generator 1 is available at switch box assembly.
2	Switch	4-Position Rotary	Selects power source for application to shelter cable connector J1.
3	GEN 2	Indicator Lamp	Indicates that power from generator 2 is available at switch box assembly.

Section II. PREVENTIVE MAINTENANCE CHECKS AND SERVICES

2-3. GENERAL

Preventive Maintenance Checks and Services (PMCS) are essential to the efficient operation of the system. PMCS prevent possible damage that might occur through neglect or failure to observe warning symptoms on time. Ensure all noted discrepancies are corrected. PMCS covers those scheduled procedures which are essential to operation of the system.

2-4. OPERATOR PMCS TABLE

Table 2-1, Operator PMCS, lists all the scheduled maintenance tasks required for the OE-481IRC. The columns of Table 2-1 are described below.

a. Column (1) - Item Number (Item No.)

This column contains a number for each procedure to be performed. When reporting malfunctions or failures on DA Form 2404, Equipment Inspection and Maintenance Worksheet, enter this number in the "TM Item No." column.

b. Column (2) - Interval (Interval B, D, A, S)

These columns tell when to perform a procedure. A dot in a column tells which procedures apply. Some procedures will have more than one dot.

c. Column (3) - Item

This column has the name of the item to be inspected.

d. Column (4) - Procedure

This column tells how to do the required checks and services on the item in column (3). Carefully perform these instructions in the order listed.

e. Column (5) - Equipment Is Not Ready/Available If

This column states conditions that will cause the equipment not to be ready for operation.

2-5. REVENTIVE MAINTENANCE PROCEDURES

NOTE

Within designated intervals, these checks are to be performed in the order listed.

a. Before You Operate

Perform the before (B) PMCS from Table 2-1. Observe WARNINGS and CAUTIONS contained in this manual and on plates installed on the equipment.

b. While You Operate

Perform the during (D) PMCS from Table 2-1. Observe WARNINGS and CAUTIONS contained in this manual and on plates installed on the equipment.

c. After You Operate

Perform the after (A) PMCS from Table 2-1. Observe WARNINGS and CAUTIONS contained in this manual and on plates installed on the equipment.

d. Semiannually

Perform the semiannual (S) PMCS from Table 2-1. Observe WARNINGS and CAUTIONS contained in this manual and on plates installed on the equipment.

e. Order

Always do the preventive maintenance in the same order.

f. Reporting

Any discrepancy shall be recorded on DA Form 2404 and reported to higher level maintenance.

Table 2-1. Operator Preventive Maintenance Checks and Services

NOTE

Within designated interval, these checks are to be performed in the order listed. To perform certain PMCS, it may be necessary to remove tarpaulin and perform additional procedures (refer to para 2-7a thru h).

B - Before operation D - During operation A - After operation S - Semiannually

(1) ITEM NO	(2) INTERVAL B	D	A	S	(3) Item	(4) Procedure	(5) Equipment is Not Ready/Available If:
1	•		•	•	Tarpaulin parts, and frayed, cut or worn fabric or webbing.	Inspect for torn or missing assembly and contents from rain, snow, ice, etc.	Cannot protect pallet
2	•		•	•	Pallet sections	Inspect for bent or badly corroded surfaces. cannot be secured.	AB-1373ifRC subassemblies cannot be stored or doors
3	•		•	•	Work platform	Inspect for bent, damaged, or corroded surfaces on hinges. Check lanyard cable for wear or damage. Check for missing or damaged locking pins and attaching hardware.	Missing or damaged support cable. Work platform cannot be securely closed. Locking pins missing or unusable due to damage or corrosion.
4	•		•	•	Tie-down cable assemblies	Inspect for missing or damaged snap hook, turnbuckle, or loadbinder. Inspect cables for cuts, wear, or corrosion. Inspect for loose or corroded ferrules.	Snap hook, turnbuckle, or loadbinder damaged or missing. Cables cut, worn, or frayed. Ferrules loose or corroded.
5	•		•	•	Canvas assemblies	Inspect for torn or missing parts, and frayed, cut or worn fabric or webbing.	Cannot secure mast sections into pallet.
6	•		•	•	Antenna reflector supports	Inspect for damaged or missing rubber coverings.	Missing or damaged rubber cover that would result in damage to stowed antenna reflector.
7	•		•	•	Antenna reflector retaining brackets	Inspect for missing or damaged locking pins and lanyards. Inspect for missing or damaged turnbuckles.	Locking pins, lanyards, or turnbuckles are missing or damaged.

Table 2-1. Operator Preventive Maintenance Checks and Services - Continued

B - Before operation D - During operation A - After operation S - Semiannually

(1) ITEM NO	(2) INTERVAL B	D	A	S	(3) Item	(4) Procedure	(5) Equipment is Not Ready/Available If:
8	•		•	•	Coaxial cable reels	Check that cables are secured with retaining straps.	Retaining straps are damaged or missing.
9	•		•	•	Cargo strap assemblies	Inspect for bent or missing snap hooks. Check for cut, worn, or frayed straps.	Snap hooks bent, or missing. Straps cut, worn, or frayed.
10	•		•	•	Davit assembly	Unwind cable from winch and inspect for cuts or wear. Rewind cable. Check that winch operates and cable pulleys turn freely. Check for bent, missing, or corroded locking pins.	Locking pins missing or damaged. Winch faulty. Cable pulleys missing or damaged. Cut or frayed cable.
11	•		•	•	Switch box assembly	Check that W1 and W2 cables are installed and not loose. Check cable insulation for cuts or wear. Check that connector J1 is tight and not damaged or corroded. Check W1 and W2 cables at generator to ensure pigtails are properly connected.	Cables worn or missing. Damaged or corroded connector.
	•		•	•		If shelter power and ground cables are not connected, check that connector J1 cover is installed and hand tight. Check that ground lug locking nut is installed and hand tight. Check that keeper wire is installed and not damaged.	Missing or damaged connector cover, ground lug locking nut, or keeper wire.
	•		•	•		Inspect terminal board cover hinges for dents, damage, or corrosion. Check that captive fasteners are installed and fastened.	Damaged or corroded hinges. Missing or inoperable captive fastener.

Table 2 - 1. Operator Preventive Maintenance Checks and Services - Continued

B - Before operation D - During operation A - After operation S - Semiannually

(1) ITEM NO	(2) INTERVAL B	D	A	S	(3) ITEM TO BE INSPECTED	(4) Procedure	(5) Equipment is Not Ready/Available If:
	•		•	•	Switch box assembly (Continued)	Inspect front panel indicator lamps for broken or missing lamp assemblies. Check that transfer switch S1 can be turned to OFF, GEN 1, GEN 2, and OFF positions. **NOTE** This is a heavy, spring-loaded switch. Use two hands and apply force to turn switch until it snaps into each position.	Broken or missing indicator lamps. Inoperable transfer switch.
	•		•	•		Check trailer ground (frame) stud (under switch box assembly) for damage. Check that wing nut is installed and tight.	Bent or damaged stud. Damaged or missing wing nut.
		•			Switch box assembly GEN 1 and GEN 2 indicator lamps	Visually check that GEN 1 or GEN 2 lamps are lit indicating powered generators. **NOTE** Indicators show presence of power from generator, not position of transfer switch. One, both, or neither indicator may light depending on which, if any, generators are supplying power.	Lamp for powered generator(s) not lit.
	•		•	•	Switch box assembly ground strap assembly	Inspect for cuts, wear, or corrosion.	Ground strap cut, worn, or corroded.

Table 2-1. Operator Preventive Maintenance Checks and Services-Continued

B - Before operation D - During operation A - After operation S - Semiannually

(1) ITEM NO	(2) INTERVAL B	D	A	S	(3) Item	(4) Procedure	(5) Equipment is Not Ready/Available If:
12	•		•	•	5-gallon fuel cans and straps	Inspect for leaks, corrosion, or broken parts.	Leaks, corrosion, or broken parts.
13	•	•	•		Generator	Refer to PMCS in TM 5-6115-585-12	
14	•		•	•	Trailer TM 9-2330-376-14&P	Refer to PMCS in	

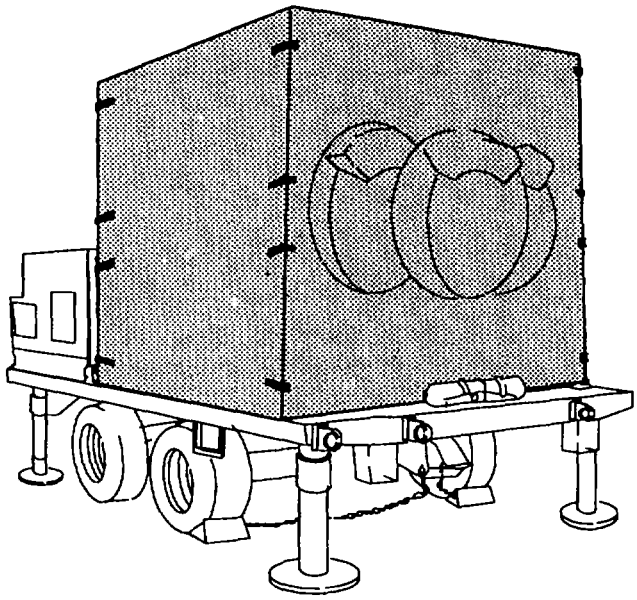
Section III. OPERATION UNDER USUAL CONDITIONS

2-6. INSTALLATION AND PREPARATION FOR USE

The OE-4811TRC is a transport container for up to three AB-1373/TRC masts. This section describes how to load the OE-481/IRC with AB-1373/TRC equipment for transport. This section also describes how to unload the AB-1373IRC equipment for deployment at the site.

The number of masts, antenna reflectors, etc., will vary depending on which DGM assemblage is being used with the OE-481/rRC. Refer to Table 1-1 for the required equipment to be loaded on the OE-481LTRC.

2-7. UNLOADING MAST EQUIPMENT

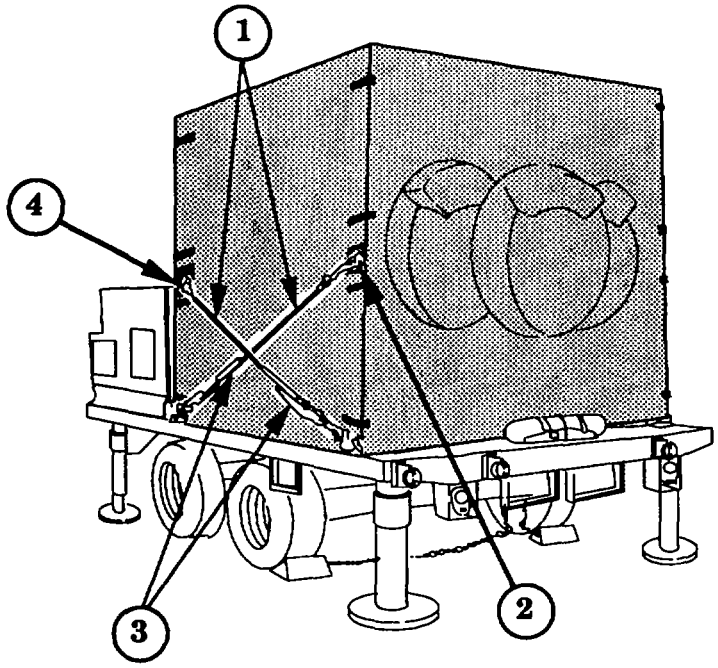


WARNING

Trailer wheels must be chocked, handbrakes set, and four stabilizers extended. Failure to comply may result in personal injury.

a. If pallet is mounted on truck, go to step c. If pallet is mounted on trailer set handbrakes, chock trailer wheels, and lower leveling jacks (refer to TM 9-2330-37614&P).

2-7. UNLOADING MAST EQUIPMENT - Continued

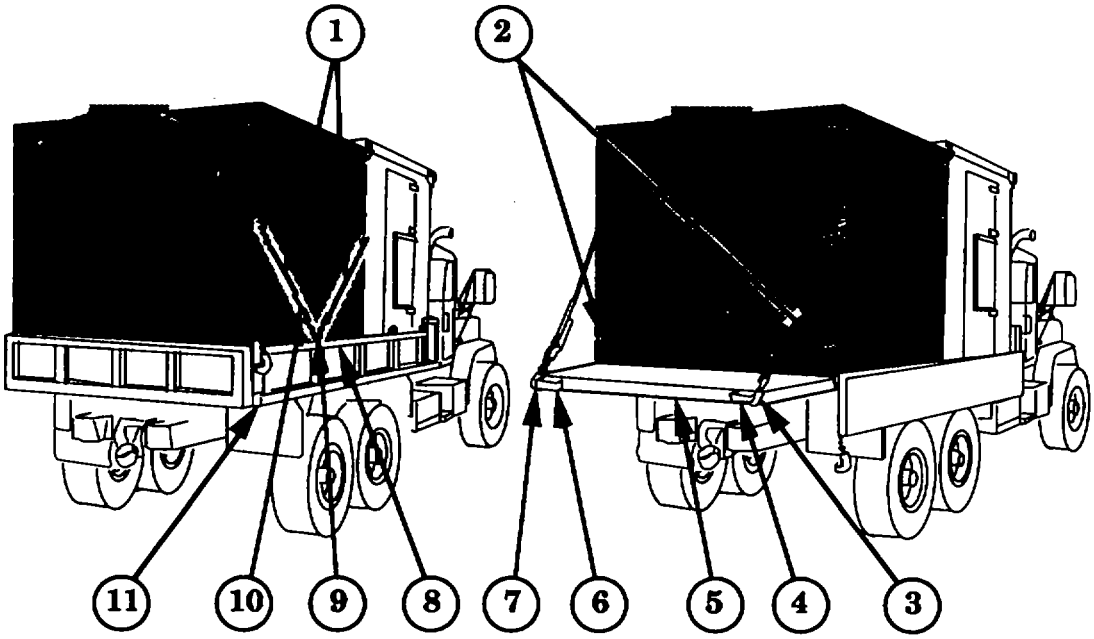


WARNING

Do not disconnect tie-down cable assemblies on both sides of trailer when completely unloading the pallet assembly. If all equipment is unloaded, such as when unloading a pallet assembly for repair, operators standing on the work platforms could cause the pallet assembly to overturn. To prevent such a hazard, keep one tie-down assembly on opposite side attached when unloading all equipment from a pallet assembly. Failure to comply with this warning may result in personal injury or death.

b. Release two loadbinders (3) on curbside and roadside of pallet assembly. Remove top snap hooks (2 and 4) and let tie-down cable assemblies (1) hang.

2-7. UNLOADING MAST EQUIPMENT - Continued



(2 PLACES)

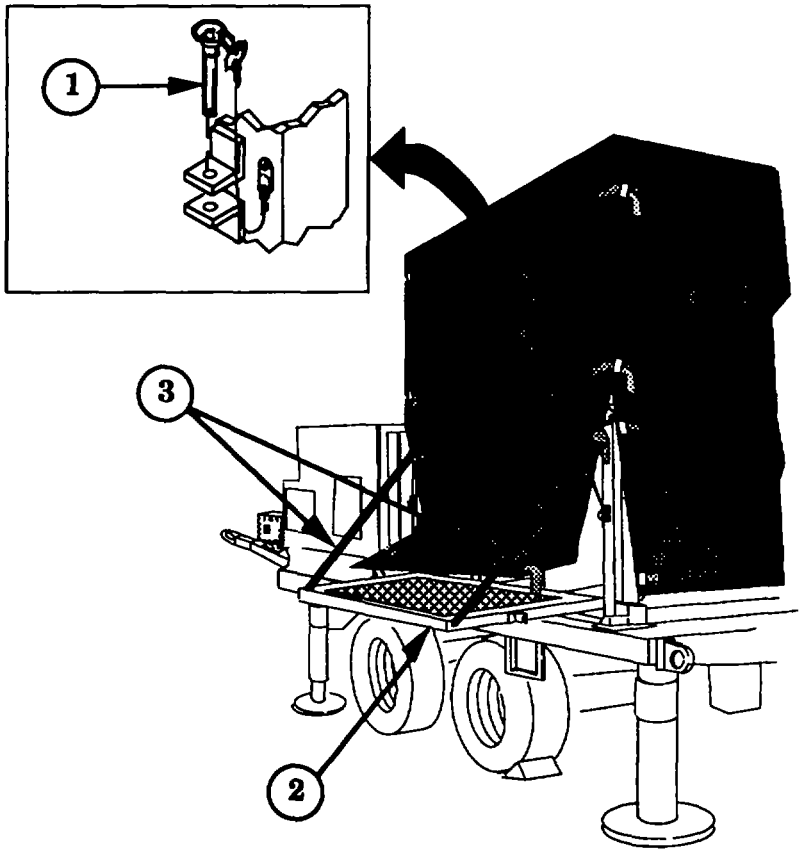
WARNING

Two operators are required to maintain control of heavy truck side rails and tailgate. Do not allow to drop free. Failure to control side rails and tailgate may result in personal injury.

c. For trailer-mounted pallet assembly, go to step d. For truck-mounted pallet assembly, release loadbinders (8 and 10) and disconnect cable tie-down assemblies (1) from truck side rails (9). Remove front cable tie-down assemblies and stow in pallet. Lower tailgate (5) to horizontal and hook rear cable tie-down assemblies (3 and 7) to tailgate handles (4 and 6). This creates a work platform for removing antennas. Lower truck side rails (9).

d. Unfasten lower tarpaulin straps (2) to gain access to pallet assembly work platform.

2.7. UNLOADING MAST EQUIPMENT - Contiuned

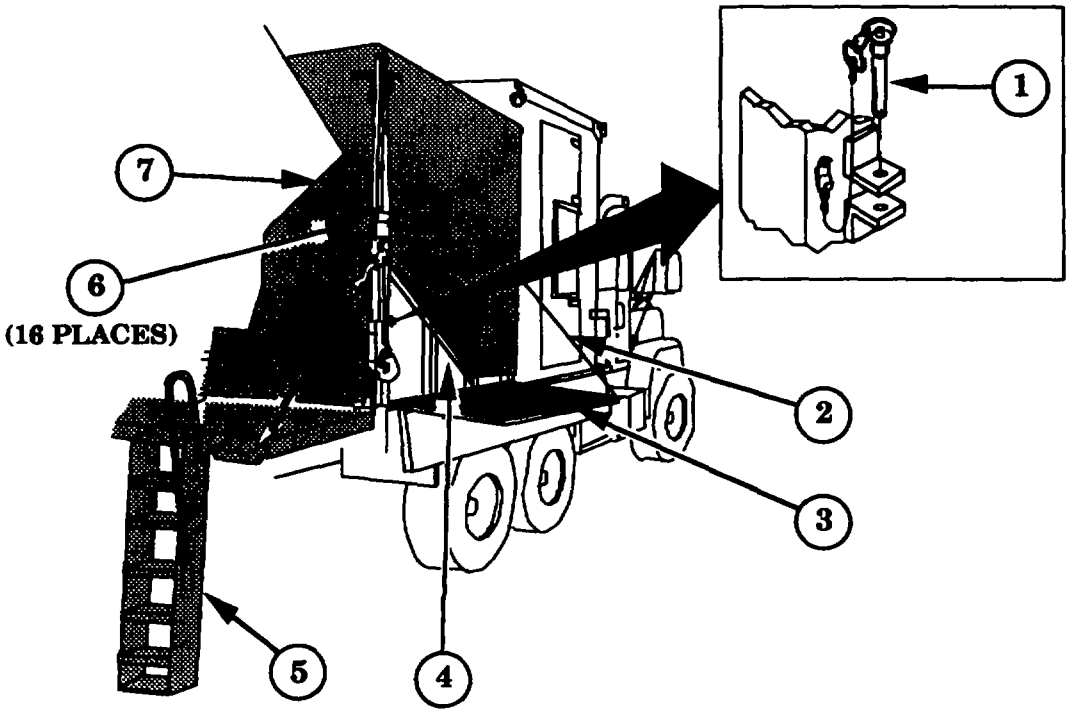


WARNING

Two operators are required to control work platform. Do not allow the work platform to drop free. It is heavy and may cause personal injury.

e. Remove two locking pins (1) from roadside work platform (2) and lower work platform until supported by cable lanyards (3).

2.7. UNLOADING MAST EQUIPMENT - Continued



WARNING

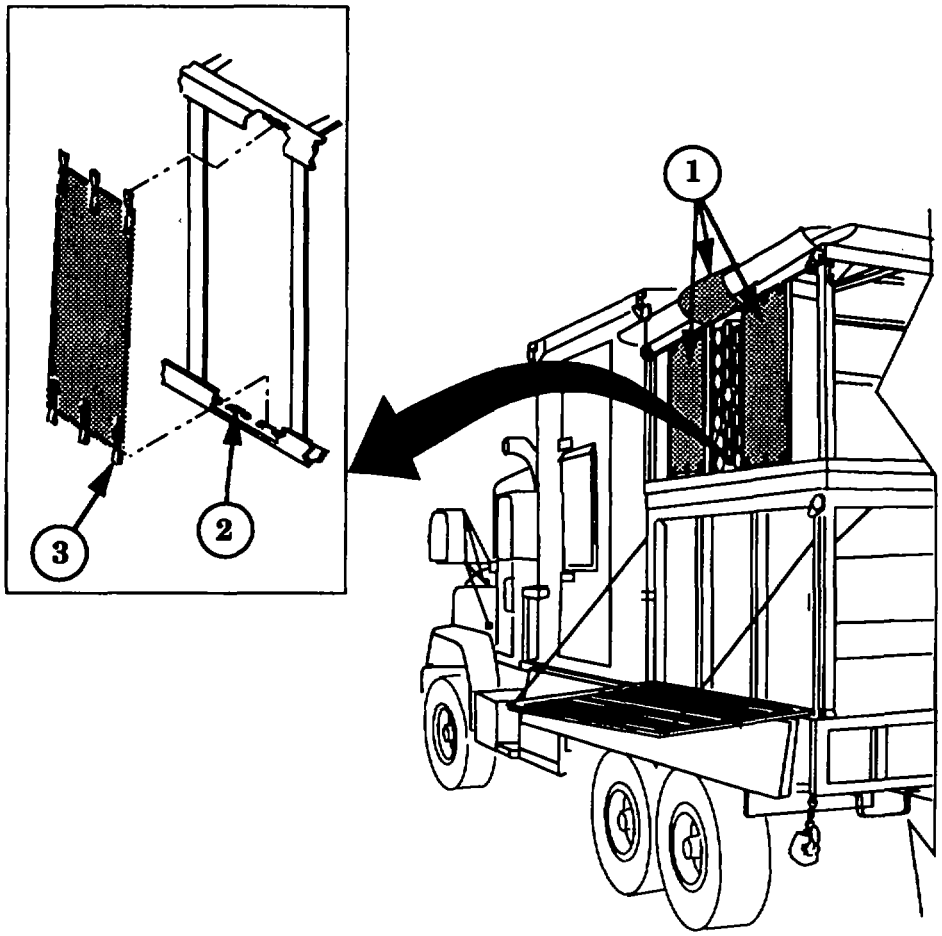
Use ladder for the truck configuration only. The ladder is too tall for safe use with the trailer. Failure to comply may result in personal injury.

f. For trailer-mounted pallet assembly, go to step g. For truck-mounted pallet assembly, remove ladder (5) from curbside center compartment (4) of lower pallet section. Install ladder (5) at curbside of truck tailgate.

g. Remove two locking pins (1) from curbside work platform (3) and lower work platform until supported by cable lanyards (2).

h. Loosen remaining tarpaulin straps (6) and fold sides of tarpaulin (7) over top of pallet assembly.

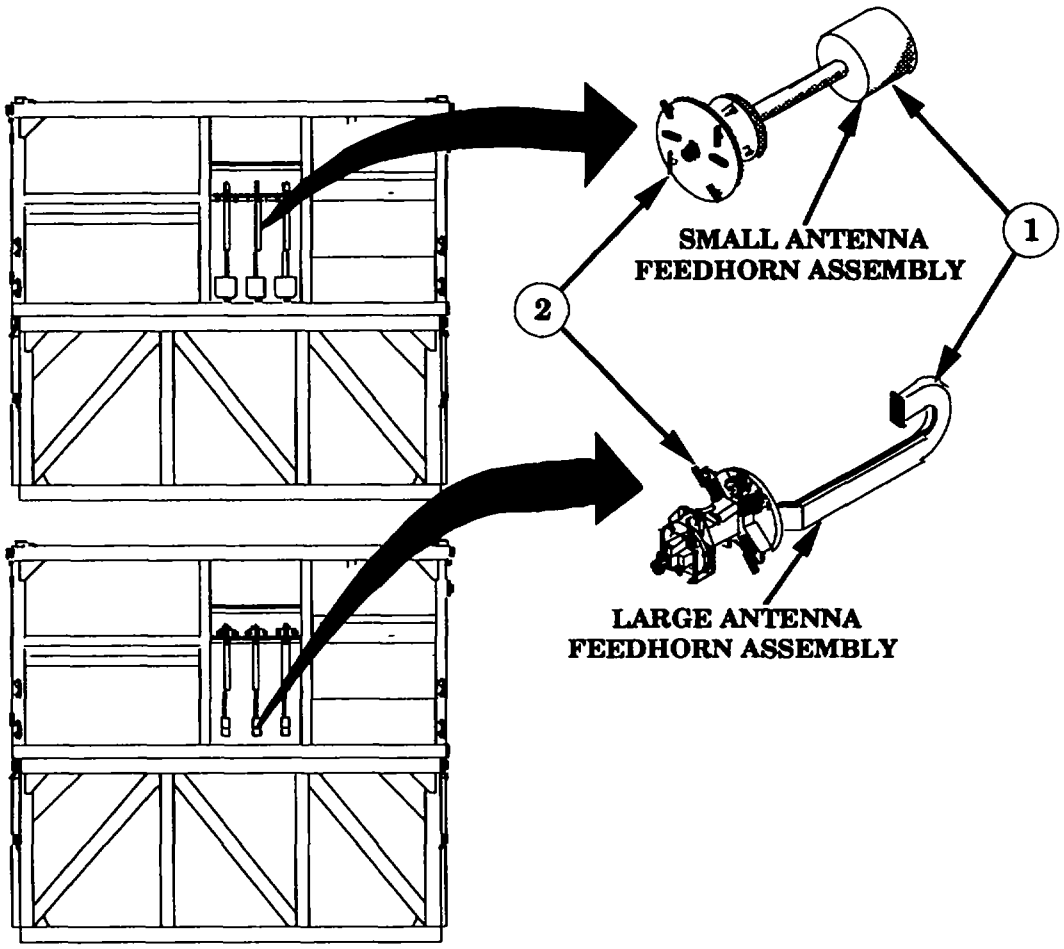
2-7. UNLOADING MAST EQUIPMENT - Continued



NOTE
Steps i thru n apply to one mast only.

i. Release straps (3) at bottom of canvas assembly (1) from footman loops (2). Flip canvas assembly (1) up onto top of pallet assembly.

2-7. UNLOADING MAST EQUIPMENT - Continued

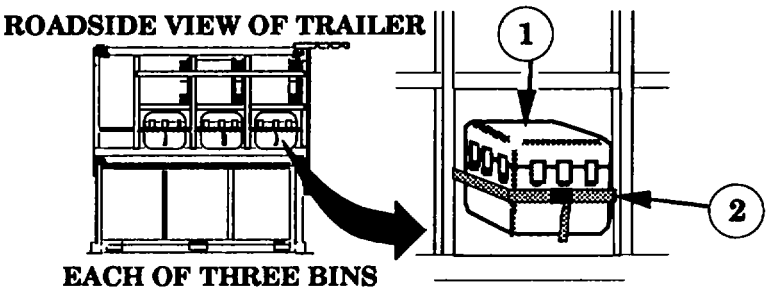


NOTE

During the following steps, place all removed items in secure, out of traffic area.

j. Unscrew four thumbscrews (2) on each feedhorn (1) and remove from pallet assembly.

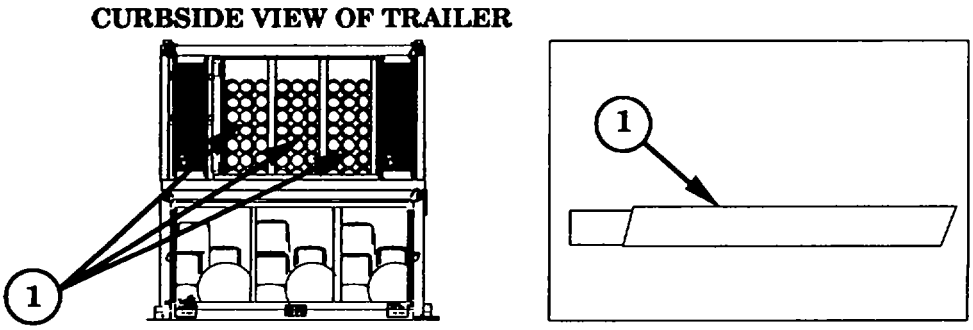
2-7. UNLOADING MAST EQUIPMENT - Continued



WARNING

Two operators are required to lift positioner/controller transit case. Failure to comply with this warning may result in personal injury.

k. Release adjustable strap (2) and remove positioner/controller transit case (1) from upper pallet section. Place adjustable strap (2) into bin.

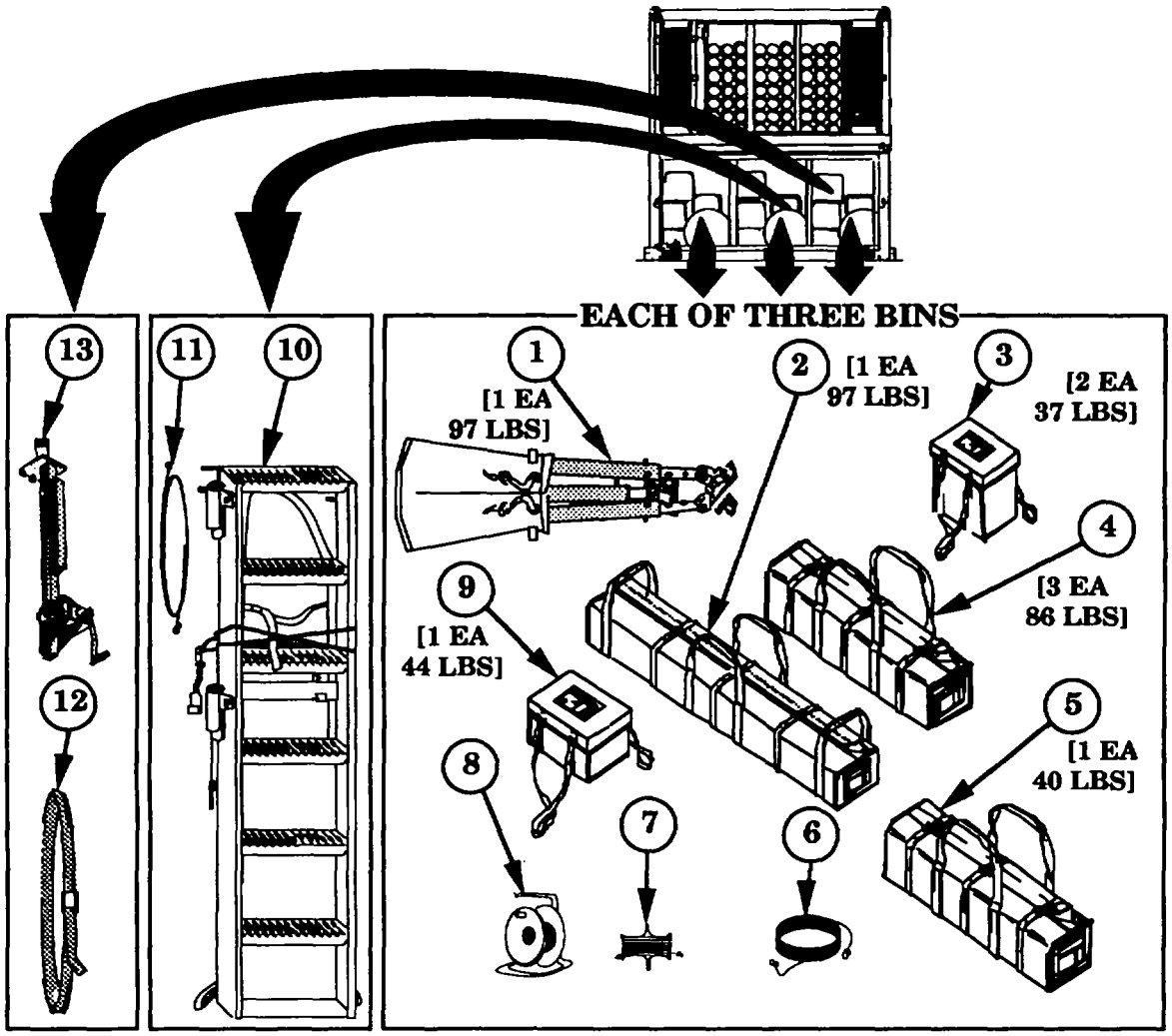


CAUTION

Use care in handling mast sections. Do not throw or drop mast sections. Rough handling will cause equipment damage.

1. Remove 21 mast sections (1) from one of three bins in upper pallet section.

2-7. UNLOADING MAST EQUIPMENT - Continued



WARNING

All equipment bags and tripod assembly are two-operator lifts. Failure to comply may result in personal injury.

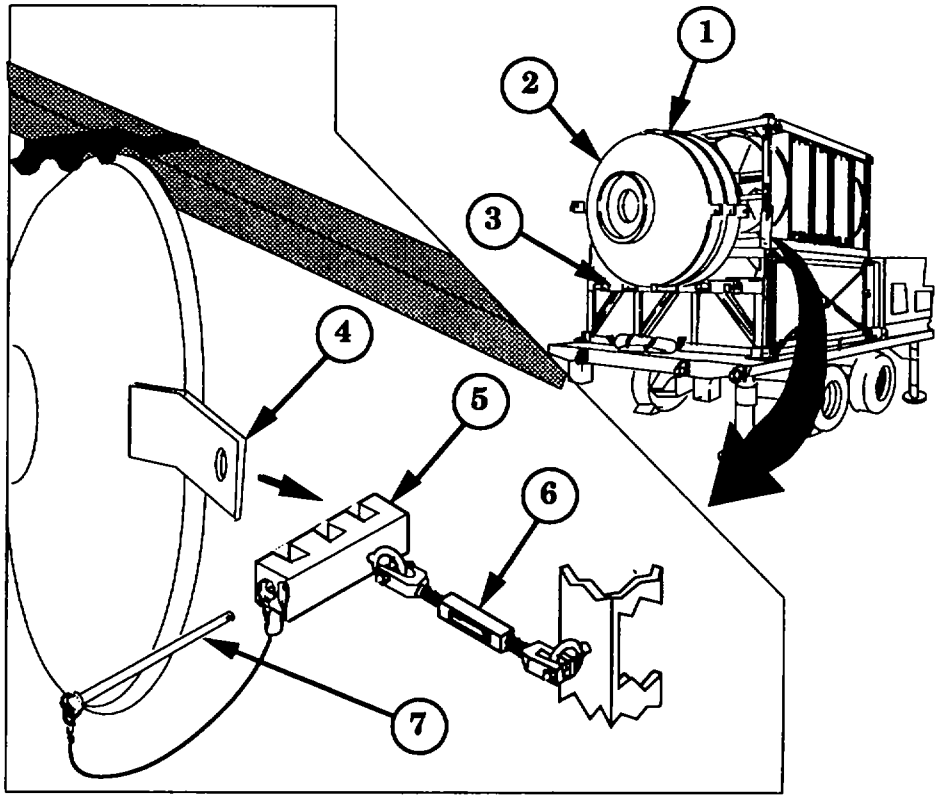
m. Remove ground cable (lightning) (8), cable assembly W1 (6), and cable assembly W2 (7) from lower pallet section bin.

n. Remove equipment bags (2, 3, 4, 5, and 9) from lower pallet section bin. Remove tripod assembly (1) and ground strap assembly (11) from bottom of lower pallet section bin.

o. Remove davit assembly (13) and loop cargo strap (12) from lower front bin, and ladder (10) from middle bin of lower pallet section.

p. If using small antenna reflectors, go to step s.

2-7. UNLOADING MAST EQUIPMENT - Continued



NOTE

If only one antenna reflector is used, reinstall retaining bracket to prevent movement of remaining reflectors.

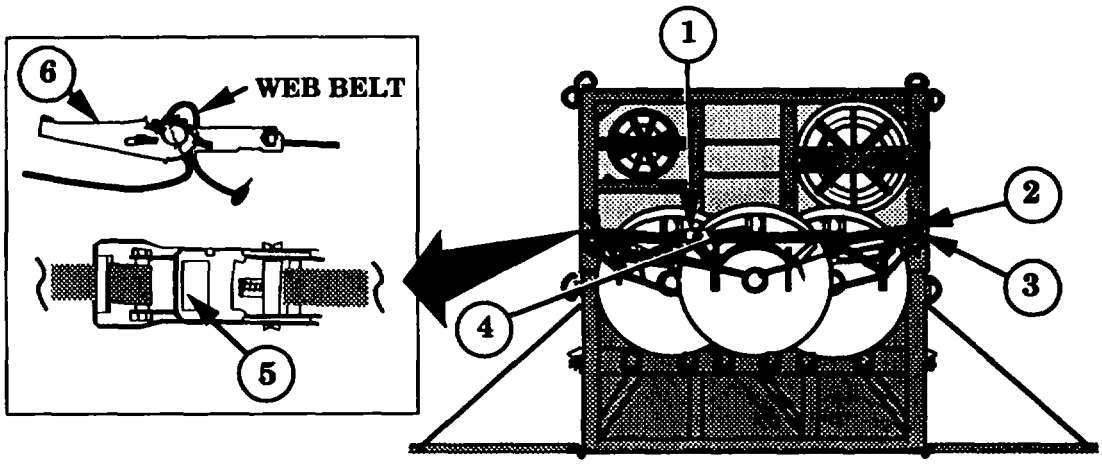
q. Loosen turnbuckles (6), and remove locking pin (7) from retaining bracket (5), to release transport tabs (4). Repeat for other side of antenna reflector (2). Let retaining bracket (5) and turnbuckle (6) hang free.

CAUTION

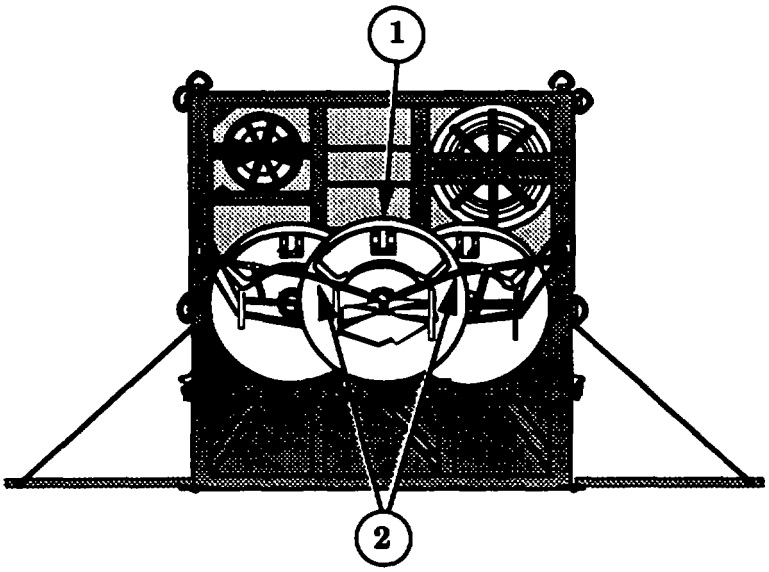
Two operators are required to remove antenna reflectors. Rough handling will cause equipment damage.

r. Lift and pull out on bottom of antenna reflector (2), to clear bottom reflector support (3). Lower reflector out of reflector spacer (1) and remove reflector (2). If all reflectors have been removed prior to moving pallet, use 8-inch and 12-inch adjustable wrenches to remove turnbuckle (6) with attached retaining bracket (5) and stow in pallet. Go to step w.

2-7. UNLOADING MAST EQUIPMENT - Continued



s. Place cargo strap ratchet (6) in release position by lifting release lever (5) and completely unfolding ratchet (6). Remove one cargo strap assembly (1) from under antenna reflector retaining brackets (4) and unhook each endhook (2) from pallet assembly eyebolts (3).

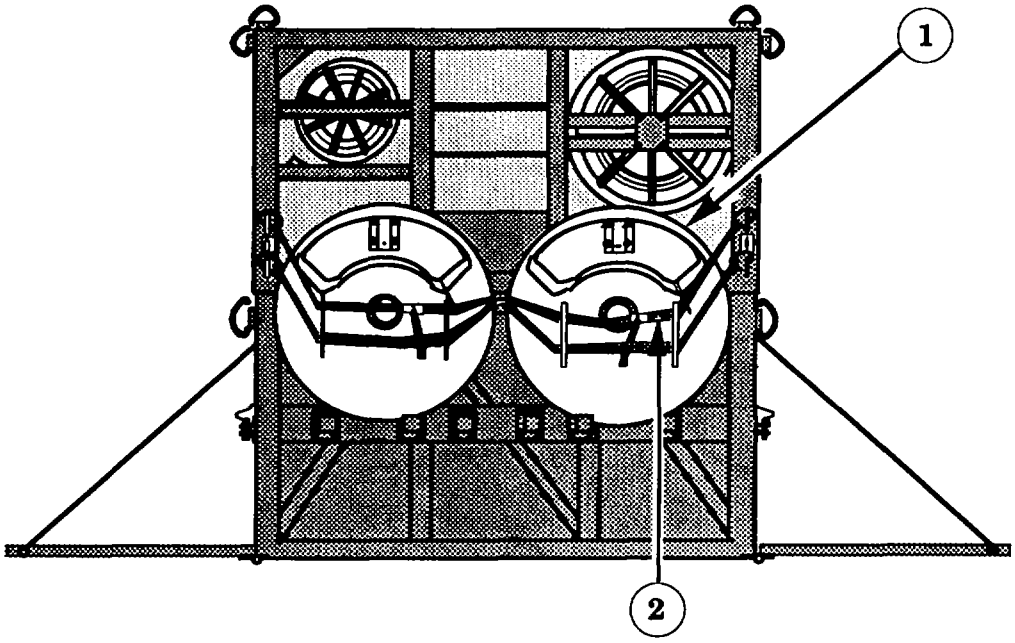


CAUTION

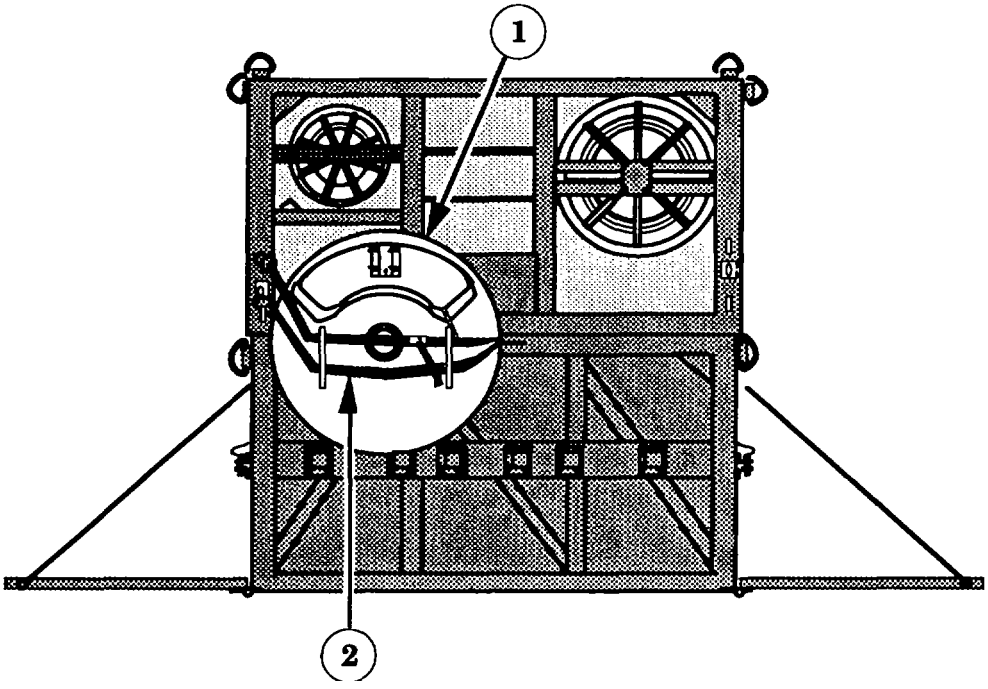
Use care in handling antenna reflectors. Rough handling will cause equipment damage.

t. Remove one cargo strap assembly (2) holding first small antenna reflector (1) to pallet. Remove reflector (1).

2-7. UNLOADING MAST EQUIPMENT - Continued

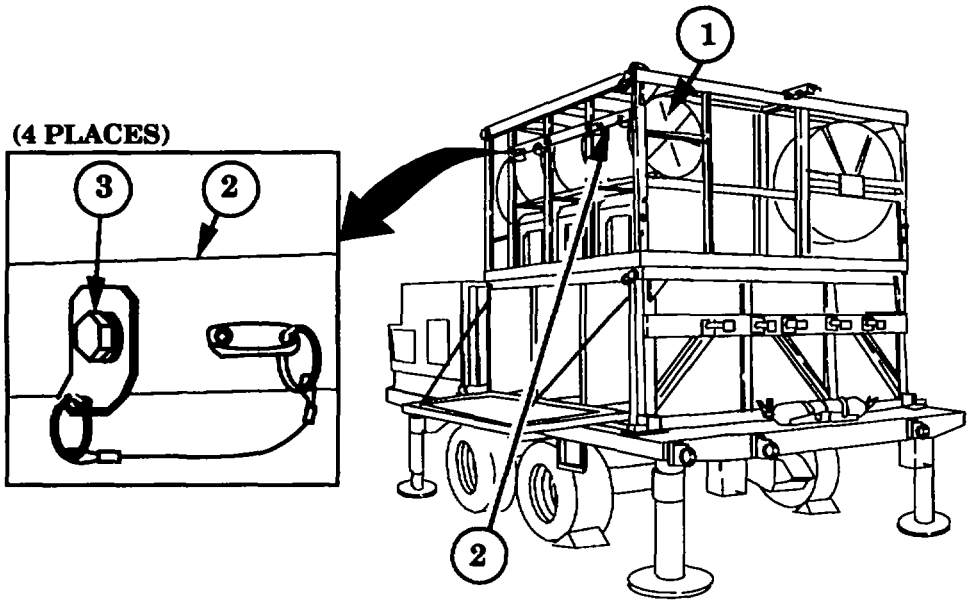


u. If an additional antenna reflector is needed, remove one cargo strap assembly (2) holding second small antenna reflector (1) to back of pallet assembly. Remove antenna reflector (1).

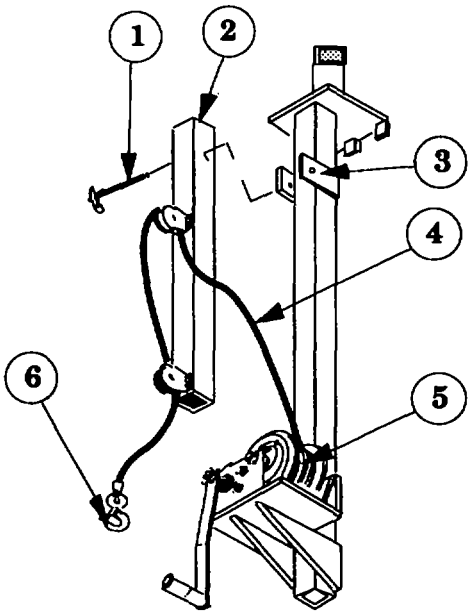


v. If an additional antenna reflector is needed, remove one cargo strap assembly (2) holding third small antenna reflector (1) to back of pallet. Remove antenna reflector (1).

2-7. UNLOADING MAST EQUIPMENT - Continued



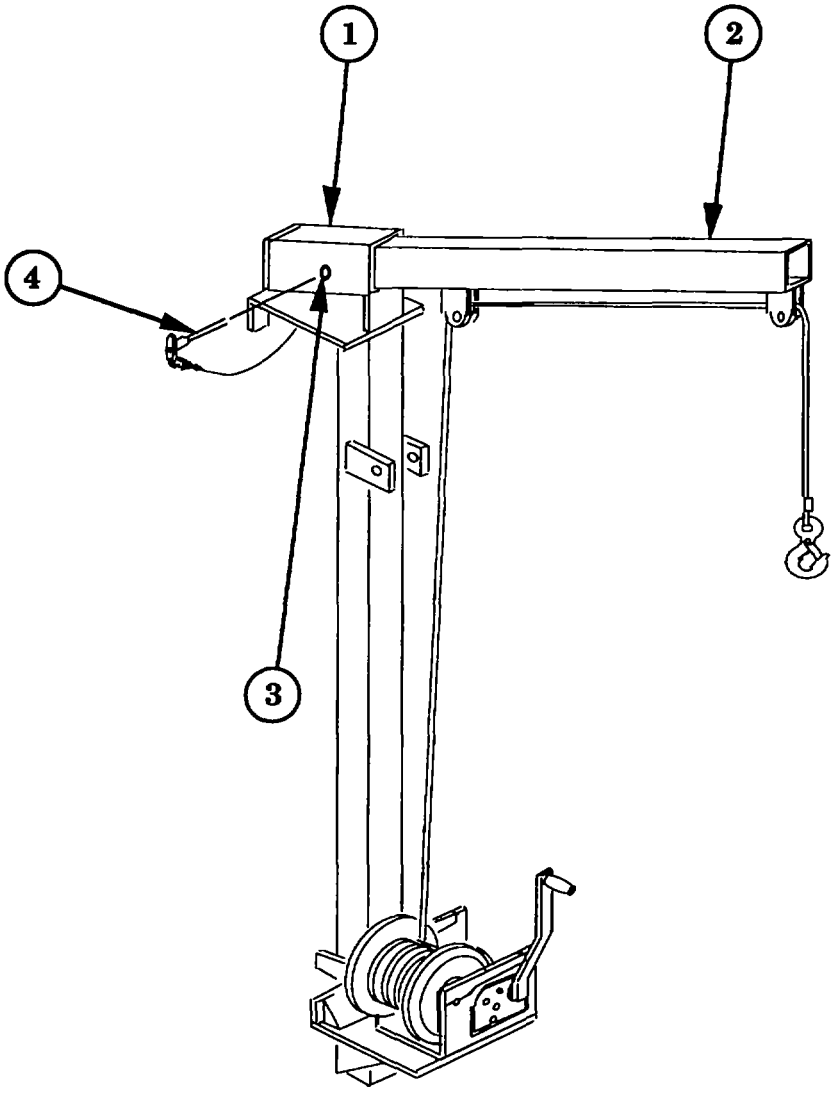
w. If unloading CX-11230 cable reel (1), use 8-inch adjustable wrench to remove four bolts (3) from retaining bar (2). Set retaining bar aside.



x. Unwind davit assembly hand winch (5) to release cable assembly (4) tension and release snap hook (6) from crank shaft.

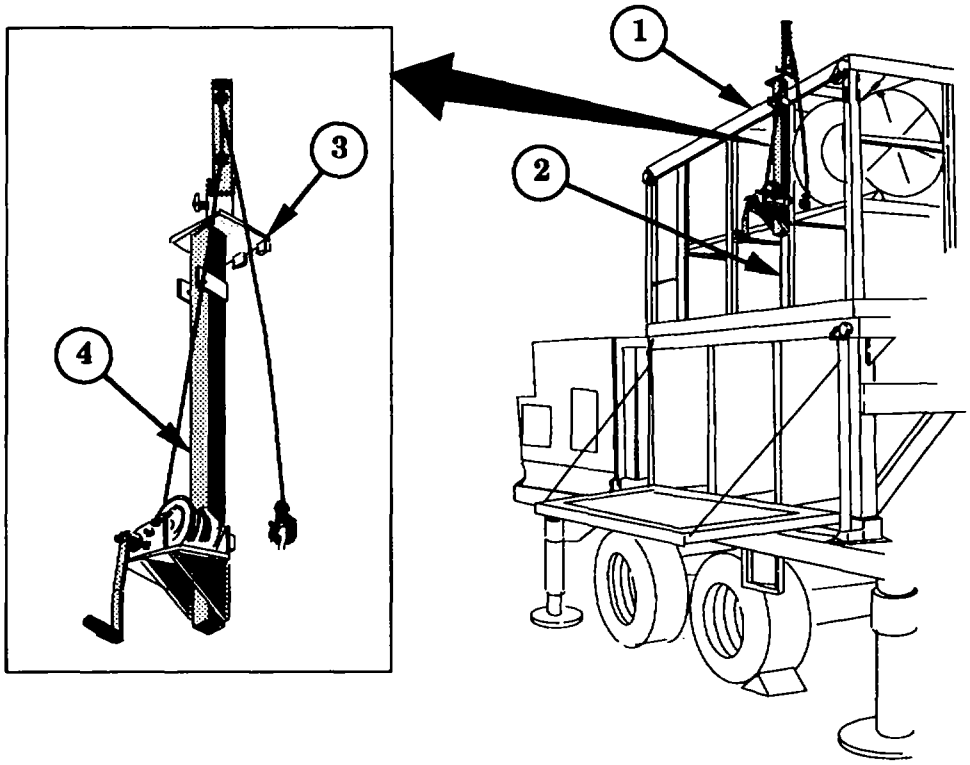
y. Remove locking pin (1) from boom storage bracket (3), releasing boom (2). Unwind approximately 2 feet of cable (4) from winch reel (5).

2-7. UNLOADING MAST EQUIPMENT - Continued



z. Insert davit assembly boom (2) into top bracket (1) and insert locking pin **(4)** through bracket hole (3).

2-7. UNLOADING MAST EQUIPMENT - Continued

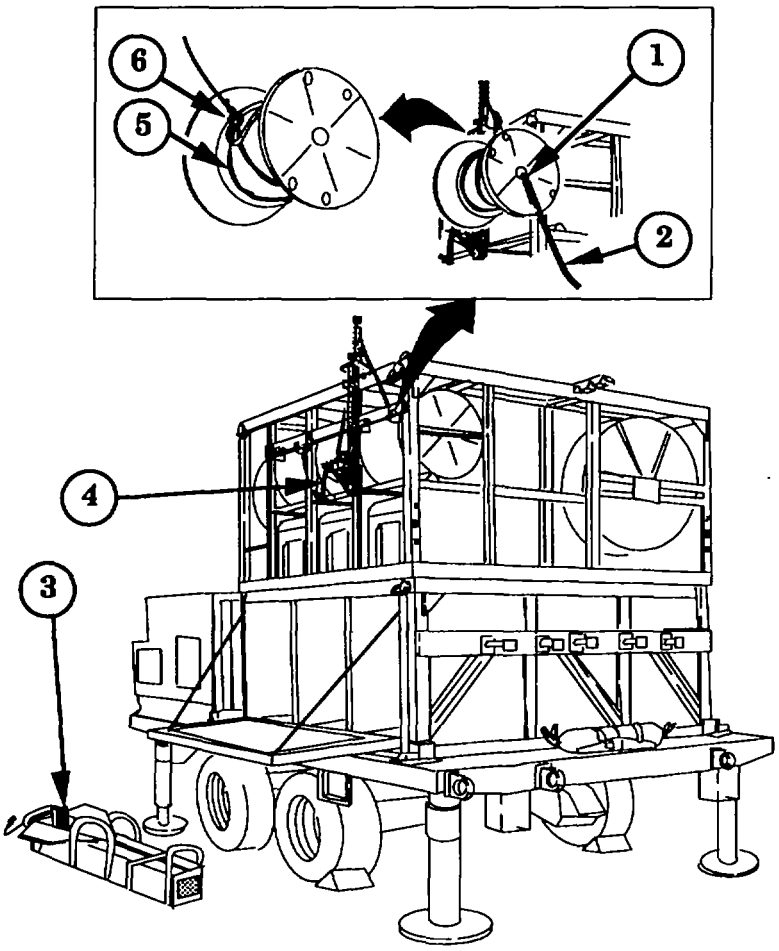


WARNING

Cable reels are heavy. Two operators are required to unload reels. Failure to comply with this warning may result in personal injury. Do not pinch fingers between davit assembly and pallet rails.

aa. Lift davit assembly and hook mounting bracket (3) over pallet assembly top (1) and siderail (2). Let davit assembly (4) rest against side rail (2).

