TECHNICAL MANUAL

OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL

TOPOGRAPHIC SUPPORT SYSTEM PAPER CONDITIONING SECTION MODEL ADC-TSS-15 NSN:3610-01-105-6442

THIS MANUAL SUPERSEDES TM 5-3610-252-14 DATED 15 JUNE 1983

HEADQUARTERS, DEPARTMENT OF THE ARMY

17 MAY 1985

CHANGE

NO. 4

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., 18 MAY 1992

Operator's, Organizational, Direct Support and
General Support Maintenance Manual

TOPOGRAPHIC SUPPORT SYSTEM
PAPER CONDITIONING SECTION
MODEL ADC-TSS-15
NSN 3610-01-105-6442

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Operator's, Organizational, Direct Support and General Support Maintenance Manual

TOPOGRAPHIC SUPPORT SYSTEM PAPER CONDITIONING SECTION MODEL ADC-TSS-15

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Operator's, Organizational, Direct Support and
General Support Maintenance Manual

TOPOGRAPHIC SUPPORT SYSTEM
PAPER CONDITIONING SECTION
MODEL ADC-TSS-15
NSN: 3610-01-105-6442

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C-3 and C-4	C-3 and C-4
C-7/C-8	C-7/C-8

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Remove pages	Insert pages
i and ii	i and ii
1-11 and 1-12	1-11 and 1-12
1-51 and 1-52	1-51 and 1-52
1-57 through 1-60	1-57 through 1-60
1-67 and 1-68	1-67 and 1-68
1-91 and 1-92	1-91 and 1-92
1-95 and 1-96	1-95 and 1-96
2-27 through 2-30	2-27 through 2-30
2-33 and 2-34	2-33 and 2-34
B-5 through B-8	B-5 through B-8
C-1 through C-7/C-8	C-1 through C-7/C-8
D-1/D-2	D-1/D-2
E-1 through E-3/E-4	E-1 through E-3/E-4

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WARNING

HIGH VOLTAGE is used in this equipment. DEATH ON CONTACT or severe injury may result if personnel fail to observe safety precautions.

Do not be misled by the term LOW VOLTAGE. Low voltage can cause serious injury or death.

Test procedures requiring the operator or maintenance personnel to investigate equipment or restore casualties with interlocks disconnected or covers removed may result in DEATH ON CONTACT if personnel fail to observe safety precautions.

Voltages in switches and circuit breaker panels may result in DEATH ON CONTACT if personnel fail to observe safety precautions.

Failure to ground the Section or equipment may result in DEATH ON CONTACT if personnel fail to observe safety procedures.

For Artificial Respiration refer to FM 21-11.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Wear solvent-impermeable gloves and eye/face protective equipment when using solvent. Do not use near open flame or excessive heat. Flash point of solvent is 100°F to 138°F (38°C to 59°C).

For Artificial Respiration refer to FM 21-11.

WARNING

Attempting to move overweight or top-heavy equipment that is unsecured may result in SEVERE PERSONNEL INJURY. Always have sufficient personnel and equipment to accomplish the task.

WARNING

Ensure power switch for equipment is OFF prior to turning any circuit breaker ON or OFF.

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PAPER CONDITIONING SECTION
MODEL ADC-TSS-15
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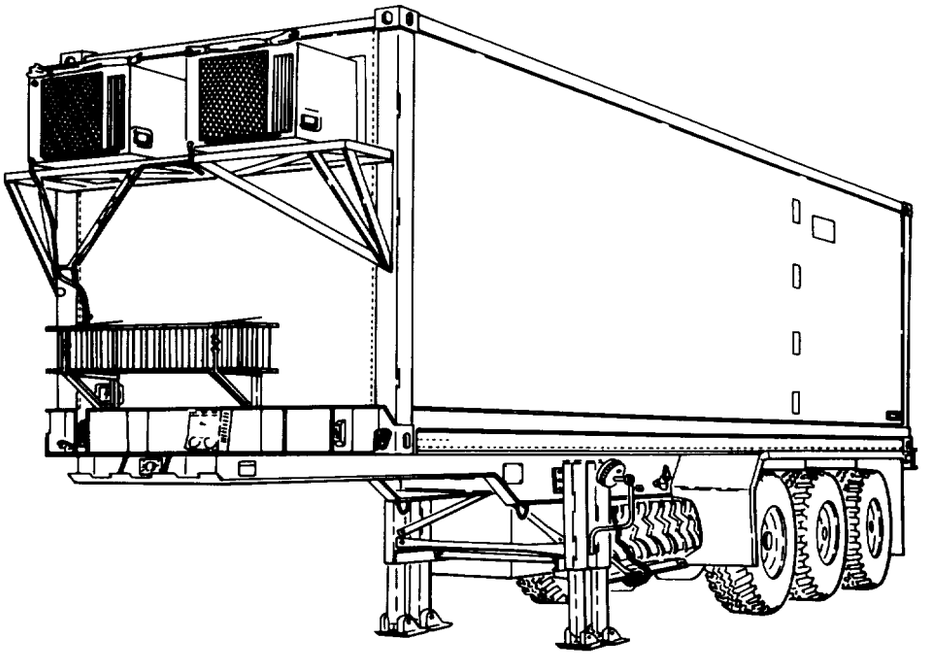
REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistake or if you know of away 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 direct to: Commander, U.S. Army Troop Support Command, ATTN: AMSTR-MCTS, 4300 Goodfellow Boulevard, St. Louis, MO 63120-1798. A reply will refurnished directly to you.



CHAPTER 1

PAPER CONDITIONING SECTION

Section I INTRODUCTION

1-1. GENERAL INFORMATION.

1-1.1 Scope. This manual contains operating and maintenance instructions for the ADC-TSS-15, Paper Conditioning Section, Topographic Support System (TSS). The purpose of the Paper Conditioning Section is to climatically stabilize paper stacks before their delivery to press sections. The Trailer Chassis is covered in TM 5-2330-305-14, Operator, Organizational, Direct Support and General Support Maintenance Manual, Topographic Support System, Chassis, Semitrailer, ISO Container Transporter. Repair parts and special tools are listed in TM 5-3610-252-24P, Organizational, Direct Support, and General Support Maintenance Repair Parts and Special Tools List, Paper Conditioning Section, Topographic Support System. Lubrication instructions are contained in LO 5-3610-252-12, Lubrication Order, Paper Conditioning Section, Topographic Support System. All authorized equipment, supplies, and their locations for transport are shown in Location and Description of Major Components of this manual.

1-1.2 Purpose of Equipment To provide a transportable facility for climatically stabilizing bulk paper stack by maintaining same temperature and humidity as press sections.

1-1.3 Maintenance Forms and Records. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA Pam 738-750, the Army Maintenance Management System (TAMMS).

1-1.4 Reporting Equipment Improvements (EIR's). If the Paper Conditioning Section needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you do not like about your equipment. Let us know why you do not like the design or performance. Put it on an SF 368 (Quality Deficiency Report). Mail it to us at: U.S. Army Troop Support Command, ATTN: AMSTR-QX, 4300 Goodfellow Blvd, St Louis, MO 63120-1798. We will send You a reply.

1-1.5 Destruction of Material to Prevent Enemy Use. For information on destruction of material to prevent enemy use, refer to TM 750-244-3, Procedures for Destruction of Equipment to Prevent Enemy Use.

1-1.6 Preparation for Storage or Shipment.

a. Perform your preparation for movement procedures.

b. For administrative storage of equipment, refer to TM 740-90-1.

c. The chapters of this manual describe special shipping instructions for major components located in the Section.

d. In the event this equipment must be removed from the Section for repair or replacement, contact your battalion for packing and shipping instructions.

1-2. EQUIPMENT DESCRIPTION.

1-2.1 Equipment Characteristics, Capabilities and Features.

a. Air and sea transportable.

b. Transportable cross-country capability when mounted on Trailer Chassis.

c. Controlled internal environment.

1-2.2 Special Considerations.

Site must permit Section to be leveled within ±2 , be well drained, and provide adequate overhead concealment. Wooded areas and other obstacles must not impede movement of transporters.

b. Dispersal of topographic sections is limited to the length of electric power transmission cable available for unit generators.

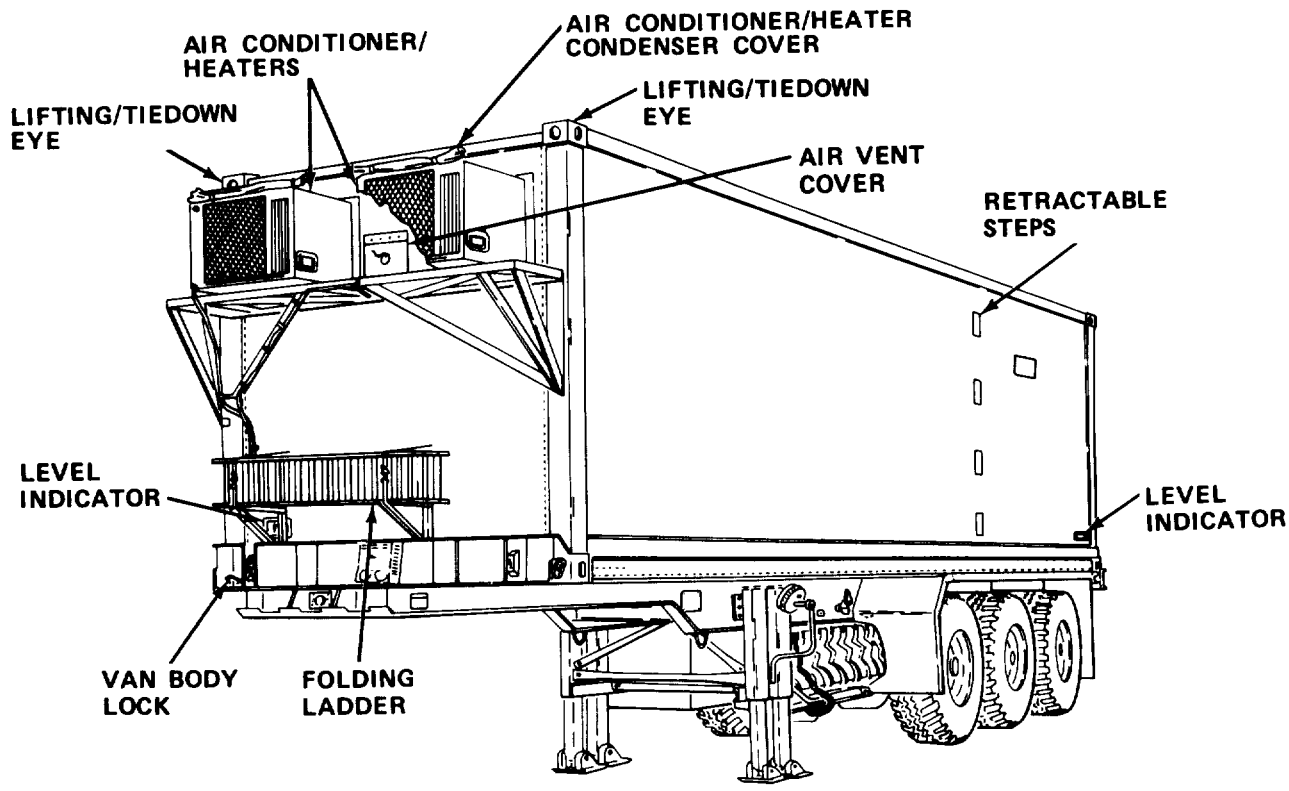
During site selection, avoid overhead power transmission lines to prevent danger from electric shock or electromagnetic interference.

d. Power is normally supplied by 60 kW generators. Commercial electric power should be used if it is compatible and available.

e. Cross-country capability of sections and transporters is limited. Relocation should be accomplished over hard-surfaced, all-weather roads whenever possible.

1-2.3 Location and Desciption of Major Components.

a. Roadside Exterior.



VAN BODY LOCK. Locks van body to Trailer Chassis.

AIR CONDITIONERS/HEATERS. Two air conditioner/heater units for internal environmental control.

LIFTING/TIEDOWN EYES. Attachment point for lifting or tying down van body.

AIR CONDITIONER/HEATER CONDENSER COVERS. Covers air conditioner/heater condenser to prevent water/air entering air conditioner/heater unit when in transport or storage.

AIR VENT COVER. Covers air vent opening.

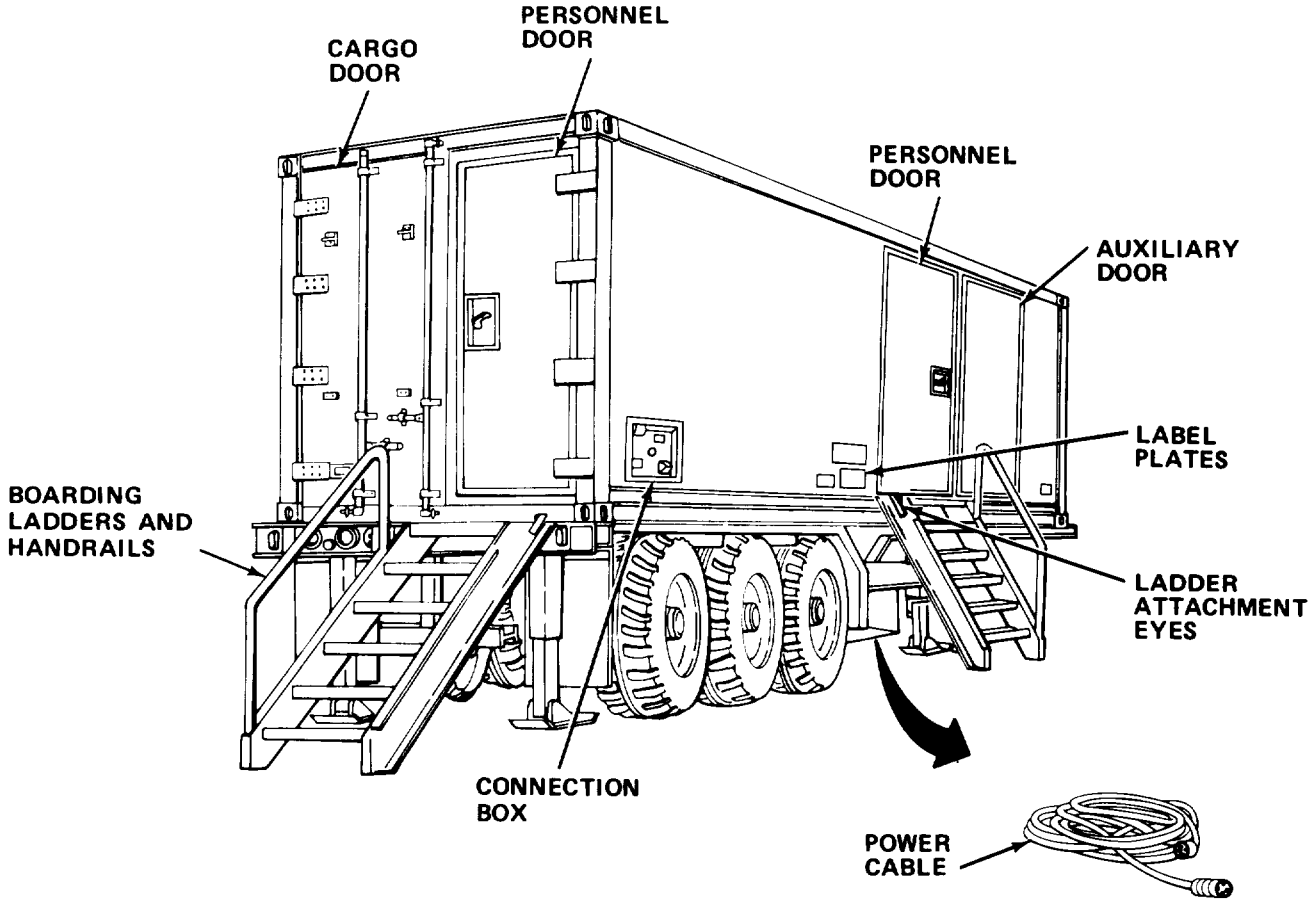
RETRACTABLE STEPS. Provide access to roof.

EXHAUST FAN COVER. Covers exhaust fan opening.

LEVEL INDICATORS. Indicate van body inclination.

FOLDING LADDER. Allows access to air conditioners and top of van.

b. Curbside Exterior.



CARGO DOOR. Access for equipment removal/installation.

PERSONNEL DOORS. Door is 35.75 in. (90.8 cm) wide by 86 in. (218.4 cm) high.

PERSONNEL DOORWAYS. Doorway is 30.75 in. (78.1 cm) wide by 78.5 in. (199.4 cm) high.

LABEL PLATES. Provide weight/moment data.

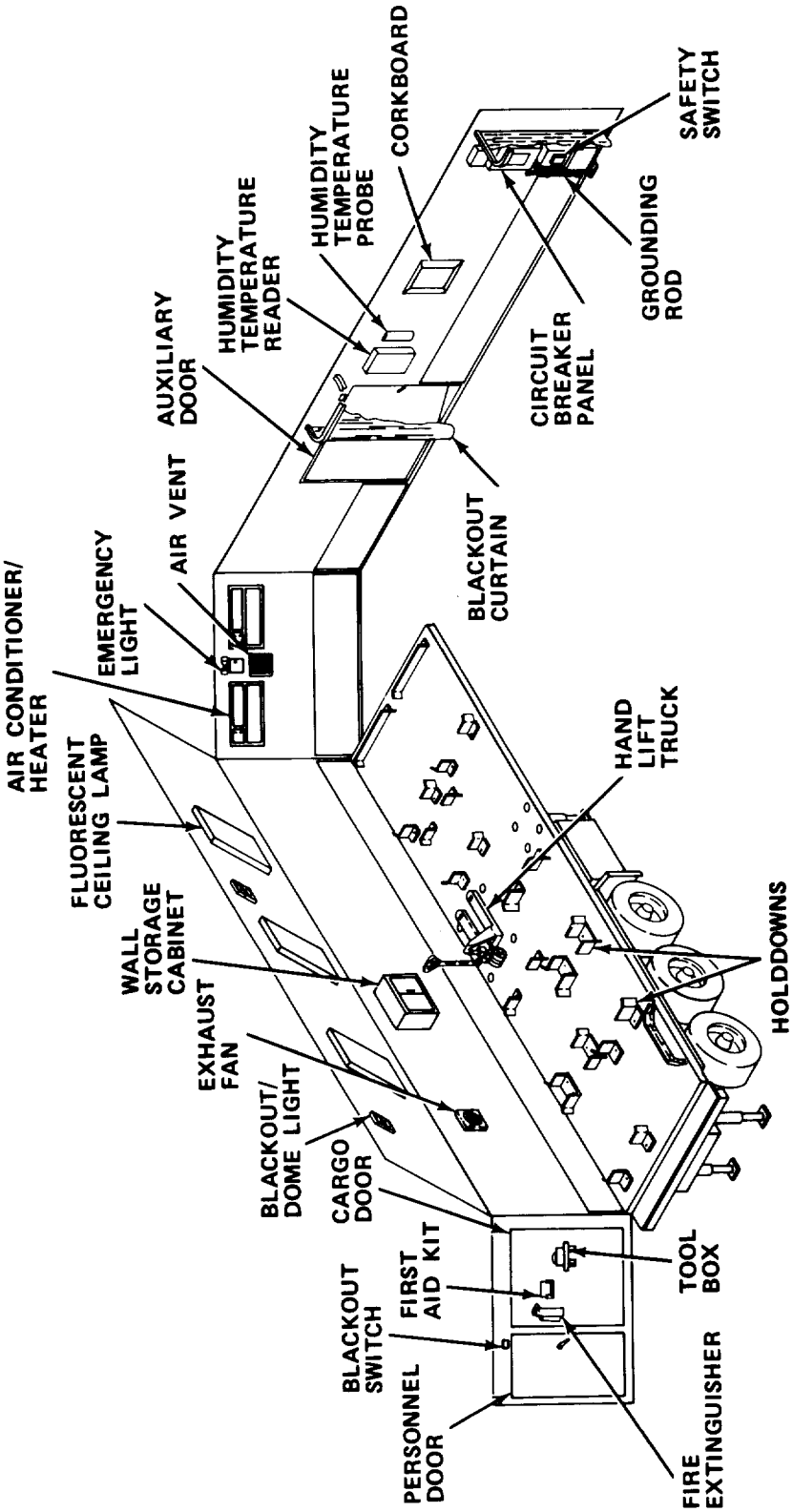
POWER CABLE. Power cable is in 50 ft (15.2 m) sections. (Stored in Trailer Chassis storage box.)

CONNECTION BOX. Contains terminals for grounding cable, power cables, and telephone lines.

LADDER ATTACHMENT EYES. Attachment points for boarding ladder.

BOARDING LADDERS AND HANDRAILS. Provide access to van body.

c. Interior.


SAFETY SWITCH
CORKBOARD
HUMIDITY TEMPERATURE PROBE
HUMIDITY TEMPERATURE READER
AUXILIARY DOOR
GROUNDING ROD
CIRCUIT BREAKER PANEL
AIR VENT
EMERGENCY LIGHT
BLACKOUT CURTAIN
AIR CONDITIONER/ HEATER
FLUORESCENT CEILING LAMP
HAND LIFT TRUCK
WALL STORAGE CABINET
HOLDDOWNS
EXHAUST FAN
BLACKOUT/ DOME LIGHT
CARGO DOOR
TOOL BOX
FIRST AID KIT
BLACKOUT SWITCH
PERSONNEL DOOR
FIRE EXTINGUISHER

PERSONNEL DOOR. Weatherproof fitted with blackout switch.

BLACKOUT SWITCH. Turns ceiling lights off when activated.

FIRE EXTINGUISHER. Dry chemical fire extinguisher.

FIRST AID KIT. Limited first aid supplies.

CARGO DOOR. Access for equipment removal/installation.

EXHAUST FAN. Provides ventilation. Fitted with lightproof louvers and weatherproof cover.

BLACKOUT DOME LIGHT. Red-lensed, white-lensed 12 V ac light actuated when blackout switch operates or from external power.

WALL STORAGE CABINET. Storage.

FLUORESCENT CEILING LAMP. White, two-level (high/low) overhead light.

HAND LIFT TRUCK. Hydraulic lift push truck to move pallets.

AIR CONDITIONERS/HEATERS. Internal environmental control.

EMERGENCY LIGHTS. Battery-powered lighting actuated by power failure.

AIR VENT. Permits filtered make-up air to enter van body.

FIRE EXTINGUISHER. Dry chemical fire extinguisher.

AUXILIARY DOOR. Opens to provide access to section for loading/unloading paper. Not fitted with blackout switch or curtain.

HUMIDITY-TEMPERATURE READER. Monitors humidity/temperature.

HUMIDITY-TEMPERATURE PROBE. Used with humidity temperature reader.

CORKBOARD. Vertical display board.

CIRCUIT BREAKER PANEL. Circuit breakers with phase test indicator.

SAFETY SWITCH. Main power safety disconnect switch.

GROUNDING ROD. Electrical ground for section.

BLACKOUT CURTAIN. Lightproof cover for personnel door.

HOLDDOWNS. Secures pallets.

TOOL BOX.

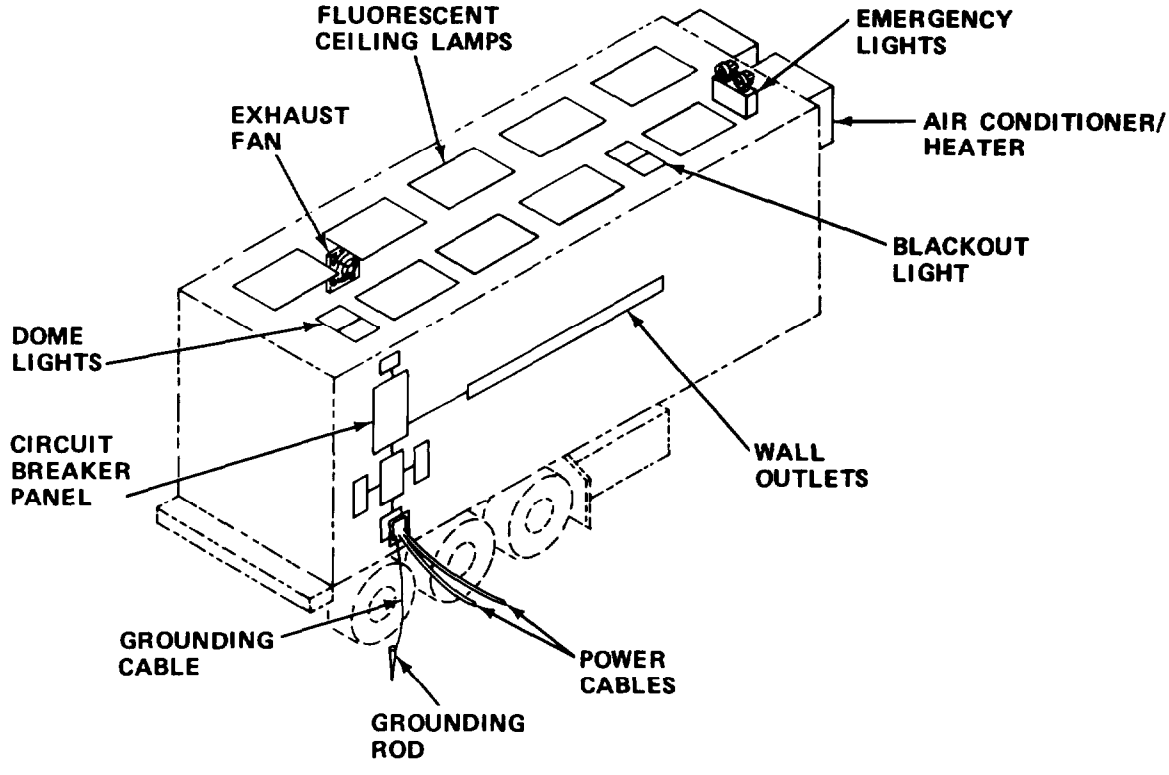
1-2.4 Equipment Data - ISO Container (Unmounted).

Dimensions	
Length	33.66 ft (10.26 m)
Width	8ft (2.44 m)
Height	8 ft (2.44 m)
Cubage	2038 ft^3 (57.7 m^3)
Connections	
Telephones	One Telephone (Three-Post) Connection
Power	12.6 kW. One 120/208 V, Three-phase, Four-Wire Connection and One 12 V dc Connection
Ground	Ground Lug
Air Conditioner/Heater (Two Units)	
Cooling	18,000 Btu/hr (5274 W) Each
Heating	14,300 Btu/hr (4190 W) (Max) Each
Power Requirements	208 V, 60 Hz, Three-Phase
Exhaust Fan	289 ft^3/min (8.18 m^3/min)
Air Vent	289 ft^3/min (8.18 m^3/min)
Weight	
Gross (Container and Chassis)	21,750 lbs (9,865.63 kg)
Tare (Container Only)	10,310 lbs (4676.54 kg)

1-3. TECHNICAL PRINCIPLES OF OPERATION.

1-3.1 General. The operation of major components located within the van are explained in the appropriate chapter for that equipment.

1-3.2 Electrical System.



GROUNDING ROD. Used to ground van body.

GROUNDING CABLE. Used with grounding rod.

CIRCUIT BREAKER PANEL. Contains voltage indicator, phase monitor, and circuit breakers.

DOME LIGHTS. White-lensed, 12 V dc lights powered from external source. Separately switched and fused.

EXHAUST FAN. Plug-in fan. Separately fused.

FLUORESCENT CEILING LAMPS. Two-level (high/low) overhead lights with blackout override switches.

EMERGENCY LIGHTS. Battery powered. Activated by power loss.

AIR CONDITIONER/HEATER. Air conditioner and electrical heater powered by three-phase, 208 V, 30 amp current.

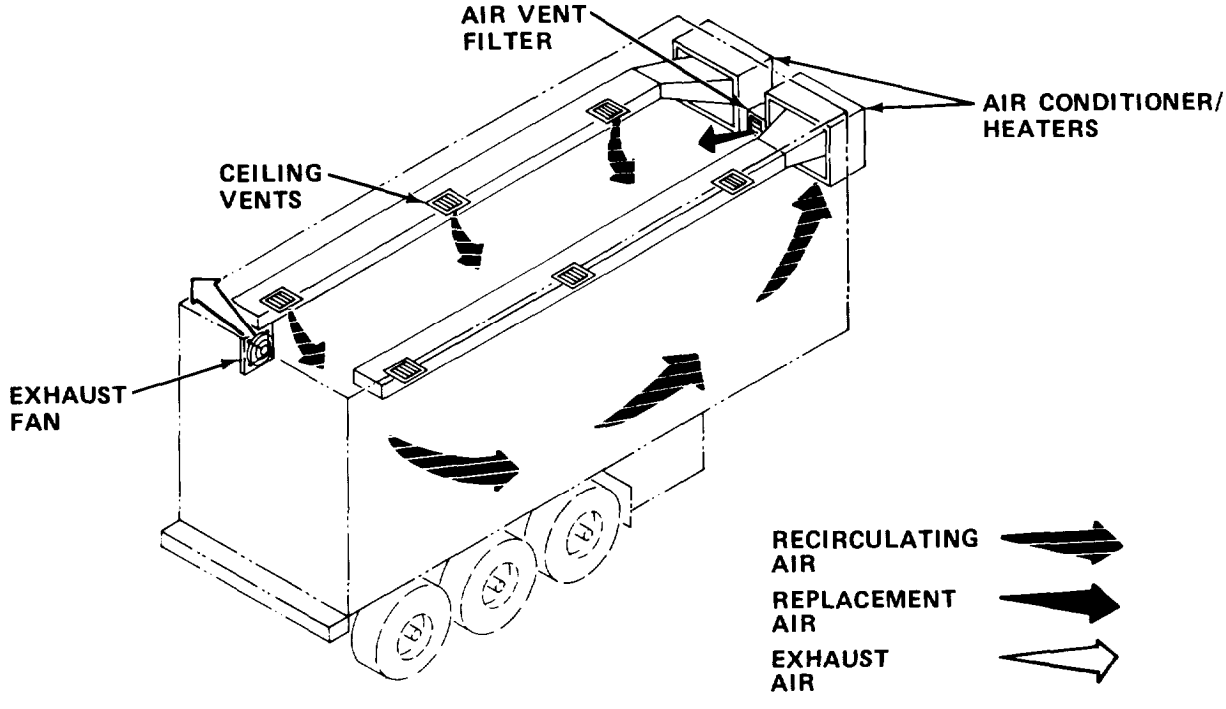
BLACKOUT LIGHTS. Red-lensed, 12 V ac lights actuated when blackout switch operates.

WALL OUTLETS . Provide grounded outlets for portable or plug-in equipment.

POWER CABLES . Power input (120/208 V ac and 12 V dc).

1-3.3 Wiring Diagram. A foldout wiring diagram is provided at the end of this manual .

1-3.4 Ventilation System.



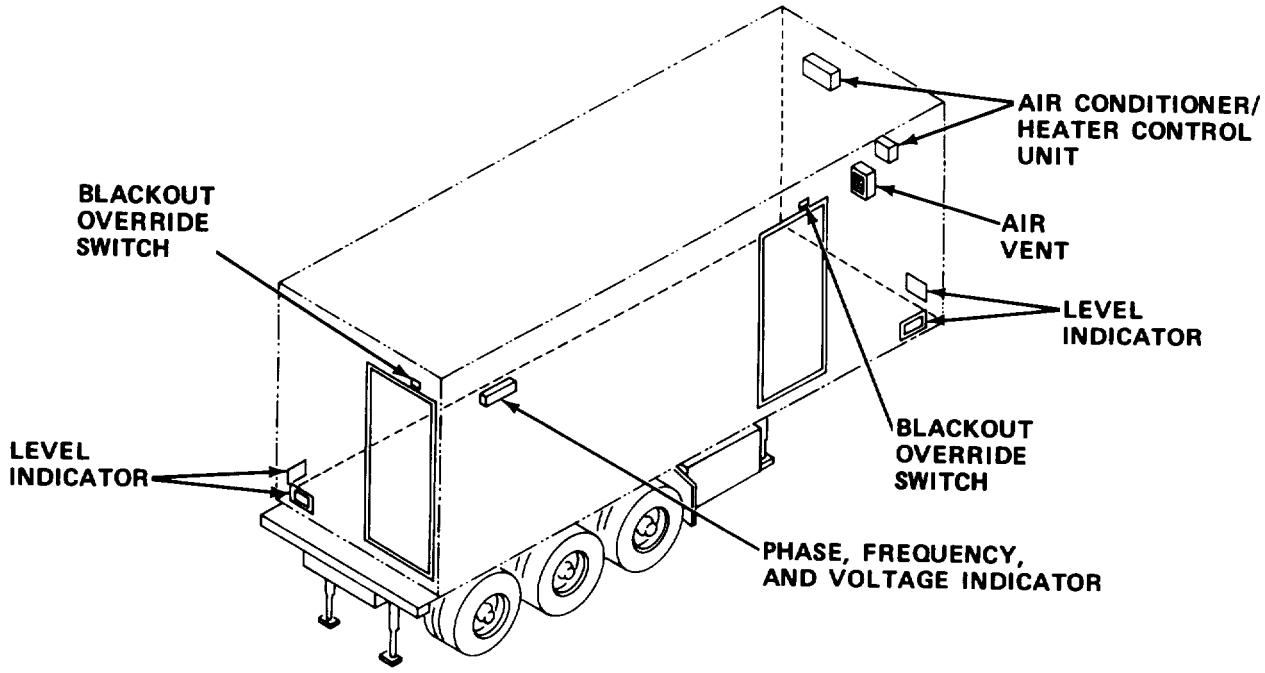
Exhaust fan exhausts air. Replacement air flows into the section through the air vent filter. Recirculating air is filtered as it enters the air conditioners/heaters. From the air conditioners/heaters, it flows through the ceiling vents and into the section.

NOTE

Detailed description of air conditioner/heater operation is contained in TM 5-4120-367-14, Operator, Organizational, Direct Support, and General Support Maintenance Manual, Air Conditioner, Horizontal, Compact, 18,000 Btu/hr Cooling, and TM 5-4120-367-24P, Organizational, Direct Support, and General Support Maintenance Repair Parts and Special Tools List (Including Depot Maintenance Repair) for Air Conditioner, Horizontal, Compact, 18,000 Btu/hr (5274W).

Section II OPERATING INSTRUCTIONS

1-4. DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS.



Control or Indicator	Function
Blackout Override Switches	Turns off illumination when door is opened.
Air Vent	Permits make-up air to enter as required.
Air Conditioner/Heater Control Unit	Permits selection of air conditioner or heater mode of operation and temperature.
Phase, Frequency, and Voltage Indicator	Monitors electrical power, phase, frequency, and voltage.
Level Indicators	Used to level section.

1-5. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES.

a. Before You Operate. Always keep in mind the WARNINGS and CAUTIONS. Perform your before (B) PMCS.

b. While You Operate. Always keep in mind the WARNINGS and CAUTIONS. Perform your during (D) PMCS.

c. After You Operate. Be sure to perform your after (A) PMCS.

d. If Your Equipment Fails to Operate. Troubleshoot with proper equipment. Report any deficiencies using the proper forms. See DA Pam 738-750.

1-5.1 PMCS Procedures.

a. PMCS are designed to keep the equipment in good working condition by performing periodic service tasks.

b. Service intervals provide you, the operator, with time schedules that determine when to perform specified service tasks.

c. The “Equipment is Not Ready/Available If” column is used for identification of conditions that make the equipment not ready/available for readiness reporting purposes or denies use of the equipment until corrective maintenance is performed.

d. If your equipment fails to operate after PMCS is performed, immediately report this condition to your supervisor.

e. Perform weekly as well as before operation if you are the assigned operator and have not operated the item since the last weekly or if you are operating the item for the first time.

f. Item number column. Item numbers are assigned in chronological ascending sequence regardless of interval designation. These numbers are used for your “TM Number” column on DA Form 2404, Equipment Inspection and Maintenance Worksheet, in recording results of PMCS.

Interval columns. This column determines the time period designated to perform your PMCS.

h. Item to be inspected and procedures column. This column lists functional groups and their respective assemblies and subassemblies as shown in the Maintenance Allocation Chart (Appendix B). The appropriate check or service procedure follows the specific item to be Inspected.

i. Equipment is not ready/available if: column. This column-indicates the reason or cause why your equipment is not ready/available to perform its primary mission.

j. List of tools and materials required for PMCS is as follows:

Item	Quantity
Wire Brush	1 ea
6 in. Adjustable Wrench	1 ea
Flat Tip Screwdriver	1 ea
Vacuum Cleaner	1 ea
Cheesecloth (Item 4, Appendix E)	ar
General Purpose Detergent (Item 5, Appendix E)	ar
Paint (Items 11, 11A and 11B appendix E)	ar
Paint Brushes	ar

Table 1-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES

NOTE

If the equipment must be kept in continuous operation, check and service only those items that can be checked and serviced without disturbing operation. Make the complete checks and services when the equipment can be shut down.

B - Before
D - During
A - After

W - Weekly
M - Monthly
Q- Quarterly

AN - Annually
S - Semiannually
BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED PROCEDURE	For Readiness Reporting, Equipment Is Not Ready/ Available If:
		VAN BODY	
1		Inspect Exterior.	
	B/W	1. Inspect surfaces for punctures, cracks, or open seams that could permit moisture to enter wall.	Punctures cracks, or open seams are present.
	B	2. Inspect four level indicators for damage and to be sure section is level.	Indicators are broken.

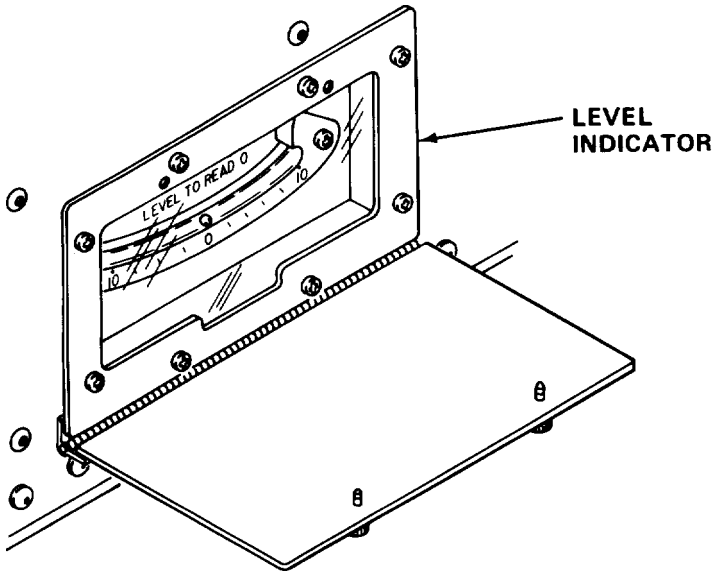


Table 1-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont

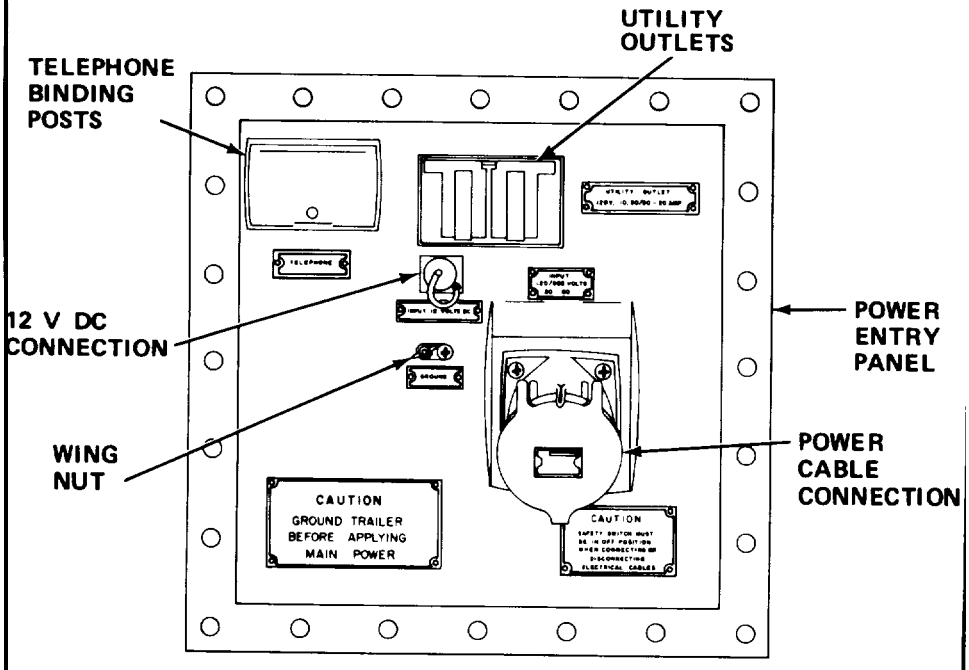
B - Before
D - During
A - After

W - Weekly
M - Monthly
Q - Quarterly

AN - Annually
S - Semiannually
BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED PROCEDURE	For Readiness Reporting, Equipment Is Not Ready/ Available If:
		VAN BODY - Cont	
1		Inspect Exterior - Cont	
		WARNING To prevent death or serious injury, do not handle or clean power cable or connectors when cable is connected to power source.	
	B	3. Inspect power cable assembly for dirt or damaged connectors. a. Wipe cable insulation with clean, dry cloth to remove dirt. b. Clean corrosion from terminals.	Connector damaged.



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B - Before
D - During
A - After

W - Weekly
M - Monthly
Q - Quarterly

AN - Annually
S . Semiannually
BI - Biennially

{Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED PROCEDURE	For Reediness Reporting Equipment Is Not Reedy/ Available If:
		VAN BODY - Cont	
1		Inspect Exterior - Cont	
	B/W	4. Inspect power entry pane" for accumulated dirt, water, or corrosion. Clean power entry panel.	
	B/W	5. Inspect power entry panel to be sure any unused receptacles are covered.	Missing covers.
	B/W	6. Inspect air conditioner/heater drain tube to be sure tube is positioned as shown. Check for breaks and crimps in hose and check connections for damage or leakage.	

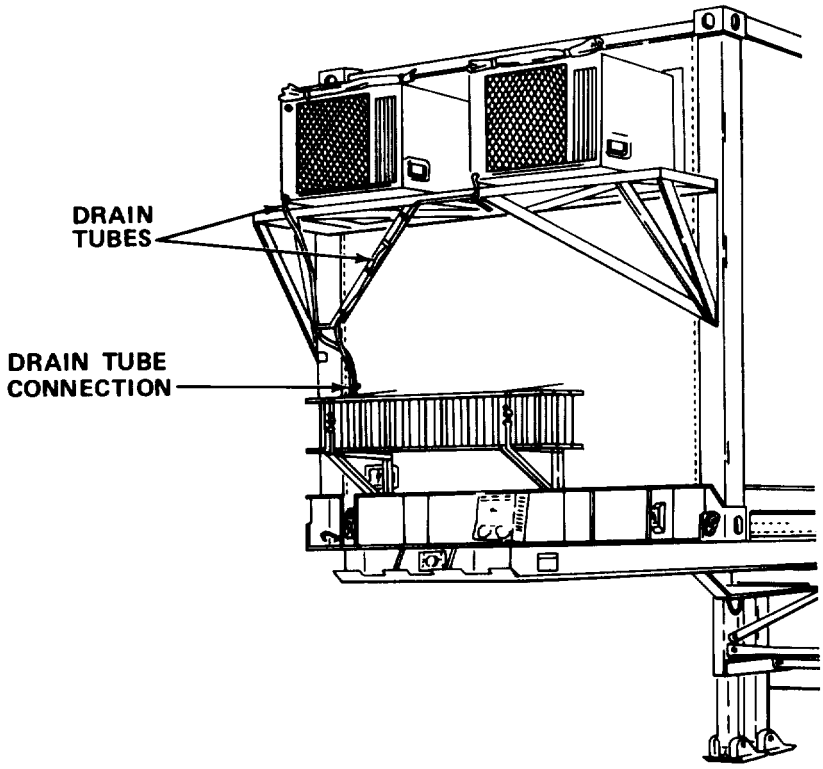

Table 1-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont

B - Before
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(Number) - Hundreds of Hours

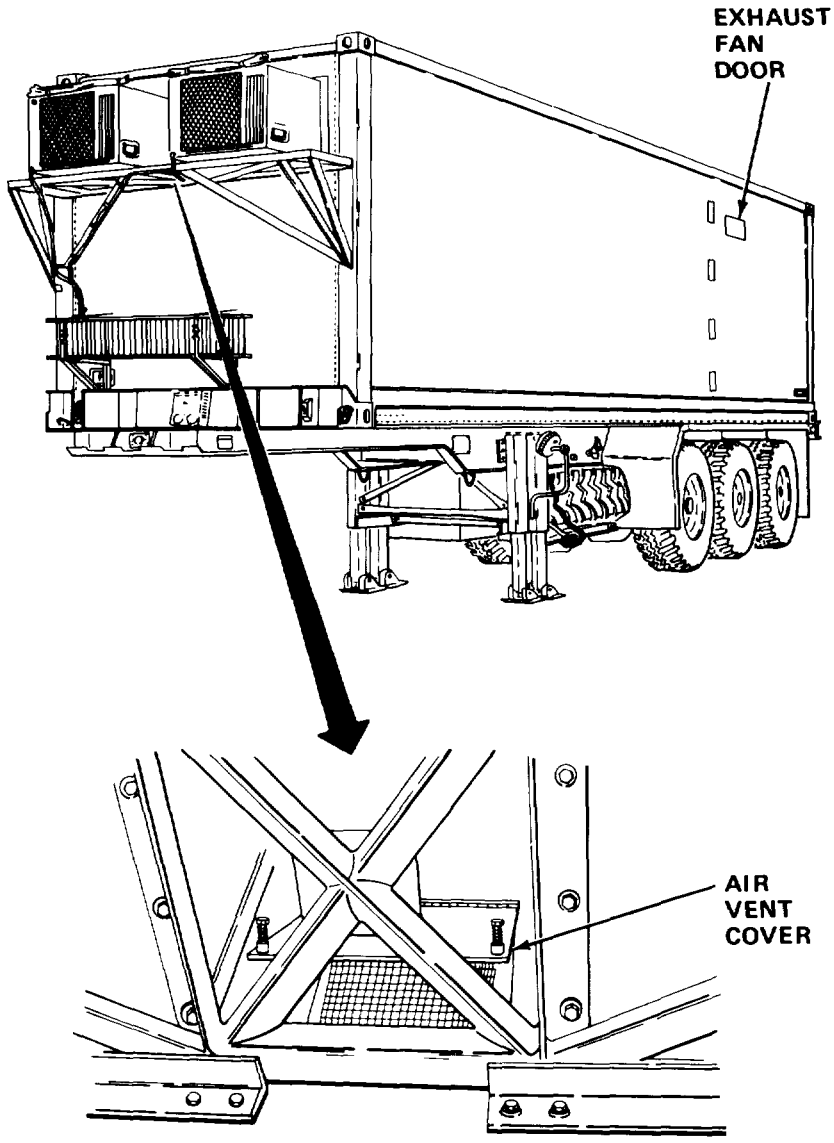
ITEM NO.	INTERVAL	ITEM TO BE INSPECTED PROCEDURE	For Reediness Reporting, Equipment Is Not Ready/ Available If:
		VAN BODY - Cont	
1		Inspect Exterior - Cont	
			
	B/W	7. Inspect exhaust fan door and air vent covers to be sure they are not blocked or clogged. Clean as required: Clean screen with vacuum cleaner as necessary.	

Table 1-1, OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont

B . Before W - Weekly AN - Annually (Number) - Hundreds of Hours
D - During M . Monthly s - Semiannually
A - After Q . Quarterly BI - Biannially

ITEM NO	IN-TER VAL	ITEM TO BE INSPECTED PROCEDURE	For Reediness Reporting, Equipment Is Not Ready/ Available If:
		VAN BODY - Cont	
1		Inspect Exterior - Cont	
	B/W	8. Visually inspect ground connections to be sure grounding cable is connected to terminal lug and grounding rod. If necessary, clean:	Grounding connec-tions are broken or missing.
		WARNING Electrical shock hazard. Power cable must be de-energized before servicing entry panel connections. Death can result from failure to observe these safety precautions.	
		a. Turn power off to cable. Disconnect from power source.	
		b. Disconnect grounding lug from grounding rod.	
		c. Clean lug, cable end, and rod with wire brush.	
		d. Reconnect grounding cable lug to rod.	
		e. Disconnect grounding cable end from entry panel.	
		f. Clean terminal and cable end with wire brush.	
		g. Reconnect grounding cable to entry panel.	
		h. Reconnect cable to power source. Turn power on.	
	B	9. Inspect boarding ladders for:	Steps are broken or will not lock in place.
		a. Secure attachment of handrails.	
		b. Steps not broken.	
		c. Locking pins in place.	

Table 1-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS ANC) SERVICES—Cont.

B—Before W—Weekly AN-Annually (Number)-Hundreds of Hours
D—During M—Monthly S -Semiannually
A—After Q —Quarterly BI —Biennially

ITEM NO.	IN-TER-VAL	ITEM TO BE INSPECTED PROCEDURE	For Readiness Reporting, Equipment Is Not Ready/ Available If:
		VAN BODY—Cont.	
1		Inspect Exterior-Cont.	
	B/D/A	10. Inspect front and rear van body locks to be sure locks are fully engaged.	Lock disengaged.
	Q	11. Inspect gaskets on personnel doors for leaks or damage.	
	W	11.1 Inspect hinges for proper placement of hinge pins.	Missing hinge pins.
	Q	12. Clean and paint blistered, pitted, or flaking areas and bare metal spots in accordance with instructions cntained in TM 43-0139, Painting Instructions for Field Use,	
2		Inspect Interior.	
	B/D	1. Test emergency lights by pressing test button.	Emergency lights do not light.
	W	2. Inspect power cords and cables to be sure wires are not kinked, cut, or cracked.	Wires or cables are cracked or cut.
	W	3. Inspect plug connectors to be sure all plug connectors are tight and firmly seated. Tighten if necessary.	
	D	4. Inspect for burned out light bulbs and fluorescent lamps. Replace as required.	
	W	5. Inspect walls, ceilings, and floor for holes, open seams, or signs of seepage or leaks.	Leaks are present.
	D	6. Check storage cabinets for broken hinges, latches, and locks.	Hinge, latch, or lock is broken.

Table 1-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont

B - Before
D - During
A - After

W - Weekly
M - Monthly
Q - Quartarly

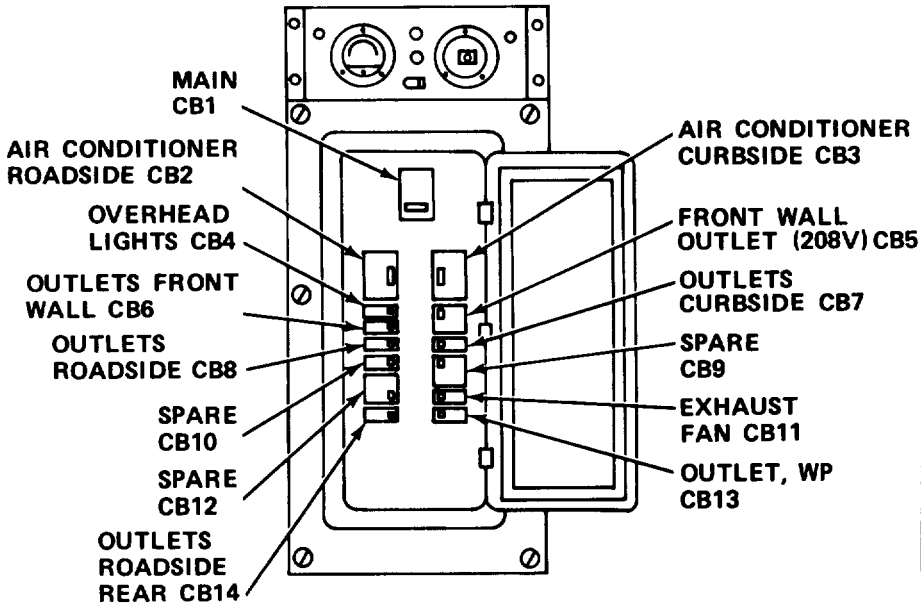
AN - Annually
S - Semiannually
BI - Biennially

(Number) - Hundreds of Howe

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED PROCEDURE	For Readiness Reporting, Equipment Is Not Reasy/ Available If:
		VAN BODY - Cont	
		Inspect Interior - Cont	
1	B/ M/A	7. Inspect fire extinguishers. Be sure security seals are not broken.	Fire extinguisher is missing or seals are broken.
	Q	8. Inspect circuit breaker panel.	Circuit breaker is defective.

NOTE

Inspection is to be conducted on a not-to-interfere basis with work being conducted. Individual equipment will be inspected as directed by the appropriate chapter of this manual.



a. Set main circuit breaker to ON.

b. Set each circuit breaker to OFF, then ON.

Table 1-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont

B - Before W - Weekly AN . Annually (Number) . Hundreds of Hours
D - During M - Monthly s - Semiannually
A - After Q - Quarterly BI - Biennially

ITEM NO.	IN-TER-VAL	ITEM TO BE INSPECTED PROCEDURE	For Readiness Reporting, Equipment Is Not Ready/ Available If:
		VAN BODY - Cont	
1		Inspect Interior - Cont	
	Q	9. Inspect light traps.	
		a. Turn on fluorescent lamps (high level).	
		b. Close entrance doors. Have exhaust fan and air vent open. Inspect for light leakage through vents.	Light leaks are present.
		c. Place light switches ON; blackout override switches OFF.	
		d. Open door and make sure internal lights go off.	Blackout system is inoperable.
	A	10. Inspect/clean interior.	
		WARNING Death *or* serious injury may occur if wet or damp cloth is used to wipe or clean energized equipment, power cords, or cables.	
		CAUTION Do not sweep interior. Dislodged dirt or dust will ruin optical, electronic, and photographic equipment and supplies.	
		a. Wipe vertical and horizontal painted surfaces with cleaning cloth moistened" with solution of general purpose detergent and fresh water until soil is removed from painted surfaces.	
		b. Dry vertical and horizontal painted surfaces with clean cloth.	
		c. Vacuum interior of section to remove dirt and waste. Pay particular attention to work stations.	

Table 1-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont

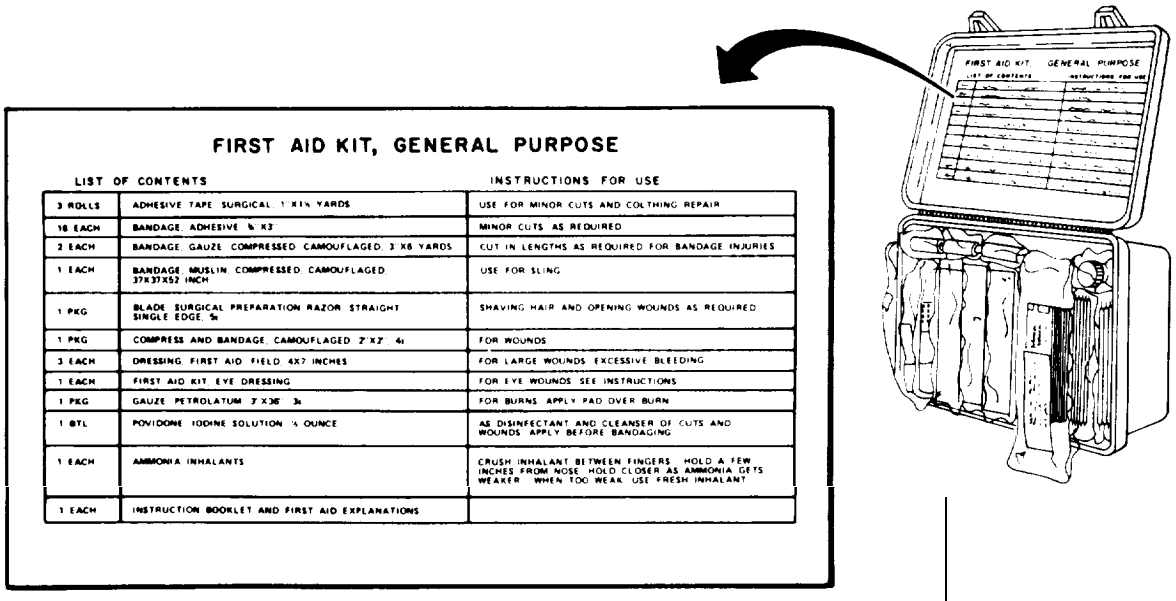
B . Before
D - During
A - After

W - Weakly
M . Monthly
Q - Quarterly

AN . Annually
S - Semiannually
BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	TEM TO BE INSPECTED PROCEDURE	For Readiness Reporting, Equipment is Not Ready/ Available If:
		VAN BODY - Cont	
1		Inspect Interior - Cont	
	s	11. Inspect first aid kit.	



FIRST AID KIT, GENERAL PURPOSE

LIST OF CONTENTS		INSTRUCTIONS FOR USE
3 ROLLS	ADHESIVE TAPE SURGICAL 1" X1¼ YARDS	USE FOR MINOR CUTS AND CLOTHING REPAIR
18 EACH	BANDAGE ADHESIVE ¾" X3"	MINOR CUTS AS REQUIRED
2 EACH	BANDAGE GAUZE COMPRESSED CAMOUFLAGED 3" X6 YARDS	CUT IN LENGTHS AS REQUIRED FOR BANDAGE INJURIES
1 EACH	BANDAGE MUSLIN COMPRESSED CAMOUFLAGED 37"X37"X52 INCH	USE FOR SLING
1 PKG	BLADE SURGICAL PREPARATION RAZOR STRAIGHT SINGLE EDGE ¾"	SHAVING HAIR AND OPENING WOUNDS AS REQUIRED
1 PKG	COMPRESS AND BANDAGE CAMOUFLAGED 2"X2" 4L	FOR WOUNDS
3 EACH	DRESSING FIRST AID FIELD 4X7 INCHES	FOR LARGE WOUNDS EXCESSIVE BLEEDING
1 EACH	FIRST AID KIT EYE DRESSING	FOR EYE WOUNDS SEE INSTRUCTIONS
1 PKG	GAUZE PETROLATUM 3"X36" ¾"	FOR BURNS APPLY PAD OVER BURN
1 BTL	POVIDONE IODINE SOLUTION ¼ OUNCE	AS DISINFECTANT AND CLEANSER OF CUTS AND WOUNDS APPLY BEFORE BANDAGING
1 EACH	AMMONIA INHALANTS	CRUSH INHALANT BETWEEN FINGERS HOLD A FEW INCHES FROM NOSE HOLD CLOSER AS AMMONIA GETS WEAKER WHEN TOO WEAK USE FRESH INHALANT
1 EACH	INSTRUCTION BOOKLET AND FIRST AID EXPLANATIONS	

a. Remove first aid kit from bracket.

b. Remove contents.

c. Inspect container for damage.

d. Inspect contents for damage. Then use checklist to inventory contents.

e. Replace damaged or missing items.

f. Repack kit.

g. Reinstall kit.

Table 1-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont

B - Before D - During A - After | W - Weekly M - Monthly Q - Quarterly | AN - Annually S - Semiannually BI - Biennially | (Number) - Hundreds of Hours

ITEM NO,	INTERVAL	ITEM TO BE INSPECTED PROCEDURE	For Reediness Reporting, Equipment is Not Ready/ Available If:
		VAN BODY - Cont	
2		Inspect Interior - Cont	
	B/W	12. Inspect blackout curtains.	
		a. Inspect blackout curtains and valances for tears, missing hooks, or broken eyelets.	
		b. Inspect nylon hook and pile tape on curtain and wall for security of attachment.	
3	3	Inspect Air Conditioner/Heater. Refer to TM 5-4120-367-14 for preventive maintenance checks and services.	
4	M	Service Power Cable.	
		WARNING Electrical shock hazard. Power cable must be de-energized before servicing. Death or serious injury may occur from failure to observe this safety precaution.	
		1. Turn off safety switch.	
		2. Disconnect cable from power entry panel.	
		3. Wrap any cuts or abrasions n cable with electrical insulation tape.	
		NOTE Check to be sure cable does not endanger personnel.	
		4. Reconnect power cabl e to entry panel.	

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PIN: 051773-003

1-6. OPERATOR UNDER USUAL CONDITIONS. Operation of the Paper Conditioning Section consists of activation of power after the Section has been located at the operation site and 12 V dc power disconnected.

1-6.1 Preparation for Use.

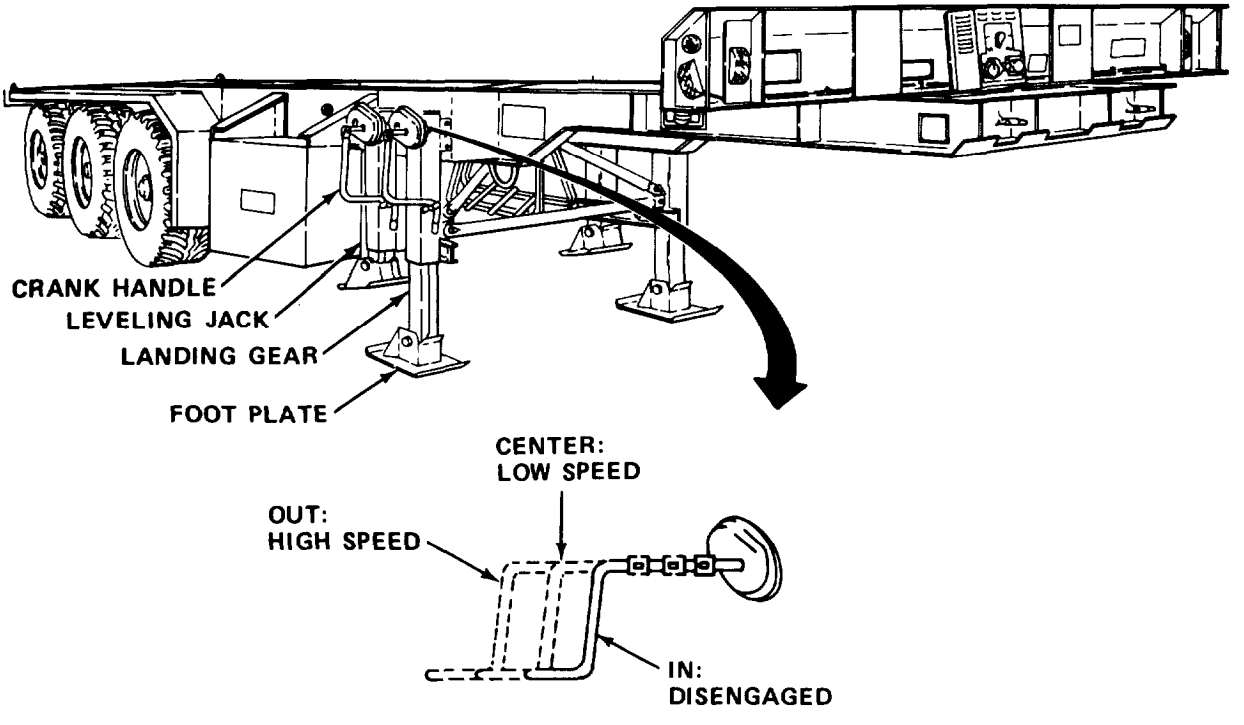
a. Procedures for leveling.

CAUTION

Trailer-mounted section must be on surface that is approximately level to avoid unnecessary stress or twisting of chassis when Section is leveled.

NOTE

- Snow or ice should be removed from under leveling foot plate before attempting to level section.
- Sand, soft ground, or mud requires that shoring or scrap material be placed under leveling foot plate to increase surface area and prevent mud shoes from sinking into surface.
- Be sure that air suspension is deflated as indicated in TM 5-2330-305-14.



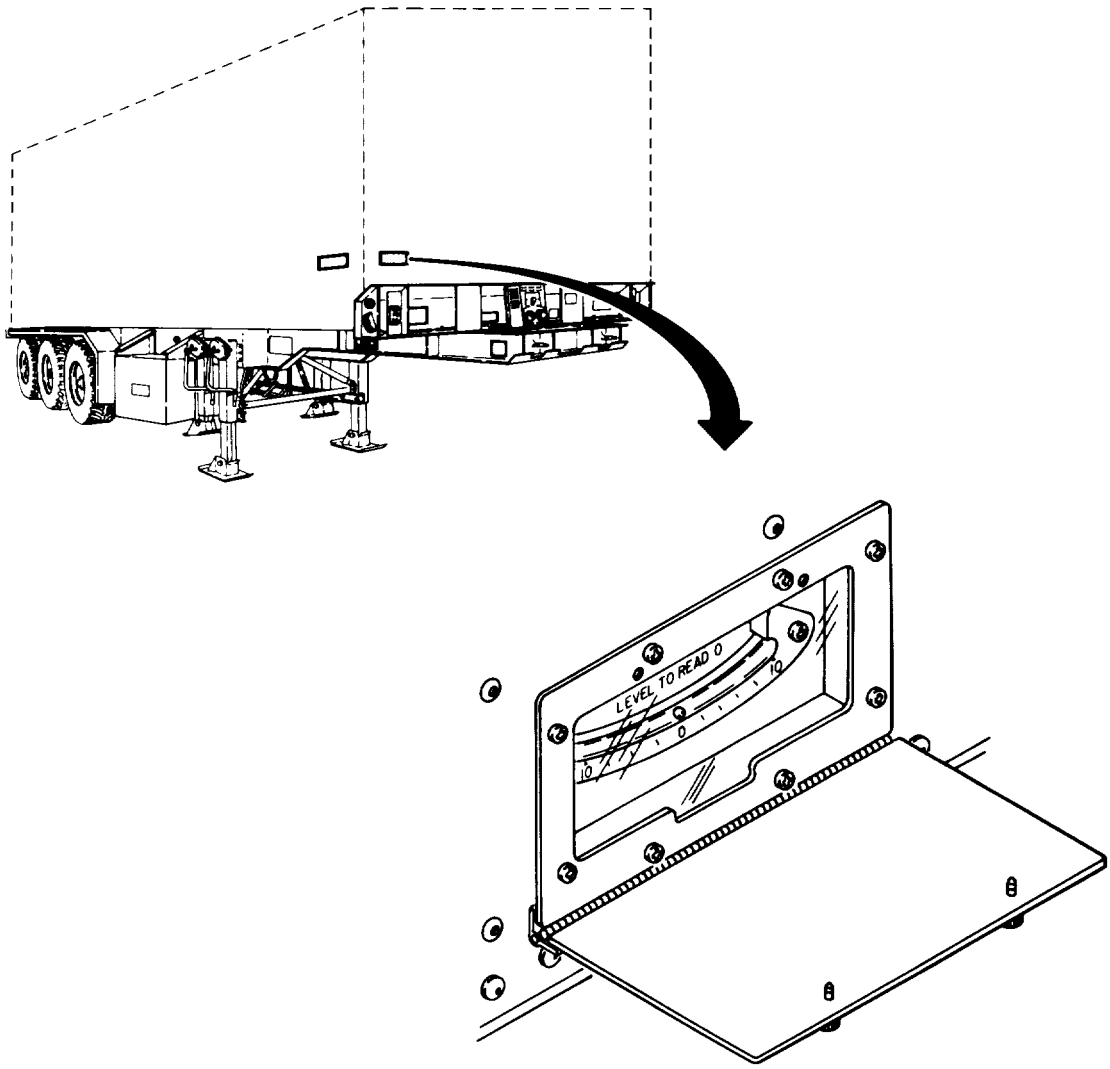
(1) Deflate air suspension in accordance with TM 5-2330-305-14.

(2) Approximately level Trailer Chassis by raising or lowering landing gear.

(3) Move handle from secured location and swing out.

(4) Pull crank handle on each leveling jack all the way out and engage. There are two positions when handle is engaged. Fully out is high speed. Partially out is low speed.

(5) Lower each leveling jack by turning crank to right at high speed until foot plate just contacts ground.

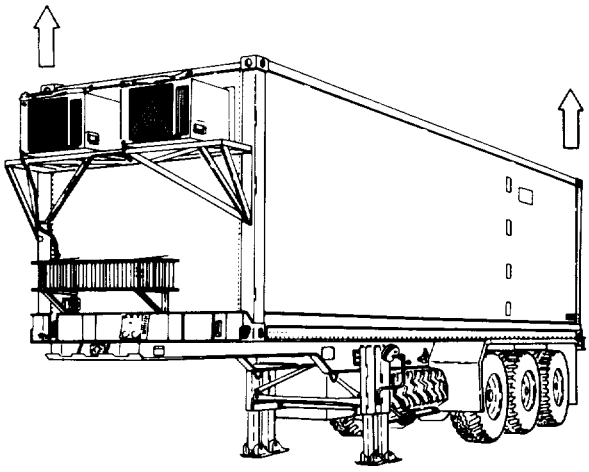


(6) Station personnel to have a clear view of level indicators at both front and rear of section.

(7) Observe level indicators to determine which end and side must be raised.

CAUTION

Do not attempt to level section by lifting at diagonal corners or frame will be twisted.



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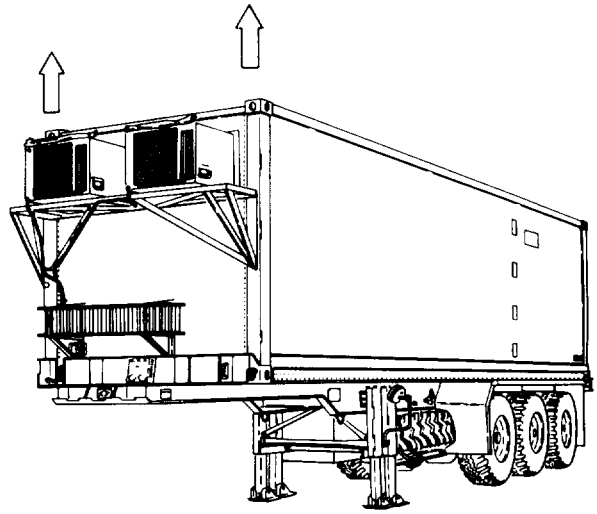
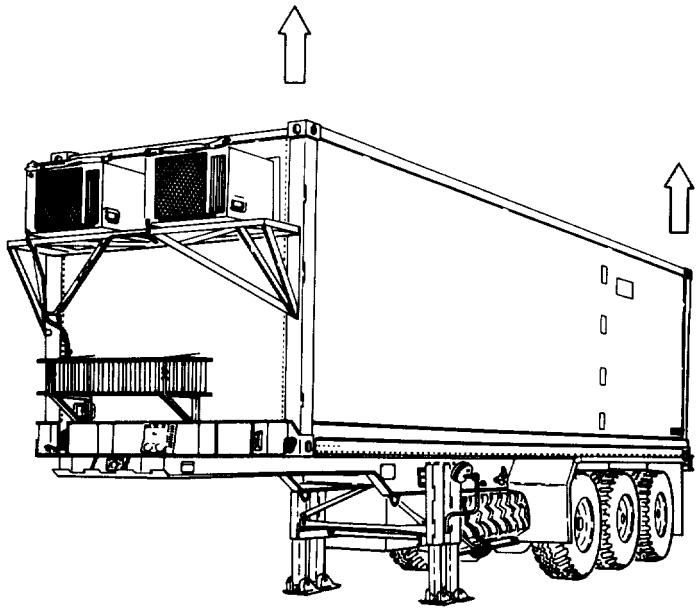
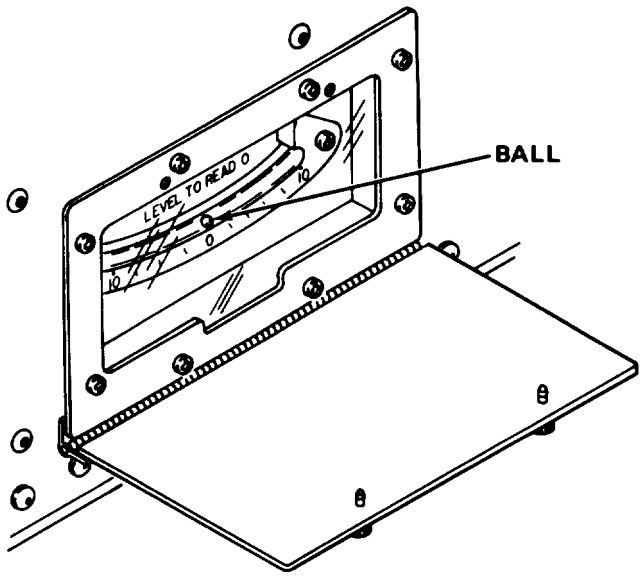


YES

(8) Raise low end by extending both leveling jacks at low end. Use low speed.



(9) Raise low side by extending both leveling jacks at low side.

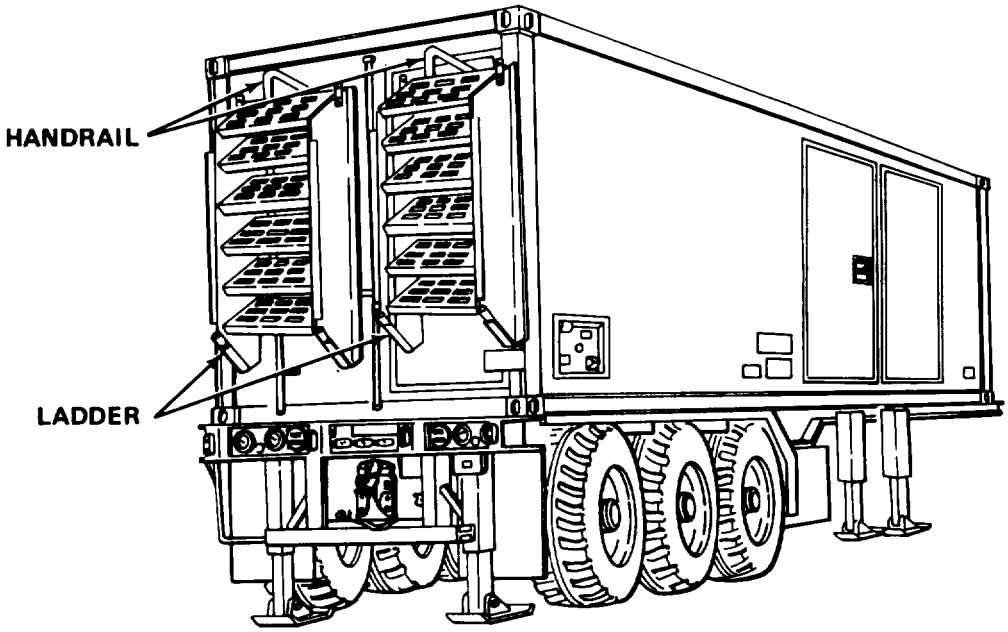


NOTE

Be sure ball is centered on all four level indicators ±2°.

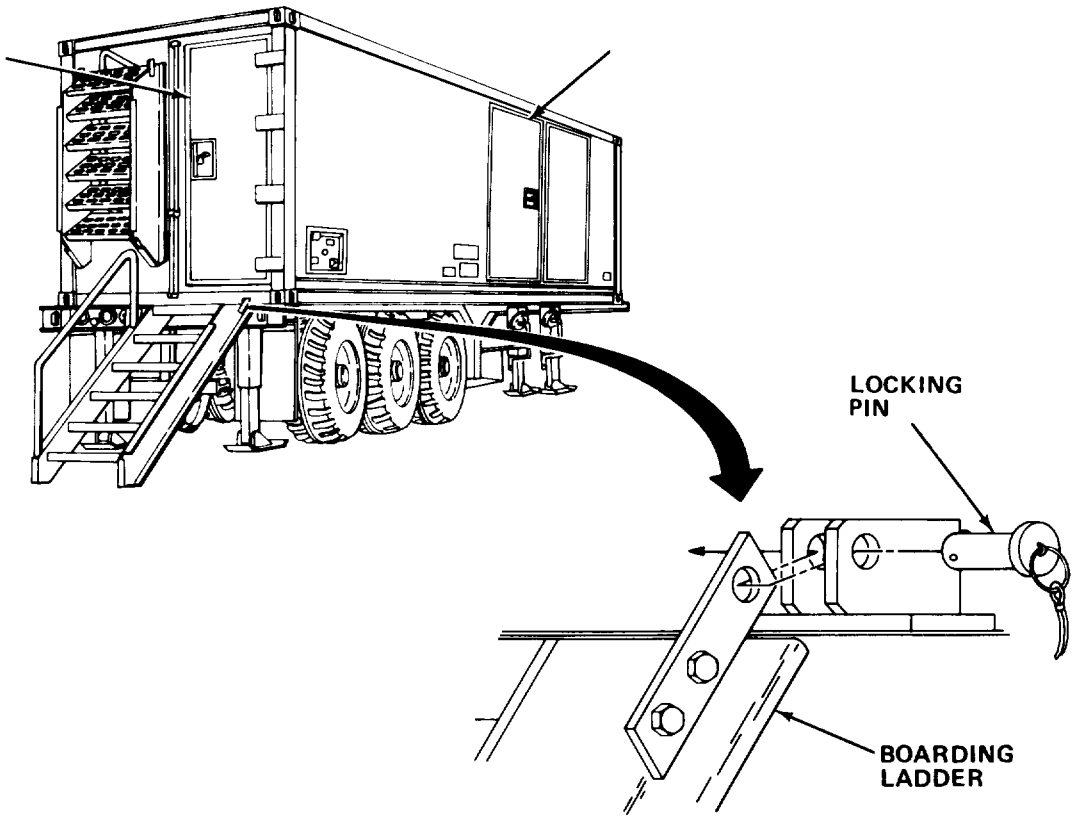
(10) Pull leveling crank handles away from Trailer Chassis and lower crank handle to stowed position.

b. Procedures to activate section.

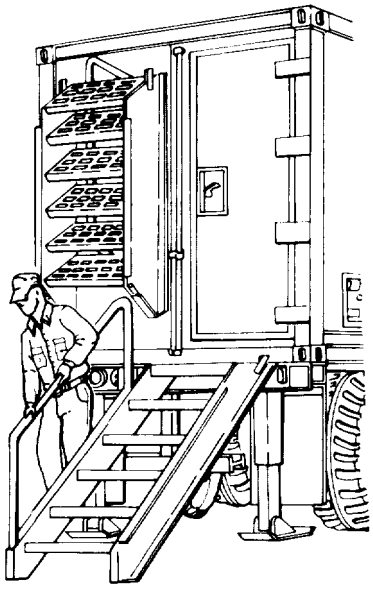


(1) Remove boarding ladders and handrails from rear of section.

(2) Remove handrails from ladders.



(3) Mount ladders at personnel doors and secure with locking pins.

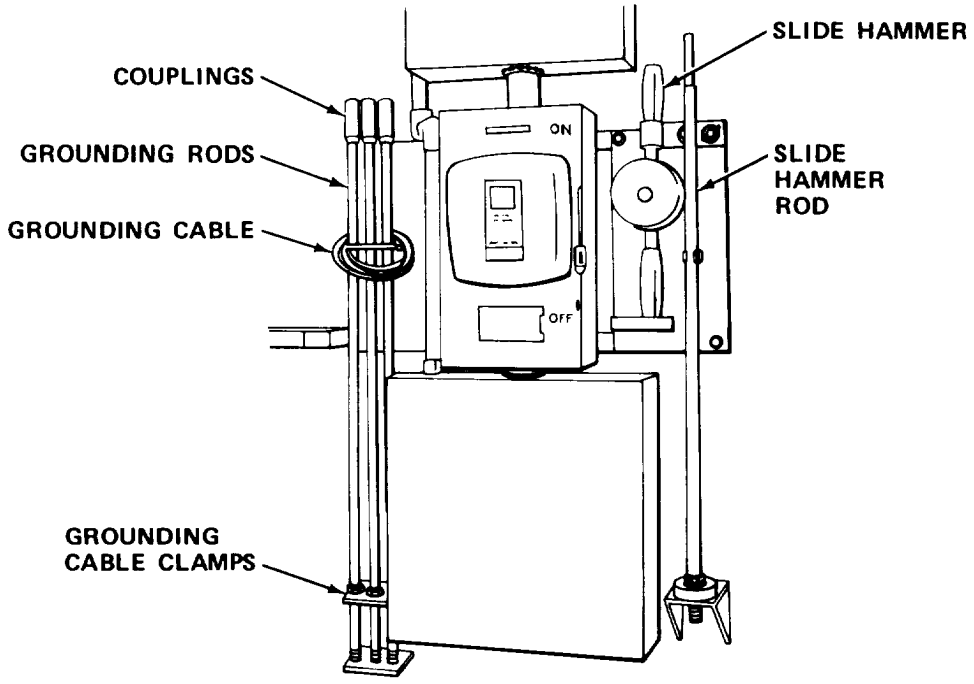


(4) Mount one handrail on each ladder.

(5) Enter section and be sure safety switch, main circuit breaker, and all equipment power supply switches are off.

WARNING

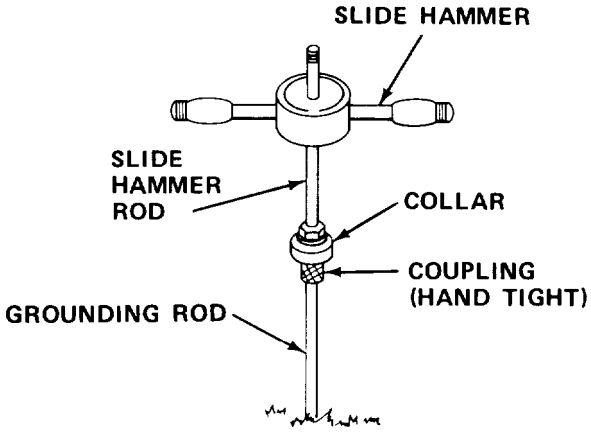
Death or serious injury may result from connecting power cable to section before grounding.



(6) Remove grounding rod, slide hammer, and grounding cable from section.

NOTE

- Apply a thin film of grease to threaded ends of rods before driving into ground. This will permit easy disassembly upon removal from ground.
- Bottom grounding rod must be numbered or identified so that it will always be the first rod driven into the ground.
- These instructions supplement TC 11-6, Grounding Techniques.



(7) Select an area as close to power entry panel as possible to install grounding rod. Then assemble the first grounding rod and coupling to the slide hammer rod.

CAUTION

Do not allow grounding rod to rotate when removing the slide hammer rod. Rods must be kept screwed together to make a good electrical ground.

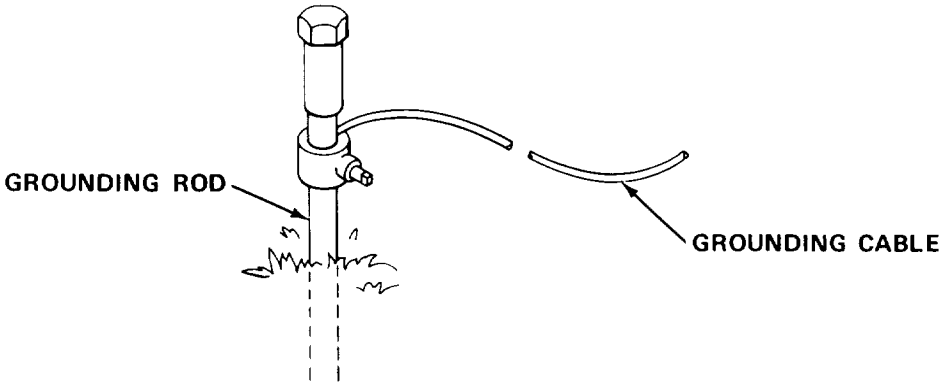
NOTE

Before driving grounding rod be certain that rods meet inside coupling. Be sure collar is handtight against coupling.

(8) Place slide hammer on hammer rod end and drive grounding rod into ground. Remove slide hammer rod. Attach slide hammer rod to a new section of grounding rod and repeat procedure until only 12 in. (30.5 cm) of the third rod is above ground.

(9) Remove slide hammer and hammer rod and place in section.

(10) Secure grounding cable clamp and grounding cable to grounding rod.

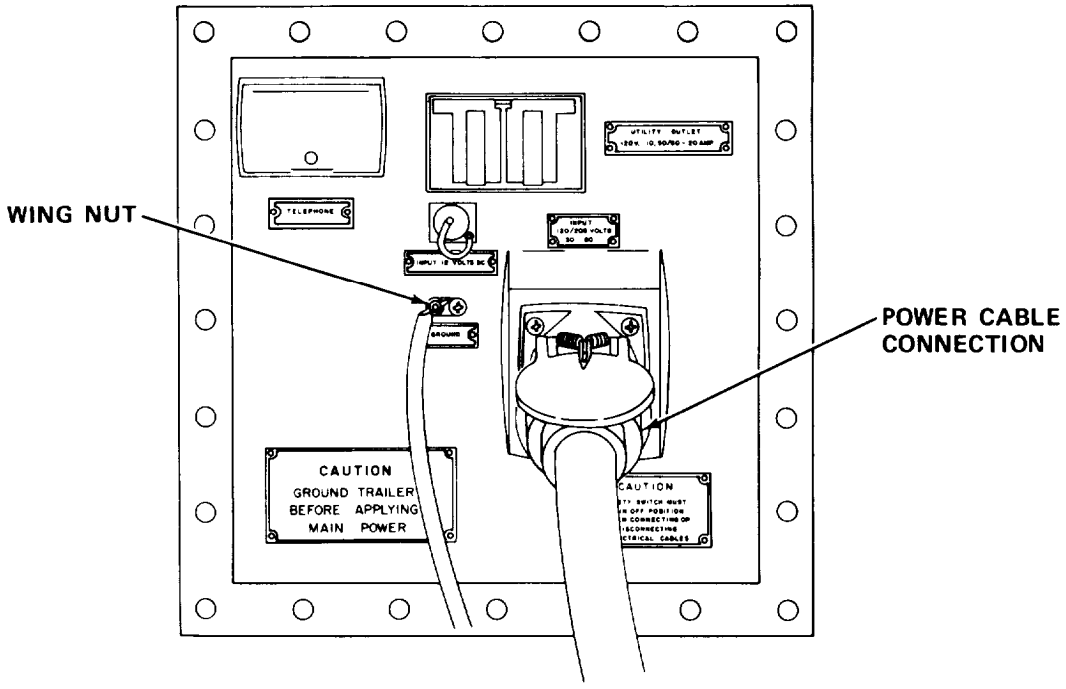


WARNING

To prevent death or serious injury, do not handle or clean power cable or connectors when cable is connected to power source.

NOTE

The section must be properly grounded before power is connected. If it is not possible to drive the three sections of grounding rod fully into ground, the rods may each be driven into the ground separately and connected in series. If it is impossible to drive-a grounding rod; a suitable alternative ground must be found, such as a buried metal water pipe. See TC 11-6, Grounding Techniques for additional instructions.

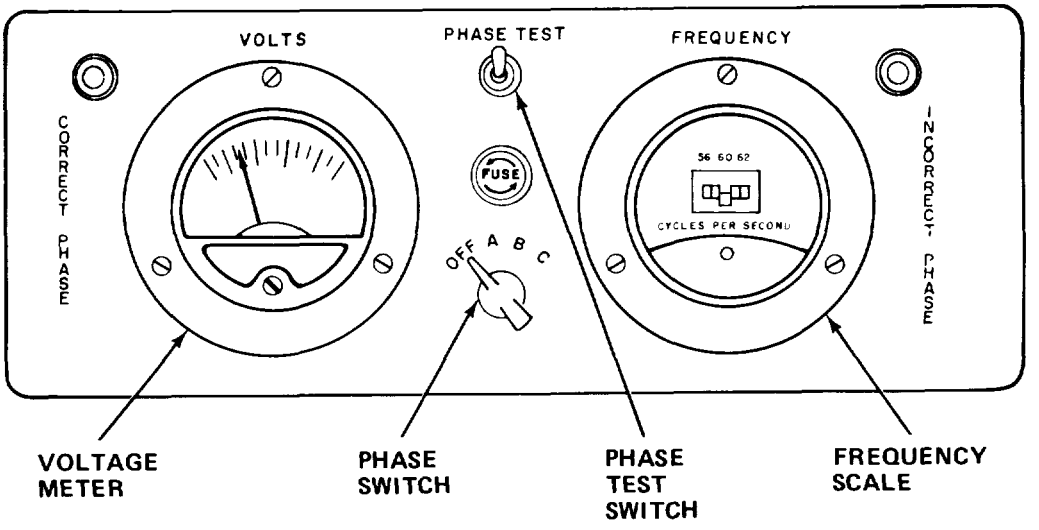


(11) Connect grounding cable to grounding lug with wing nut.

CAUTION

Be sure safety switch is off before connecting power cable to avoid equipment damage.

(12) Firmly connect the power cable to the power receptacle.



(13) Turn on safety switch.

CAUTION

Do not energize section if incorrect phase lamp lights. Damage to equipment may result.

(14) Check voltage and frequency as follows:

(a) Push phase test switch. Observe correct phase lamp lights.

(b) Turn phase switch to A.

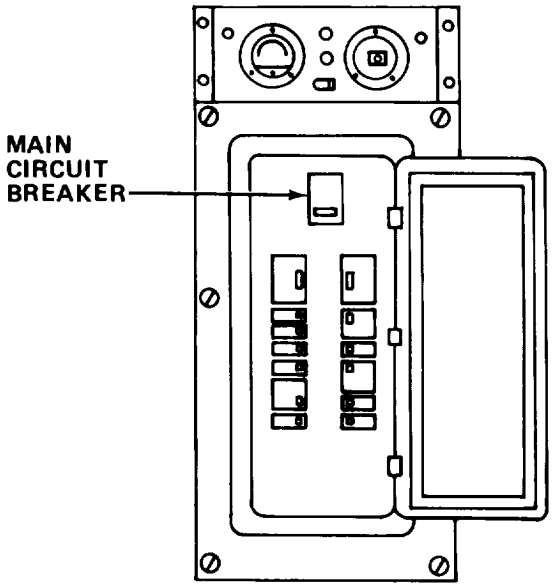
CAUTION

Voltage must be between 110 and 120, and frequency must be at 60 ±1 Hz on each leg before turning on main circuit breaker or damage to equipment may result.

(c) Read voltage on meter.

(d) Read frequency on scale.

(e) Repeat for positions B and C on phase switch.



(15) Set main circuit breaker ON.

NOTE

This step must be accomplished if section is placed in operation in darkness, fog, mist, or under blackout conditions.

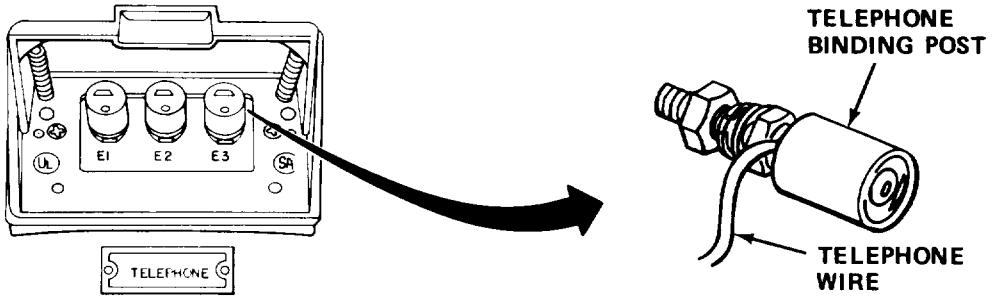
(16) Close blackout curtains, if required.

(17) Turn on circuit breakers in following order:

(a) Individual lighting.

(b) Curbside and roadside air conditioners/heaters.

(c) Curbside and roadside receptacles.



(18) Connect telephone lines to corresponding interior binding posts.

(19) Check blackout switches.

(20) Plug in emergency lighting and turn switch to READY.

1-6.2 Preparation for Movement.

a. Inventory equipment and supplies.

b. Position pallets in pallet plates.

c. Evenly distribute bulk paper on pallets.

d. Secure bulk paper with holddown straps.

e. Secure authorized equipment in proper containers or as specified by appropriate chapters.

f. Secure straps and remove slack from holddowns.

WARNING

Death or serious injury may occur if power cable is disconnected while power is on.

g. Turn equipment switches OFF.

h. Turn main circuit breaker OFF.

i. Turn safety switch OFF.

j. Have power cable disconnected at power supply end. Disconnect power cable from receptacle. Put cable in storage box on Trailer Chassis.

k. Turn emergency light switch OFF.

l. Disconnect telephone cables from power entry panel.

CAUTION

To prevent loss of rod or thread damage, do not allow grounding rod to rotate and unscrew when removing the slide hammer rod.

m. Remove grounding rod with slide hammer, and put grounding rods, couplings, and slide hammer inside section. Clean threads on each grounding rod before storing.

NOTE

Be certain exhaust fan and air vent doors are securely closed.

n. Reinspect section interior for loose equipment and close all vents.

o. Close section. Secure and lock all personnel doors and cargo door.

NOTE

Be sure air conditioner/heater covers are down and secured.

p. Remove handrails from boarding ladders.

q. Remove boarding ladders and insert handrails into back of ladders.

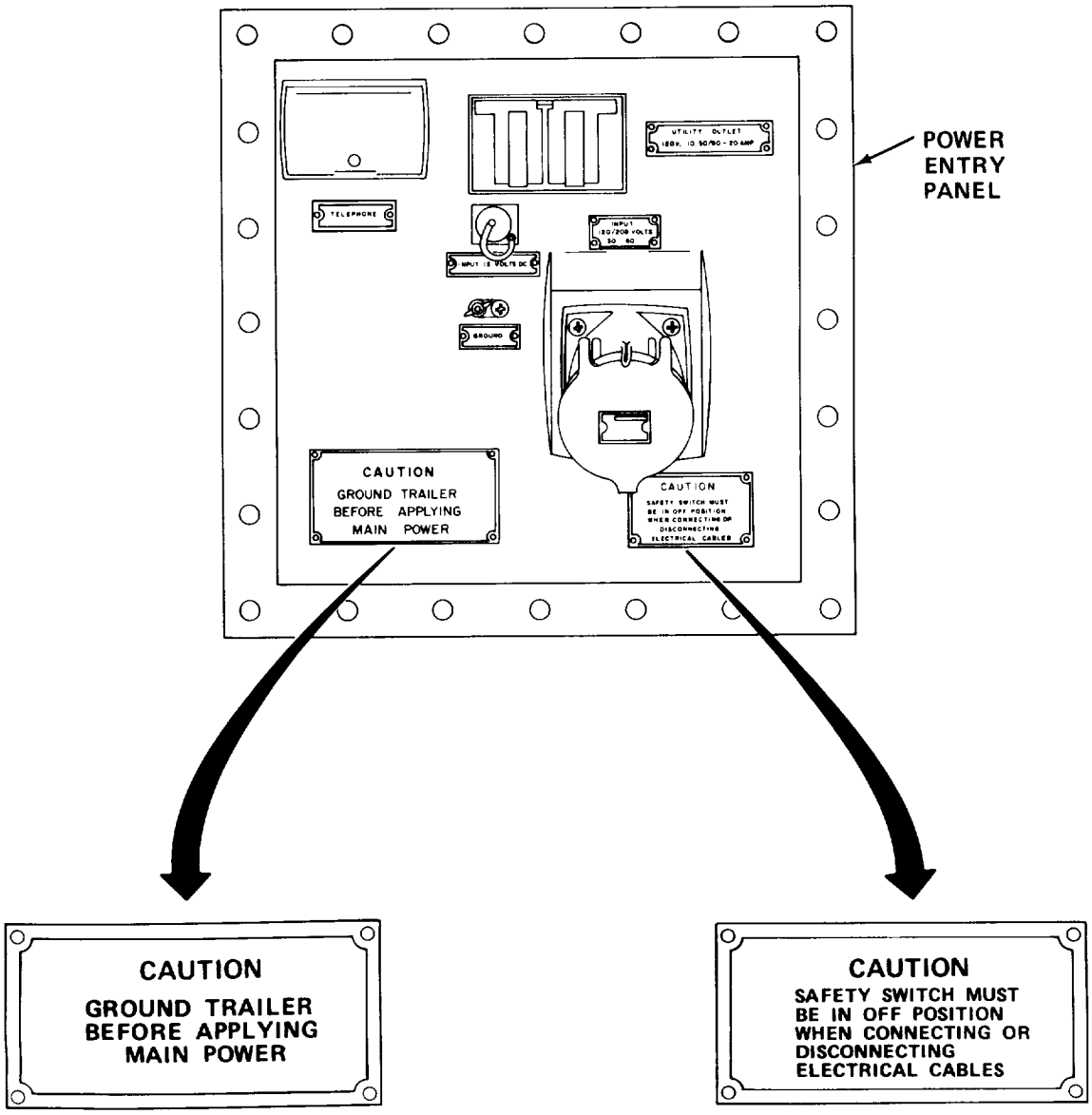
r. Secure ladders to back of section.

s. Fully extend landing gear.

t. Retract leveling jacks.