2-7. UNLOADING MAST EQUIPMENT - Continued



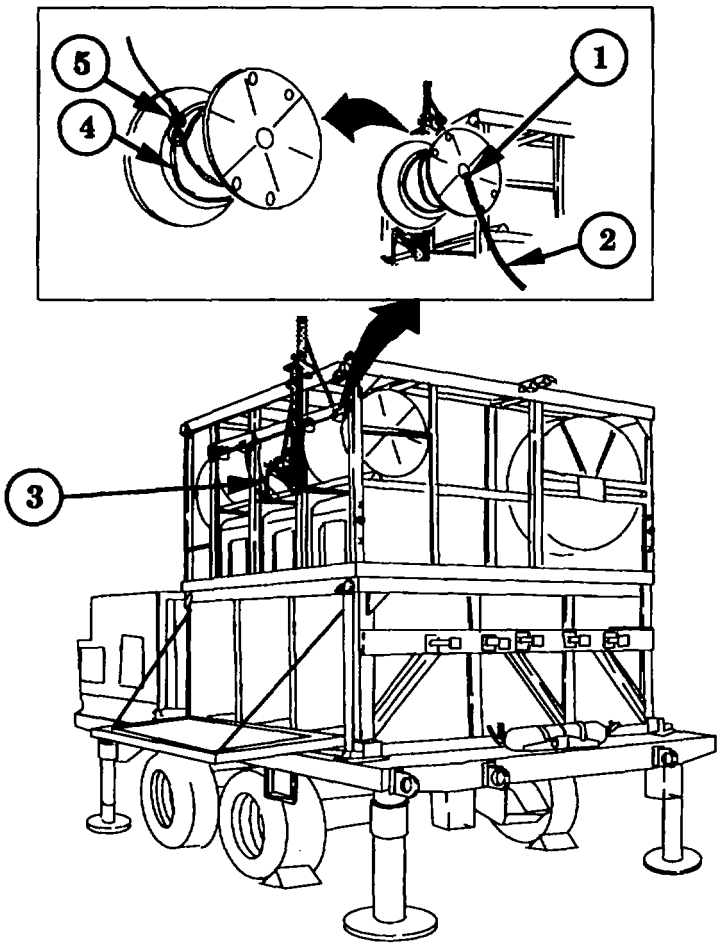
WARNING

Do not attempt to unload CX-11230 cable assemblies by hand. Failure to comply may result in personal injury.

bb Loop cargo strap assembly (5) around CX-11230 cable assemblies and connect davit assembly snap hook (6) to cargo strap assembly (5).

cc Remove radius rope (2) from Mast AB-1373YTRC mast accessories bag (3), and connect radius rope S-hook (1) to cable assembly.

2-7. UNLOADING MAST EQUIPMENT - Continued



WARNING

Maintain control of cable assembly while removing from pallet. Failure to comply will cause cable assembly to swing free and may result in personal injury or death.

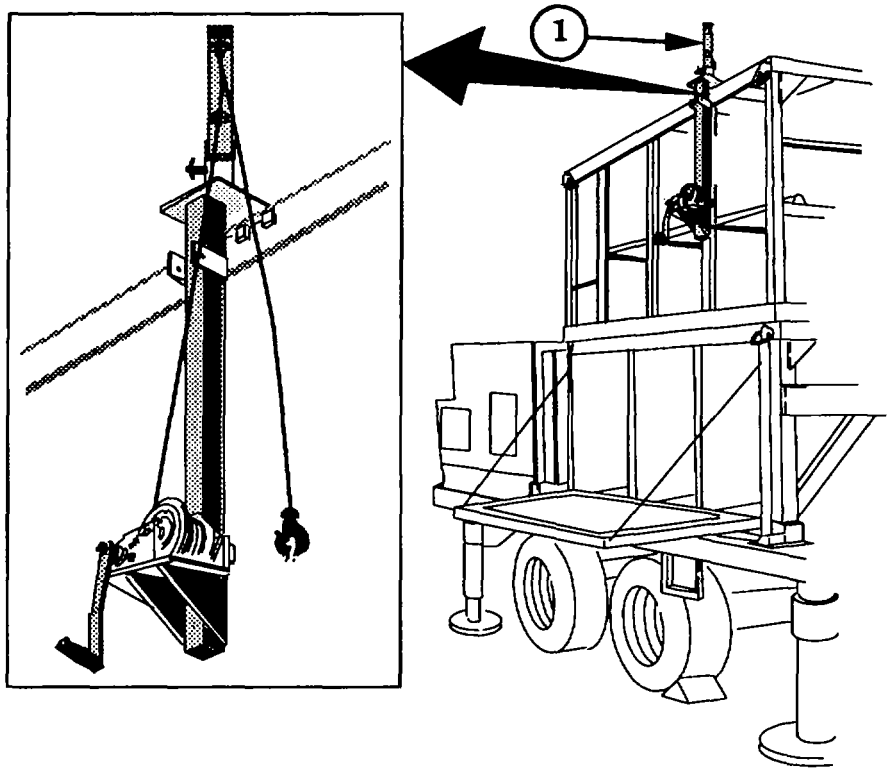
dd. Operator 1: Stand on platform and work cable assembly until free from pallet. Then, at ground level, use radius rope (2) to control cable assembly while unloading.

Operator 2: Crank davit assembly winch handle (3) to first lift cable assembly from pallet then lower cable assembly to ground.

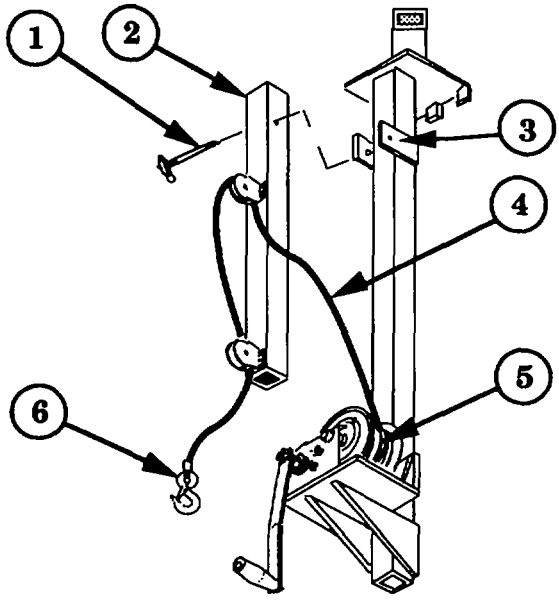
ee. Disconnect radius rope S-hook (1), cargo strap assembly (4), and davit assembly snap hook (5) from cable assembly.

ff. Repeat step bb thru dd for remaining CX-11230 cable assemblies as required.

2-7. UNLOADING MAST EQUIPMENT - Continued

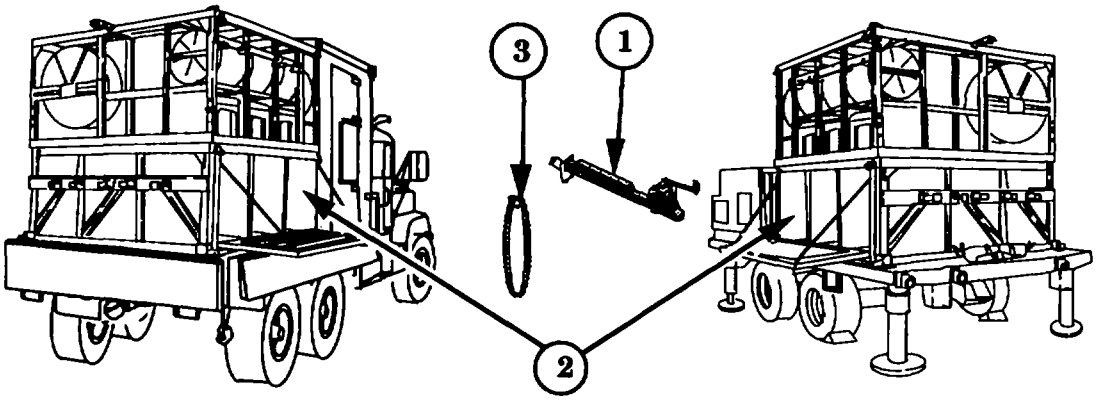


gg. After unloading CX-11230 cable assemblies, lift upward on davit assembly (1), remove from pallet assembly, and place flat on work platform for disassembly.

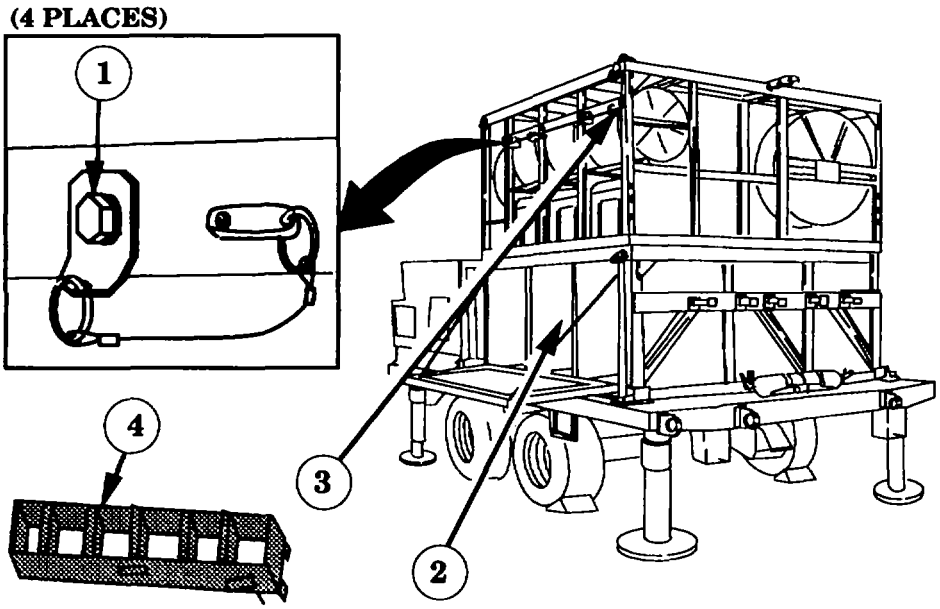


hh. Remove locking pin (1) from davit assembly boom (2). Insert davit boom (2) in storage bracket (3) and replace locking pin (1). Connect snaphook (6) to crank shaft and use winch (5) to crank in excess cable (4).

2-7. UNLOADING MAST EQUIPMENT - Continued



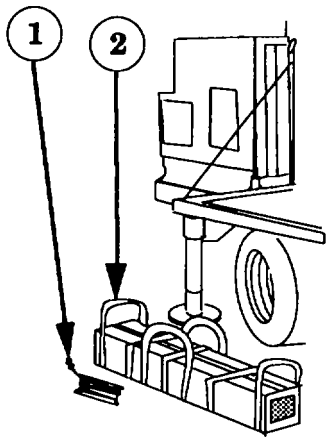
ii. Store davit assembly (1) and loop cargo strap assembly (3) in lower front bin (2) of pallet assembly.



jj. Reinstall retaining bar (3), using 8-inch adjustable wrench to secure four captive bolts (1) through retaining bar (3).

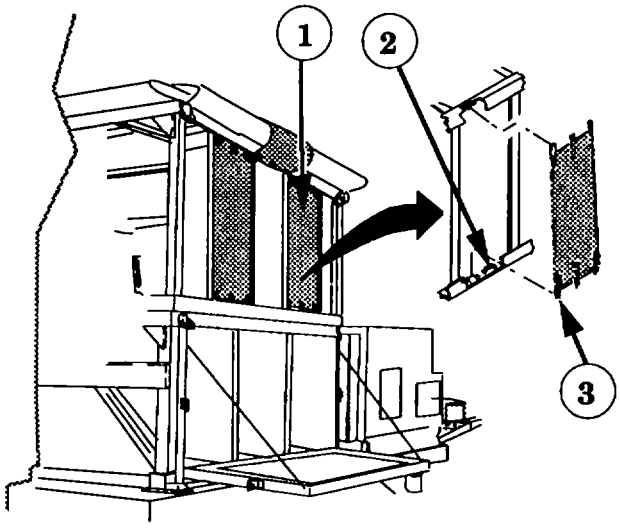
kk. If not in use, store ladder (4) in center bin (2) of lower pallet section.

2-7. UNLOADING MAST EQUIPMENT - Continued



ll. Rewind radius rope (1) and return to mast accessories bag (2).

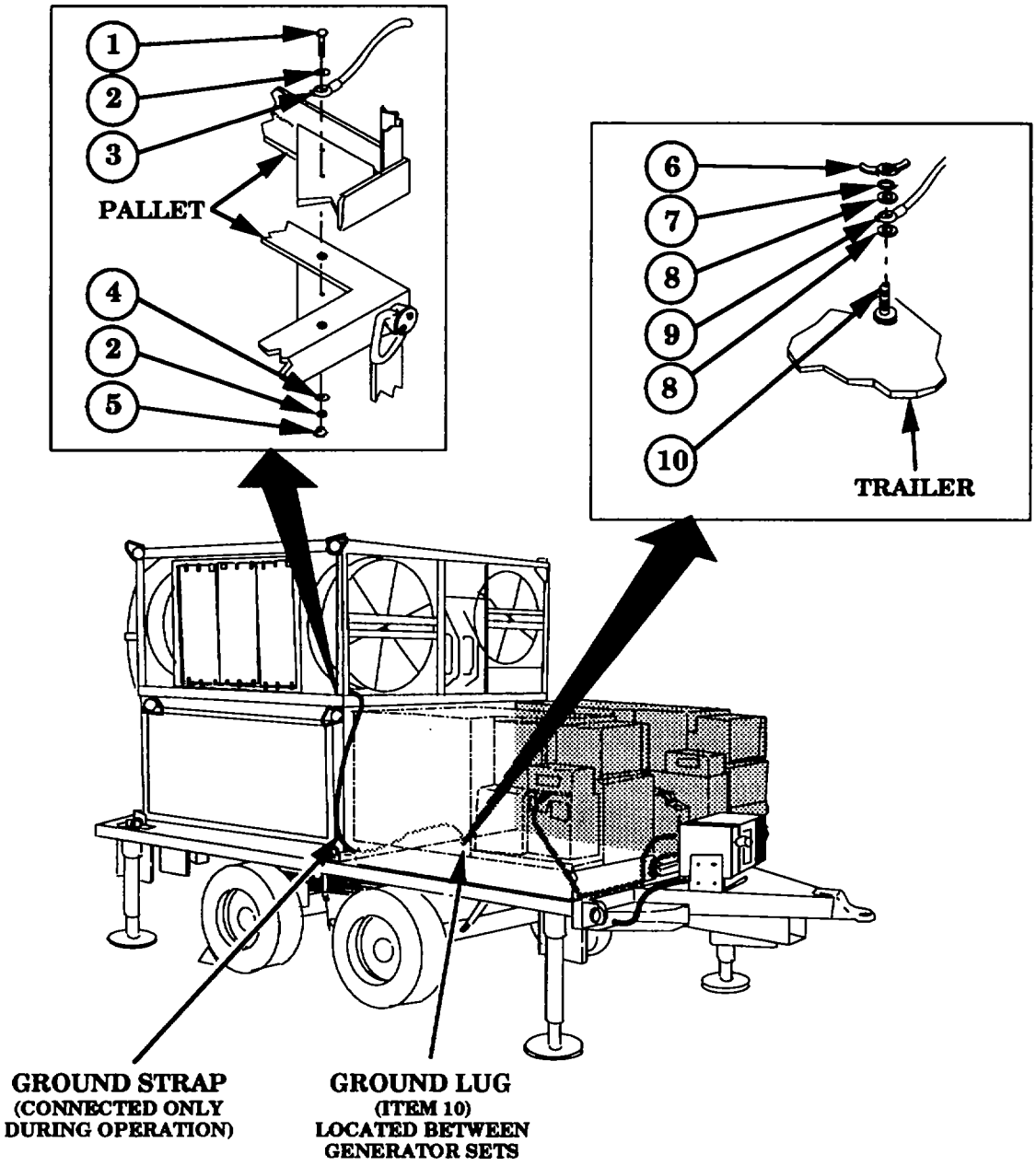
mm. Unload positioner/controller transit cases, mast sections, and equipment bags for other masts, as required.



nn. Use strap buckles (3) to secure three canvas assemblies (1) to pallet assembly lower footman loops (2).

2-7. UNLOADING MAST EQUIPMENT - Continued

oo. Install Ground Strap Assembly - Trailer Configuration

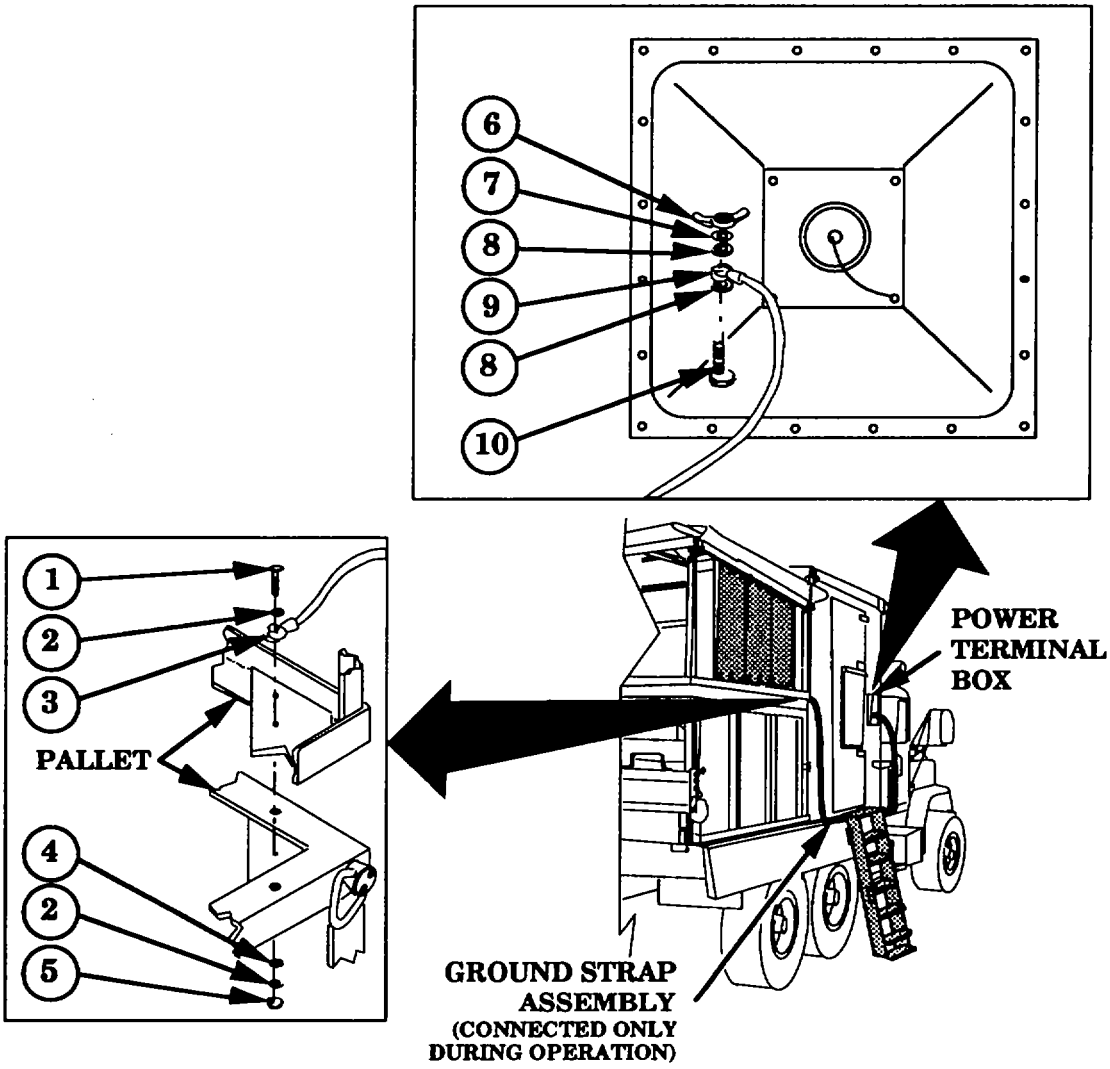


(1) Place ground strap assembly (9), lock washer (7), and washers (8) on trailer ground stud (10) and secure using wing nut (6).

(2) Attach ground strap assembly (3) to pallet using bolt (1), lock washers (2), washer (4), and nut (5).

(3) Using 8-inch adjustable wrench, tighten bolt securing ground strap assembly (3) to pallet.

2-7. UNLOADING MAST EQUIPMENT - Continued

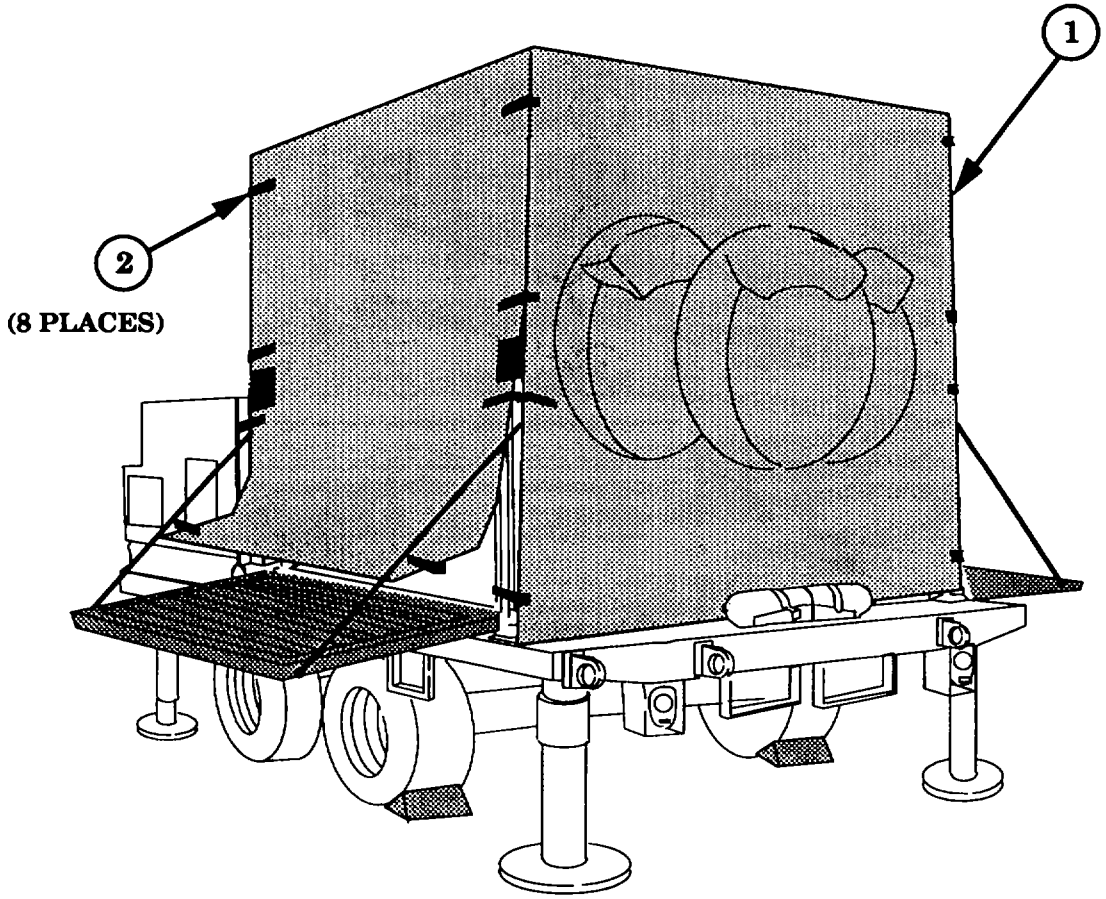


(1) Place ground strap assembly (9), lock washer (7), and washers (8) on communications shelter ground stud (10) and secure using wing nut (6).

(2) Attach ground strap assembly (3) to pallet using bolt (1), lock washers (2), washer (4),and nut (5).

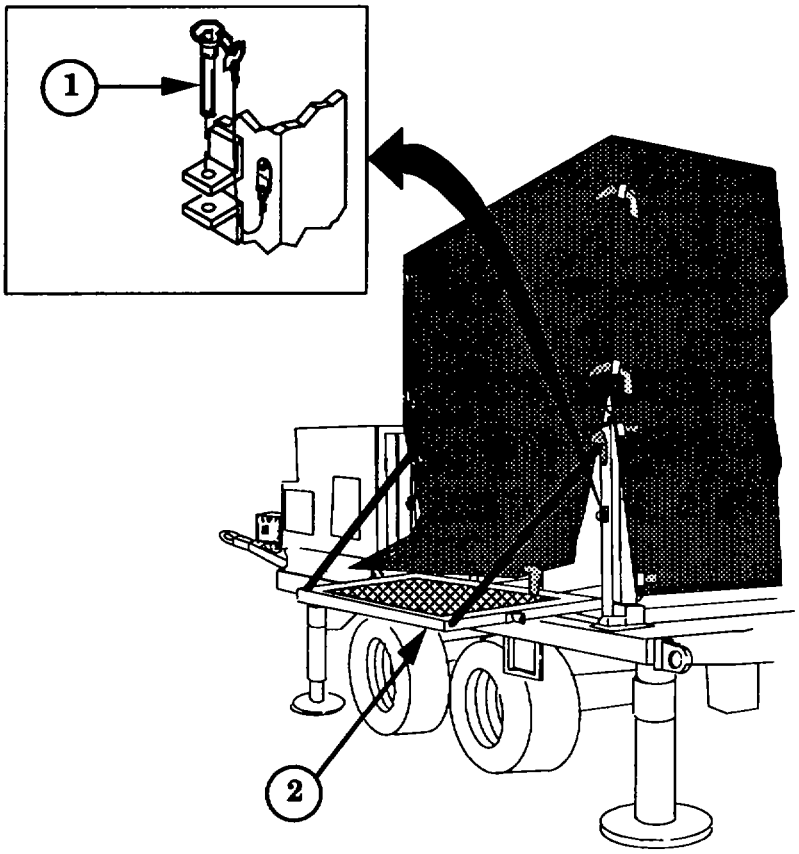
(3) Using 8-inch adjustable wrench, tighten bolt (1) securing ground strap assembly (3) to pallet.

2-7. UNLOADING MAST EQUIPMENT - Continued



qq. Unfold tarpaulin flaps (1) and secure upper straps (2). For truck-mounted pallet assemblies, go to step ss.

2-7. UNLOADING MAST EQUIPMENT - Continued



WARNING

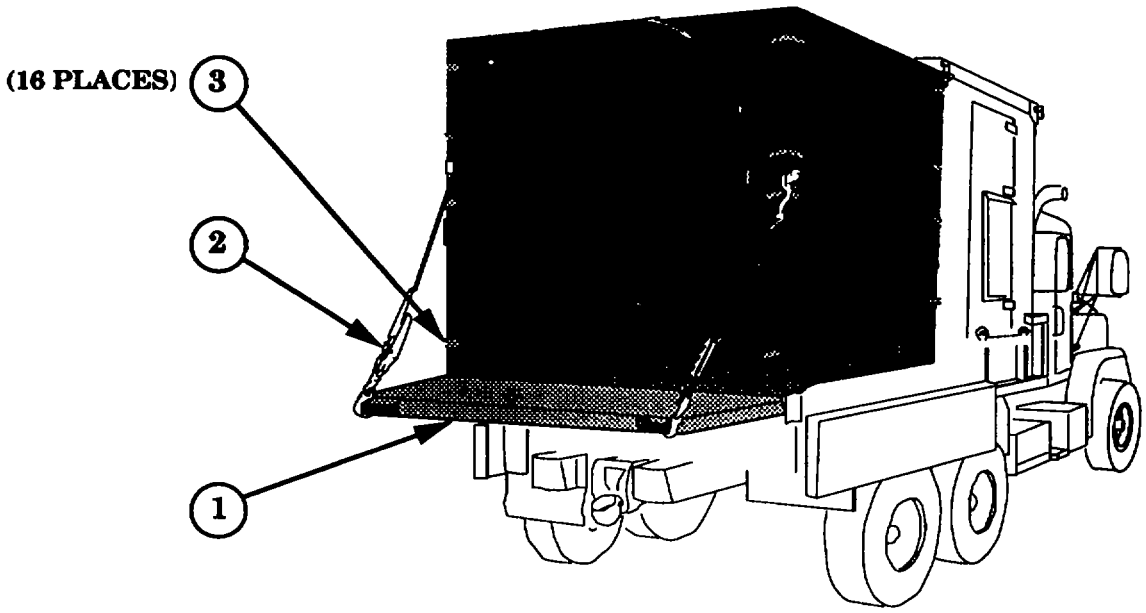
Two operators are required to close work platform. Failure to comply with this warning may result in personal injury.

NOTE

Check that tie-down assembly fittings and lanyards are out of the way before closing work platform.

rr Hold tarpaulin out of way, raise work platform (2), and secure using four locking pins (1). Repeat for work platform on other side. For trailer-mounted pallet assemblies, go to step uu.

2-7. UNLOADING MAST EQUIPMENT - Continued



WARNING

Two operators are required to lift heavy work platforms and truck tailgate. Failure to comply with this warning may result in personal injury.

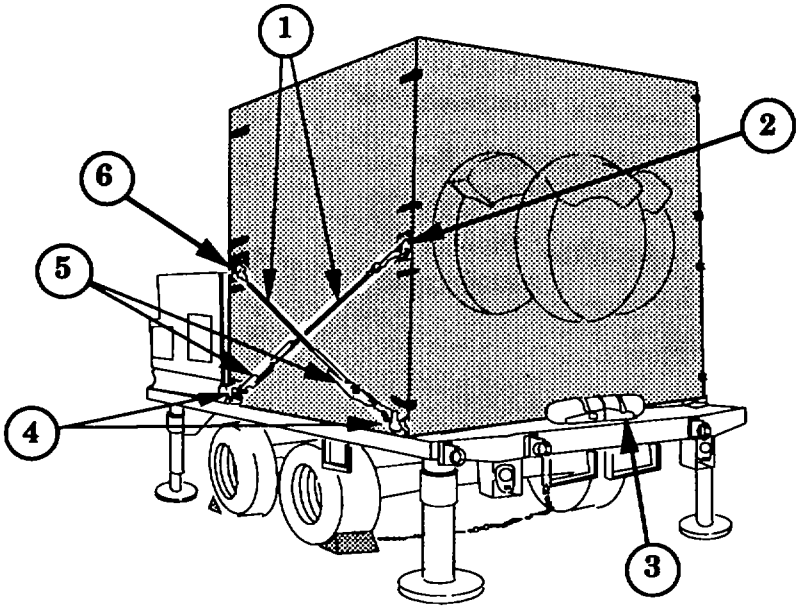
ss Support truck tailgate (1) and disconnect cable tie-down assemblies (2). Do not allow heavy truck tailgate (1) to fall free. Lower truck tailgate completely down.

NOTE

Check that tie-down straps are accessible when securing tarpaulin.

rr Secure all tarpaulin straps (3). For truck-mounted pallet assemblies, go to uu.

2-7. UNLOADING MAST EQUIPMENT - Continued

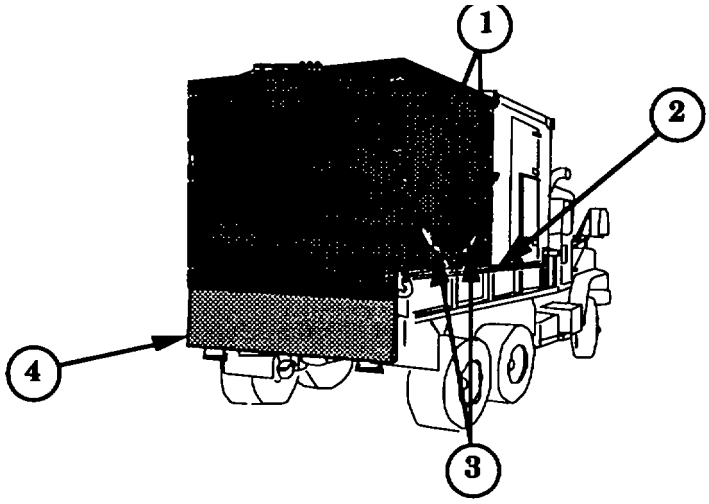


uu. Hook pallet assembly tie-down cable assemblies (1) onto pallet assembly attachment points (2, 4, and 6) and secure loadbinders (5).

vv. Pull up on fire extinguisher bracket latch to open restraining straps. Remove fire extinguishers (3) and place at designated fire points.

WARNING

Two operators are required to lift and secure heavy tailgate and siderails. Failure to comply with this warning may result in personal injury.



ww. For truck-mounted pallet assemblies, lift and secure tailgate (4) and siderails (2). Attach tie-down assemblies (1) to pallet assembly and truck side-rail attachment points. Secure loadbinders (3).

2-8. OPERATION OF AUXILIARY EQUIPMENT

a. OE-481rTRC Generator Configuration.

(1) Inspecting and Servicing Equipment.

(a) MEP-003A Generator. Perform inspection and servicing procedures described in TM 5-6115-585-12.

(b) M1061A1 5-Ton, Flatbed Trailer. Perform preliminary services procedures described in TM 9-2330-213-376-14&P.

(2) Installation.

(a) Trailer.

1. Locate trailer on as level a surface as possible in order for the generator set to operate effidently.

2. Set brakes and block wheels securely to prevent any movement.

3. Pull leg supports down and adjust length for firm contact with ground.

WARNING

Wheels must be blocked, brakes set and leg supports down in support position before operating the equipment. Failure to comply may result in personal injury or death.

(b) External Fuel Line Connections. When the generator sets are to be operated for long intervals, frequent refilling of fuel tanks can be eliminated by obtaining fuel from external source (such as 55 gallon diesel fuel drum).

1. Connect auxiliary fuel line to generator set auxiliary fuel supply connection located below control cabinet.

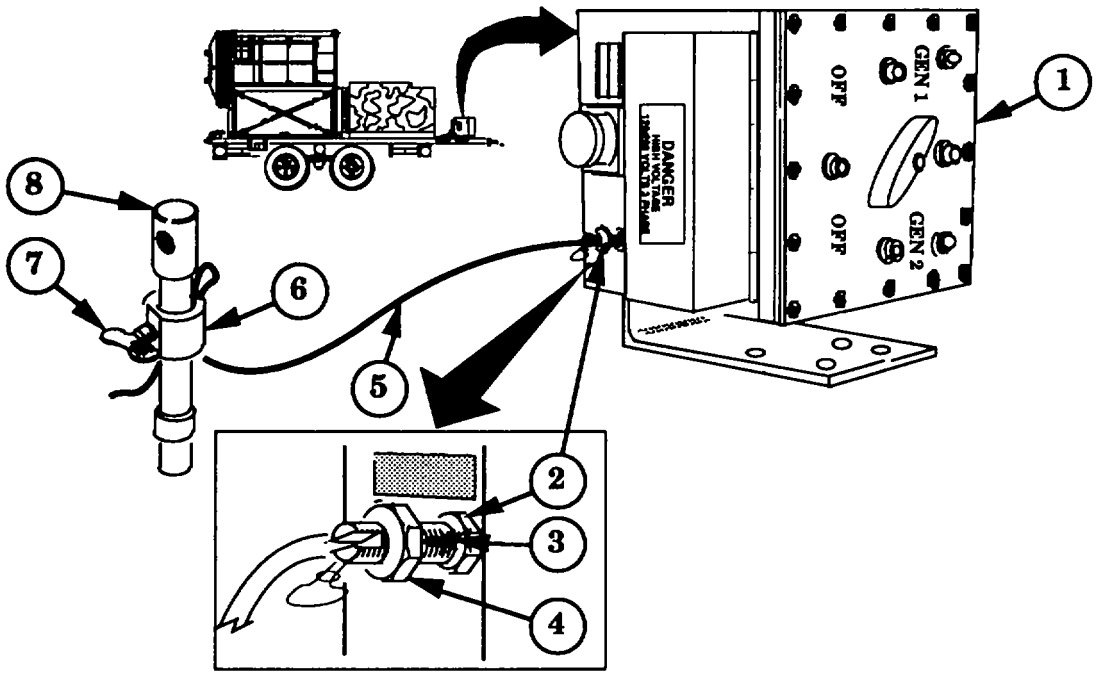
2. Connect auxiliary fuel line to auxiliary fuel source.

3. Position fuel selector valve in the auxiliary position.

2-8. OPERATION OF AUXILIARY EQUIPMENT - Continued
a. OE-481frRC Generator Configuration - Continued

(2) Installation - Continued

(c) Ground Connection. Switch box assembly may be grounded to underground metallic water system, driven metal rod, or buried metal plate. Ground rod must have minimum diameter of 5/8-inch if solid or 3/4-inch if pipe, and must be driven to minimum depth of 8 feet. Saturate hole with salt water. Ground plate must have minimum area of 9-square feet and be buried to minimum depth of 4 feet. Ground lead must be at least No. 6 AWG copper wire.



1. Locate 5/8-inch ground rod (8) within 2 feet of switch box assembly (1), and drive to a minimum depth of 8 feet.

2. Route No. 6 AWG copper wire (5) through ground post slot (3) of ground stud (2) on switch box (1).

3. Tighten switch ground post nut (4) snugly using 12-inch adjustable wrench.

4. Route and loop other end of No. 6 AWG copper wire through clamp (6) on ground rod (8).

5. Tighten ground rod clamp bolt (7) snugly using 8-inch adjustable wrench.

2-8. OPERATION OF AUXILIARY EQUIPMENT - Continued

a. OE-481/IRC Generator Configuration - Continued

(3) Starting.

> **WARNING**
>
> Do not operate generator set until it has been connected to a suitable ground. Serious injury or death by electrocution can result from operating an ungrounded generator set.

(a) Connect load cables to distribution box.

(b) Perform prestarting procedures described in TM 5-6115-585-12.

(c) Position distribution box transfer switch to desired generator.

(d) Start generator as instructed in TM 5-6115-585-12.

(4) Stopping. Stop generator as instructed in TM 5-6115-585-12.

(5) Transferring Generators.

(a) Stop operating generator as described in paragraph 2-8 a(4).

(b) Set distribution box transfer switch to other generator set.

(c) Start alternate generator as described in paragraph 2-8 a(3).

b. Power Plant AN/MJQ-18 (truck configuration only)

Refer to TM 5-6115-594-14&P.

c. Generator MEP-003A

Refer to TM 5-6115-585-12.

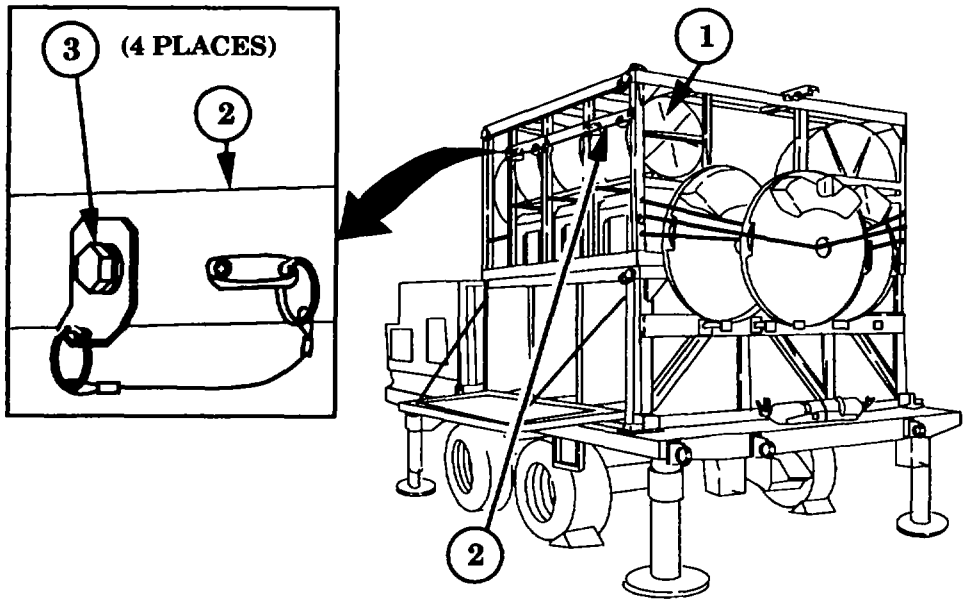
d. M923 5-Ton Truck

Refer to TM 9-2320-272-10.

e. M1061A1 5-Ton, Flatbed Trailer

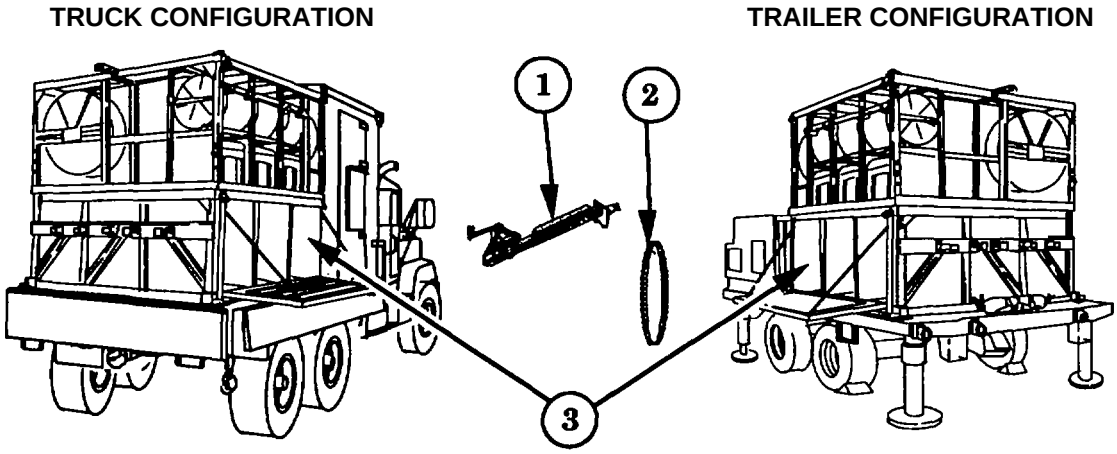
Refer to TM 9-2330-376-14&P.

2.9 PREPARATION FOR MOVEMENT



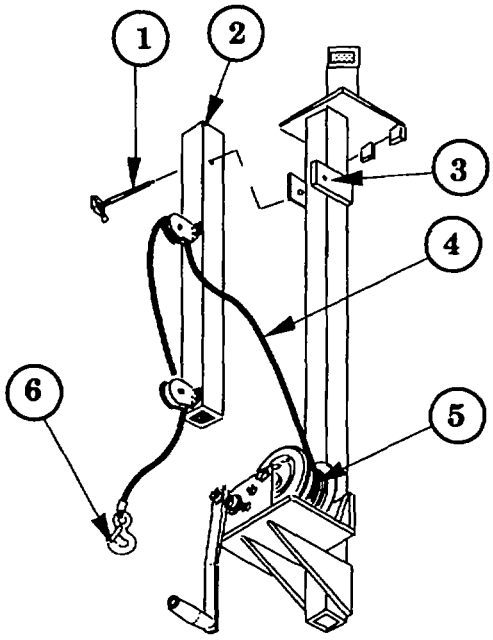
a. Perform steps a thru i of paragraph 2-7 to obtain access to storage compartments.

b. If loading CX-11230 cable assemblies (1), remove retaining bar (2) using 8-inch adjustable wrench to remove four captive bolts (3). Set retaining bar aside.

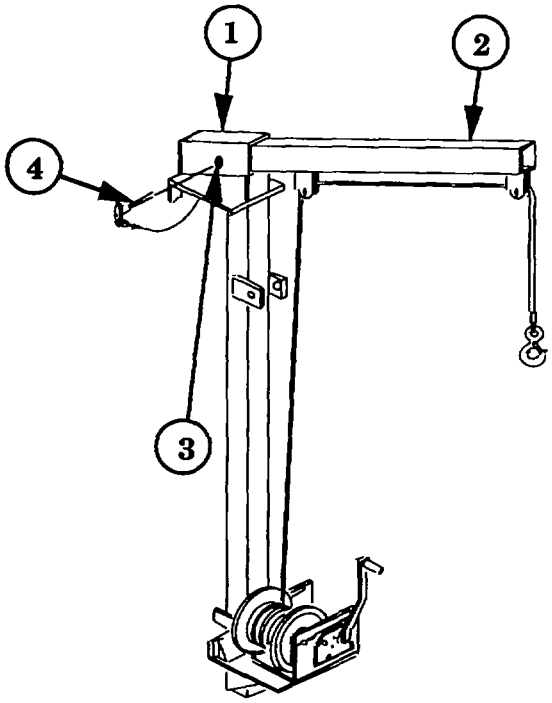


c. Remove davit assembly (1) and loop strap assembly (2) from lower front storage bin (3) of pallet assembly.

2-9. PREPARATION FOR MOVEMENT- Continued



d. Remove locking pin (1) from boom storage bracket (3), releasing boom (2). Unwind approximately 2 feet of cable (4) from winch reel (5).

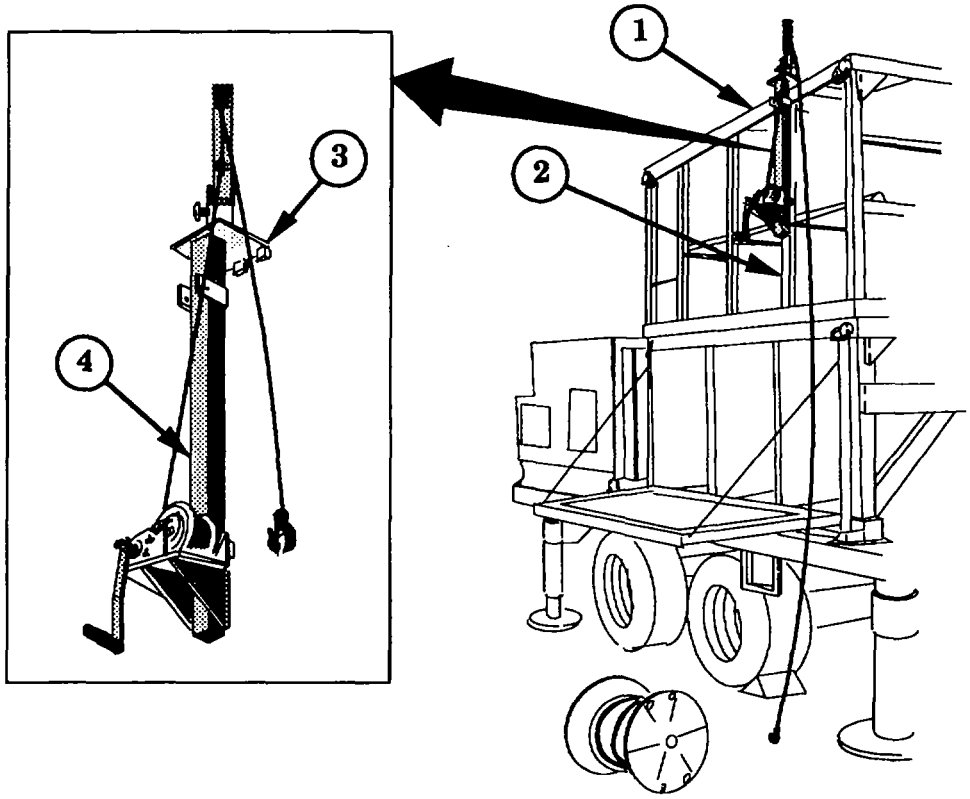


e. Insert davit assembly boom (2) into top bracket (1) and insert locking pin (4) through bracket hole (3).

2-9. PREPARATION FOR MOVEMENT - Continued

WARNING

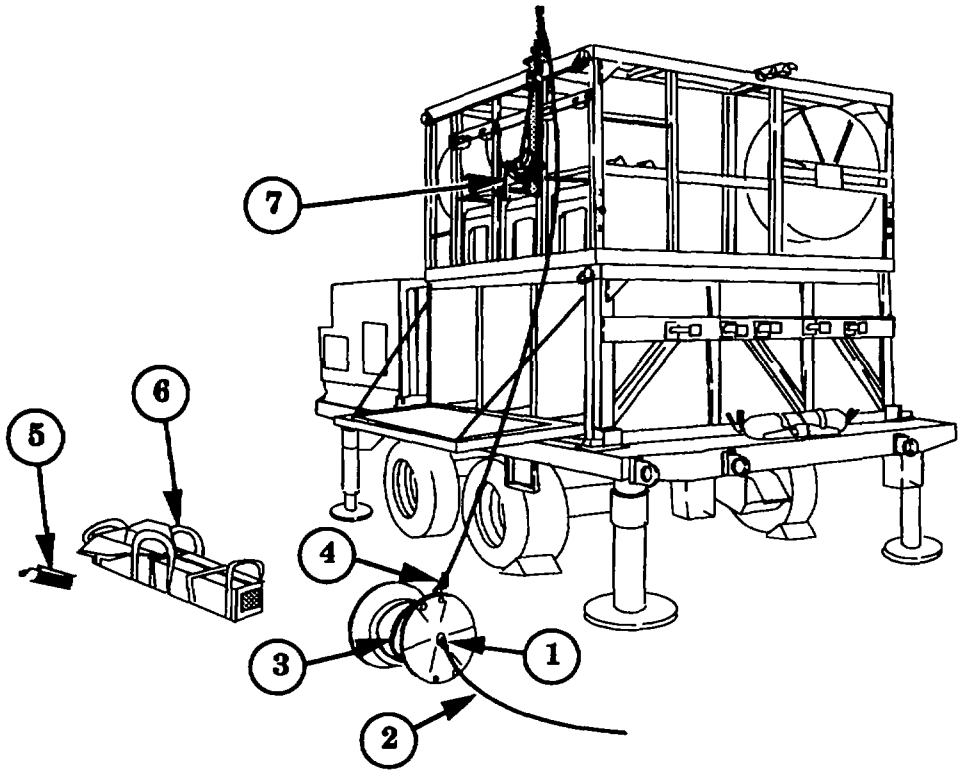
Take care not to pinch fingers between davit assembly and pallet rails.
Cable reels are heavy. Two operators are required to load reels.
Failure to comply with this warning may result in personal injury.



f. Lift davit assembly and hook mounting bracket (3) over pallet assembly top (1) and side rail (2). Let davit assembly (4) rest against side rail (2).

g. Unwind davit assembly cable until snap hook reaches CX-11230 cable assembly.

2-9. PREPARATION FOR MOVEMENT - Continued



h. Loop cargo strap assembly (3) around CX-11230 cable assembly and connect davit assembly snap hook (4) to cargo strap assembly (3).

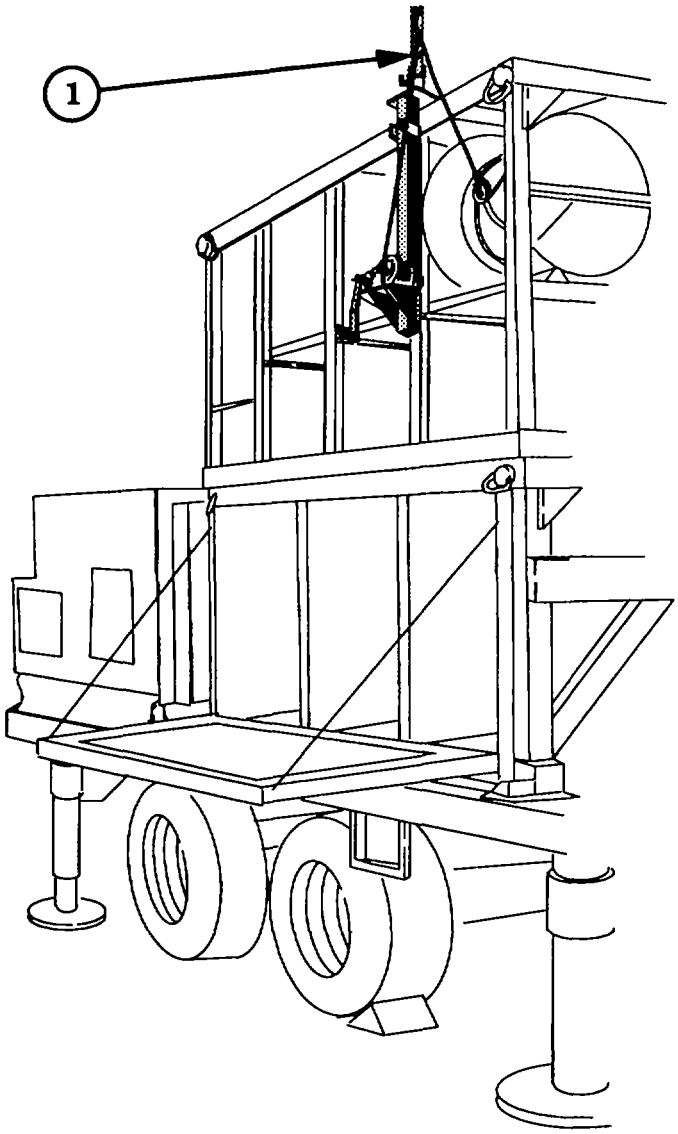
i. Remove radius rope (5) from Mast AB-1373/TRC mast accessories bag (6), and connect radius rope S-hook (1) to CX-11230 cable assembly.

j. Operator 1: Use radius rope (2) to control cable reel while loading. Operator 2: Crank davit assembly winch handle (7) to lift cable reel and push into bin.

k. Disconnect radius rope, S-hook cargo strap assembly and davit assembly snap hook from cable reel.

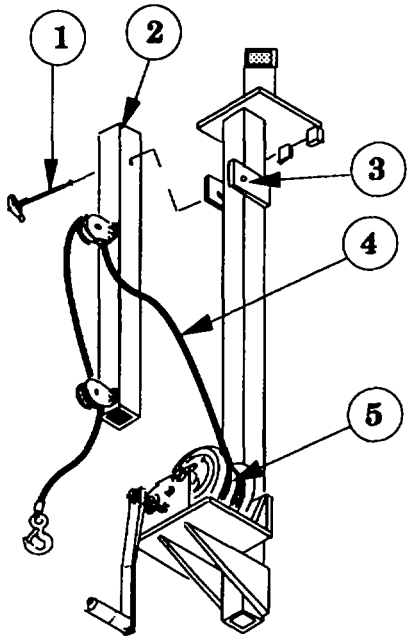
l. Repeat steps h thru k for remaining CX-11230 cable assemblies as required.

2-9. PREPARATION FOR MOVEMENT - Continued

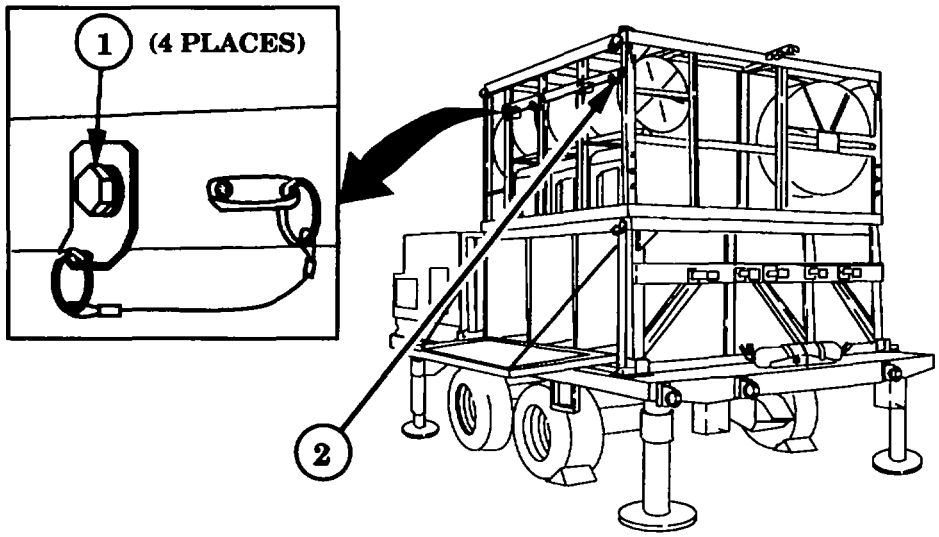


m. After all CX-11230 cable reels have been loaded, lift upward on davit assembly (1) removing davit from pallet assembly. Place davit assembly on work platform for disassembly.

2-9. PREPARATION FOR MOVEMENT - Continued



n. Remove locking pin (1) from davit assembly boom (2). Insert davit boom in storage bracket (3) and replace locking pin (1). Use winch (5) to crank in excess cable (4). Place davit assembly in immediate area of pallet.



o. Install retaining bar (2) using 8-inch adjustable wrench to secure four captive bolts (3 through retaining bar.