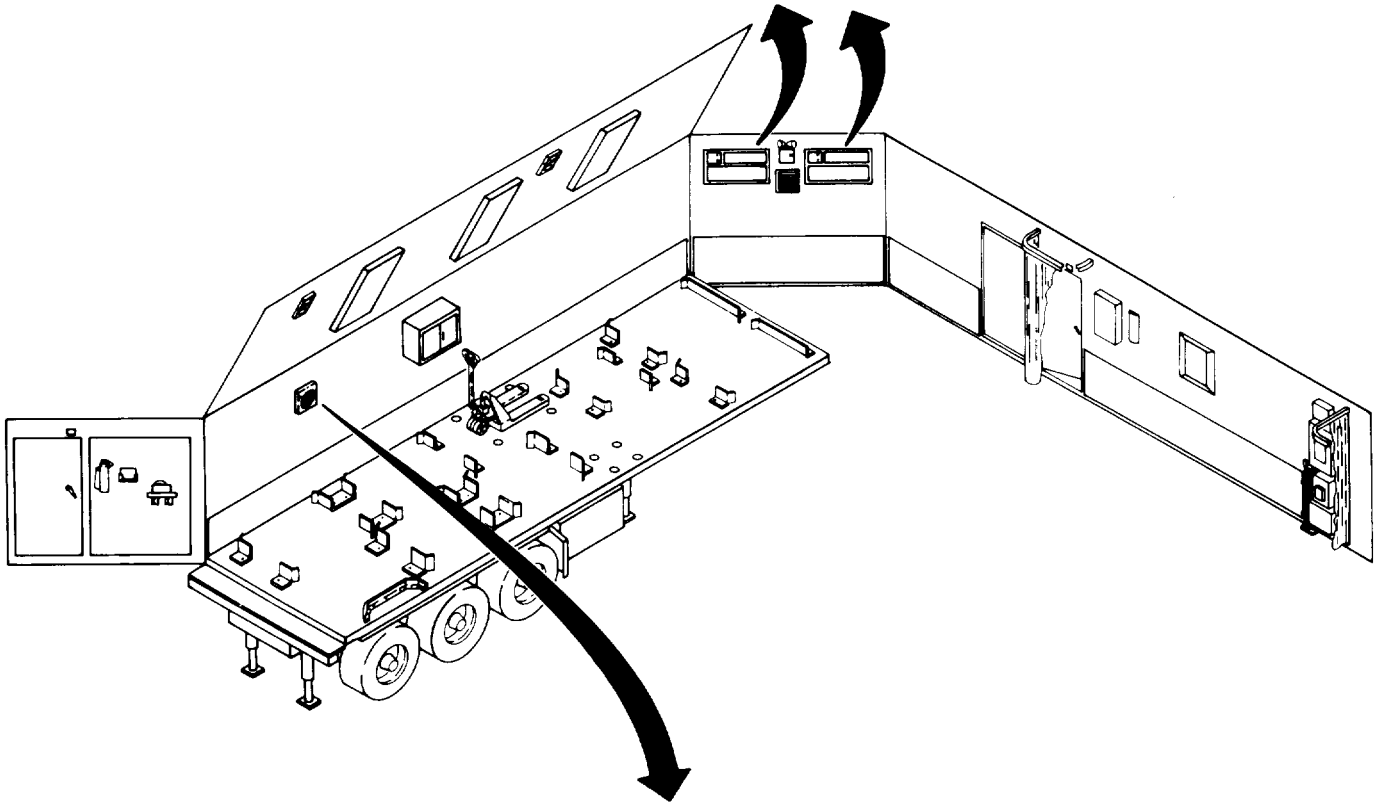
u. Visually inspect van exterior to be sure all equipment and covers are secured.

1-6.3 Operating Instructions on Decals and Instruction Plates.



CAUTION
FOR SAFE OPERATION
SEE TM FOR PROPER
INTERNAL AND EXTERNAL
GROUNDING

CAUTION TO START UNIT ON "COOL"
MODE AT 0°F AMBIENT
JUMPER LACO SWITCH (S-5)



CAUTION

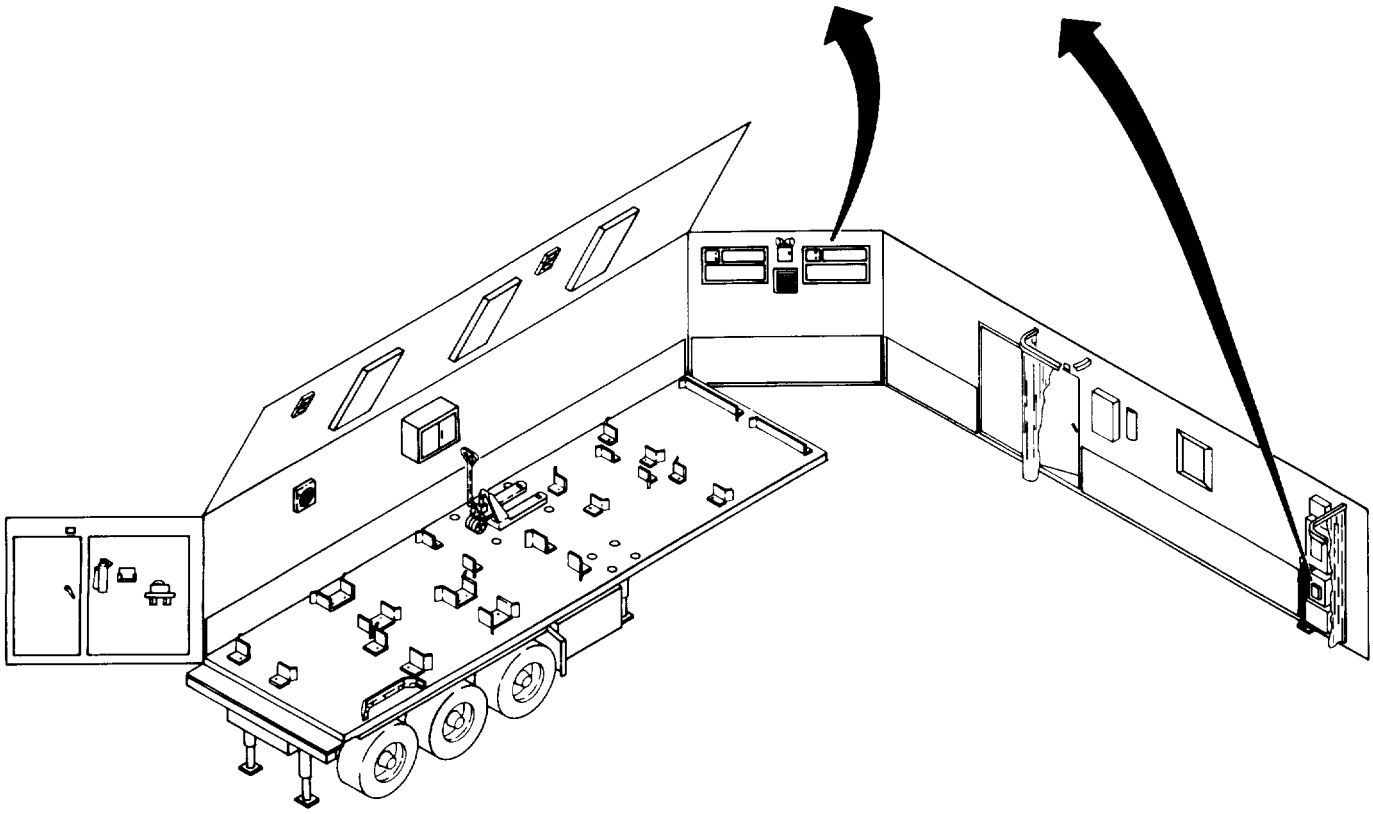
OPEN OUTSIDE VENT BEFORE

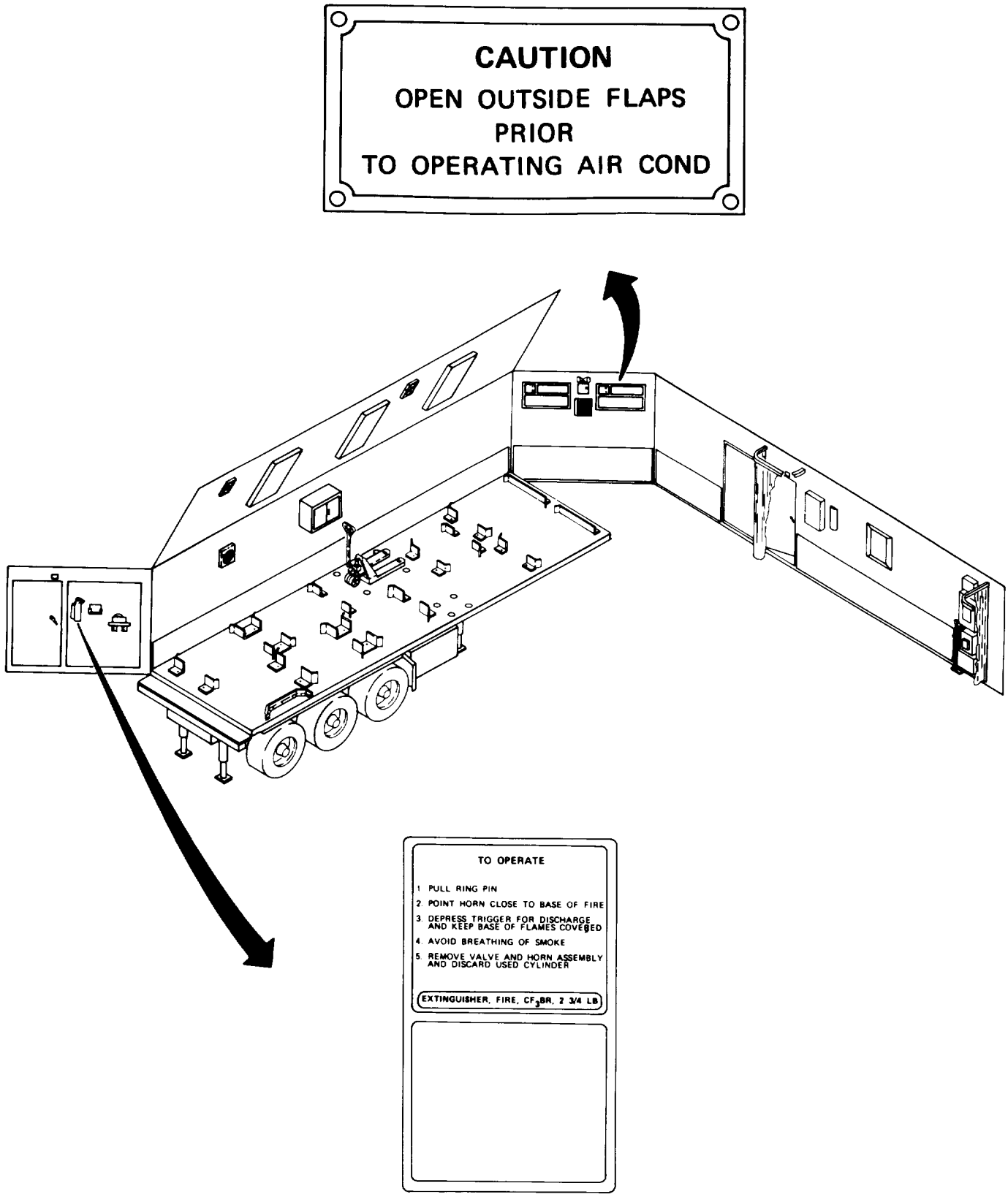
OPERATING FAN

CAUTION

EMERGENCY LIGHT SWITCH
MUST BE IN THE OFF POSITION
WHEN ELECTRICAL POWER
IS INTENTIONALLY DISCONNECTED

SWITCH MUST BE IN THE READY
POSITION FOR NORMAL EMERGENCY
LIGHT OPERATION




CAUTION
OPEN OUTSIDE FLAPS
PRIOR
TO OPERATING AIR COND
TO OPERATE
1. PULL RING PIN
2. POINT HORN CLOSE TO BASE OF FIRE
3. DEPRESS TRIGGER FOR DISCHARGE AND KEEP BASE OF FLAMES COVERED
4. AVOID BREATHING OF SMOKE
5. REMOVE VALVE AND HORN ASSEMBLY AND DISCARD USED CYLINDER
EXTINGUISHER, FIRE, CF_3BR, 2 3/4 LB

1-7. OPERATION UNDER UNUSUAL CONDITIONS.

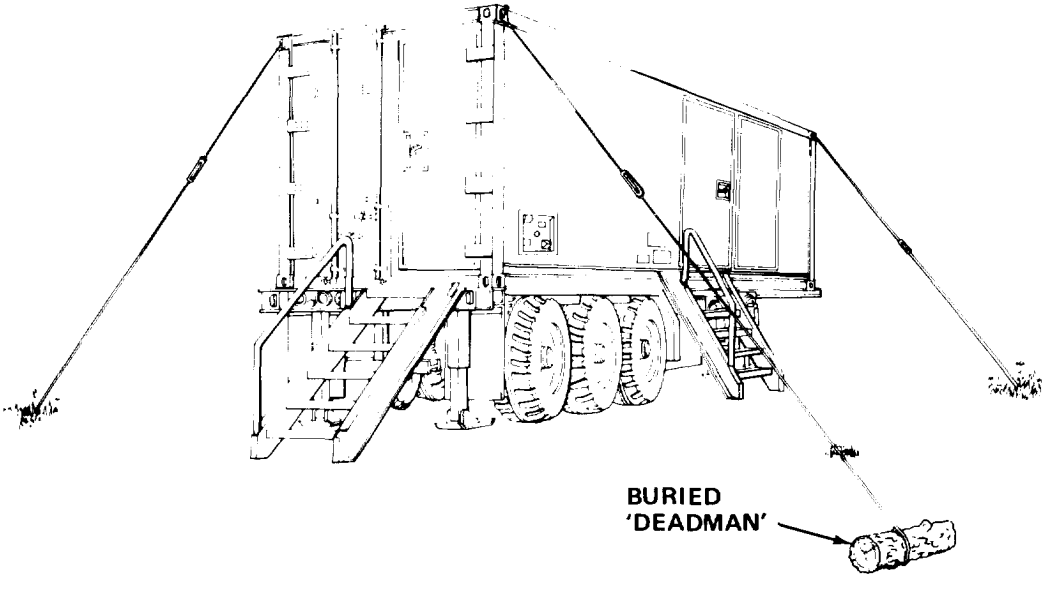
NOTE

Damage to container permitting light leaks, water, or dirt entry must be temporarily repaired using available material on hand. Maintenance personnel will conduct permanent repairs; however, crew must maintain operational capability of section.

1-7.1 Operation in High Wind or Storm Conditions.

a. Relocate section if trees or structures present hazard.

SUGGESTED METHOD OF ANCHORING THE SECTION IN HIGH WINDS



b. Secure section corners at lifting eyes to deadmen or substantial objects.

c. Remove all loose objects from area.

1-7.2 Operation in Cold Weather.

a. The operation of the internal equipment is performed within environmentally controlled conditions; however, in extreme cold, the main power supply cable and grounding cable will become hard, brittle, and difficult to handle. Be careful when connecting or disconnecting the cables so that kinks and unnecessary loops will not result in permanent damage.

b. Make certain that connections and cable receptacles on the outside of the section are free of frost, snow, and ice.

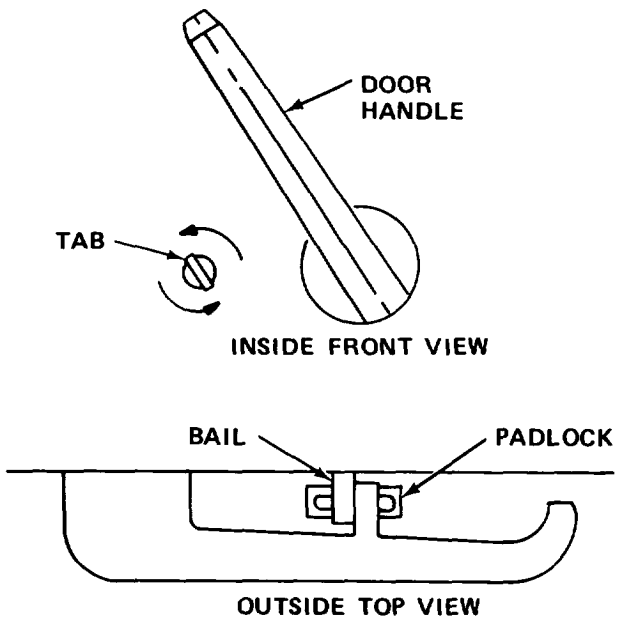
c. When section heaters are not operating or when the section is being transported, liquid consumable supplies may freeze, break their containers, then melt, and ruin equipment or documents. Store those items in an area to prevent equipment or document damage.

1-7.3 Operation in Extreme Heat. The operation of the internal equipment is performed within environmentally controlled conditions; however, during transportation or when air-conditioning units are not operating, consumable supplies may suffer reduced shelf life and internal components may have accelerated deterioration of gaskets, seals, or insulation.

1-7.4 Operation in Tropical Conditions. Fungi, mildew, or mold will form on and in equipment, documents, and supplies if internal environmental control equipment is not operating and outside heat and humidity are allowed to enter the section

1-7.5 Operation in Desert Conditions. Dust, grit, and sand will ruin supplies, equipment, and documents. Extreme care must be taken to prevent dust, grit, and sand from entering into the section. Air filters will be changed whenever airflow is restricted and cleaning of section interior must be conducted more frequently than specified by PMCS schedules.

1-7.6 Emergency Porcedures. There are no specific emergency procedures for operation of the section.



1-7.7 Emergency Means of Exit. In the event personnel are locked in the section, the tab may be turned to the left until the bail on the padlock falls free. The door handle is now free to turn.

Section III OPERATOR MAINTENANCE

1-8. LUBRICATION INSTRUCTIONS.

a. Lubrication instructions for the Paper Conditioning Section are contained in LO 5-3610-252-12, Lubrication Order, Paper Conditioning Section, Topographic Support System. The intervals and man-hours specified in the Lubrication Order are based on normal operations. During inactive periods, lubrication periods may be extended with adequate preservation.

b. Topographic equipment and all optical equipment require special care in lubrication. When a specified lubricant is called for, substitutions are not authorized. Minimum amounts of lubricant are to be used and all excess lubricant is to be immediately removed. Spray lubricants must not be used in the vicinity of optical equipment unless optics are completely protected. No lubricant is to be applied unless a thorough cleaning is conducted first to remove dirt, dust, or abrasive material.

c. Be sure that you refer to the appropriate chapter before any equipment is stored after use, that the temperature has stabilized, and that required lubrication after use is accomplished.

1-9. TROUBLESHOOTING PROCEDURES.

a. The table lists the common malfunctions which you may find during operation or maintenance of the Paper Conditioning Section, or its components. You should perform the test/inspections and corrective actions in the order listed.

b. This manual cannot list all malfunctions that may occur, nor all test or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify your supervisor.

Table 1-2. TROUBLESHOOTING

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

1. NO ELECTRICAL POWER TO SECTION.

WARNING

Death or serious injury may result. Do not perform any electrical maintenance or make electrical connections or disconnections at main power receptacle when power cable is energized.

Step 1. Observe voltage and frequency for phases A, B, and C. Read 115 ± 5 V, 60 ± 1 Hz.

(a) If voltage and frequency are correct, proceed to step 2.

(b) If voltage and frequency are incorrect, notify power supply supervisor.

CAUTION

Do not energize section if voltage or frequency is not correct. Damage to equipment may result.

Step 2. Press phase test switch on power panel for A, B, and C,

(a) If phases A, B, and C are correct, proceed to step 3.

(b) If incorrect phase lamp lights, notify power supply supervisor.

CAUTION

Do not energize section if incorrect phase lamp lights. Damage to equipment may result.

Step 3. Check safety switch position.

(a) If safety switch is ON, proceed to step 4.

(b) If safety switch is OFF, turn ON.

Table 1-2. TROUBLESHOOTING - Cont

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

1. NO ELECTRICAL POWER TO SECTION - Cont

Step 4. Check main circuit breaker position.

(a) If circuit breaker is ON, refer to direct/general support maintenance.

(b) If circuit breaker is OFF, turn ON.

(c) If circuit breaker trips repeatedly, notify power supply supervisor.

2. NO ELECTRICAL POWER TO EQUIPMENT.

Step 1. Check equipment power switch.

(a) If power switch is ON, proceed to step 2.

(b) If power switch is OFF, turn ON.

Step 2. Check power cord.

(a) If power cord is plugged in, proceed to step 3.

(b) If power cord is unplugged, plug in.

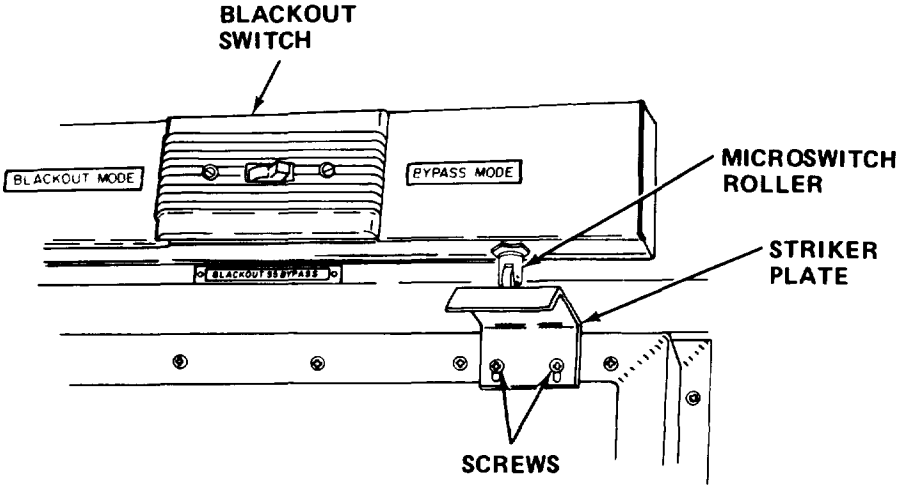
Step 3. Inspect circuit breaker panel for breakers in OFF position.

(a) If all circuit breakers are ON, refer to direct/general support maintenance.

(b) If any circuit breakers are OFF, turn ON.

Table 1-2. TROUBLESHOOTING - Cont

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
3. BLACKOUT SWITCH DOES NOT OPERATE.



Step 1. Check blackout switch position.

(a) If switch is ON, proceed to step 2.

(b) If switch is OFF, reset switch to BLACKOUT.

Step 2. Check to see that striker plate contacts roller on microswitch.

(a) Loosen screws and move plate up or down until microswitch operates.

(b) If blackout switch still fails to operate, refer to organizational maintenance.

1-10. MAINTENANCE PROCEDURES.

a. This section contains instructions covering operator maintenance functions for the Paper Conditioning Section. Personnel required are listed only if the task requires more than one.

b. After completing each maintenance procedure, perform operational check to be sure that equipment is properly functioning.

INDEX

1-10.1 Replace Fluorescent Lamp.

MOS: 83F, Photolithographer

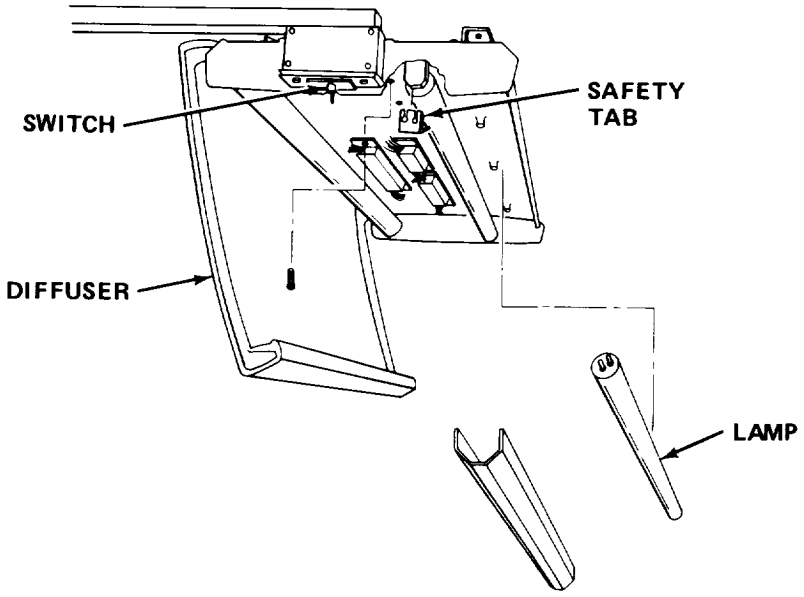
TOOLS: None

SUPPLIES: Fluorescent Lamp

WARNING

Death or serious injury may result if power is left on while servicing lamp.

a. Turn switch OFF.



b. Gently pull diffuser from light bracket and place diffuser out of the way to prevent damage.

c. Remove safety tab from lamp socket.

d. Rotate defective lamp until prongs are free from slot and remove.

e. Insert new lamp prongs into slot and rotate 90 degrees.

f. Reinstall safety tab into lamp socket.

g. Reinstall diffuser.

h. Turn power ON.

1-10.2 Service Ventilation Ducts.

MOS: 83F, Photolithographer

TOOLS : Vacuum Cleaner
Flat Tip Screwdriver

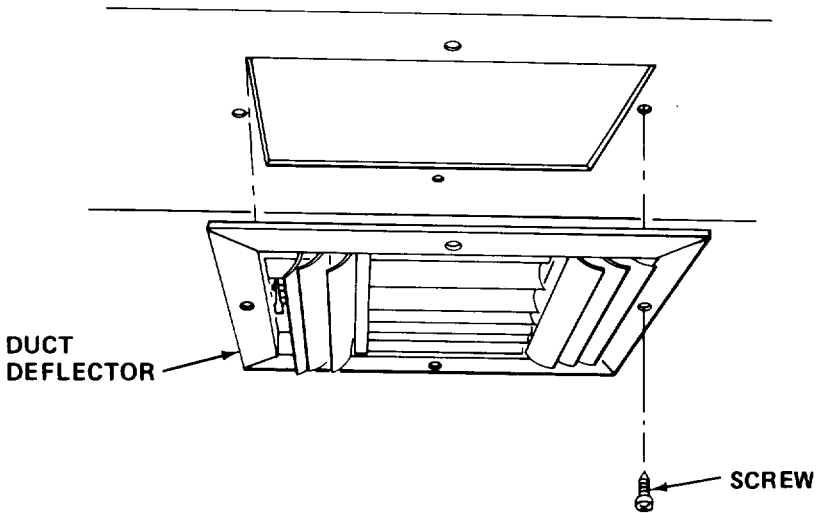
SUPPLIES: None

a. Cover equipment to prevent dust from entering equipment.

b. Close all doors and cabinets.

c. Remove any documents or other work that may be damaged by dirt/dust.

d. Turn off air conditioner/heater.



e. Remove four screws from each ventilation duct deflector.

f. Remove all duct deflectors.

g. Vacuum dirt or dust from deflector louvers.

h. Insert vacuum cleaner probe into ventilation duct at each deflector hole and vacuum as far as probe will reach.

i. Reinstall deflectors and secure with four screws.

j. Turn on air conditioner/heater.

k. Vacuum any dislodged dirt or dust from interior of section.

l. Remove covers for operation.

1-10.3 Replace Blackout/Dome Light.

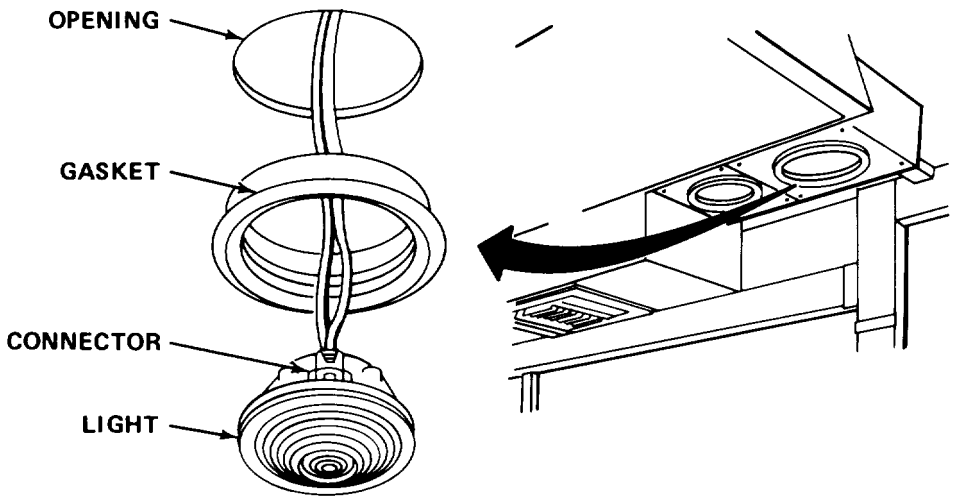
MOS: 83F, Photolithographer

TOOLS: None

SUPPLIES: Lamp (12 V)
Silicone Spray (Item 18, Appendix E)

NOTE

Blackout light and dome light are sealed units. No bulb replacement is possible. Complete light must be replaced.



a. Push light and gasket up into opening.

b. Tilt and remove light and gasket from opening.

c. Disconnect defective light from connector.

d. Connect new light to connector.

e. Reinstall gasket in opening.

NOTE

The use of silicone spray on the gasket will help to position light.

f. Position light in gasket and push in.

Section IV ORGANIZATIONAL MAINTENANCE

1-11. LUBRICATION INSTRUCTIONS. This equipment does not require lubrication at this level of maintenance.

1-12. REPAIR PARTS. SPECIAL TOOLS: TEST. MEASUREMENT. AND DIAGNOSTIC EQUIPMENT; AND SUPPORT EQUIPMENT.

1-12.1 Common Tools and Equipment. For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

1-12.2 Special Tools; Test. Measurement, and Diagnostic Equipment; and Support Equipment. Special Tools, TMDE, and Support Equipment is listed in the applicable repair parts and special tools list and in Appendix B of this manual.

1-12.3 Repair Parts. Repair parts for this equipment are listed in the Repair Parts and Special Tools List, TM 5-3610-252-24P covering organizational maintenance for this equipment.

1-13. SERVICE UPON RECEIPT.

NOTE

The section may be received mounted on a chassis or as a van body for mounting on an available transporter or on site. Inspection of the chassis is covered in TM 5-2330-305-14. Inspection of the air conditioner/heater is covered in TM 5-4120-367-14.

1-13.1 Checking Unpacked Equipment.

a. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on DD Form 6, Packing Improvement Report.

(1) Visually inspect the section exterior starting at the rear to cover rear, curbside, roadside, front, top, and bottom. Inspect for damage, tears, breaks, or corrosion.

(2) Enter section and inspect for broken equipment, tool boxes, chairs, or loose equipment.

(3) Close doors and vents to determine if light leaks exist.

(4) Inspect doors for damage, torn or rotted seals, and tightness of closure.

(5) Inspect interior for evidence of water damage, fungi, mildew, or corrosion.

(6) Report damage or discrepancies in accordance with AR 735-11 and AR 735-11-2.

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

(1) Inventory sections against Components of End Item and Basic Issue Items Lists (Appendix C).

(2) Inventory expendable supplies contained in section as shown in Appendix E.

(3) Conduct operational checks on equipment in accordance with the chapters in this manual when operators are available and power can be safely provided to the van body.

c. Check to see whether the equipment has been modified.

1-14. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES

a. PMCS are designed to keep the equipment in good working condition by performing certain tests, inspections, and services. The intervals provide you, the organizational technician, with time schedules that determine when to perform specified tasks.

b. Item number column. Item numbers are assigned in chronological ascending sequence regardless of interval designation. These numbers are used for your "TM Number" column on DA Form 2404, Equipment Inspection and Maintenance Worksheet, in recording the results of PMCS.

c. Interval columns. This column determines the time period designated to perform your PMCS.

d. Item to be inspected and procedures column. This column lists functional groups and their respective assemblies and subassemblies as shown in the Maintenance Allocation Chart (Appendix B). The appropriate check or service procedure follows the specific item to be inspected.

e. Preventive maintenance checks and services for the air conditioners/heaters are contained in TM 5-4120-367-14.

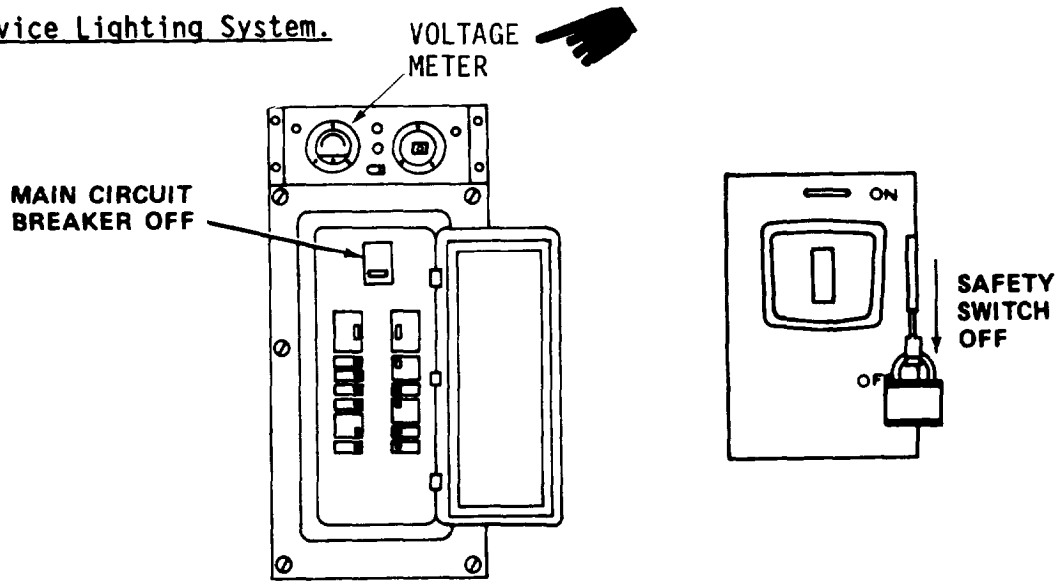
f. List of tools and materials required for PMCS is as follows:

Item	Quantity
Vacuum Cleaner	1 ea
8 in. Adjustable Wrench	1 ea
Cross Tip Screwdriver	1 ea
Flat Tip Screwdriver	1 ea
Spring Scale	1 ea
Padlock	1 ea
Flashlight	1 ea

Table 1-3. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES

B - Before D - During A - After | W - Weekly M - Monthly Q - Quarterly | AN - Annually S - Semiannually BI - Biennially | (Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED / PROCEDURE
		VAN BODY
1	M	Service Air Conditioner/Heater. Refer to TM 5-4120-367-14 for preventive maintenance checks and services.
2	M	Service Lighting System.



WARNING

Do not open or service electrical connections, cables, or switches until main power is off and voltage meter confirms circuit is not energized. Death may result from failure to observe these safety precautions.

1. Turn off main circuit breaker. Turn safety switch OFF.
2. Padlock safety switch.
3. Tighten all loose screws, bolts, and clamps.
4. Check which switches, switch plate outlets, receptacles, and posts require repair.

Table 1-3. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont

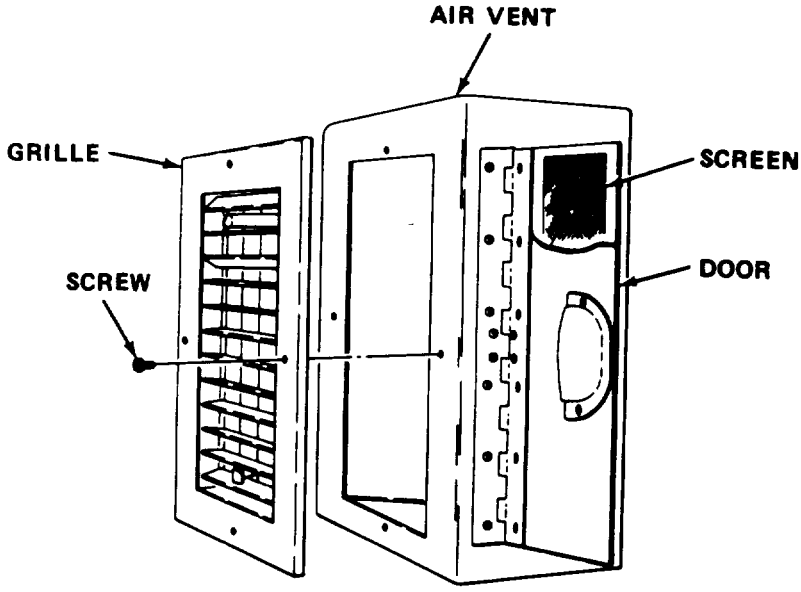
B - Before
D - During
A - After

W - Weekly
M - Monthly
Q - Quarterly

AN - Annually
S - Semiannually
Bi - Biennially

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED PROCEDURE
		VAN BODY - Cont
2	M	Service Lighting System - Cont
		5. Check for loose screws and nuts on ceiling, console lights, circuit breaker panels, and conduits.
		6. Remove padlock.
		7. Turn on main circuit breaker and safety switch.
3	M	Service Air Vent.



1. Remove screws from front of grille.
2. Remove front grille.
3. Using vacuum cleaner, clean screens on side doors. Vacuum inside of air vent.
4. Reinstall grille and secure with screws.

1-15. ORGANIZATIONAL TROUBLESHOOTING PROCEDURES.

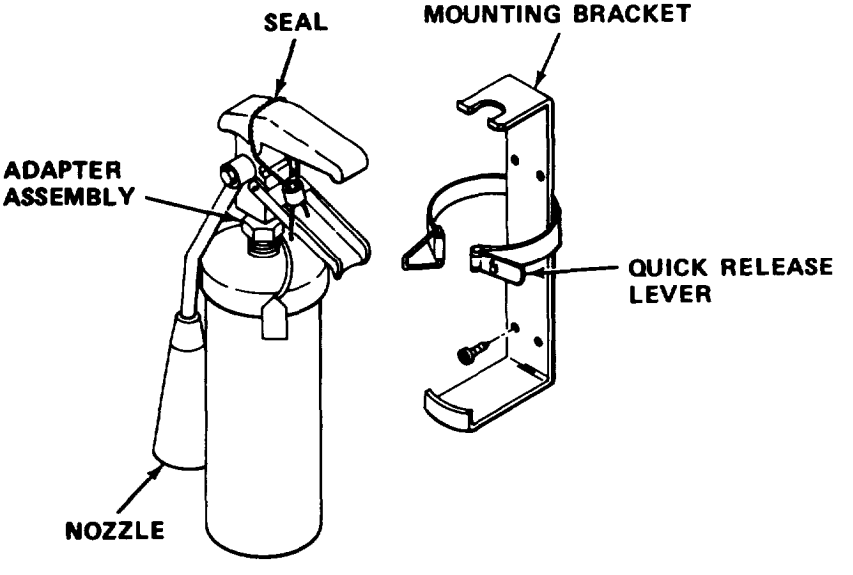
B - Before
D - During
A - After

W - Weekly
M - Monthly
Q - Quarterly

AN - Annually
S - Semiannually
BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	IN-TER-VAL	ITEM TO BE INSPECTED PROCEDURE
		VAN BODY - Cont
4	M	Inspect Fire Extinguisher.



1. Remove from mounting bracket. Check free movement of bracket.
2. inspect nozzle and adapter assembly for damage.
3. Inspect seal. Be sure it is not broken.

S

4. Weigh cylinder. Replace if gross weight has decreased by 6 oz (170 g) or more.

1-15. ORGANIZATIONAL TROUBLESHOOTING PROCEDURES.

a. Organizational troubleshooting procedures cover the most common malfunctions that may be repaired at the organizational level. Repair or adjustment requiring specialized equipment is not authorized unless such equipment is available. Troubleshooting procedures used by the operator should be conducted in addition to the organizational troubleshooting procedures.

b. This manual cannot list all the possible malfunctions or every possible test/inspection and corrective action. If a malfunction is not listed or corrected by a listed corrective action, notify your supervisor.

c. For unidentified malfunctions, use the facing schematic or the foldout located at the end of this manual for further fault analysis.

d. If any component of the Paper Conditioning Section does not power up when turned on, verify that 120 V ac is present at the receptacle. If voltage is not present, plug equipment into receptacle with power available and proceed with equipment troubleshooting. Perform no-power troubleshooting procedures for dead receptacle (Table 1-4).

Table 1-4. ORGANIZATIONAL TROUBLESHOOTING

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

WARNING

Electrical shock hazard. Be sure power is off when checking continuity at troubleshooting points. Death or serious injury could result from failure to do so.

1. FLUORESCENT CEILING LAMP IS INOPERATIVE.

Step 1. Check for continuity of fluorescent lamp switch.

(a) If continuity exists, proceed to step 2.

(b) If continuity does not exist, replace switch (paragraph 1-16.3).

Step 2. Check for continuity of lamp ballast.

(a) If continuity exists, proceed to step 3.

(b) If continuity does not exist, replace lamp ballast (paragraph 1-16.1).

Step 3. Check for shorts in RF Filter.

Replace RF filter (paragraph 1-16.2).

2. VENTILATION FAN IS INOPERATIVE.

Check ON/OFF switch for continuity.

(a) If continuity exists, replace fan (paragraph 1-16.9).

(b) If continuity does not exist, replace switch (paragraph 1-16.4).

Table 1-4. ORGANIZATIONAL TROUBLESHOOTING - Cont

MALFUNCTION TEST OR INSPECTION	CORRECTIVE ACTION
3. EMERGENCY LIGHTS ARE INOPERATIVE. Press in test indicator.	If lamps do not light, replace emergency light assembly (paragraph 1-16.11).
4. NO POWER TO EQUIPMENT. Step 1. Check circuit breaker ON/OFF position.	(a) If circuit breaker is ON, proceed to step 2. (b) If circuit breaker is OFF, turn ON. (c) If circuit breaker trips repeatedly, notify power supply supervisor.
Step 2. Check circuit breaker input for 120 V ac.	(a) If input voltage is present, proceed to step 3. (b) If input voltage is not present, refer to direct/general support maintenance for repair or replacement of defective wiring.
Step 3. Check circuit breaker output for 120 V ac.	(a) If output voltage is present, proceed to step 4. (b) If output voltage is not present, refer to direct/general support maintenance for circuit breaker replacement (paragraph 1-20. 5).
Step 4. Remove receptacle and check for 120 V ac input.	(a) If present, replace receptacle (paragraph 1-16.6). (b) If not present, refer to direct/general support maintenance for repair or replacement of defective wiring.

1-16. MAINTENANCE PROCEDURES.

a. This section contains instructions covering organizational maintenance functions for the Paper Conditioning Section. Personnel required are listed only if the task requires more than one.

b. After completing each maintenance procedure, perform operational check to be sure that equipment is properly functioning.

INDEX

1-16.1 Replace Fluorescent Lamp Ballast.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Flat Tip Screwdriver
1/4 in. Wrench
1/4 in. Drive Socket Set
Scribe

SUPPLIES: Lamp Ballast
Wire Ties

WARNING

Death or serious injury may occur unless overhead light circuit breaker and main circuit breaker are turned off before working on light fixture.

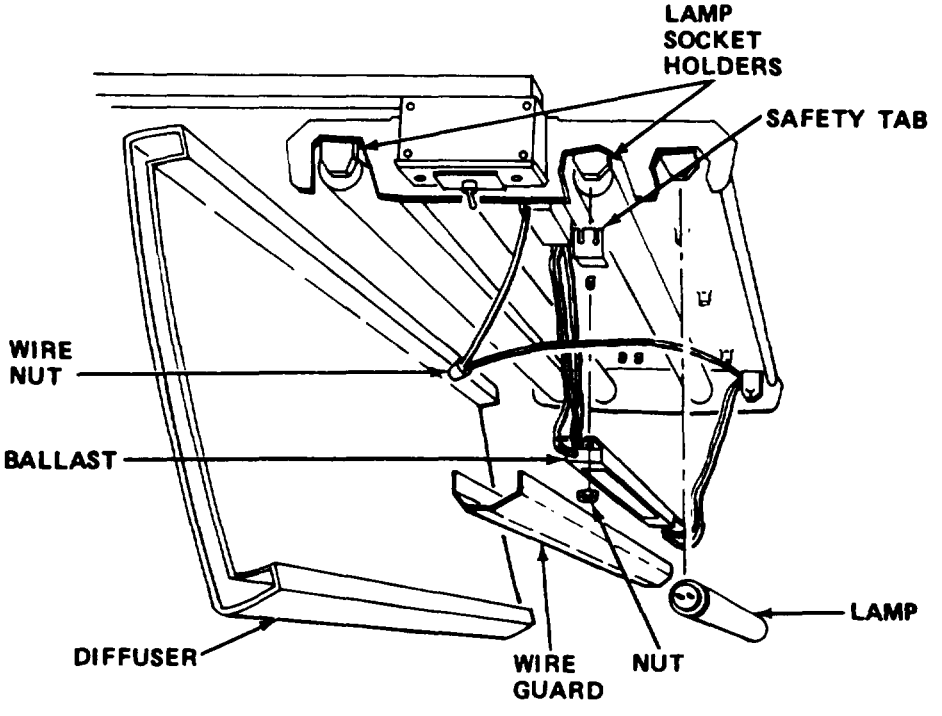
a. Turn off overhead light circuit breaker and main circuit breaker.

b. Remove diffuser from light fixture.

c. Remove safety tabs and lamps. Place in diffuser.

d. Squeeze light wiring guard and remove.

e. Remove wire ties as required.



f. Tag wires from ballast for reference.

g. Disconnect ballast wire from wire nut connection.

h. Pry out lamp socket holder with flat tip screwdriver.

i. Using scribe, depress wire clips and disconnect ballast wiring.

j. Remove nut and defective ballast.

k. Install new ballast and connect wires to corresponding lamp socket holders.

l. Secure with nut.

m. Reconnect ballast wire to wire nut connection.

n. Remove tags.

o. Install new wire ties.