2-9. PREPARATION FOR MOVEMENT - Continued

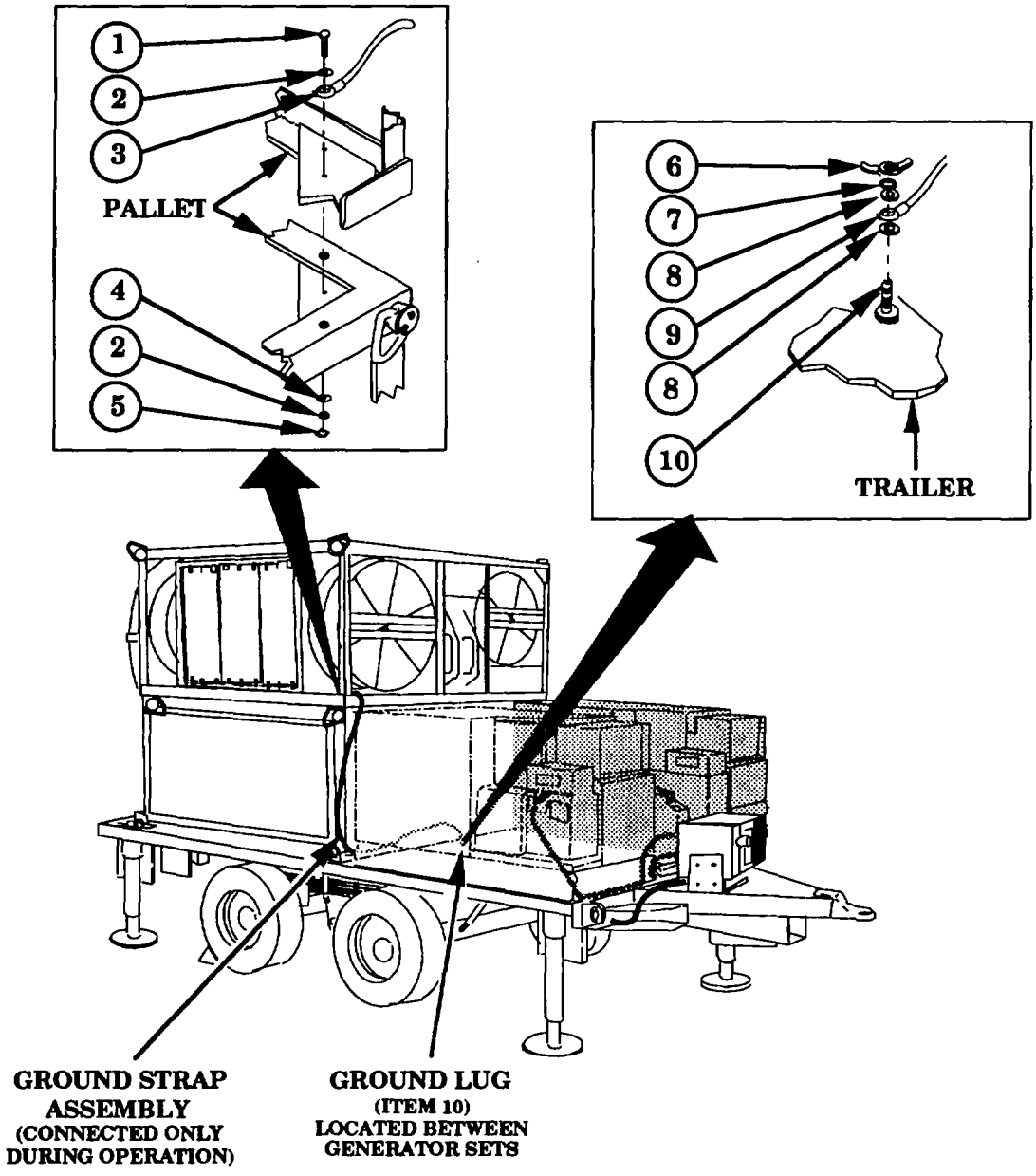
p. Remove Ground Strap Assembly - Trailer Configuration

(1) Using 8-inch adjustable wrench, remove bolt (1), lock washers (2), washer (4), and nut (5) securing ground strap assembly (3) to pallet.

(2) Remove ground strap assembly (3) from pallet.

(3) Loosen and remove wing nut (6), lock washer (7), and washers (8) securing ground strap assembly (9) to trailer ground stud (10).

(4) Remove ground strap assembly (9) from ground stud (10).



2-9. PREPARATION FOR MOVEMENT - Continued

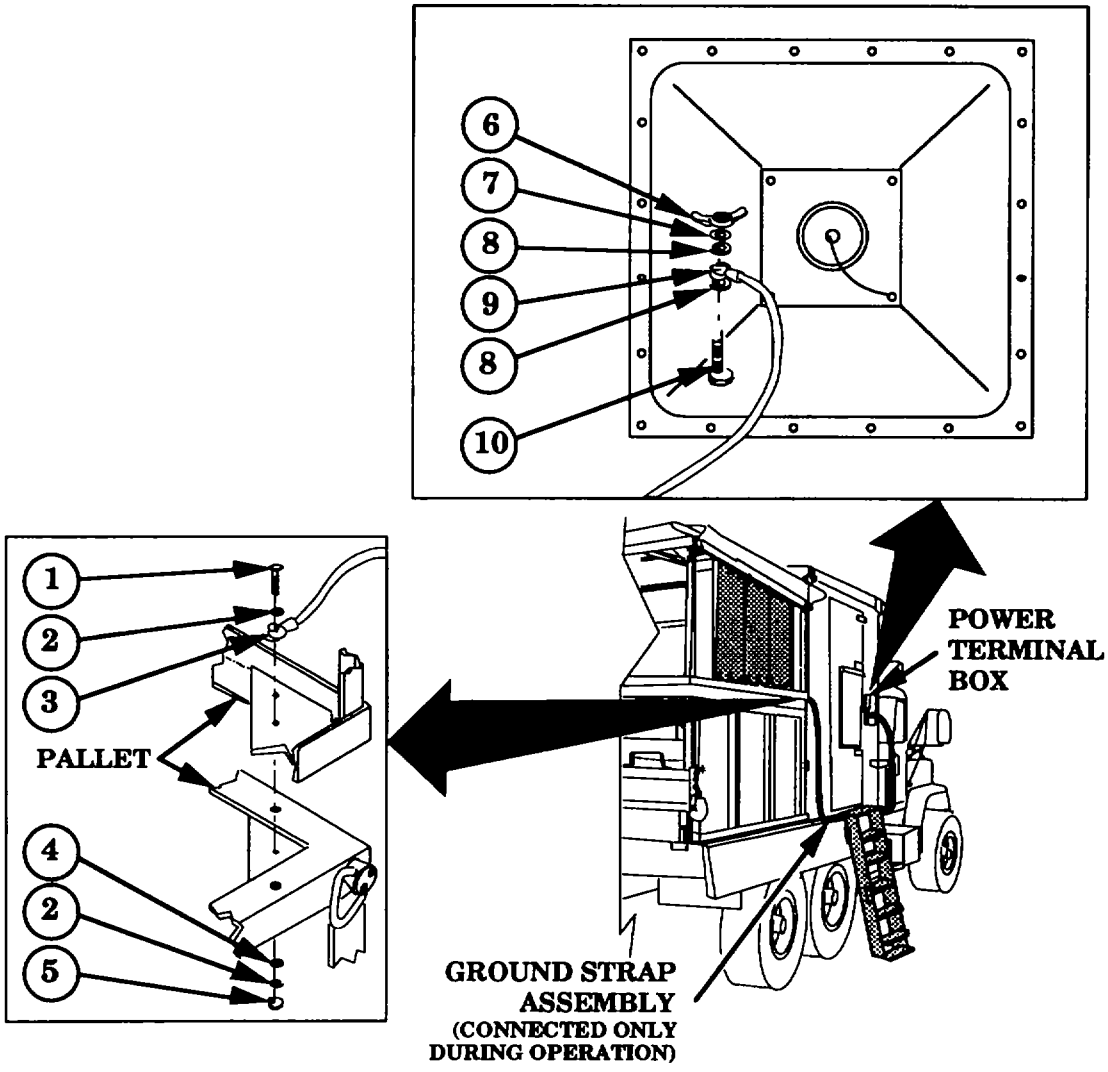
q. Remove Ground Strap Assembly - Truck Configuration

(1) Using 8-inch adjustable wrench, remove bolt (1), lock washers (2), washer (4), and nut (5) securing ground strap assembly (3) to pallet.

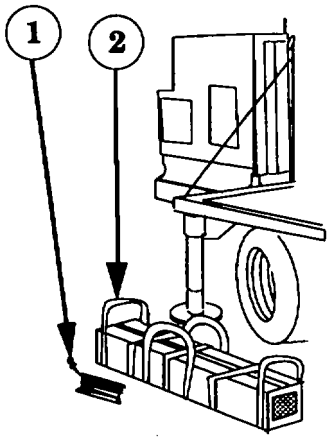
(2) Remove ground strap assembly (3) from pallet.

(3) Loosen and remove wing nut (6), lock washer (7), and washers (8) securing ground strap assembly (9) to communications shelter ground stud (10).

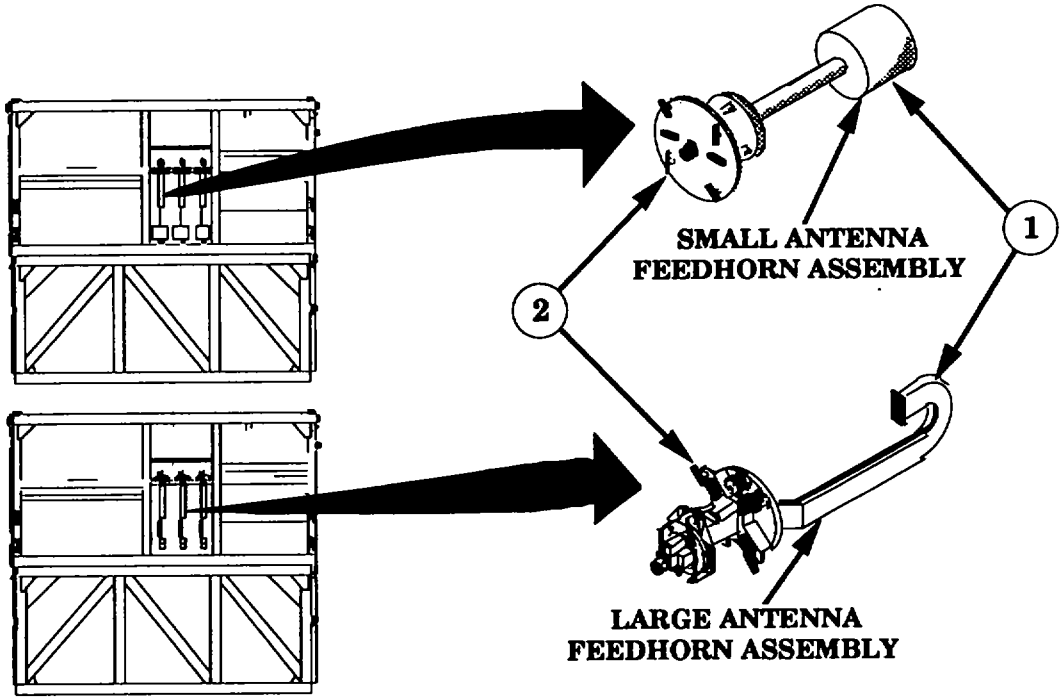
(4) Remove ground strap assembly (9) from communications shelter ground stud (10).



2-9. PREPARATION FOR MOVEMENT - Continued



r. Rewind radius rope (1) and return to mast accessories bag (2).

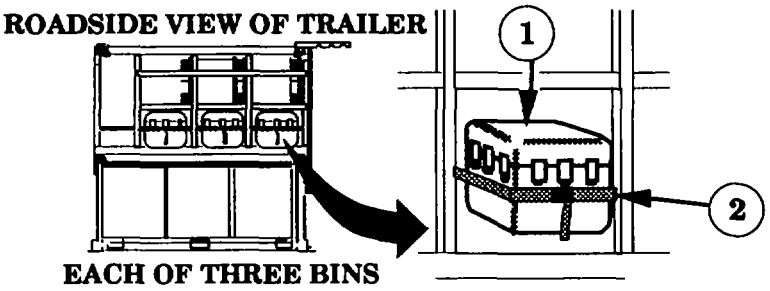


CAUTION

Use care in handling feedhorn assemblies. Rough handling will cause equipment damage.

s. Stow feedhorns (1) in front of pallet assembly top section. Secure each feedhorn with four thumbscrews (2).

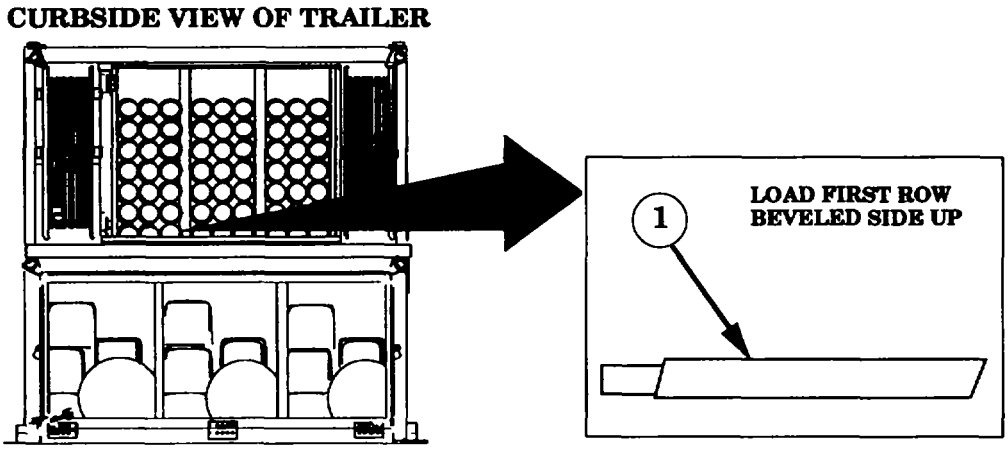
2-9. PREPARATION FOR MOVEMENT - Continued



WARNING

Two operators are required to lift positioner/controller transit case. Failure to comply may result in personal injury.

t. Stow positioner/controller transit case (1) in upper pallet section. Secure in place with adjustable strap (2).



CAUTION

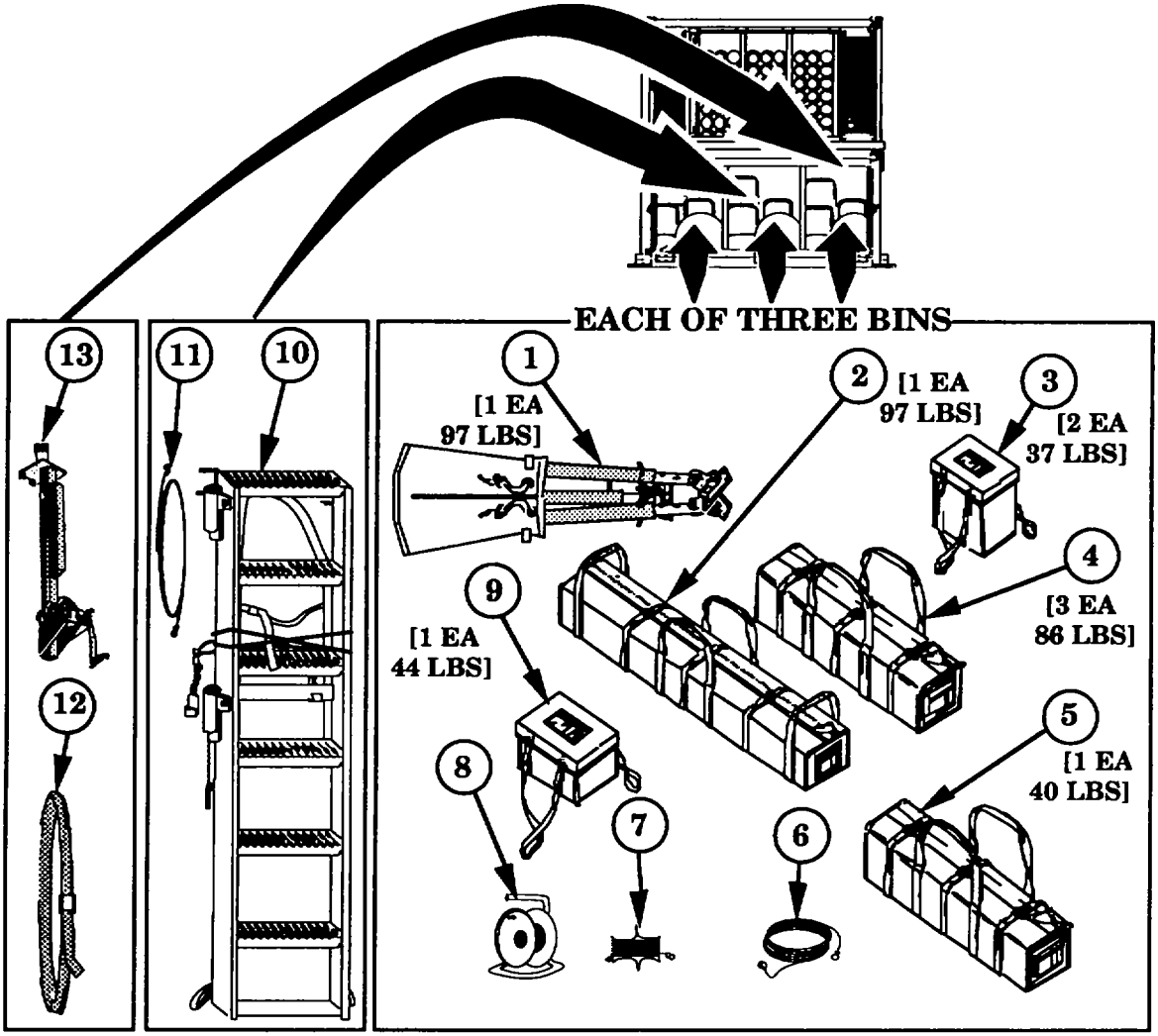
Use care in handling mast sections. Do not throw or drop mast sections. Rough handling may cause equipment damage.

NOTE

Bottom row of mast sections must be turned long side of bevel up to allow space for canvas assembly straps to reach footman loops.

u. Stow 21 mast sections (1) into upper pallet section, in groups of three wide by seven high.

2-9. PREPARATION FOR MOVEMENT - Continued



WARNING

Two operators are required to lift tripod assembly and all equipment bags. Failure to comply may result in personal injury.

v. Stow tripod assembly (1) into bottom of lower pallet section bin.

w. Stow mast accessories bag (2) beside tripod assembly (1).

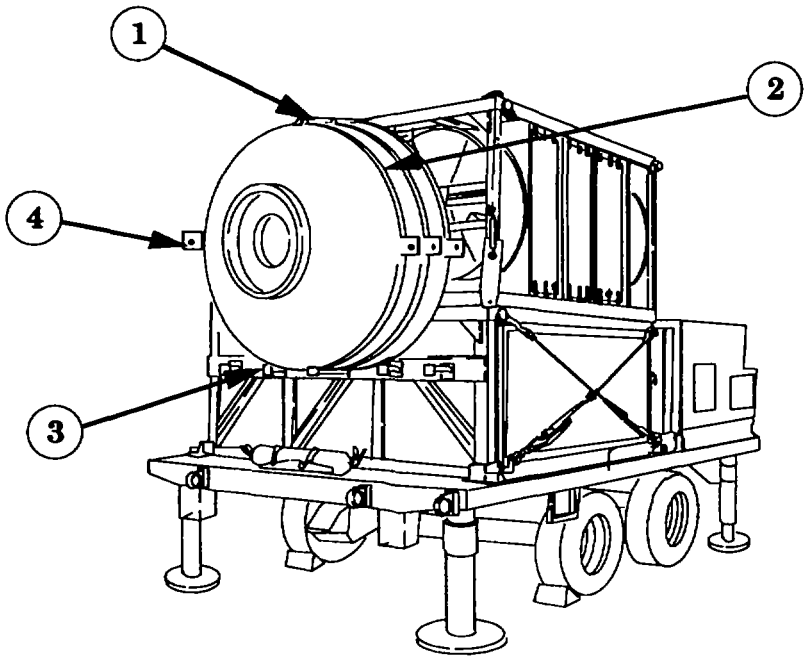
x. Stack remaining equipment bags (3, 4, 5, and 9) into bottom of lower pallet section bin in the following order: guy accessories bags (4) (3 each), top section and antenna mounting bracket bag (5) (1 each), guy winch bags (3) (2 each), and lifting winch bag (9) (1 each).

y. Stack ground cable lightning (8) and cable assemblies W1 (6) and W2 (7) on top of bags.

z. Store davit assembly (13) and cargo strap assembly (12) in lower pallet section front bin, and ladder (10) and ground strap assembly (11) in middle bin.

2-9. PREPARATION FOR MOVEMENT - Continued

aa. If using AS-3047/grc-103(v) small antenna reflectors, go to step gg.



CAUTION

Two operators are required to load antenna reflectors to prevent damage to the antennas.

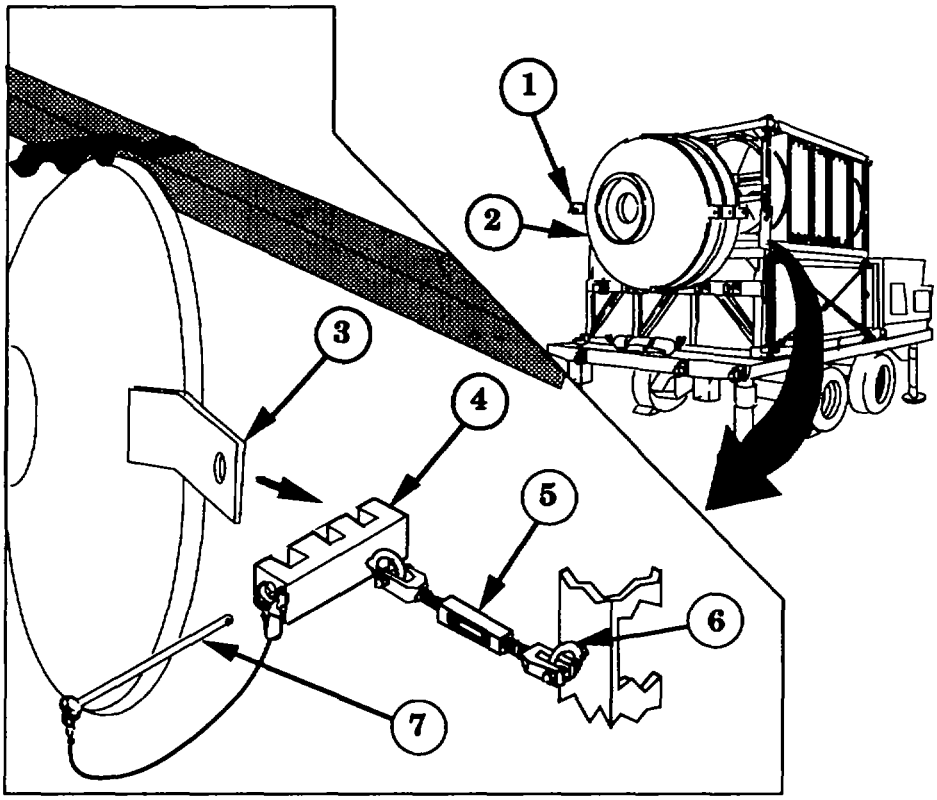
bb. Insert two or three (depending upon configuration, refer to Tables 1-1 and 1-2) large antenna reflectors (2) under reflector spacer (1), with reflectors resting on bottom reflector support (3).

NOTE

When two antenna reflectors are stowed, the antenna reflectors should be inserted in the two inside retaining bracket slots.

cc. Align antenna reflector transport tabs (4) to sides with each other.

2-9. PREPARATION FOR MOVEMENT - Continued

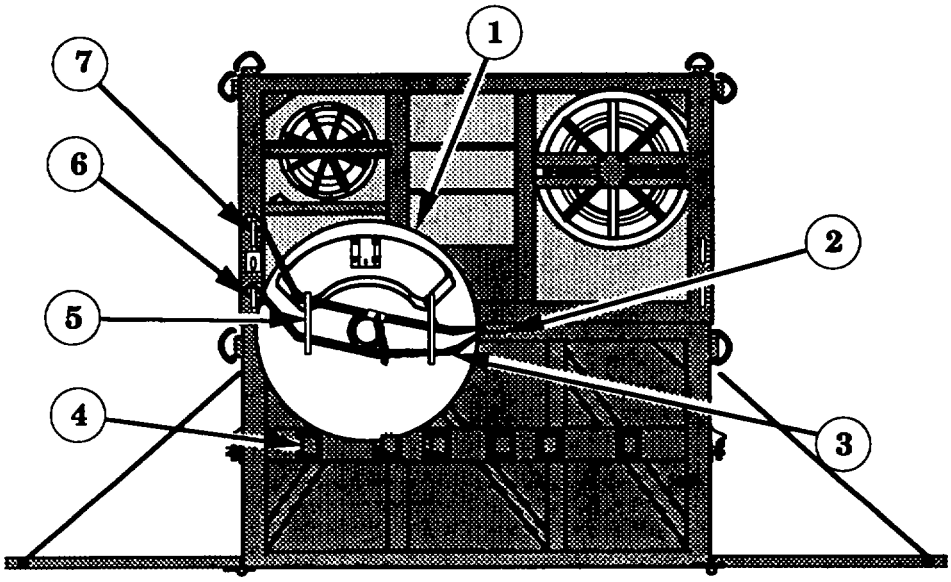


dd. Mount turnbuckles (5) and retaining brackets (4) onto eyebolts (6) on back of pallet assembly.

ee. Place two (or three) reflector transport tabs (1 and 3) into retaining bracket (4) and insert locking pins (7).

ff. Hand tighten turnbuckles (5) until snug to secure antenna reflectors (2).

2-9. PREPARATION FOR MOVEMENT - Continued



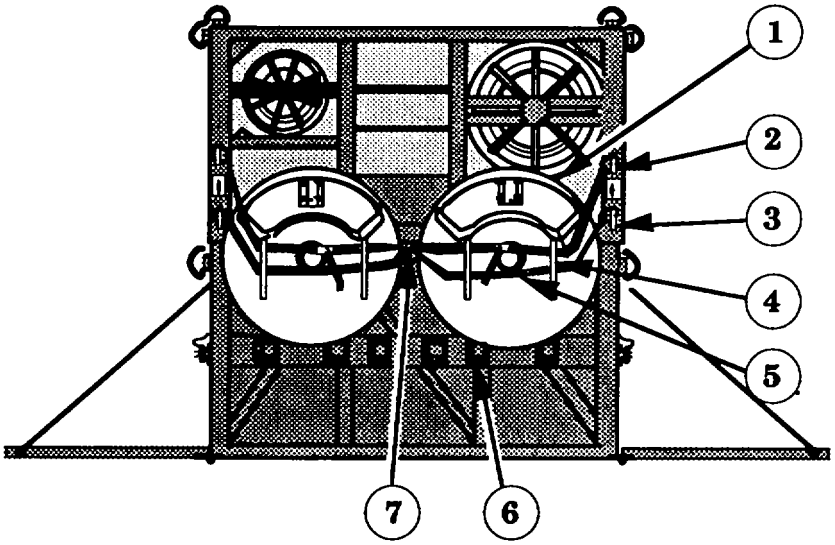
CAUTION

Use care when handling reflectors. Rough handling may cause equipment damage.

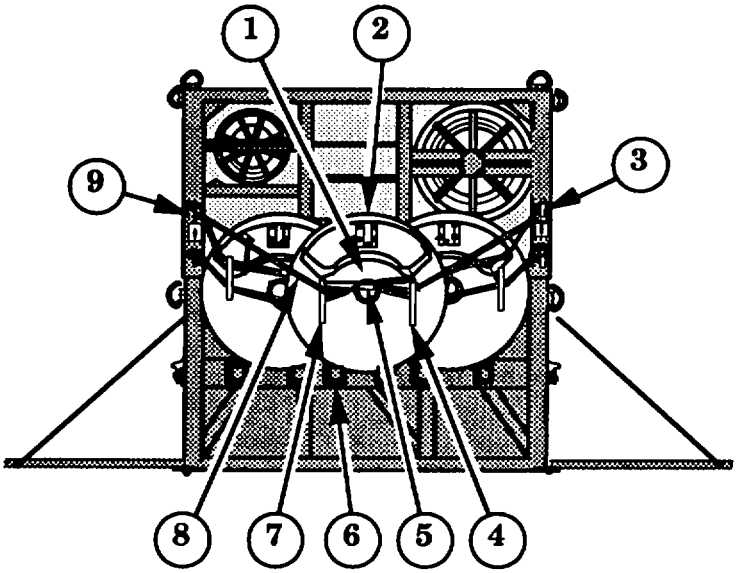
gg. If using AS-3047/GRC (V) small antenna reflectors, place small antenna reflector (1) onto reflector supports (4) on back of lower pallet assembly, with back of dish facing outward from pallet assembly.

hh. Attach one cargo strap assembly (3) to first footman loop (6). Feed cargo strap assembly (3) through two antenna reflector handles (5), and U-bolt (2), back through two antenna reflector handles (5) and connect to second footman loop (7). Tighten cargo strap assembly (3) until antenna reflector is snug against pallet assembly.

2-9. PREPARATION FOR MOVEMENT - Continued

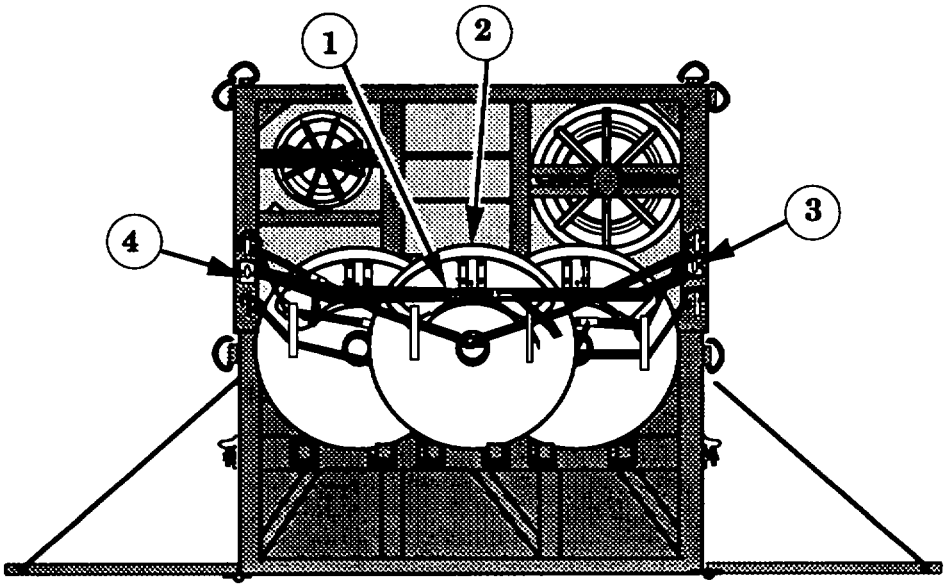


ii. Place second small antenna reflector (1) on reflector supports (6) on back of pallet assembly, with back of dish facing outward from pallet assembly. Attach one cargo strap assembly (5) to first footman loop (2). Loop cargo strap assembly (5) through antenna reflector handles (4), around U-bolt (7) back through reflector handles (4) and attach to second footman loop (3). Tighten cargo strap assembly (5) until antenna reflector is snug against pallet assembly.



jj. Place third small antenna reflector (2) onto reflector supports (6) on rear of pallet assembly. Attach cargo strap assembly (8) to footman loop (9). Run other end of cargo strap assembly (8) through one antenna reflector handle (7) and through center hole (1). Loop cargo strap assembly (8) around U-bolt (5) and back out of center hole (1). Run free end of cargo strap assembly (8) through second antenna reflector handle (4). Attach cargo strap assembly (8) to second footman loop (3). Tighten cargo strap assembly (8) until reflector is snug against pallet assembly.

2-9. PREPARATION FOR MOVEMENT - Continued



kk. Attach one large ratcheting cargo strap assembly (1) to eyebolt (4). Place cargo strap assembly (1) under three antenna reflector retaining brackets (2) and attach to second eyebolt (3).

ll. Tighten all cargo strap assemblies until antenna reflectors are snug against pallet assembly.

mm. Load positioner/controller transit cases, mast sections, and equipment bags for other masts, as required.

nn. Perform steps nn and ss thru ww of paragraph 2-7 to secure pallet.

oo. Return fire extinguishers to fire extinguisher brackets. Close and latch fire extinguisher brackets.

pp. If pallet is mounted on trailer, couple trailer and prime mover, stow wheel chocks, and release handbrakes (refer to TM 9-2330-376-14&P).

Section IV. OPERATION UNDER UNUSUAL CONDITIONS

2-10. UNUSUAL WEATHER

a. Arctic Climate

Extreme cold weather conditions cause cables and plastic coated components to become very brittle. Permanent damage can result from mistreatment of equipment. Follow the precautions below when operating your equipment in extreme cold weather:

(1) Remove buildup of ice and snow.

(2) Avoid excessive bending of RF coaxial cables, power cables, and signal cables.

(3) If equipment bags should become wet, empty the bags and wipe the equipment and bags dry using a dry, clean, soft cloth and repack as soon as possible.

b. Tropical Climate

Extreme heat and humidity can cause surface moisture, promoting fungus and mold growth. This can cause improper operation. Wipe moisture, fungus, or mold from equipment using a dry, clean, soft cloth. Wash with a mild soap and water. Rinse with clear water and wipe dry using a dry, clean, soft cloth.

c. Desert Climate

In hot, dry climates, connectors, receptacles, and mechanical equipment are subject to damage from dust and dirt. Follow the precautions below when operating your equipment in desert climate:

(1) Keep covering bags on equipment.

(2) After sand or dust storm, remove any accumulation of sand or dust from equipment.

d. Salt Air or Sea Spray

Salt air or sea spray can cause serious corrosion problems. The following precautions must be followed:

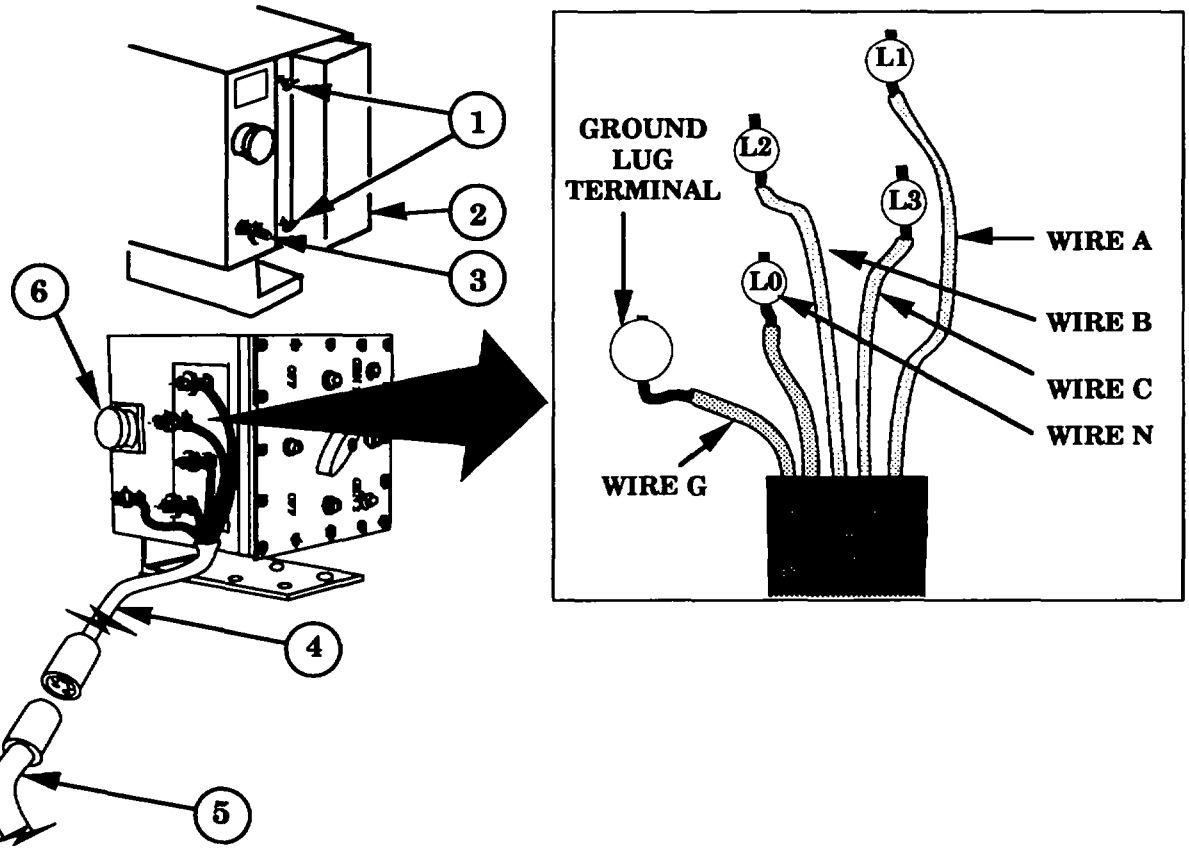
(1) Keep equipment covered as much as possible.

(2) Clean metal surfaces with a clean, lint-free cloth dampened with fresh water.

(3) Frequently rinse exposed surfaces with fresh water to remove salt deposits.

2-11. BYPASS OF SWITCH BOX CONNECTOR J1

If switch box assembly connector J1 becomes damaged, connect shelter power cable directly to switch box assembly box assembly terminal board studs.



WARNING

This is an emergency procedure only and results in a hazardous condition. Do not operate with this condition any longer than necessary.

Assure power is removed from switch box assembly before proceeding. Failure to comply may result in personal injury or death.

a. Disconnect shelter power cable (5) from connector J1 (6) on switch box assembly.

b. Connect 10-foot power stub (4) to shelter power cable (5).

2-11. BYPASS OF SWITCH BOX CONNECTOR J1 - Continued

CAUTION

Ensure all connections are tight and power cable is slack. Failure to comply may result in equipment damage.

c. Release captive fasteners (1) and open switch box assembly terminal board cover (2). Using 12-inch adjustable wrench, connect power stub (4) wires to switch box assembly terminals as follows:

Power Cable Wire	Switch Box Assembly Terminal
A (Black)	L1
B (Red)	L2
C (Blue)	L3
N (White)	LO
G (Green)	Ground Lug Terminal (3)

WARNING

The terminal board cover will not close while the cable is attached. Use extreme caution around the switch box assembly after starting generators. Failure to comply may result in personal injury or death.

d. Start on-line generator and verify that power is available at shelter.

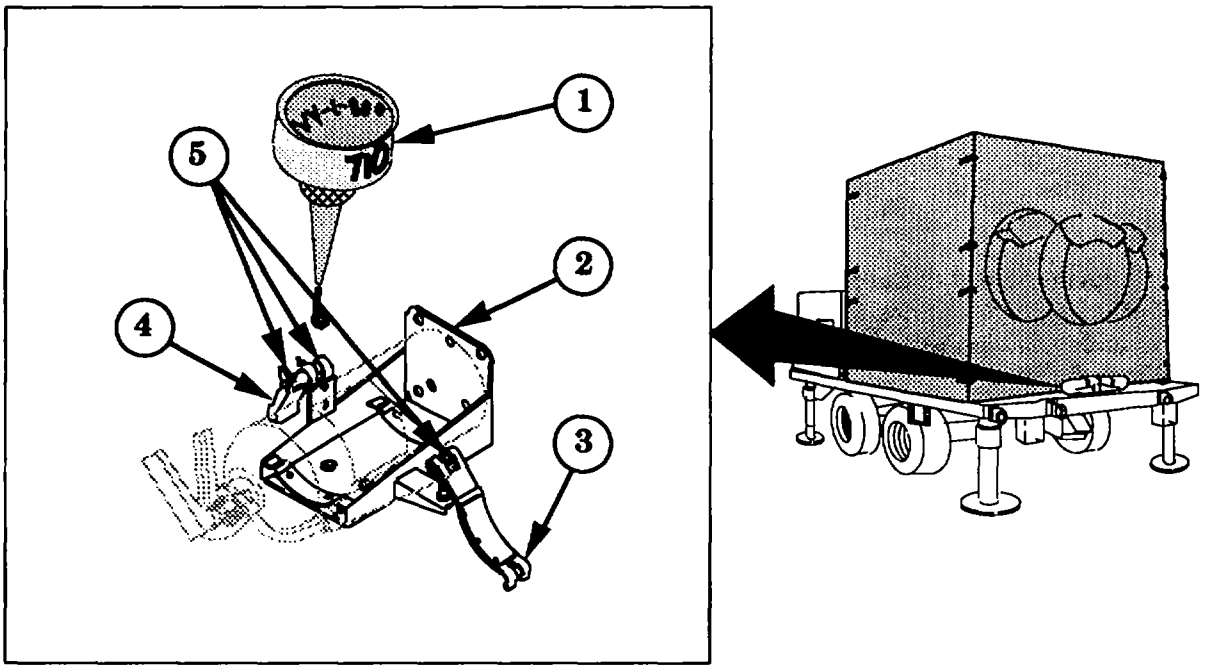
CHAPTER 3

OPERATOR MAINTENANCE

Section I. LUBRICATION INSTRUCTIONS

3-1. FIRE EXTINGUISHER BRACKET LUBRICATION

Lubrication of fire extinguisher bracket must be performed monthly.



a. Open fire extinguisher bracket (2) by pulling up on latch (4).

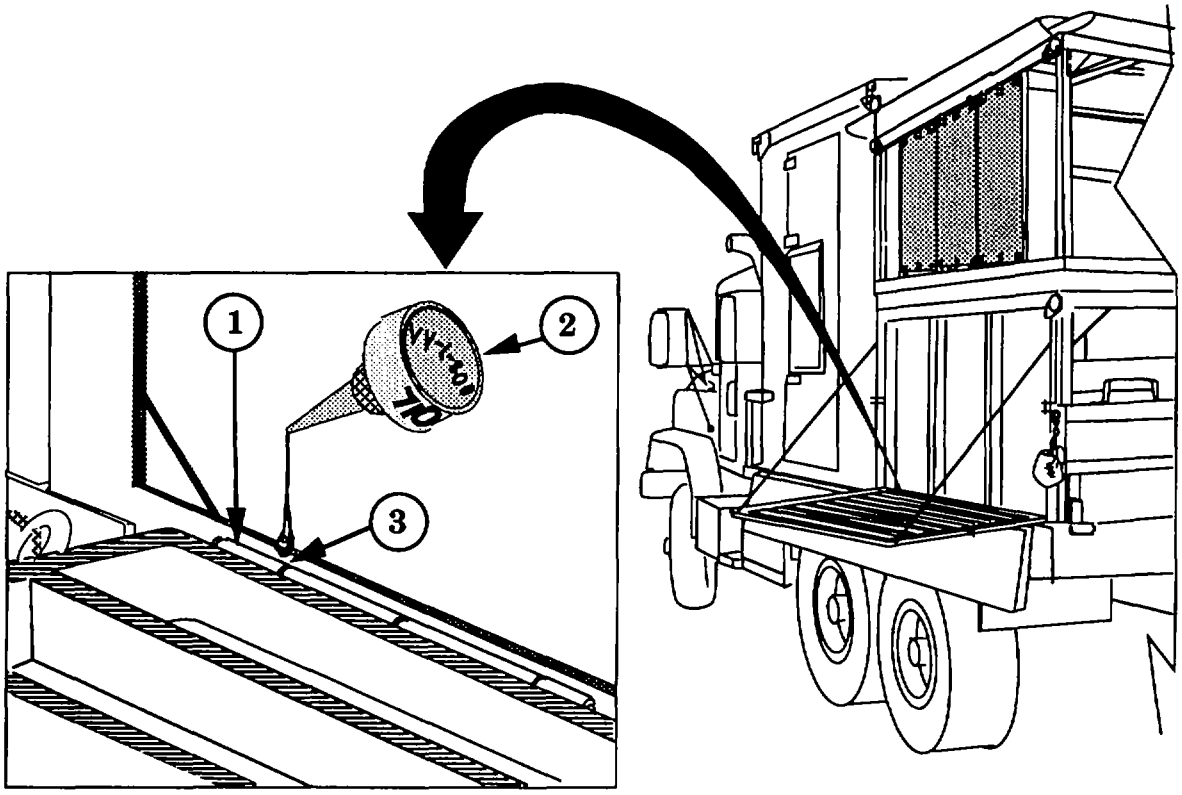
b. Apply 3 to 4 drops of VV-L-800 oil (1) to each of three hinge points (5).

c. Close fire extinguisher bracket (2) by closing bracket (3) over fire extinguisher then close latch (4) and press down to secure.

d. Repeat steps a thru c for other fire extinguisher bracket.

3-2. WORK PLATFORM HINGE LUBRICATION

Lubrication of work platform hinges must be performed monthly.



a. Remove locking pins and lower roadside work platform until supported by built-in cable lanyards.

b. Apply 3 to 4 drops of VV-L-800 oil (2) to each hinge joint (3) on hinge (1).

c. Repeat step b for remaining two hinges on work platform.

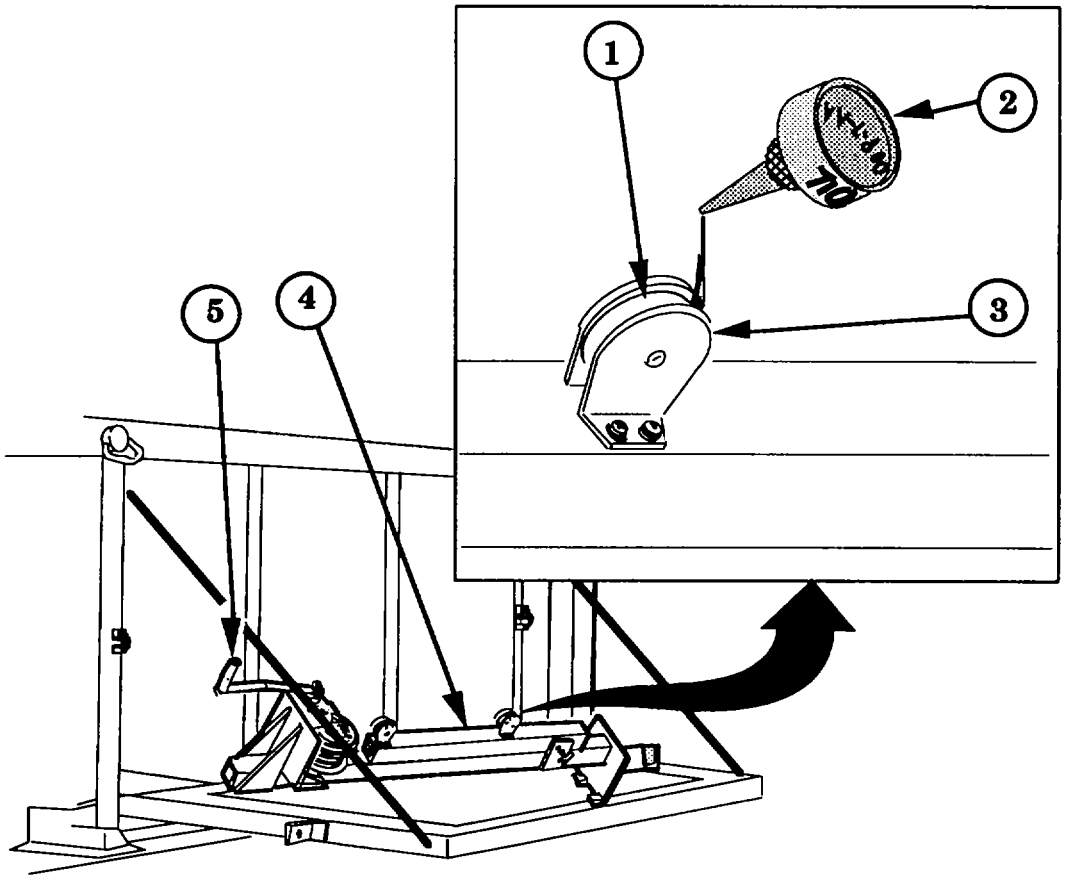
d. Raise and lower work platform several times, working oil into hinges.

e. Raise work platform to stowed position and secure with locking pins.

f. Repeat steps a thru e for curbside work platform.

3-3. DAVID ASSEMBLY CABLE PULLEY LUBRICATION

Lubrication of cable pulleys must be performed monthly.



a. Lay davit assembly (4) on work platform so that cable pulleys (1) face up. Turn crank (5) to release cable tension so that cable pulleys can be rotated.

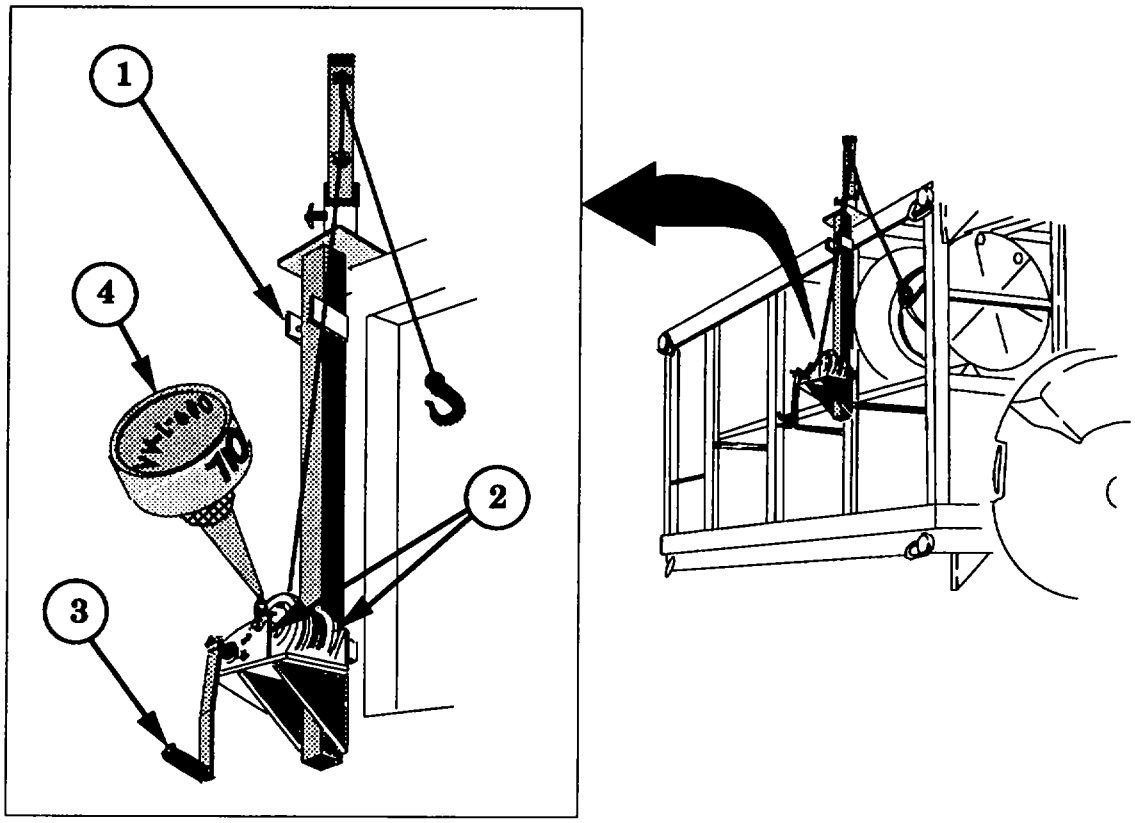
b. Apply 3 to 4 drops of W-L-800 oil (2) to area between pulley and bracket (3) on both sides of cable pulley (1).

c. Rotate cable pulley (1) by hand three complete revolutions.

d. Repeat steps b and c for other cable pulley. Turn crank (5) to tighten cable.

3-4. DAVIT WINCH LUBRICATION

Lubrication of davit winch must be performed monthly.



a. Mount davit assembly (1) in deployed configuration (refer to para 2-7, steps x thru aa).

b. Apply 4 to 5 drops of W-L-800 oil (4) to both ends of winch drum shaft (2) in area between winch drum and housing.

c. Turn crank (3) to unwind 3 feet of cable.

d. Turn crank (3) to rewind cable.

e. Return davit assembly (1) to its stowed location (refer to para 2-7, steps gg thru ii).

Section II. OPERATOR MAINTENANCE PROCEDURES

3-5. OPERATOR MAINTENANCE

Operator maintenance of the OE-481/TIRC is limited to preventive maintenance checks and services, and lubrication.

3-6. CLEANING

Equipment should be cleaned as often as operating conditions require, and should be kept free of dust, moisture, and grease. Use the following procedure to clean items listed below.

Antenna Support Group
Tie-Down Cable Assemblies
Pallet Assembly
Reel Assemblies
Upper Pallet Section
Tarpaulin
Fuel Can Straps
Fire Extinguisher Brackets
Retaining Brackets
Hand Reel Assemblies
Reflector Retaining Spacer
Trailer Assembly
Lower Pallet Section
Cargo Strap Assemblies
Davit Assembly
Canvas Assemblies
Switch Box Assembly
Fuel Can Bracket
Retaining Straps

a. Hose each item with clean water to wet and wash away accumulated mud, dirt, or salt.

b. Use soft cloth dampened with water to wash heavily soiled areas.

c. Rinse item with fresh water.

d. Use clean, soft cloth to remove excess water on item.

e. Allow item to air dry.

CHAPTER 4

UNIT MAINTENANCE

Section I. REPAIR PARTS, SPECIAL TOOLS, TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT (TMDE), AND SUPPORT EQUIPMENT

4-1. COMMON TOOLS AND EQUIPMENT

For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

4-2. SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

All tools, TMDE, and support equipment required to perform the maintenance procedures in this chapter are listed in the Maintenance Allocation Chart (MAC) in Appendix B of this manual.

4-3. REPAIR PARTS

Repair parts are listed and illustrated in the repair parts and special tools list TM 11-5985392-23P.

Section II. SERVICE UPON RECEIPT

4-4. SERVICE UPON RECEIPT OF EQUIPMENT

a. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on SF 361, Transportation Discrepancy Report.

b. Check the equipment against the packing slip to see if the shipment is complete. Report all discrepancies in accordance with the instructions of DA Pam 738-750.

4-4. SERVICE UPON RECEIPT OF EQUIPMENT - Continued

c. Check DA Pam 25-30 to see whether the equipment has been modified.

After checking the equipment for damage (during shipment), check it for completeness with the shipping documents (packing slip) to ensure that all parts are accounted for and complete. If a packing slip is not available, check the equipment against the basic issue items list and report all discrepancies in accordance with DA Pam 738-750. Shortage of a minor assembly or part that does not affect the proper functioning of the equipment should not prevent use of the equipment.

If the equipment has been used or reconditioned, check if it has been changed or modified by a MWO. If it has been modified, the MWO number will appear on the equipment. Also check if the MWO (if any) and appropriate notations concerning the modification have been entered in the equipment log. Current MWO's applicable to the equipment are listed in DA Pam 2530.

Section III. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

4-5. GENERAL

Preventive Maintenance Checks and Services (PMCS) are essential to the efficient operation of the system. PMCS prevent possible damage that might occur through neglect or failure to observe warning symptoms on time. Ensure all noted discrepancies are corrected. PMCS cover those scheduled procedures which are essential to operation of the system.

4-6. UNIT PMCS TABLE

Table 4-1 lists scheduled maintenance tasks required for the OE-481/TRC. The columns of Table 4-1 are described below.

a. Column (1) - Item Number (Item No.)

This column contains a number for each procedure to be performed. When reporting malfunctions or failures on DA Form 2404, Equipment Inspection and Maintenance Worksheet, enter this number in the "TM Item No." column.

b. Column (2) - (Interval B, M)

These columns tell when to perform a procedure. A dot in a column tells which procedures apply.

c. Column (3) - Item to Be Inspected

This column contains the name of the item to be inspected.

d. Column (4) - Procedure

This column tells how to perform the required checks and services on the appropriate item. Carefully perform these instructions in the order listed.

4-7. PREVENTIVE MAINTENANCE PROCEDURES

NOTE

Within designated intervals, these checks are to be performed in the order listed.

a. Before You Operate

Perform before (B) PMCS in Table 4-1. Observe WARNINGS and CAUTIONS contained in this manual and on plates installed on equipment

b. Monthly

Perform monthly (M) PMCS in Table 4-1. Observe WARNINGS and CAUTIONS contained in this manual and on plates installed on equipment.

c. Order

Always do preventive maintenance in the same order.

d. Reporting

Any discrepancies shall be recorded on DA Form 2404 and reported to higher level maintenance.