NOTE

Be sure wires are free of kinks and do not interfere with placement of wire guard.

p. Reinstall wire guard.

q. Reinstall lamp and safety tabs.

r. Reinstall diffuser.

s. Turn on overhead light circuit breaker and main circuit breaker.

1-16.2 Replace Radio Frequency (RF) Filter.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Flat Tip Screwdriver
1/4 in. Wrench
1/4 in. Drive Socket Set

SUPPLIES: RF Filter
Wire Ties

WARNING

Death or serious injury may occur unless overhead light switch is turned OFF before working on light fixture.

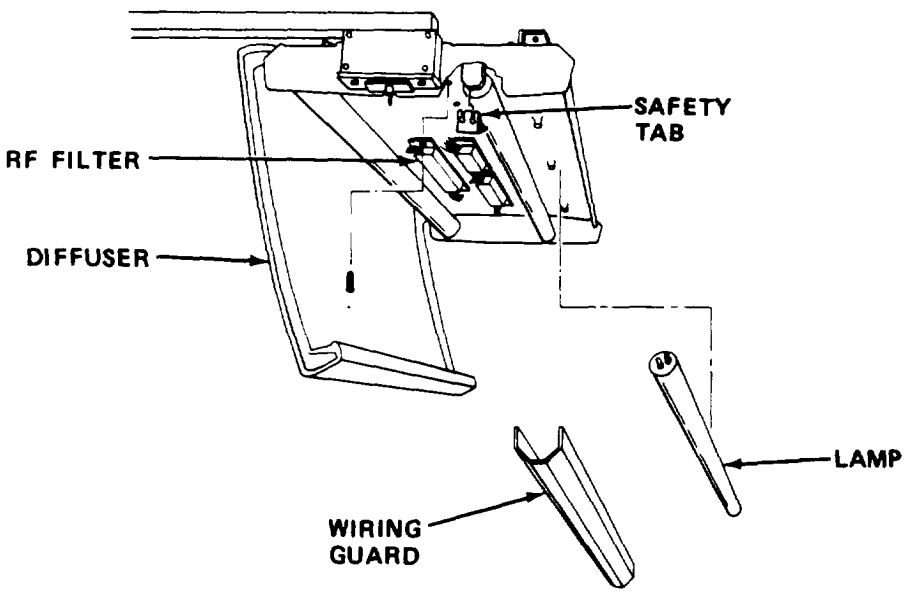
a. Turn overhead light switch OFF.

b. Remove diffuser from light fixture.

c. Remove safety tabs and lamps. Place in diffuser.

d. Squeeze light wiring guard and remove.

e. Remove wire ties as required.



f. Tag wires to filter.

g. Remove wire nuts and disconnect filter wires.

h. Remove nuts and defective filter.

i. Install new filter. Secure with nuts.

j. Reconnect filter wires and secure with wire nuts.

k. Remove tags.

l. Install new wire ties.

NOTE

Be sure wires are free of kinks and do not interfere with placement of wire guard.

m. Reinstall wire guard.

n. Reinstall lamps and safety tabs.

o. Reinstall diffuser.

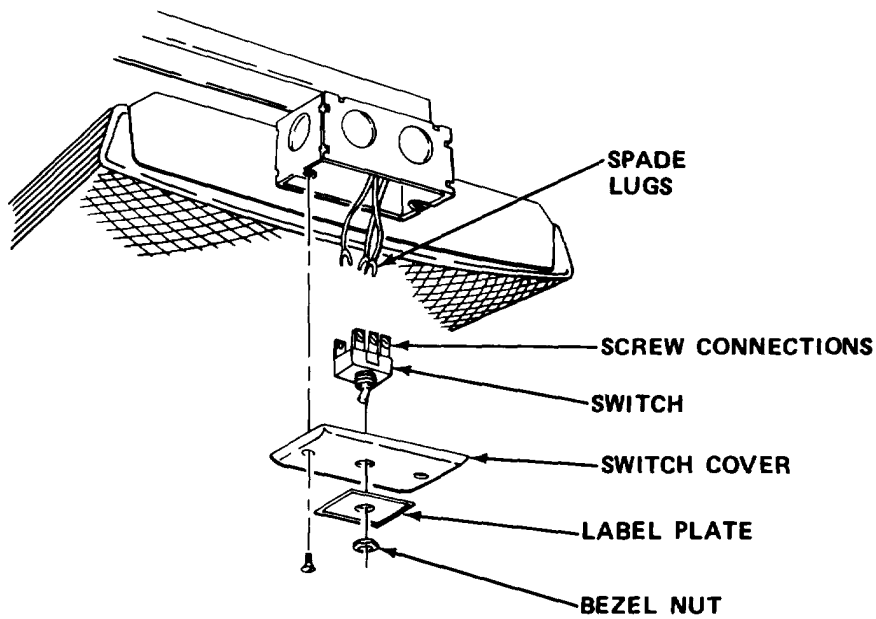
p. Turn on light switch.

1-16.3 Replace Fluorescent Lamp Switch

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS : Flat Tip Screwdriver
Needle Nose Pliers
Flashlight

SUPPLIES: Switch Assembly



WARNING

Death or serious injury may occur if lighting circuit breaker is not turned OFF before working on lamp assembly.

NOTE

Alternate lighting is required to perform this task.

a. Turn circuit breaker OFF.

b. Remove bezel nut.

c. Note notch on label plate and remove label plate.

d. Loosen screws.

NOTE

Note position of cover and reinstall as noted.

e. Remove cover plate.

f. Tag and disconnect wires from defective switch.

g. Install new switch and connect wires.

h. Insert switch through cover plate and label plate.

NOTE

Be sure label plate is in same direction as when removed. Secure with bezel nut.

i. Aline cover plate with holes and secure with screws.

j. Turn circuit breaker ON.

1-16.4 Replace On/Off Switch.

MOS: 83FJ6, Reproduction Equipment Repairer

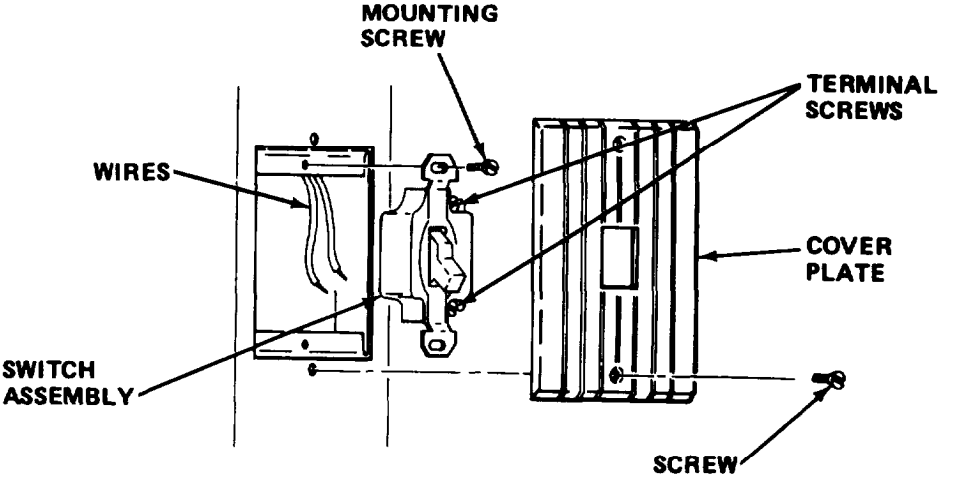
TOOLS : Flat Tip Screwdriver

SUPPLIES: Switch

WARNING

Death or serious injury may occur if switch circuit breaker is not turned OFF before working on switch.

a. Turn off appropriate circuit breaker.



b. Remove screws.

c. Remove cover plate.

d. Remove mounting screws.

e. Pull switch assembly from wire guide to gain access to wires.

f. Loosen terminal screws; then disconnect wires.

g. Install new switch.

h. Reconnect wires.

i. Guide switch into wire guide, alining holes.

NOTE

Be sure wires are not kinked or strained.

j. Reinstall mounting screws.

k. Reinstall cover plate and secure with screws.

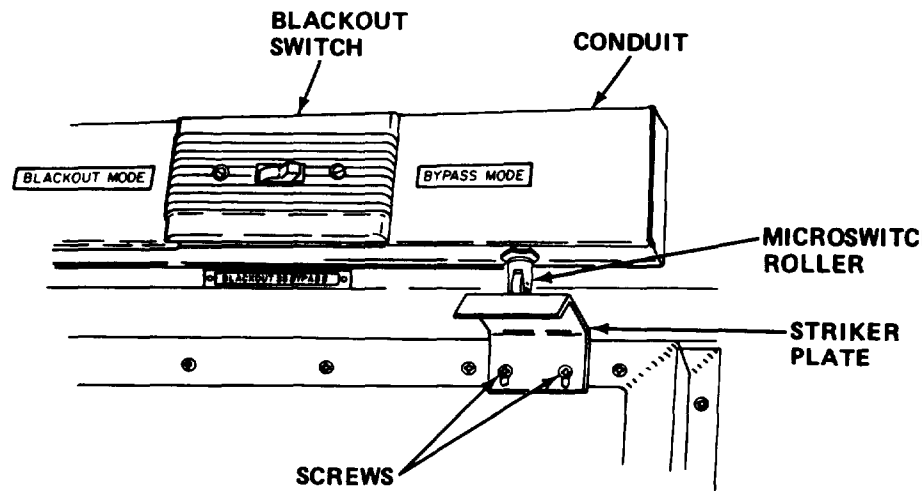
l. Turn on switch circuit breaker.

1-16.5 Replace Blackout/Dome Light Microswitch.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS : Flat Tip Screwdriver
6 in. Adjustable Wrench

SUPPLIES: Microswitch



WARNING

Death or serious injury may occur from electrical shock unless power is off before servicing.

a. Turn off blackout/dome light circuit breaker.

b. Remove conduit cover.

c. Remove nut and pull out switch to expose wiring.

d. Disconnect wires from defective switch.

e. Connect wires to new switch.

f. Install switch and secure with nut.

g. Adjust striker plate until plate contacts rollers.

h. Reinstall conduit cover.

i. Turn on circuit breaker.

1-16.6 Replace Receptacle.

MOS: 83FJ6, Reproduction Equipment Repairer

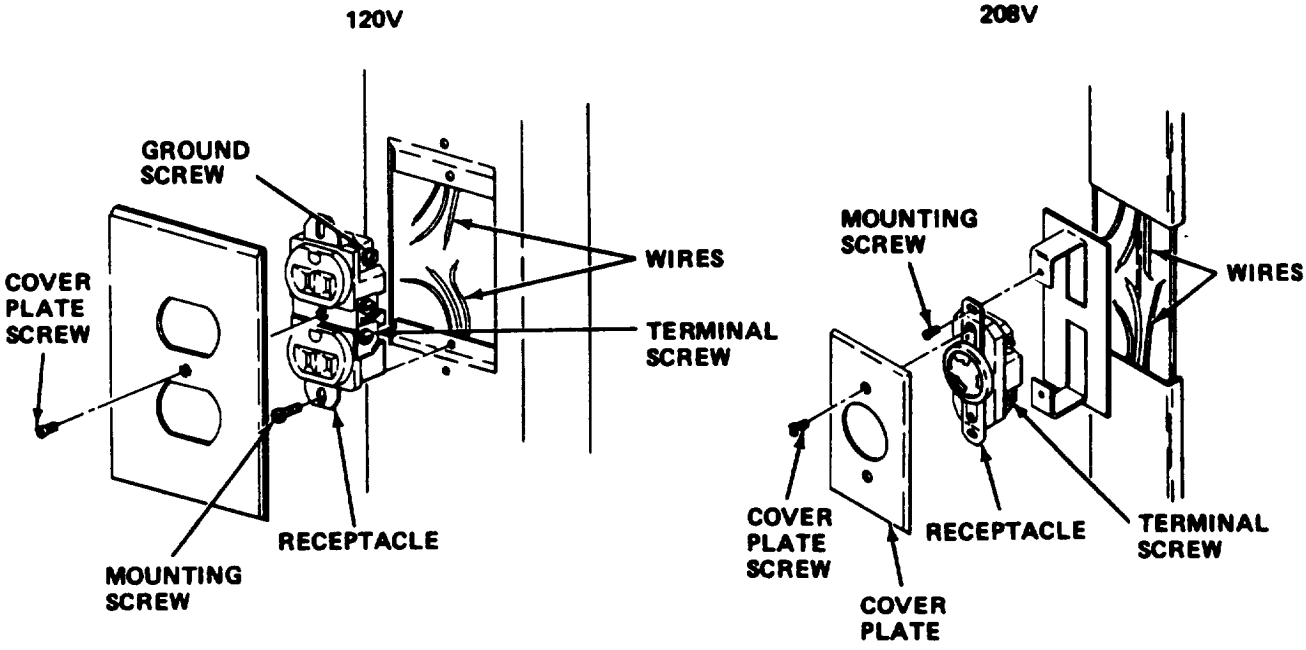
TOOLS: Flat Tip Screwdriver

SUPPLIES: Receptacle

WARNING

Death or serious injury may occur if receptacle circuit breaker is not turned OFF before working on receptacle.

a. Turn off receptacle circuit breaker.



b. Remove cover plate screws.

c. Remove cover plate.

d. Remove mounting screws.

e. Withdraw receptacle to gain access to wires.

f. Loosen terminal screws and ground screw. Disconnect wires.

g. Reconnect wires. Connect green (ground) wire first.

h. Install new receptacle.

i. Guide receptacle into wire guide.

NOTE

Be sure wires are not kinked or strained.

j. Secure receptacle with screws.

k. Reinstall cover plate. Secure with screws.

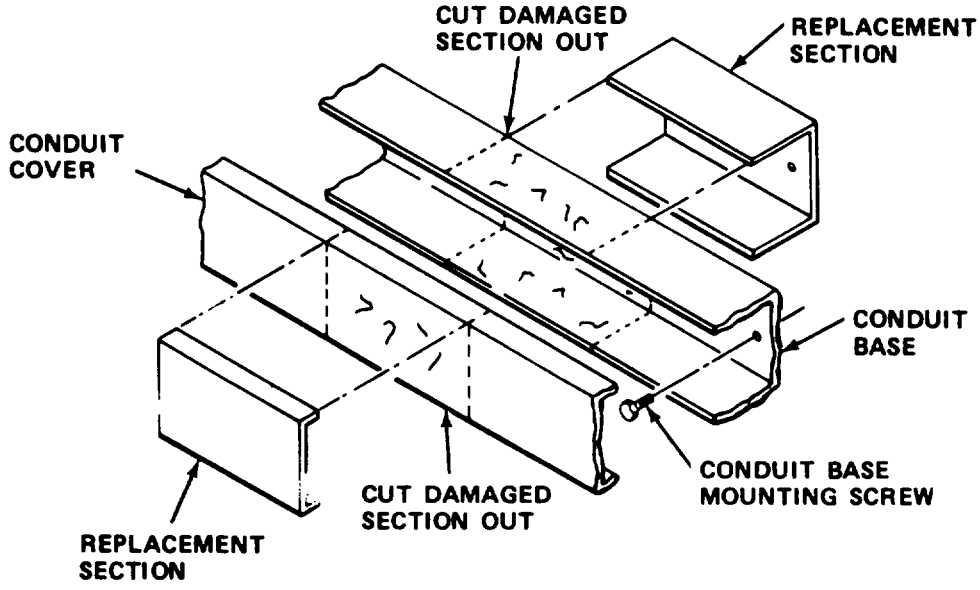
l. Turn on receptacle circuit breaker.

1-16.7 Relace Wire Molding.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Flat Tip Screwdriver
Hacksaw
Flashlight
Paint Brush
Multimeter
Drill and Bits
File
Machinist Rule

SUPPLIES: Paint (Item 12, Appendix E)
Cheesecloth (Item 4, Appendix E)
Conduit Base
Conduit Cover
Padlock



WARNING

Death or serious injury may occur from failure to turn OFF and padlock safety switch before repairing molding.

NOTE

Alternate lighting is required to perform this task.

a. Turn OFF and padlock safety switch.

b. Remove conduit cover.

c. Inspect wires for damage.

NOTE

Refer to direct support maintenance for wiring repair if necessary.

d. Loosen wiring and carefully pull it from the entire base section.

e. Remove screws and base from wall.

f. Mark and measure damaged area on molding. Record measurement.

g. Cut damaged area from molding.

h. Cut section from new molding to the length recorded in step f.

i. Using damaged area as a template, mark mounting holes on new piece.

j. With a number 25 drill bit, drill holes in new molding.

k. With file, remove all burred edges.

l. Paint base section as required.

m. Reinstall conduit base on wall with screws.

n. Carefully place wiring back in conduit base.

o. Reinstall cover on base.

p. Test wiring for continuity between power wires and conduit. If there is continuity, determine and correct grounding fault.

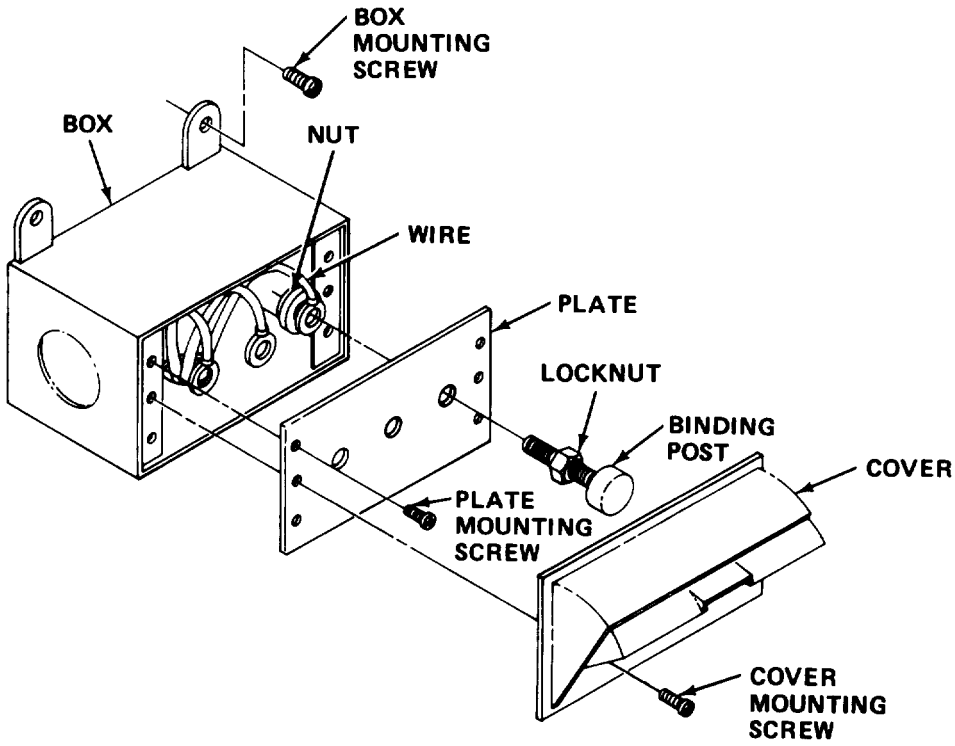
q. Test wiring with power ON.

1-16.8 Replace Telephone Binding Post Assembly.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS : Cross Tip Screwdriver
1/2 in. Combination Wrench

SUPPLIES: Binding Post Box
Binding Posts



a. Remove cover mounting screws. Remove cover.

b. Remove plate mounting screws to gain access to back of plate.

c. Tag wires for identification.

d. Remove nuts and wires from binding posts.

e. If required, remove box mounting screws and replace box.

f. Replace any defective binding posts. Secure wires to new posts and remove tags.

g. Reinstall box assembly and plate and secure plate with screws.

h. Secure cover with screws.

1-16.9 Replace Exhaust Fan.

MOS: 83FJ6, Reproduction Equipment Repairer

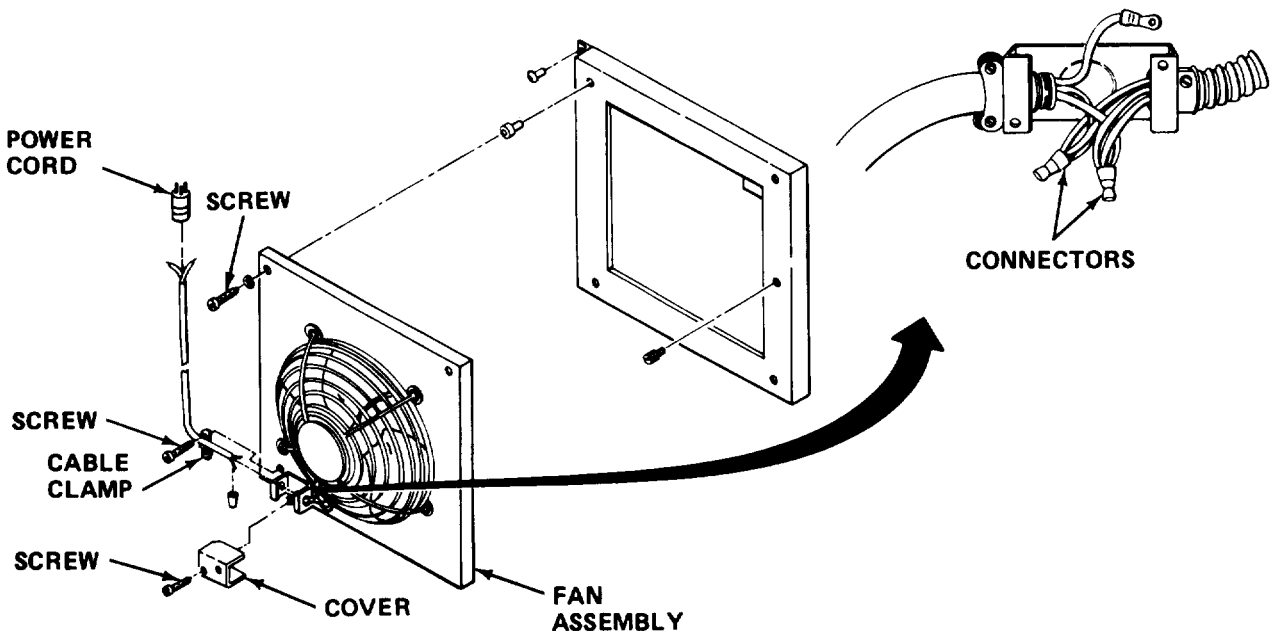
TOOLS : Flat Tip Screwdriver
Cross Tip Screwdriver
Wire Cutters

SUPPLIES: Fan Assembly
Wire Nuts
Power Cord

WARNING

Death or serious injury may occur if power is left on. Turn fan switch OFF and unplug power cord before working on ventilation fan.

a. Unplug power cord.



b. Remove screws and place fan assembly on work surface.

c. Loosen screws on cable clamp.

d. Remove screws and cover.

e. Tag wires and cut connectors from wires.

f. Remove power cord from defective fan assembly.

g. Install new fan.

h. Install new power cord.

i. Connect wires with wire nuts and remove tags.

j. Tighten cable clamp screws.

k. Reinstall cover. Secure with screws.

l. Reinstall fan assembly. Secure with screws.

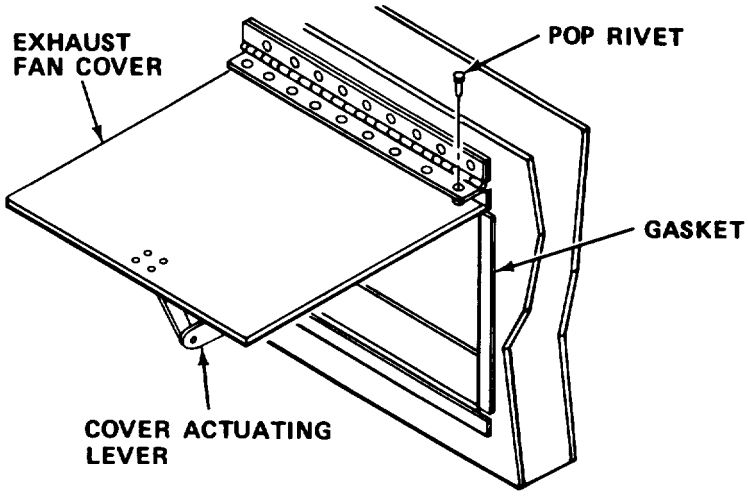
m. Plug in power cord.

1-16.10 Replace Exhaust Fan Cover.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Drill and Bits
Pop Rivet Gun
Scraper

SUPPLIES: Pop Rivets
Ventilation Fan Cover
Gasket
Solvent P-D-680 (Item 17, Appendix E)
Adhesive (Item 1, Appendix E)
Cheesecloth (Item 4, Appendix E)
Impermeable Gloves
Goggles



a. Drill pop rivets from hinged cover to remove vent cover.

b. Remove defective vent cover and transfer mounted hardware to new cover.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Wear solvent-impermeable gloves and eye/face protective equipment when using solvent. Do not use near open flame or excessive heat. Flash point of solvent is 100°F to 138°F (38°C to 59°C).

c. Scrape gasket off van body and clean area with solvent P-D-680.

d. Secure new gasket to van body with adhesive.

e. Aline ventilation fan vent cover and pop rivet to hinge.

f. Test cover for tightness of closure.

1-16.11 Replace Emergency Light Assembly.

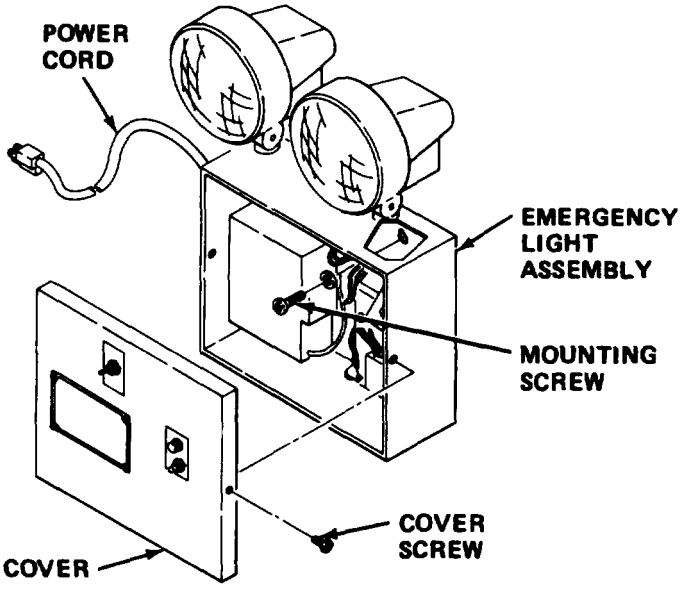
MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Cross Tip Screwdriver
Flat Tip Screwdriver

SUPPLIES: Emergency Light Assembly

WARNING

Death or serious injury may occur if power cord is not unplugged before servicing light.



a. Unplug power cord.

b. Remove cover screws. Move cover out of way.

c. Remove mounting screws.

d. Remove emergency light assembly.

e. Install new emergency light assembly. Secure with screws.

f. Secure cover with screws.

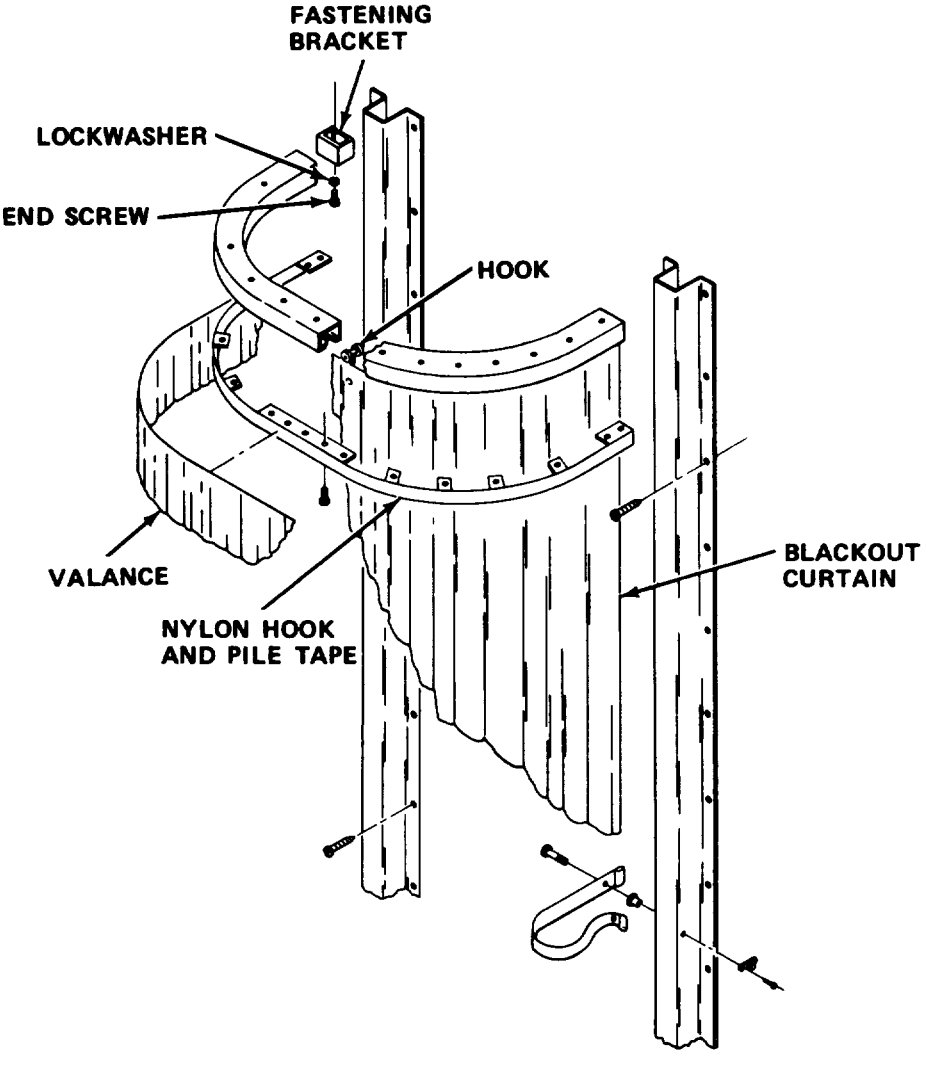
g. Plug in power cord.

1-16.12 Repair Blackout Curtain.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS : Cross Tip Screwdriver

SUPPLIES: Hooks
Valance
Curtain
Nylon Hook and Pile Tape
Adhesive (Item 1, Appendix E)



a. Remove curtain from hooks.

b. Pull curtain and valance from nylon hook and pile tape.

c. Remove end screw, lockwasher, and fastening bracket from ceiling.

d. Replace damaged hooks.

e. Reinstall fastening bracket with hooks. Fasten with end screw and lockwasher.

f. Glue loose nylon hook and pile tape to wall or bracket. Replace tape if worn out.

g. Hook curtain to bracket.

h. Attach valance.

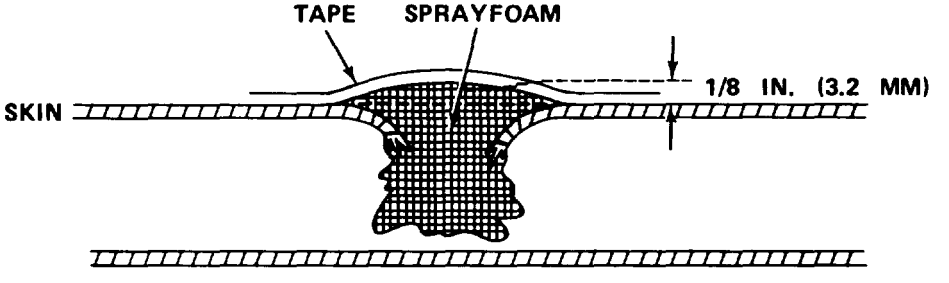
i. Check curtain for free movement.

1-16.13 Repair Van Body Skin (Temporary).

MOS: 52C, Utilities Equipment Repairer

TOOLS: Pliers
Ball Peen Hammer
Scissors or Utility Knife

SUPPLIES: Cloth Duct Sealing Tape (Item 20, Appendix E)
Silicone Sealant (Item 16, Appendix E)
Sprayfoam (Item 19, Appendix E)
Cheesecloth, (Item 4, Appendix E)



a. Bend broken edges of punctured skin inward into puncture hole. Do not attempt to remove fragments of skin by bending or pulling outward. Bend skin inward only enough to put broken edges below surface of unbroken skin.

b. Remove any loose fragments of foam which are not now held in place by bent broken skin. Removing small pieces of foam or dust is more important than removing chunks.

c. Using cloth slightly dampened with water, wipe area around puncture to remove any dirt or mud and wipe dry.

d. Inject sprayfoam into puncture. Mound sprayfoam to about 1/8 in. (3.2 mm) above surface of unbroken skin. Apply bead of sealant about 1/4 in. (6.4 mm) wide over all cuts in skin leading out from puncture. Do not smooth out sealant.

e. Plan how puncture is to be covered with tape before applying any tape. Length and width of tape, number of tape strips, overlapping, and how tape is applied will affect sealing capability of repair. Each piece of tape should extend about 1-1/2 in. (3.81 cm) beyond sealant it will cover. If this will require more than one strip of tape, tape should overlap about 1/2 in. (12.7 mm). If three or more strips of tape are required, center strip should be applied first.

f. Apply tape, holding it taut, and apply it perpendicular to panel skin. Do not apply with rolling motion either end-to-end or center-to-ends. Do not rub each strip in place individually. Apply all strips lightly with proper overlap and rub into place.

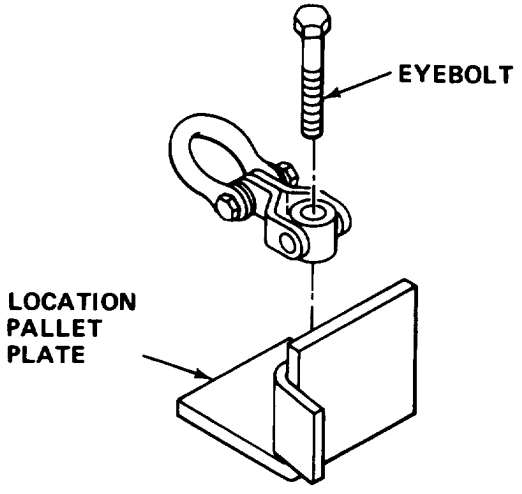
g. If necessary, damaged tape can be replaced; however, it should be removed with careful peeling motion to avoid damage to sealant. If sealant also peels back, new sealant should be applied. Complete removal of old sealant is not necessary. Permanent repair by direct support or higher category of maintenance should be made as soon as possible.

1-16.14 Replace Location Pallet Plate.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Adjustable Wrench

SUPPLIES: Location Pallet Plate



a. Remove eyebolt from defective pallet plate.

b. Remove defective pallet plate.

c. Install new pallet plate.

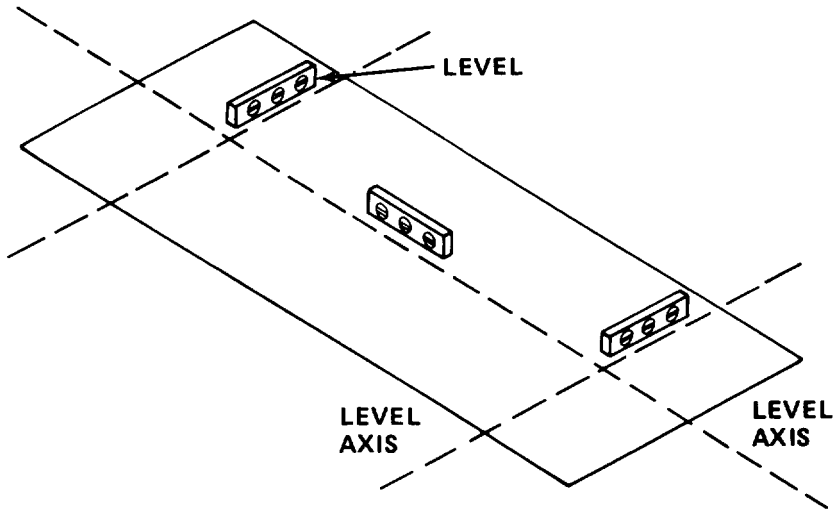
d. Secure new pallet plate with eyebolt.

1-16.15 Replace Level Indicator.

MOS: 83FJ6, Reproduction Equipment Repairer

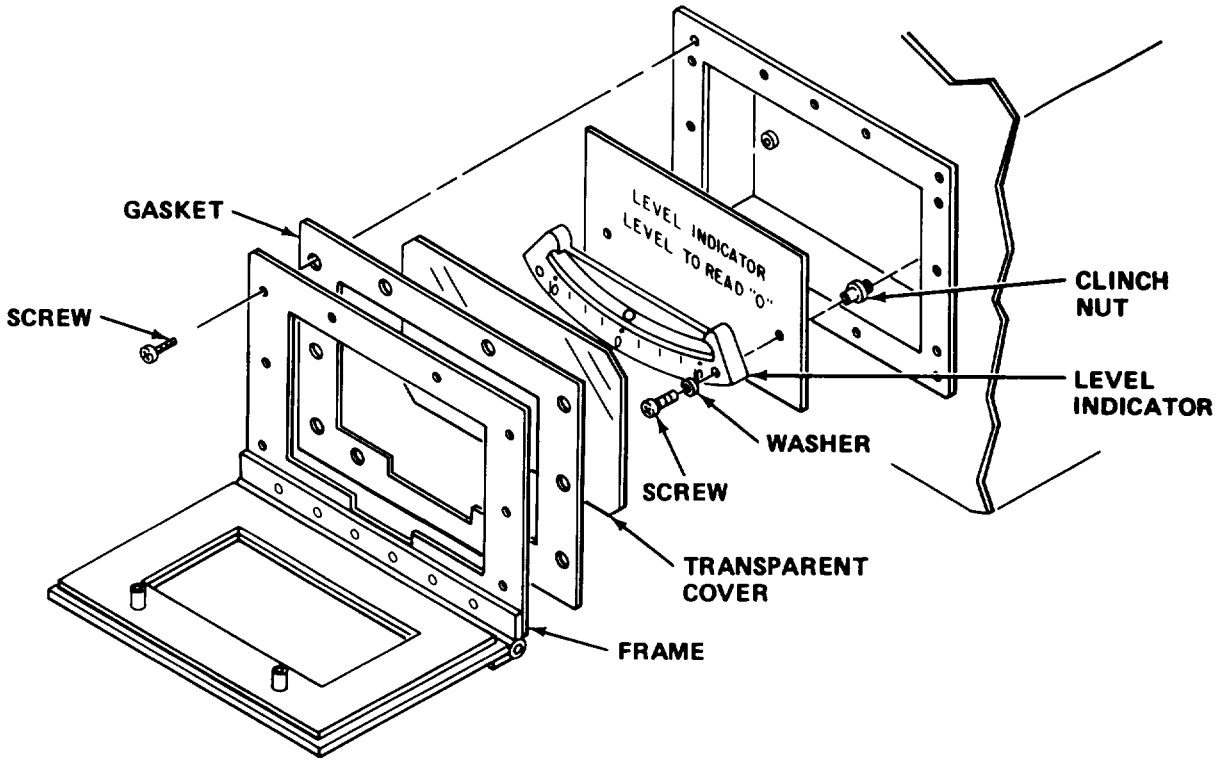
TOOLS : Carpenter's Level
Cross Tip Screwdriver
Knife, TL-29

SUPPLIES: Level Indicator
Gasket



a. Level section using level indicators. Confirm section is level by using carpenter's level on floor inside section.

b. Adjust section leveling jacks until section is level as indicated by carpenter's alinement level at front-rear and left-right at each end as shown in illustration.



c. Loosen knurled screws and move cover away from level assembly.

d. Remove screws and washers to release frame and gasket.

e. Remove transparent cover.

f. Remove screws and washers to remove level indicator.

g. Replace level assembly and secure with screws and washers.

h. Reinstall transparent cover.

i. Install new gasket.

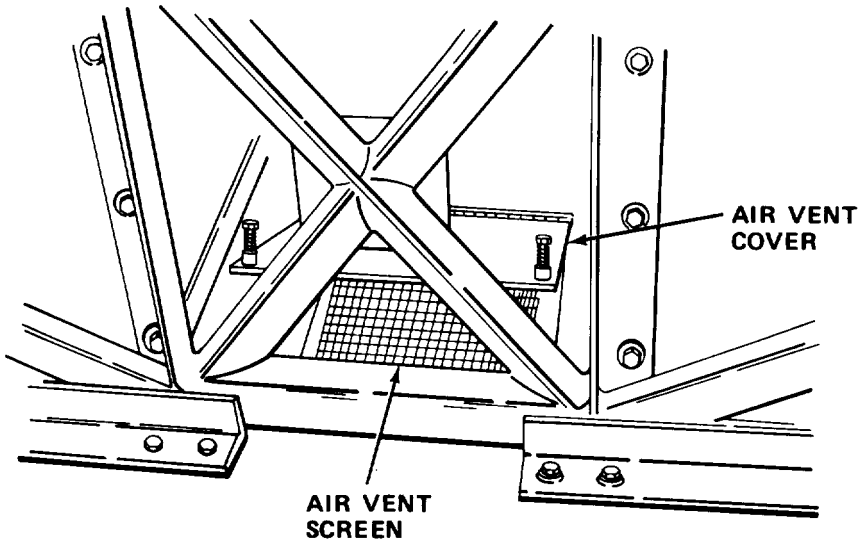
j. Reinstall frame and secure with screws and washers.

1-16.16 Replace Air Vent Screen.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Cross Tip Screwdriver
Scissors

SUPPLIES: Rubber Adhesive (Item 1, Appendix E)
Screen, Nylon (Item 15, Appendix E)



a. Raise access cover and remove screws holding screen frame to section.

b. Remove screen and frame.

c. Clean all old screen material and adhesive from frame.

d. Cut new screen material to size and attach to frame with adhesive.

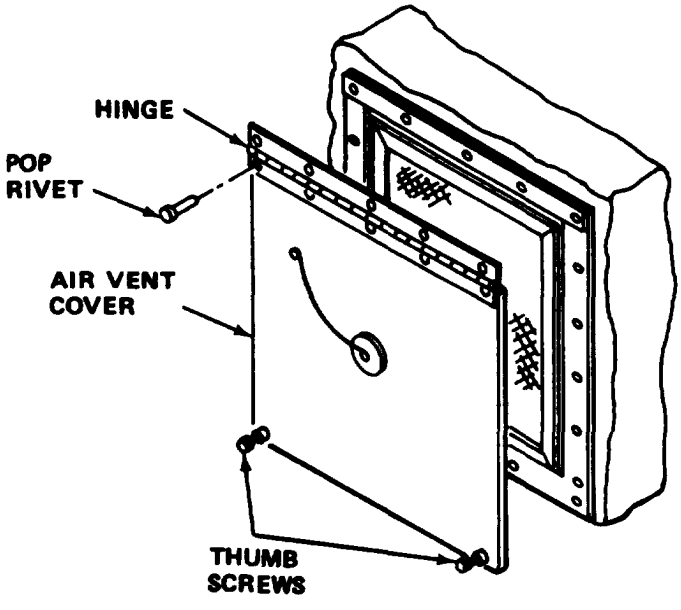
e. Reinstall frame to section and secure with screws. Lower cover.

1-16.17 Replace Air Vent Cover.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Drill and Bits
Pop Rivet Gun

SUPPLIES: Vent Cover
Pop Rivets



a. Loosen thumbscrews.

b. Drill pop rivets from hinge. Remove air vent cover.

c. Aline holes and pop rivet new air vent cover to section.

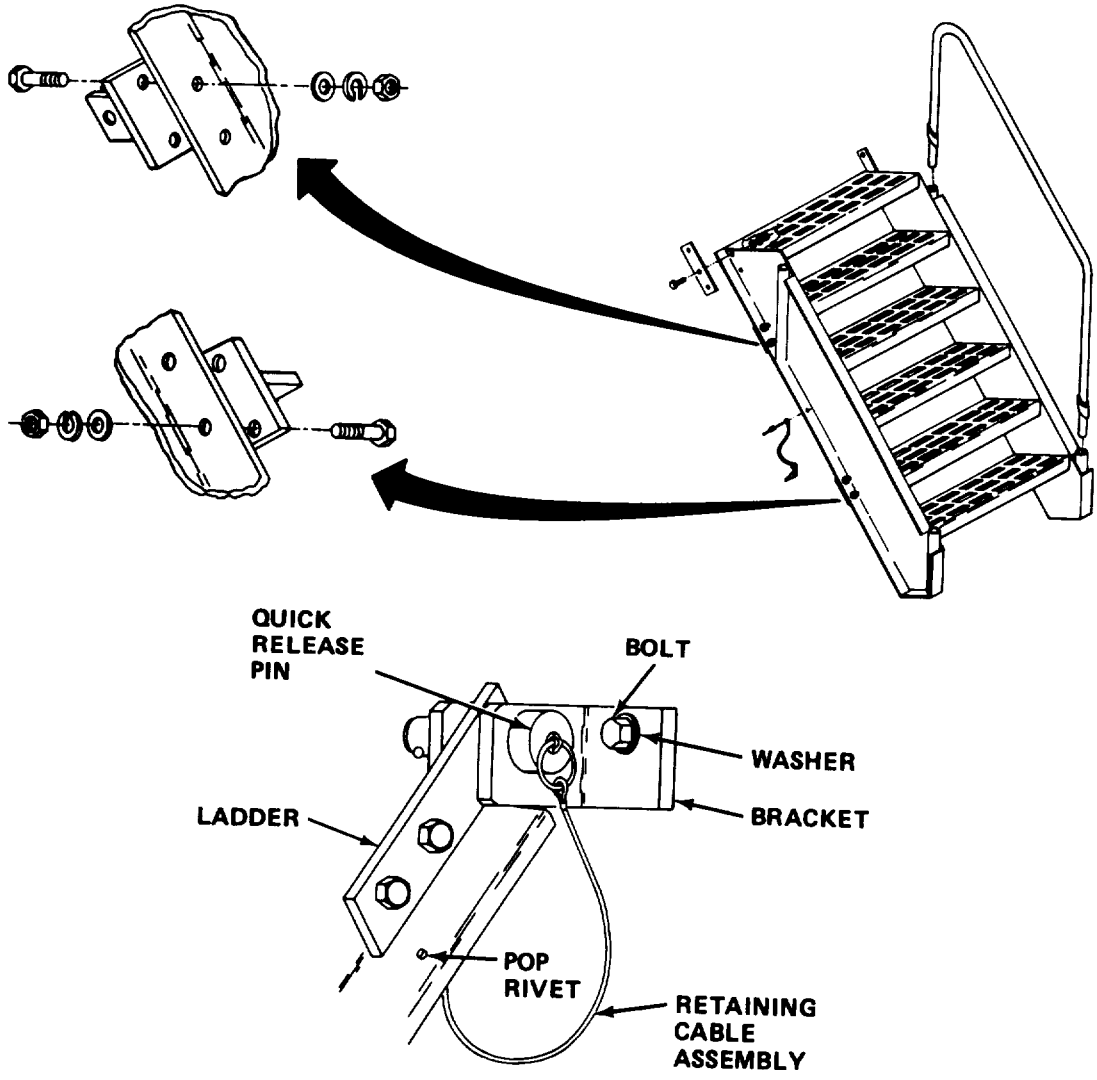
d. Tighten thumbscrews.

1-16.18 Repair Personnel Ladder.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Drill and Bits
pop Rivet Gun
9/16 in. Combination Wrench
8 in. Adjustable Wrench

SUPPLIES: Cable Assembly
Quick Release Pins
Pop Rivets
Mounting Brackets



a. Remove ladder from mounting bracket.

b. **Remove bolts,** washers, and nuts securing damaged mounting brackets to ladder.

c. Remove damaged cable assembly from ladder by drilling out rivet.

d. Reinstall or install new mounting brackets. Secure with bolts, washers, and nuts.

e. Rivet new cable assembly to ladder.

NOTE

Be sure ladder mounting brackets fit section on rear door and under personnel doors.

f. Reinstall ladder on mounting bracket.

1-17. PREPARATION FOR STORAGE OR SHIPMENT.

a. Section may be stored or shipped either mounted on trailer chassis or unmounted. Preparation of trailer chassis is covered in TM 5-2330-305-14 and should be referred to when trailer-mounted section is prepared for storage and shipment. TM 5-4120-367-14 must be reviewed for instructions covering air conditioner/heater.

b. Remove consumable supplies that have limited shelf life or broken seals. Replace missing items and be sure that all remaining consumable supplies are at authorized levels. Be sure all major components are operational.

c. Remove all unauthorized or personal equipment from section.

d. Move all classified material or sensitive data to proper storage. Complete all accountability and/or transfer of documents.

e. Refer to Preparation for Movement (paragraph 1-6.2) and follow applicable steps and any additional steps directed by proper authority.

Section V DIRECT/GENERAL SUPPORT MAINTENANCE

1-18. REPAIR PARTS, SPECIAL TOOLS; TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT; AND SUPPORT EQUIPMENT.

1-18.1 Common Tools and Equipment. For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

1-18.2 Special Tools; Test, Measurement, and Diagnostic Equipment: and Support Equipment. Special Tools, TMDE, and Support Equipment is listed in the applicable repair parts and special tools list and in Appendix B of this manual.

1-18.3 Repair Parts. Repair parts are listed and illustrated in the Repair Parts and Special Tools List, TM 5-3610-252-24P covering direct/general support maintenance for this equipment.

1-18.4 Electrical System. Direct/general support level of maintenance for the repair of the section's electrical system will consist of electrical wiring repair using standard electrical wiring repair procedures.

1-19. DIRECT/GENERAL SUPPORT TROUBLESHOOTING PROCEDURES.

a. Direct/general support troubleshooting procedures cover the most common malfunctions that may be repaired at the direct/general support level. Repair or adjustment requiring specialized equipment is not authorized unless such equipment is available. Troubleshooting procedures used by lower level maintenance should be conducted in addition to the direct/general support troubleshooting procedures.

b. This manual cannot list all the possible malfunctions or every possible test/inspection and corrective action. If a malfunction is not listed or corrected by a listed corrective action, notify your supervisor.

c. For unidentified malfunctions, use the facing schematic or the foldout located at the end of this manual for further fault analysis.

Table 1-5. DIRECT/GENERAL SUPPORT TROUBLESHOOTING

MALFUNCTION TEST OR INSPECTION	CORRECTIVE ACTION
1. PERSONNEL/CARGO DOORS DO NOT CLOSE COMPLETELY.	
Step 1. Check that latch rollers rotate freely.	Replace latches (paragraph 1-20.2).
Step 2. Check to see if latch rods are bent.	Replace latch rods (paragraph 1-20.2).
Step 3. Check to see if door gasket is torn or broken.	Replace door gasket (paragraph 1-20.3)
2. PERSONNEL/CARGO DOORS DO NOT LATCH PROPERLY.	
Check door latch for missing or damaged components.	Replace door latch (paragraph 1-20.2)
3. AIR OR WATER ENTERS SECTION BODY AROUND DOOR.	
Check to see if door gasket is worn or broken.	Replace door gasket (paragraph 1-20.3)

Table 1-5. DIRECT/GENERAL SUPPORT TROUBLESHOOTING - Cont

MALFUNCTION TEST OR INSPECTION	CORRECTIVE ACTION
4. RECEPTACLES DO NOT OPERATE BUT CIRCUIT BREAKERS ARE ON.	
	WARNING Turn off main circuit breaker before inspecting or servicing circuit breakers or receptacles. Failure to do so may result in death or serious injury.
Step 1. Check to see if power cable is firmly connected to power entry panel.	Connect power cable.
Step 2. Check to see if voltage meter and frequency scale and INCORRECT PHASE or CORRECT PHASE lamp indicate necessary power.	Notify your supervisor for service of power supply at source.
5. CIRCUIT BREAKERS TRIP CONTINUALLY.	
	WARNING Turn off and padlock safety switch before inspecting or servicing circuit breakers or receptacles. Failure to do so may result in death or serious injury.
Step 1. Check to see if receptacles are overloaded.	Reconnect equipment to different receptacles.
Step 2. Check to see if receptacles are damaged.	Replace receptacles (paragraph 1-16.6).

1-20. MAINTENANCE PROCEDURES.

a. This section contains instructions covering direct/general support maintenance functions for the Paper Conditioning Section. Personnel required are listed only if the task requires more than one.

b. After completing each maintenance procedure) Perform operational check to be sure that equipment is properly functioning.

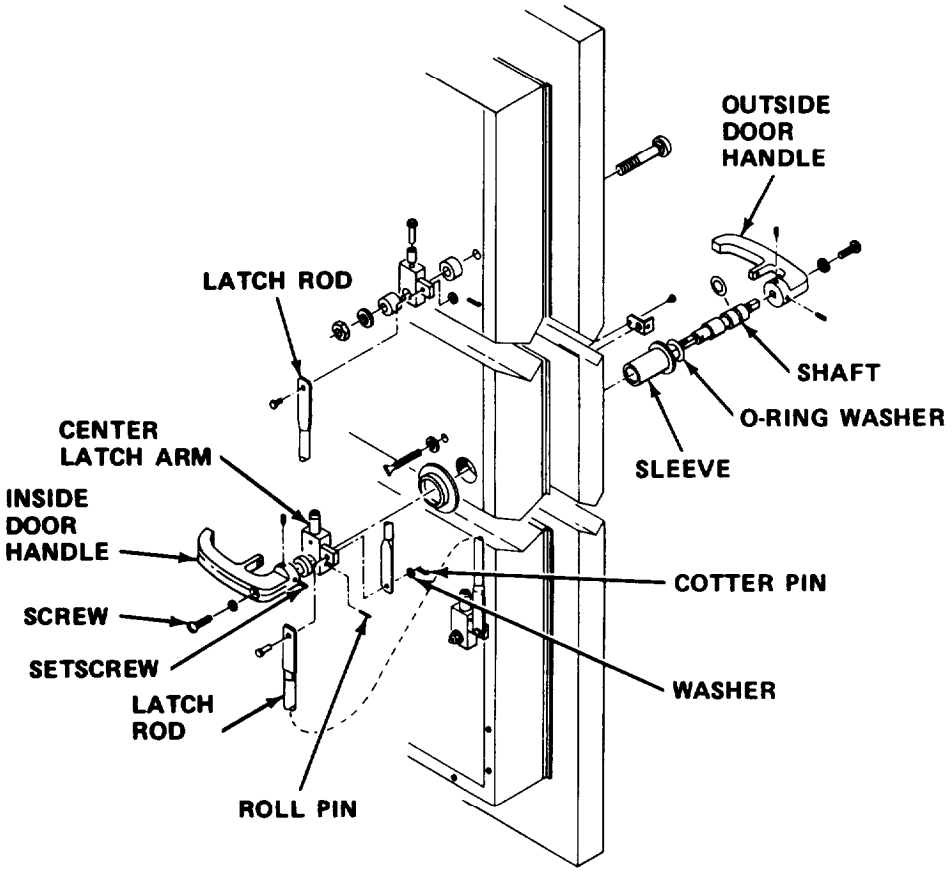
INDEX

1-20.1 Repair Personnel Door Handle.

MOS: 63W, Wheel Vehicle Repairer

TOOLS: Cross Tip Screwdriver
Needle Nose Pliers
15/16 in. Combination Wrench
Hammer
Center Punch
1/8 in. Hex Head Key Wrench

SUPPLIES: O-Ring Washer
Sleeve
Roll Pin
Personnel Door Handle
Cheesecloth (Item 4, Appendix E)
Oil, Lubricating, General Purpose (Item 9, Appendix E)
Hand Oiler
Cotter Pin



a. Loosen screw and socket head setscrews. Remove defective inside door handle.

b. Remove cotter pin and pins from center latch arm assembly.

c. Move latch rods out of way.

d. Punch roll pin from center latch arm assembly and pull latch arm assembly from shaft.

e. Withdraw latch and defective door handle.

f. Inspect all components for wear.

g. Replace worn O-ring washer and sleeve.

h. Replace other worn components as needed.

i. Reinstall shaft and new door handle.

j. Aline center latch arm assembly on shaft. Secure with new roll pin.

k. Aline latch rods. Attach to latch arms with pins, washers, and new cotter pin.

l. Reinstall new inside door handle.

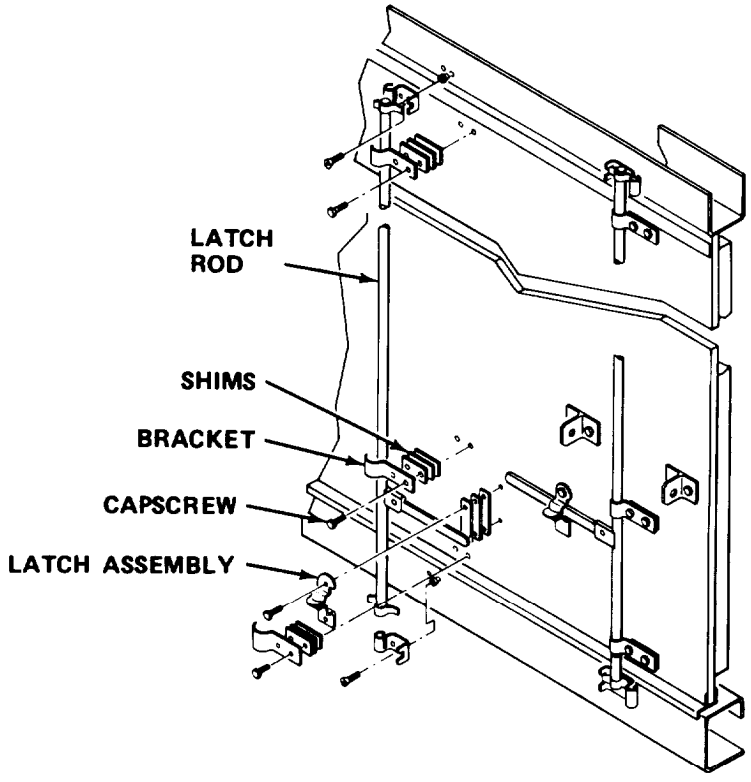
m. Lightly oil all moving parts. Wipe up surplus oil.

1-20.2 Replace Cargo Door Latch Assembly.

MOS: 63W, Wheel Vehicle Repairer

TOOLS: 9/16 in. Combination Wrench

SUPPLIES: Cargo Door Latch Assembly



a. Unlock latch.

b. Remove capscrews and washers from brackets. Remove brackets and shims.

c. Remove defective latch assembly and latch rod.

d. Install new latch assembly and latch rod.

e. Reinstall shims, brackets, washers, and capscrews.

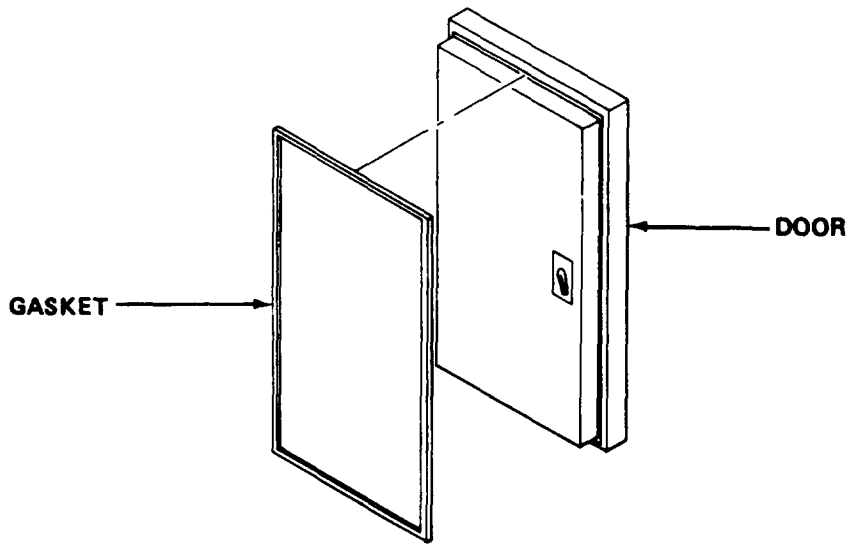
f. Check movement of latch rod and latch assembly. Lock latch.

1-20.3 Replace Personnel/Cargo Door Gasket.

MOS: 63W, Wheel Vehicle Repairer

TOOLS: Knife

SUPPLIES: Vinyl Gasket
Adhesive (Item 2, Appendix E)
Solvent P-D-680 (Item 17, Appendix E)
Impermeable Gloves
Goggles



a. Open door completely and secure in open position.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Wear solvent-impermeable gloves and eye/face protective equipment when using solvent. Do not use near open flame or excessive heat. Flash point of solvent is 100°F to 138°F (38°C to 59°c).

b. Remove defective gasket by prying gasket from door. Scrape traces of gasket and adhesive from door. Wash with solvent P-D-680.

c. Coat gasket area on door with adhesive.

d. Firmly press new gasket onto door.

e. Wipe excess adhesive from gasket.

f. Close door and wipe excess adhesive from door and frame.

g. Allow adhesive to dry before using door.

1-20.4 Replace Personnel/Cargo Doors.

MOS: 63W, Wheel Vehicle Repairer

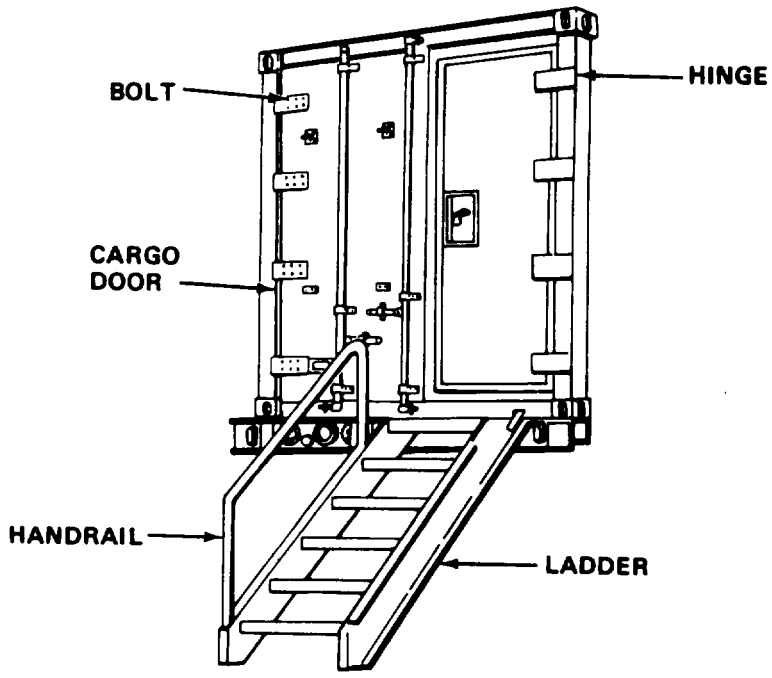
PERSONNEL: Two persons are required to perform this procedure.

TOOLS : Pop Rivet Gun
Electric Drill and Bits
Hoist
3/4 in. Combination Wrench
Paint Brush

SUPPLIES: Personnel/Cargo Door
Pop Rivets
Vinyl Gasket
Paint (Item 11, 11A and 11B, Appendix E)
Paint (Item 12, Appendix E)
Adhesive (Item 2, Appendix E)
Cheesecloth (Item 4, Appendix E)

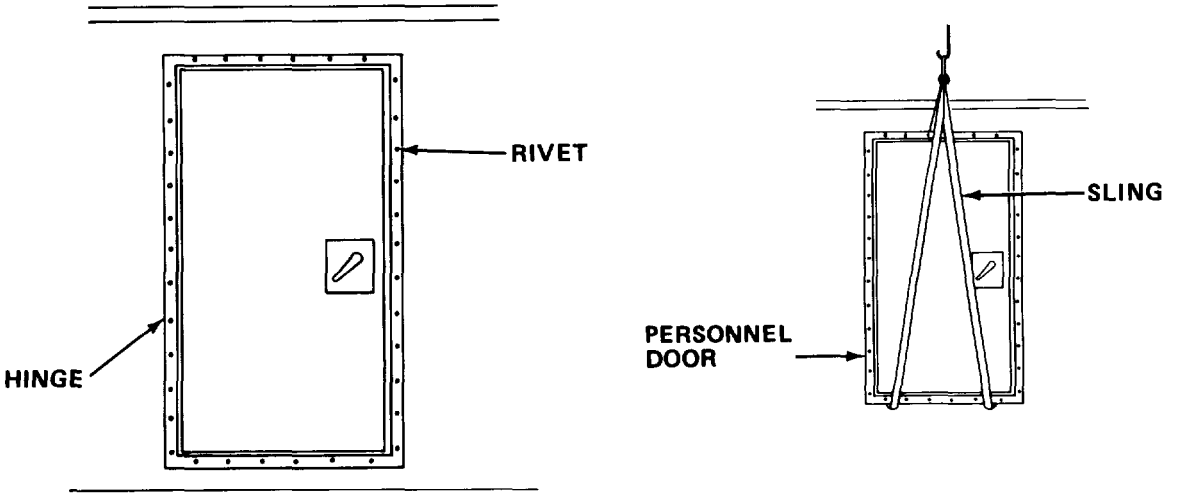
WARNING

To prevent personal injury or equipment damage, do not attempt to remove doors unless suitable lifting equipment and hoist are available.



a. Remove handrails and ladders if rear cargo door is to be replaced.

b. Unlock and open door to be replaced.



c. Place sling around door and put a slight strain on hoist to remove weight from hinges.

d. Remove bolts from hinges on rear personnel door. On side personnel door, drill out pop rivets from hinge. Remove hinges from door.

e. Remove damaged door using hoist.

f. Install new door using hoist.

g. Reinstall hinges on rear personnel door. Secure with bolts. Reinstall hinges on side personnel door. Secure with pop rivets.

h. Remove sling from door.

i. Install new gaskets on door after it is mounted (paragraph 1-20.3).

j. Repaint as needed.

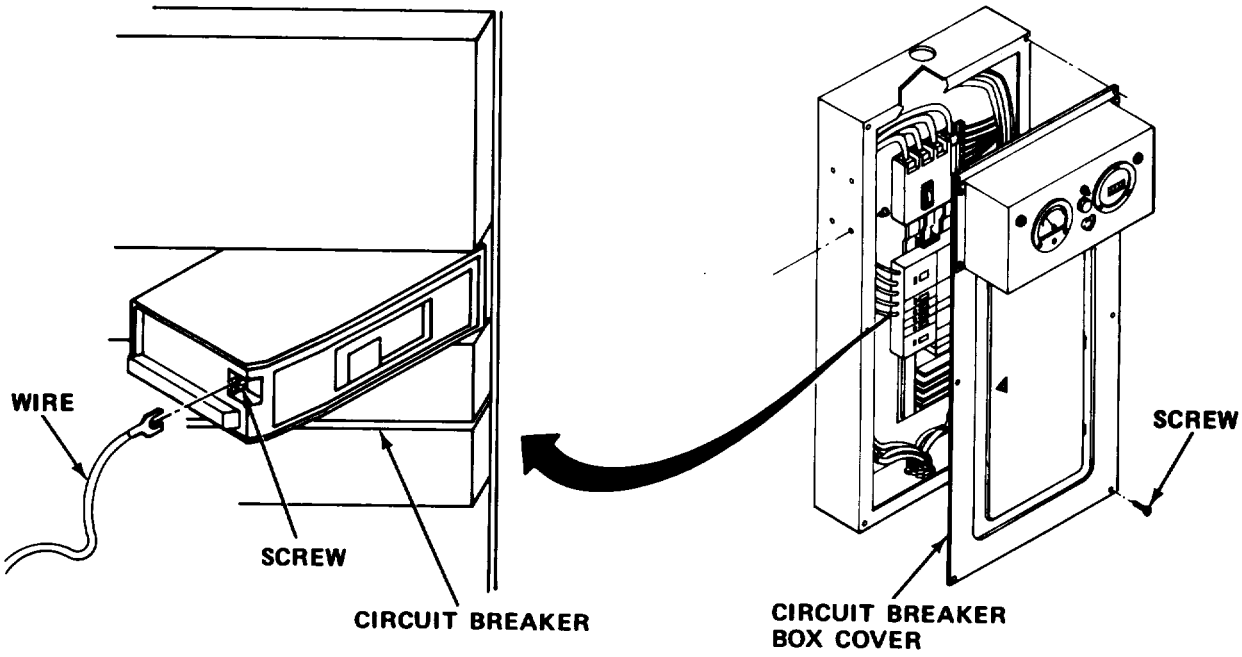
k. Close and lock door.

1-20.5 Replace Circuit Breaker.

MOS: 35E, Special Electronic Devices Repairer

TOOLS: Flat Tip Screwdriver
Multimeter

SUPPLIES: Circuit Breaker



WARNING

Turn off and padlock safety switch. Turn off all individual circuit breakers before inspecting or servicing circuit breakers. Failure to do so may result in death or serious injury.

a. Turn off and padlock safety switch. Turn off individual circuit breakers.

b. Remove circuit breaker box cover.

c. Use multimeter to make sure voltage is not present.

d. Remove defective circuit breaker by pushing and snapping out of place.

e. Tag and remove wires from defective circuit breaker.

f. Pull circuit breaker from panel.

g. Reconnect wires to new circuit breaker. Secure wires with screws.

h. Install new circuit breaker by pushing and snapping into place.

i. Reinstall circuit breaker box cover.

j. Remove padlock and turn on safety switch and individual circuit breakers.

1-20.6 Repair Van Body Skin (Permanent).

MOS: 63W, Wheel Vehicle Repairer

TOOLS: Pop Rivet Gun
Electric Drill and Bits
Paint Brush

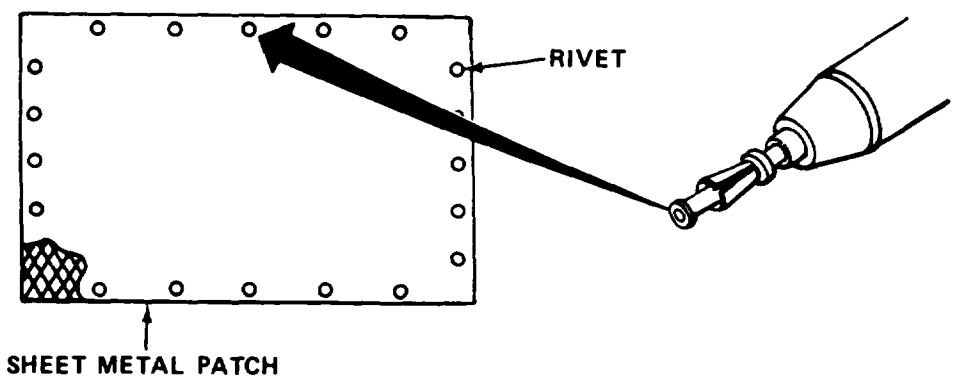
SUPPLIES: Pop Rivets
Sprayfoam (Item 19, Appendix E)
Silicone Sealant (Item 16, Appendix E)
Sheet Metal
Paint (Item 11, 11A and 116, Appendix E)
Cheesecloth (Item 4, Appendix E)

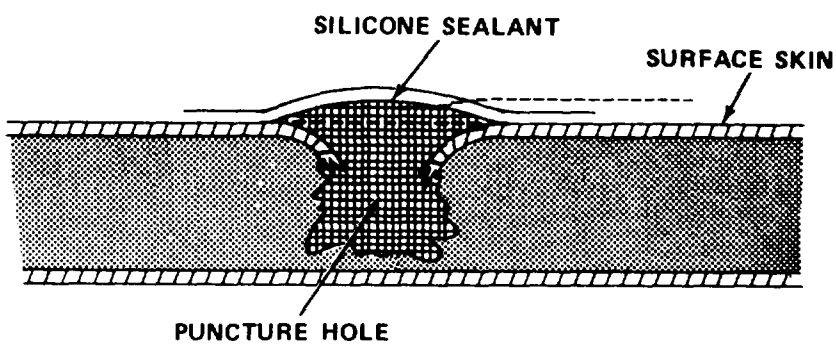
a. Bend broken edges of skin inward into puncture hole. Do not attempt to remove fragments of skin by bending or pulling out.

b. Remove any loose fragments of foam.

c. Use cloth dampened with water to clean area around puncture. Wipe dry.

d. Inject sprayfoam into puncture. Fill to 1/8 in. (3.2.mm) above surface of unbroken skin. Apply sealant to cracks leading to puncture.





e. Prepare sheet metal patch large enough to cover damaged area with overlap.

f. Place patch over damaged area and mark all around edges of patch.

g. Drill holes 1 in. (25.4 mm) apart.

h. Apply sealant to edges of patch.

i. Apply patch to van body.

j. Install pop rivets beginning at center of each side. Rivets should be placed 1 in. (25.4 mm) apart.

k. Paint as needed.

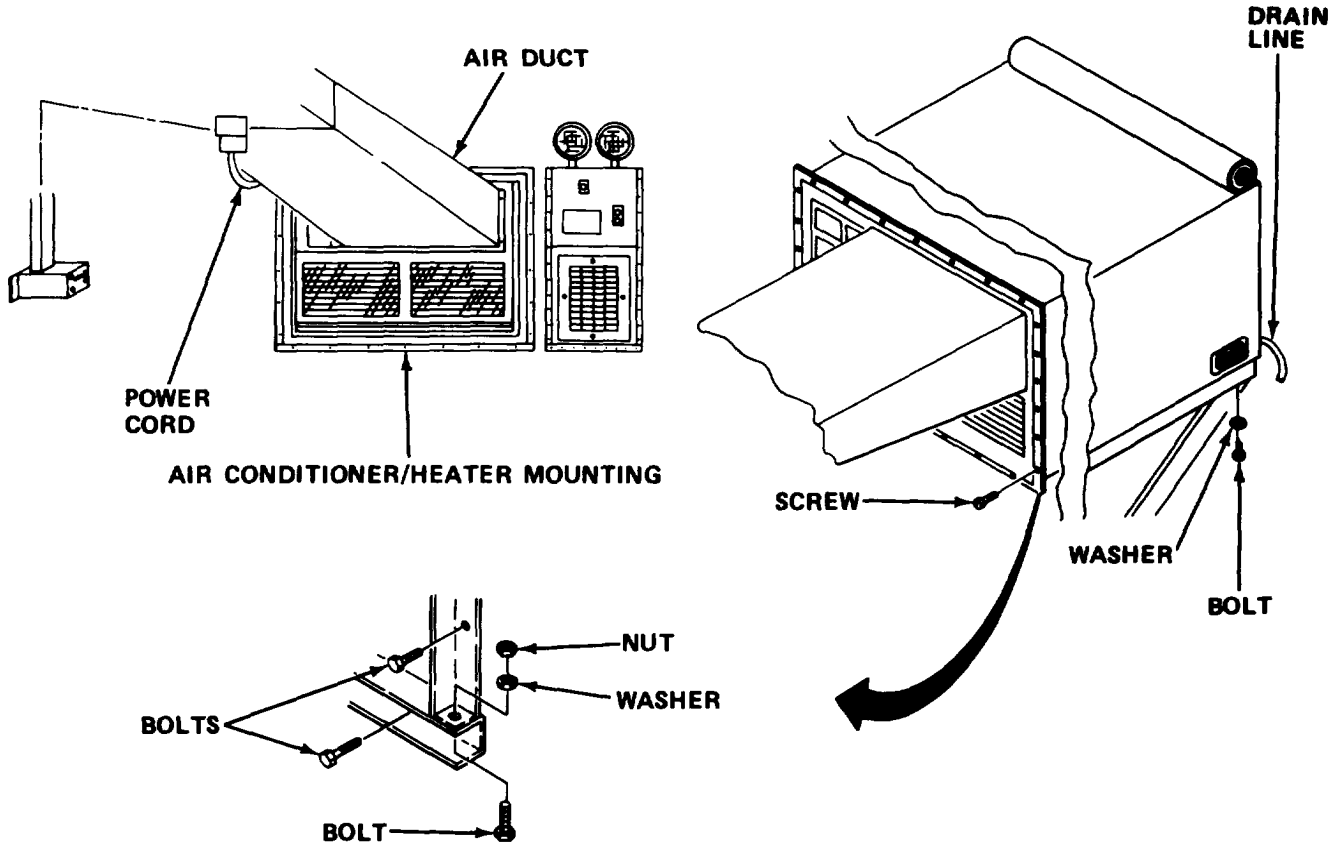
1-20.7 Replace Air Conditioner/Heater.

MOS: 63W, Wheel Vehicle Repairer

PERSONNEL: Two persons are required to perform this procedure.

TOOLS: Cross Tip Screwdriver
Lifting Equipment
8 in. Adjustable Wrench
7/16 in. Combination Wrench

SUPPLIES: Air Conditioner/Heater
Solvent P-D-680 (Item 17, Appendix E)
Gasket
Sealant (Item 16, Appendix E)
Adhesive (Item 1, Appendix E)



WARNING

- Use hoist or proper lifting equipment to replace air conditioner/heater. Failure to do so may result in death or serious injury.
- Turn off air conditioner/heater circuit breaker and unplug power cord. Failure to do so may result in death or serious injury.

a. Turn off air conditioner/heater circuit breaker. Unplug or disconnect power cord as appropriate.

b. Remove screws holding air duct to air conditioner/heater.

c. Remove nut, washer, and screw from each corner of air conditioner/heater mounting. Remove screws securing mounting to van wall.

d. Disconnect drain line from air conditioner/heater.

e. Attach sling to lifting handles. Raise hoist enough to remove slack from sling.

f. Remove mounting bolts and washers.

g. Slide out air conditioner until other lifting handles are free. Attach sling to handles.

h. Raise defective air conditioner/heater with hoist until unit is free from brackets and section.

i. Place air conditioner/heater on flat-bed truck or pallet.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Wear solvent-impermeable gloves and eye/face protective equipment when using solvent. Do not use near open flame or excessive heat. Flash point of solvent is 100°F to 138°F (38°C to 59°C).

j. Clean sealant from opening using dry cleaning solvent P-D-680.

k. Remove damaged gasket and replace with new gasket.

l. Raise air conditioner/heater until it rests on air conditioner/heater brackets.

m. Remove two sling hooks as unit is eased into hole until grille touches duct .

n. Remove remaining sling.

o. Reinstall washers and mounting bolts.

p. Reconnect drain lines.

q. Reinstall screws securing air conditioner/heater mounting to section wall. Reinstall screw, washer, and nut to each corner of mounting.

r. Reinstall screws securing air duct to air conditioner/heater.

s. Reconnect or plug in power cord. Turn on air conditioner/heater circuit breaker.

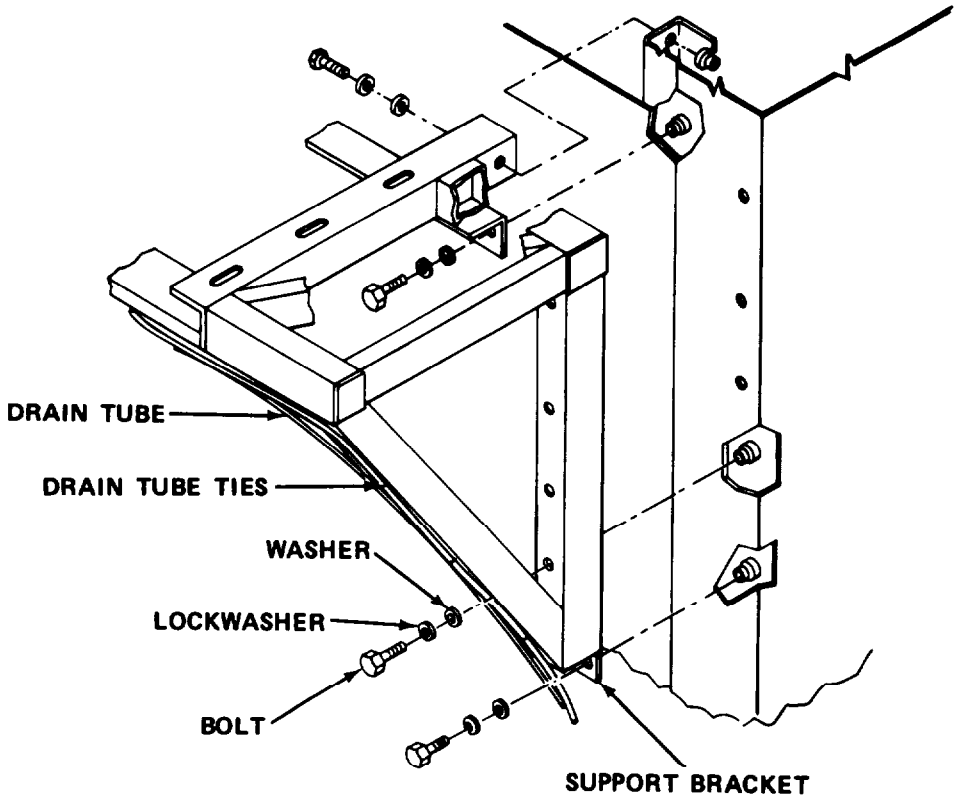
1-20.8 Replace Air Conditioer Support Bracket.

MOS: 63W, Wheel Vehicle Repairer

PERSONNEL: Two persons are required to perform this procedure.

TOOLS: 9/16 in. Combination Wrench
Lifting Equipment
Knife, TL-29

SUPPLIES: Air Conditioner Support Bracket
Drain Tube Ties



WARNING

Serious injury to personnel or damage to equipment may occur unless two or more personnel are used to remove and replace air conditioner/heater because of weight and balance of air conditioner/heater.

a. Remove air conditioner/heater (paragraph 1-20.8).

b. Cut drain tube ties and remove drain tube from support bracket.

c. Remove bolts, lockwashers, and washers securing support bracket.

d. Remove defective support bracket.

e. Install new support bracket. Secure to van with bolts, lockwashers, and washers.

f. Reinstall drain tube on support bracket and secure with new ties.

g. Reinstall air conditioner/heater (paragraph 1-20.8).

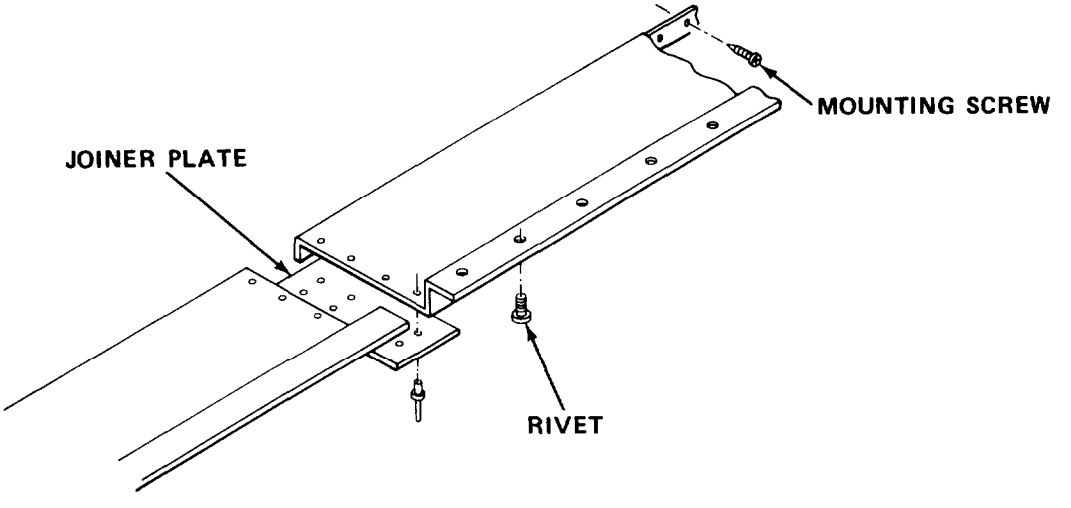
1-20.9 Replace Ventilation Duct.

MOS: 52C, Utilities Equipment Repairer

TOOLS : Hacksaw
Electric Drill and Bits
Ball Peen Hammer
Pop Rivet Gun
Paint Brush
Cross Tip Screwdriver

SUPPLIES: Sealant (Item 16, Appendix E)
Wood Block
Pop Rivets
Paint (Item 12, Appendix E)
Cheesecloth (Item 4, Appendix E)
Salvaged Ventilation Duct

a. Turn off air conditioner/heater so air will not blow through duct.



b. Drill rivets from damaged section of duct. Remove joiner plates.

c. Remove mounting screws to remove damaged sections of duct.

d. Straighten remaining sections of duct at edges using hammer and wood block.

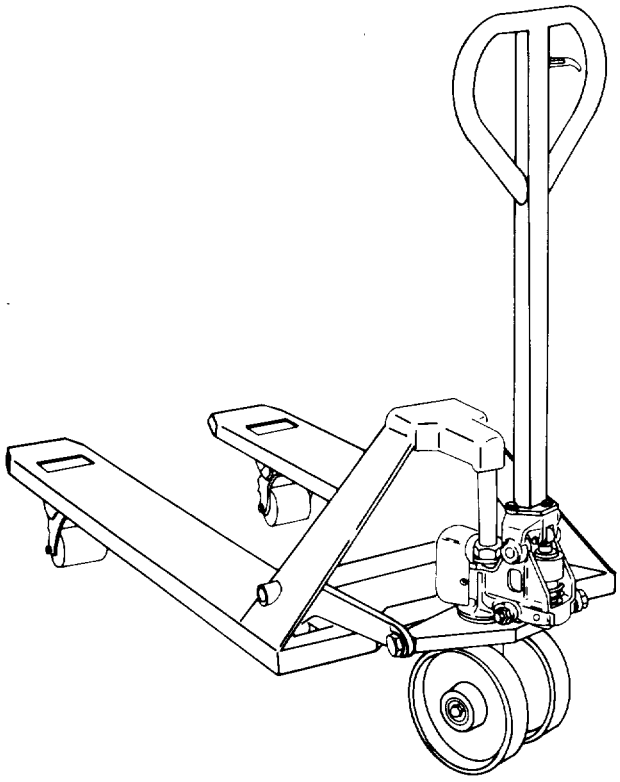
e. Place sealant on mounting edges.

f. Install new duct section cut from salvaged duct. Secure with screws.

g. Reinstall joiner plates. Install rivets to secure.

h. Paint as necessary.

i. Turn on air conditioner/heater.



CHAPTER 2

HYDRAULIC PALLET TRUCK

Section I INTRODUCTION

2-1. GENERAL INFORMATION.

2-1.1 Scope.

a. Model Number and Equipment Name. Model MSK 20-42 Hydraulic Pallet Truck

b. Purpose of Equipment. To move loads up to 5000 lbs (2265 kg) within the Paper Conditioning Section.

2-2. EQUIPMENT DESCRIPTION.

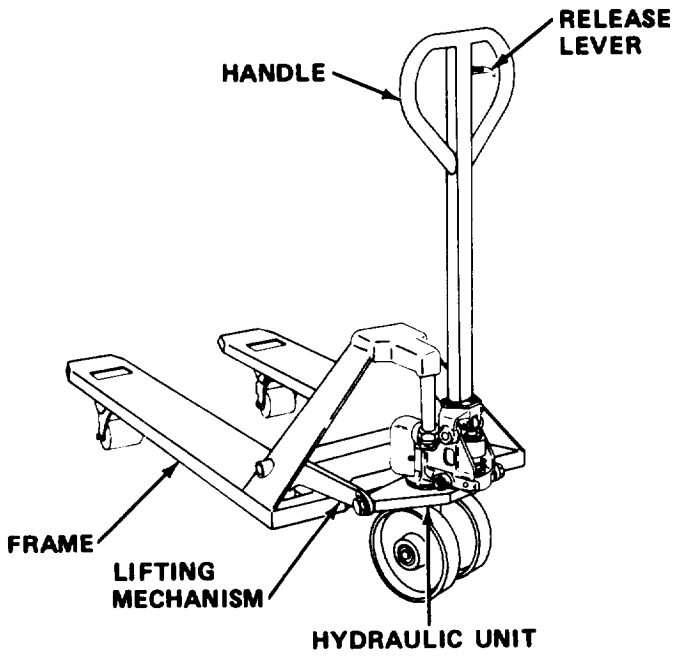
2-2.1 Equipment Characteristics, Capabilities, and Features.

a. Hydraulically activated lifting mechanism.

b. Low frame height.

c. Manually controlled steering.

2-2.2 Locatation and Description of Major Components.



HANDLE. Controls and steers unit.

RELEASE LEVER. Controls load height.

HYDRAULIC UNIT. Raises, holds, and lowers load.

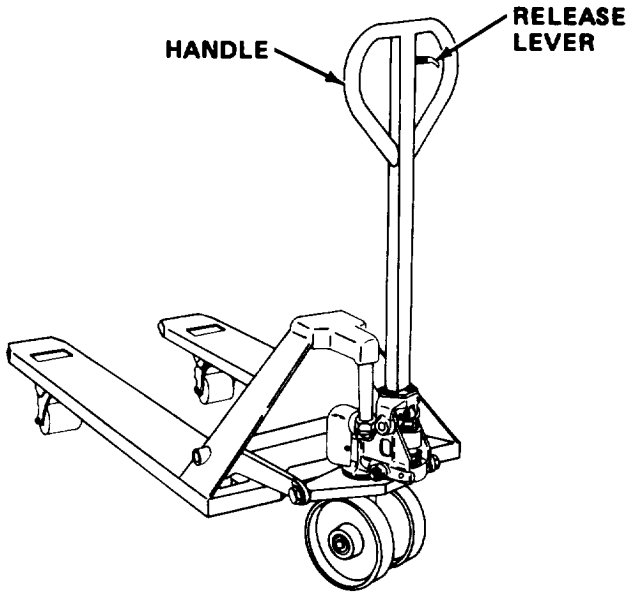
FRAME . Supports load.

LIFTING MECHANISM. Supports load.

2-2.3 Equipment Data

Manufacturer	Stokvis Multiton Corp.
Model	MSK 20-42
Load Capacity	5000 lbs (2265 kg)
Weight	197 lbs (892 kg)
Height (Top of Handle)	48 in. (121.9 cm)
Fork Height (Lowered)	3 in. (7.62 cm)
Length	42 in. (106.7 cm)
Width	20-1/2 in. (52.1 cm)
Steering Arc	240 degrees

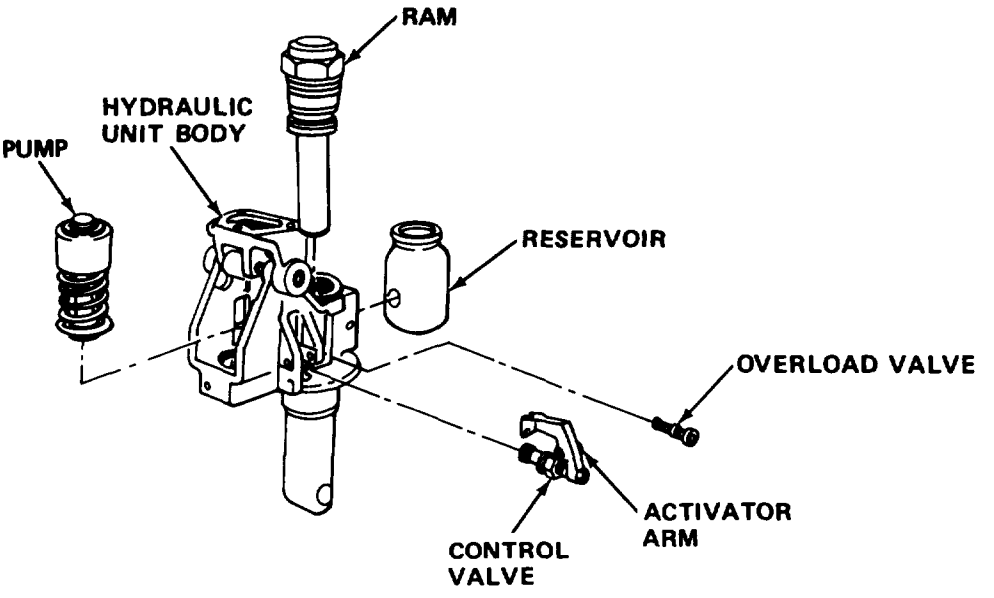
2-3. TECHNICAL PRINCIPLES OF OPERATION. The function of the hydraulic pallet truck is to provide manual moving capability for skid or palletized loads in the Paper Conditioning Section or similar environment. It consists of the following:



2-3.1 Handle Assembly. Transmits force to actuate hydraulic unit and steers complete assembly. It consists of:

a. Truck Handle. Provides directional control of truck and acts as the pump handle.

b. Release Lever. Provides control for raising and lowering load.



2-3.2 Hydraulic Unit. Hydraulically raises, holds, and lowers frame and lifting mechanism. It consists of:

a. Hydraulic Unit Body. Provides housing for hydraulic components,

b. Reservoir. Provides storage for hydraulic fluid.

c. Pump. Provides fluid under pressure and ports it to control valve.

d. Control Valve. Controls directional flow of fluid.

e. Ram. Utilizes fluid pressure to raise or lower frame.

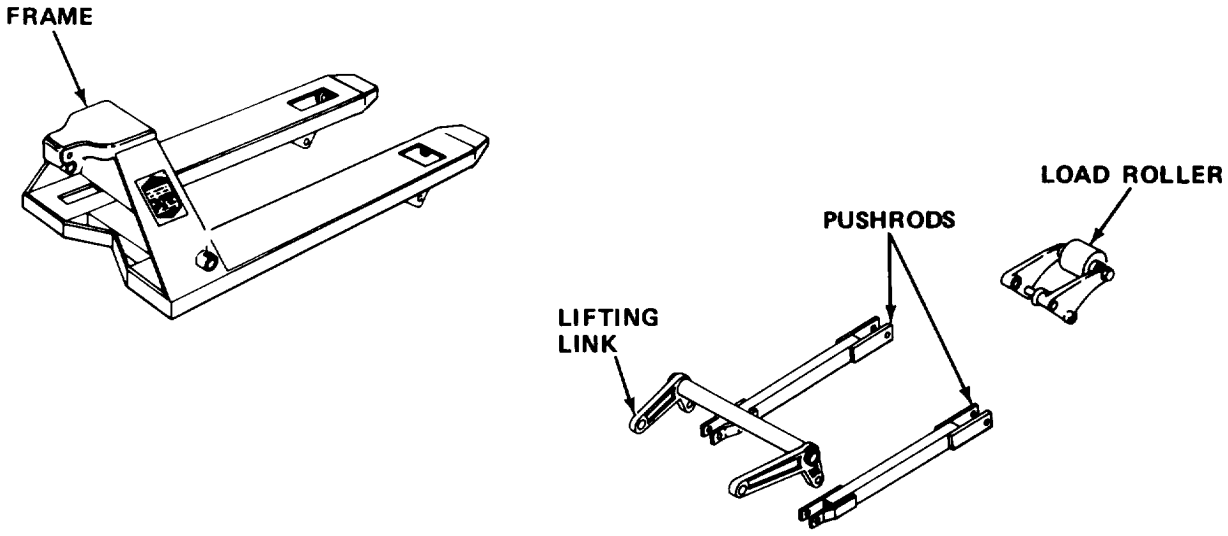
f. Overload Valve. Prevents damage to hydraulic unit if load exceeds 5000 lbs. (2265 kg.).

g. Activator Arm. Moves control valve to position selected by release lever.