4-7. PREVENTIVE MAINTENANCE PROCEDURES - Continued

Table 4-1. Unit Preventive Maintenance Checks and Services

B-Before M-Monthly

(1) Item No.	(2) Interval		(3) Item to be Inspected	(4) Procedure
	B	M		
1	•	•	Ground Studs	Clean all ground studs to remove corrosion.
2	•	•	Ground Cable	Replace ground cable if frayed or corroded.
3	•	•	Ground Rod	Replace ground rod if threads are damaged preventing use.
4		•	Tie-down cable assemblies	Check for damage or corrosion. Replace as needed.
5		•	Pallet	Inspect pallet surfaces for paint deterioration, bare metal, and corrosion. Refer to TB 43-0118 for instructions on maintaining equipment surfaces.
6		•	Pallet Hardware	Inspect for frayed lanyards, missing lanyards, or locking pins. Replace as needed.
7		•	Davit Assembly	Check for missing or damaged locking pins, faulty winch, or damaged cable pulleys. Replace as needed.
8		•	Switch Box Assembly	Check for damaged or corroded connector or studs, worn cables, damaged lamps, or inoperative switch. Replace as needed.
9		•	Generator	Refer to TM 5-6115-585-12.
10		•	Trailer	Refer to TM 9-2330-376-14&P.

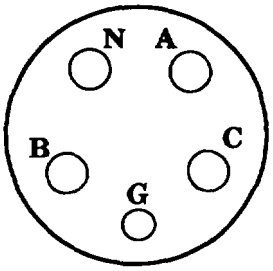
Section IV. TROUBLESHOOTING

4-8. TROUBLESHOOTING SWITCH BOX ASSEMBLY

The symptom column provides an index of faults that may be observed during operations. The second column describes actions to be performed. The third column provides procedures to be performed to isolate and correct the fault.

WARNING

Two personnel should always be present during troubleshooting procedures. Failure to do so could result in equipment damage or personal injury.

Symptom	Action	Corrective Procedure
No power to shelter. On-line generator is running and switch box assembly indicator for on-line generator is lit. generator is lit.	(1) Check shelter power cable for good connection at shelter and at switch box assembly connector J1. If connection is good, J1. If connection is good, set shelter power circuit breaker to off. Check voltage at switch box assembly connector J1.	Disconnect shelter power cable from switch box assembly connector J1. Measure voltages at J 1. NOTE: If any voltage is missing go to step 2. Place one probe into pin A and other probe in Pin N. Voltage should be 120 V ac i 10 V ac. If correct, move probe from pin A to pin B. Voltage should be 120 V ac + 10 V ac. If correct, move probe from pin B to pin C. Voltage should be 120 V ac + 10 V ac. If voltages are correct, switch box is not faulty. Replace shelter power cable W1. 

4-8. TROUBLESHOOTING SWITCH BOX ASSEMBLY - Continued

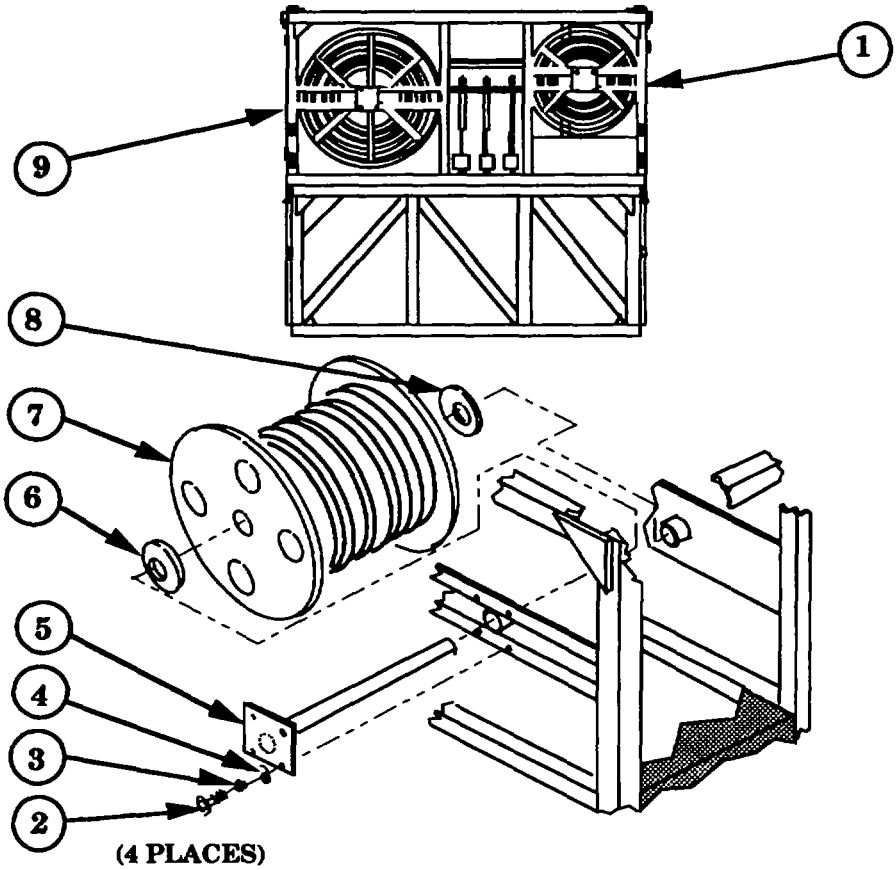
Symptom	Action	Corrective Procedure
	(2) Shut down on-line generator and start up standby generator. Turn switch box assembly transfer switch to select on-liner generator. Set shelter circuit breaker to on.	Observe that switch box assembly indicator light is lit and shelter power is restored. If power is not restored, check voltages at on-line generator load terminal. If voltage at generator load terminal is correct, switch box assembly is defective. Replace switch box assembly (refer to para 4-19). If voltage at load terminal is not correct, fault is in generator. Refer to higher level maintenance.

Section V. MAINTENANCE PROCEDURES

4-9. REEL ASSEMBLY REMOVAL AND REPLACEMENT

Although there are two different reel assemblies (1 and 9), removal and replacement procedures are the same.

a. Removal



(1) Disconnect retaining strap that secures reel assembly and cable. Unreel all cable from reel.

(2) Using 7/16-inch open-end wrench, remove four bolts (2), lockwashers (3), and flat washers (4) securing shaft (5) to frame of upper pallet section.

WARNING

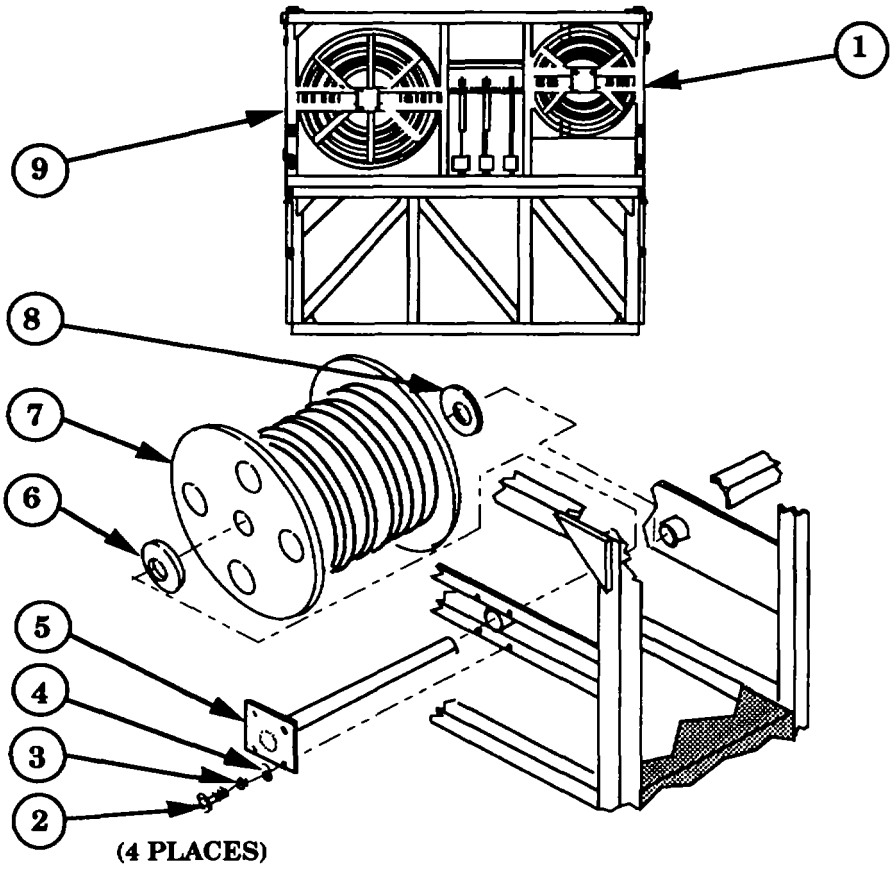
Two personnel are required to remove reel assembly. Failure to comply may result in equipment damage or personal injury.

(3) Person 1: Lift reel (7) off shaft (5). Person 2: Slowly slide shaft (5) out of upper pallet section. Remove washer shims (6 and 8) as the shaft is pulled out.

(4) Roll reel (7) out of upper pallet section.

4-9. REEL ASSEMBLY REMOVAL AND REPLACEMENT - Continued

b. Replacement



WARNING

Two personnel are required when installing reel assembly. Failure to comply may result in equipment damage or personal injury.

(1) Roll reel (1 or 9) into upper pallet section.

(2) Person 1: Support reel assembly (7).
Person 2: Slide shaft (5) into frame and through reel (7), placing washer shims (6 and 8) on each side of reel as shaft slides through.

(3) Insert four bolts (2), lock washers (3), and flat washers (4) to secure shaft (5) to frame. Tighten bolts using 7/16-inch open-end wrench.

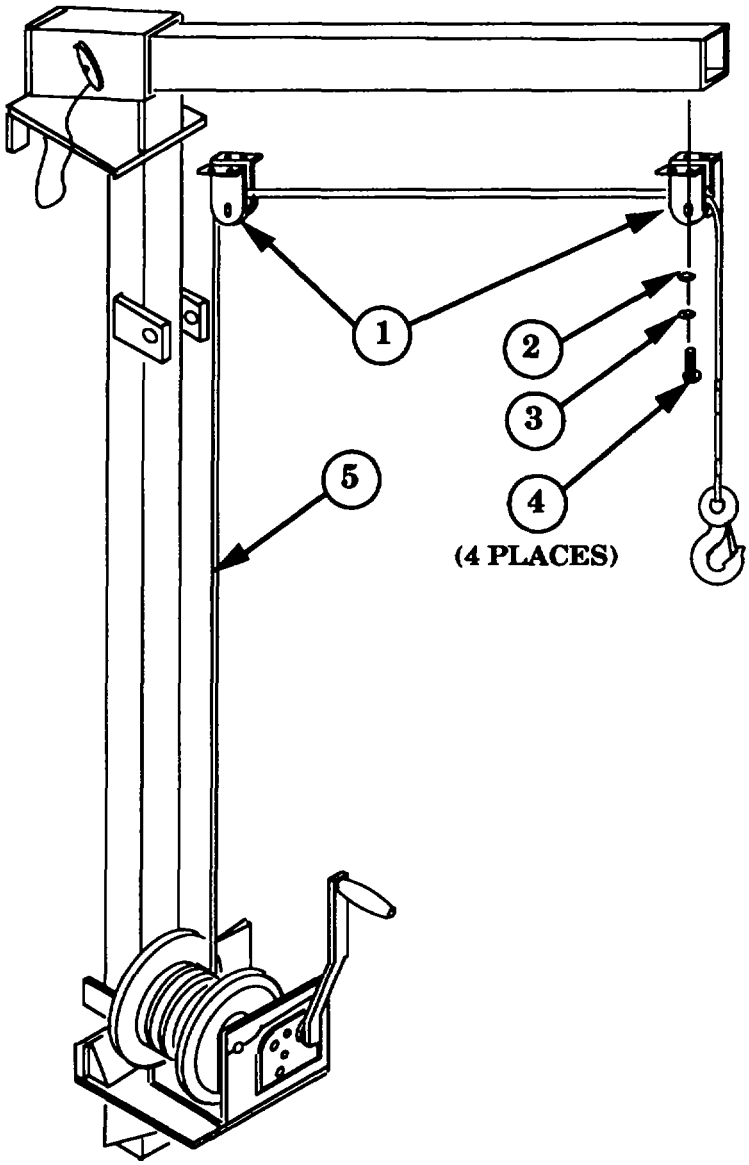
(4) Reel cable onto reel as required. Secure cable with retaining strap.

4-10. DAVIT ASSEMBLY CABLE PULLEY REMOVAL AND REPLACEMENT

a. Removal

(1) Use cross-tip screwdriver to remove four machine screws (4), lock washers (3), and flat washers (2) securing cable pulley (1) to davit assembly.

(2) Remove cable pulley.



b. replacement

(1) Position cable (5) on top of cable pulley (1).

(2) Use cross-tip screwdriver to install four machine screws (4), lock washers (3), and flat washers (2) securing cable pulley to davit assembly.

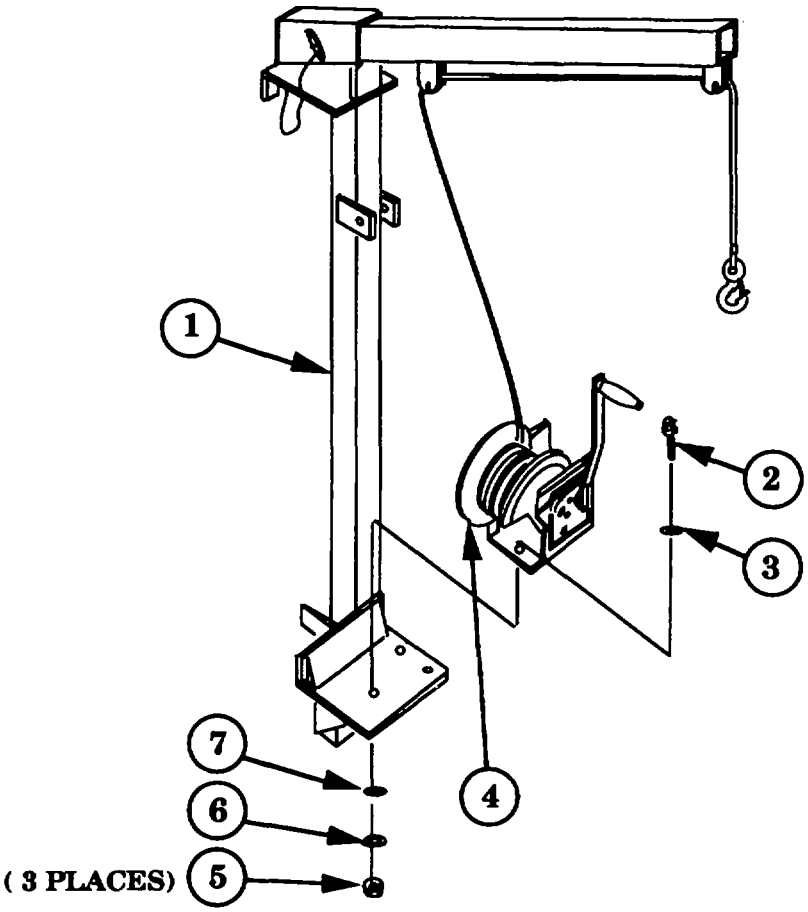
4-11. DAVIT ASSEMBLY HAND WINCH REMOVAL AND REPLACEMENT

a. Removal

(1) Remove cable pulleys (refer to para 4-10a).

(2) Using 9/16-inch socket with ratchet wrench and 9/16-inch open-end wrench, remove three nuts (5) from hex head screws (2) securing hand winch (4) to davit assembly (1).

(3) Remove hex head screws (2), flat washers (3 and 7), and lock washers (6). Remove hand winch (4).



b. Replacement

(1) Place hand winch (4) on davit assembly (1). Use 9/16-inch socket with ratchet wrench and 9/16-inch open-end wrench to install three hex head screws (2), flat washers (3 and 7), lock washers (6), and nuts (5).

(2) Replace cable pulleys (refer to para 4-10b).

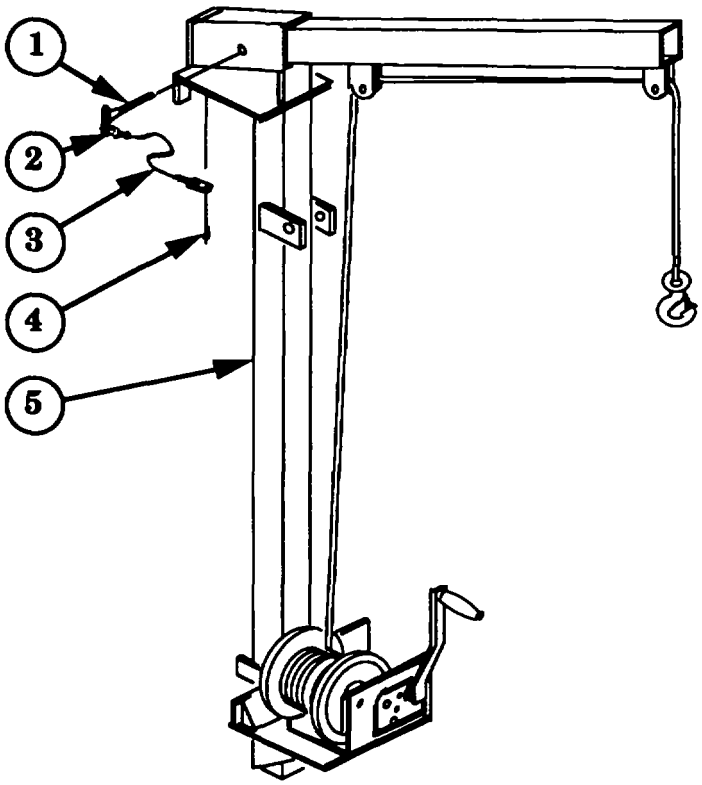
4-12. DAVIT ASSEMBLY LOCKING PIN, LANYARD ASSEMBLY, AND SPLIT RING REMOVAL AND REPLACEMENT

a. Removal

(1) Press and hold plunger and remove locking pin (1) from davit assembly (5).

(2) Remove split ring (2) from locking pin (1) and lanyard assembly (3).

(3) Wedge flat-tip screwdriver under lanyard bracket and use ball peen hammer to remove drive screw (4) that secures lanyard assembly (3) to davit assembly (5).



b. Replacement

(1) Put drive screw (4) through hole in lanyard assembly (3) mounting tab.

(2) Use ball peen hammer to drive drive screw (4) into davit assembly (5).

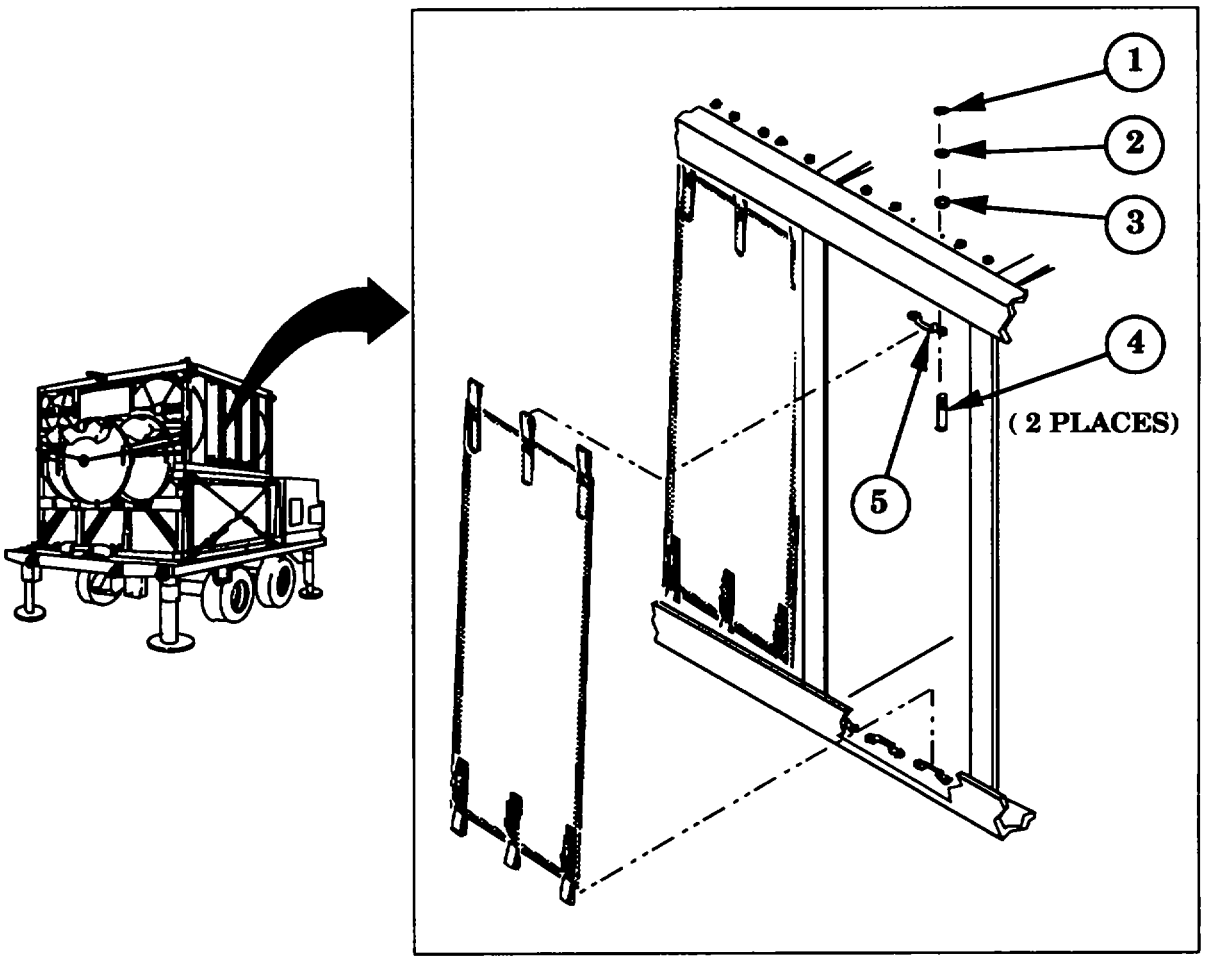
(3) Install split ring (2) to connect lanyard assembly (3) to locking pin (1).

(4) Insert locking pin (1) in davit assembly.

4-13. FOOTMAN LOOP REMOVAL AND REPLACEMENT

a. Removal

Using cross-tip screwdriver and 3/8-inch open-end wrench, remove two screws (4), flat washers (3), lock washers (2), and nuts (1) securing footman loop (5) to pallet section rail.



b. Replacement

Use cross-tip screwdriver and 3/8-inch open end wrench to install two screws (4), flat washers (3), lock washers (2), and nuts (1) securing footman loop (5) to pallet section rail.

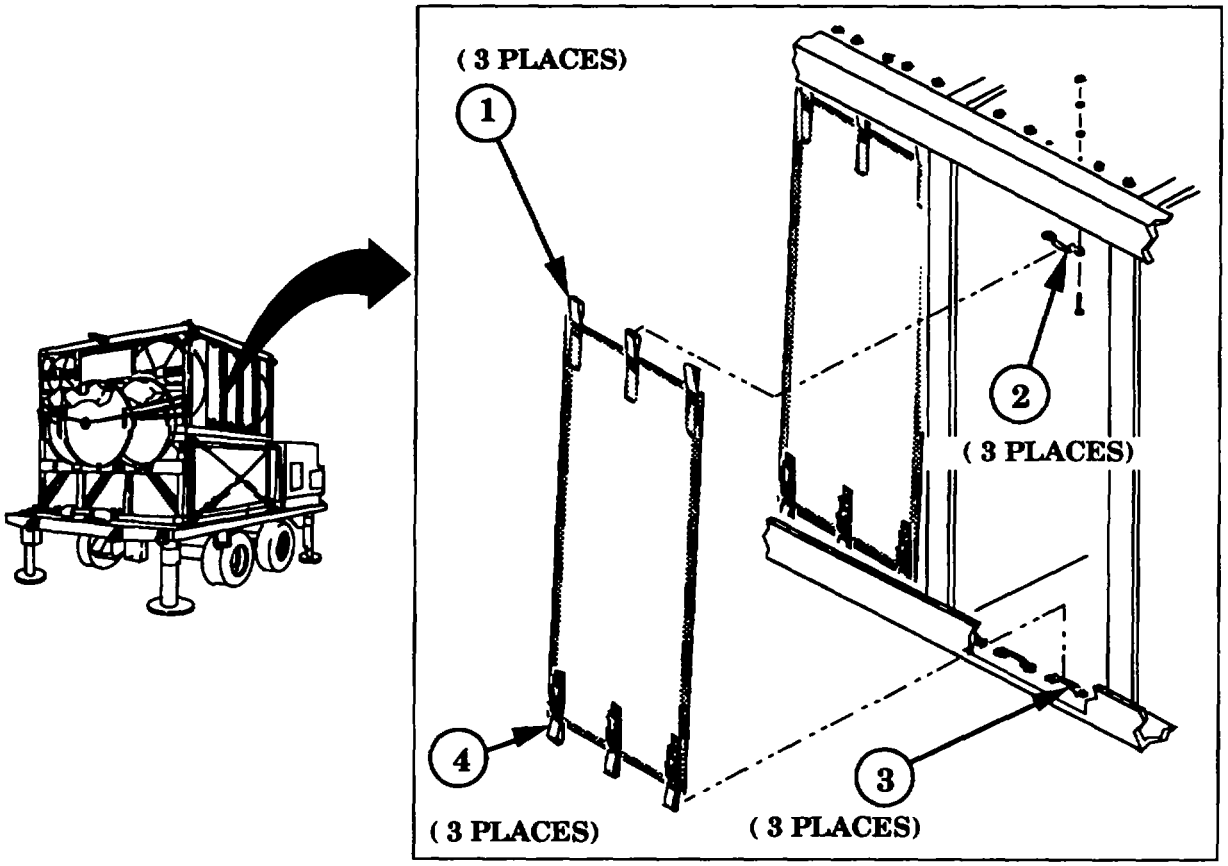
4-14. CANVAS ASSEMBLY (TYPICAL) REMOVAL AND REPLACEMENT

a. Removal

(1) Unbuckle three straps (4) on lower canvas assembly.

(2) Slide each strap out of lower footman loop (3).

(3) Remove three footman loops (2) securing upper canvas assembly straps (1) (refer to upper pallet section



b. Replacement

(1) Insert footman loop (2) through each canvas assembly upper strap (1) and install in upper pallet section top rail (refer to para 4-13b).

(2) Slide three straps (4) through footman loops (3), and buckle straps. Adjust strap tension until canvas assembly is tight.

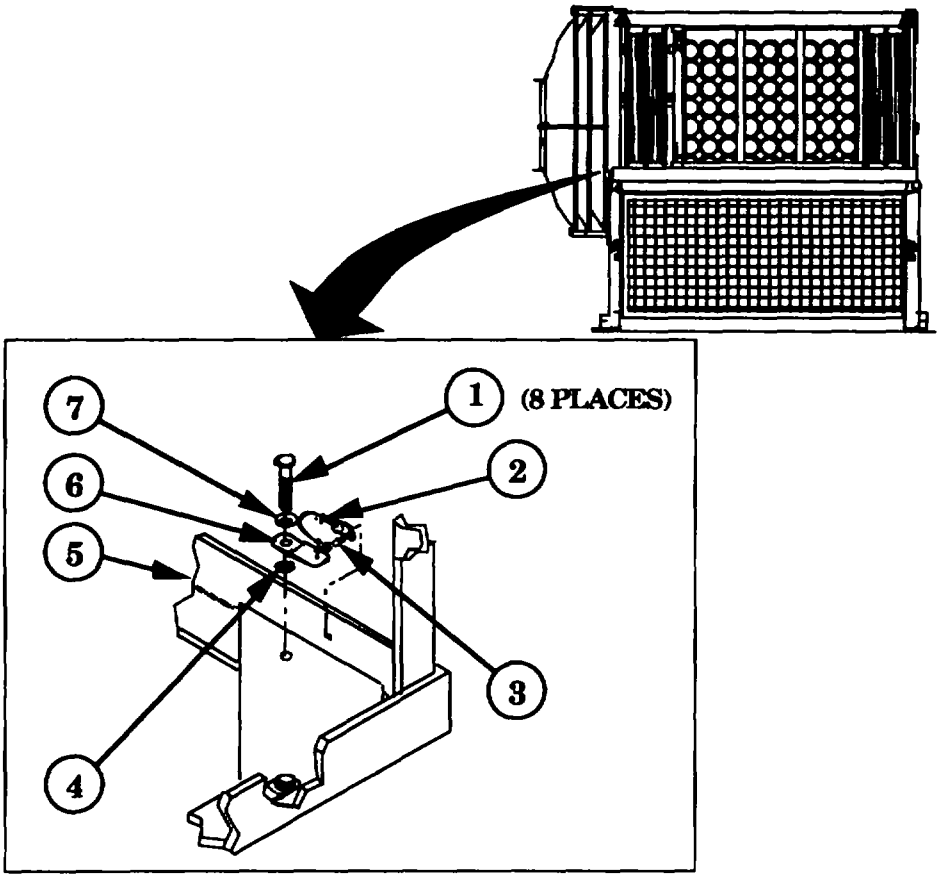
4-15. LANYARD ASSEMBLY (TYPICAL) REMOVAL AND REPLACEMENT

a. Removal

(1) Using 8-inch adjustable wrench, remove eight captive hex head bolts (1) and lock washer (7) securing lanyard assembly brackets (6) to upper pallet section. Captive hex head bolt retaining ring (4) should not come out.

(2) Remove captive hex head bolt (1), lock washer (7), and retaining ring (4) from lanyard assembly bracket (6).

(3) Wedge flat-tip screwdriver under lanyard bracket (6) and use ball peen hammer to tap screwdriver to remove drive screw (3) securing other end of lanyard assembly (2) to upper Dallet section (5).



b. Replacement

(1) Put drive screw (3) through hole in lanyard assembly (2) mounting tab.

(2) Use ball peen hammer to drive drive screw (3) into upper pallet section (5).

(3) Use retaining ring (4) to secure lock washer (7) and lanyard assembly bracket (6) to hex head bolt (1).

(4) Use 8-inch adjustable wrench to install eight captive hex head bolts (1), lock washers (7), and lanyard assembly brackets (6) to upper pallet section.

4-16. LOCKING PIN, LANYARD CABLE, AND SPLIT RING REMOVAL AND REPLACEMENT

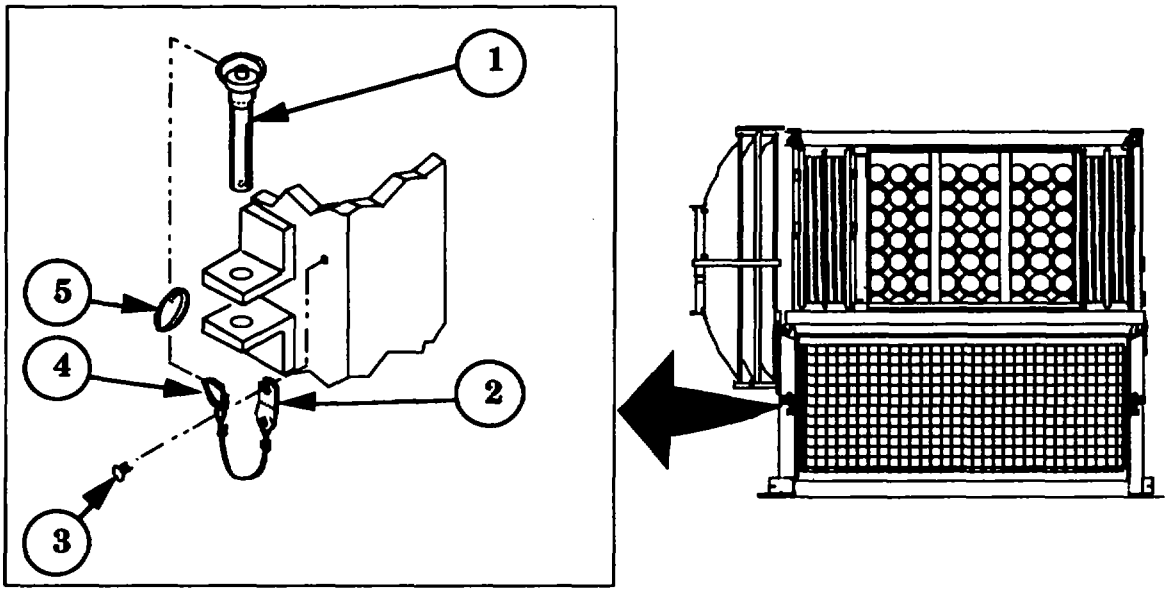
a. Removal

(1) Press and hold plunger and remove locking pin (1) from its hole.

(2) Remove locking pin (1) from split ring (5).

(3) Remove split ring (5) from lanyard cable (4).

(4) Wedge flat-tip screwdriver under lanyard bracket (2) and use ball peen hammer to tap screwdriver to remove drive screw (3) and lanyard (2).



b. Replacement

(1) Use ball peen hammer and drive screw (3) to attach replacement lanyard bracket (2) to lower pallet section.

(2) Install split ring (5) on lanyard cable (4).

(3) Install locking pin (1) on split ring (5).

(4) Press and hold plunger and install locking pin (1) through holes.

4-17. FUEL CAN BRACKET REMOVAL AND REPLACEMENT

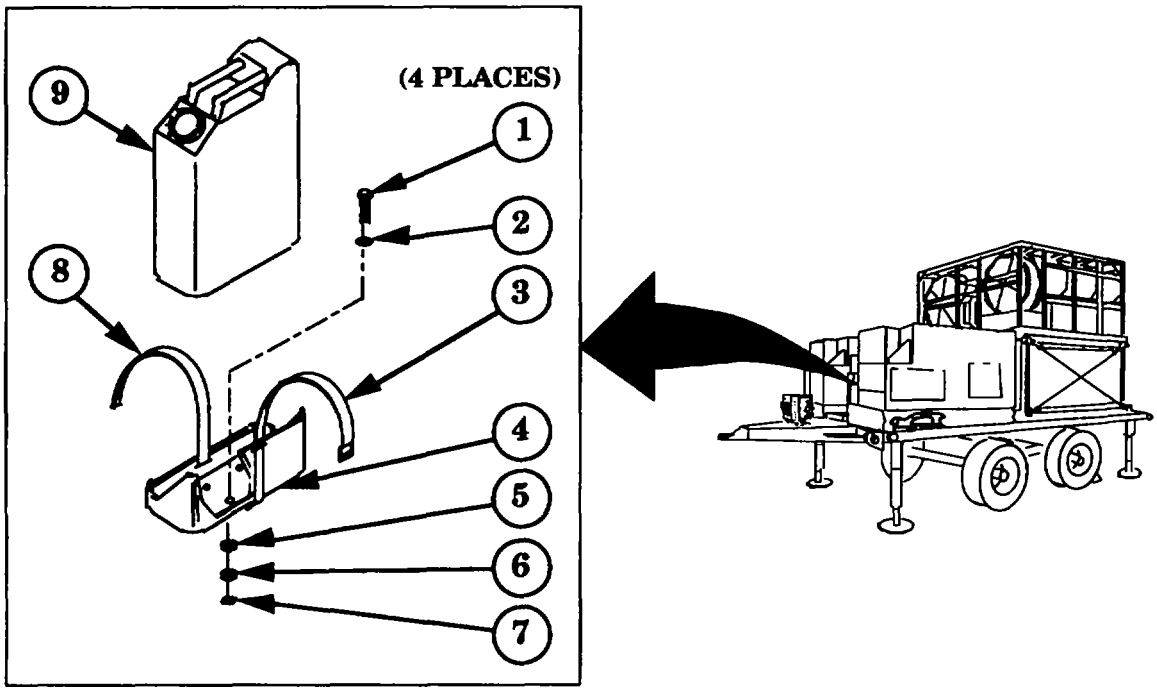
a. Removal

NOTE

Two personnel are required to remove fuel can bracket mounting bolts. One person is required under trailer and one person on trailer.

(1) Release straps (3 and 8) and remove fuel can (9) from bracket (4).

(2) Using 9/16-inch socket with ratchet wrench and 9/16-inch open-end wrench, remove four bolts (1), flat washers (2 and 5), lock washers (6), and nuts (7) securing fuel can bracket (4) to trailer.



b. Replacement

NOTE

Two personnel are required to secure fuel can bracket mounting bolts.

(1) Use 9/16-inch socket with ratchet wrench and 9/16-inch open-end wrench to install four bolts (1), flat washer (2and 5), lock washers 96), and nuts (7) securing fuel can bracket (4) to trailer.

(2) Install fuel can (9) in bracket (4) and secure strap (3 and 8).

4-18. FUEL CAN STRAP REMOVAL AND REPLACEMENT

a. Removal

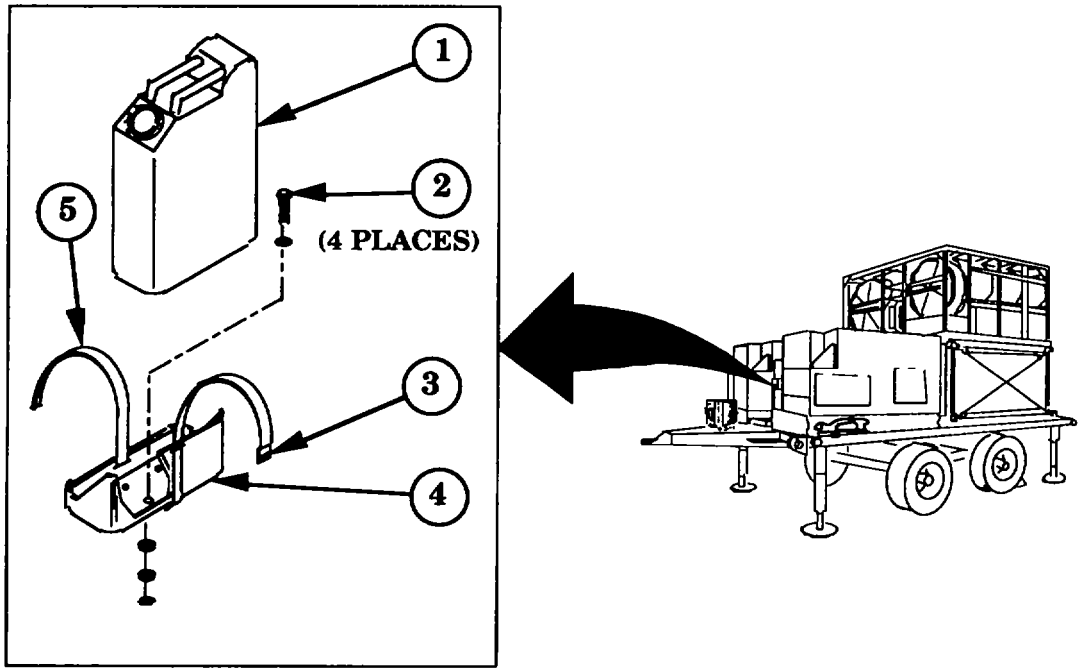
NOTE

Two personnel are required to remove fuel can bracket mounting bolts. One person is required under trailer and one person on trailer.

(1) Release strap (3 and 5) and remove 5-gallon fuel can (1) from bracket (4).

(2) Using 9/16-inch socket with ratchet wrench and 9/16-inch open-end wrench, loosen four hex head screws (2) enough for strap (3) to slide freely from under bracket (4).

(3) Pull strap (3) from bracket (4).



b. Replacement

NOTE

Two personnel are required to replace fuel can bracket mounting bolts. One person is required under trailer and one person on trailer.

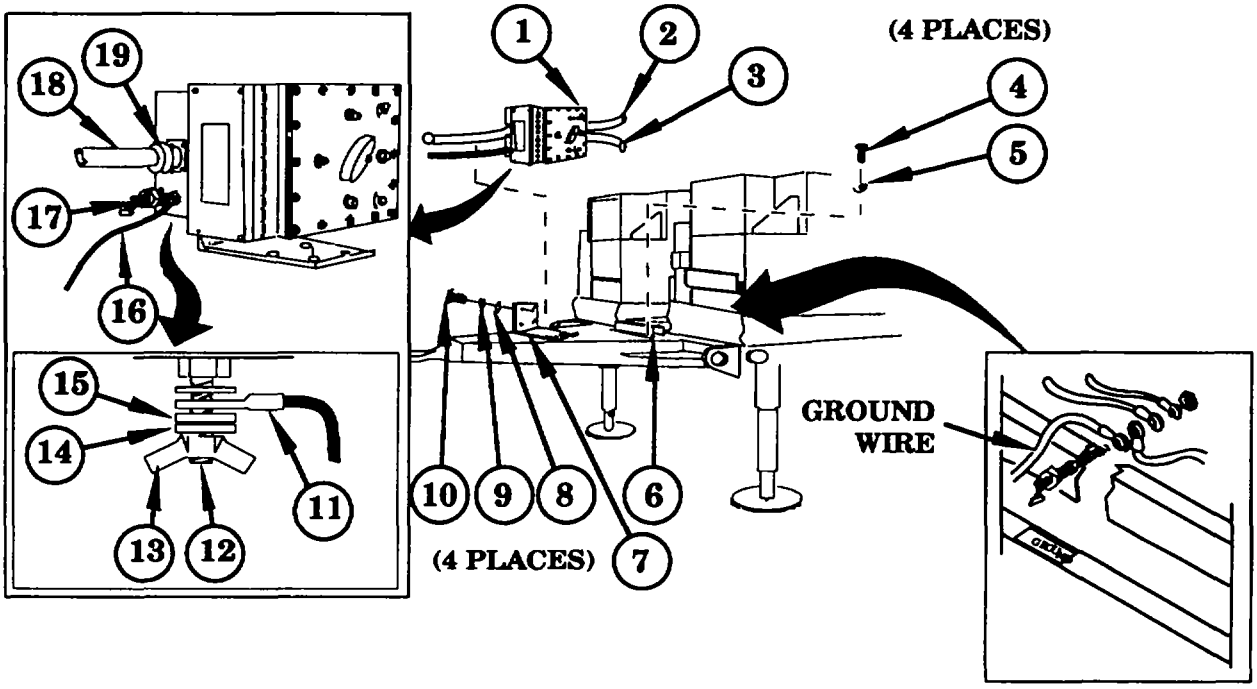
(1) With buckle facing out, thread strap (5) through slot in high side of bracket (4) under the bracket, and through slot in low side of bracket. Adjust strap length so that equal lengths extend from bracket.

(2) Use 9/16-inch socket with ratchet wrench and 9/16-inch open-end wrench to tighten four hex head screws (2) to secure bracket (4) and strap (3 and 5).

(3) Install fuel can (1) in bracket and secure with strap (3 and 5).

4-19. SWITCH BOX ASSEMBLY REMOVAL AND REPLACEMENT

a. Removal



WARNING

Hazardous voltages are present at the switch box assembly when the generator sets are running. Both generator sets must be shut down before attempting to disconnect cables from the switch box assembly. Failure to observe this warning may result in personal injury or death.

(1) Disconnect shelter power cable (18) from switch box assembly (1) connector J1 (19).

(2) Tag switch box cable assembly W1 (2) and cable assembly W2 (3) wires and disconnect cable assemblies from each generator.

(3) Disconnect ground cable (16) from ground stud (17).

(4) Using 7/16-inch open-end wrench, remove four hex head bolts (4), flat washers (5), and kick plate (6) holding cable assembly W2 (3) in place.

(5) Use 1/2-inch open-end wrench to remove ground wire from rear of each generator ground stud.

(6) Using cross-tip screwdriver, remove cable assembly W2 (3) cable clamps on front of generator.

4-19. SWITCH BOX ASSEMBLY REMOVAL AND REPLACEMENT - Continued

a. Removal - Continued

(7) Using cross-tip screwdriver, remove five cable assembly W1 (2) cable clamps on front of trailer and generator.

(8) Remove wing nut (13), lock washer (14), and flat washer (15) securing ground strap assembly (11) to ground stud (12).

(9) Using 9/16-inch socket and ratchet wrench, remove four bolts (10), lock washers (9), and flat washers (8) securing switch box assembly (1) to switch box bracket (7).

WARNING

The switch box assembly weighs 90 pounds. Two personnel are required to lift switch box assembly. Failure to observe this warning may result in personal injury.

(10) Remove switch box assembly (1) (with attached cables) from trailer.

b. Replacement

WARNING

The switch box assembly weighs 90 pounds. Two personnel are required to lift switch box assembly. Failure to observe this warning may result in personal injury.

(1) Lift replacement switch box assembly (1) (with attached W1 and W2 cable assemblies) onto trailer. Align switch box assembly mounting holes with mounting holes in switch box bracket (7).

(2) Using 9/16-inch socket and ratchet wrench, install four bolts (10), lock washers (9), and flat washers (8) securing switch box assembly (1) to switch box bracket (7).

(3) Install ground strap assembly (11), flat washer (15), lock washer (14), and wing nut (13) on ground stud (12) and hand tighten.

(4) Place cable assembly W2 (3) on trailer, and using 7/16-inch open-end wrench, install kick plate (6) with four hex head bolts (4) and flat washers (5).

(5) Use 12-inch open-end wrench to install ground wire on rear of generator ground stud.

(6) Use cross-tip screwdriver to install cable assembly W2 (3) cable clamp on front of generator.

(7) Use cross-tip screwdriver to install cable assembly W1 (2) cable clamps on front of trailer and generator.

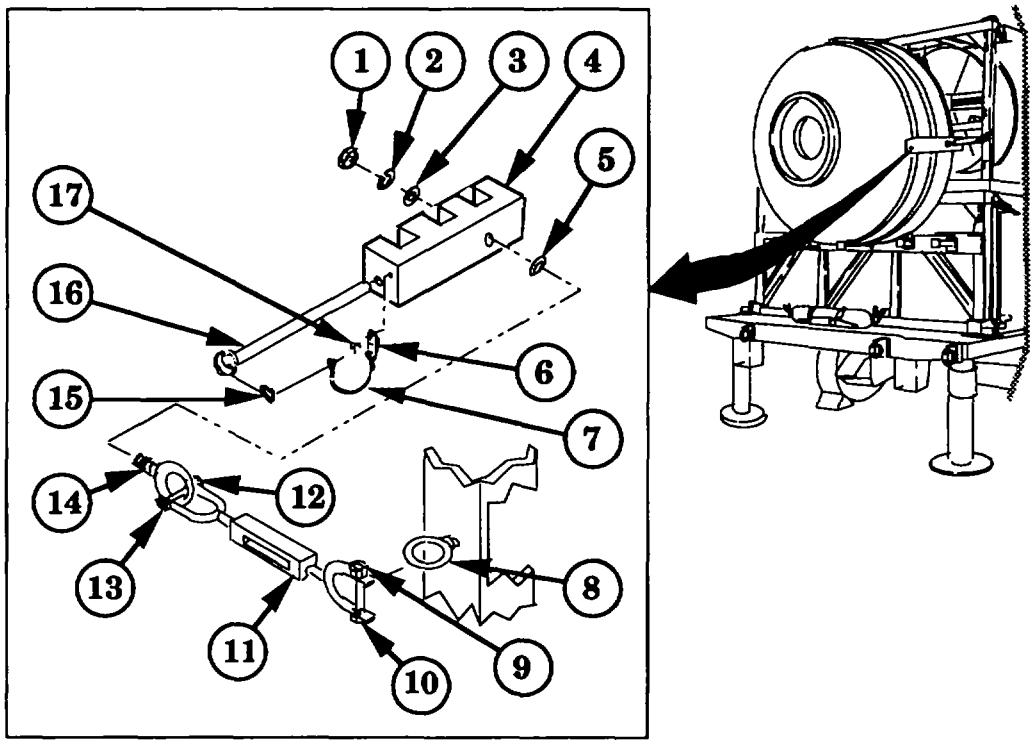
(8) Attach cable assemblies W1 and W2 to generators.

(9) Connect ground cable (16) to ground stud (17).

(10) Connect shelter power cable (18) to switch box assembly connector J1 (19).

4-20. RETAINING BRACKET, LOCKING PIN, TURNBUCKLE, STiE;L LANYARD, AND SPLIT RING REMOVAL AND REPLACEMENT

a. Removal



(1) Using 9/16-inch and 1/2-inch combination wrenches, remove nut (9) and bolt (10) securing turnbuckle (11) to eyebolt (8).

(2) Repeat step 1 for nut (12), bolt (13), and eyebolt (14).

(3) Using 9/16-inch socket with 3-inch extension and ratchet wrench, remove nut (1), lock washer (2), flat washers (3 and 5), and eyebolt (14) from retaining bracket (4).

(4) Press and hold plunger and remove locking pin (16) from retaining bracket (4).

(5) Remove split ring (15) from locking pin (16) and steel lanyard (7).

(6) Wedge flat-tip screwdriver under retaining bracket lanyard (6) and use ball peen hammer to tap screwdriver to remove drive screw (17) and lanyard (7).

4-20. RETAINING BRACRET, LOCKING PIN, TURNBUCKLE, STEEL LANYARD, AND SPLIT RING REMOVAL AND REPLACEMENT - Continued

b. Replacement

(1) Insert drive screw (17) through hole in retaining bracket lanyard (6). Use ball peen hammer and drive screw to attach steel lanyard (7) to retaining bracket (4).

(2) Install split ring (15) on locking pin (16) and steel lanyard (7).

(3) Using 9/16-inch socket, 3-inch extension, and ratchet wrench, install flat washers (3 and 5), lock washer (2), and nut (1) securing eyebolt (14) to retaining bracket (4).

(4) Press and hold plunger and install locking pin (16) into retaining bracket (4).

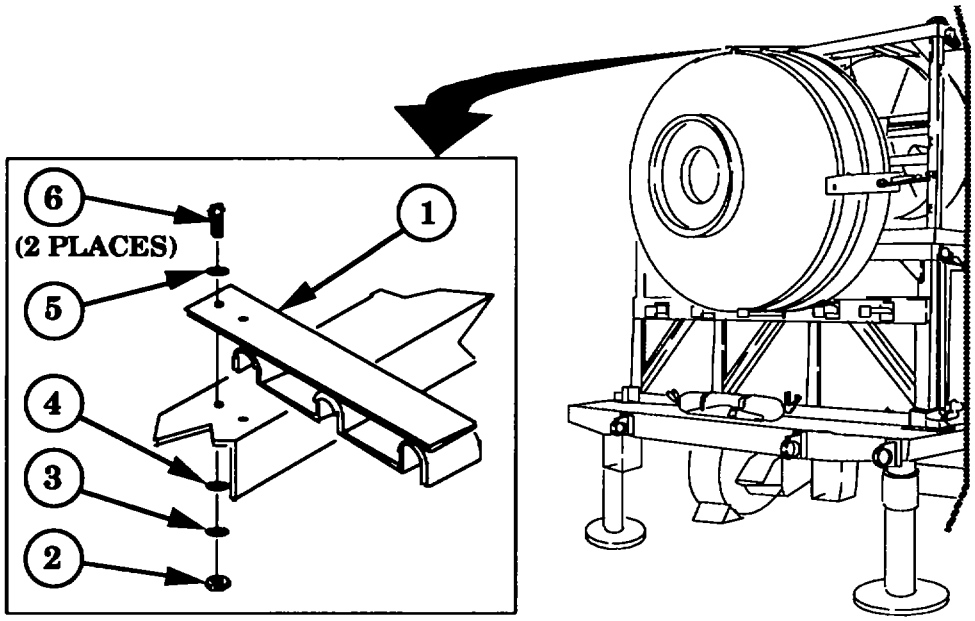
(5) Insert bolt (10) through turnbuckle (11) and eyebolt (8). Install nut (9) on bolt (10) and tighten using 9/16-inch and 1/2-inch combination wrenches.

(6) Repeat step 5 for bolt (13), nut (12), and eyebolt (14).

4-21. REFLECTOR RETAINING SPACER REMOVAL AND REPLACEMENT

a. Removal

Using 1/2-inch socket with ratchet wrench and 9/16-inch box-end wrench, remove two hex head screws (6), flat washers (4 and 5), lock washers (3), and nuts (2) securing reflector retaining spacer (1) to upper pallet section.



b. Replacement

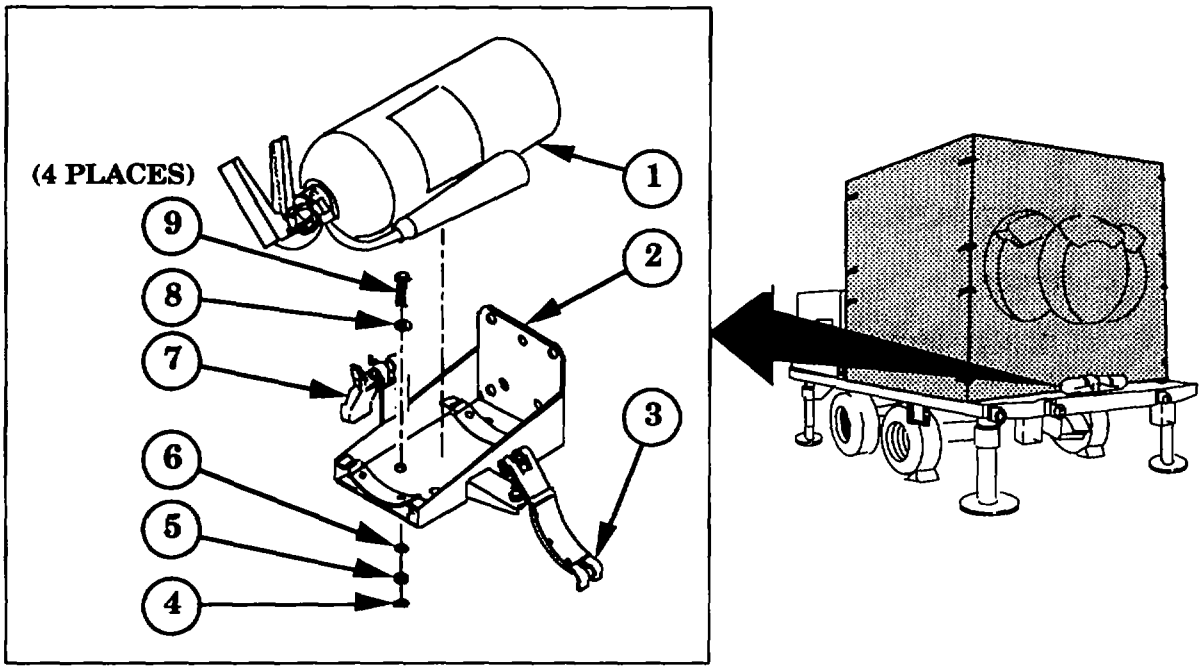
Use 1/2-inch socket with ratchet wrench and 9/16-inch box-end wrench to install two hex head screws (6), flat washers (4 and 5), lock washers (3) and nuts (2) securing retaining spacer (1) to upper pallet section.

4-22. FIRE EXTINGUISHER AND FIRE EXTINGUISHER BRACKET REMOVAL AND REPLACEMENT

a. Removal

(1) Pull up on fire extinguisher bracket handle (7) and remove fire extinguisher (1) from bracket (2).