2-3.3 Frame and Lifting Mechanism. Provides the load-supporting surface and consists of:

a. Frame. Provides load surface.

b. Lifting Link. Transmits raising and lowering force to pushrods.

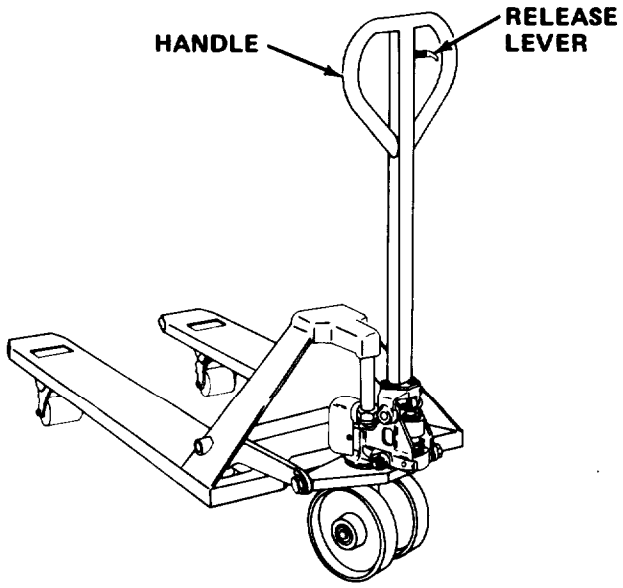


c. Pushrods. Transmit force to raise and lower load rollers.

d. Load Rollers. Provide load support and mobility.

Section II OPERATING INSTRUCTIONS

2-4. DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS.



Control or Indicator	Function
Handle	Provides directional control and acts as pump handle.
Release Lever	Provides pressure control for raising and lowering load.

2-5. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES.

a. Before You operate. Always keep in mind the WARNINGS and CAUTIONS. Perform your before (B) PMCS.

b. While You Operate. Always keep in mind the WARNINGS and CAUTIONS. Perform your during (D) PMCS.

c. After You Operate. Be sure to perform your after (A) PMCS.

d. If Your Equipment Fails to Operate. Troubleshoot with proper equipment. Report any deficiencies using the proper forms. See DA Pam 738-750.

2-5.1 Operator PMCS Procedures.

a. PMCS are designed to keep the equipment in good working condition by performing periodic service tasks.

b. Service intervals provide you, the operator, with time schedules that determine when to perform specified service tasks.

c. The "Equipment is Not Ready/Available If" column is used for identification of conditions that make the equipment not ready/available for readiness reporting purposes or denies use of the equipment until corrective maintenance is performed.

d. If your equipment fails to operate after PMCS is performed, immediately report this condition to your supervisor.

e. Perform weekly as well as before operation if you are the assigned operator and have not operated the item since the last weekly or if you are operating the item for the first time.

f. Leakage definitions for operator PMCS shall be classified as follows:

Class I Seepage of fluid (as indicated by wetness or discoloration) not great enough to form drops.

Class II Leakage of fluid great enough to form drops but not enough to cause drops to drip from the item being checked/inspected.

Class III Leakage of fluid great enough to form drops that fall from the item being checked/inspected.

g. Item number column. Item numbers are assigned in chronological ascending sequence regardless of interval designation. These numbers are used for your "TM Number" Column on DA Form 2404, Equipment Inspection and Maintenance Worksheet in recording results of PMCS.

h. Interval columns. This column determines the time period designated to perform your PMCS.

i. Item to be inspected and procedures column. This column lists functional groups and their respective assemblies and subassemblies as shown in the Maintenance Allocation Chart (Appendix B). The appropriate check or service procedure follows the specific item to be inspected.

j. Equipment is not ready/available if: column. This column indicates the reason or cause why your equipment is not ready/available to perform its primary mission.

Table 2-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES

NOTE

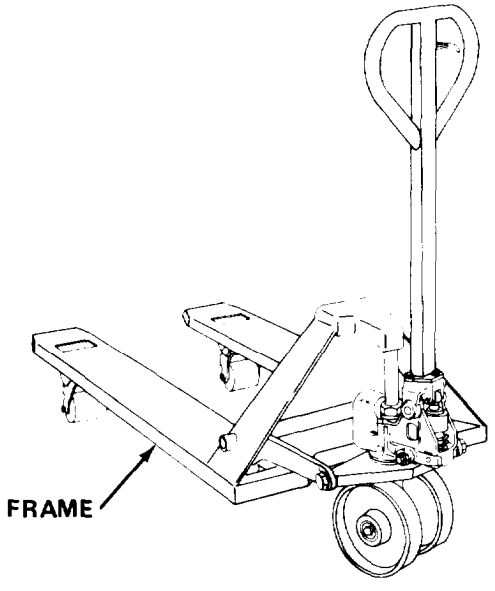
If the equipment must be kept in continuous operation, check and service only those items that can safely be checked and serviced without disturbing operation. Make the complete checks and services when the equipment can be shut down.

B - Before
D - During
A - After

W - Weekly
M - Monthly
Q - Quarterly

AN - Annually
S - Semiannually
BI - Biennially

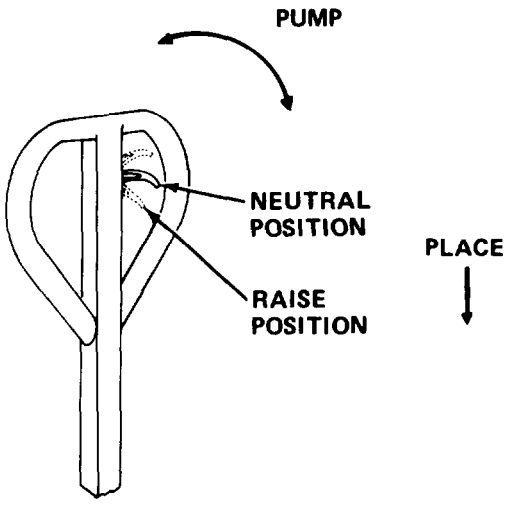
(Number) - Hundreds of Hours

ITEM NO.	IN-TER-VAL	ITEM TO BE INSPECTED PROCEDURE	For Readiness Reporting, Equipment Is Not Ready/ Available If:
		HYDRAULIC PALLET TRUCK	
1	B	Inspect Frame.	
			
		Check frame for bent or cracked structural members.	Frame or handle assembly is damaged.

2-6. OPERATION UNDER USUAL CONDITIONS.

2-6.1 Operating Procedures.

a. Raising load.

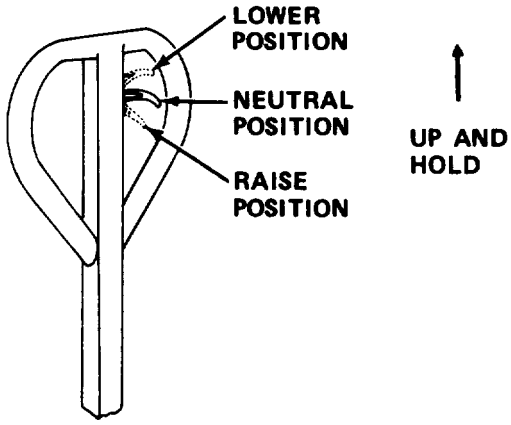


CAUTION

Overloading of truck could result in equipment failure and/or damage. Maximum load that will be placed on hydraulic pallet truck is 5000 lbs (2265 kg).

Place release lever down and hold. Pump handle up and down until load reaches desired height. It is not necessary to pump until full piston height is reached. Clearance of 1 in. between floor and load is usually sufficient to move load.

b. Lowering load.



Pull release lever up and hold. Load will lower as long as release lever is held up. As soon as load is lowered, release the lever. Since release lever is spring-loaded, it will automatically return to neutral when released.

c. Moving load.

NOTE

Always use the NEUTRAL position when moving a load. This provides load stability when moving.

With release lever in neutral, handle is totally free to move with no hydraulic resistance. Load will remain in position in which previously placed. Move load to desired location.

2-7. OPERATION UNDER UNUSUAL CONDITIONS. This equipment is designed for operation only in a controlled environment.

Section Ill OPERATOR MAINTENANCE

2-8. LUBRICATION INSTRUCTIONS.

NOTE

These lubrication instructions are mandatory.

2-8.1 Wipe down all bare metal surfaces and exposed moving parts quarterly, using HDO-30 oil (MIL-L-2104), Item 10 (Appendix E).

2-9. TROUBLESHOOTING PROCEDURES.

a. The table lists the common malfunctions which you may find during operation or maintenance of the hydraulic pallet truck, or its components. You should perform the test/inspections and corrective actions in the order listed.

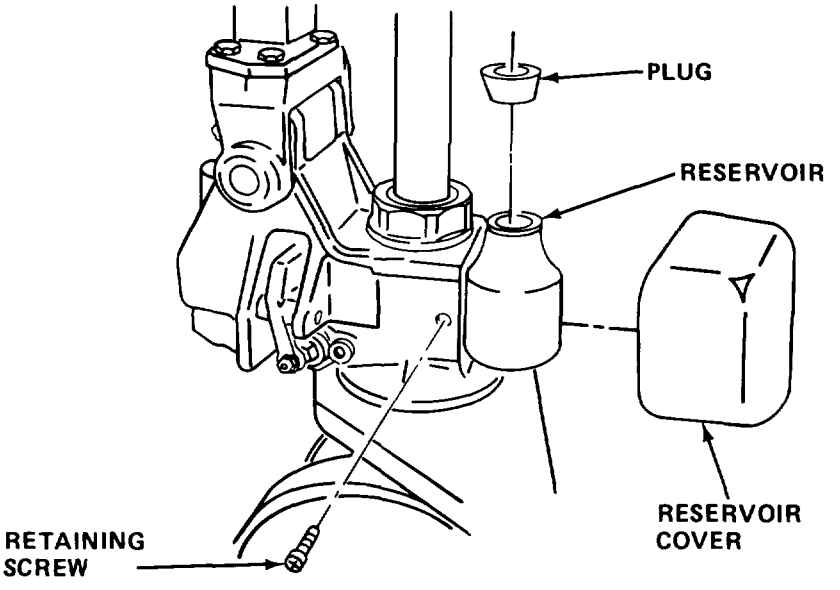
b. This manual cannot list all malfunctions that may occur, nor all test or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify your supervisor.

Table 2-2. TROUBLESHOOTING

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
1. TRUCK WILL NOT RAISE. Check reservoir for low fluid level. If fluid is low, service hydraulic unit. (a) Remove two screws and reservoir cover. (b) Remove plug from reservoir. (c) Check fluid level in reservoir. Fluid level should be 1/8 in. (3.2 mm) below reservoir mouth.

Table 2-2. TROUBLESHOOTING - Cont

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
1. TRUCK WILL NOT RAISE - Cont		
		(d) Add hydraulic fluid (Item 6, Appendix E) to reservoir if level is low.



NOTE

Replace reservoir plug if damaged or shows evidence of leaking.

(e) Reinstall plug.

(f) Reinstall reservoir cover and screws.

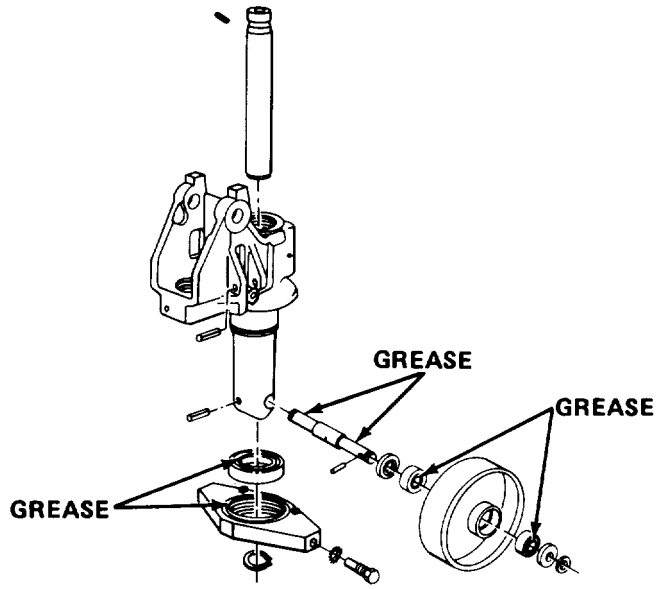
2-10. MAINTENANCE PROCEDURES. There are no operator maintenance procedures assigned for this equipment.

Section IV ORGANIZATIONAL MAINTENANCE

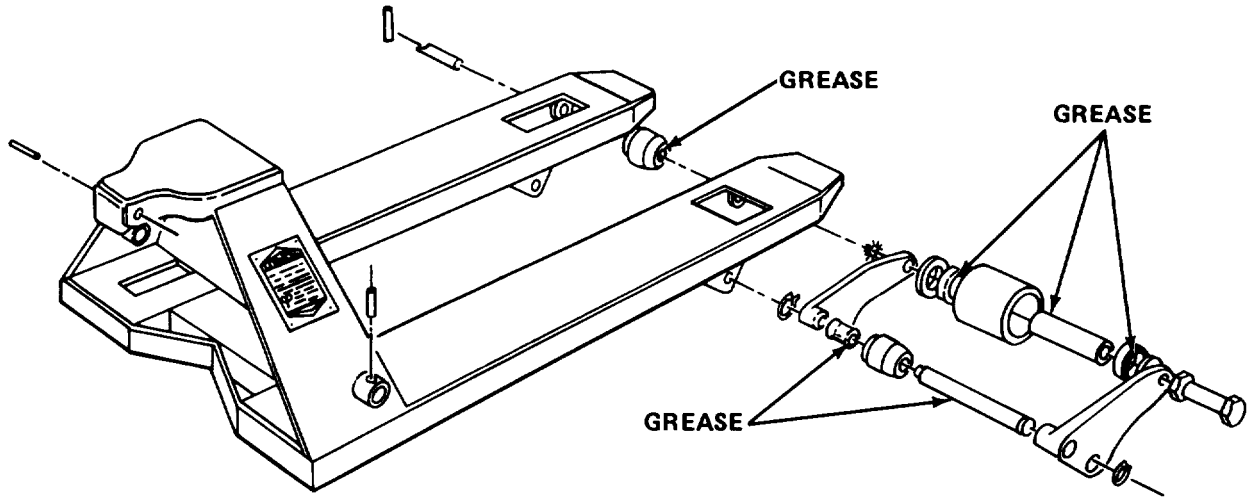
2-11. LUBRICATION INSTRUCTIONS.

NOTE

These lubrication instructions are mandatory.



2-11.1 Grease the steering wheels and load rollers semiannually with Molybdenum grease (Item 8, Appendix E).



2-11.2 Annually, the frame of the hydraulic pallet truck should be partially disassembled and the joints, pivot pins, and axles greased with Molybdenum grease (Item 8, Appendix E).

2-12. REPAIR PARTS, SPECIAL TOOLS; TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT; AND SUPPORT EQUIPMENT.

2-12.1 Common Tools and Equipment. For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

2-12.2 Special Tools: Test, Measurement, and Diagnostic Equipment: and Support Equipment. Special Tools, TMDE, and Support Equipment is listed in the applicable repair parts and special tools list and in Appendix B of this manual.

2-12.3 Repair Parts. Repair parts for this equipment are listed and illustrated in the Repair Parts and Special Tools List, TM 5-361O-252-24P covering organizational maintenance for this equipment.

2-13. SERVICE UPON RECEIPT.

2-13.1 Checking Unpacked Equipment.

Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on DD Form 6, Packing Improvement Report.

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

c. Check to see whether the equipment has been modified.

2-14. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES.

a. PMCS are designed to keep the equipment in good working conditions by performing certain tests, inspections, and services. The intervals provide you, the organizational technician, with time schedules that determine when to perform specified tasks.

b. Item number column. Item numbers are assigned in chronological ascending sequence regardless of interval designation. These numbers are used for your "TM Number" column on DA Form 2404, Equipment Inspection and Maintenance Worksheet, in recording the results of PMCS.

c. Interval columns. This column determines the time period designated to perform your PMCS.

d. Item to be inspected and procedures column. This column lists functional groups and their respective assemblies and subassemblies as shown in the Maintenance Allocation Chart (Appendix B). The appropriate check or service procedure follows the specific item to be inspected.

e. List of tools and materials required for PMCS is as follows:

Item	Quantity
Cheesecloth (Item 4, Appendix E)	ar

Table 2-3. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES

B - Before
D - During
A - After

W - Weekly
M - Monthly
Q - Quarterly

AN - Annually
S - Semiannually
BI - Biennially

(Number) - Hundreds of Hours

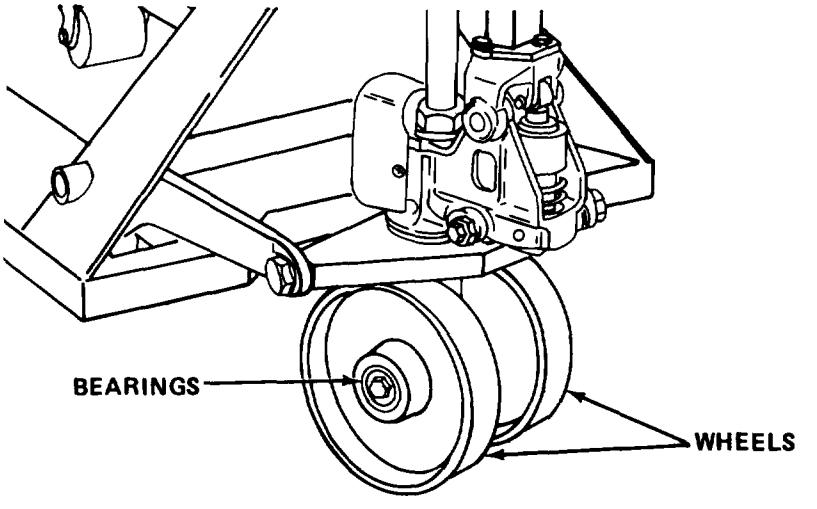
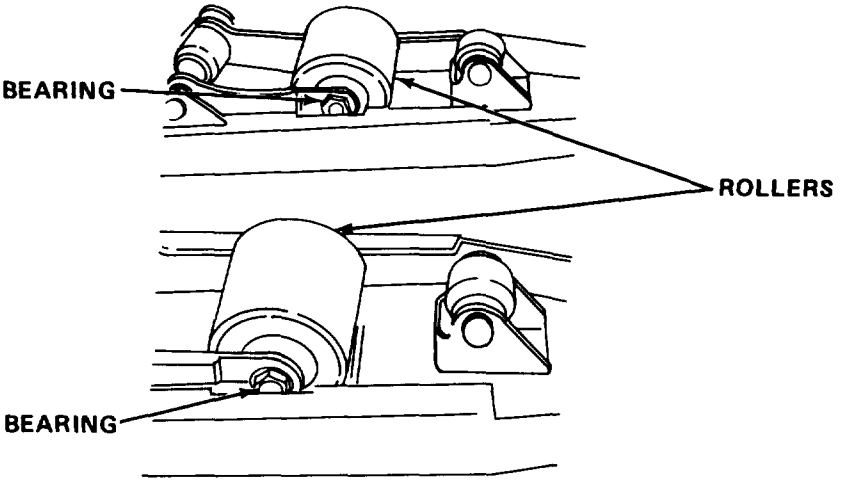
ITEM NO.	INTERVAL	ITEM TO BE INSPECTED PROCEDURE
		HYDRAULIC PALLET TRUCK
1	W	Inspect Steering Wheels.
		
		Check wheels for free movement.
2	W	Inspect Load Rollers.
		
		Check load rollers for damage or wear.

Table 2-3. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont

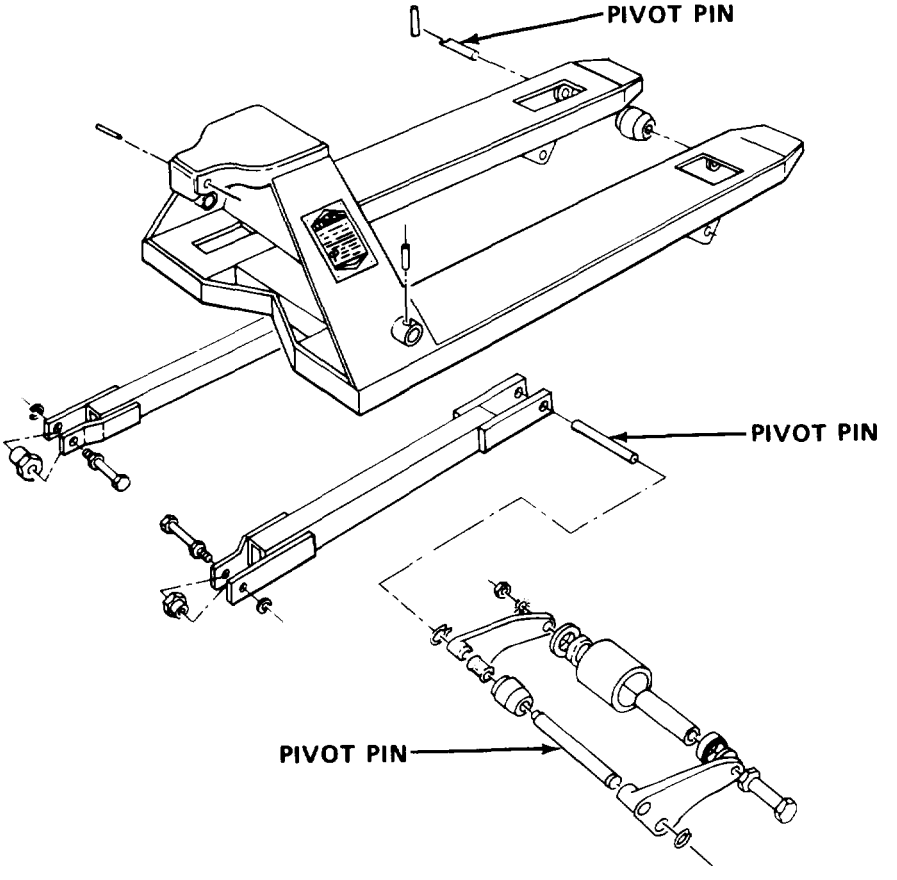
B - Before
D - During
A - After

W - Weekly
M - Monthly
Q - Quarterly

AN - Annually
S - Semiannually
BI - Biennially

(Number) - Hundreds of Hours

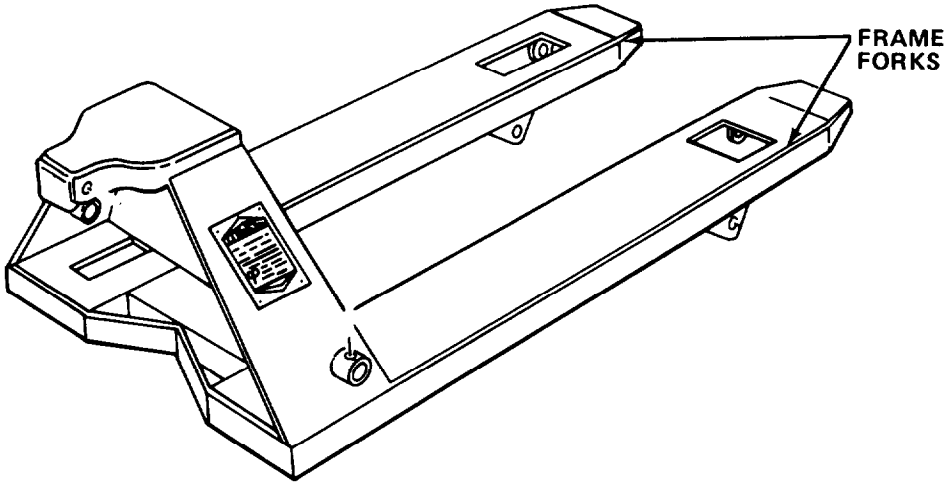
ITEM NO.	IN-TER-VAL	ITEM TO BE INSPECTED PROCEDURE
		HYDRAULIC PALLET TRUCK - Cont
3	W	Inspect Lifting Assembly Pins.



Check pivot pins for damage or wear.

Table 2-3. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont

B - Before, D - During, A - After | W - Weekly, M - Monthly, Q - Quarterly | AN - Annually, S - Semiannually, BI - Biennially | (Number) - Hundreds of Hours

ITEM NO.	IN-TER-VAL	ITEM TO BE INSPECTED PROCEDURE
		HYDRAULIC PALLET TRUCK – Cont
4	B	Inspect Frame Assembly.
		
		Check for damage. Wipe excess oil from frame forks with cheesecloth.

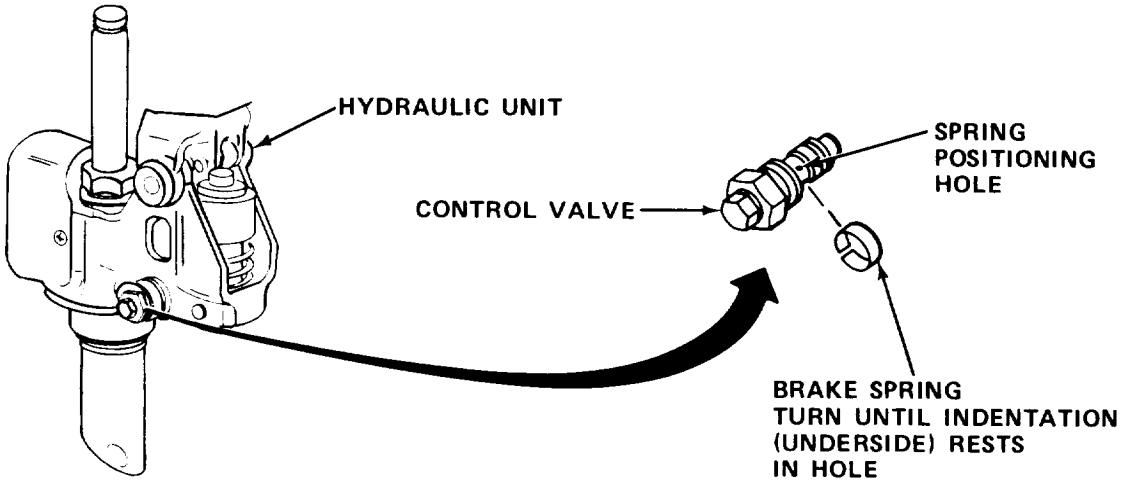
2-15. ORGANIZATIONAL TROUBLESHOOTING PROCEDURES.

a. Organizational troubleshooting procedures cover the most common malfunctions that may be repaired at the organizational level. Repair or adjustment requiring specialized equipment is not authorized unless such equipment is available. Troubleshooting procedures used by the operator should be conducted in addition to the organizational troubleshooting procedures.

b. This manual cannot list all the possible malfunctions or every possible test/inspection and corrective action. If a malfunction is not listed or is not corrected by a listed corrective action, notify your supervisor.

Table 2-4. ORGANIZATIONAL TROUBLESHOOTING

MALFUNCTION TEST OR INSPECTION	CORRECTIVE ACTION
1. TRUCK LOWERS TOO FAST.	
Step 1. Check control valve (left side) for cracks, breaks, or leaks.	(a) If control valve is good and is not leaking, proceed to step 2. (b) Repair control valve (paragraph 2-16.3).
Step 2. Check control valve (left side) brake spring,	Adjust brake spring (paragraph 2-16.3).



2. TRUCK DROPS IN NEUTRAL OR RAISE POSITION OR WILL NOT LIFT FULL 5000 LB (2265 KG) CAPACITY.	
Step 1. Check control valve and overload valve for dirt,	(a) If clean, proceed to step 2. (b) Clean control valve and overload valve.
Step 2. Check control valve adjustment.	Adjust control valve (paragraph 2-16.10).

Table 2-4. ORGANIZATIONAL TROUBLESHOOTING - Cont

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
3. SLUGGISH PUMP STROKE.
Step 1. Check hydraulic unit for contaminated oil and dirt.
(a) If not contaminated/dirty, proceed to step 2.
(b) Service hydraulic unit (paragraph 2-16.1).
Step 2. Check ram collar for leak.
(a) If not leaking, proceed to step 3.
(b) Replace ram collar seals (paragraph 2-16.6).
Step 3. Check pump (piston) for leaks.
(a) If not leaking, proceed to step 4.
(b) Replace piston sleeve seals (paragraph 2-16.5) .
Step 4. Check control valve for leak.
(a) If control valve is not leaking, proceed to step 5.
(b) Repair control valve (paragraph 2-16.3).
Step 5. Check overload valve for leaks.
(a) If overload valve is not leaking, proceed to step 6.
(b) Replace overload valve (paragraph 2-16.7) .
Step 6. Check reservoir for leaks.
Replace reservoir (paragraph 2-16.2).

2-16. MAINTENANCE PROCEDURES.

a. This section contains instructions covering organizational maintenance functions for the hydraulic pallet truck. Personnel required are listed only if the task requires more than one.

b. After completing each maintenance procedure, perform operational check to be sure that equipment is functioning properly.

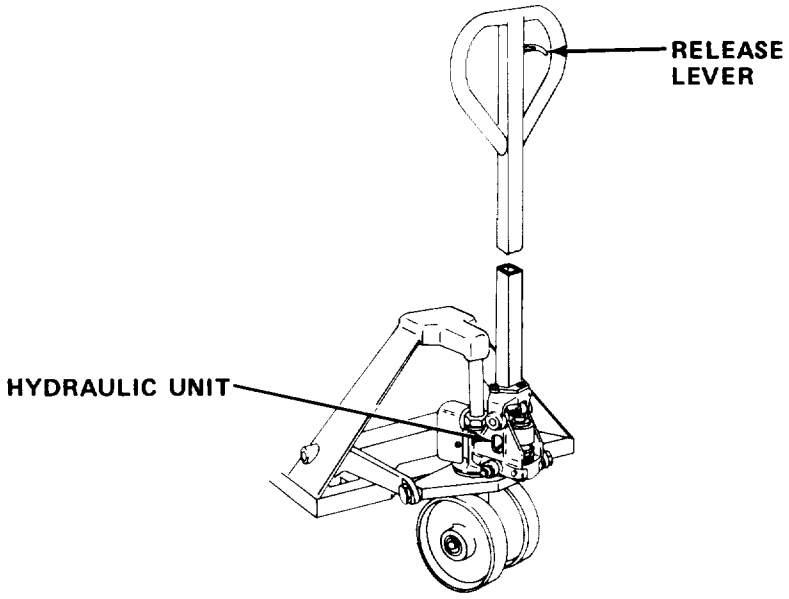
INDEX

2-16.1 Service Hydraulic Unit.

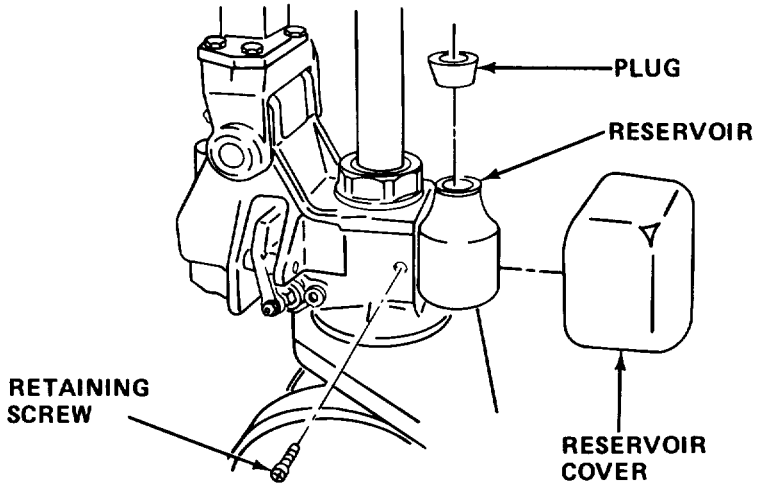
MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Flat Tip Screwdriver

SUPPLIES: Hydraulic Fluid (Item 6, Appendix E)
Cheesecloth (Item 4, Appendix E)



a. Place release lever in up position and lower forks to lowest position.



b. Remove two retaining screws and reservoir cover.

c. Remove plug from reservoir.

d. Add hydraulic fluid until it is about 1/8 in. (3.2 mm) from top of reservoir.

CAUTION

Use only approved hydraulic fluid. Motor oil or brake fluid will damage hydraulic unit.

e. With lever in up position, pump handle a few times. Air bubbles will seen in reservoir with slight drop of fluid level.

f. Refill reservoir to within 1/8 in. (3.2 mm) from top.

g. Place lever to down position, pump handle, and raise forks to maximum be height.

h. Place lever to up position and lower forks.

i. Reinstall plug.

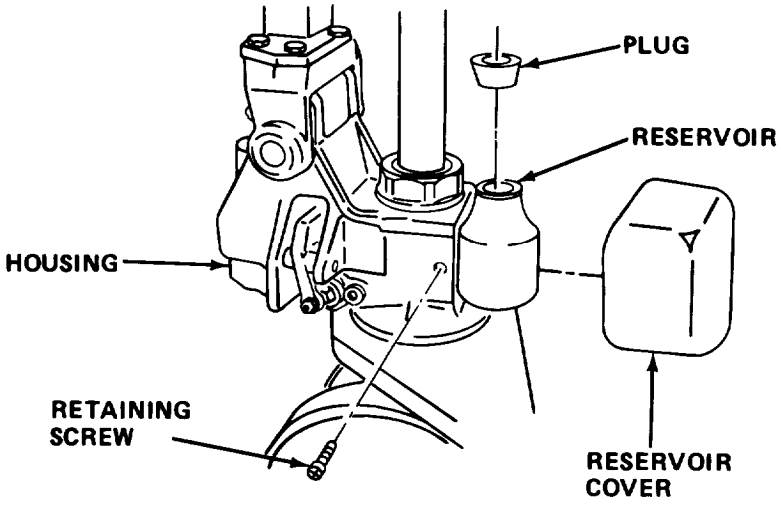
j. Reinstall reservoir cover and secure with two retaining screws.

2-16.2 Replace Reservoir.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS : Flat Tip Screwdriver

SUPPLIES: Hydraulic Fluid (Item 6, Appendix E)
Cheesecloth (Item 4, Appendix E)



a. Drain hydraulic fluid by removing hydraulic unit (paragraph 2-16.8).

b. Remove two retaining screws holding reservoir cover; remove cover.

c. Place wiping cloth around reservoir to minimize spillage of hydraulic fluid when reservoir is removed.

d. Grasp reservoir firmly and pull from housing.

e. Dispose of hydraulic fluid in reservoir as required. Remove plug from reservoir and set aside for future use.

NOTE

Be sure new reservoir is properly positioned to prevent fluid leaks.

f. Place new reservoir in position and slide onto projection in housing,

g. Wipe plug clean and install on new reservoir.

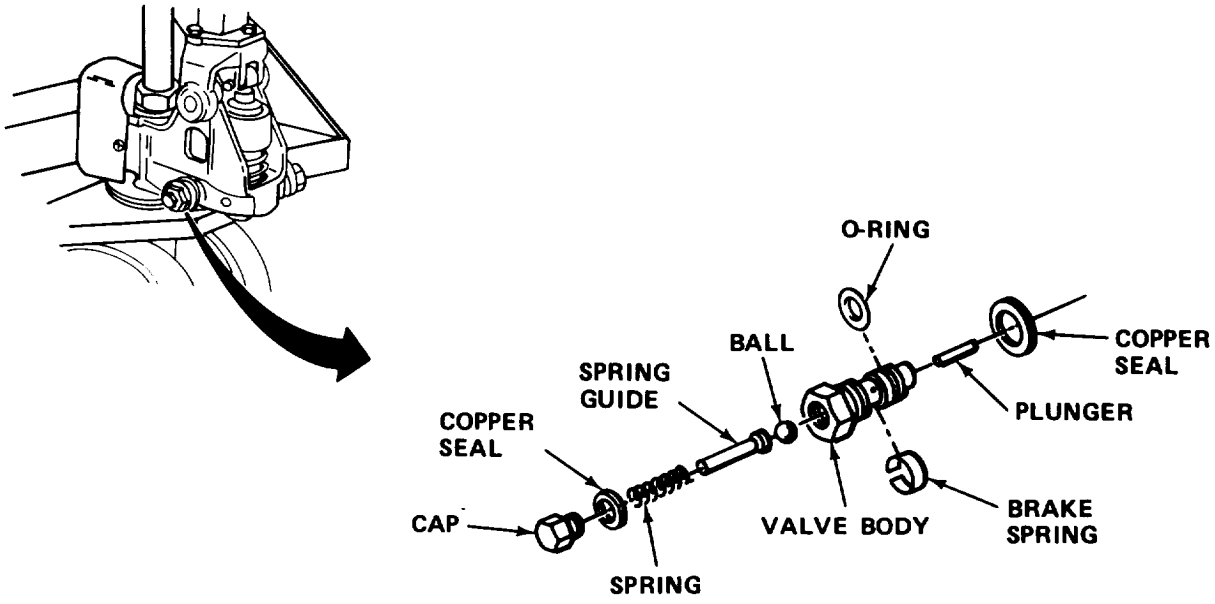
h. Fill with hydraulic fluid and bleed air from system.

2-16.3 Repair Control Valve.

MOS: 83FJ6, Reproducti on Equipment Repairer

TOOLS: 9/16 in. Combination Wrench
15/16 in. Combination Wrench

SUPPLIES: HDO-30 Oil (Item 10, Appendix E)
Cheesecloth (Item 4, Appendix E)
Hydraulic Fluid (Item 6, Appendix E)



a. Unscrew valve body.

b. Remove copper seal, brake spring, O-ring, and plunger from valve body.

c. Remove valve cap, copper seal, spring, spring guide, and ball.

d. Wipe all parts clean with lightly oiled cheesecloth.

e. From nut side of valve body, install ball, spring guide, spring, copper seal, and valve cap.

NOTE

Make sure copper seal is seated and valve cap is tight to prevent fluid leaks.

f. Place large copper seal onto valve body.

NOTE

Brake spring indentation fits into partially drilled hole of valve body and fully covers drilled hole.

g. Reinstall brake spring onto valve body.

h. Reinstall O-ring and plunger. Screw valve body into housing.

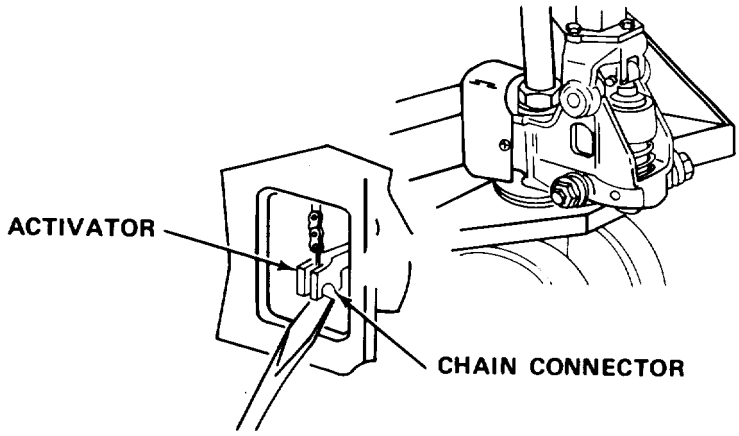
i. Fill with hydraulic fluid and bleed air from system.

2-16.4 Replace Plunger Body Seal.

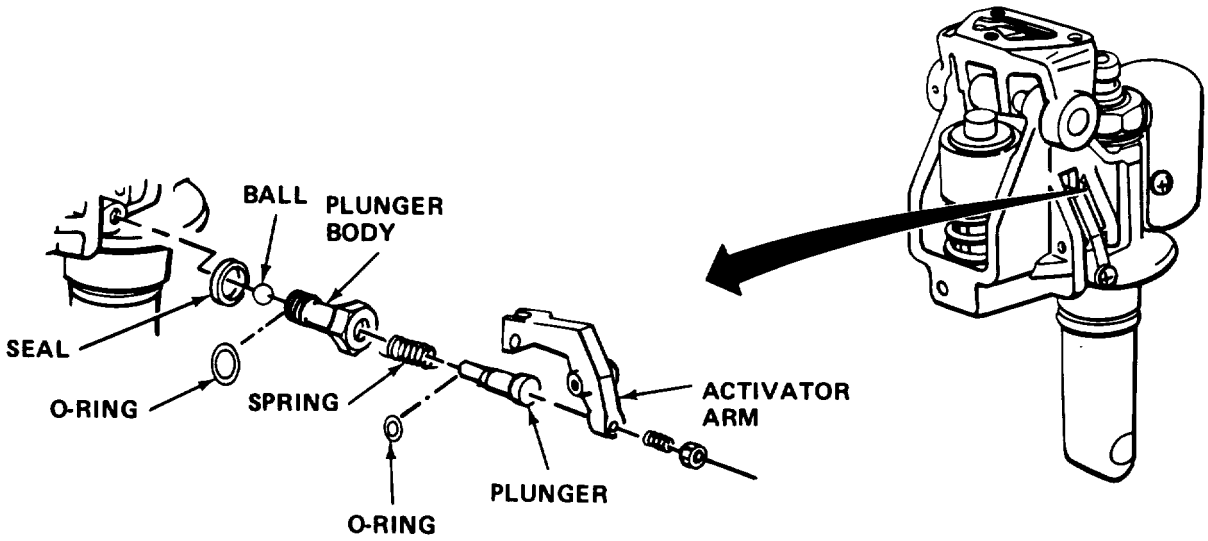
MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS : Two Flat Tip Screwdrivers
Ball Peen Hammer
15/16 in. Socket, 1/2 in. Drive
1/2 in. Drive Ratchet
Punch Set
Needle Nose Pliers

SUPPLIES: HDO-30 Oil (Item 10, Appendix E)
Cheesecloth (Item 4, Appendix E)
Hydraulic Fluid (Item 6, Appendix E)
Body O-Ring
Plunger O-Ring



a. Use flat tip screwdriver to lift up activator. Remove connector from groove with second screwdriver.



b. Drive split pin out and remove activator arm.

c. Unscrew plunger body and remove.

d. Disassemble plunger body by removing copper seal, O-ring, plunger, plunger O-ring, spring, and ball.

e. Wipe all parts clean with lightly oiled cheesecloth.

f. Install new O-ring in machined groove of plunger body. Reinstall copper seal.

g. Install new O-ring on plunger. Insert plunger spring and plunger into hex end of plunger body.

h. Insert ball into plunger body from unthreaded end.

i. Screw plunger body into hydraulic unit.

j. Reinstall activator arm and split pin into hydraulic unit and attach chain connector.

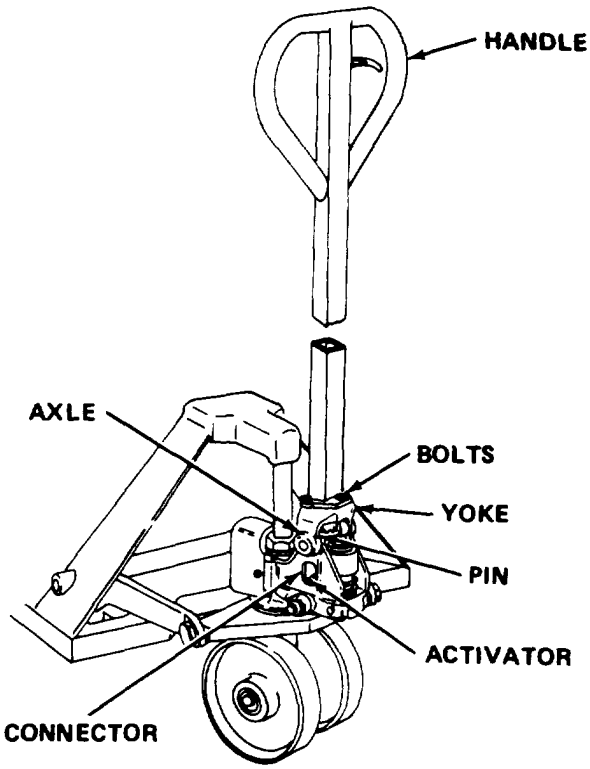
k. Fill with hydraulic fluid and bleed air from system.

2-16.5 Replace Piston Sleeve Wiper Seals.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: External Snap Ring Pliers
Seal Driver (1-1/8 in. OD)
Ball Peen Hammer 4 oz.
Two Flat Tip Screwdrivers
2-3/4 in. Wrench
Drift Punch (1/8 in.)
6 mm Hex Head Key Wrench
1-1/2 in. Combination Wrench

SUPPLIES: HDO-30 Oil (Item 10, Appendix E)
Grease, Wide Temp Range (Item 7, Appendix E)
Cheesecloth (Item 4, Appendix E)
Wiper Seals



a. Use flat tip screwdriver to lift up activator. Remove connector from groove with second screwdriver.

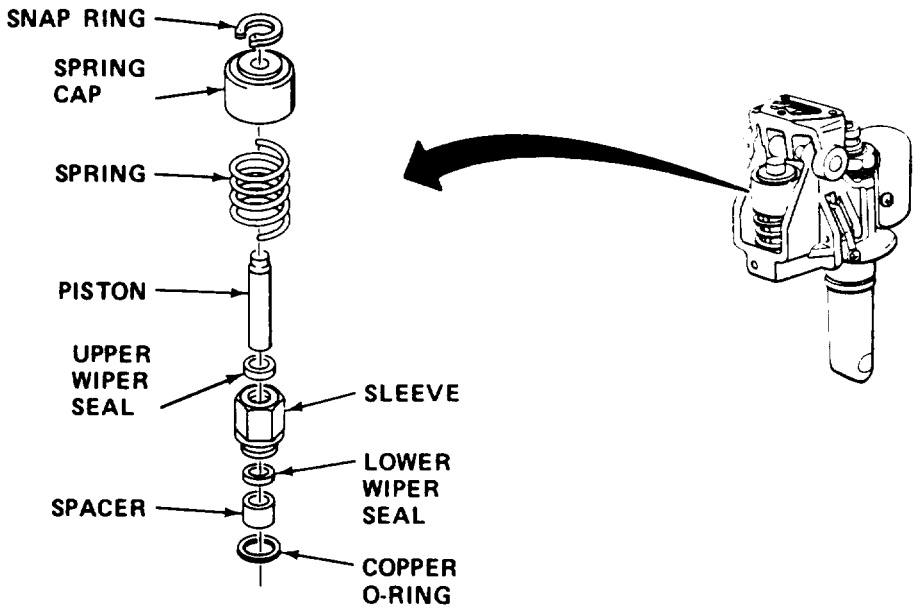
b. Remove three bolts, washers, and handle.

c. Pull yoke forward and remove handle with chain.

d. Drive out split pin from left side of handle yoke.

e. Remove handle yoke axle by gently tapping on axle with a drift punch.

f. Remove handle yoke.



g. Remove spring cap, spring, and piston as a unit.

h. Unscrew piston sleeve from hydraulic unit body.

i. Remove plastic spacer from piston sleeve.

j. Remove copper O-ring from bottom of piston sleeve chamber.

k. Remove defective lower wiper seal from piston sleeve.

1. Remove defective upper wiper seal from piston sleeve.

m. Install new upper and lower wiper seals using seal driver.

n. Wipe piston with light oil and insert from top into piston sleeve.

o. Apply a small amount of grease on nylon spacer and insert into piston sleeve.

p. Place copper O-ring in base of sleeve chamber and screw sleeve into chamber.

q. Reinstall spring, spring cap, and piston.

r. Place handle yoke in position, alining axle holes on yoke with holes on hydraulic unit body.

s. Insert handle yoke axle through yoke/body holes and secure in place with split pin.

t. Attach handle to handle yoke with three bolts and washers.

u. Attach chain connector to activator arm.

v. Wipe hydraulic unit and handle components free of oil and dirt.

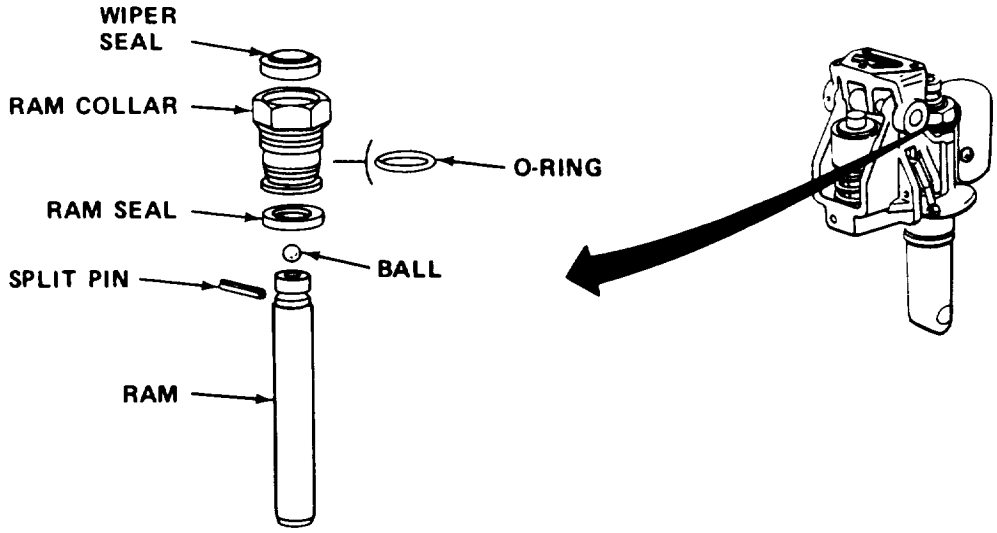
w. Fill with hydraulic fluid and bleed air from system.

2-16.6 Replace Ram Seals.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS : Flat Tip Screwdriver
Ball Peen Hammer 4 oz.
2-3/8 in. Wrench
1-3/16 in. Seal Driver
Punch Set
6 mm Hex Head Key Wrench
Snap Ring Pliers
1-1/4 in. Combination Wrench

SUPPLIES: Hydraulic Fluid (Item 6, Appendix E)
HDO-30 Oil (Item 10, Appendix E)
Cheesecloth (Item 4, Appendix E)
Thread Locking Compound (Item 21, Appendix E)
Ram Seals



CAUTION

Do not lose pins during disassembly.

a. Remove hydraulic unit (paragraph 2-16.8).

b. Unscrew and remove ram collar.

c. Remove ram and ball from ram collar.

d. Remove O-ring from groove in ram collar.

CAUTION

To prevent damage to seal seat, use care in removal.

e. Pry wiper seal out of ram collar using flat tip screwdriver.

f. Pry ram seal from bottom of ram chamber.

g. Wipe ram and ram collar clean with lightly oiled cheesecloth.

h. Place ram collar on clean surface, insert wiper seal in top opening of collar, and seat seal using seal driver.

i. Place O-ring in machined groove of ram collar.

j. Install new ram seal by carefully inserting seal at 45-degree angle into ram chamber to minimize damage from sharp threads.

k. Place ram into ram collar.

1. Place a few drops of thread locking compound on threads of ram collar. Screw ram collar into chamber and tighten.

m. Reinstall hydraulic unit.

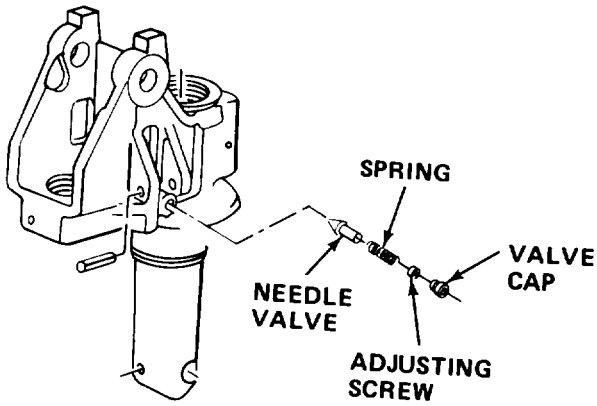
n. Fill with hydraulic fluid and bleed air from system.

2-16.7 Replace Overload Valve.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: 5 mm Hex Head Key Wrench

SUPPLIES: Cheesecloth (Item 4, Appendix E)
Needle Valve
Spring



a. Remove overload valve cap.

b. Remove adjusting screw.

c. Remove spring and defective needle valve.

d. Install new needle valve and spring.

e. Reinstall adjusting screw and turn all the way to right.

f. Rotate screw left one-quarter to one-half turn. This will set hydraulic unit to 5000 lb (2265 kg) overload setting.

g. Reinstall overload valve cap.

h. Wipe hydraulic unit clean.

i. Fill with hydraulic fluid and bleed air from system.

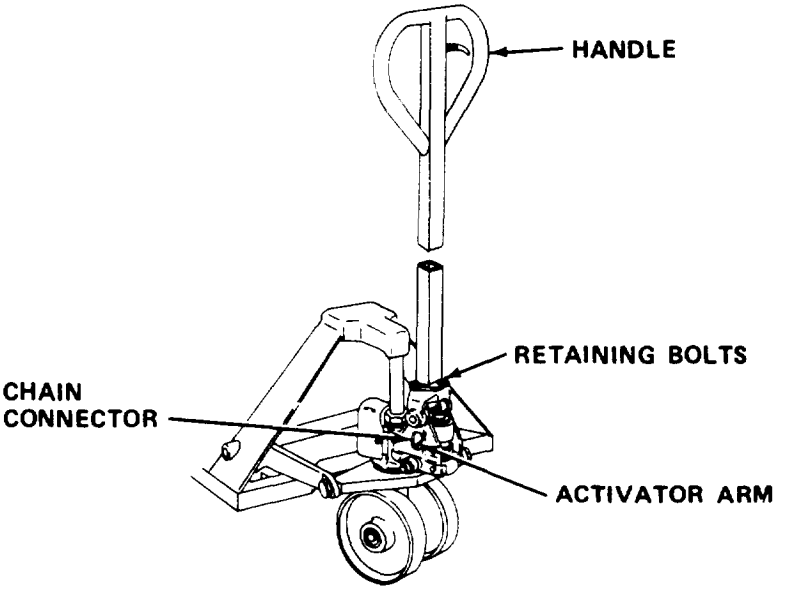
2-16.8 Replace Hydraulic Unit.

MOS: 83FJ6, Reproduction Equipment Repairer

PERSONNEL: Two persons are required to perform this procedure.

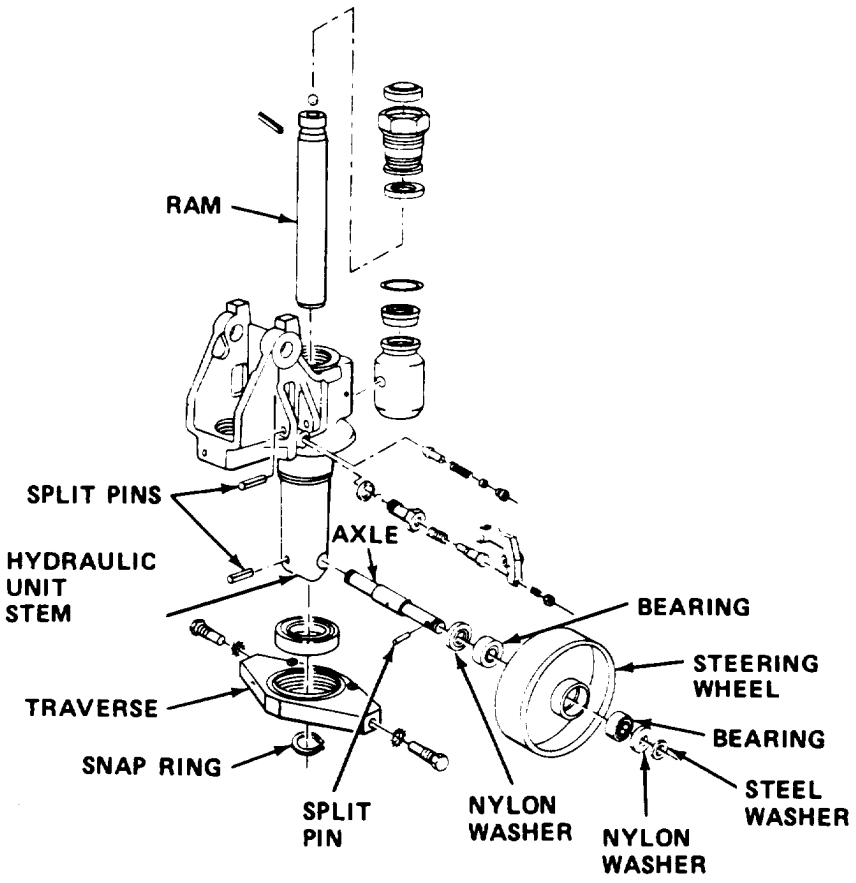
TOOLS: Two Flat Tip Screwdrivers
2-3/8 in. Wrench
Ball Peen Hammer 4 oz.
1/4 in. Punch
1/8 in. Punch
External Snap Ring Pliers
1-1/4 in. Combination Wrench
6 mm Hex Head Key Wrench

SUPPLIES: Hydraulic Fluid (Item 6, Appendix E)
Cheesecloth (Item 4, Appendix E)



a. Use flat tip screwdriver to lift up activator. Remove connector from groove with second screwdriver.

b. Remove retaining bolts and handle.



WARNING

Serious injury may result if an inadequate number of personnel are used to turn hydraulic pallet truck upside down. This equipment weighs 197 lbs.

c. Carefully turn truck upside down (two persons required)

d. Remove steering wheel by driving out split pin.

e. Drive out split pin that holds axle to hydraulic unit stem and remove remaining wheel.

f. Remove snap ring that holds hydraulic unit to traverse.

g. Remove bolts, washers, and traverse.

h. Drive out split pin that holds ram of hydraulic unit to the frame.

i. Remove hydraulic unit assembly from truck.

j. Remove overload valve (paragraph 2-16.7).

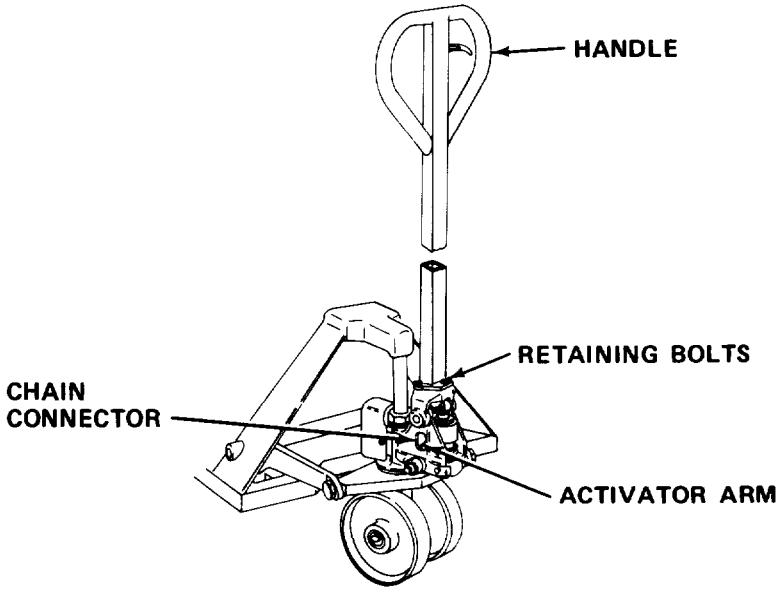
2-16.8 Replace Hydraulic Unit.

MOS: 83FJ6, Reproduction Equipment Repairer

PERSONNEL: Two persons are required to perform this procedure.

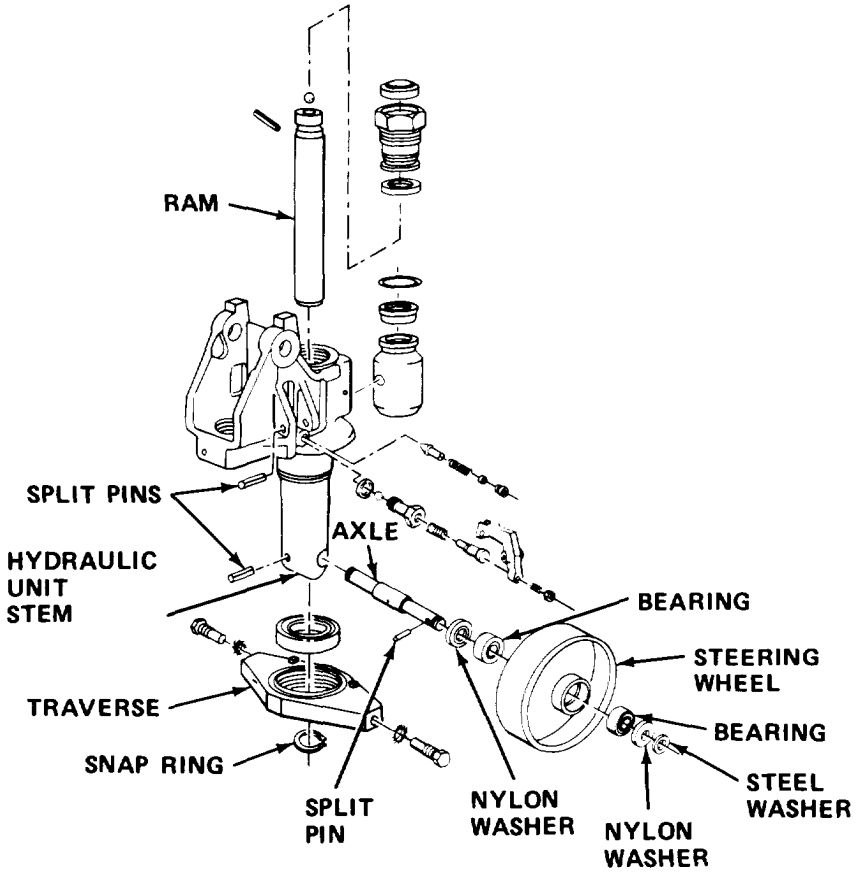
TOOLS: Two Flat Tip Screwdrivers
24 in. Adjustable Wrench
Ball Peen Hammer
1/4 in. Punch
1/8 in. Punch
External Snap Ring Pliers
1-1/4 in. Combination Wrench
6 mm Hex Head Key Wrench

SUPPLIES: Hydraulic Fluid (Item 6, Appendix E)
Cheesecloth (Item 4, Appendix E)



a. Use flat tip screwdriver to lift up activator. Remove connector from groove with second screwdriver.

b. Remove retaining bolts and handle.



WARNING

Serious injury may result if an inadequate number of personnel are used to turn hydraulic pallet truck upside down. This equipment weighs 197 lbs.

c. Carefully turn truck upside down (two persons required).

d. Remove steering wheel by driving out split pin.

e. Drive out split pin that holds axle to hydraulic unit stem and remove remaining wheel.

f. Remove snap ring that holds hydraulic unit to traverse.

g. Remove bolts, washers, and traverse.

h. Drive out split pin that holds ram of hydraulic unit to the frame.

i. Remove hydraulic unit assembly from truck.

j. Remove overload valve (paragraph 2-16.7).

k. Remove hydraulic ram (paragraph 2-16.6).

l. Remove piston sleeve (paragraph 2-16.5).

m. Remove control valve (paragraph 2-16.3).

n. Remove reservoir (paragraph 2-16.2).

o. Inspect components for damage or wear and replace defective components as necessary.

p. Install reservoir, control valve, piston sleeve, hydraulic ram, and overload valve on new hydraulic housing.

q. Slide axle with one wheel attached back into hydraulic unit stem. Secure by driving in split pin. Then reinstall remaining wheel and secure with split pin.

r. Reinstall hydraulic unit assembly on truck.

s. Reinstall ram of hydraulic unit to frame and secure by driving in split pin.

t. Reinstall traverse on hydraulic unit and secure with bolts and washers. Reinstall snap ring.

WARNING

Serious injury may result if an inadequate number of personnel are used to turn hydraulic pallet truck upside down. This equipment weighs 197 lbs.

u. Carefully turn truck back onto wheels (two persons required).

v. Reinstall handle and secure with retaining bolts.

w. Attach chain connector to activator arm.

x. Wipe hydraulic unit, handle components, and wheel components free of fluid and dirt.

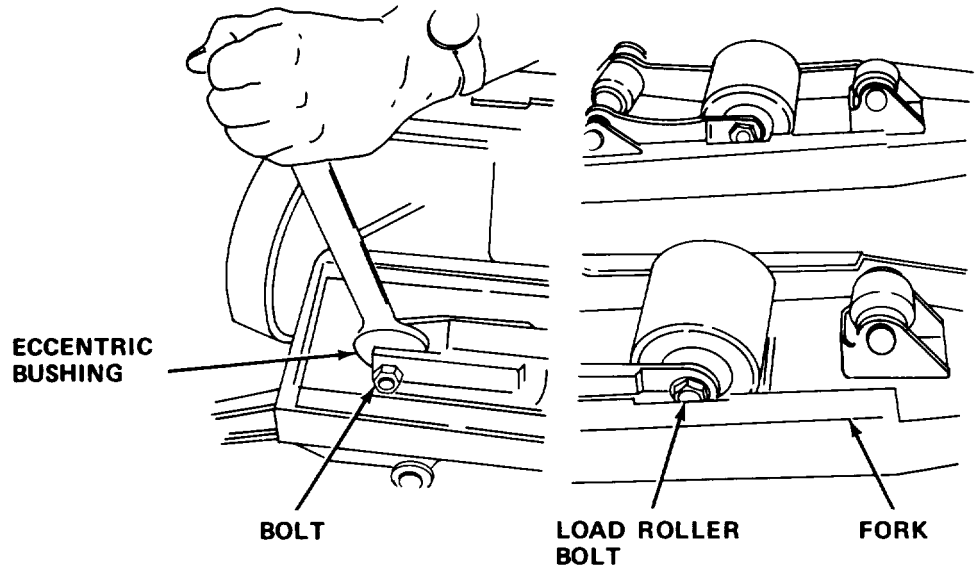
y. Fill with hydraulic fluid and bleed air from system.

2-16.9 Adjust Fork Height.

MOS: 83FJ6, Reproduction Equipment Repairer

PERSONNEL: Two persons are required to perform this procedure.

TOOLS: 3/4 in. Combination Wrench
19 mm Combination Wrench



WARNING

Serious injury may result if an inadequate number of personnel are used to turn hydraulic pallet truck upside-down. This equipment weighs 197 lbs.

a. Turn truck upside down (two persons required).

b. Loosen bolt and nut on eccentric bushing.

c. Turn eccentric bushing until center of load roller bolt is centered with underside of fork.

d. Tighten eccentric nut and bolt assembly.

WARNING

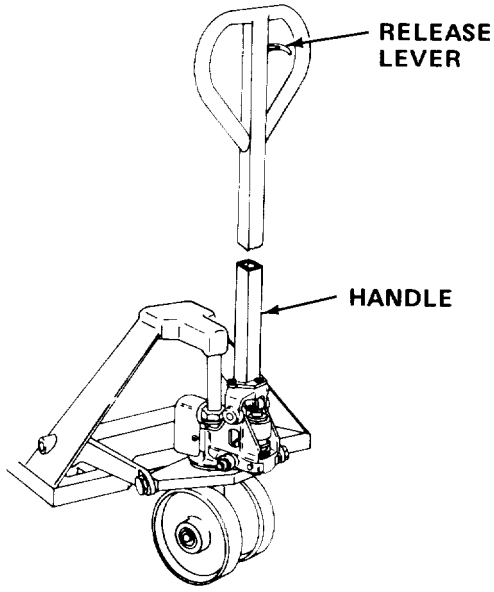
Serious injury may result if an inadequate number of personnel are used to turn hydraulic pallet truck upside down. This equipment weighs 197 lbs.

e. Turn truck right side up.

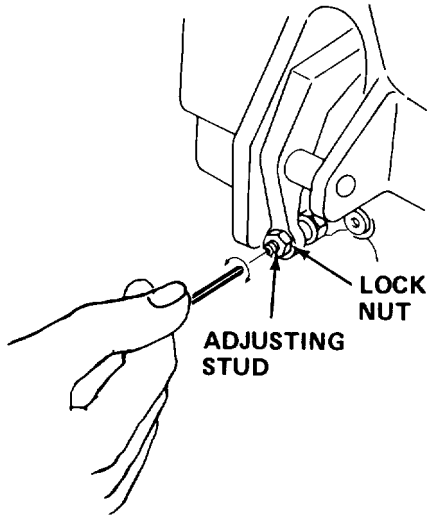
2-16.10 Adjust Control Valve.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: 3 mm Hex Head Key Wrench
5 mm Hex Head Key Wrench
10 mm Combination Wrench



a. Place release lever in raise position and attempt to raise forks by pumping handle.

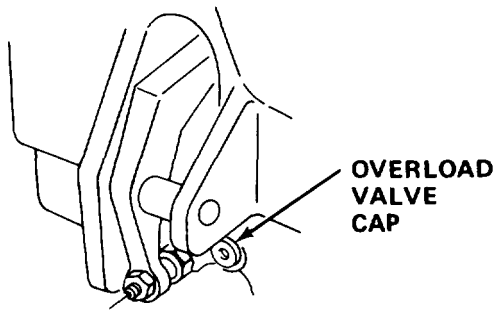


b. If forks do not raise, loosen lock nut on activator and insert hex head key wrench into adjusting stud. Turn hex head key wrench to left as far as it will go.

c. Pump handle and turn adjusting stud to right until forks have raised 2 to 3 in. (5.0 to 7.6 cm). Stop pumping and continue to turn adjustinq stud until forks start to lower. Turn-adjusting stud to left to stop fork lowering.

d. Turn adjusting stud three-quarter turn to left. Lock by tightening locknut.

e. If operation is not satisfactory, place lever in lower position.



f. Remove overload valve cap.

g. Insert 5 mm hex head key wrench into slot in adjusting screw behind overload valve cap. Turn adjusting screw to left as far as it will go. Turn right one-quarter to one-half turn.

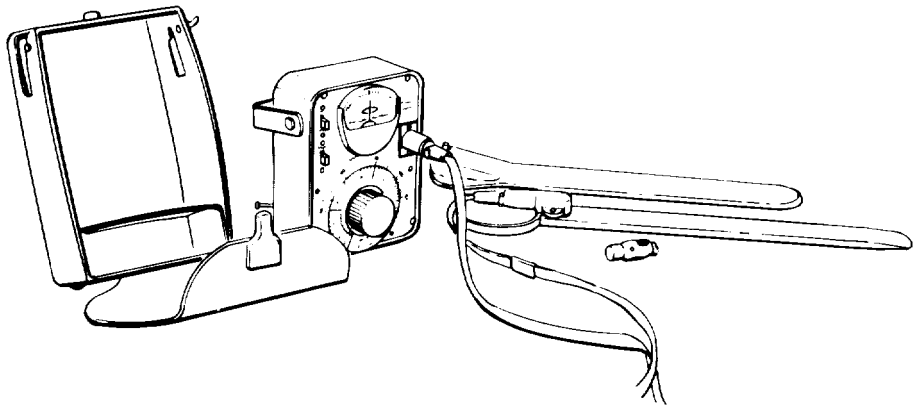
h. Reinstall valve cap and tighten.

i. Test operation in raise and lower positions.

2-17. PREPARATION FOR STORAGE AND SHIPMENT. Contact your battalion for packing and shipping instructions.

Section V DIRECT/GENERAL SUPPORT MAINTENANCE

There are no assigned direct/general support maintenance tasks for this equipment.



CHAPTER 3

HUMIDITY-TEMPERATURE READER

Section I INTRODUCTION

3-1. GENERAL INFORMATION.

3-1.1 Score.

Model Number and Equipment Name. Model 15-3032 Direct-Reading Humidity-Temperature Reader.

b. Purpose of Equipment. To measure relative humidity in paper stock.

3-1.2 List of Abbreviations.

RH	Relative Humidity

3-2. EQUIPMENT DESCRIPTION.

3-2.1 Equipment Characteristics, Capabilities, and Features.

a. Self-contained power supply.

b. Detachable and interchangeable sensors.

c. Portable.

d. Replaceable RH range dials.

3-2.2 Equipment Data.

a. Humidity-Temperature Reader

Dimensions

Height	7-1/8 in. (18.1 cm)
Width	6 in. (15.2 cm)
Depth	3-3/8 in. (8.5 cm)

Humidity Range, DIAL “D”	18% to 61% RH
Humidity Measurement Accuracy	±3% RH
Temperature Measurement Accuracy	±2° F (±1°C)
Mercury Battery Sizes	5.6 V, 7.0 V
Power Consumption	45 mW
Operating Life of Batteries	150 hrs

b. Probe

Dimensions	
Length o/a	19 in. (48.26 cm)
Width of Blade	1-5/8 in. (4.12 cm)
Thickness of Blade	3/8 in. (9.5 mm)
Handle	4 in. (10.16 cm) diameter
Humidity Range	18% to 60% RH, ± 1.5% RH
Temperature Range of Sensor	40°F to 120°F, +2°F (4.8°C to 52.8°C)
Length of Insertion	14 in. (35.5 cm)
Weight	2.5 lbs (1.13 kg)

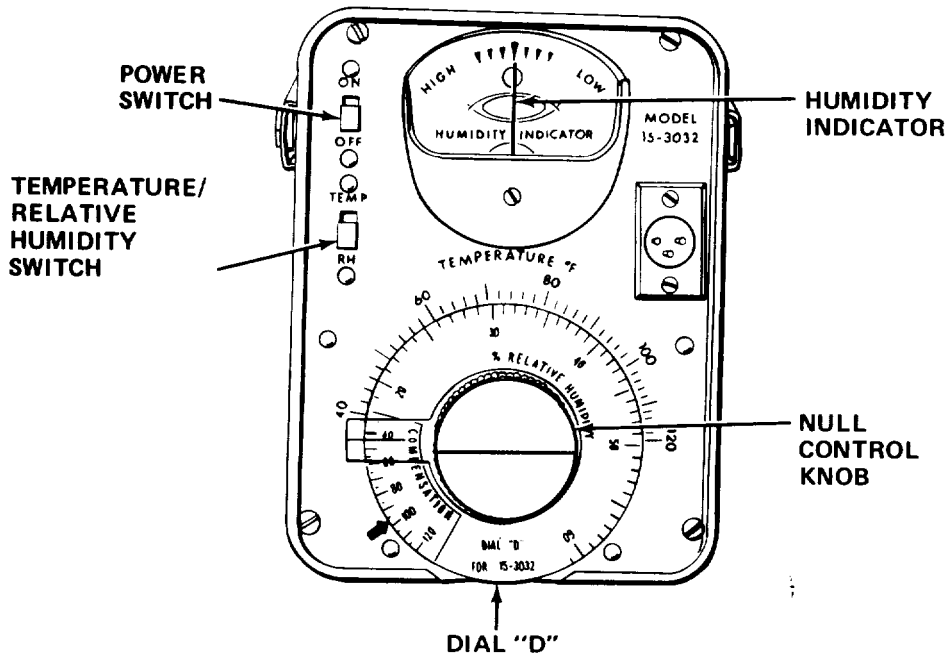
3-3. TECHNICAL PRINCIPLES OF OPERATION.

The Model 15-3032 Direct-Reading Humidity-Temperature Reader is a transistorized electronic meter for measuring relative humidity and temperature of paper in any location where normal ac power is not available, or is not readily accessible. It has all components and self-contained power supply necessary for making temperature and humidity measurements when connected by a cable to a sensor in the probe.

b. The probe used with the humidity-temperature reader is a portable inspection tool for measuring the moisture condition of stacked paper. The blade of the probe houses a sensitive hydroscopic humidity sensor. The electrical resistance of the sensor changes with the changes in moisture content of the air surrounding it. These changes are measurable electronically with the aid of the portable humidity-temperature reader.

Section II OPERATING INSTRUCTIONS

3-4. DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS.



Control or Indicater	Function
Power Switch	Controls power to humidity-temperature reader.
Temperature/Relative Humidity Switch	Determines if reader measures temperature or relative humidity.
HUMIDITY INDICATOR	Null indicator used to guide adjustment of null control knob.
Null Control Knob	Adjusts position of HUMIDITY INDICATOR to obtain a null reading.
DIAL "D"	Compensates RH reading to account for present temperature conditions.

3-5. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES.

Before You Operate. Always keep in mind the WARNINGS and CAUTIONS. Perform your before (B) PMCS.

b. While You Operate. Always keep in mind the WARNINGS and CAUTIONS. Perform your during (D) PMCS.

c. After You Operate. Be sure to perform your after (A) PMCS.

d. If Your Equipment Fails to Operate. Troubleshoot with proper equipment. Report any deficiencies using the proper forms. See DA Pam 738-750.

3-5.1 PMCS Procedures.

PMCS are designed to keep the equipment in good working condition by performing periodic service tasks.

b. Service intervals provide you, the operator, with time schedules that determine when to perform specified service tasks.

c. The “Equipment is Not Ready/Available If” column is used for identification of conditions that make the equipment not ready/available for readiness reporting purposes or denies use of the equipment until corrective maintenance is performed.

d. If your equipment fails to operate after PMCS is performed, immediately report this condition to your supervisor.

e. Perform weekly as well as before operation if you are the assigned operator and have not operated the item since the last weekly or if you are operating the item for the first time.

f. Item number column. Item numbers are assigned in chronological ascending sequence regardless of interval designation. These numbers are used for your “TM Number” column on DA Form 2404, Equipment Inspection and Maintenance Worksheet in recording results of PMCS.

Interval columns. This column determines the time period designated to perform your PMCS.

h. Item to be inspected and procedures column. This column lists functional groups and their respective assemblies and subassemblies as shown in the Maintenance Allocation Chart (Appendix B). The appropriate check or service procedure follows the specific item to be inspected.

i. Equipment is not ready/available if: column. This column indicates the reason or cause why your equipment is not ready/available to perform its primary mission.

j. List of tools and materials required for PMCS is as follows:

Item	Quantity
Flat Tip Screwdriver, 1/4 in.	1 ea
Paper Towels (Item 14, Appendix E)	ar
Typewriter Brush	1 ea
Liquid Detergent (Item 5, Appendix E)	ar
Glass Cleaner (Item 3, Appendix E)	ar

Table 3-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES

NOTE

If the equipment must be kept in continuous operation, check and service only those items that can safely be checked and serviced without disturbing operation. Make the complete checks and services when the equipment can be shut down.

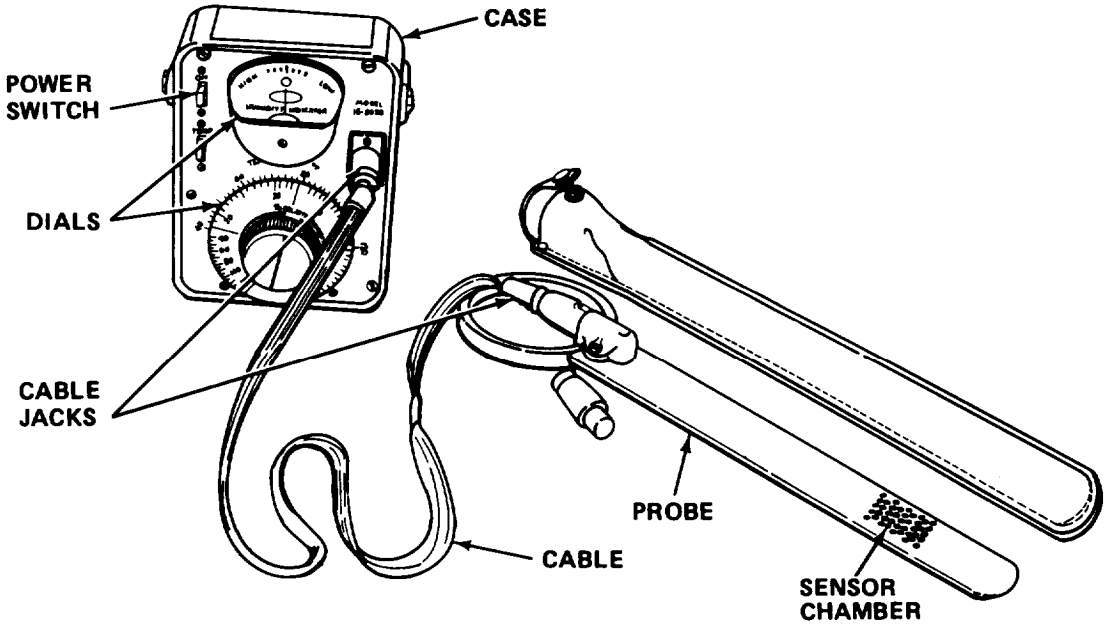
B - Before
D - During
A - After

w - weekly
M - Monthly
Q - Quarterly

AN - Annually
s - Semiannually
BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED PROCEDURE	For Reediness Reporting, Equipment Is Not Reedy/ Available If:
		HUMIDITY-TEMPERATURE READER	
1	B	Service and Inspect.	
		1. Turn power switch to OFF.	



		2. Wipe off surface of probe, dials, and casing with paper towel. Clean with glass cleaner if necessary.	

Table 3-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont

B Before W - Weekly AN - Annually (Number) - Hundreds of Hours
D During M - Monthly S - Semiannually
A After Q - Quarterly BI - Biennially

ITEM NO	INTERVAL	ITEM TO BE INSPECTED PROCEDURE	For Readiness Reporting, Equipment Is Not Ready/ Available If:
		HUMIDITY-TEMPERATURE READER - Cont	
1	B	Service and Inspect - Cont	
		3. Inspect probe, dials, and casing for signs of cracks or breaks.	Hydroscope is cracked or broken.
		4. Remove cable from reader. Clean jack with brush.	
		5. Remove cable from probe. Clean probe jack with brush.	
		6. Inspect cable and probe for cracks or breaks.	Cable and/ or probe is cracked or broken.

Table 3-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont

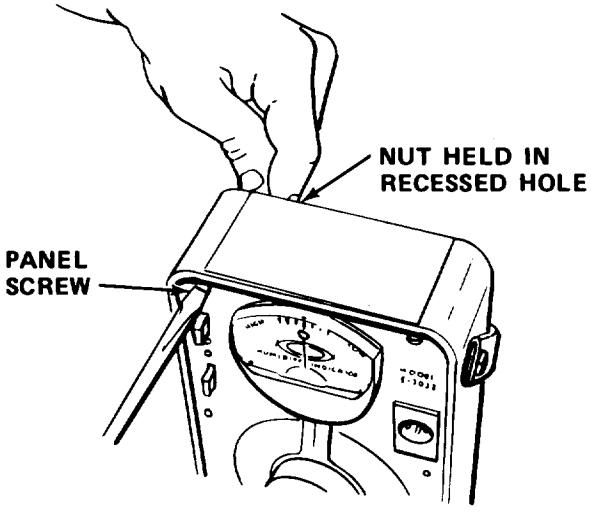
B - Before
D - During
A - After

W - Weekly
M - Monthly
Q - Quarterly

AN - Annually
S - Semiannually
BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED PROCEDURE	For Readiness Reporting, Equipment Is Not Ready/ Available If:
		HUMIDITY-TEMPERATURE READER - Cont	
2	S	Replace Batteries.	



NOTE

Bolts holding front panel extend all the way through reader. Nuts are placed on bolts through recesses on rear of reader. Do not lose nuts.

1. Remove four screws holding front panel in place.
2. Tilt reader back to drop nuts out of recessed holes.
3. Turn reader face down into one hand. Lift case off with other hand.

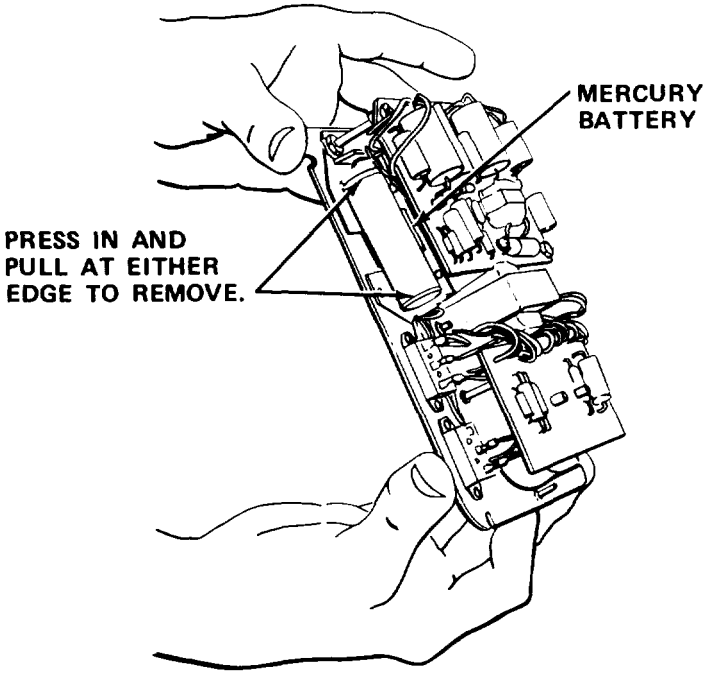
Table 3-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont

B - Before D - During | W - Weekly M . Monthly | AN - Annually S BI - Biennially | (Number) - Hundreds of Hours

ITEM NO.	IN-TER-VAL	ITEM TO BE INSPECTED PROCEDURE	For Readiness Reporting, Equipment Is Not Ready/ Available If:
		HUMIDITY-TEMPERATURE READER - Cont	
2	S	Replace Batteries - Cont	

NOTE

Batteries are mounted on clips, one on each side of wiring harness, behind panel.



CAUTION

To prevent short circuits or damage, do not pry batteries out with screwdriver or other metal object.

Table 3-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont

B - Before D - During A - After | W - Weekly M - Monthly Q - Quarterly | AN - Annually S - Semiannually BI - Biennially | (Number) - Hundreds of Hours

ITEM NO.	INTER. VAL	ITEM TO BE INSPECTED PROCEDURE	For Reediness Reporting, Equipment Is Not Ready/ Available If:
		HUMIDITY-TEMPERATURE READER - Cont	
2	S	Replace Batteries - Cont	
		4. To remove each battery, press on one edge of battery with fingertip and pull battery back out of clip.	
		CAUTION To prevent damage to reader, be sure that polarity markings (+,-) on batteries match marks on chassis when installed.	
		NOTE Always check new batteries for charge and damage before installing.	
		5. Install new batteries by pressing into clips.	
		6. Reinstall panel chassis into case.	
		7. Reinstall four mounting screws and nuts, and tighten.	
		8. Test reader for proper operation in all modes.	Reader does not operate properly.

3-6. OPERATION UNDER USUAL CONDITIONS.

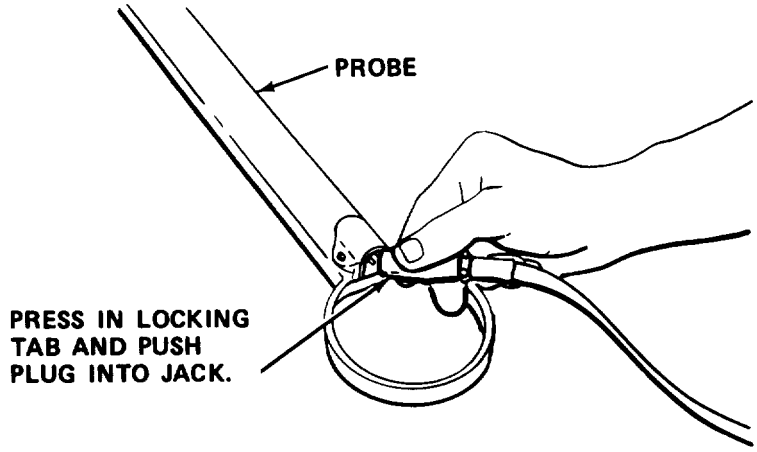
3-6.1 Assembly and Preparation for Use.

a. Remove components from storage cases.

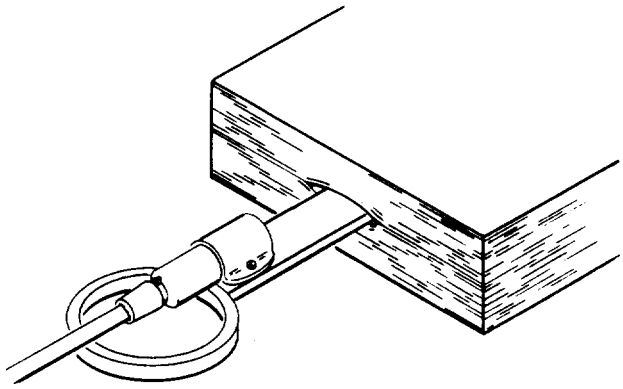
b. Slide power switch up to ON.

c. Slide TEMP/RH switch up to TEMP.

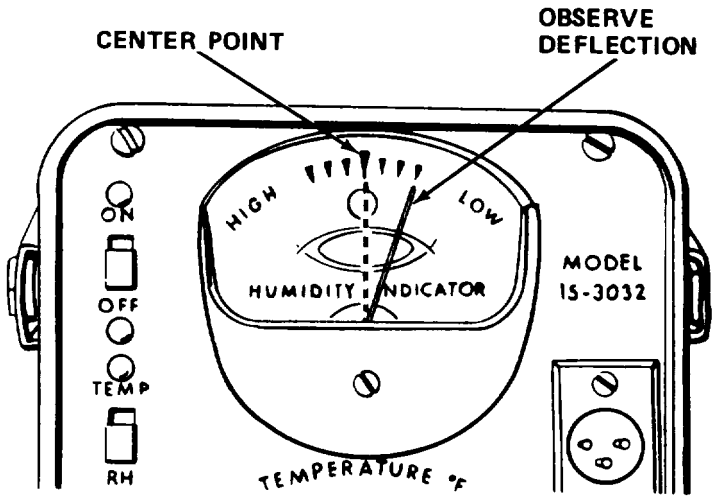
d. Connect one end of reader cable into reader.



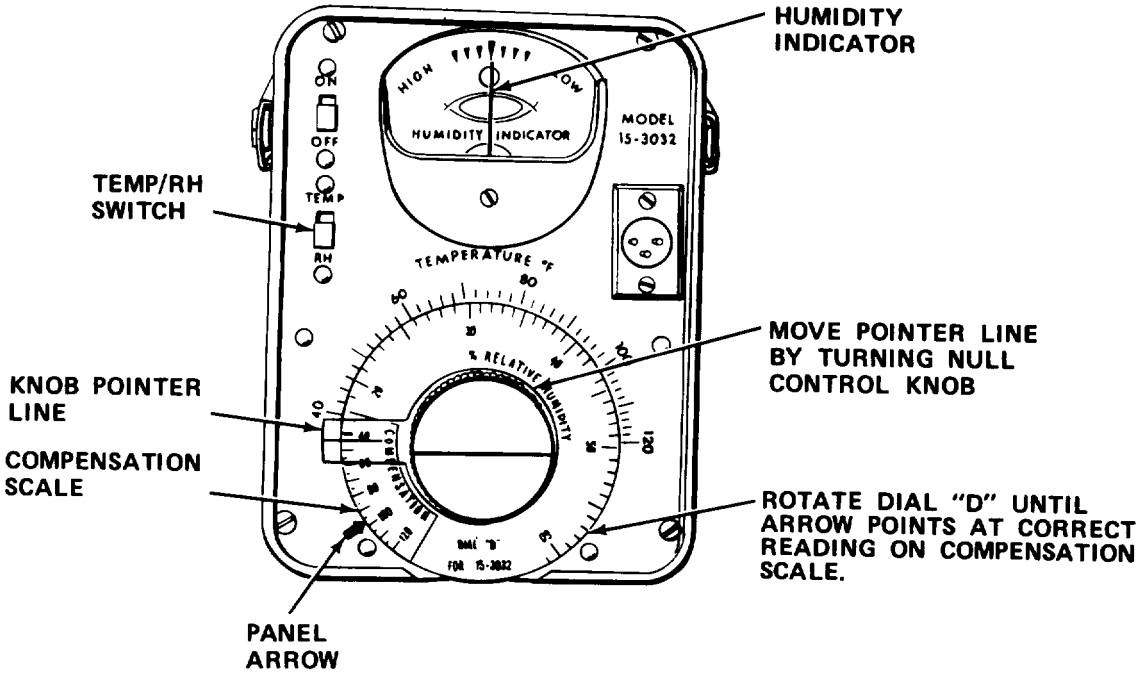
e. Connect other end of cable to probe by pressing in locking tab on side and inserting into jack.



f. Insert probe between paper sheets where temperature and humidity measurement is desired.



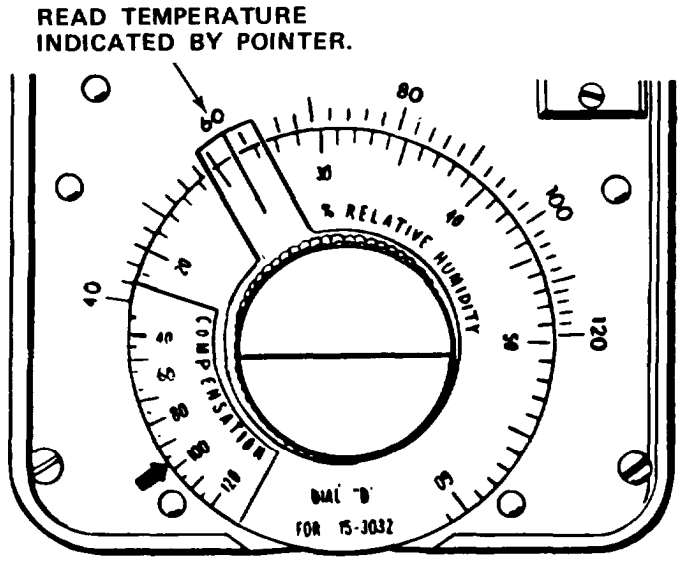
g. Observe deflection of HUMIDITY INDICATOR needle.



h. Rotate null control knob until HUMIDITY INDICATOR needle points to center point.

NOTE

If HUMIDITY INDICATOR needle is on HIGH side of center, turn null control knob toward higher temperature to deflect needle back toward center. If needle is on LOW side of center, turn knob toward lower temperature.



i. Read temperature on TEMPERATURE °F scale by scribed line of null control knob.

NOTE

If it is impossible to balance null indicator needle at center by turning null control knob, temperature is beyond range of sensor. If needle is on HIGH side of center, temperature is higher than range of reader. If needle is on LOW side, temperature is lower.

Rotate DIAL "D" until arrow on reader panel points to temperature on COMPENSATION scale.

k. Slide TEMP/RH switch down to RH.

l. Observe deflection of HUMIDITY INDICATOR needle.

. Rotate null control knob until HUMIDITY INDICATOR needle points to center point.

n. Read RH indicated by scribed line of null control knob directly from % RELATIVE HUMIDITY scale.

o. Slide power switch to OFF when measurements are complete.