(2) Using 9/16-inch socket with ratchet wrench and 9/16-inch open-end wrench, remove four nuts (4), lock washers (5), flat washers (6 and 8), and hex head screws (9) securing fire extinguisher bracket (2) to trailer.



b. Replacement

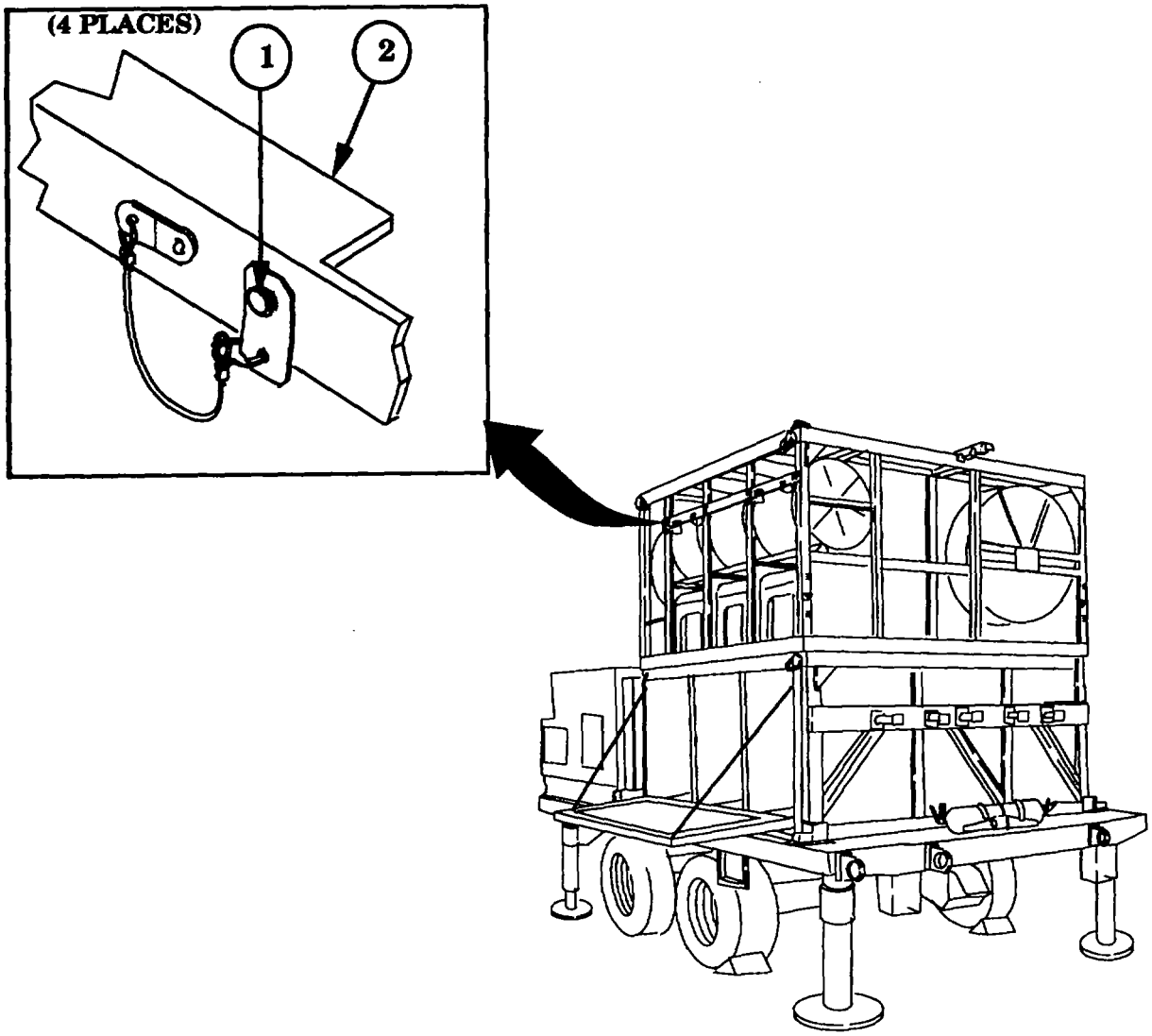
(1) Use 9/16-inch socket and ratchet wrench and 9/16-inch open-end wrench to install four hex head screws (9), flat washers (6 and 8), lock washers (5), and nuts (4) securing fire extinguisher bracket to trailer.

(2) Install fire extinguisher (1) in bracket (2). Close retaining straps (3 and 7) and secure by pushing down on handle (7).

4-23. PALLET CABLE REEL RETAINER BAR REMOVAL AND REPLACEMENT

a. Removal

Using 7/16-inch open-end wrench, remove four captive hex head bolts (1) securing retainer bar (2) to upper pallet section.



b. Replacement

Use 7/16-inch open-end wrench to install four captive hex head bolts (1) securing retainer bar (2) to upper pallet section.

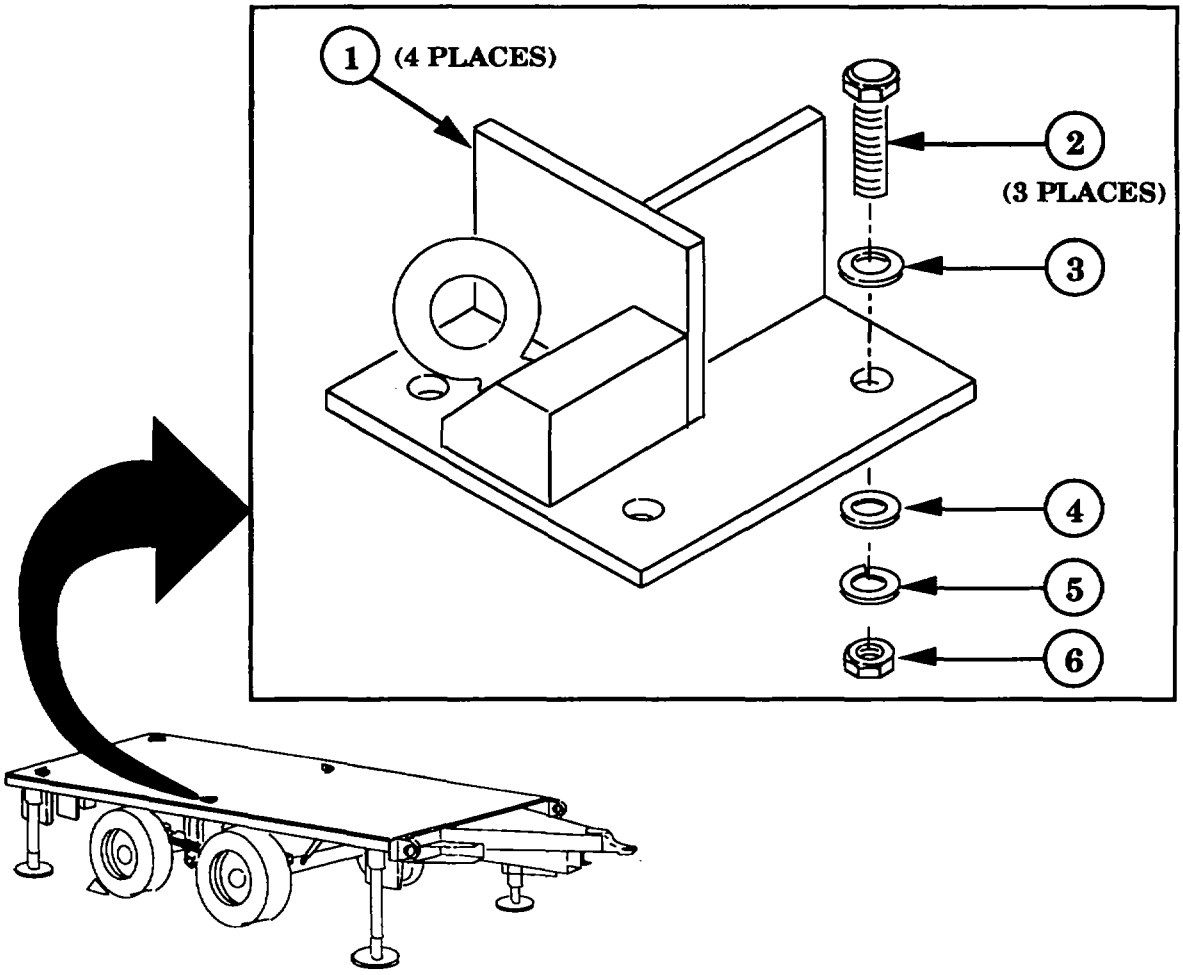
4-24. PALLET RETAINING BRACKET (TRAILER) REMOVAL AND REPLACEMENT

a. Removal

NOTE

Two personnel are required to remove pallet corner brackets. One person is required under trailer and one person on trailer.

Using 8-inch adjustable wrench, remove three hex head bolts (2), flat washers (3 and 4), lock washer (5), and nuts (6) securing mounting bracket (1) to trailer.



b. Replacement

Use 8-inch adjustable wrench to install three hex head screws (2), flat washers (3 and 4), lock washers (5), and nuts (6) securing mounting bracket (1) to trailer and torque to 78 foot-pounds.

4-25. PALLET EYEBOLT RETAINING ASSEMBLY (TRUCK) REMOVAL AND REPLACEMENT

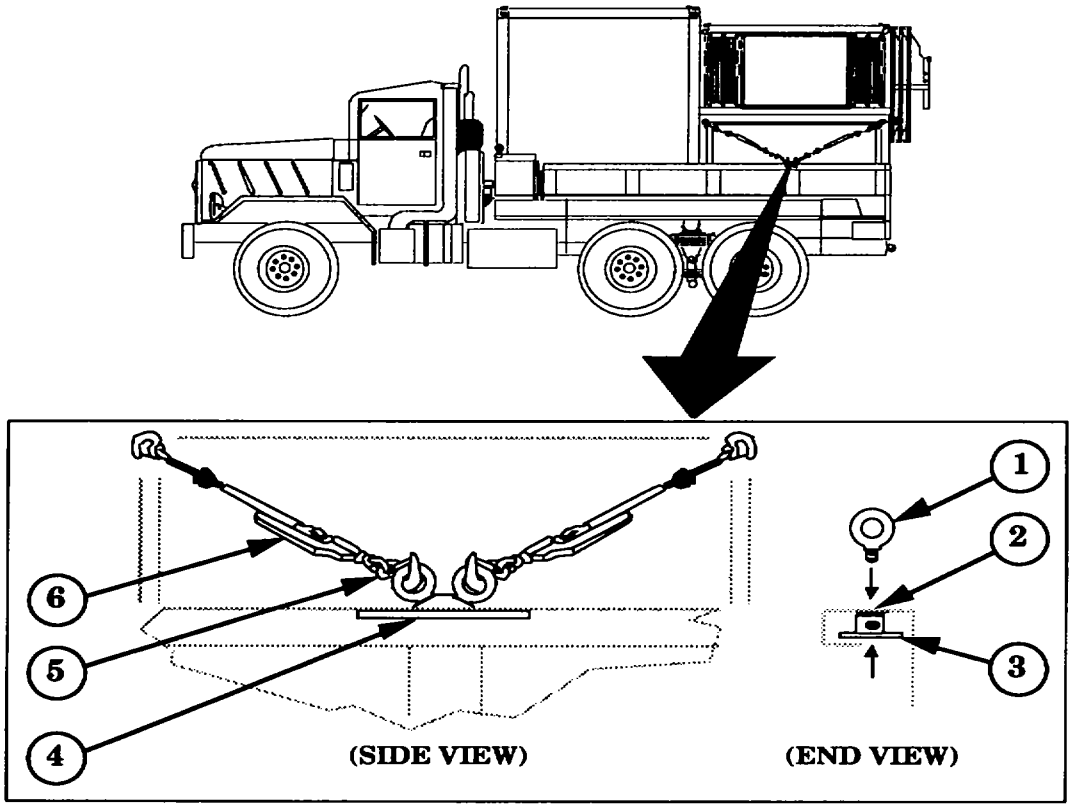
a. Removal

(1) Release two loadbinders (6) securing pallet to truck.

(2) Remove tie-down cable snaphooks (5) from eyebolt retaining assembly (4) and let tiedown cable assemblies hang.

(3) Use socket wrench handle to remove two eyebolts (1) while holding plate (3) in place.

(4) Remove plate (3) from cutout in truck siderail (2).



b. Replacement

(1) Insert plate (3) into cutout in truck side rail (2).

(2) While holding plate (3) in cutout, screw two eyebolts (1) into plate (3) until eyebolts are hand tight.

(3) Attach snaphooks (5) to eyebolt retaining assembly (4).

(4) Close two loadbinders (6) securing pallet to truck.

Section VI. PREPARATION FOR STORAGE OR SHIPMENT

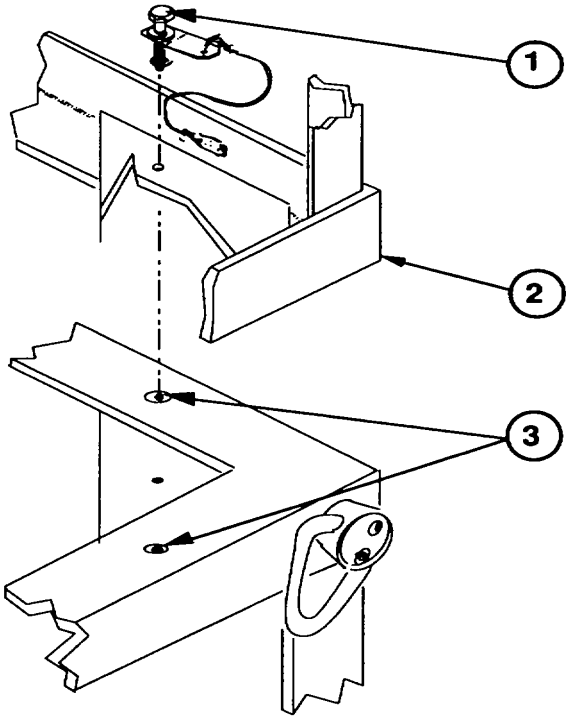
4-26. PREPARATION FOR STORAGE OR SHIPMENT

Before storing or shipping the OE-481/TRC, perform PMCS (refer to Table 4-1). Ensure that tarpaulin is properly secured. Dry storage will prevent deterioration.

4-27. TRANSPORT PREPARATION FOR TRAILER-MOUNTED OE481/TRC

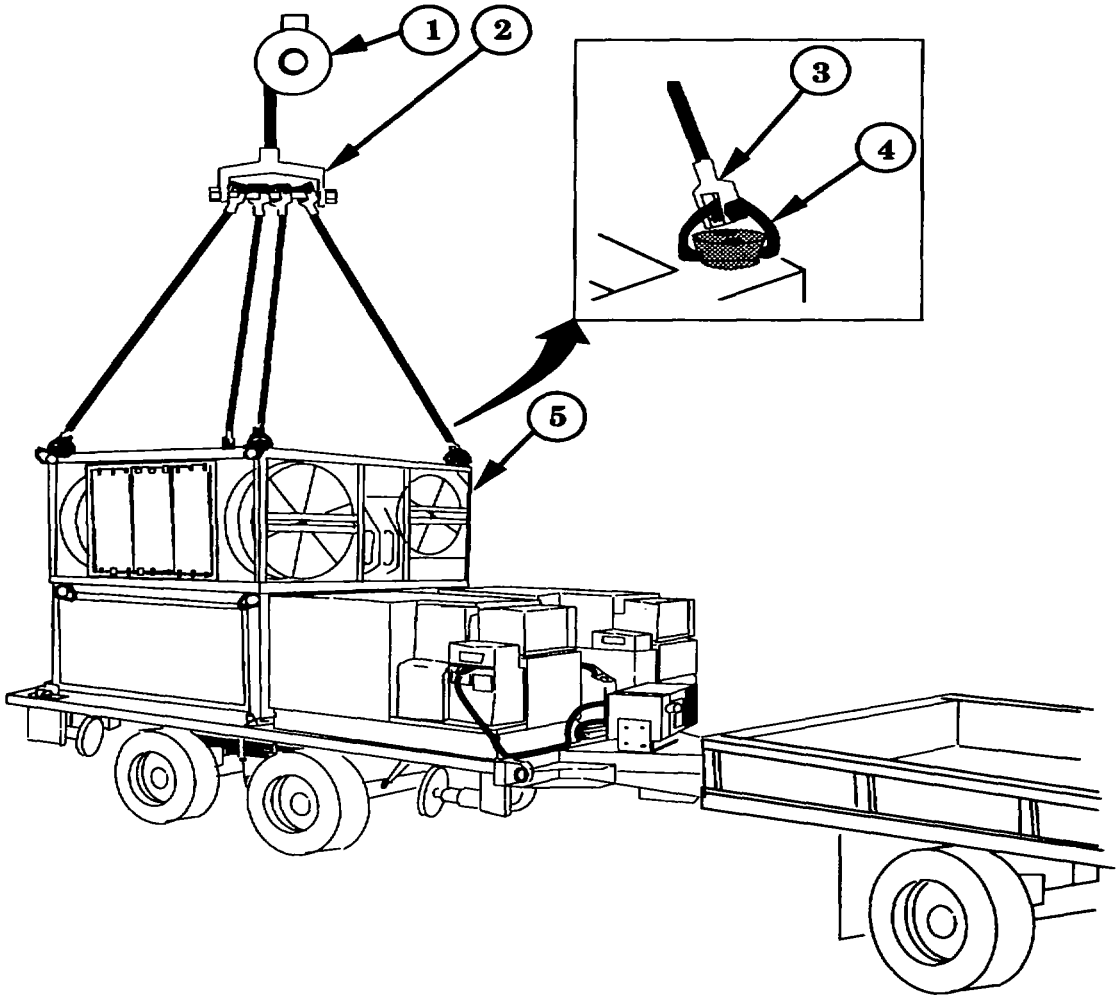
a. Remove shelter from truck (refer to shelter technical manual).

b. Remove antenna reflectors from rear of trailer-mounted pallet assembly and set aside (refer to para 2-7, steps p thru v).



c. Using 8-inch adjustable wrench, remove eight captive bolts (1), two at each corner (3), located in upper pallet section (2).

4-27. TRANSPORT PREPARATION FOR TRAILOR-MOUNTED OE-481/TRC - Continued

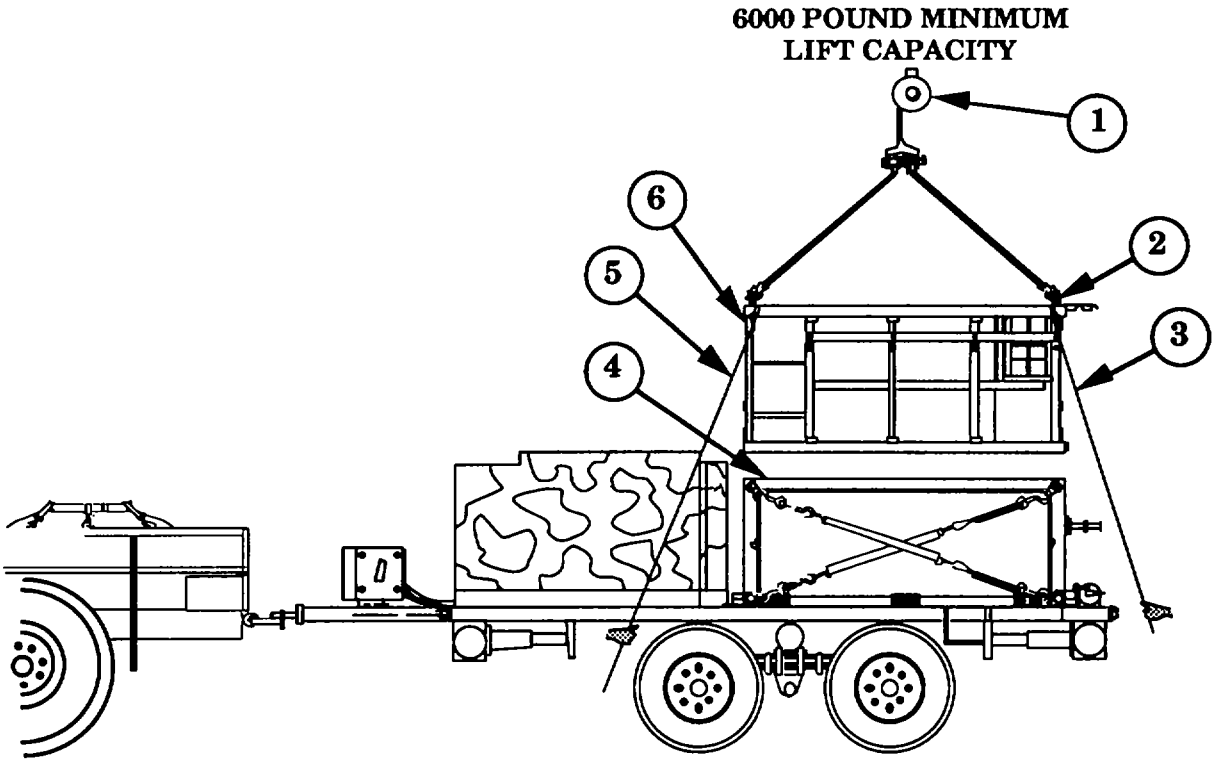


WARNING

Capacity of lifting device and four-point sling must be 6000 pounds or greater. Failure to use proper lifting device may result in personal injury or death.

d. Using 6000-pound lifting device (1) equipped with four-point sling (2), attach lifting sling shackles (3) to four hoist rings (4) on top of pallet assembly (5).

4-27. TRANSPORTATION PREPARTION FOR TRAILER-MOUNTED OE-481/TRC - Continued



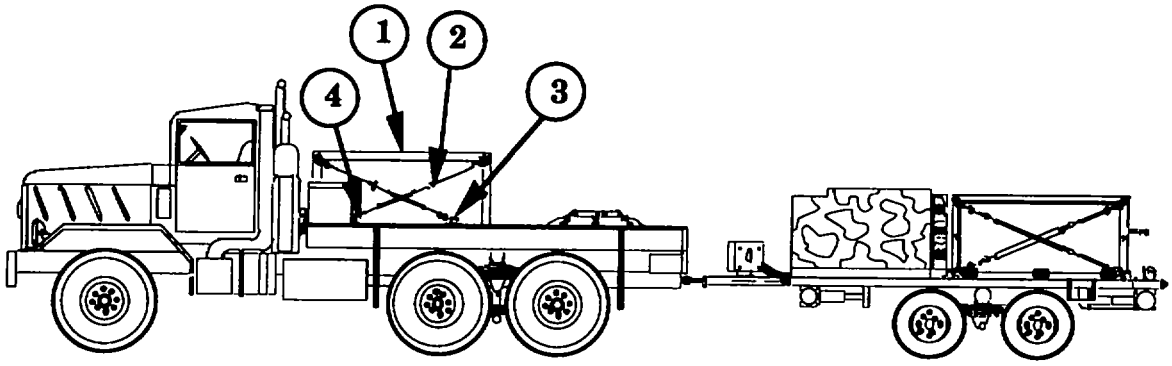
WARNING

Two personnel are required to guide pallet section during lifting procedure. Failure to control pallet assembly during lifting may result in personal injury or death.

e. Secure two 15-foot, 1/2-inch ropes (3 and 5) to tie-down rings (2) at opposite ends of upper pallet section (6). Hold ropes tight to prevent upper pallet section (6) from swinging when lifted and to guide upper pallet section when being placed on truck.

f. Using lifting device (1) (6000-pound minimum capacity), lift upper pallet section (6) from lower pallet section (4).

4-27. TRANSPORT PREPARTION FOR TRAILER-MOUNTED OE-481/TRC - Continued



g. Locate upper pallet section (1) in front of truck bed, as close as possible to front rail.

h. Install single eyebolt assembly (4) in first pocket of roadside side rail (refer to para 4-25b).

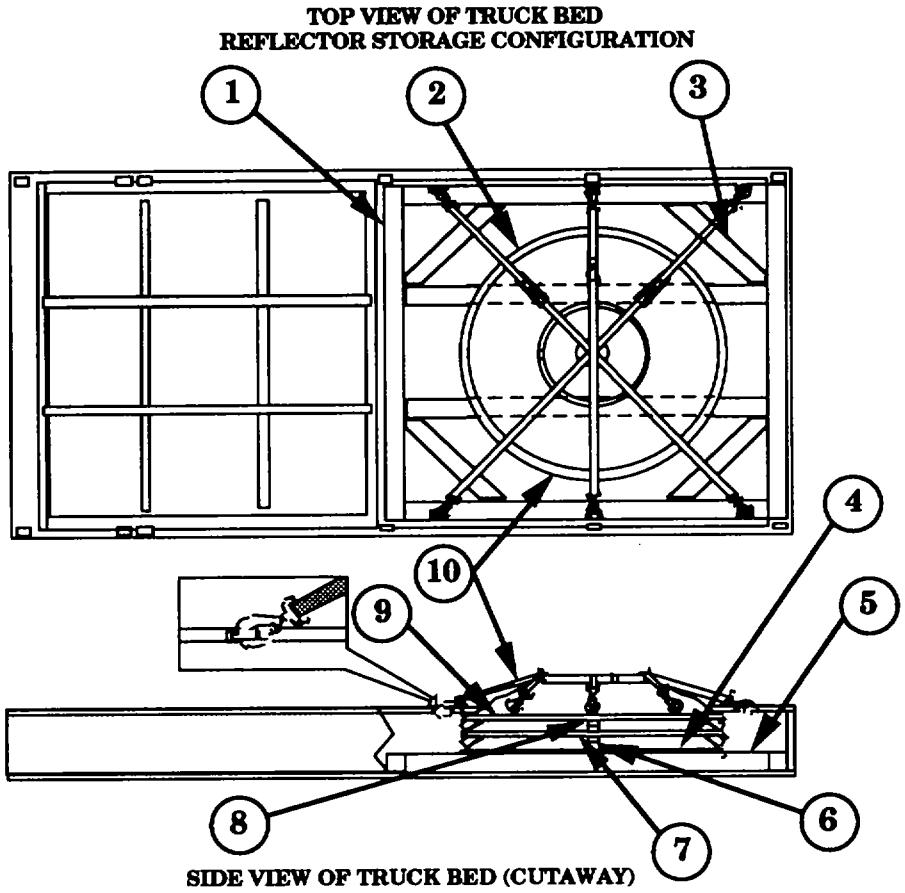
i. Install double eyebolt assembly (3) in second pocket of roadside side rail (refer to para 4-25b).

j. Secure upper pallet section (1) to truck bed using tie-down cable assemblies without loadbinders (2).

k. Tighten turnbuckles to eliminate slack.

l. Repeat steps h thru k for curbside.

4-27. TRANSPORT PREPARATION FOR TRAILER-MOUNTED OE-481/TRC - Continued



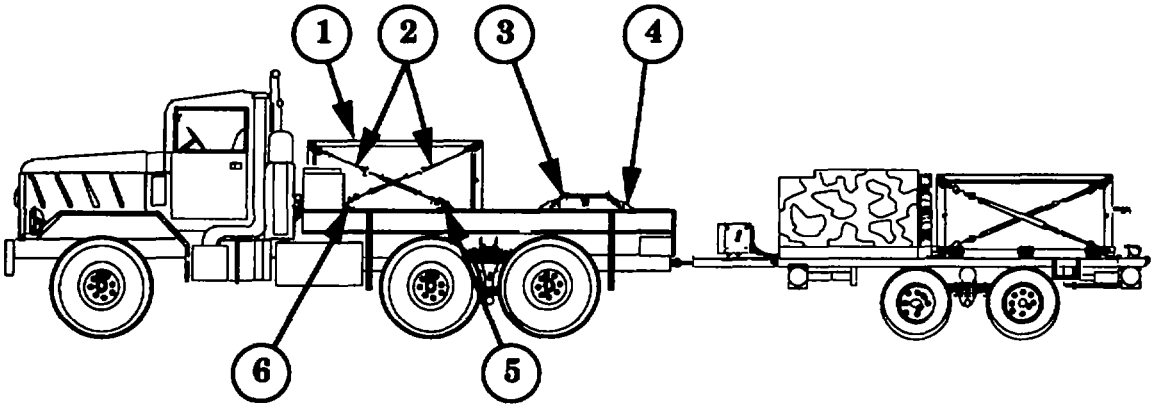
m. Build frame (1) for antenna reflectors (2) with 4 x 4-inch wood beams.

n. Make shipping frame (3) of 4 x 4-inch wood beams. Wedge beams in place to prevent movement. Secure 4 x 4-inch wood cross members in place using nails to prevent wedged members from moving.

o. Place one reflector (4) facing down on shipping frame (5). Place four 4 x 4-inch x 6-inch wooden spacers (6) on top of reflector, for separation between reflectors. Locate second reflector (7) on top of spacers (6).

p. Place four 4 x 4-inch x 6-inch wood spacers (8) on top of second reflector (7). Locate third reflector (9) on top of spacers (8). Secure reflectors to truck bed using cargo strap assemblies (10).

4-28. POST TRANSPORT CONFIGURATION FOR TRAILER-MOUNTED OE-481/TRC



a. Remove cable straps (3) from antenna reflectors (4) in rear of truck.

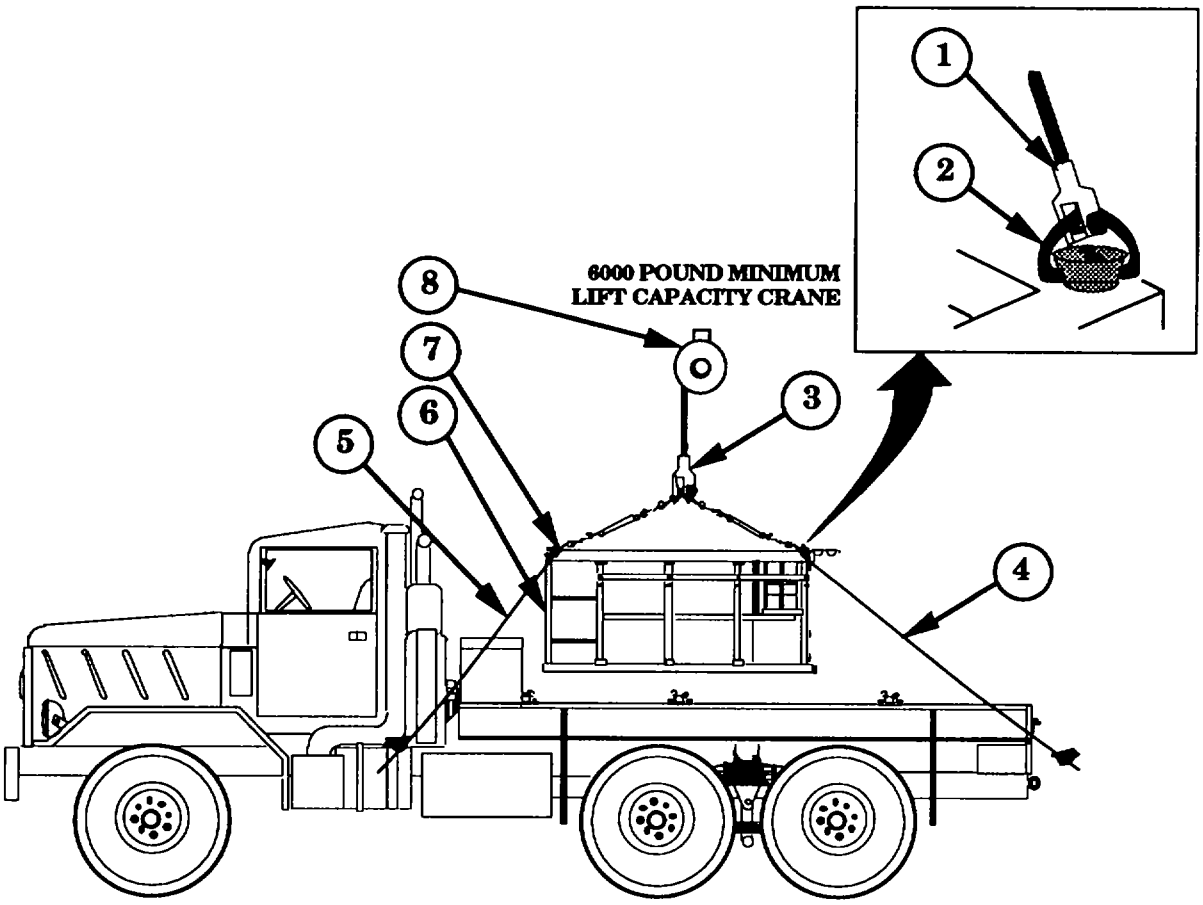
b. Remove antenna reflectors (4) from truck and set in safe location.

c. Disassemble shipping frame so that upper pallet section (1) can be removed.

d. Remove tie-down cable assemblies (2) securing upper pallet section (1) to truck bed.

e. Remove single (6) and double (5) eyebolt assemblies from side rail pockets.

4-28. POST TRANSPORT CONFIGURATION FOR TRAILER-MOUNTED OE-481/TRC - Continued



WARNING

Capacity of lifting device and four-point sling must be 6000 pounds or greater. Failure to use proper lifting device may result in personal injury or death.

f. Using 6000 pound lifting device (8) equipped with four-point sling (3), attach lifting sling shackles (1) to four hoist rings (2) on top of upper pallet section (6).

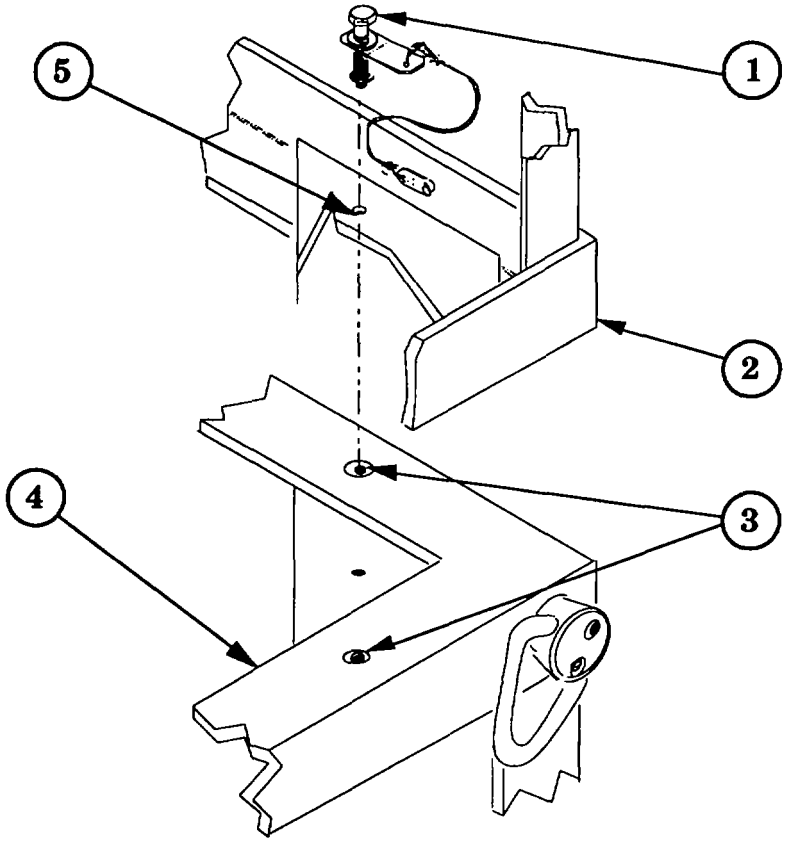
WARNING

Two personnel are required to guide pallet section during lifting procedure. Failure to control transport pallet assembly during lifting may result in personal injury or death.

g. Secure two 15-foot, 1/2-inch ropes (4 and 5) to tie-down rings (7) at opposite ends of upper pallet section (6). Hold ropes tight to prevent upper pallet section (6) from swinging when lifted and to guide upper pallet section onto lower pallet section.

4-28. POST TRANSPORT CONFIGURATION FOR TRAILER-MOUNTED OE-481/TRC - Continued

h. Lift upper pallet section from truck and set on lower pallet section.



i. Align mounting holes (5) of the upper pallet section (2) with mounting holes (3) of lower pallet section (4).

j. Secure upper pallet section (2) to lower pallet section (4) using 8-inch adjustable wrench to snugly tighten eight captive bolts (1), two at each corner.

k. Secure antenna reflectors to rear of trailer-mounted pallet assembly (refer to para 2-9, steps aa thru 11).

l. Install shelter on truck and secure (refer to shelter technical manual).

4-29. TRANSPORT PREPARATION FOR TRUCK-MOUNTED OE-481/TRC

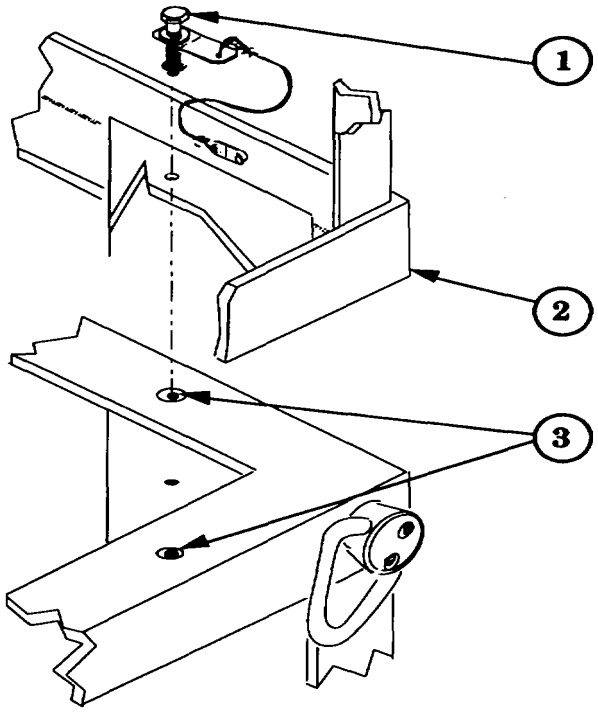
a. Remove shelter from truck (refer to shelter technical manual).

b. Remove antenna reflectors from rear of pallet assembly (refer to para 2-7, steps p thru v).

NOTE

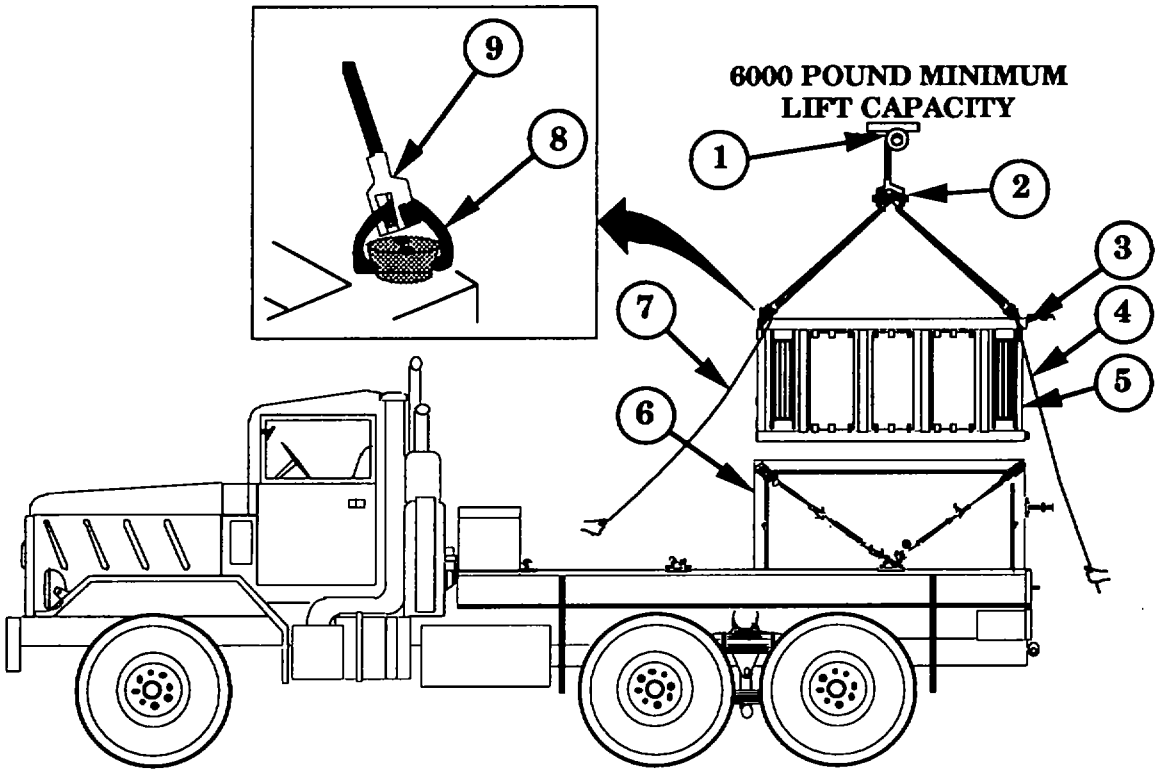
Brackets are provided in the DGM downsized shelters for storing the AS-3047/GRC-103(V) or the AS-1425/GRC antenna reflectors.

c. Store antenna reflectors in shelter using existing brackets (refer to shelter technical manual).



d. Using 8-inch adjustable wrench, remove eight captive bolts (1), two at each corner (3), located in upper pallet section (2).

4-29. TRANSPORT PREPARATION FOR TRUCK MOUNTED OE-481/TRC - Continued



WARNING

Capacity of lifting device and four-point sling must be 6000 pounds or greater. Failure to use proper lifting device may result in personal injury or death.

e. Using 6000-pound lifting device (1) equipped with four-point sling (2), attach lifting sling shackles (9) to four hoist rings (8) on top of upper pallet section (5).

WARNING

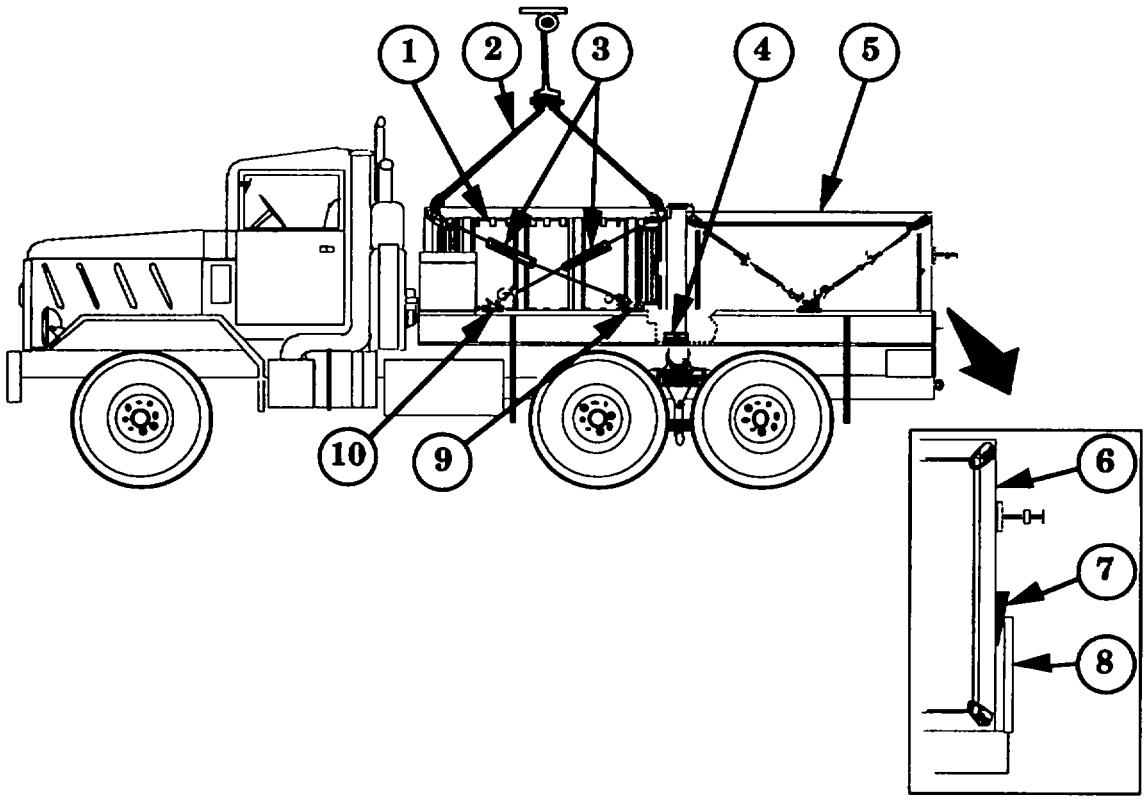
Two personnel are required to guide pallet section during lifting procedure. Failure to control pallet assembly during lifting may result in personal injury or death.

f. Secure two 15-foot, 1/2-inch ropes (4 and 7) to tie down rings (3) at opposite ends of upper pallet section (5). Hold ropes tight to prevent upper pallet section from swinging when lifted and to guide upper pallet section when being placed on truck.

g. Lift upper pallet section (5) from lower pallet section (6).

h. Move upper pallet section (5) to front of truck bed.

4-29. TRANSPORT PREPARATION FOR TRUCK-MOUNTED OE-481/TRC - Continued



i. Locate upper pallet section (1) in space at front of truck bed.

j. Disconnect four-point lifting sling (2) from upper pallet section (1).

k. Place 4 x 4-inch shipping frame (4) on truck bed between upper pallet section (1) lower pallet section (5).

l. Place wood wedges (7) in 4 corners between the side rails of truck (8) and outside vertical members of pallet sections (6).

m. Install single eyebolt assembly (10) in first pocket of roadside side rail.

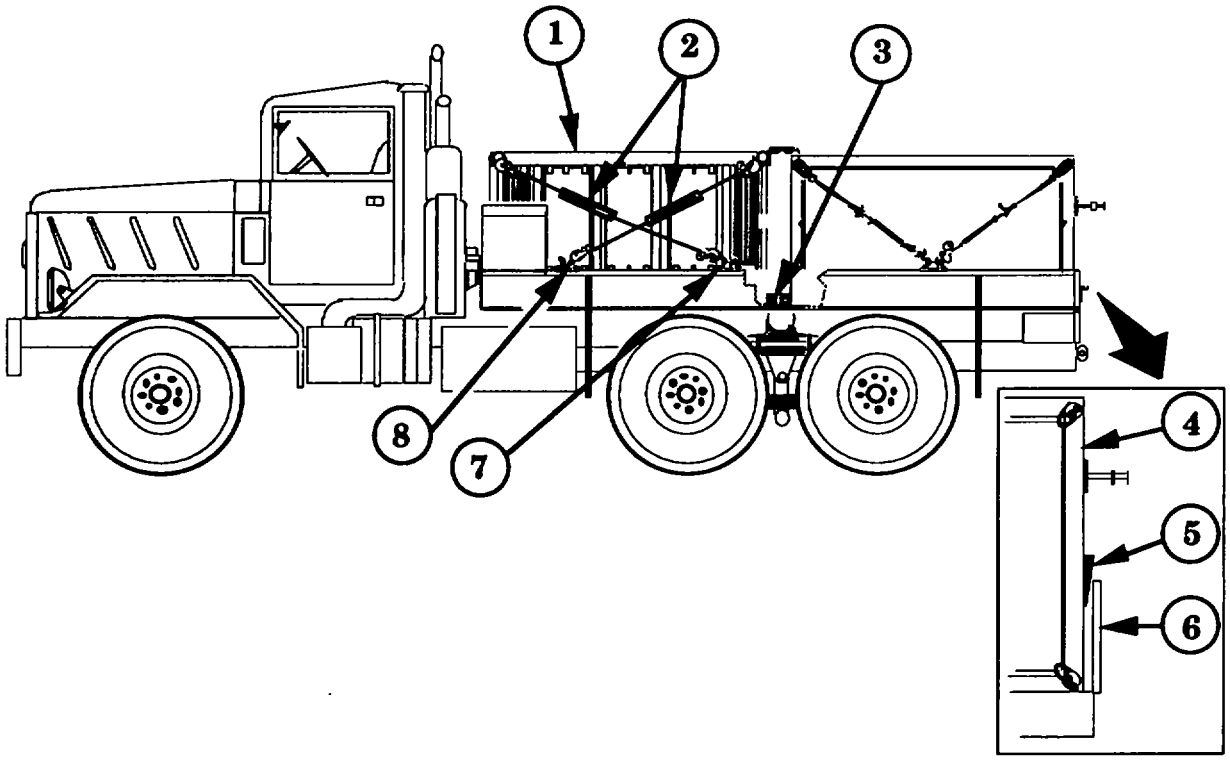
n. Install double eye bolt assembly (9) in second pocket of roadside side rail.

o. Use tie-down cable assemblies (without load-binders) (3) to secure upper pallet section to truck bed.

p. Repeat steps m thru o for curbside.

q. Remove two 15-foot ropes from upper pallet section (1).

4-30. POST TRANSPORT CONFIGURATION FOR TRUCK-MOUNTED OE-481/TRC



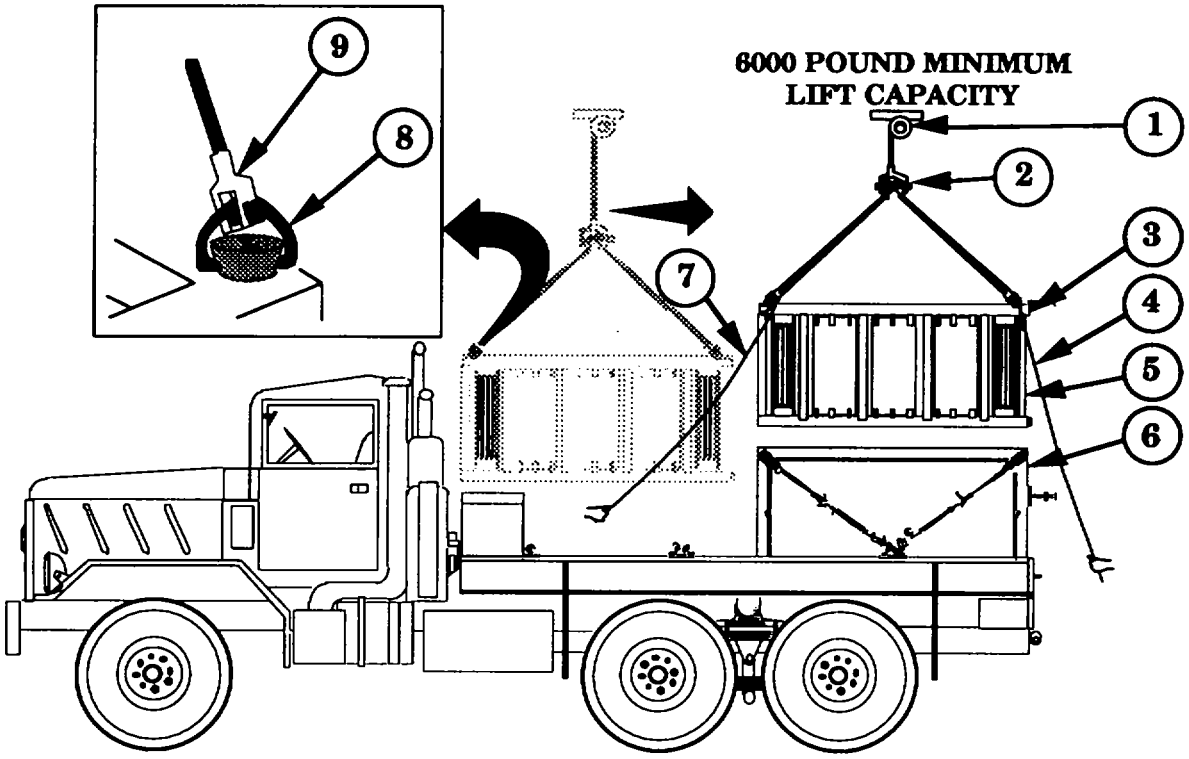
a. Remove tie-down assemblies (2) securing upper pallet section (1) to truck, first roadside then curbside.

b. Remove wood wedges (5) from between pallet sections (4) and side rails of truck (6).

c. Remove 4 x 4-inch shipping frame (3) from between upper and lower pallet sections.

d. Remove single eyebolt assembly (8) and double eyebolt assembly (7), first roadside then curbside.

4-30. POST TRANSPORT CONFIGURATION FOR TRUCK-MOUNTED OE-481/TRC - Continued



WARNING

Capacity of lifting device and four-point sling must be 6000 pounds or greater. Failure to use proper lifting device may result in personal injury or death.

e. Using 6000-pound lifting device (1) equipped with four-point sling (2), attach lifting sling shackles (9) to four hoist rings (8) on top of upper pallet section (5).

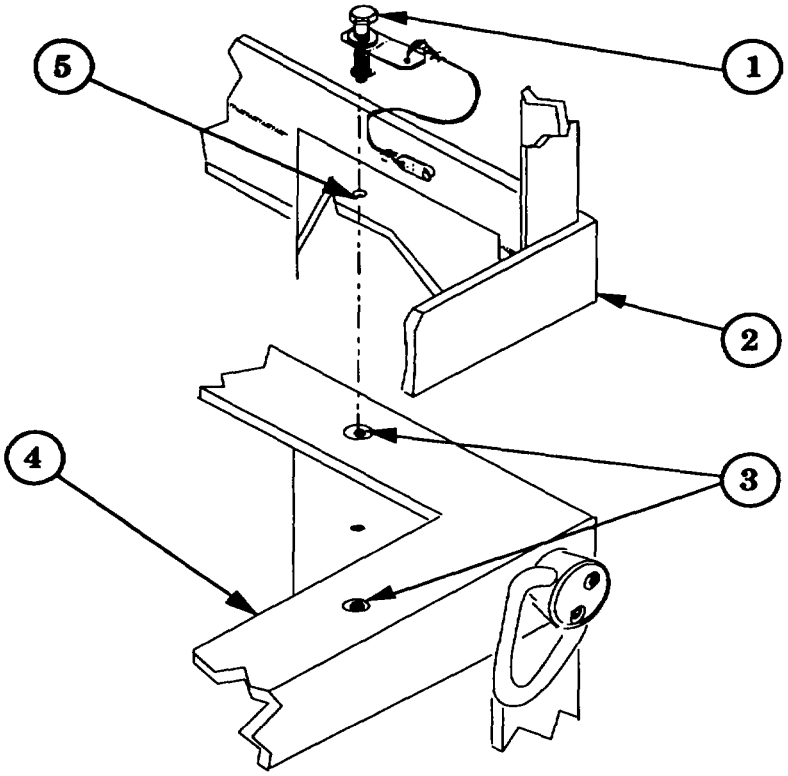
WARNING

Two personnel are required to guide pallet section during lifting procedure. Failure to control pallet assembly during lifting may result in personal injury or death.

f. Secure two 15-foot 1/2-inch ropes (4 and 7) to tie-down rings (3) at opposite ends of upper pallet section (5). Hold ropes tight to prevent upper pallet section from swinging when lifted and to guide upper pallet section when being placed on truck.

g. Lift upper pallet section (5) from its stowed location on the truck and move above lower pallet section (6).

4-30. POST TRANSPORT CONFIGURATION FOR TRUCK-MOUNTED OE-481/TRC - Continued

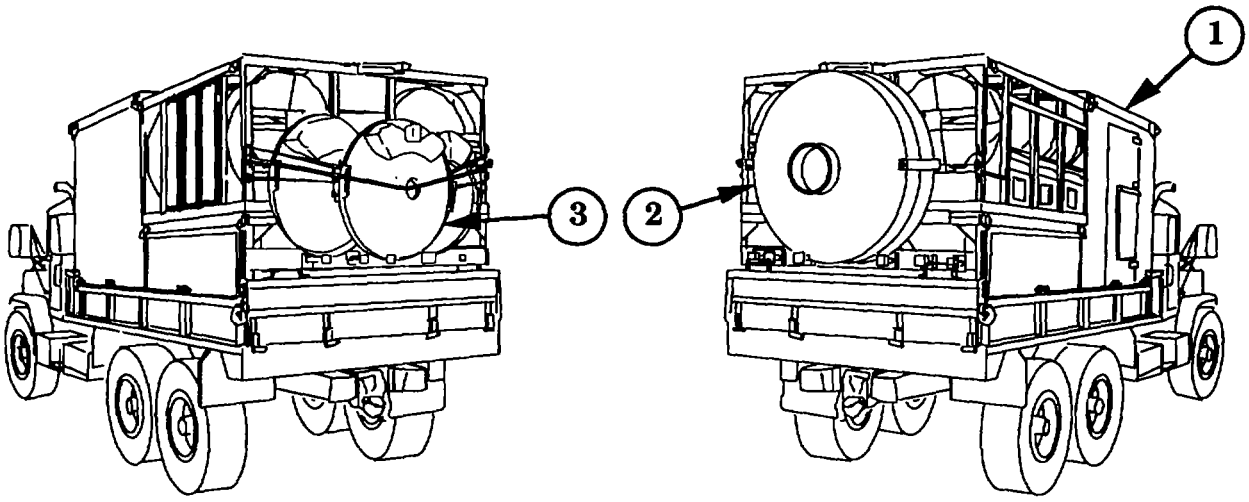


h. Align mounting holes (5) of upper pallet section (2) with mounting holes (3) of lower pallet section (4), and lower top pallet section (2) onto lower pallet section (4).

i. Secure upper pallet section (2) to lower pallet section (4) using 8-inch adjustable wrench to snugly tighten 8 captive bolts (1), two at each corner.

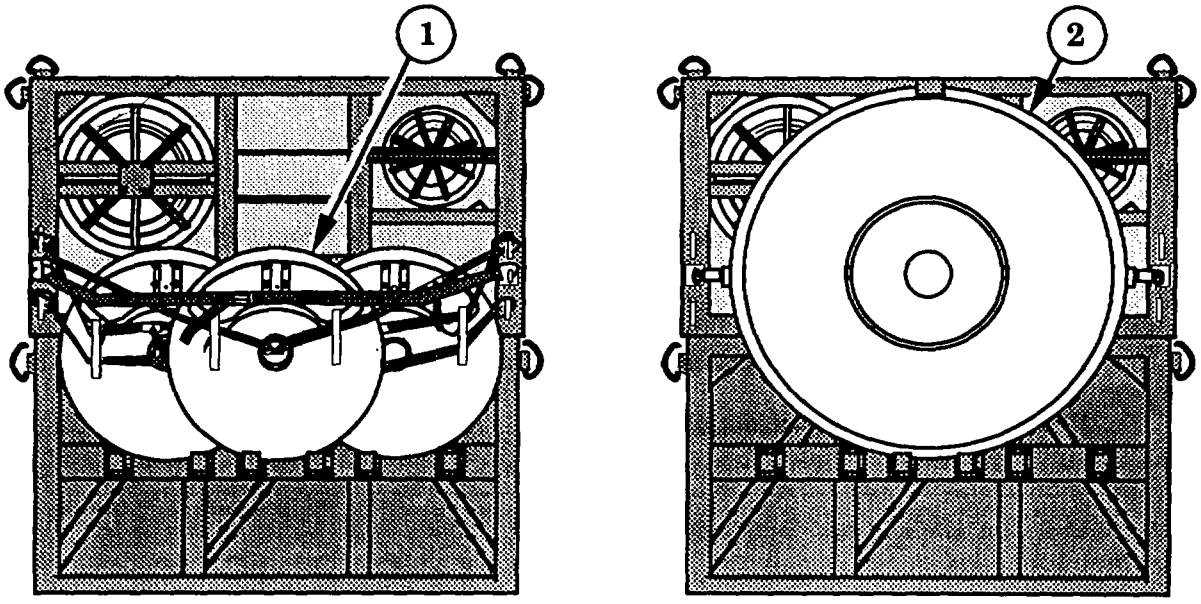
j. Remove two 15-foot ropes installed in step f.

4-30. POST TRANSPORT CONFIGURATION FOR TRUCK- MOUNTED OE-481/TRC - Continued



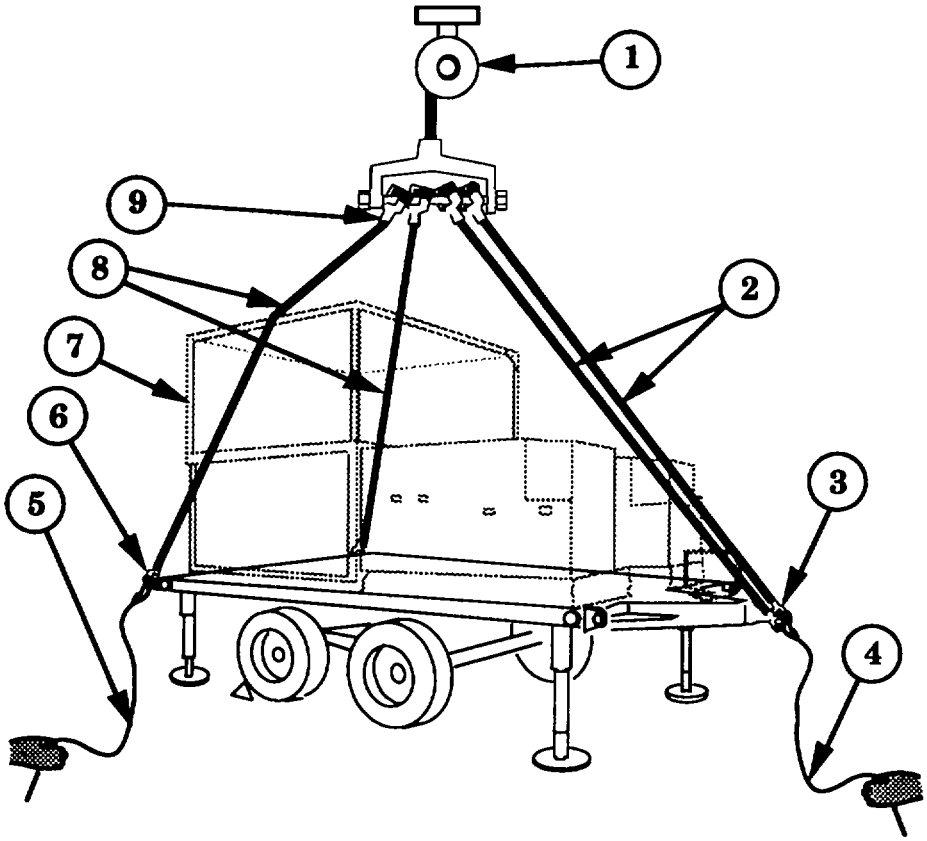
k. Install shelter (1) on truck and secure (refer to shelter technical manual).

l. Remove antenna reflectors (2 or 3) as applicable from shelter (1) internal brackets (refer to shelter technical manual).



m. Secure antenna reflectors (1 or 2) to rear of pallet assembly as applicable (refer to para 2-9, steps aa thru 11).

4-31. LIFTING TRAILER WITH OE 481/TRC MOUNTED EQUIPMENT



a Tie two 15-foot ropes (4 and 5) to opposite ends of trailer.

b. Connect four lifting cable shackles (9) to minimum 15,000 pound live-load rated crane (1).

c. Connect two lifting cables (8) using lifting cable shackles (6) to lifting loops on rear of trailer.

d. Connect two lifting cables (2) using lifting cable shackles (3) to lunette.

e. Place lifting cables at contact points with upper pallet section (7).

f. Use crane (1) to slowly take up tension on cables. Stop when cables are taut and trailer is still on ground.

g. Check that all shackles are secure.

4-31. LIFTING TRAILER WITH OE-481/TRC MOUNTED EQUIPMENT - Continued

WARNING

Two personnel are required to guide trailer during lifting procedure.
Do not enter area under trailer while trailer is off ground.
Failure to comply may result in personal injury or death.

h. Prevent trailer from swinging during lifting, using two 15-foot ropes (4 and 5).

i. Lift trailer using crane (1) to desired height and to new location.

j. Lower trailer to surface of new location using crane (1) and slowly relieve tension on cables.

k. Disconnect two lifting cables (2) by disconnecting lifting cable shackles (3) from lunette.

l. Disconnect two lifting cables (7) by disconnecting lifting cable shackles (6) from lifting loops on rear of trailer.

m. Disconnect four lifting cable shackles (8) from crane (1).

n. Remove two 15-foot ropes (4 and 5) from opposite ends of trailer.

CHAPTER 5

DIRECT SUPPORT MAINTENANCE

Section I. REPAIR PARTS, SPECIAL TOOLS, TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT (TMDE), AND SUPPORT EQUIPMENT

5-1. COMMON TOOLS AND EQUIPMENT

For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

5-2. SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

All tools, TMDE, and support equipment required to perform the maintenance procedures in this chapter are listed in the Maintenance Allocation Chart (MAC) in Appendix B of this manual. Removal and replacement of upper pallet section and lower pallet section requires use of a lifting device and sling having a capacity of 6000 pounds.

5-3. REPAIR PARTS

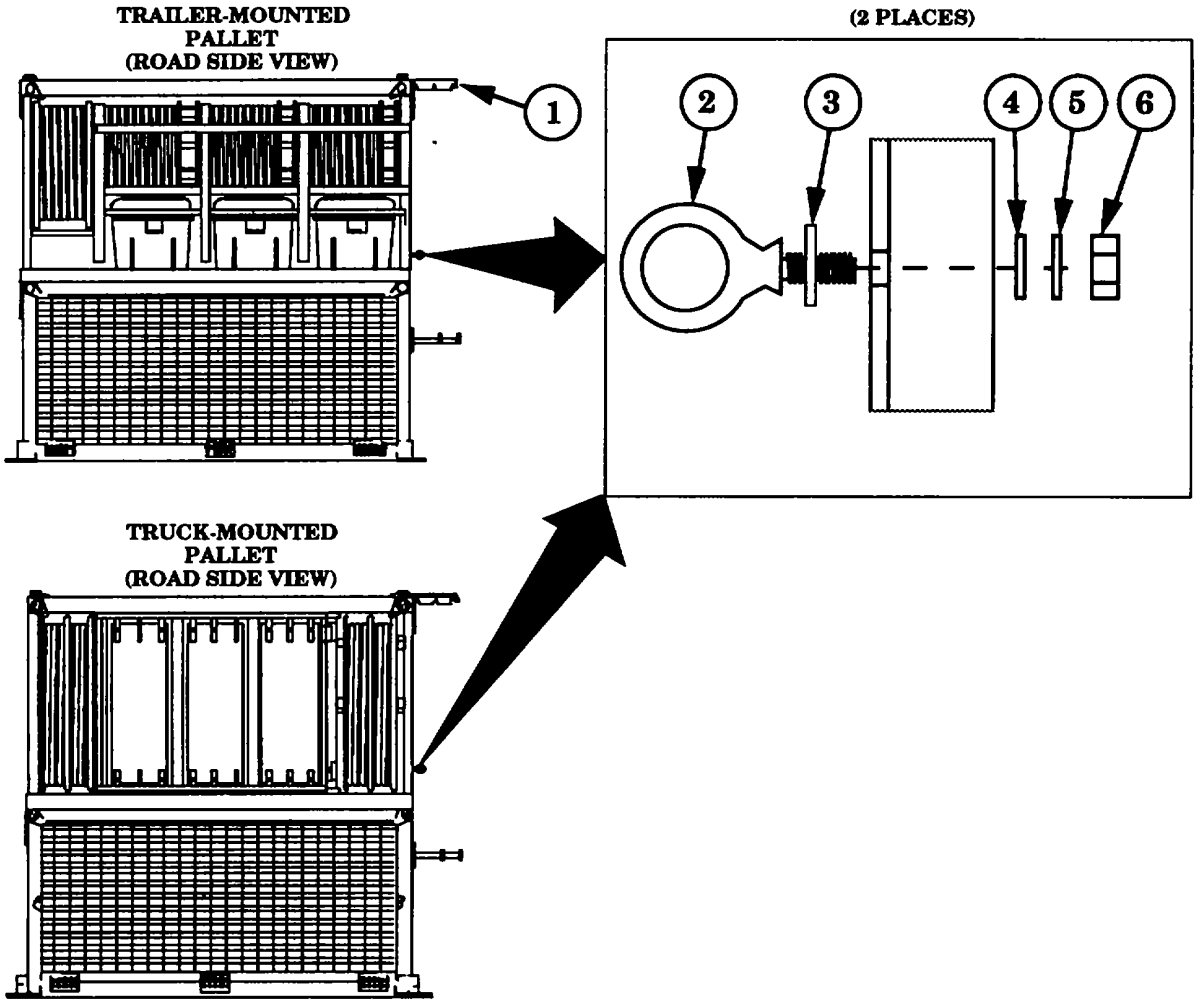
Repair parts are listed and illustrated in the repair parts and special tools list, TM 11-5985-392-23P.

Section II. MAINTENANCE PROCEDURES

5-4. REPAIR OF SWITCH BOX ASSEMBLY

Refer to Appendix F of this manual.

5-5. CONVERTING TRAILER-MOUNTED PALLET TO TRUCK-MOUNTED PALLET



NOTE

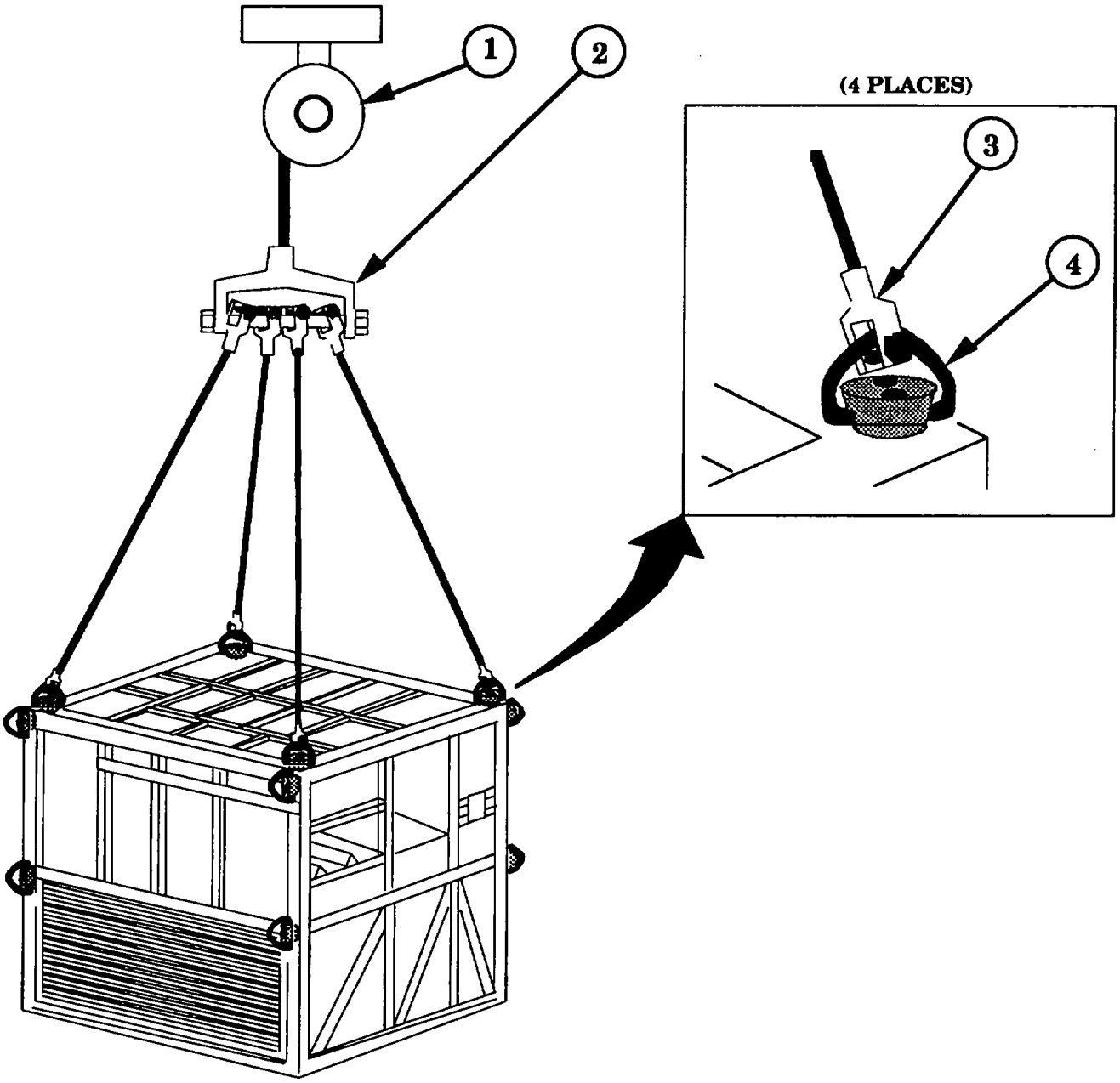
Configurations differ in that upper pallet section of truck-mounted configuration is rotated 180 degrees compared to trailer-mounted configuration.

a. For assemblages that use antenna AS-3047/GRC-103(V), remove reflector retaining spacer (1) (refer to para 4-21a) and store in pallet.

b. For assemblages that use antenna AS-1425/GRC, remove reflector retaining spacer (1) and install on opposite end of upper pallet section (refer to para 4-21).

c. Using 9/16-inch socket with ratchet wrench, remove nut (6), lock washer (5), and flat washers (3 and 4) from eyebolt (2) located on each side of pallet. Remove eyebolt (2) and reinstall on opposite end of pallet.

5.5 CONVERTING TRAILER-MOUNTED PALLET TO TRUCK-MOUNTED PALLET Continued

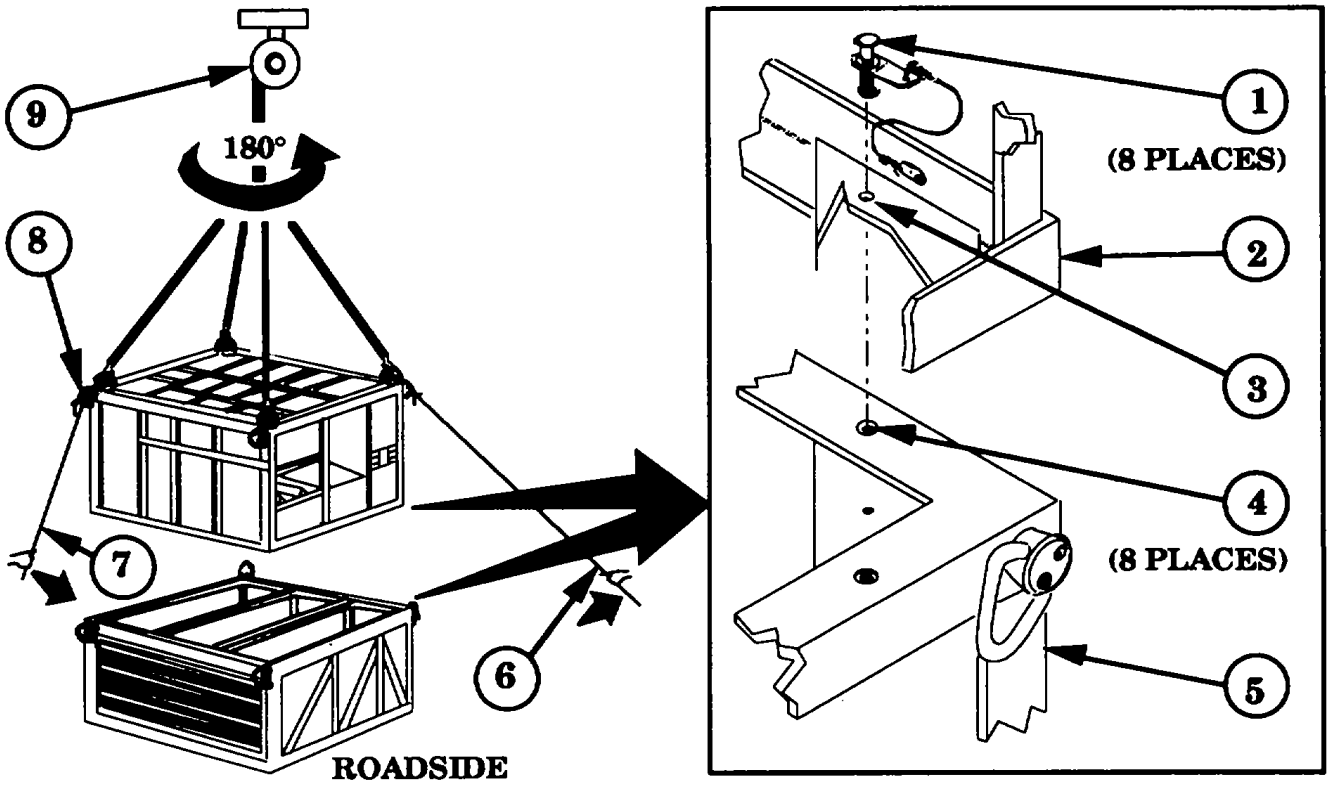


WARNING

Capacity of lifting device and four-point sling must be 6000 pounds or greater. Failure to use proper lifting device may result in personal injury or death.

d. Using 6000-pound lifting device (1) equipped with four-point sling (2), attach lifting sling shackles (3) to four hoist rings (4) on top of pallet.

5.5 CONVERTING TRAILER-MOUNTED PALLET TO TRUCK-MOUNTED PALLET Continued



e. Using 3/4-inch socket with ratchet wrench and 5-inch extension, remove captivated hex head bolts (1) (eight places, two at each corner) located in bottom four corners of upper pallet section (2).

WARNING

Two personnel are required to guide pallet section during lifting procedure. Failure to control upper pallet section during lifting may result in personal injury or death.

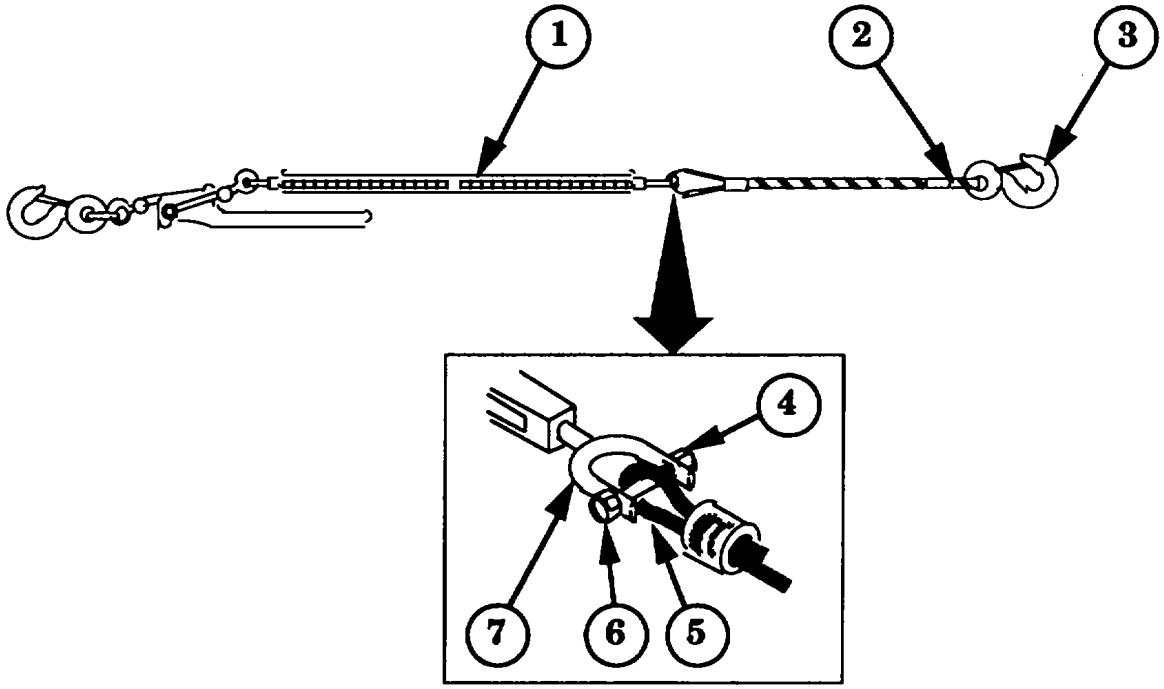
f. Secure two 15-foot, 1/2-inch ropes (6 and 7) to hoist rings (8) at opposite ends of upper pallet section. Hold ropes tight to prevent upper pallet section from swinging when lifted and to guide upper pallet section when aligning with lower pallet section. g. Lift upper pallet section using 6000 lbs lifting device (9) and using ropes (6 and 7) rotate upper pallet section 180 degrees.

h. Realign upper pallet section mounting holes (3) with threaded mounting holes (4) on lower pallet section (5).

i. Install 3/4-inch bolts (1) (eight places).

j. Using torque wrench with 3/4-inch socket and 5-inch extension, tighten 3/4-inch bolts to 78 foot-pounds.

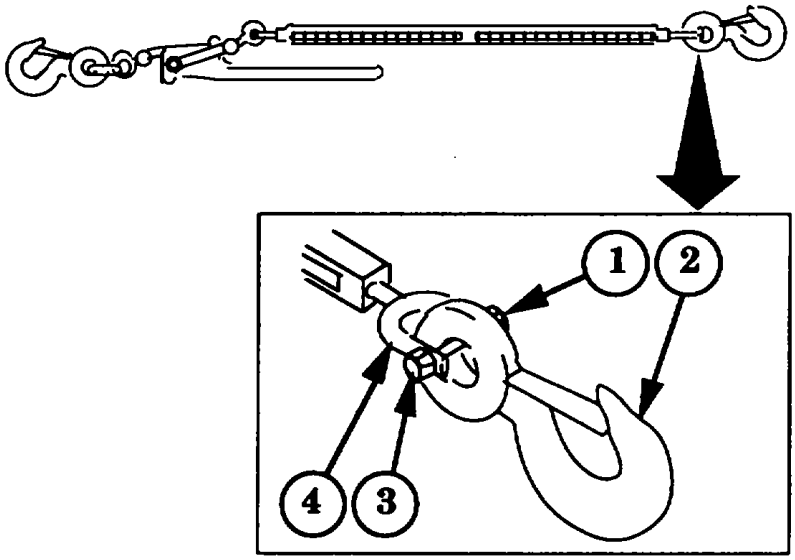
5.5 CONVERTING TRAILER-MOUNTED PALLET TO TRUCK-MOUNTED PALLET Continued



k. Disconnect lifting sling.

l. Use hacksaw to cut cable (2) on tie-down cable assembly (1) at snaphook (3).

m. Using 13/16-inch box end wrench and 10-inch adjustable wrench, remove nut (4) and bolt (6) securing cable loop (5) to turnbuckle (7).



n. Attach snaphook (2) to turnbuckle (4) using bolt (3) and nut (1).

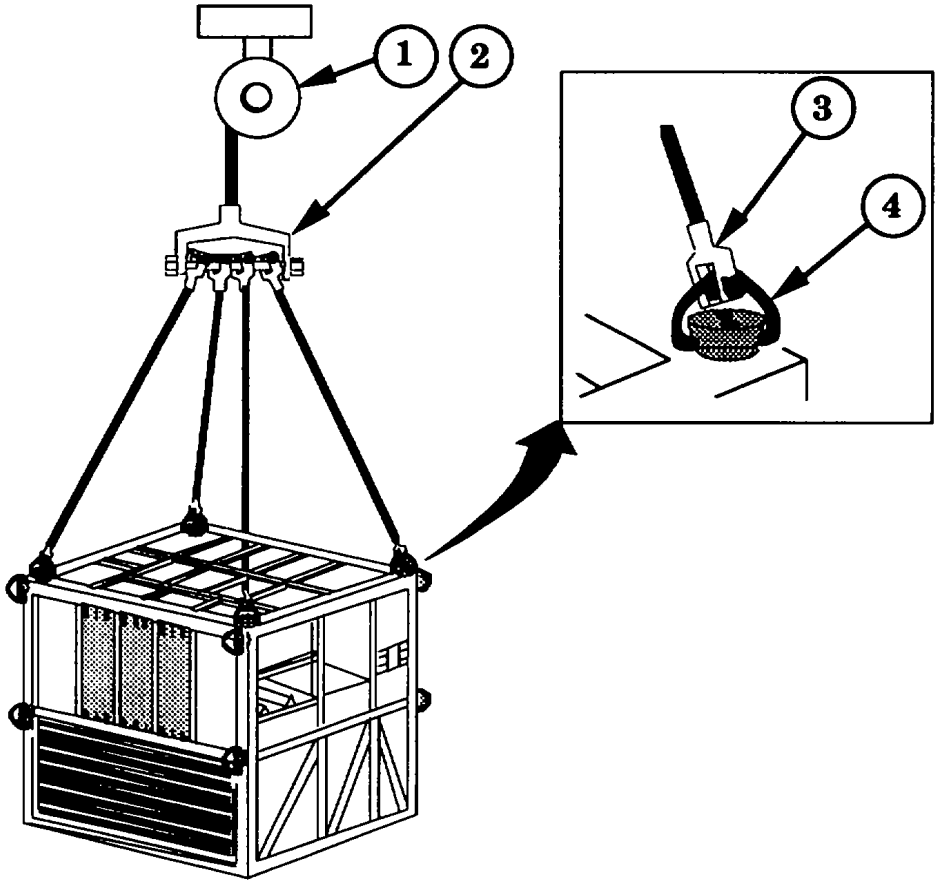
o. Using 13/16-inch box end wrench and 10-inch adjustable wrench, tighten bolt (3) and nut (1).

5-6. CONVERTING TRUCK-MOUNTED PALLET TO TRAILER-MOUNTED PALLET

a. Perform procedure for converting trailer-mounted pallet to truck-mounted pallet (refer to para 5-5, steps a thru j).

b. Secure pallet to trailer (refer to para 5-7, steps c thru i).

5-7. MOUNTING PALLET ON M1061A1 TRAILER

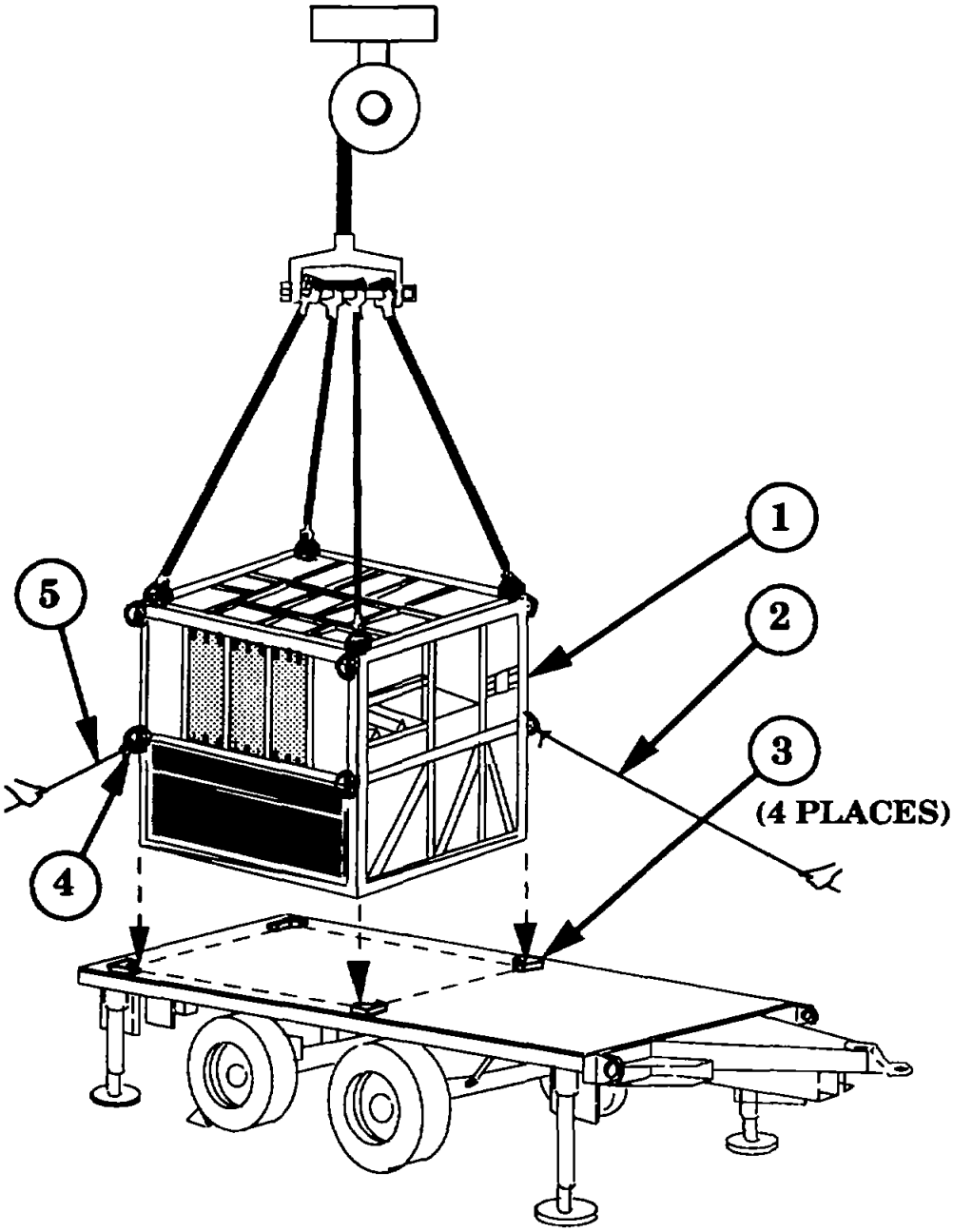


WARNING

Capacity of lifting device and four-point sling must be 6000 pounds or greater. Failure to use proper lifting device may result in personal injury or death.

a. Using 6000-pound lifting device (1) equipped with four-point sling (2), attach lifting sling shackles (3) to four hoist rings (4) on top of pallet.

5-7. MOUNTING PALLET ON M1061A1 TRAILER - Continued



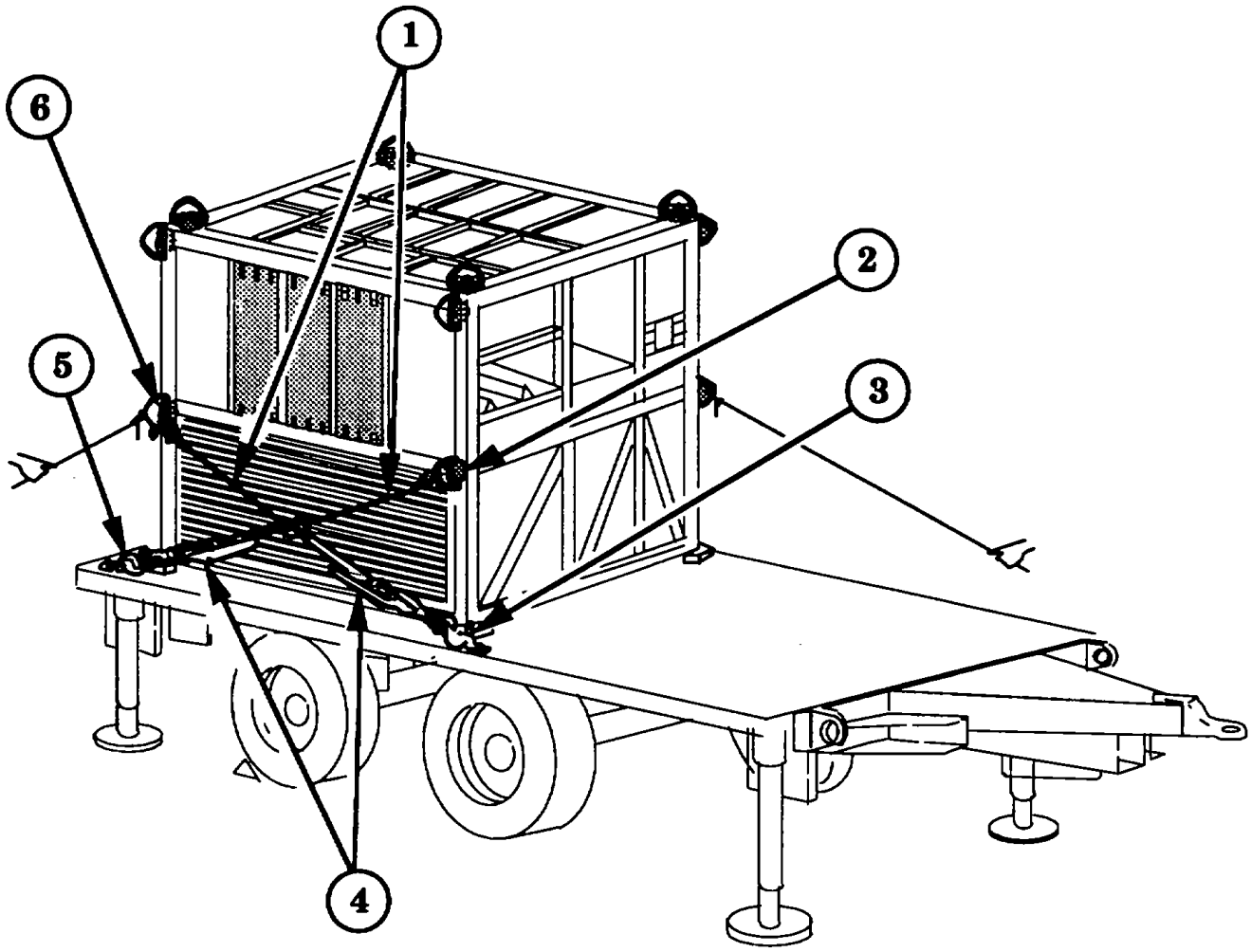
WARNING

Two personnel are required to guide pallet during lifting procedure. Failure to control pallet during lifting may result in personal injury or death.

b. Secure two 15-foot, 1/2-inch ropes (2 and 5) to hoist rings (4) at opposite ends of lower pallet section. Hold ropes tight to prevent pallet (1) from swinging when lifted and to guide pallet when being placed on trailer.

c. Lift pallet (1) and locate pallet within retaining brackets (3) on trailer.

5-7. MOUNTING PALLET ON M1061A1 TRAILER - Continued



d. Attach tie-down cable assemblies (1) to hoist rings (2 and 6) located at top of lower pallet section.

e. Criss-cross tie-down cable assemblies.

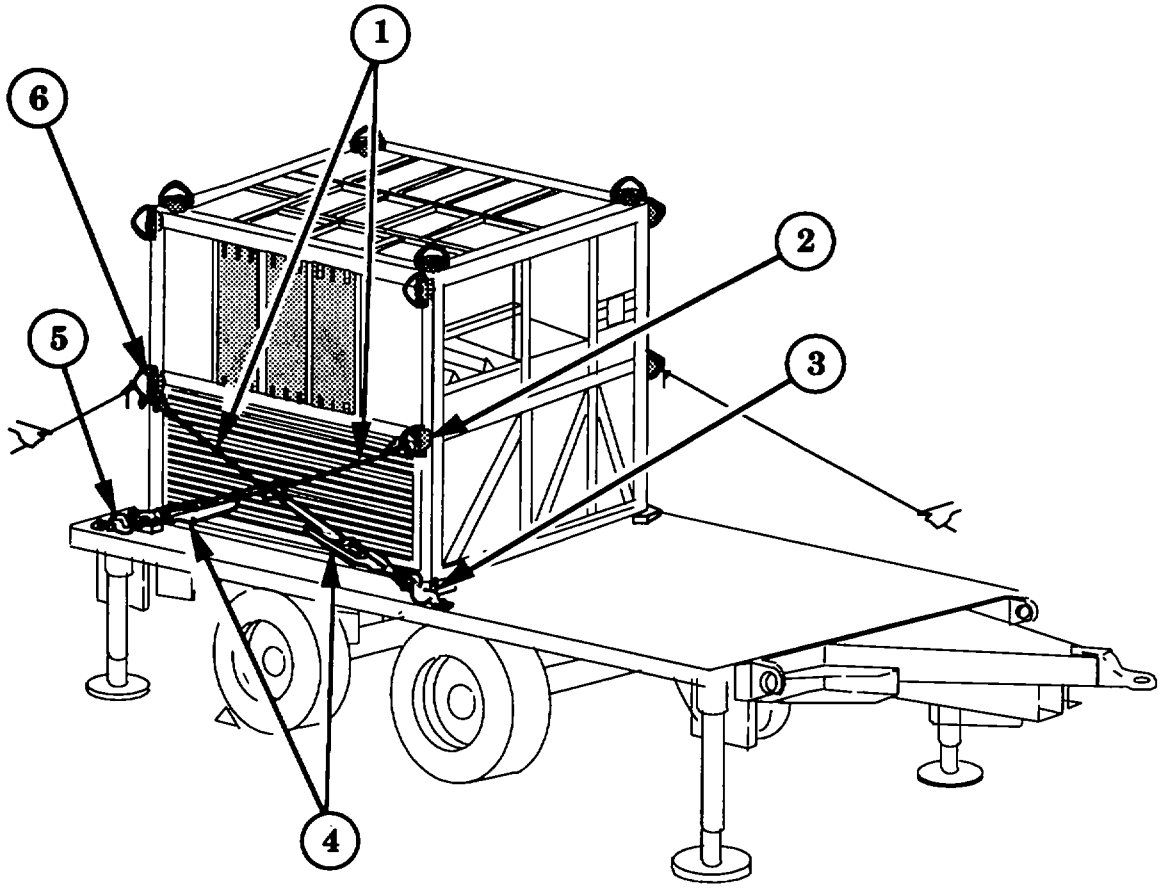
f. Attach lower end of tie-down cable assemblies to tie-down eyebolts (3 and 5) on bed of trailer.

g. Adjust tie-down cable tension using turnbuckles and load binders (4) to ensure transport pallet is secured to trailer and will not shift during transport.

h. Repeat steps d thru g for other side of pallet.

i. Remove two 15-foot guide ropes put on in step b.

5-8 REMOVING PALLET FROM M1061A1 TRAILER



a. Release load binders (4).

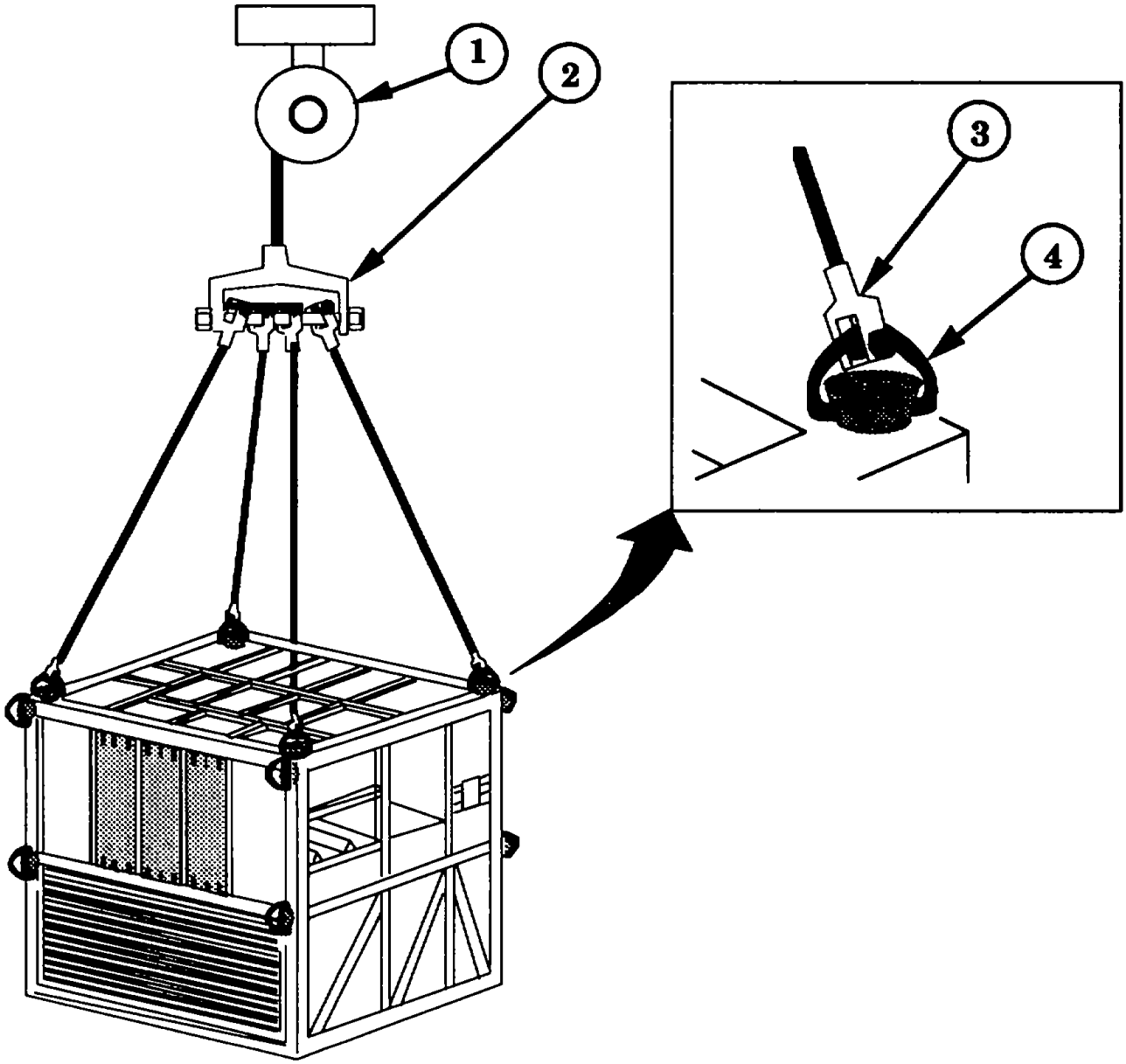
b. Disconnect tie-down assemblies (1) from hoist rings (2 and 6) located at top of lower pallet section.

c. Disconnect lower end of tie-down cable assemblies from tie-down eyebolts (3 and 5) on bed of trailer.

d. Repeat steps a thru c for other side of pallet.

e. Store tie-down cable assemblies in pallet.

5-8. REMOVING PALLET FROM M1061A1 TRAILER - Continued

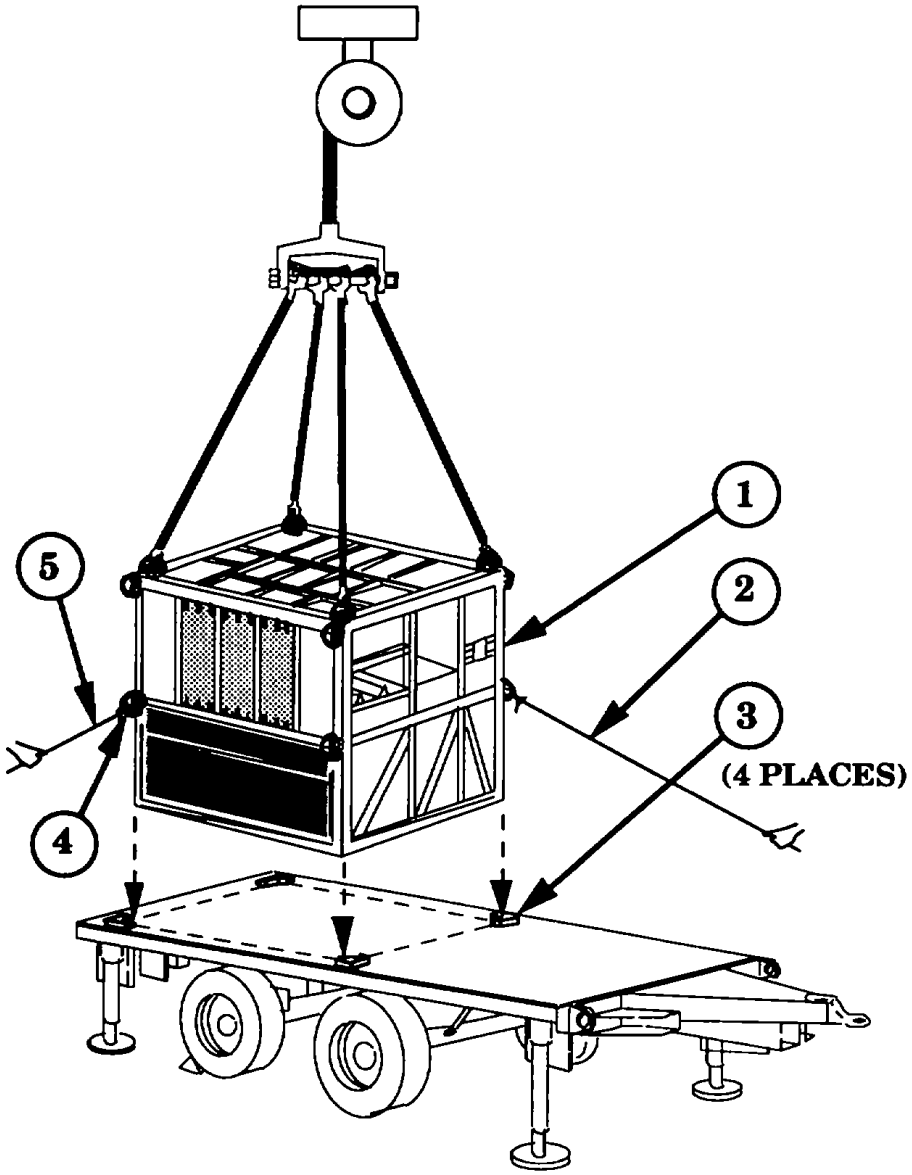


WARNING

Capacity of lifting device and four-point sling must be 6000 pounds or greater. Failure to use proper lifting device may result in personal injury or death.

f. Using 6000-pound lifting device (1) equipped with four-point sling (2), attach lifting sling shackles (3) to four hoist rings (4) on top of pallet.

5-8. REMOVING PALLET FROM M1061A1 TRAILER - Continued



g. Secure two 15-foot, 1/2-inch ropes (2 and 5) to hoist rings (4) at opposite ends of lower pallet section. Hold ropes tight to prevent pallet (1) from swinging when lifted and to guide pallet.

WARNING

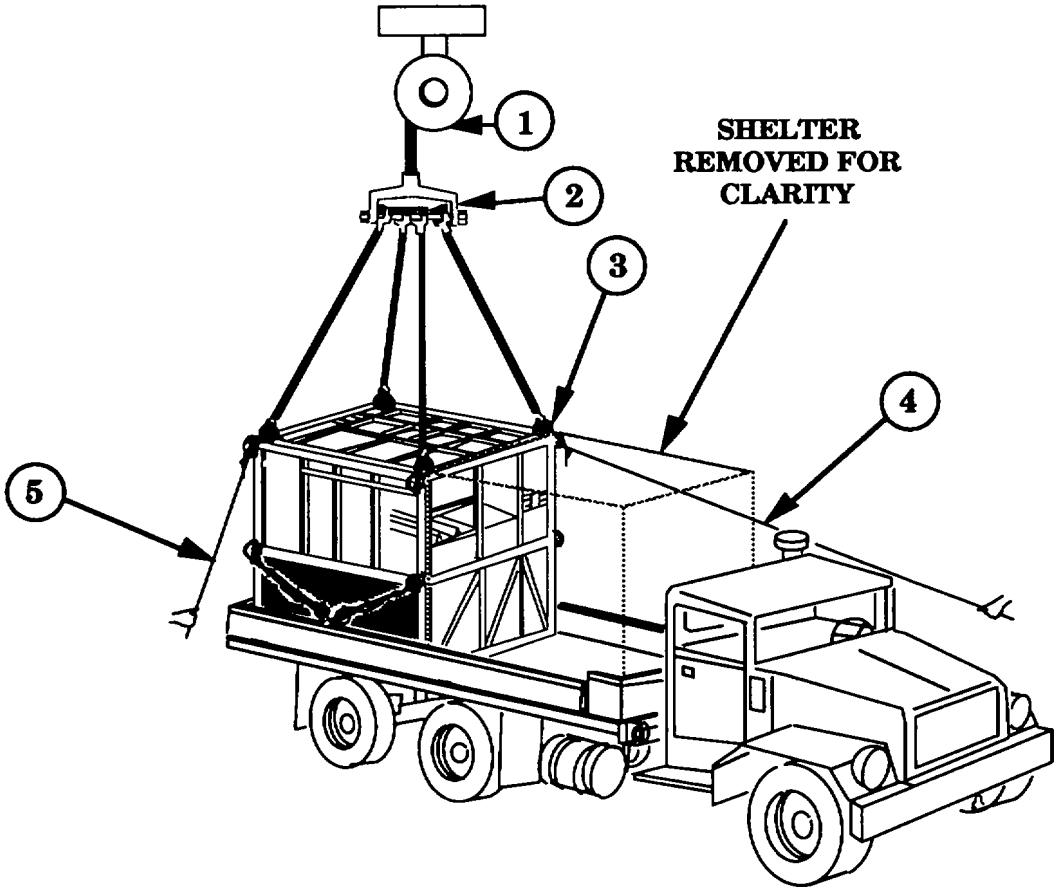
Two personnel are required to guide pallet during lifting procedure. Failure to control pallet during lifting may result in personal injury or death.

h. Lift pallet (1) from retaining brackets (3) on trailer and set on ground.

i. Remove two 15-foot, 1/2-inch ropes (2 and 5).

j. Remove lifting sling shackles attached in step f.

5-9. MOUNTING PALLET ON M923 TRUCK



WARNING

Capacity of lifting device and four-point sling must be 6000 pounds or greater. Failure to use proper lifting device may result in personal injury or death.

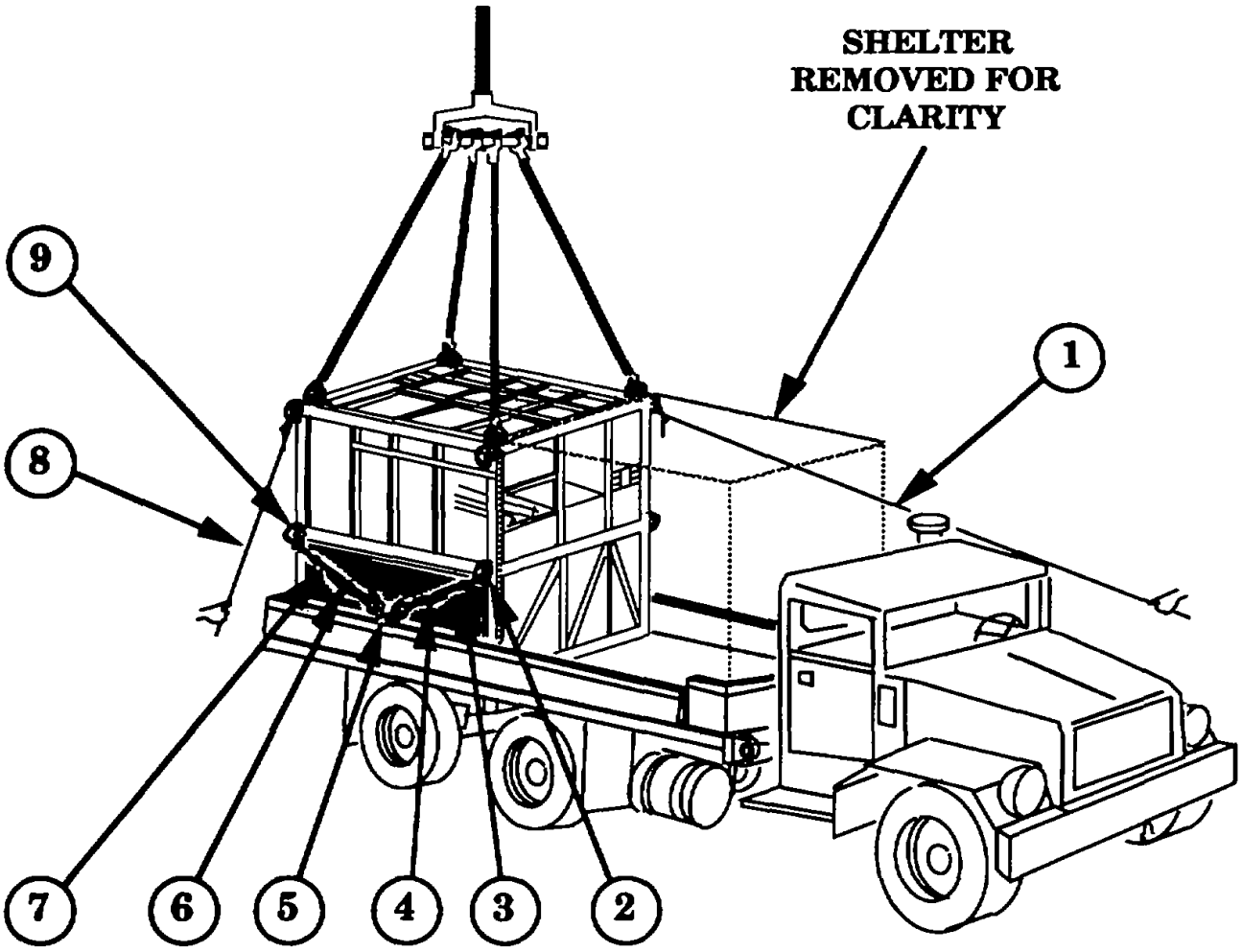
a. Using 6000-pound lifting device (1) equipped with four-point sling (2), attach lifting sling shackles to four hoist rings (3) on top of pallet.

WARNING

Two personnel are required to guide pallet during lifting procedure. Failure to control pallet during lifting may result in personal injury or death.

b. Secure two 15-foot, 1/2-inch ropes (4 and 5) to hoist rings at opposite ends of upper pallet section. Hold ropes tight to prevent pallet from swinging when lifted and to guide pallet onto truck.

5.9 MOUNTING PALLET ON M923 TRUCK - Continued



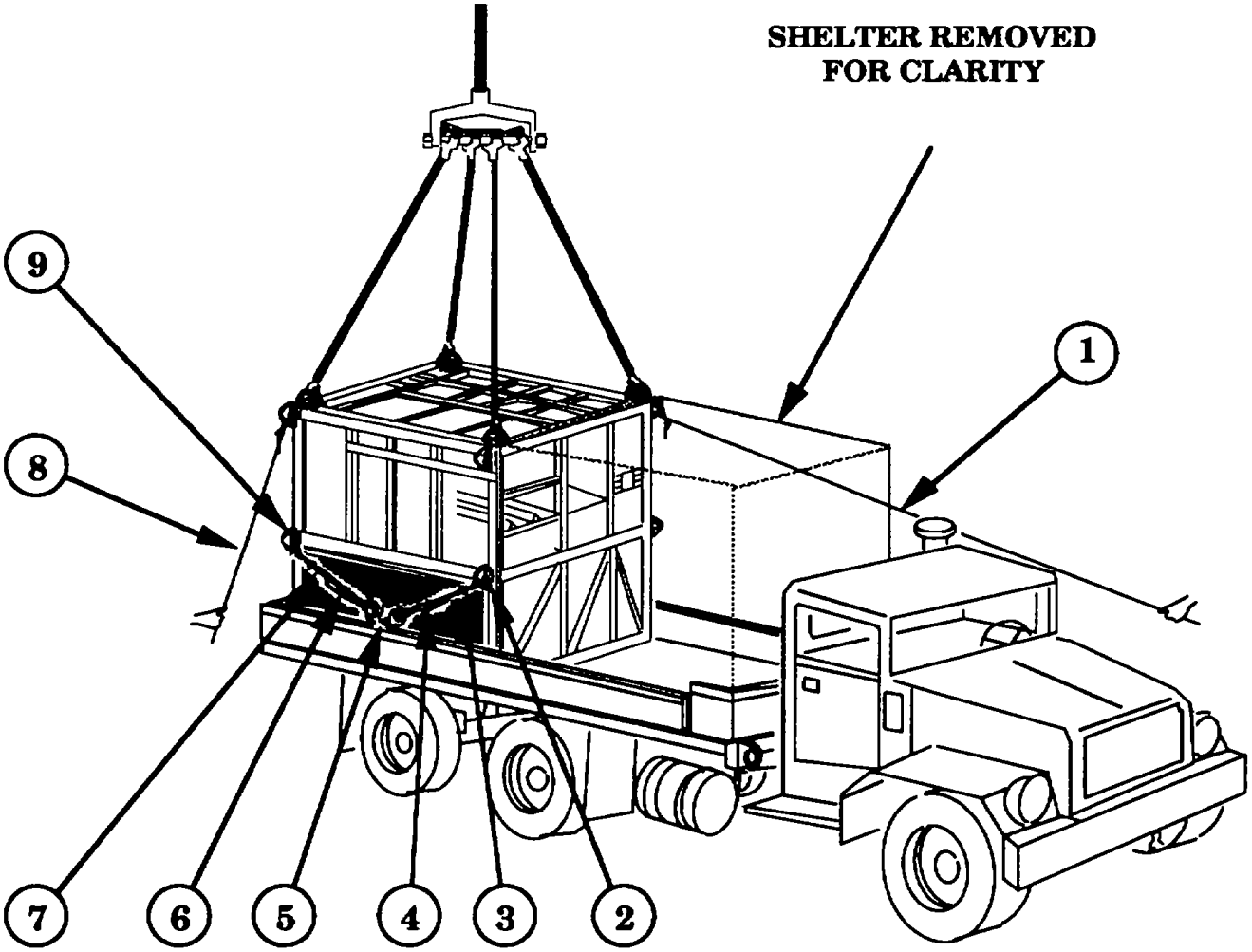
c. Lift pallet and locate directly over bed of transport truck. Lower pallet into confines of truck bed. Make sure rear of transport pallet is located firmly against tailgate of transport truck to maximize clearance between pallet and shelter.

d. Attach truck tie-down cable assemblies (3 and 7) (two each side) to hoist rings (2 and 9) located at top of lower pallet section. Attach lower end of tie-down assemblies to dual eyebolt assembly (5) mounted on side rail of truck, approximately at center of pallet. Tie-down cables will form a "V' when secured.

e. Adjust tie-down cable tension using turnbuckles and load binders (4 and 6) to ensure pallet is secured to truck and will not shift during transport.

f. Remove two 15-foot guide ropes (1 and 8).

5-10. REMOVING PALLET FROM M923 TRUCK

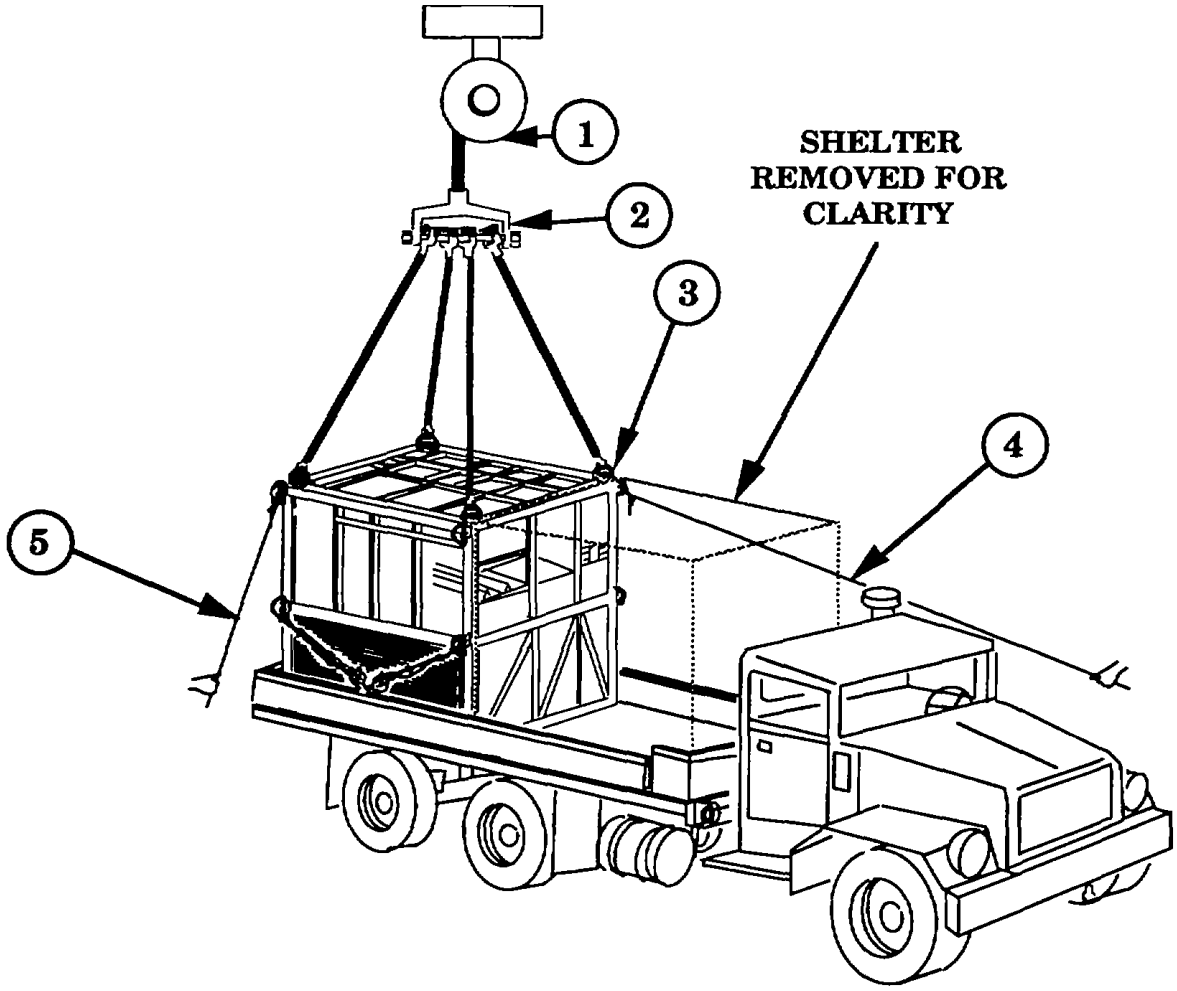


a. Release load binders (4 and 6).

b. Disconnect truck tie-down cable assemblies (3 and 7) (two each side) from hoist rings (2 and 9) located at top of lower pallet section. Disconnect lower end of tie-down assemblies from dual eyebolt assembly (5).

c. Secure two 15-foot, 1/2-inch guide ropes (1 and 8) to hoist rings at opposite ends of upper pallet section.

5-10. REMOVING PALLET ON M923 TRUCK - Continued



WARNING

Capacity of lifting device and four-point sling must be 6000 pounds or greater. Failure to use proper lifting device may result in personal injury or death.

d. Using 6000-pound lifting device (1) equipped with four-point sling (2), attach lifting sling shackles to four hoist rings (3) on top of pallet.

WARNING

Two personnel are required to guide pallet during lifting procedure. Failure to control pallet during lifting may result in personal injury or death.

e. Hold ropes (4 and 5) tight to prevent pallet from swinging when lifted and to guide pallet.

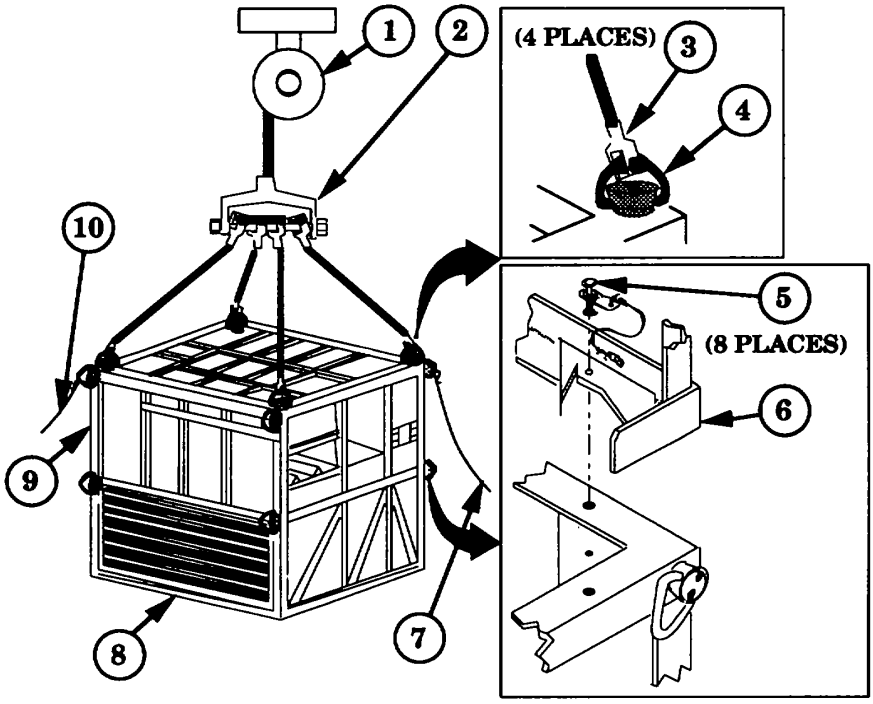
f. Lift pallet from truck and set on ground.

g. Remove two 15-foot, 1/2-inch ropes (4 and 5).

h. Remove lifting sling shackles attached in step d.

5-11. UPPER PALLET SECTION REMOVAL AND REPLACEMENT

a. Removal



WARNING

Capacity of lifting device and four-point sling must be 6000 pounds or greater. Failure to use proper lifting device may result in personal injury or death.

(1) Using 6000-pound lifting device (1) equipped with four-point sling (2), attach lifting sling shackles (3) to four hoist rings (4) on top of pallet.

(2) Using 3/4-inch socket with ratchet wrench and 5-inch extension, remove captivated 3/4-inch bolts (5) (eight places, two at each corner) located in bottom four corners of upper pallet section (6).

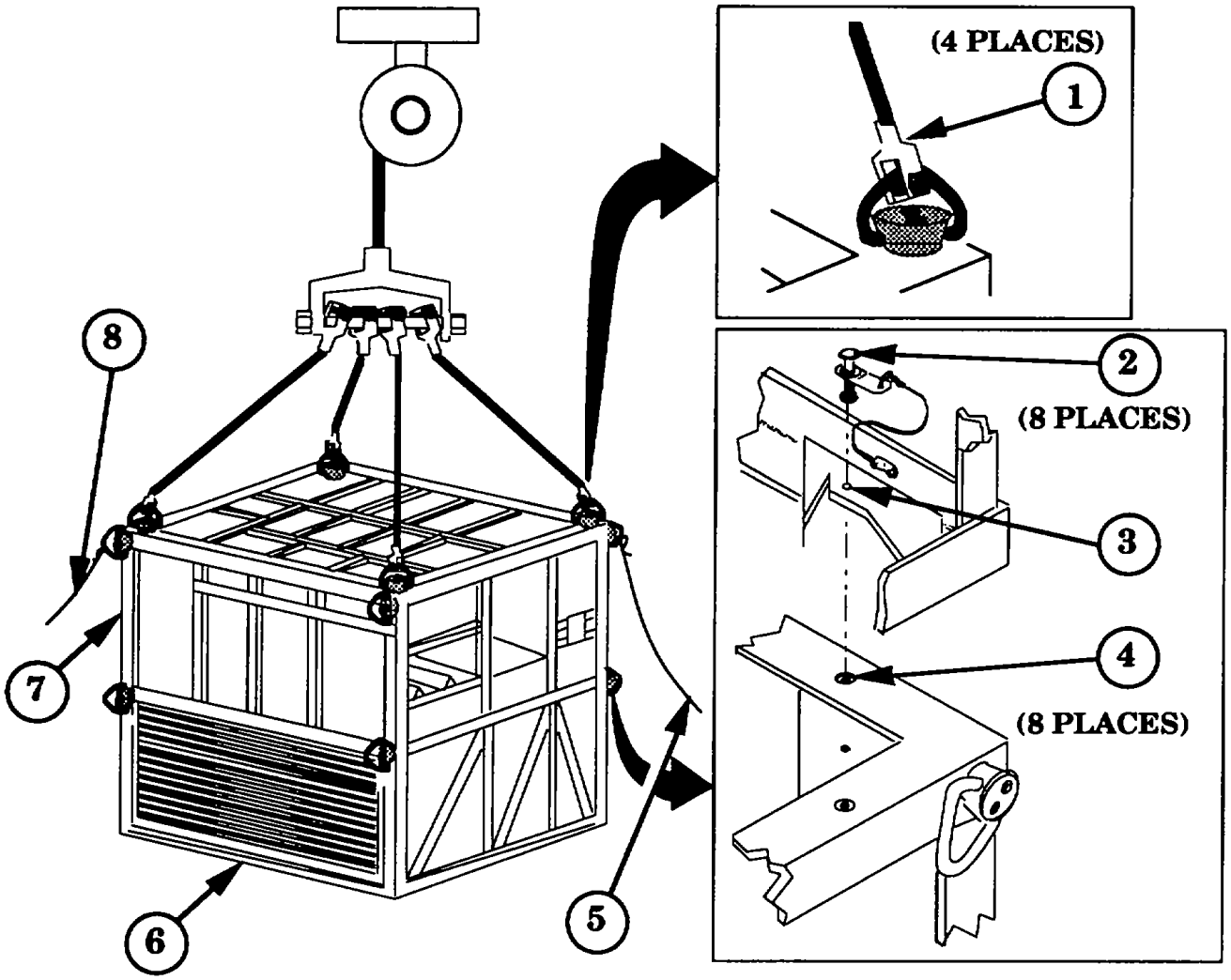
WARNING

Two personnel are required to guide pallet during lifting procedure. Failure to control pallet as it is lifted may result in personal injury or death.

(3) Secure two 15-foot, ½ inch ropes (7 and 10) to hoist rings at opposite ends of upper pallet section. Hold ropes tight to prevent upper pallet section (9) from swinging when lifted from lower pallet section (8) and to guide upper pallet section when being placed on ground.

5-11. UPPER PALLET SECTION REMOVAL AND REPLACEMENT - Continued

a. Removal - Continued



(4) Lift upper pallet section (7) and set on ground. Disconnect lifting sling shackles (1) and guide ropes (5 and 8) from upper pallet section (7).

b. Replacement

(1) Connect lifting sling and guide ropes to upper pallet section (refer to para 5-lla, step 1).

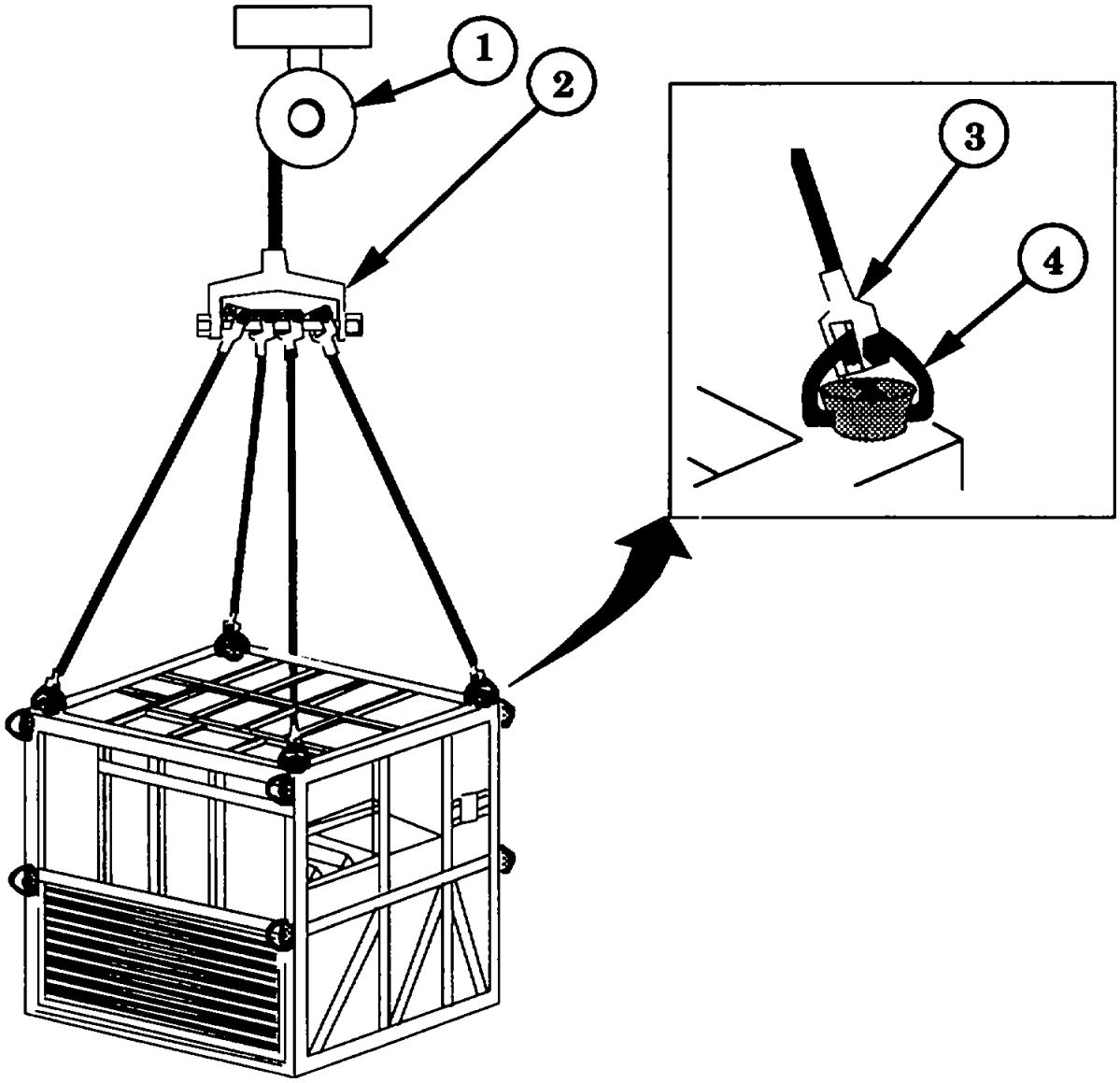
(2) Lift upper pallet section (7) and move above lower pallet section (6). Align upper pallet section mounting holes (3) with threaded mounting holes (4) in lower pallet section (6).

(3) Install 3/4-inch bolts (2) (eight places). Using torque wrench with 3/4-inch socket and 5-inch extension, tighten 3/4-inch bolts to 78 foot-pounds.

(4) Disconnect lifting sling shackles (1) and guide ropes (5 and 8).

5-12. LOWER PALLET SECTION REMOVAL AND REPLACEMENT

a. Removal



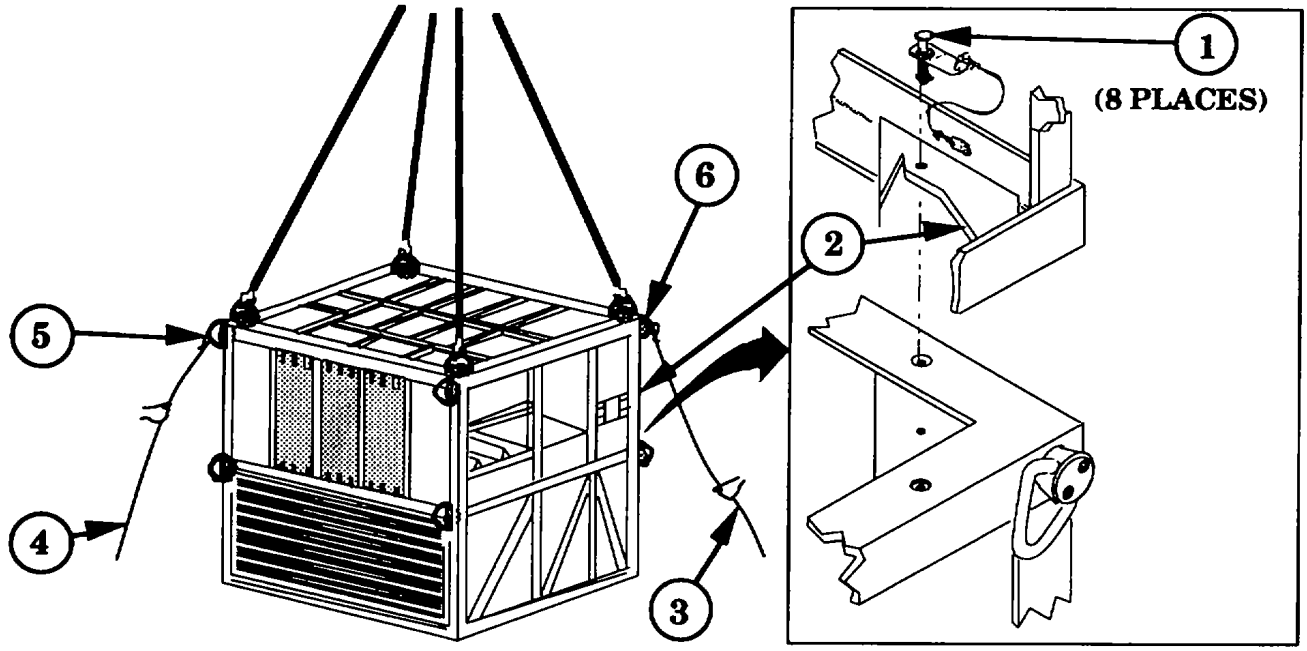
WARNING

Capacity of lifting device and four-point sling must be 6000 pounds or greater. Failure to use proper lifting device may result in personal injury or death.

(1) Using 6000-pound lifting device (1) equipped with four-point sling (2), attach lifting sling shackles (3) to four hoist rings (4) on top of pallet.

5-12. LOWER PALLET SECTION REMOVAL AND REPLACEMENT - Continued

a. Removal - Continued



(2) Using 3/4-inch socket with ratchet wrench and 5-inch extension, remove captivated 3/4-inch bolts (1) (eight places, two at each corner) located in bottom four corners of upper pallet section (2).

WARNING

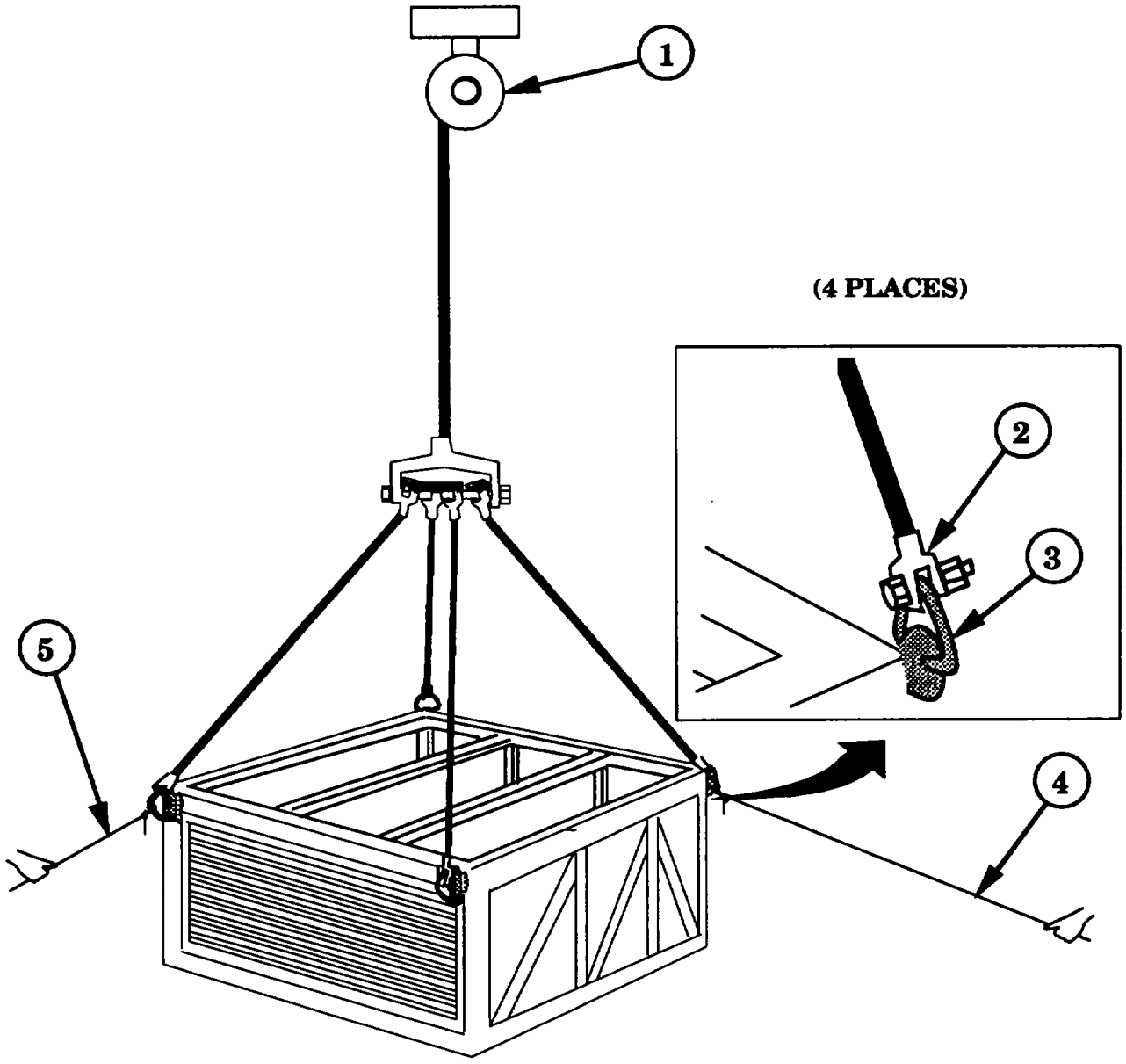
Two personnel are required to guide pallet during lifting procedure. Failure to control pallet as it is lifted may result in personal injury or death.

(3) Secure two 15-foot, 1/2-inch ropes (4 and 3) to hoist rings (5 and 6) at opposite ends of upper pallet section. Hold ropes tight to prevent upper pallet section from swinging when lifted and to guide upper pallet section when being placed on ground.

(4) Lift upper pallet section (2) and place on ground. Disconnect lifting sling and guide ropes from upper pallet assembly.

5-12. LOWER PALLET SECTION REMOVAL AND REPLACEMENT - Continued

a. Removal - Continued



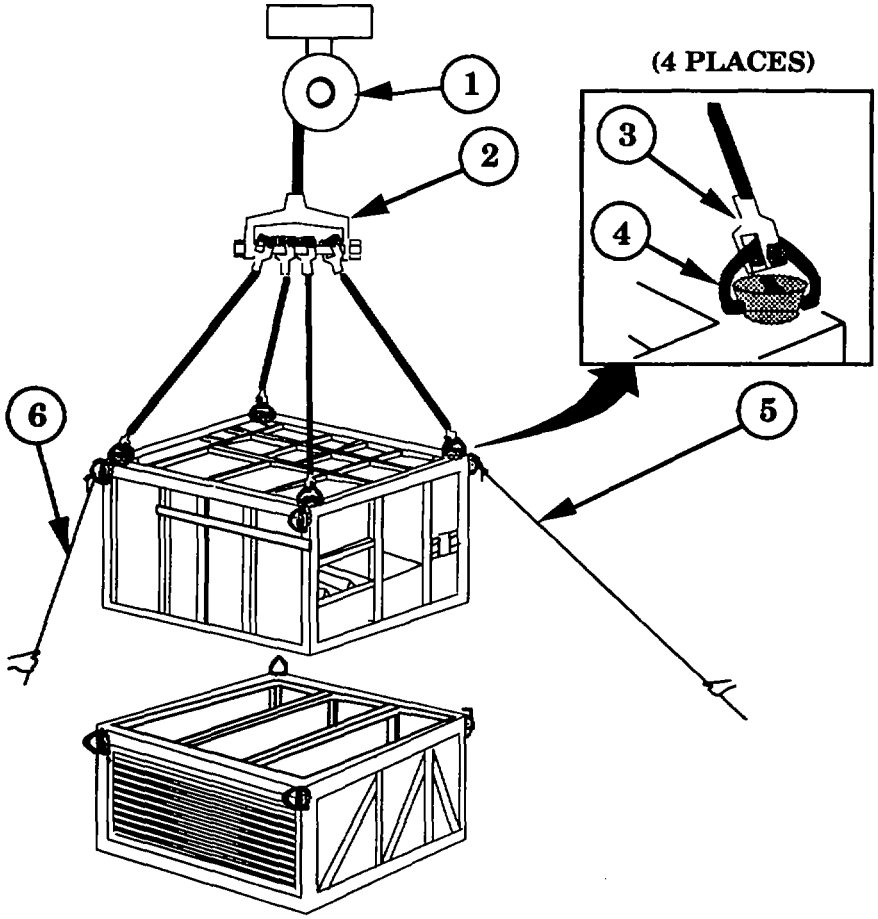
(5) Move lifting device (1) over lower pallet section and attach lifting sling shackles (2) to hoist rings (3) on each side of lower pallet section.

(6) Secure 15-foot, 1/2-inch ropes (4 and 5) to opposite ends of lower pallet section. Two personnel keep lower pallet section from swinging when lifted.

(7) Lift lower pallet section and place on ground. Disconnect lifting sling shackles (2) and guide ropes (4 and 5).

5-12. LOWER PALLET SECTION REMOVAL AND REPLACEMENT - Continued

b. Replacement



WARNING

Capacity of lifting device and four-point sling must be 6000 pounds or greater. Failure to use proper lifting device may result in personal injury or death.

(1) Using 6000-pound lifting device (1) equipped with four-point sling (2), attach lifting sling shackles (3) to four hoist rings (4) on top of upper pallet section.

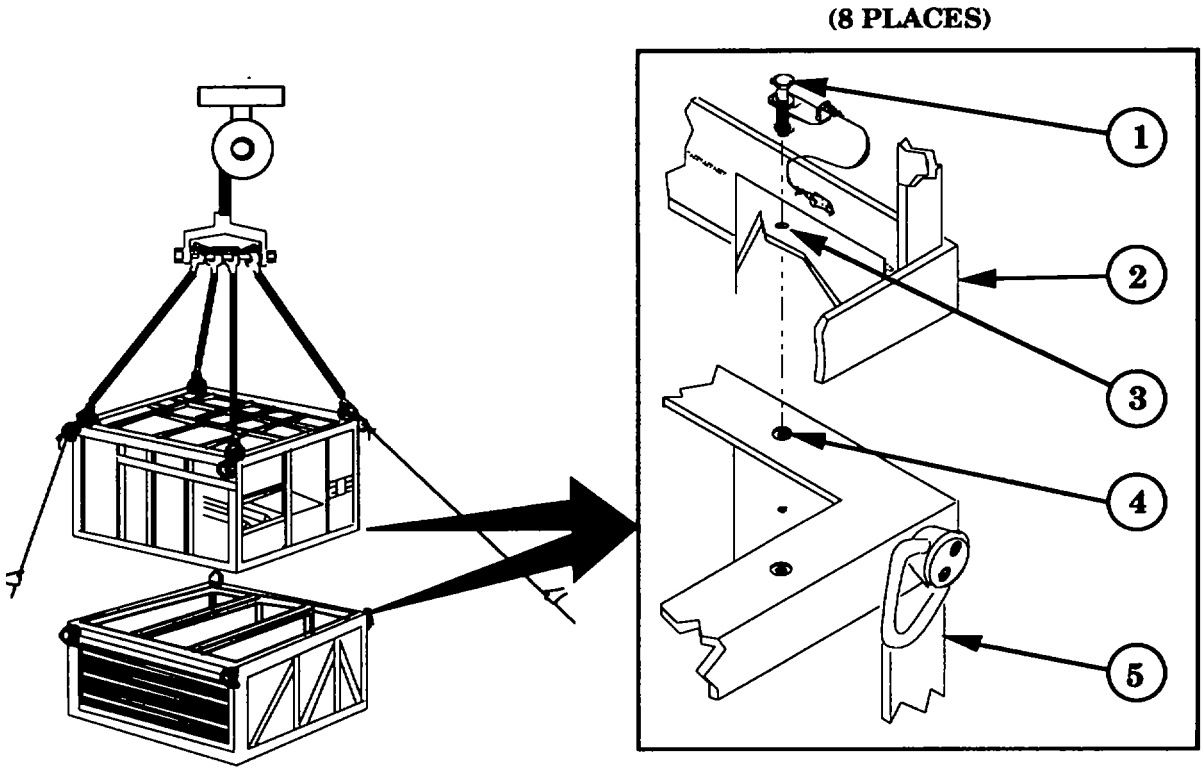
WARNING

Two personnel are required to guide pallet section during lift procedure. Failure to control upper pallet section when lifting may result in personal injury.

(2) Secure 15-foot, 1/2-inch rope (5 and 6) to opposite ends of upper pallet section. Keep upper pallet section from swinging when lifted, and guide upper pallet section onto lower pallet section.

5-12. LOWER PALLET SECTION REMOVAL AND REPLACEMENT- Continued

b. Replacement-Continued



(3) Lift upper pallet section and place on top of lower pallet section. Align mounting holes (3) in upper pallet section (2) with threaded mounting holes (4) in lower pallet section (5).

(4) Install 3/4-inch bolts (1) eight places.

(5) Using torque wrench with 3/4-inch socket and 5-inch extension, tighten 3/4-inch bolts (1) to 78 foot-pounds.

(6) Disconnect lifting sling and ropes. Install pallet on truck or trailer. (For trailer, refer to para 5-7. For truck, refer to para 5-9).

APPENDIX A

REFERENCES

A-1. SCOPE

This appendix lists forms and publications that are referenced in this manual.

A-2. PAMPHLETS

DA Pam 25-30	Consolidated Index of Army Publications and Blank Forms
DA Pam 738-750	The Army Maintenance Management System (TAMMS)
A-3 FORMS	
DA Form 2404	Equipment Inspection and Maintenance Worksheet
DA Form 2028	Recommended Changes to Publications and Blank Forms
DA Form 2028-2	Recommended Changes to Equipment Technical Publications
SF 361	Transportation Discrepancy Report (TDR)
SF 364	Report of Discrepancy (ROD)
SF 368	Product Quality Deficiency Report

A-4. SUPPLY BULLETINS

SB 11-573	Painting and Preservation Supplies Available for Field Use for Electronics Command Equipment
SB 708-41142	Federal Supply Code for Manufacturers; United States and Canada - Name to Code and Code to Name (GSA-FSS H4-1/H4-2)

A-5. TECHNICAL BULILETINS

TB 11-5985-392-25	Warranty Program for Antenna Support Group OE-481/rRC
TB 43-0118	Field Instructions for Painting and Preserving Communications-Electronics Equipment
TB 43-0125	Installation of Communications-Electronic Equipment: Hook-up of Electrical Cables to Mobile Generator Sets on Fielded Equipment to Meet Electrical Safety Standards
TB 43-0129	Safety Measures to be Observed When Installing and Using Whip Antennas, Field-Type Masts, Towers, Antennas and Metal Poles that are used with Communication, Radar, and Direction Finder Equipment

A5. TECHNICAL BUILLEINS - Continued

TB 385-4	Safety Precautions for Maintenance of Electrical/Electronic Equipment

A-6. TECHNICAL MANUALS

TM 43-0139	Painting Instructions for Field Use
TM 740-90-1	Administrative Storage of Equipment
TM 750-244-2	Procedures for Destructions of Electronic Materiel to Prevent Enemy Use (Electronics Command)
TM 11-5985392-10-HR	Hand Receipt for Antenna Support Group OE-481PTRC
TM 11-5985-392-23P	Unit and Direct Support Maintenance Repair Parts and Special Tools List: Antenna Support Group OE-481/TRC
TM 11-5985-394-13	Operator's, Unit, and Direct Support Maintenance Manual: Mast AB-1373/TRC
TM 9-2330-376-14&P	Operator, Unit, Intermediate Direct Support and General Support Maintenance (Including Repair Parts and Special Tools List) for Trailer, Flatbed; 5-ton, 4-wheel, M1061A1
TM 5-6115-585-12	Operator and Organizational Maintenance Manual: Generator Set, Diesel Engine Driven, Tactical Skid Mounted 10 kW, 1 phase - 2 wire, 1 phase - 3 wire, 3 phase - 4 wire, 120, 120/240 and 120/208 volts. Model MEP-003A.

A-7. FIELD MANUALS

FM 21-11	First Aid for Soldiers

A-8. MISCELLANEOUS PUBLICATIONS

CTA 50-970	Expendable Items (Except: Medical, Class V, Repair Parts and Heraldic Items)
SC 5180-91-CL-R07	Sets, Kits, and Outfits Components List: Tool Kit, Electronic Equipment TK-105/G (NSN 5180-00-610-8177)
SC 5180-91-CL-R13	Sets, Kits, and Outfits Components List: Tool Kit, Electronic Equipment TK-101/G (NSN 5180-00-064-5178)
SC 5180-91-CL-S21	Sets, Kits, and Outfits Components List: Tool Kit, Electronic Equipment TK-100/G (NSN 5180-00-605-0079)

APPENDIX B

MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

B-1. GENERAL

This appendix provides a summary of the maintenance operations for Antenna Support Group OE-481'TRC. It authorizes levels of maintenance for specific maintenance functions on repairable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.

B-2. MAINTENANCE FUNCTIONS

Maintenance functions will be limited to and defined as follows.

a. **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).

b. **Test**. To verify serviceability and to detect incipient failure by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. **Service**. Operations required periodically to keep an item in proper operating condition, i.e., to clean (decontaminate), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases.

d. **Adjust**. To maintain, within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to specified parameters.

e. **Align**. To adjust specified variable elements of an item to bring about optimum or desired performance.

f. **Calibrate**. To determine and cause corrections to be made, or to be adjusted on instruments or test, measuring and diagnostic equipments 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.

g. **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.

h. **Replace**. To remove an unserviceable item and install a serviceable counterpart in its place.

B-2. MAINTENANCE FUNCTIONS - Continued

i. Repair. The application of maintenance services (inspect, test, service, adjust, align, calibrate, replace) or other maintenance actions (welding, grinding, riveting, straightening, facing, remachining, or resurfacing) to 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.

j. Overhaul. That maintenance effort (service/action) necessary to restore an item to a completely serviceable/operational condition as prescribed by maintenance standards (i.e., DMWR) 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.

k. 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 material maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours, miles, etc.) considered in classifying Army equipment/components.

B-3. EXPLANATION OF COLUMNS IN MAC, Section II

a. Column (1) - Group Number. Column 1 lists functional group code numbers, the purpose of which is to identify components, assemblies, subassemblies, and modules within the next higher assembly.

b. Column (2) - Component/Assembly. Column 2 contains the names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

c. Column (3) - Maintenance Function. Column 3 lists the functions to be performed on the item listed in column 2.

d. Column (4) - Maintenance Level. Column 4 specifies, by the listing of a worktime figure in the appropriate subcolumn(s), the lowest level of maintenance authorized to perform the function listed in column 3. This figure represents the active time required to perform that maintenance function at the indicated level of maintenance. If the number or complexity of tasks within the listed maintenance function vary at different maintenance levels, appropriate worktime figures will be shown for each level. The worktime figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition and typical field operating conditions. This time includes preparation time, (including necessary disassembly/assembly time), troubleshooting time/fault location time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance function authorized in the maintenance allocation chart. The symbol designations for the various maintenance levels are as follows:

C - Operator/Crew (Unit Level Maintenance)
O - Organizational (Unit Level Maintenance)
F - Direct Support
H - General Support
D - Depot

B-3. EXPLANATION OF COLUMNS IN MAC, Section II - Continued

e. Column (5) - Tools and Equipment. Column 5 specifies by code, those common tool sets, (not individual tools) and special tools, TMDE, and support equipment required to perform the designated function.

f. Column (6) - Remarks. Column 6 identifies remarks defined in Section IV of the MAC.

B-4. EXPLANATION OF COLUMNS IN TOOL AND TEST EQUIPMENT REQUIREMENTS, Section III

a. Column 1, Reference Code. The tool and test equipment reference code correlates with a code used in the MAC, Section II, column 5.

b. Column 2, Nomenclature. This column lists the name and nomenclature of the tools and test equipment required to perform the maintenance function.

c. Column 3, Maintenance Level. The lowest level of maintenance authorized to use the tool or test equipment.

d. Column 4, National/NATO Stock Number. This column lists the National/NATO stock number of the specific tool or test equipment.

e. Column 5, Tool Number. This column lists the manufacturer's part number of the tool followed by the Federal Supply code for manufacturers (five digit) in parenthesis.

B-5. EXPLANATION OF COLUMNS IN REMARKS, SECTION IV.

a. Column 1, Reference Code. This code refers to the appropriate item in Section II, Column 6 of the MAC.

b. Column 2, Remarks. This column provides the required explanatory information necessary to clarify items in Section II of the MAC.

Section II. MAINTENANCE ALLOCATION CHART FOR ANTENNA SUPPORT GROUP OE-481/TRC

(1) GROUP NUMBER	(2) COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL C	O	F	H	D	(5) TOOLS AND EQUIPMENT	(6) REMARKS
00	Antenna Support Group	Inspect		0.2					
	OE481TrRC	Service		0.5					
	A3156730-001	Repair		0.3					
01	Pallet Assembly	Inspect		0.2					
	A3156731-001	Repair		0.1				1, 5	A
		Repair			0.5			4	
0101	Upper Pallet Section	Inspect		0.1					
	A3156733-001	Repair		0.5				1, 6	A
		Replace			0.8			2,4	
0102	Lower Pallet Section	Inspect		0.1					
	A3156732-001	Repair		0.5				1, 5	A
		Repair			0.5			2, 4	
		Replace			0.7			2, 4	
0103	Davit Assembly	Inspect		0.1					
	A3156797-001	Repair		0.2				1	
02	Trailer Assembly*								B
	A3156771-001								
0201	Generator								C
	MEP-003A								
0202	Switch Box Assembly*	Inspect		0.1					
	A3079275-001	Repair		0.1				1	D
		Repair			0.8			2	E
		Replace		0.3				1	
		Test		0.1				3	
		Test			0.2			3	

* Maintenance tasks for this equipment are not normally performed by communications-electronics maintenance personnel.

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS FOR ANTENNA SUPPORT GROUP OE-481ITRC

(1) Tool or Test Equipment Reference Code	(2) Nomenclature	(3) Maintenance Level	(4) National/NATO Stock Number	(5) Tool Number
1	Tool Kit, Electronic Equipment TK-101VG	0	5180-00-064-5178	
2	Tool Kit, Electronic Equipment TK-105/G	F	5180-00-610-8177	
3	Multimeter, Digital AN/PSM-45	O, F	6625-01-139-2512	
4	Tool Kit, Electronic Equipment TK-100/G	F	5180-00-605-0079	
5	Hammer, Hand, Machinist	0	5120-00-243-2985	
6	Socket, 3/4 Inch 1/2 Inch Drive	F	5120-00-189-7985	
7	Wrench, Ratchet 1/2 Inch Drive	F	5120-00-230-6385	
8	Extension, 5 Inch 1/2 Inch Drive	F	5120-00-243-7326	
9	Wrench, Torque 0-250 ft/lbs	F	5120-00-640-6365	
10	Pliers, Slip Joint	F	5120-00-781-0820	

Section IV. REMARKS FOR ANTENNA SUPPORT GROUP OE481/TRC

(1) Reference Code	(2) Remarks
A	Repair restricted to replacement of removable components.
B	Refer to TM 9-2330-376-14 & P.
C	Refer to TM 5-6115-585-12.
D	Repair limited to replacement of switch box knob, indicator lights, and lens.
E	Refer to Appendix F of this manual.

APPENDIX C

COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS

Section I. INTRODUCTION

C-1. SCOPE

This appendix lists components of end item and basic issue items for Antenna Support Group OE-481/rRC to help you inventory items required for safe and efficient operation.

C-2. GENERAL

The components of end item and basic issue items lists are divided into the following sections.

a. **Section II. Components of End Item**. This listing is for informational purposes only, and is not authority to requisition replacements. These items are part of the end item, but are removed and separately packaged for transportation and shipment. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Illustrations are furnished to assist you in identifying the items.

b. **Section III. Basic Issue Items**. These are the minimum essential items required to place the OE-481TRC in operation, how to operate it, and how to perform emergency repairs. Although shipped separately, packaged BII must be with the OE-481/TRC during operation and whenever it is transferred between property accounts. The illustrations will assist you with hard to identify items. This manual is your authority to request/requisition replacement BII, based on TOE/MTOE authorization of the end item.

C-3. EXPLANATION OF COLUMNS

The following provides an explanation of columns found in the tabular listings.

a. **Column (1) -Illustration Number (illus No.).** This column indicates the number of the illustration in which the item is shown.

b. **Column (2) - National Stock Number**. Indicates the national stock number assigned to the item and will be used for requisitioning purposes.

c. **Column (3) - Description (Description (CAGEC) and Part Number).** Indicates the national item name and, if required, a minimum description to identify and locate the item. The last line for each item indicates the Commercial and Government Entity (CAGE) Code (in parentheses) followed by the part number. If items needed differs for different models of this equipment, the model is shown under the Usable On heading in this column.

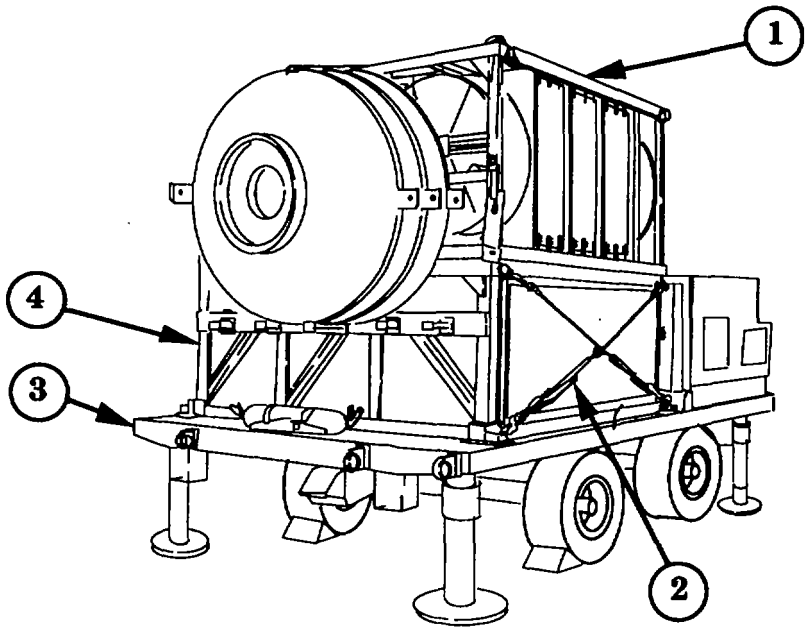
CODE	USED ON
PAA	Model XX1
PAB	Model XX2
PAC	Model XX3

C-3. EXPLANATION OF COLUMNS - Continued

d. Column (4) - Unit of Measure (U/M). Indicates the measure used in performing the actual operational/maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr).

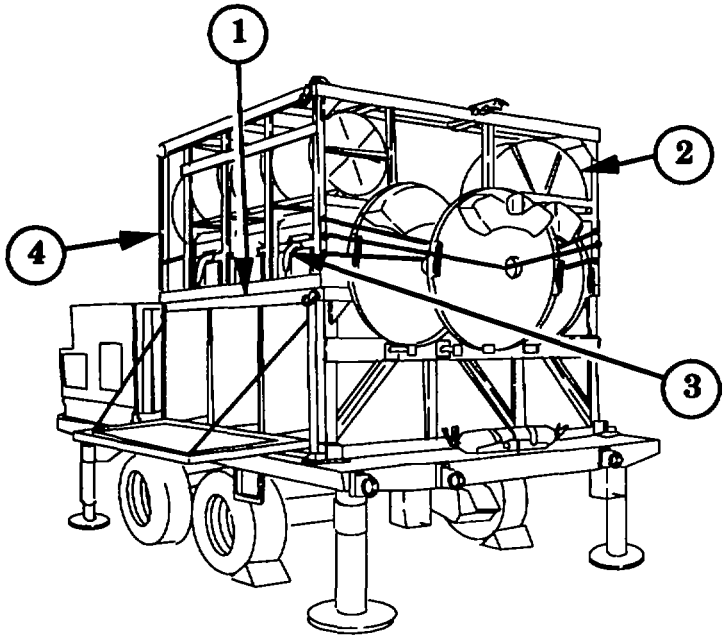
e. Column (5) - Quantity Required (Qty Reqd). Indicates the quantity of the item authorized to be used with/on the equipment.

Section II. COMPONENTS OF END ITEM

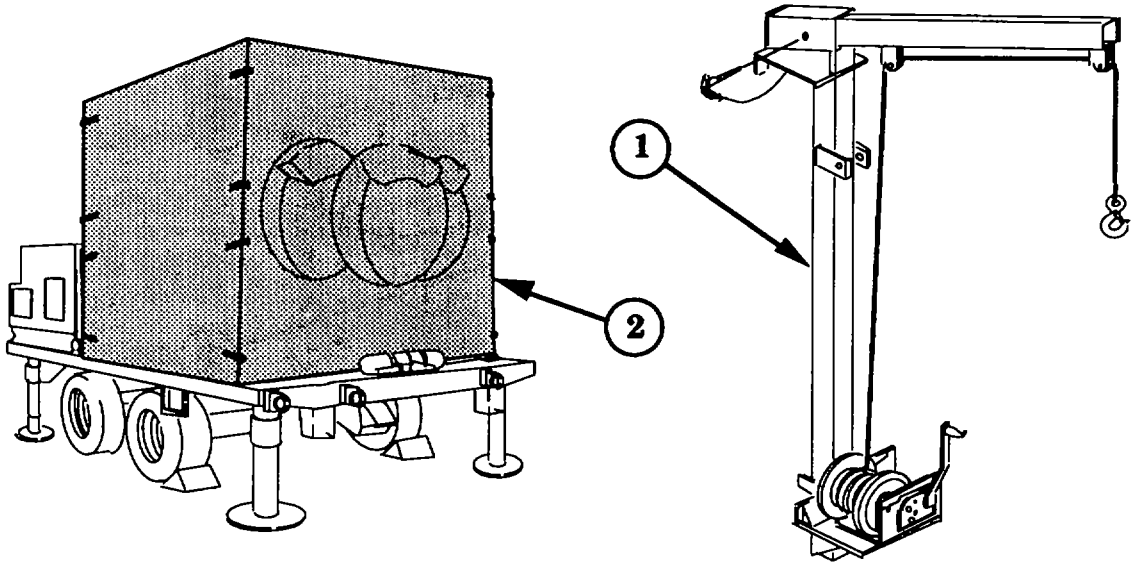


(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC and Part Number	Usable On Code	(4) U/M	(5) QTY Reqd
1	5985-01-333-9688	Antenna Support Group (80062) A3156730-001		EA	1
2	3990-01-349-5347	Tie-Down Cable Assembly (80063) A3156761-004		EA	4
3		Trailer Assembly (80063) A3156771-001		EA	1
4		Transport Pallet Assembly (80063) A3156731-001		EA	1

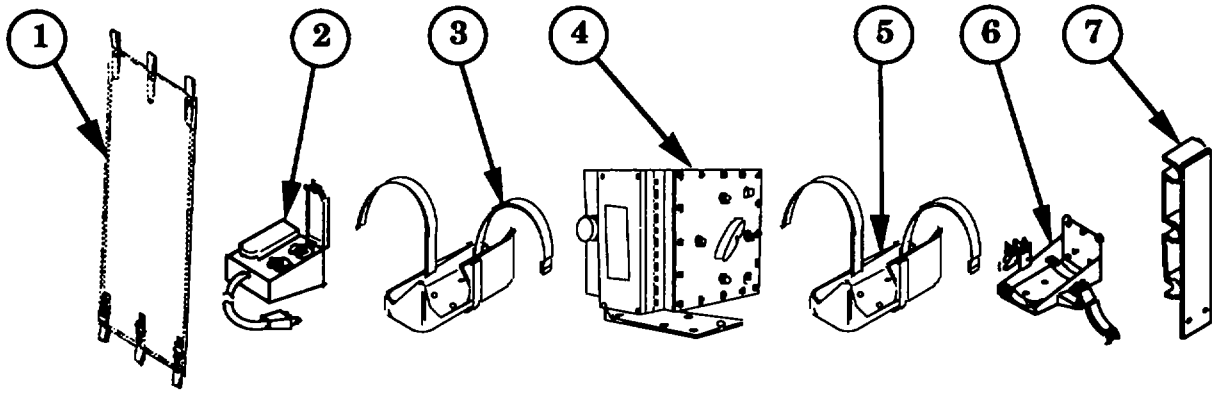
* Not issued with truck-mounted version.



(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC and Part Number	Usable On Code	(4) U/M	(5) QTY Reqd
1		Lower Pallet Section (80063) A3156732-001		EA	1
2		Reel Assembly (80063) A3156728-001		EA	2
3		Cargo Strap Assembly (80063) A3156757-003		EA	3
4		Upper Pallet Section (80063) A3156733-001		EA	1

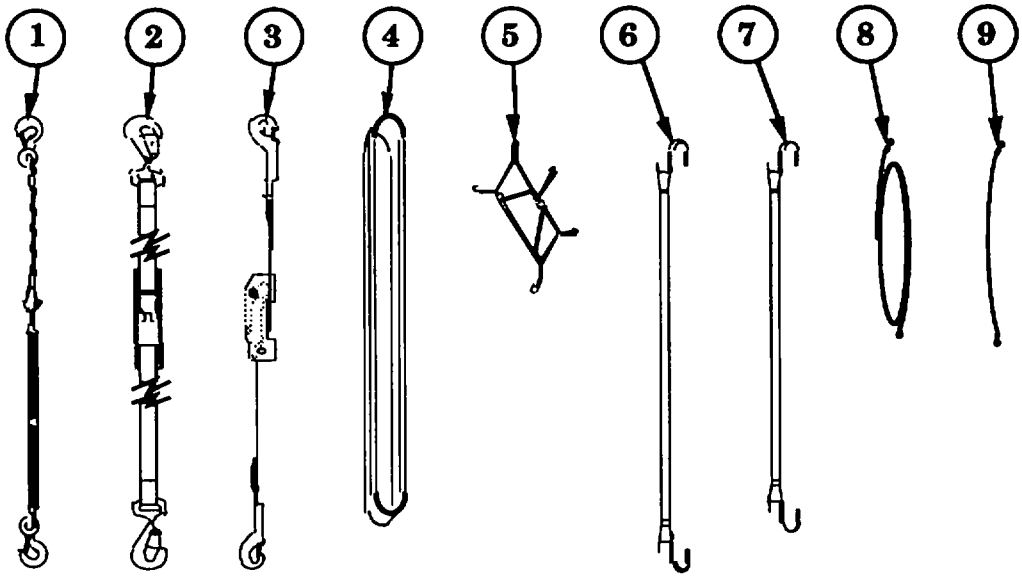


(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC and Part Number	(4) Usable On Code	(4) U/M	(5) QTY Reqd
1		Davit Assembly (80063) A3156797-001		EA	1
2		Tarpaulin (80063) A3156745-001		EA	1

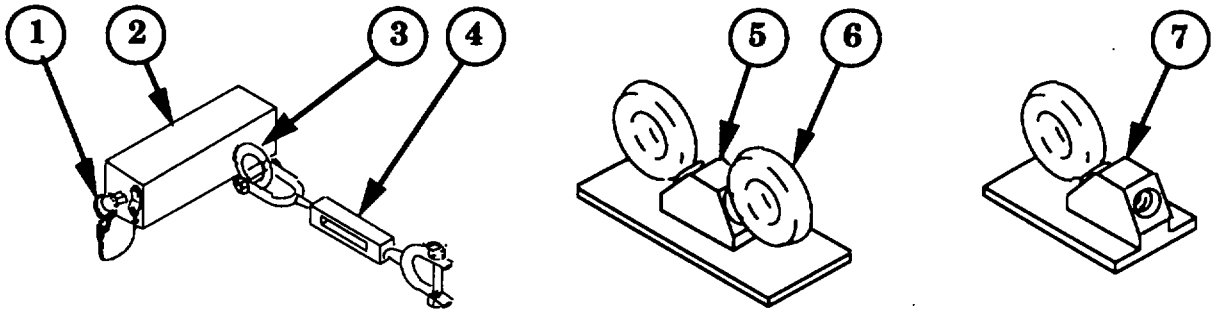


(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC and Part Number	Usable On Code	(4) U/M	(5) QTY Reqd
1		Canvas Assembly (80063) A3156796-001		EA	3
2		Power Outlet Box (80063) A3156758-001		EA	1
3	2540-00-968-4060	Fuel Can Strap (19207) 8690527		EA	4
4		Switch Box Assembly (80063) A3079275-001		EA	1
5	2590-00-473-6331	Fuel Can Bracket (96906) MS53052-1		EA	4
6	4210-00-223-4857	Fire Extinguisher Bracket (96906) 13214E1235		EA	2
7		Reflector Retaining Spacer (80063) A3156759-001		EA	1

* Not issued with truck-mounted version.

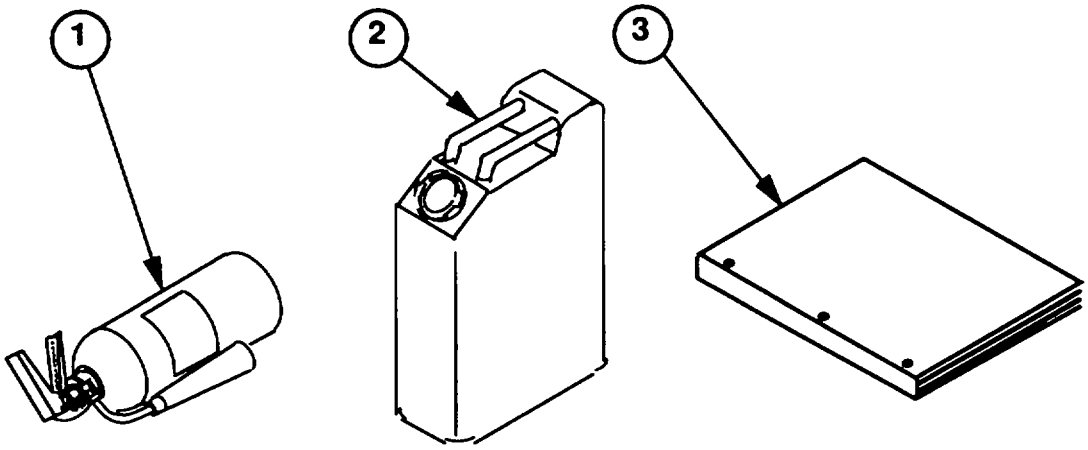


(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC and Part Number	Usable On Code	(4) U/M	(5) QTY Reqd
1	3990-01-349-5346	Cable Tie-Down Assembly (80063) A3156761-002		EA	4
2		Cargo Strap Assembly (80063) A3156757-001		EA	1
3		Cargo Strap Assembly (80063) A3156757-002		EA	3
4		Cargo Strap Assembly (80063) A3156757-004		EA	1
5		Hand Reel Assembly (80063) A3156741-001		EA	6
6		Retaining Strap, 15-inch long (80063) A3156755-002		EA	5
7		Strap, Retaining, 9-inch long (80063) A3156755-001		EA	5
8		Ground Strap Assembly (80063) A3156789-001		EA	1
9		Ground Strap Assembly (80063) A3156789-002		EA	1



(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC and Part Number	Usable On Code	(4) U/M	(5) QTY Reqd
1		Quick Release Pin (96906) MS17987C1090		EA	2
2		Retaining Bracket (80063) A3156787-001		EA	2
3	5306-00-050-0346	Eyebolt (96906) MS519373		EA	2
4		Turnbuckle (96906) MS51562-2Z		EA	2
5		Plate (80063) SC-D-595074		EA	2
6		Eyebolt (80063) SC-B-595075		EA	6
7		Plate (80063) A3156788		EA	2

Section III. BASIC ISSUE ITEMS



(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, CAGEC and Part Number	Usable On Code	(4) U/M	(5) QTY Reqd
1	4210-00-270-4512	Fire Extinguisher, Carbon Dioxide* (80063) SC-D-539482		EA	2
2	7240-00-222-3088	5-Gallon Fuel Can* (81902) 14196P1		EA	4
3		Technical Manual TM 11-5985-392-13		EA	1

* Not issued with truck-mounted version.

APPENDIX D

ADDITIONAL AUTHORIZATION LIST

(NOT APPLICABLE)

APPENDIX E

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

E-1. SCOPE

This appendix lists the expendable supplies and materials you will need to operate and maintain the Antenna Support Group OE-481/TRC. These items are authorized to you by CTA 50-970, Expendable Items (Except Medical, Class V, Repair Parts and Heraldic Items).

E-2. FORMS

a **Column (1) - Item Number**. This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material (e.g., "use cleaning compound, item 1, app D").

b. **Column (2) - Level**. This column identifies the lowest level of maintenance that requires the listed item. One of the following codes appears in column (2).

C - Operator/Crew (Unit)
0 - Organizational (Unit)
F - Direct Support

c. **Column (3) - National Stock Number**. This is the national stock number assigned to the item. Use it to request or requisition the item.

d. **Column (4) - Description**. Indicates Federal item name and, if required, a description to identify the item. The last line for each item indicates the Federal Supply Code for Manufacturer (FSCM) in parentheses followed by the part number.

e. **Column (5) - Unit of Measure (U/M).** Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

Section II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
	0	9150-00-021-8533	Oil, Lubrication GP	QT
	0	8350-00-267-3015	Rags, Dry	BU
	F		Rope, 1/2-inch, 15-foot long (2)	FT

E-1/(E-2 Blank)

APPENDIX F

SWITCH BOX ASSEMBLY

Section I. REPAIR PARTS, SPECIAL TOOLS, TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT (TMDE), AND SUPPORT EQUIPMENT

F-1. COMMON TOOLS AND EQUIPMENT

For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

F-2. SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

All tools, TMDE, and support equipment required to perform maintenance procedures in this appendix are listed in the Maintenance Allocation Chart (MAC) in Appendix B of this manual.

F-3. REPAIR PARTS

Repair parts are listed and illustrated in the repair parts and special tools list, TM 11-5985-392-23P.

Section II. TROUBLESHOOTING

F-4. TROUBLESHOOTING SWITCH BOX ASSEMBLY

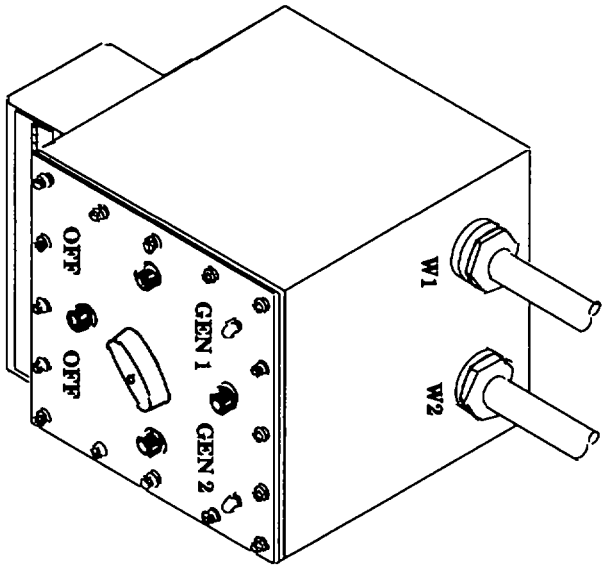
Troubleshooting the switch box assembly is performed using a digital multimeter (DMM) to check continuity of cables W1 thru Wll, switch S1, and connector J1. During troubleshooting, the switch must be set to the position on which it failed (GEN 1 or GEN 2).

WARNING

Two personnel are required to lift the switch box assembly. Failure to comply may result in personal injury.

NOTE

Switch S1 is a spring-loaded, 4 position rotary switch. Use two hands to turn switch handle and apply force until switch snaps into position.



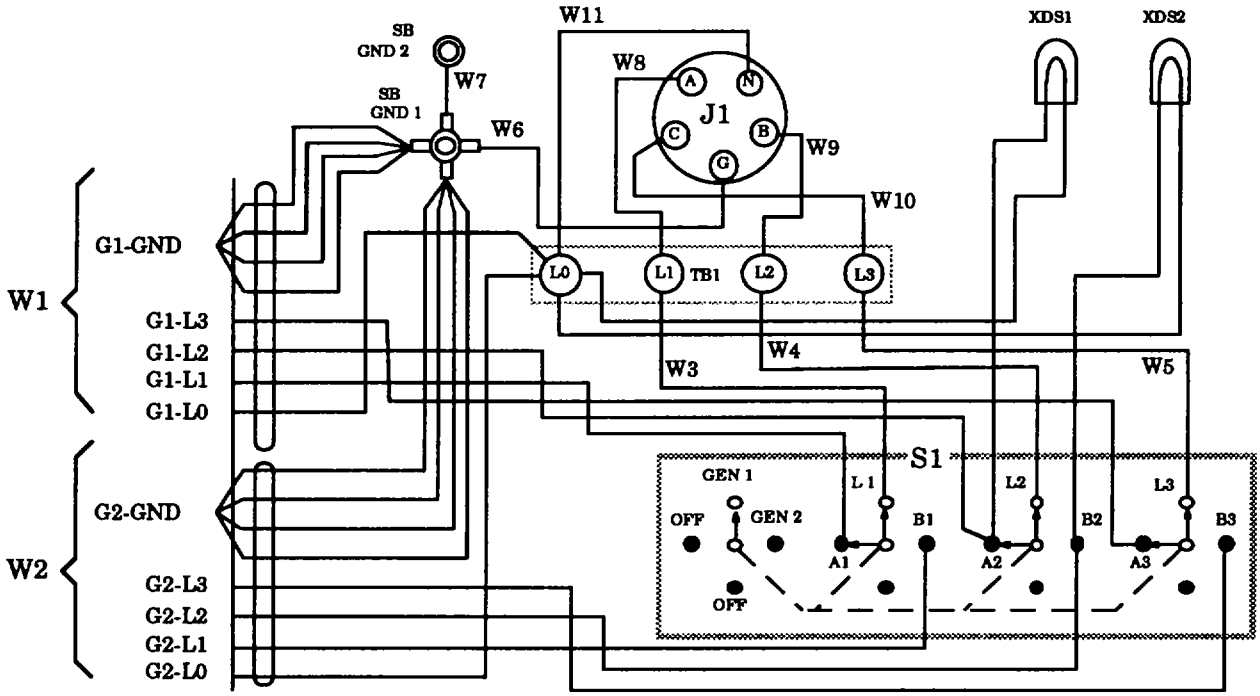
F-5. FAULT SYMPTOM INDEX

The symptom column provides an index of faults which may be observed during operation. The second column describes action to be performed. The third column provides procedures to be performed to isolate and correct the fault.

Symptom	Action	Corrective Procedure
No 115 V ac output atJ1 with GEN 1 selected.	Perform continuity checks.	Refer to para F-6.
No 115 V ac output at J1 with GEN 2 selected.	Perform continuity checks.	Refer to para F-6.
DS1 not lit when GEN 1 selected and 115 V ac power is present at J1.	Perform continuity checks.	Refer to para F-6.
DS2 not lit when GEN 2 selected and 115 V ac power is present at J1.	Perform continuity checks.	Refer to para F-6.

F-6. SWITCH BOX WIRING LIST

The switch box assembly wiring diagram and wiring list are used to perform continuity checks as directed in the Fault Symptom Index.



F-6. SWITCH BOX WIRING LIST - Continued

S1 Set to GEN 1

From	To
S1-A1	S1-L1
S1-A2	S1-L2
S1-A3	S1-L3

S1 Set to GEN 2

From	To
S1-B1	S1-L1
S1-B2	S1-L2
S1-B3	S1-L3

XDS-1

From	To
XDS-1	S1-A2 (125 V ac)
XDS-1	TB1-LO (GND)

XDS-2

From	To
XDS-2	S1-B2 (125 V ac)
XDS-2	TB1-LO (GND)

Cable Assembly W1

From	To
(Wi) G1-L3	S1-A3
(Wi) G1-L2	S1-A2
(W1) G1-L1	S1-A1
(W1) G1-LO	TB1-LO
(W1) G1-GND	SB-GND 1

Cable Assembly W2

From	To
(W2) G2-L3	S1-B3
(W2) G2-L2	S1-B2
(W2) G2-L1	S1-B1
(W2) G2-LO	TB1-LO
(W2) G2-GND	SB-GND 1

Cable Assembly W3

From	To
S1-L1	TB1-L1

Cable Assembly W4

From	To
S1-L2	TB1-L2

Cable Assembly W5

From	To
S1-L3	TB1-L3

Cable Assembly W6

From	To
GND-1 (Ground Terminal Lug)	J1-G

F-6. SWITCH BOX WIRING LIST - Continued

Cable Assembly W7

From	To
GND-1 (Ground Terminal Lug)	GND-2 (Equipment (Frame) Ground)

Cable Assembly W8

From	To
TB1-L1	J1-A

Cable Assembly W9

From	To
TB1-L2	J1-B

Cable Assembly W10

From	To
TB1-L3	J1-C

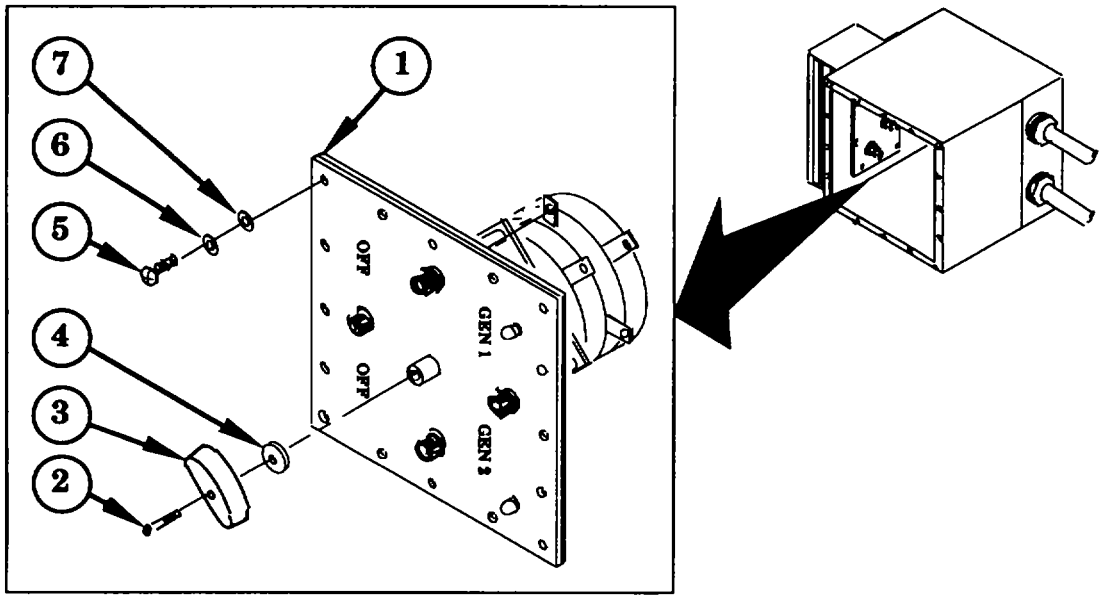
Cable Assembly Wll

From	To
TB1-LO	J1-N

Section III. MAINTENANCE PROCEDURES

F-7. SWITCH S1 REMOVAL AND REPLACEMENT

a. Removal



(1) Using cross-tip screwdriver, remove 16 screws (5), lock washers (6), and flat washers (7) from front panel (1).

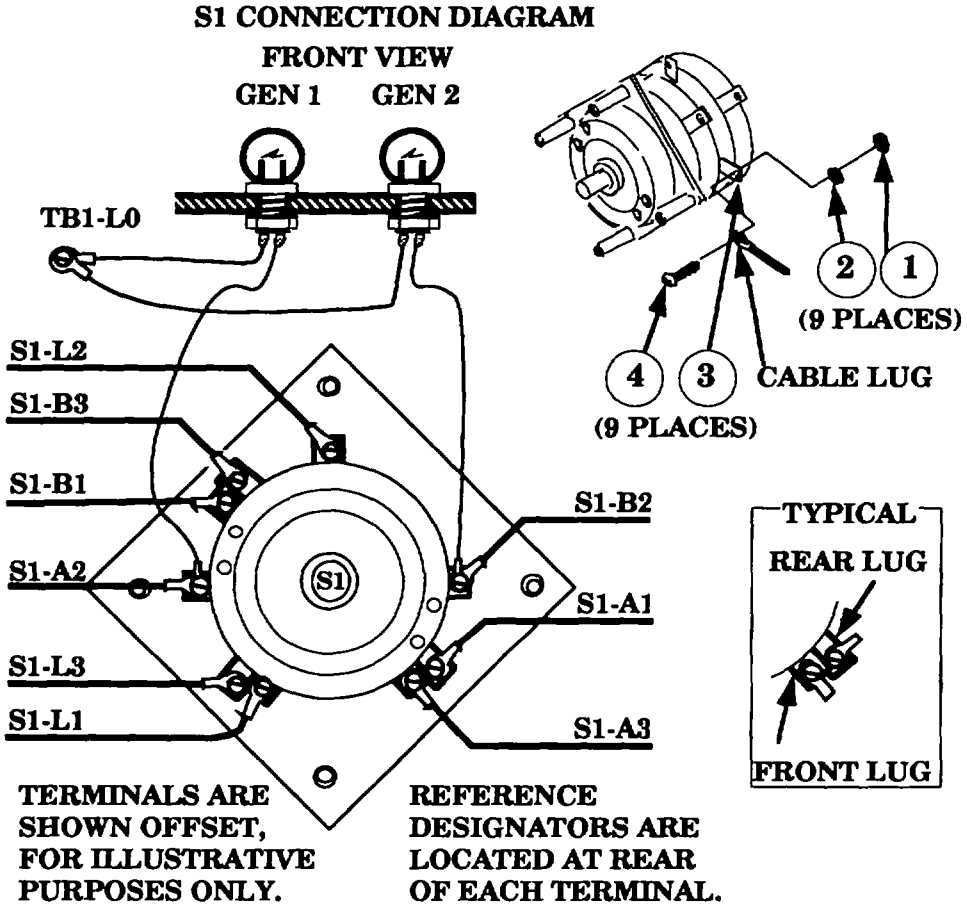
(2) Use flat-tip screwdriver to remove screw (2) from center of switch knob (3). Remove switch knob and grommet (4).

F-7. SWITCH S1 REMOVAL AND REPLACEMENT - Continued

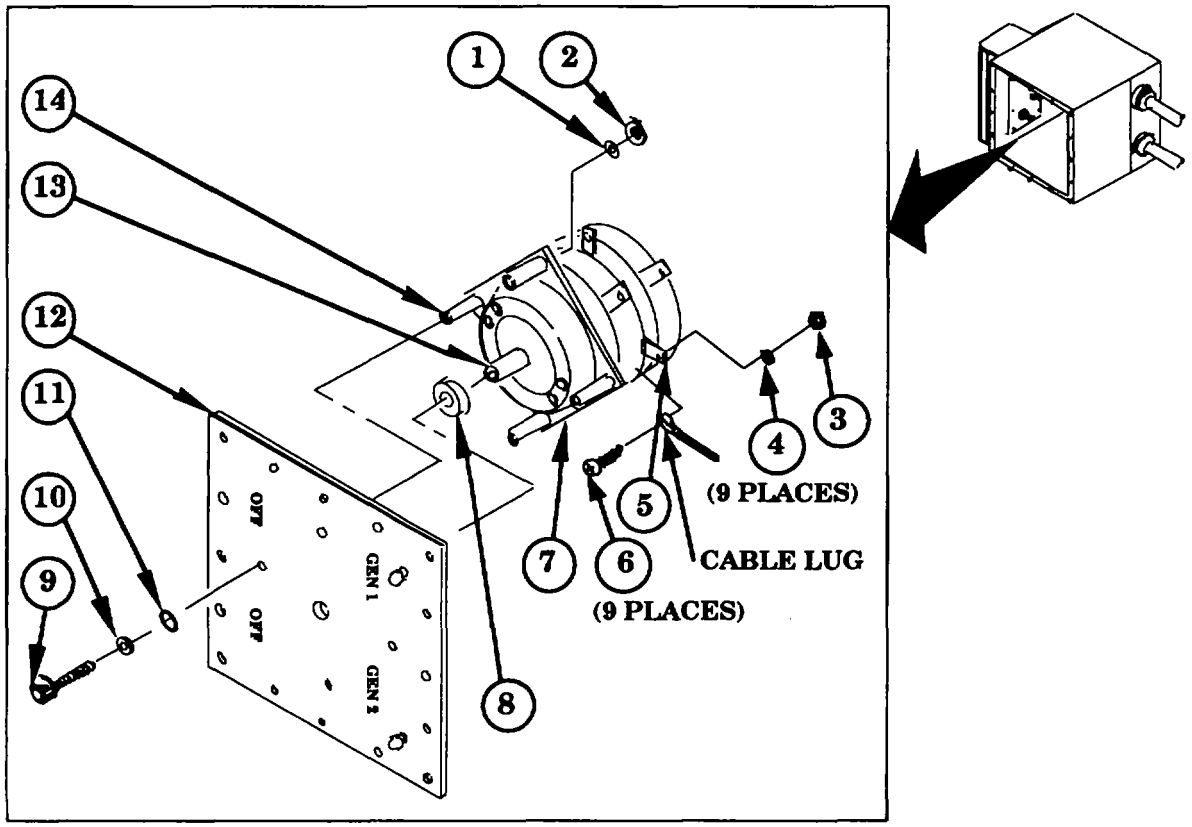
a. Removal - Continued

CAUTION

Ensure that bottom of switch box assembly front panel rests on workbench. Failure to do so may result in damage to front panel gasket.



(3) Tag and remove all wires from switch. Use fingers to hold head of screw (4) securing wire to switch terminal (3). Use 5/8-inch open end wrench to loosen each nut (1). Remove nut (1), lock washer (2), and screw (4).



(4) Using 3/8-inch hex key and 3/4-inch open end wrench, remove four hex head screws (9), flat washers (1 and 10), O-rings (11), and nuts (2) securing switch (7) to front panel (12).

(5) Remove switch S1 (7).

b. Replacement

NOTE
Reference designators are located at rear of each terminal on switch.

(1) Insert switch shaft (13) into center hole in front panel. Align terminal L2 on switch with top hole in front panel.

(2) Place flat washer (10) and O-ring (11) on hex head screw (9). Insert hex head screw (9) into front panel hole through mounting plate spacer (14) and secure with flat washer (1) and nut (2). Finger tighten.

(3) Repeat step 2 until all four hex head screws (9) are installed. Use 3/8-inch hex key > and 3/4- inch open end wrench to tighten four hex head screws.

(4) Observe tags and connect wires to terminals (5). Insert screws (6) through switch terminals (5) and cable lugs, and secure with lock washers (4) and nuts (3). Hold head of screw with fingers and tighten nut using 5/8-inch open end wrench.

F-7. SWITCH S1 REMOVAL AND REPLACEMENT - Continued

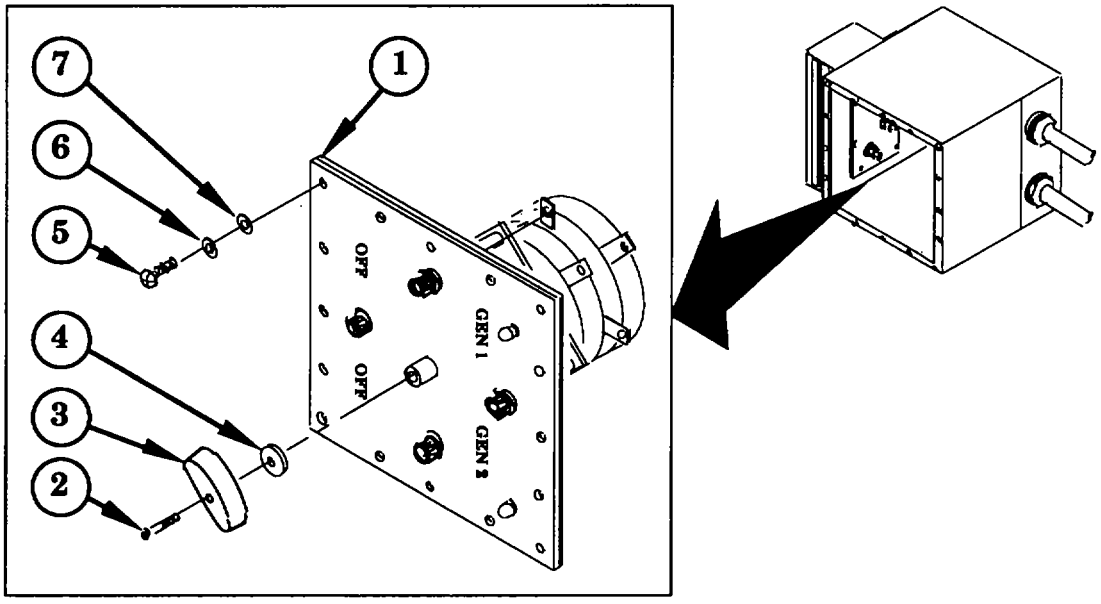
b. Replacement - Continued

(5) Measure continuity with switch S1 set to GEN 1 position.

From	To
(W1) G1-L1	J1-A
(W1) G1-L2	J1-B
(W1) G1-L3	J1-C
(W1) G1-LO	J1-N

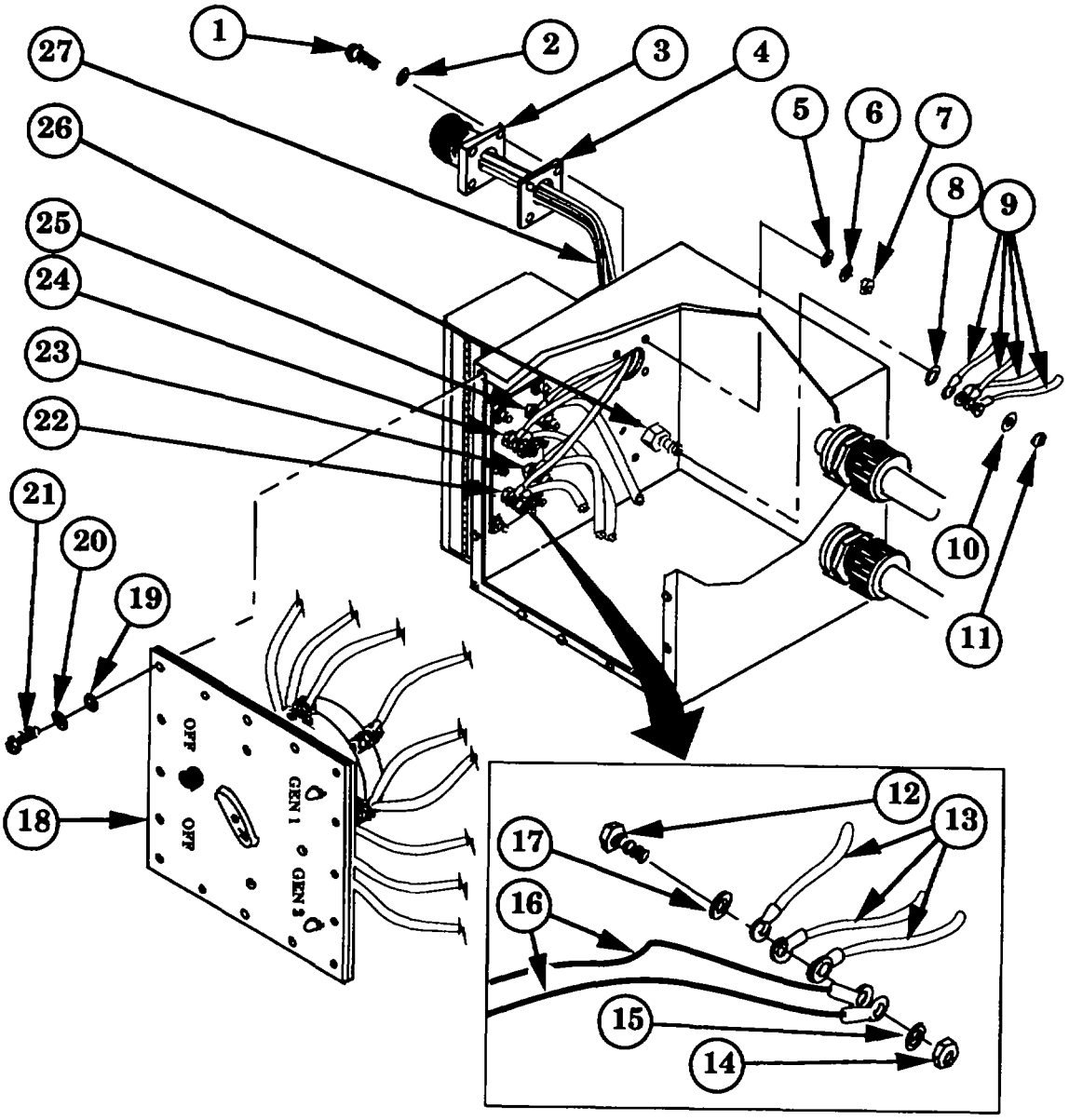
(6) Measure continuity with switch S2 set to GEN 2 position.

From	To
(W2) G2-L1	J1-A
(W2) G2-L2	J1-B
(W2) G2-L3	J1-C
(W2) G2-LO	J1-N



(7) Using cross-tip screwdriver, install 16 screws (5), lock washers (6), and flat washers (7) securing front panel (1) to switch box assembly.

(8) Install grommet (4) and switch knob (3) over switch shaft. Insert screw (2) into knob and secure with flat-tip screwdriver.


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
OFF
OFF
GEN 1
GEN 2

F-10

F-8. CONNECTOR ASSEMBLY J1 REMOVAL AND REPLACEMENT - Continued

a. Removal

(1) Using cross-tip screwdriver, remove 16 screws (21), lock washers (20), and flat washers (19) from switch box assembly front panel (18). Remove front panel.

(2) Using cross-tip screwdriver and 3/8-inch open end wrench, remove four nuts (7), four lock washers (6), eight flat washers (2 and 5) and four screws (1) securing connector J1 [with connector cover] (3) and gasket (4) to switch box assembly.

(3) Using 3/4-inch open end wrench, remove one nut (14), one flat washer (15), two cables (13) at TB1-L1 (25), TB1-L2 (24), and TB1-L3 (22). Flat washer (17) may be left in place on stud (12).

(4) Using 3/4-inch open end wrench, remove one nut (14), one flat washer (15), three cables labeled TB1-LO (13), and two white wires with lugs (16).

(5) Using 3/4-inch open end wrench, remove one nut (11), one flat washer (10), four cables (9), and one flat washer (8) from ground terminal lug GND-1 (26).

(6) Remove connector assembly J1 (3) with attached cables W6, W8, W9, W10, and W11 (27) from switch box assembly.

b. Replacement

(1) Insert cables W6, W8, W9, W10, W11 (27), and connector assembly J1 (3) into connector hole in switch box assembly.

(2) At TB1-LO (23), install one flat washer (17), two white wires with lugs (16), three cables labeled TB1-LO (13), one flat washer (15), and one nut (14). Using 3/4-inch open end wrench, tighten nut.

(3) At TB1-L1 (24), install one flat washer (17), two cables labeled TB1-L1 (13), one flat washer (15), and one nut (14). Using 3/4-inch open end wrench, tighten nut.

(4) Repeat step (3) for two cables labeled TB1-L2 (13) at TB1-L2 (25) and two cables labeled TB1-L3 (13) at TB1-L3 (22).

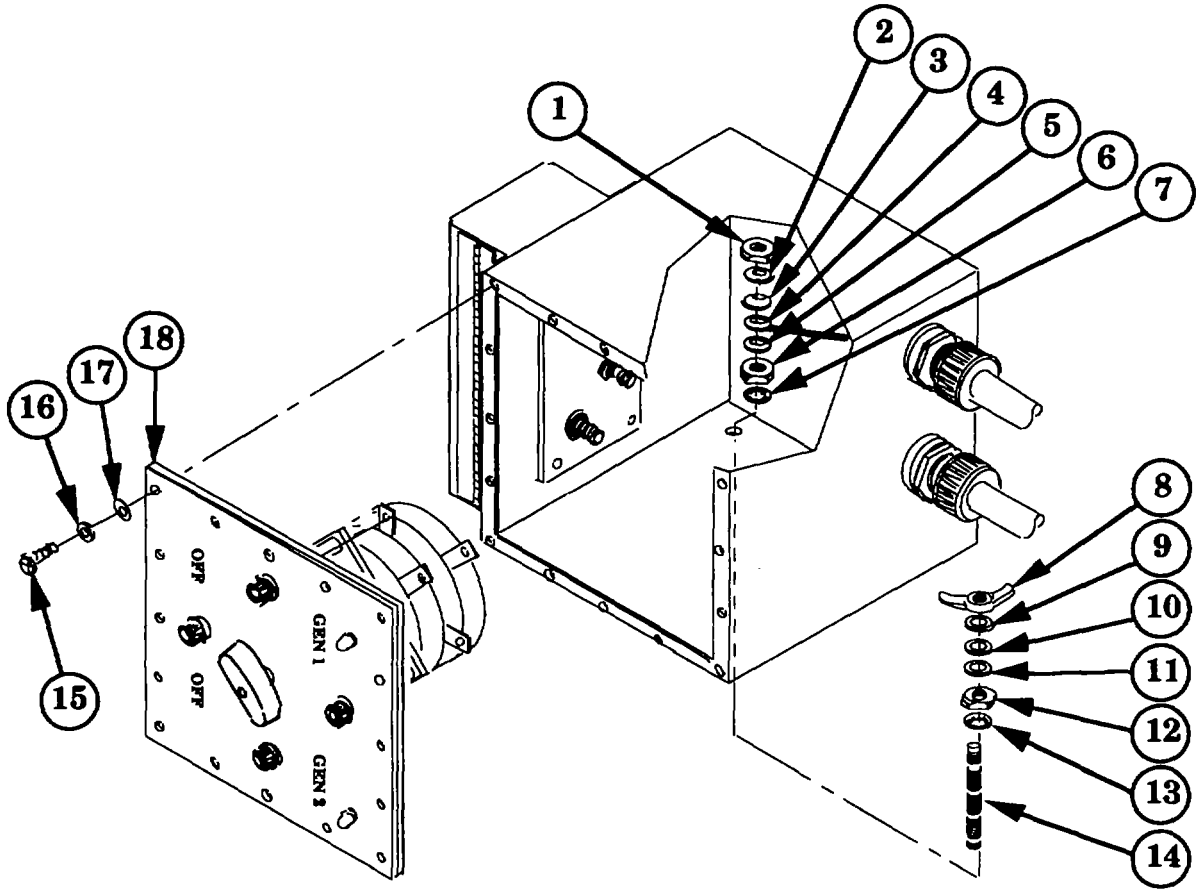
(5) Install one flat washer (8), cables W7, W6, W1 G1-GND, and W2 G2-GND (9), one flat washer (10), and one nut (11) on ground terminal lug GND-1. Using 3/4-inch open end wrench, tighten nut (11).

(6) Insert four screws (1), eight flat washers (2 and 5), four lock washers (6), and four nuts (7) attaching connector J1 (3) to switch box assembly. Tighten four screws (1) using cross-tip screwdriver and 3/8-inch open end wrench.

(7) Position front panel (18) on switch box and install 16 screws (21), lock washers (20), and flat washers (19). Using cross-tip screwdriver, tighten 16 screws (21).

F9. EQUIPMENT (FRAME) GROUND STUD REMOVAL AND REPLACEMENT

a. Removal



(1) Using cross-tip screwdriver, remove 16 screws (15), lock washers (16), and flat washers (17) from switch box assembly front panel (18). Remove front panel (18).

(2) Remove wing nut (8), lock washer (9), and two flat washers (10 and 11).

(3) Using 9/16-inch open end wrench and adjustable wrench, remove three nuts (1 ,6 and 12), three lock washers (2, 7, and 13), two flat washers (3 and 5), and lug on cable W7 (4). Remove ground stud (14).

F-9. EQUIPMENT (FRAME) GROUND STUD REMOVAL AND REPLACEMENT - Continued

b. Replacement

(1) Insert equipment (frame) ground stud (14) into switch box assembly.

(2) Install two lockwashers (7 and 13) and two nuts (6 and 12). Using 9/16-inch open end wrench and adjustable wrench, tighten nuts (6 and 12).

(3) Install flatwasher (5), cable W7 lug (4), flat washer (3), lock washer (2), and nut (1) on ground stud (14). Using 9/16-inch open end wrench and adjustable wrench, tighten nut (1).

(4) Install two flat washers (10 and 11), lock washer (9), and wing nut (8) on ground stud (14). Hand tighten wing nut (8).

(5) Position front panel (18) on switch box and install 16 screws (15), lock washers (16), and flat washers (17). Using cross-tip screwdriver, tighten screws (15).

F-10. TERMINAL BOARD STUD REMOVAL AND REPLACEMENT

a. Removal

(1) Remove front panel (refer to para F-9a, step 1).

(2) Using 3/4-inch open end wrench, remove nut securing two flat washers and two lugs to terminal stud.

(3) Using 3/4-inch open end wrench, remove nut and lockwasher securing terminal stud to terminal board TB1.

b. Replacement

(1) Position terminal stud to align keying pin on stud with hole in terminal board TB1. Insert stud through TB1.

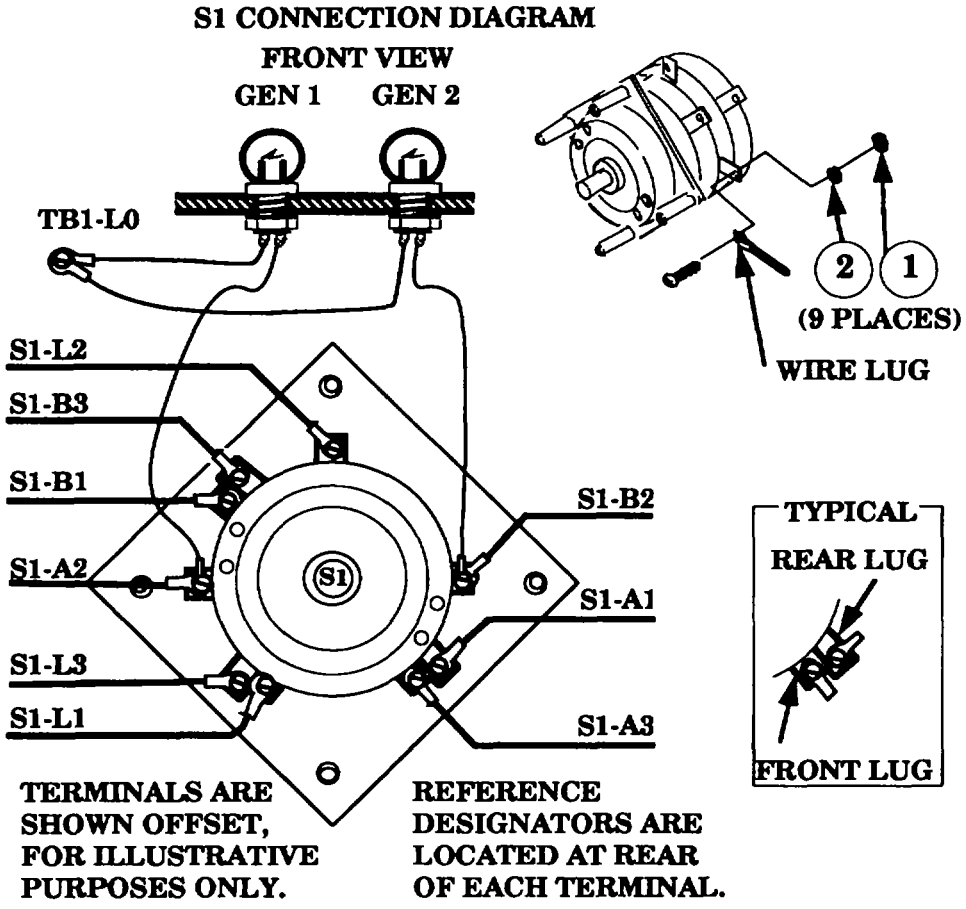
(2) Install lock washer and nut on terminal stud. Use 3/4-inch open end wrench to tighten nut.

(3) Install two flat washers, two lugs, and nut on terminal stud. Use 3/4-inch open end wrench to tighten nut.

(4) Replace front panel (refer to para F-9b, step 5).

F-11. XDS1 AND XDS2 REMOVAL AND REPLACEMENT

a. Removal



(1) Remove switch S1 (refer to para F-7a, steps 1 and 2).

(2) Using 3/4-inch open end wrench, remove nut, flat washer, two cable lugs and two wire lugs from TB1-LO.

(3) Using 5/8-inch open end wrench, remove nut (1), lock washer (2), and wire lug on switch S1 terminal A2 for XDS1 (or terminal B2 for XDS2).

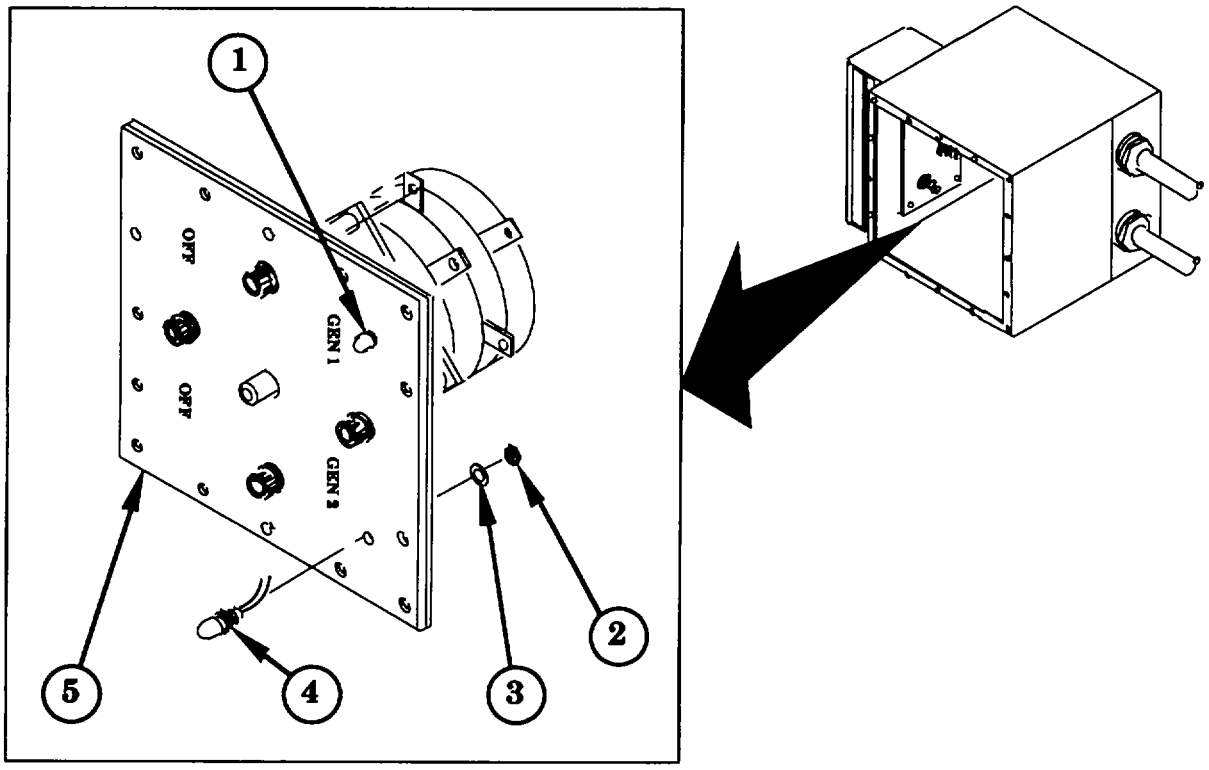
F-11. XDS1 AND XDS2 REMOVAL AND REPLACEMENT - Continued

a. Removal - Continued

(4) Using 9/16-inch open end wrench, remove nut (2) and lock washer (3) securing XDS1 (1) or XDS2 (4) to front panel.

(5) Pull XDS1 or XDS2 with wires through front panel (5).

b. Replacement

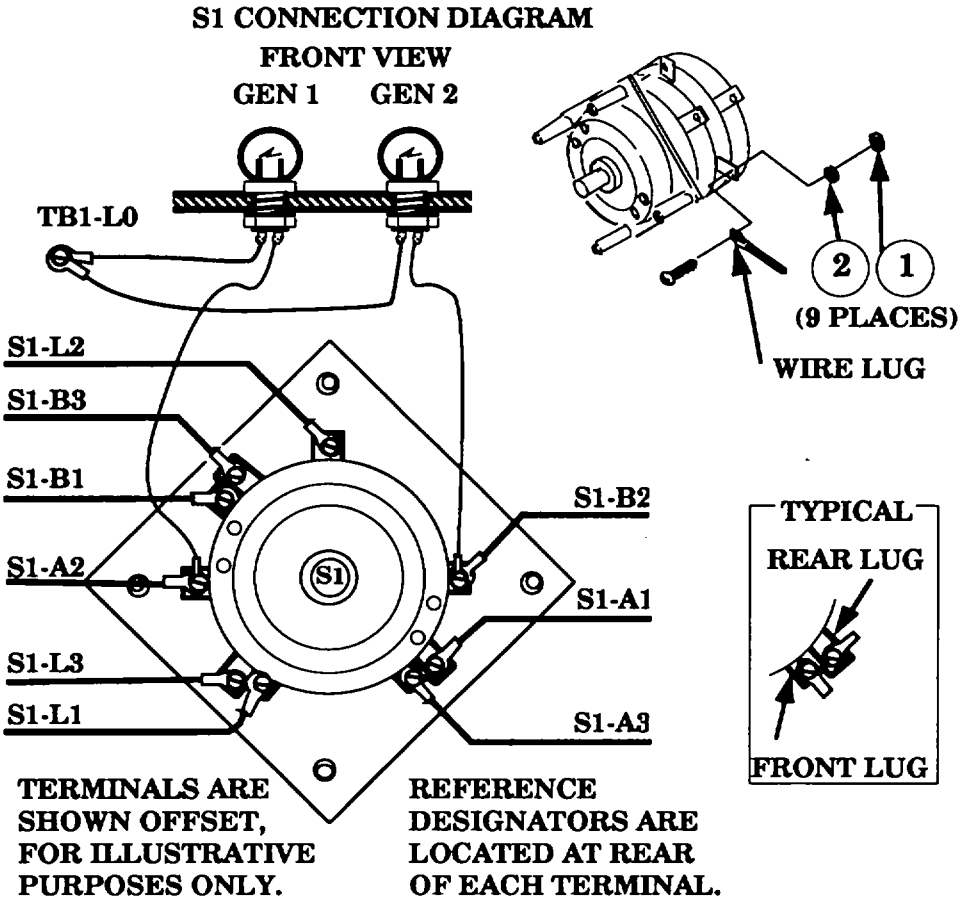


(1) Insert XDS1 (1) or XDS2 (4) wires through holes in front panel (5).

(2) Install lock washer (3) and nut (2) and tighten using 5/8-inch open end wrench.

F-11. XDS1 AND XDS2 REMOVAL AND REPLACEMENT - Continued

b. Replacement - Continued



(3) Place one wire lug from XDS1 on S1-A2 (or XDS2 on S1-B2). Secure by installing lock washer (2) and nut (1). Tighten nut (1) using 5/8-inch open end wrench.

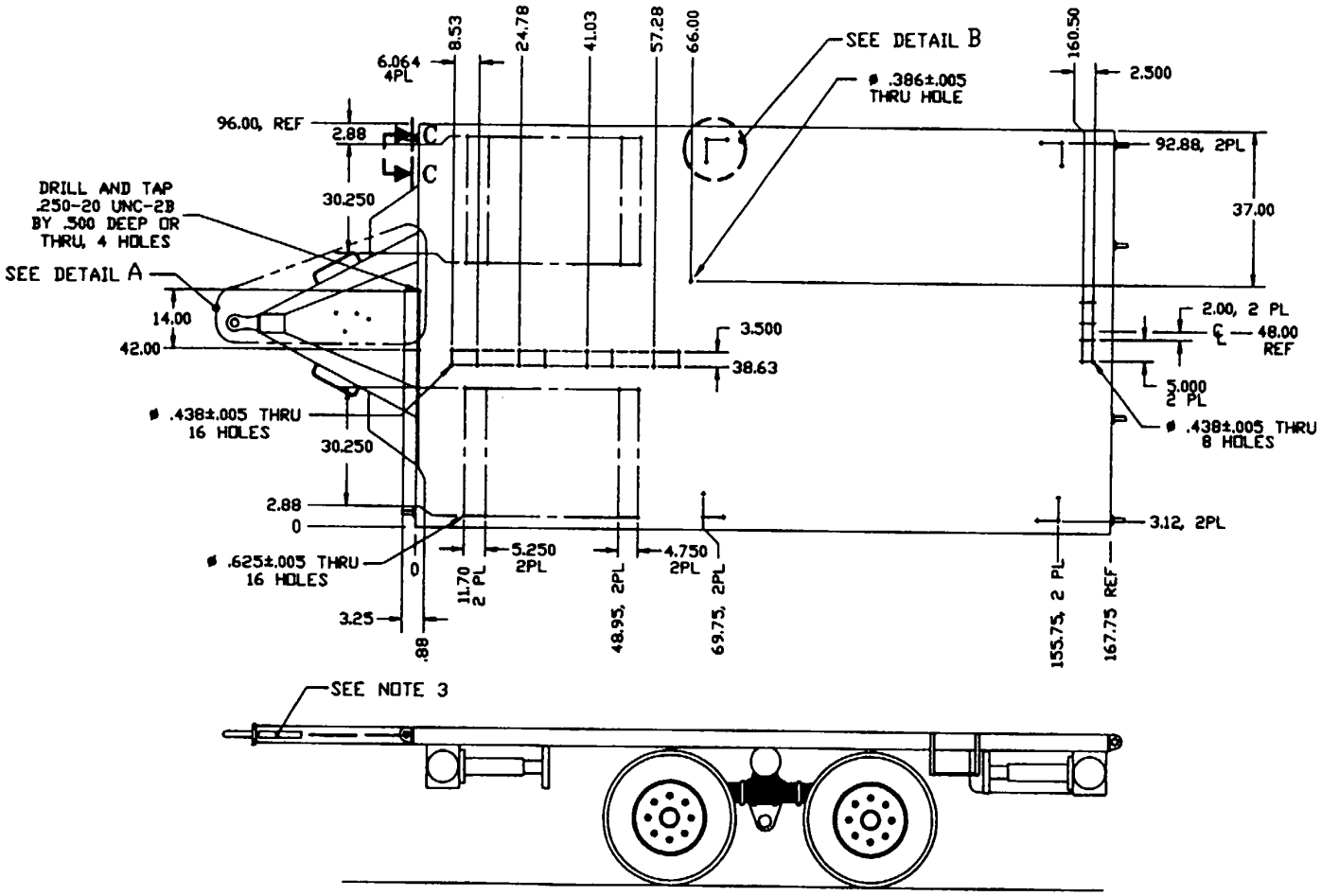
(4) Install two cable lugs (labeled TB1-LO) and two wire lugs from XDS1 or XDS2 on TB1-LO. Install flat washer and nut and secure using 3/4-inch open end wrench.

(5) Replace switch S1 (refer to para F-7b, steps 7 and 8).

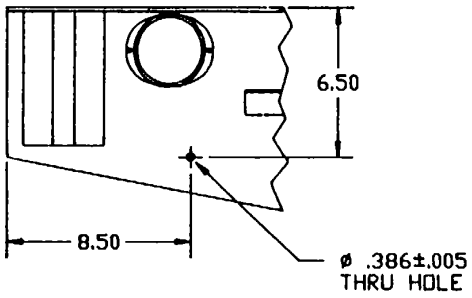
APPENDIX G

TRAILER HOLE PATTERN

The drawings on the following pages provide the hole pattern for all equipment to be mounted on the trailer for the OE-481TRC configuration.

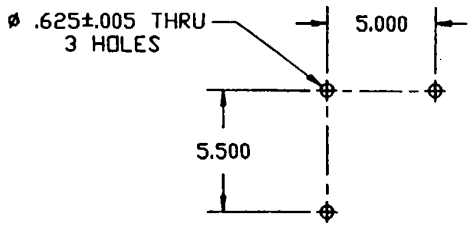

8.53
24.78
41.03
57.28
66.00
160.50
6.064
4PL
SEE DETAIL B
Ø .386±.005
THRU HOLE
2.500
96.00, REF
2.88
C
C
92.88, 2PL
37.00
DRILL AND TAP
.250-20 UNC-2B
BY .500 DEEP OR
THRU, 4 HOLES
30.250
SEE DETAIL A
14.00
42.00
3.500
38.63
2.00, 2 PL
℄
48.00
REF
5.000
2 PL
Ø .438±.005 THRU
16 HOLES
30.250
Ø .438±.005 THRU
8 HOLES
2.88
0
3.12, 2PL
Ø .625±.005 THRU
16 HOLES
0
11.70
2 PL
5.250
2PL
4.750
2PL
3.25
.88
48.95, 2PL
69.75, 2PL
155.75, 2 PL
167.75 REF
SEE NOTE 3

-001 AS SHOWN



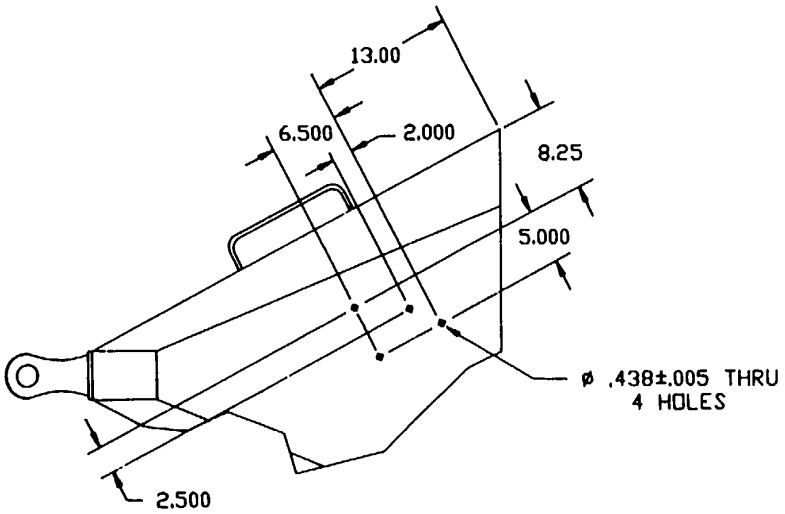
VIEW C-C

SCALE: 1/4
ROTATED 90° CCW



DETAIL B

SCALE: 1/4
4 PL



DETAIL A

SCALE: 1/8

NOTES:

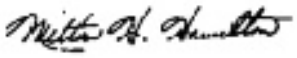
1. WORKMANSHIP IAW MIL-STD-454, REQT 9.
2. INTERPRET IAW DOD-STD-100 AND DOD-D-1000.
3. STENCIL 80063-A3156772-001 AND MANUFACTURERS CODE IDENT WITH .25 HIGH CHARACTERS, BLACK IAW MIL-M-13231, GROUP I. LOCATE APPROX AS SHOWN.
4. TOUCH UP AND REFINISH ALL HOLES EXCEPT ø .386 HOLES IAW MIL-F-14072, FINISH NO. P213.1AG. FINAL FINISH COAT SHALL BE IAW MIL-C-46168.
5. MAKE FROM GOVERNMENT FURNISHED EQUIPMENT (GFE) TRAILER ASSEMBLY, NSN NO. 2330-01-207-3533.

ALPHABETICAL INDEX

By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army
Chief of Staff

Official:



MILTON H. HAMILTON
Administrative Assistant to the
Secretary of the Army
01773

Distribution:

To be distributed in accordance with DA Form 12-36-E, block 9266, Operator, Unit and Direct Support/General Support Maintenance requirements for TM 11-5985-392-12.

*U.S. GOVERNMENT PRINTING OFFICE : 1994 O-388-421/1320

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

THEN. . JOT DOWN THE DOPE ABOUT IT ON THIS FORM, CAREFULLY TEAR IT OUT, FOLD IT AND DROP IT IN THE MAIL!

SOMETHING WRONG WITH THIS PUBLICATION?

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 11-5825-270-10	23 Jul 81	Radio Frequency R-2176/FRN

BE EXACT. . .PIN-POINT WHERE IT IS

PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

SIGN HERE:

DA FORM 1 JUL 79 2028-2

PREVIOUS EDITIONS ARE OBSOLETE.

P.S.—IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS.

TEAR ALONG PERFORATED LINE

PIN: 070012-000