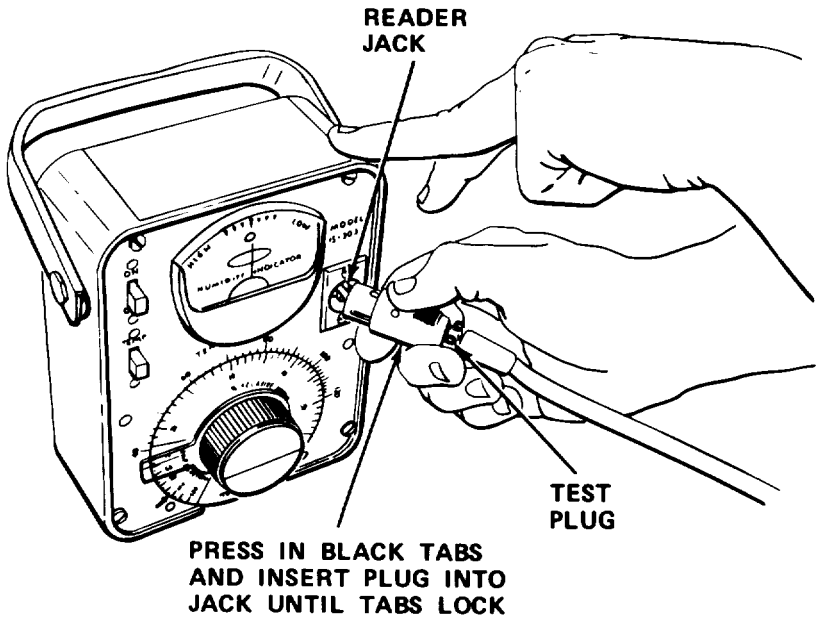
p. Disconnect components and store in cases.

3-6.2 Initial Adjustments, Daily Checks, and Self Test.

a. Self test.

NOTE

This test should be performed before first use of reader each day.

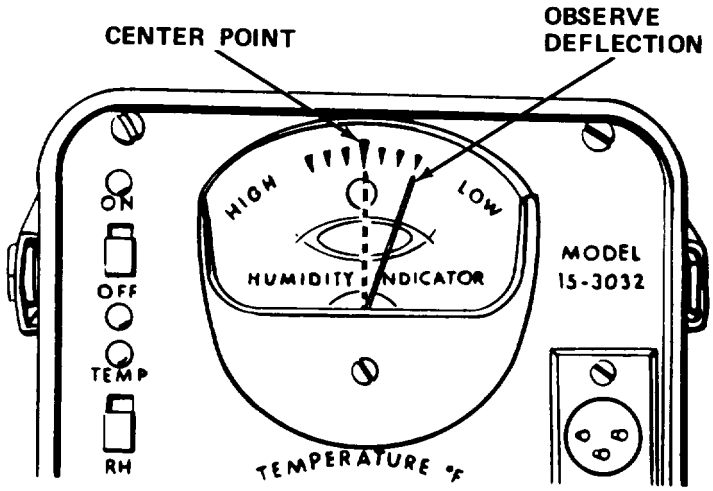


(1) Insert cable check test plug into jack in reader front panel by pushing in while pressing black tabs.

(2) Check temperature adjustment as follows:

(a) Slide power switch up to ON.

(b) Slide TEMP/RH switch up to TEMP.

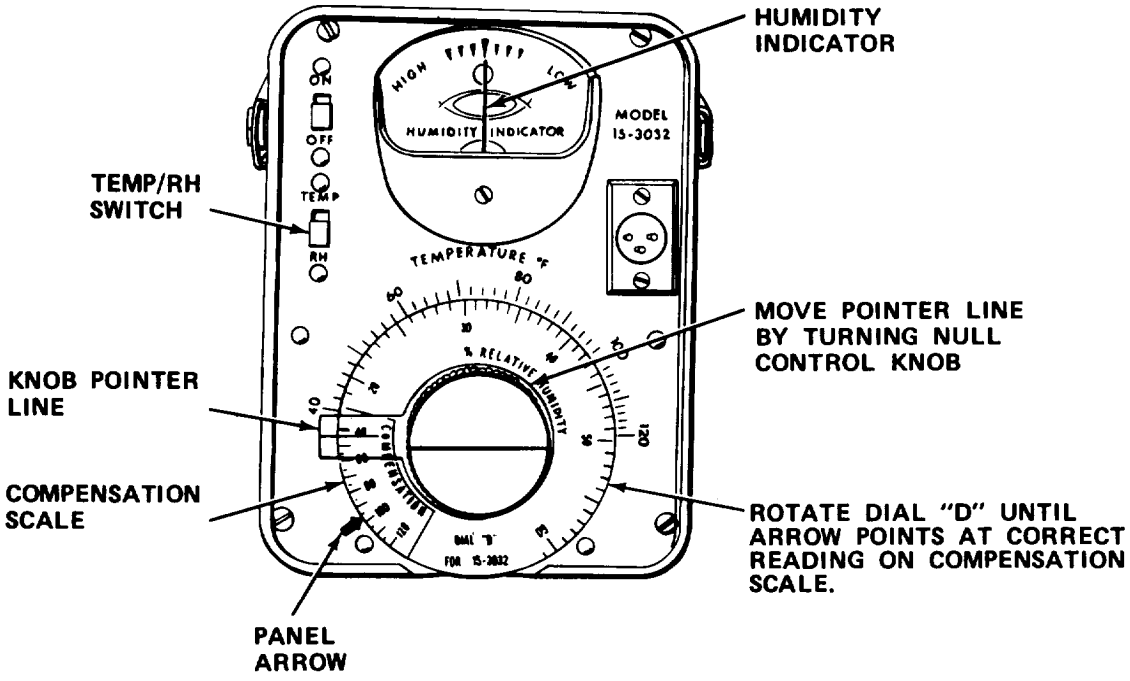


(c) Observe deflection of null indicator needle on upper dial.

(d) Rotate null control knob until HUMIDITY INDICATOR needle points at center point.

(e) Check scribed line on null control knob. Line should be between 98° and 102 on TEMPERATURE °F scale.

(3) Check humidity adjustment as follows:

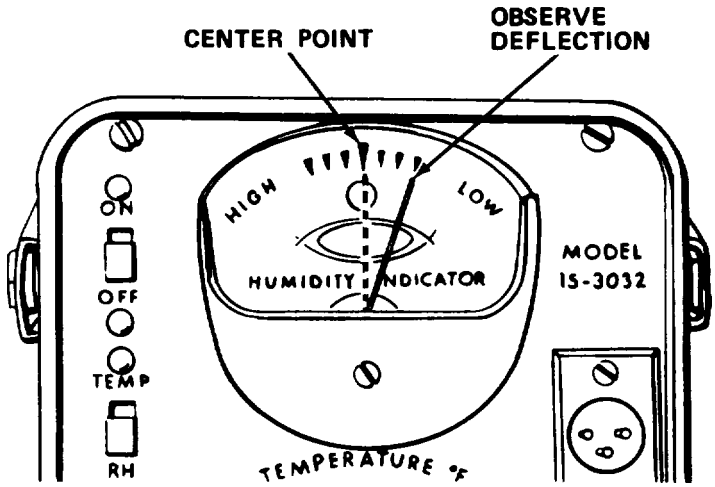


(a) Slide TEMP/RH switch to RH.

(b) Set compensation value by rotating DIAL “D” (beneath knob) and pushing on exposed edge until arrow on panel points to 100° on COMPENSATION scale.

(c) Observe deflection of HUMIDITY INDICATOR needle.

(d) Rotate null control knob until HUMIDITY INDICATOR needle points at center point.



(e) Check scribed line on null control knob. For DIAL “D”, needle should read 47% ± 1%.

3-7. OPERATION UNDER UNUSUAL CONDITIONS. The humidity-temperature reader is designed for operation only in a controlled environment.

Section III OPERATOR MAINTENANCE

3-8. LUBRICATION INSTRUCTIONS. This equipment does not require lubrication.

3-9. TROUBLESHOOTING PROCEDURES.

a. The table lists the common malfunctions which you may find during operation or maintenance of the humidity-temperature reader, or its components. You should perform the test/inspections and corrective actions in the order listed.

b. This manual cannot list all malfunctions that may occur, nor all test or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify your supervisor.

Table 3-2. TROUBLESHOOTING

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
1. HUMIDITY INDICATOR NEEDLE POINTS AT CENTER AND WILL NOT MOVE WHEN KNOB IS TURNED. Step 1. Move TEMP/RH switch to new setting, and slide power switch to OFF and then back ON. Check to see if HUMIDITY INDICATOR needle moves. Replace batteries if indicator does not move. Step 2. Check that cable connections to reader and sensor are tight. Tighten cable connections.
2. HUMIDITY INDICATOR NEEDLE GIVES ERRATIC READINGS, FLUCTUATES, OR DRIFTS. Step 1. Move TEMP/RH switch to new setting and slide power switch to OFF and then back ON. Null indicator should steady or move to center. If indicator does not steady or move to center, replace reader. Step 2. Check to be sure cable connections to reader and sensor are tight. (a) Tighten connections. (b) Replace reader batteries. (c) Replace reader.

3-10. MAINTENANCE PROCEDURES. There are no operator maintenance procedures assigned for this equipment.

Section IV ORGANIZATIONAL MAINTENANCE

3-11. LUBRICATION INSTRUCTIONS, This equipment does not require lubrication.

3-12. REPAIR PARTS, SPECIAL TOOLS; TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT; AND SUPPORT EQUIPMENT

3-12.1 Common Tools and Equipment. For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

3-12.2 Special Tools; Test. Measurement, and Diagnostic Equipment: and Support Equipment. Special Tools, TMDE, and Support Equipment is listed in the applicable repair parts and special tools list and in Appendix B of this manual.

3-12.3 Repair Parts. Repair parts are listed and illustrated in the Repair Parts and Special Tools List, TM 5-3610-252-24P, covering organizational maintenance for this equipment.

3-13. SERVICE UPON RECEIPT,

3-13.1 Checking Unpacked Equipment.

Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on DD Form 6, Packing Improvement Report.

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

c. Check to see whether the equipment has been modified.

3-14. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES. There are no organizational PMCS procedures assigned for this equipment.

3-15. ORGANIZATIONAL TROUBLESHOOTING PROCEDURES.

Organizational troubleshooting procedures cover the most common malfunctions that may be repaired at the organizational level. Repair or adjustment requiring specialized equipment is not-authorized unless such-equipment is available. Troubleshooting procedures used by the operator should be conducted in addition to the organizational troubleshooting procedures.

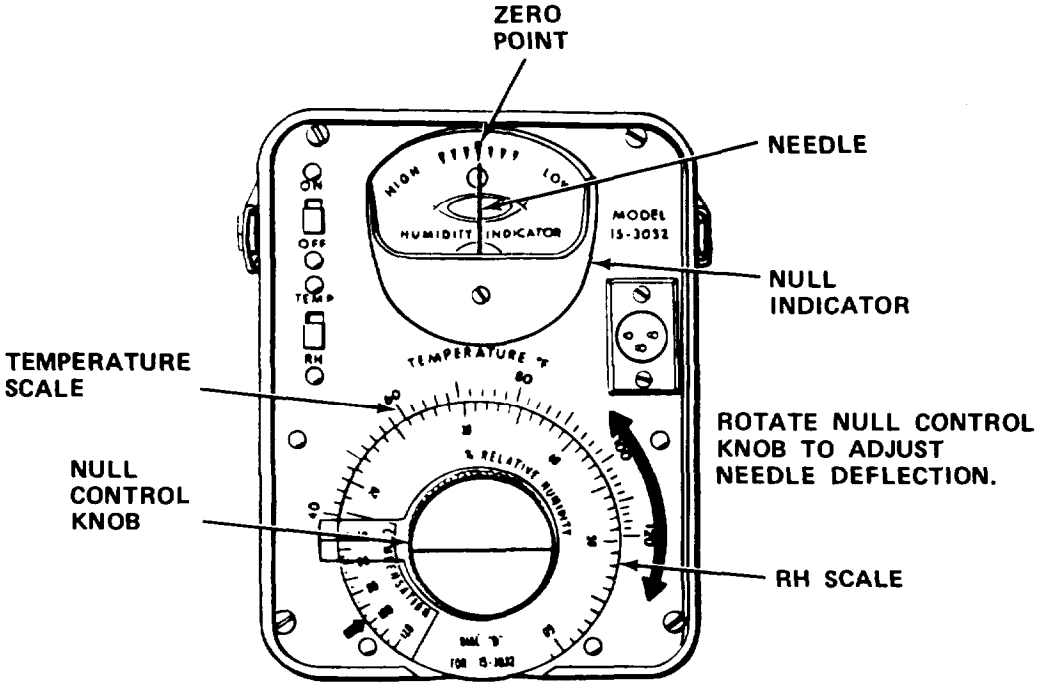
b. This manual cannot list all the possible malfunctions or every possible test/ inspection and corrective action. If a malfunction is not listed or is not corrected by a listed corrective action, notify your supervisor.

Table 3-3. ORGANIZATIONAL TROUBLESHOOTING

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
HUMIDITY INDICATOR NEEDLE REMAINS DEFLECTED AND CANNOT BE ZEROED WITH KNOB.
Test operation of reader as follows: CAUTION Do not attempt to use ohmmeter or any other dc measuring device to check continuity of temperature or humidity elements or sensor will be damaged. a. Unplug cable from probe. Leave cable connected to reader. b. Connect cable test plug to end of cable. NOTE If cable test plug is not available, connect 300K (5%) resistor between pins 1 and 2 at end of cable. c. Slide power switch up to ON. d. Slide TEMP/RH switch up to TEMP. e. Rotate null control knob until HUMIDITY INDICATOR needle is at center point.

Table 3-3. ORGANIZATIONAL TROUBLESHOOTING - Cont

MALFUNCTION TEST OR INSPECTION	CORRECTIVE ACTION
HUMIDITY INDICATOR NEEDLE REMAINS DEFLECTED AND CANNOT BE ZEROED WITH KNOB - Cont	
f. Scribed line on null control knob should indicate temperature of between 98° and 102°F.	



NOTE

If reading is not correct, remove cable and connect reader test plug. Repeat above steps. If reading is correct, replace cable.

g. Slide TEMP/RH switch down to RH.

h. Rotate DIAL “D” until arrow on reader panel points to 100°F on COMPENSATION scale.

i. Rotate null control knob until HUMIDITY INDICATOR needle points at center point.

Table 3-3. ORGANIZATIONAL TROUBLESHOOTING - Cont

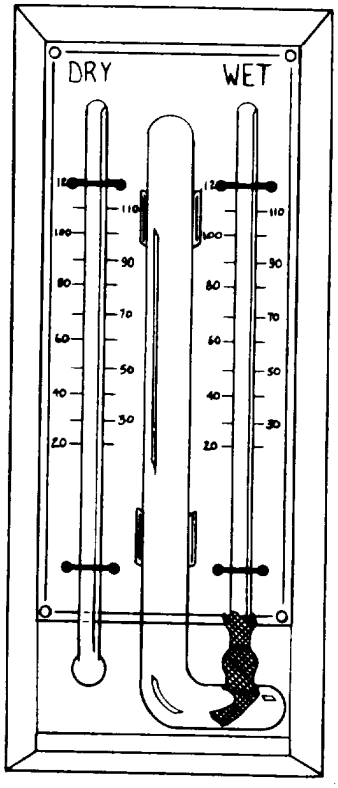
MALFUNCTION TEST OR INSPECTION	CORRECTIVE ACTION
HUMIDITY INDICATOR NEEDLE REMAINS DEFLECTED AND CANNOT BE ZEROED WITH KNOB - Cont	
j. Be sure that scribed line on null control knob indicates relative humidity of 47% ± 1%.	
NOTE If reading is not correct, remove cable and connect reader test plug. If reading is correct, cable is bad. If still incorrect, reader is bad.	
Replace either reader *or* cable according to results of test.	

3-16. MAINTENANCE PROCEDURES. There are no organizational maintenance procedures assigned for this equipment.

3-17. PREPARATION FOR STORAGE OR SHIPMENT. Contact your battalion for packing and shipping instructions.

Section V DIRECT/GENERAL SUPPORT MAINTENANCE

There are no assigned direct/general support maintenance tasks for this equipment.


DRY
WET

CHAPTER 4

MASON-TYPE PSYCHROMETER

Section I INTRODUCTION

4-1. GENERAL INFORMATION.

4-1.1 Scope.

a. Model Number and Equipment Name. Model 314 Mason-Type Psychrometer.

b. Purpose of Equipment. To measure wet and dry bulb temperatures from 20° to 120°F (-6.6° to 48.8°C), for determination of relative humidity.

4-2. EQUIPMENT DESCRIPTION,

4-2.1 Equipment Characteristics, Capabilities, and Features.

a. Direct reading.

b. Wall-mounted.

4-2.2 Equipment Data.

Dimensions

Length	9 in. (22.8 cm)
Width	4 in. (10.1 cm)

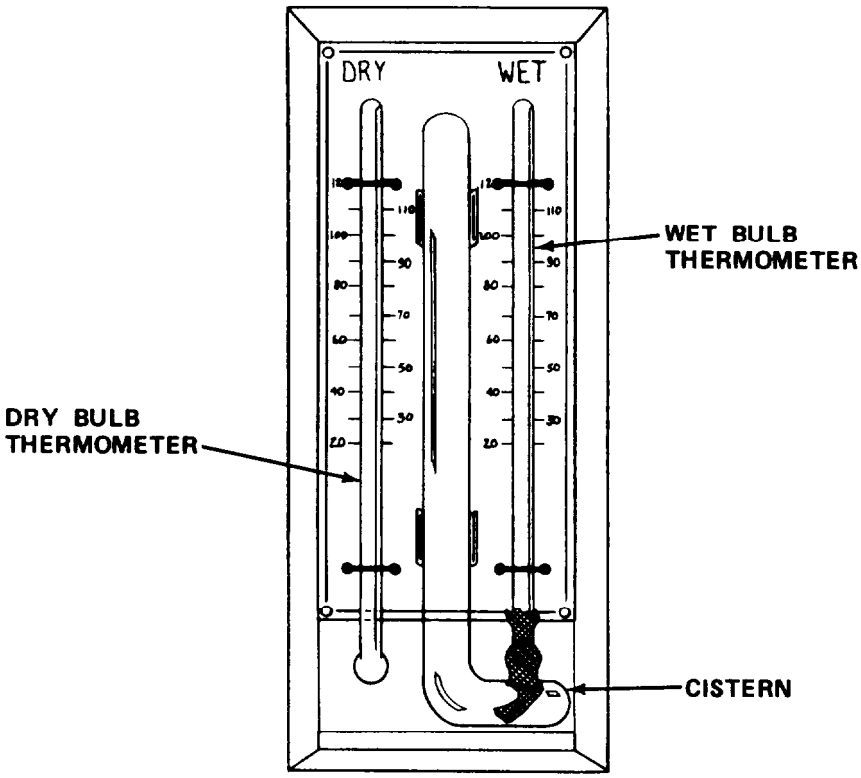
4-3. TECHNICAL PRINCIPLES OF OPERATION.

a. The mason-type psychrometer is an instrument consisting of two thermometers, used in the measurement of the moisture content (humidity) of air or other gases. The bulb of one of the thermometers is covered by a thin piece of muslin cloth (wick) wetted uniformly with distilled water. The temperatures of both the bulb and the air contacting the bulb are lowered by evaporation which takes place when unsaturated air moves past the wetted bulb. An equilibrium temperature, called the wet-bulb temperature, will be reached; it closely approaches the lowest temperature to which air can be cooled by evaporation of water into that air.

b. The water vapor content of the air surrounding the wet bulb can then be determined by calculating the difference between the wet bulb temperature and the dry bulb temperature. The final determination is known as relative humidity, or the amount of moisture in the air as compared with the maximum amount that the air could contain at the same temperature. Relative humidity is expressed as a percentage. Where the dry bulb and wet bulb temperatures are the same, the atmosphere is saturated.

Section II OPERATING INSTRUCTIONS

4-4. DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS.



Control or Indicator	Function
WET Bulb Thermometer	Measures temperature of wick in Fahrenheit.
Cistern	Contains water to keep wick on WET bulb thermometer completely saturated.
DRY Bulb Thermometer	Measures air temperature in Fahrenheit.

4-5. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES.

Before You Operate. Always keep in mind the WARNINGS and CAUTIONS. Perform your before (B) PMCS.

b. While You Operate. Always keep in mind the WARNINGS and CAUTIONS. Perform your during (D) PMCS.

c. After You Operate. Be sure to perform your after (A) PMCS.

d. If Your Equipment Fails to Operate. Troubleshoot with proper equipment. Report any deficiencies using the proper forms. See DA Pam 738-750.

4-5.1 PMCS Procedures.

PMCS are designed to keep the equipment in good working condition by performing periodic service tasks.

b. Service intervals provide you, the operator, with time schedules that determine when to perform specified service tasks.

c. The "Equipment is Not Ready/Available If" column is used for identification of conditions that make the equipment not ready/available for readiness reporting purposes or denies use of the equipment until corrective maintenance is performed.

d. If your equipment fails to operate after PMCS is performed, immediately report this condition to your supervisor.

e. Perform weekly as well as before operation if you are the assigned operator and have not operated the item since the last weekly or if you are operating the item for the first time.

f. Item number column. Item numbers are assigned in chronological ascending sequence regardless of interval designation. These numbers are used for your "TM Number" Column on DA Form 2404, Equipment Inspection and Maintenance Worksheet in recording results of PMCS.

g. Interval columns. This column determines the time period designated to perform your PMCS.

h. Item to be inspected and procedures column. This column lists functional groups and their respective assemblies and subassemblies as shown in the Maintenance Allocation Chart (Appendix B). The appropriate check or service procedure follows the specific item to be inspected.

i. Equipment is not ready/available if: column. This column indicates the reason or cause why your equipment is not ready/available to perform its primary mission,

Table 4-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES

NOTE

If the equipment must be kept in continuous operation, check and service only those items that can safely be checked and serviced without disturbing operation. Make the complete checks and services when the equipment can be shut down.

B - Before
D - During
A - After

W - Weekly
M - Monthly
Q - Quarterly

AN . Annually
S - Semiannually
BI - Biennially

(Numbed - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED PROCEDURE	For Reediness Reporting, Equipment Is Not Reedy/ Available If:
		MASON-TYPE PSYCHROMETER	
1	W	Inspect.	
		1. Inspect thermometers for damage.	
		2. Check that wick is clean and completely saturated with distilled water.	
		3. Check that cistern is filled with distilled water.	
		CAUTION Mounting psychrometer near heat sources, fans, or air-conditioning supply and exhaust vents will cause psychrometer to indicate incorrect air temperatures.	
		4. Mount psychrometer on wall.	

Table 4-1. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES - Cont

B - Before
D . During
A . After

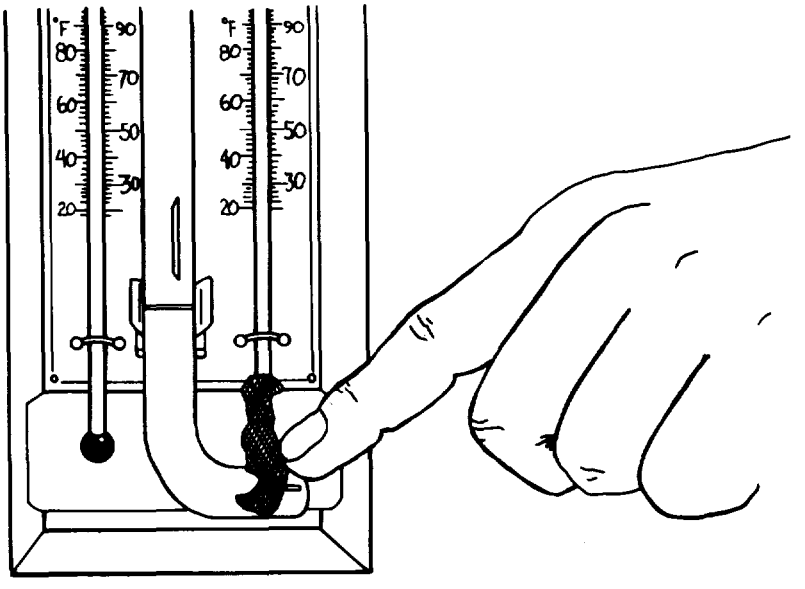
W - Weakly
M - Monthly
Q - Quarterly

AN - Annually
S - Semiannually
BI - Biennially

(Number) - Hundreds of Hours

ITEM NO.	IN-TER. VAL	ITEM TO BE INSPECTED PROCEDURE	For Readiness Reporting, Equipment Is Not Ready/ Available If:
		MASON-TYPE PSYCHROMETER - Cont	
2	AN	Replace Wick.	

1. Remove psychrometer from wall.

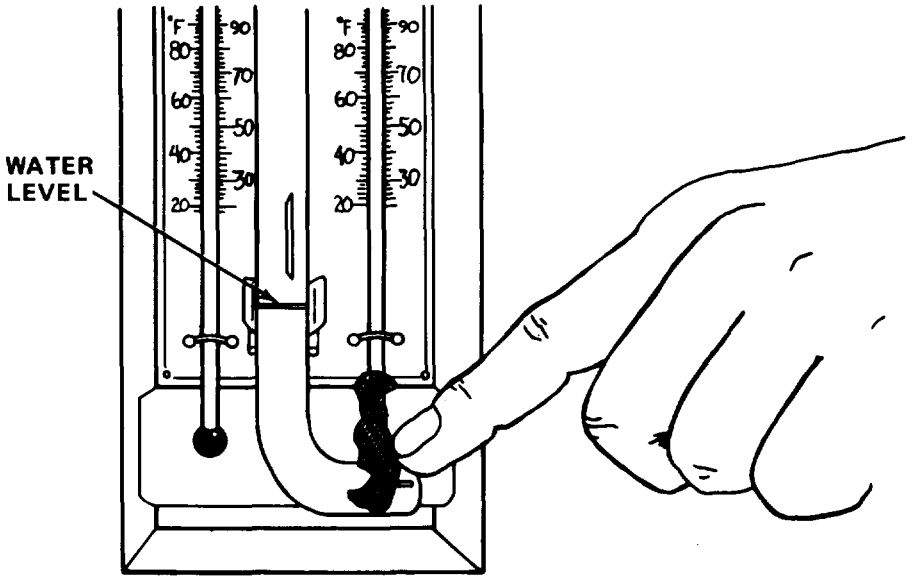


2. Remove wick from WET bulb thermometer and cistern.
3. Install new wick over WET bulb thermometer.
4. Fill cistern with clean, distilled water.
5. Insert other end of wick into cistern.
6. Saturate wick with distilled water.
7. Mount psychrometer on wall.

4-6. OPERATION UNDER USUAL CONDITIONS.

NOTE

Be sure psychrometer is not close to fans, heaters, open doors, and ventilation ducts.



a. Check that water level in cistern is halfway between brackets.

b. Add distilled water to saturate wick and fill cistern when necessary.

c. Mount psychrometer on hook on wall.

d. Allow five minutes to lapse before recording WET and DRY bulb readings.

e. Convert WET and DRY bulb thermometer readings to relative humidity as follows:

Air Temperature (DRY Bulb): 68° F (20°C)

WET Bulb: 62° F (16°C)

Depression = DRY Bulb (t) - WET Bulb (t^{l}) = 68°- 62°= 6°F (20°-16 = 14°C)

Depression = 6° F (-14°C)

Use left column to find air temperature of 68° F (20°C),

Use top column to find depression of 6° F (-14°c).

The intersection of both columns gives the percent of relative humidity, in this case 71%.

Table 4-2. RELATIVE HUMIDITY, PER CENT - FAHRENHEIT TEMPERATURES

PRESSURE EQUALS 30.0 INCHES

AIR TEMP	DEPRESSION OF WET-BULB THERMOMETER t-t1																			
t	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.3	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5
20	92	85	77	70	62	55	48	40	33	26	19	12	5								
31	92	85	78	71	63	56	49	42	35	28	21	16	8	1							
22	93	86	78	71	65	58	51	44	37	31	24	17	11	4							
23	93	86	79	72	66	59	52	46	39	33	26	20	14	7	1						
24	93	87	80	73	67	60	54	47	41	35	29	22	16	10	4						
25	94	87	81	74	68	62	55	49	43	37	31	25	19	13	7	1					
26	94	87	81	75	69	63	57	51	45	39	33	27	21	16	10	4					
27	94	88	82	76	70	64	58	52	47	41	35	29	24	18	13	7	2				
28	94	88	82	76	71	65	59	54	48	43	37	32	26	21	15	10	5				
29	94	88	83	77	72	66	60	53	50	44	39	34	28	23	18	13	8	3			
30	94	89	83	78	73	67	62	56	51	46	41	36	31	26	21	16	11	6	1		
31	94	89	84	78	73	68	63	58	52	47	42	37	33	28	23	18	13	8	4		
32	95	89	84	79	74	69	64	59	54	49	44	39	35	30	25	20	16	11	7	2	
33	95	90	85	80	75	70	65	60	56	51	46	41	37	32	27	23	18	14	9	5	0
34	95	90	86	81	76	71	66	62	57	52	48	43	38	34	29	25	21	16	12	8	3
35	95	91	86	81	77	72	67	63	58	54	49	45	40	36	32	27	23	19	14	10	6
36	95	91	86	82	77	73	68	64	60	55	51	46	42	38	34	29	25	21	17	13	9
37	95	91	87	83	78	74	69	65	61	57	53	48	44	40	36	31	27	23	19	15	11
38	96	91	87	83	79	75	70	66	62	58	54	50	46	42	37	33	29	25	21	17	14
39	96	92	87	83	79	75	71	67	63	59	55	51	47	43	39	35	31	27	24	20	16
40	96	92	87	83	79	75	71	68	64	60	56	52	48	45	41	37	33	29	26	22	18
41	96	92	88	84	80	78	72	69	65	61	57	54	50	46	42	39	35	31	28	24	20
42	96	92	88	85	81	77	73	69	65	62	58	55	51	47	44	40	36	33	30	26	23
43	96	92	88	85	81	77	73	70	66	63	59	55	52	48	45	42	38	35	31	28	25
44	96	93	89	85	81	78	74	71	67	63	60	56	53	49	46	43	39	36	33	30	26
45	96	93	89	86	82	78	74	71	67	64	61	57	54	51	47	44	41	38	34	31	28
46	96	93	89	86	82	79	75	72	68	65	61	58	55	52	48	45	42	39	35	32	29
47	96	93	89	86	82	79	75	72	69	66	62	59	56	53	49	46	43	40	37	34	31
48	96	93	90	86	83	79	76	73	69	66	63	60	57	54	50	47	44	41	38	35	32
49	96	93	90	86	83	80	76	73	70	67	64	61	57	54	51	48	45	42	39	36	34
50	96	93	90	87	83	80	77	74	71	67	64	61	58	55	52	49	46	43	41	38	35
51	97	94	90	87	84	81	78	75	71	68	65	62	49	56	53	50	47	45	42	39	36
52	97	94	90	87	84	81	78	75	72	69	66	63	60	57	64	51	49	46	43	40	37
53	97	94	90	87	84	81	78	75	72	69	66	63	61	58	55	52	50	47	44	41	39
54	97	94	91	88	85	82	79	76	73	70	67	64	61	59	56	53	50	48	45	42	40
55	97	94	91	88	85	82	79	76	73	70	68	65	62	59	57	54	51	49	46	43	41
56	97	94	91	88	85	82	79	76	73	71	68	65	63	60	57	55	52	50	47	44	42
57	97	94	91	88	85	82	80	77	74	71	69	66	63	61	58	55	53	50	48	45	43
58	97	94	91	88	85	83	80	77	74	72	69	66	64	61	59	56	54	51	49	46	44
59	97	94	91	89	86	83	80	78	75	72	70	67							9	47	45
			1	89	86	83	81	78	75	73	70	68							0	48	46
			2	89	86	84	81	78	76	73	71	68	65	63	61	58	56	54	41	40	47
			2	89	86	84	81	79	76	74	71	69	66	65	61	59	57	54	52	50	47
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64	97	95	92	90	87	84	82	79	77	74	72	70	67	65	63	60	58	56	53	51	49
65	97	95	92	90	87	85	82	80	77	75	72	70	68	66	63	61	59	56	54	52	50
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67	97	95	92	90	87	85	83	80	78	75	73	71	69	66	64	62	60	58	56	53	51
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70	98	95	93	90	88	86	83	81	79	77	74	72	70	68	66	64	61	59	57	55	53
71	98	95	93	90	88	86	84	81	79	77	75	72	70	68	66	65	62	60	58	56	54
72	98	95	93	91	88	86	84	82	79	77	75	73	71	69	67	65	63	61	59	57	55
73	98	95	93	91	88	86	84	82	80	78	75	73	71	69	67	65	63	61	59	57	55
74	98	95	93	91	89	96	94	92	90	78	76	74	71	69	67	65	63	61	60	58	56
75	98	96	93	91	89	86	84	82	80	78	76	74	72	70	68	66	64	62	60	58	56
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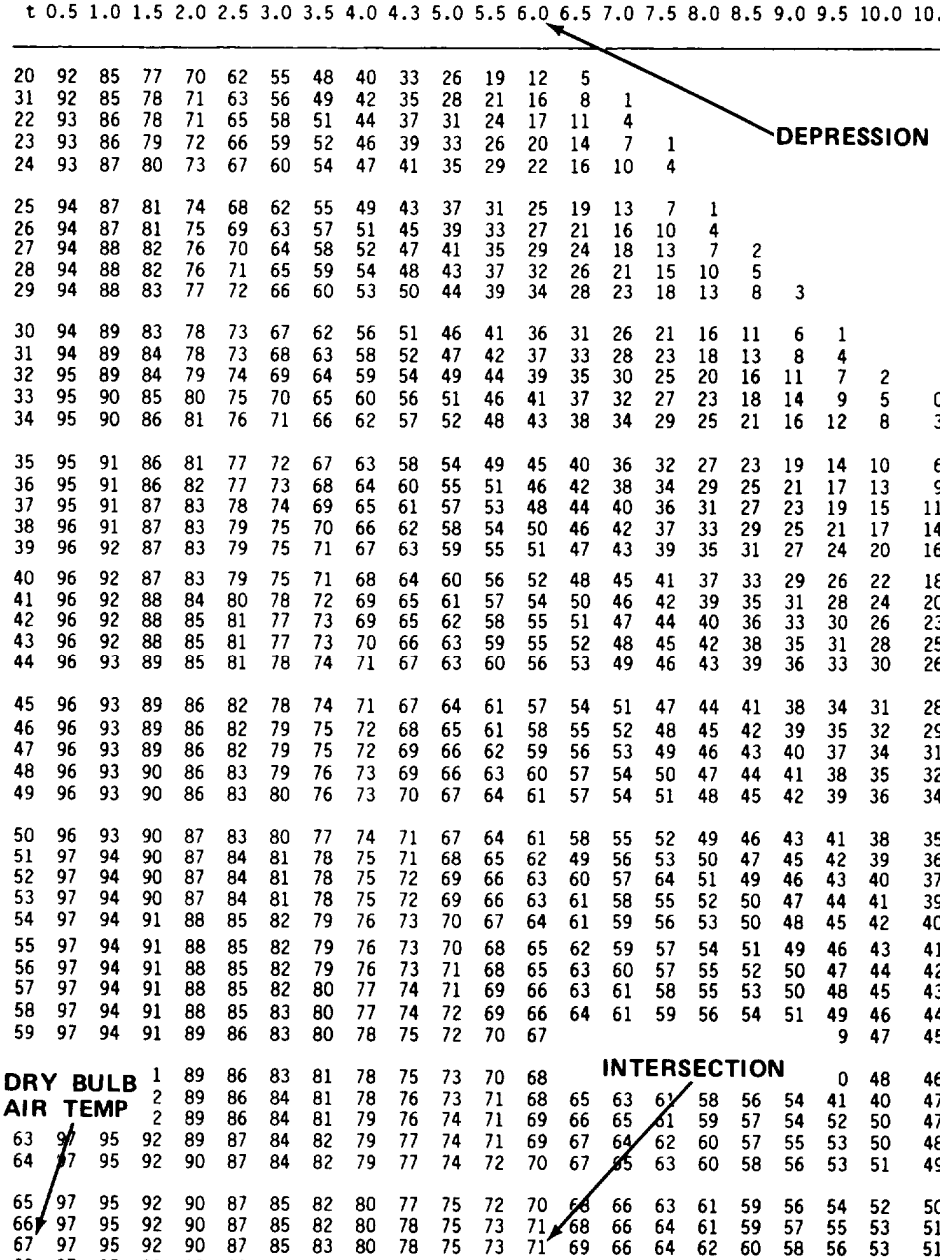

Table 4-2. RELATIVE HUMIDITY, PER CENT - **FAHRENHEIT** TEMPERATURES - Cont

PRESSURE EQUALS 30.0 INCHES

AIR TEMP	DEPRESSION OF WET-BULB THERMOMETER t-t1																				
t	11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	15.5	16.0	16.5	17.0	17.5	18.0	18.5	19.0	19.5	20.0	20.5	21.0
35	2																				
36	5	1																			
37	7	3																			
38	10	6	2																		
39	12	9	5	1																	
40	16	11	7	4	0																
41	17	13	10	6	3																
42	19	16	12	9	5	2															
43	21	18	14	11	8	4	1														
44	23	20	16	18	10	7	4	0													
45	25	22	18	15	12	9	6	3													
46	26	23	20	17	14	11	8	5	2												
47	28	25	22	19	16	18	10	7	5	2											
48	29	26	23	21	18	15	12	9	7	4	1										
49	31	28	25	22	19	17	14	11	9	6	3	1									
50	32	29	27	24	21	18	16	13	10	8	5	3	0								
51	34	31	28	26	23	20	17	15	12	9	7	4	2								
52	35	32	29	27	24	22	19	17	14	11	9	6	4	1							
53	36	33	31	28	26	23	20	18	16	13	10	8	6	3	1						
54	37	35	32	29	27	24	22	20	17	15	12	10	8	5	3	1					
55	38	36	33	31	28	26	23	21	19	16	14	12	9	7	5	2	0				
56	39	37	34	32	30	27	25	22	20	18	16	18	11	9	7	4	2				
57	40	38	35	33	31	28	26	24	22	19	17	15	13	10	8	6	4	2			
58	41	39	37	34	32	30	27	25	23	21	18	16	14	12	10	8	6	3	1		
59	42	40	38	35	33	31	29	26	24	22	20	18	16	13	11	9	7	5	3	1	
60	43	41	39	37	34	32	30	28	26	23	21	19	17	15	13	11	9	7	5	3	1
61	44	42	40	38	35	33	31	29	27	25	22	20	18	16	14	12	10	8	7	5	3
62	45	43	41	39	36	34	32	30	28	26	24	22	20	18	16	14	12	10	8	6	4
63	46	44	42	40	37	35	33	31	29	27	25	23	21	19	17	15	13	11	10	8	6
64	47	45	43	41	38	36	34	32	30	28	26	24	22	20	18	17	15	13	11	9	7
65	48	46	44	41	39	37	35	33	31	29	27	25	24	22	20	18	16	14	12	11	9
66	48	46	44	42	40	38	36	34	32	30	29	27	25	23	21	19	17	16	14	12	10
67	49	47	45	43	41	39	37	35	33	31	30	28	26	24	22	20	19	17	15	13	12
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71	52	50	48	46	45	43	41	39	37	35	33	32	30	28	27	25	23	22	20	18	17
72	53	51	49	47	45	43	42	40	38	36	34	33	31	29	28	26	24	23	21	19	18
73	53	51	50	48	46	44	42	40	39	37	35	34	32	30	29	27	25	24	22	20	19
74	54	52	50	48	47	45	43	41	39	38	36	34	33	31	29	28	26	26	23	21	20

4-7. OPERATION UNDER UNUSUAL CONDITIONS. This equipment is designed for operation only in a controlled environment.

Section III OPERATOR MAINTENANCE

4-8. LUBRICATION INSTRUCTIONS. This equipment does not require lubrication.

4-9. TROUBLESHOOTING PROCEDURES.

a. The table lists the common malfunctions which you may find during the operation or maintenance of the Mason-type psychrometer. You should perform the test/inspection and corrective actions in the order listed.

b. This manual cannot list all malfunctions that may occur, nor all test or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify your supervisor.

Table 4-3. TROUBLESHOOTING

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
1. WET AND DRY BULB TEMPERATURE READINGS ARE CONSTANTLY IDENTICAL.
Lack of water in cistern.
Add water.
2. WET BULB READINGS DO NOT AGREE WITH OTHER PSYCHROMETER.
Step 1. Dirty wick.
Clean cistern, replace wick, and add distilled water.
Step 2. Thermometer(s) have shifted on scale.
Replace psychrometer.

4-10. MAINTENANCE PROCEDURES. There are no operator maintenance procedures assigned for this equipment.

Section IV ORGANIZATIONAL MAINTENANCE

4-11. LUBRICATION INSTRUCTIONS. This equipment does not require lubrication.

4-12. REPAIR PARTS, SPECIAL TOOLS; TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT; AND SUPPORT EQUIPMENT.

4-12.1 Common Tools and Equipment. For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

4-12.2 Special Tools; Test. Measurement. and Diagnostic Equipment: and Support Equipment. Special Tools, TMDE, and Support Equipment is listed in the applicable repair parts and special tools list and in Appendix B of this manual.

4-12.3 Repair Parts. Repair parts are listed and illustrated in the Repair Parts and Special Tools List, TM 5-3610-252-24P, covering organizational maintenance for this equipment.

4-13. SERVICE UPON RECEIPT.

4-13.1 Checking Unpacked Equipment.

Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on DD Form 6, Packing Improvement Report.

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

c. Check to see whether the equipment has been modified.

4-14. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES. There are no organizational PMCS procedures assigned for this equipment.

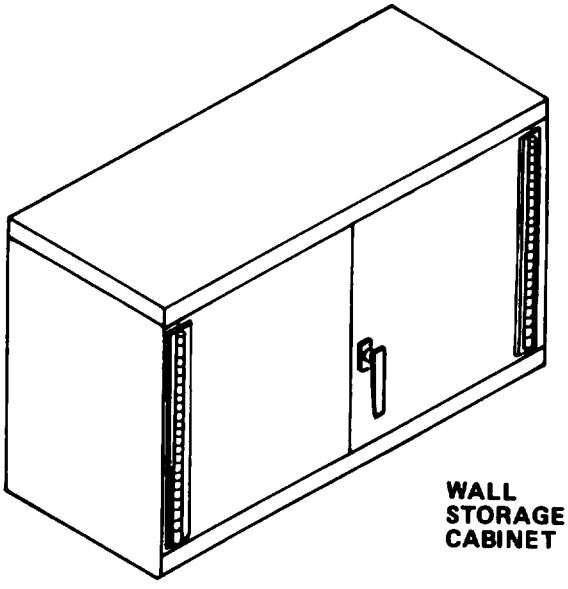
4-15. ORGANIZATIONAL TROUBLESHOOTING PROCEDURES. There are no organizational troubleshooting procedures assigned for this equipment.

4-16. MAINTENANCE PROCEDURES. There are no organizational maintenance procedures assigned for this equipment.

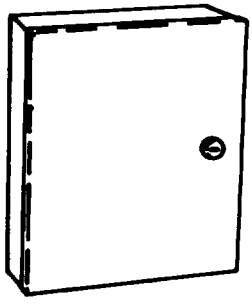
4-17. PREPARATION FOR STORAGE OR SHIPMENT. Contact your battalion for packing and shipping instructions.

Section V DIRECT/GENERAL SUPPORT MAINTENANCE

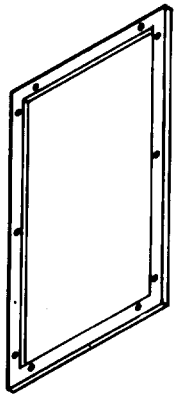
There are no assigned direct/general support maintenance tasks for this equipment.



WALL
STORAGE
CABINET



HUMIDITY
TEMPERATURE
READER CABINET



CORKBOARD

CHAPTER 5

FURNITURE AND CABINETS

Section I INTRODUCTION

5-1. GENERAL INFORMATION.

5-1.1 Scope. This chapter contains the description of all furniture and cabinets contained in this section.

5-2. EQUIPMENT DESCRIPTION.

a. Wall Storage Cabinet. Used for miscellaneous storage. There are two shelves. The two doors are held shut by a handle-type latch. Dimensions:

Width	30 in. (76.2 cm)
Depth	12 in. (30.5 cm)
Height	18 in. (45.7 cm)

b. Humidity-Temperature Reader Cabinet. Used to store the humidity temperature reader. There is a strap in the cabinet to secure the instrument. Dimensions:

Width	10 in. (25.4 cm)
Depth	6 in. (15.2 cm)
Height	12 in. (30.5 cm)

c. Corkboard. Wall mounted. Dimensions:

Width	18.0 in. (45.7 cm)
Height	30.0 in. (76.2 cm)

5-3. TECHNICAL PRINCIPLES OF OPERATION. There are no specific principles of operation for this equipment.

Section II OPERATING INSTRUCTIONS

5-4. DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS. This equipment has no operator controls or indicators.

5-5. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES. There are no operator PMCS procedures assigned for this equipment.

5-6. OPERATION UNDER USUAL CONDITIONS.

5-6.1 Preparation for Movement. Ensure that portable equipment is properly secured with tiedowns provided.

5-7. OPERATION UNDER UNUSUAL CONDITIONS. This equipment is designed for operation only in a controlled environment.

Section III OPERATOR MAINTENANCE

5-8. LUBRICATION INSTRUCTIONS. This equipment does not require lubrication.

5-9. TROUBLESHOOTING PROCEDURES. There are no operator troubleshooting procedures assigned for this equipment.

5-10. MAINTENANCE PROCEDURES.

a. This section contains instructions covering operator maintenance functions for the furniture and cabinets. Personnel required are listed only if the task requires more than one.

b. After completing each maintenance procedure, perform operational check to be sure that equipment is properly functioning.

5-10.1 Inspect Cabinets and Furniture. Inspect furniture and cabinets for structural damage, rust, and proper operation of all latches, hinges, and adjustment mechanisms.

Section IV ORGANIZATIONAL MAINTENANCE

5-11. LUBRICATION INSTRUCTIONS. This equipment does not require lubrication.

5-12 REPAIR PARTS, SPECIAL TOOLS; TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT; AND SUPPORT EQUIPMENT.

5-12.1 Common Tools and Equipment. For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

5-12.2 Special Tools: Test, Measurement, and Diagnostic Equipment: and Support Equipment. Special Tools, TMDE, and Support Equipment is listed in the applicable repair parts and special tools list and in Appendix B of this manual.

5-12.3 Repair Parts. Repair parts are listed and illustrated in the Repair Parts and Special Tools List, TM 5-3610-252-24P covering organizational maintenance for this equipment.

5-13. SERVICE UPON RECEIPT.

5-13.1 Checking Unpacked Equipment.

Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on DD Form 6, Packing Improvement Report.

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

c. Check to see whether the equipment has been modified.

5-14. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES. There are no organizational PMCS procedures assigned for this equipment.

5-15. ORGANIZATIONAL TROUBLESHOOTING PROCEDURES. There are no organizational troubleshooting procedures assigned for this equipment.

5-16. MAINTENANCE PROCEDURES.

a. This section contains instructions covering organizational maintenance functions for the furniture and cabinets. Personnel required are listed only if the task requires more than one.

b. After completing each maintenance procedure, perform operational check to be sure that equipment is properly functioning.

INDEX

5-16.1 Replace Door Hinge (Piano Hinge).

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: 1/4 in. Electric Drill
5/32 in. Drill Bit
Pop Rivet Gun

SUPPLIES: Storage Cabinet Hinge
5/32 in. Pop Rivets
8-32 x 1/2 in. Screws (4 required)
8-32 Nuts (4 required)

a. Drill out rivets holding hinge to cabinet and remove hinge.

b. Install new hinge and temporarily secure with four 8-32 screws and nuts.

c. Close and latch cabinet door and install pop rivets.

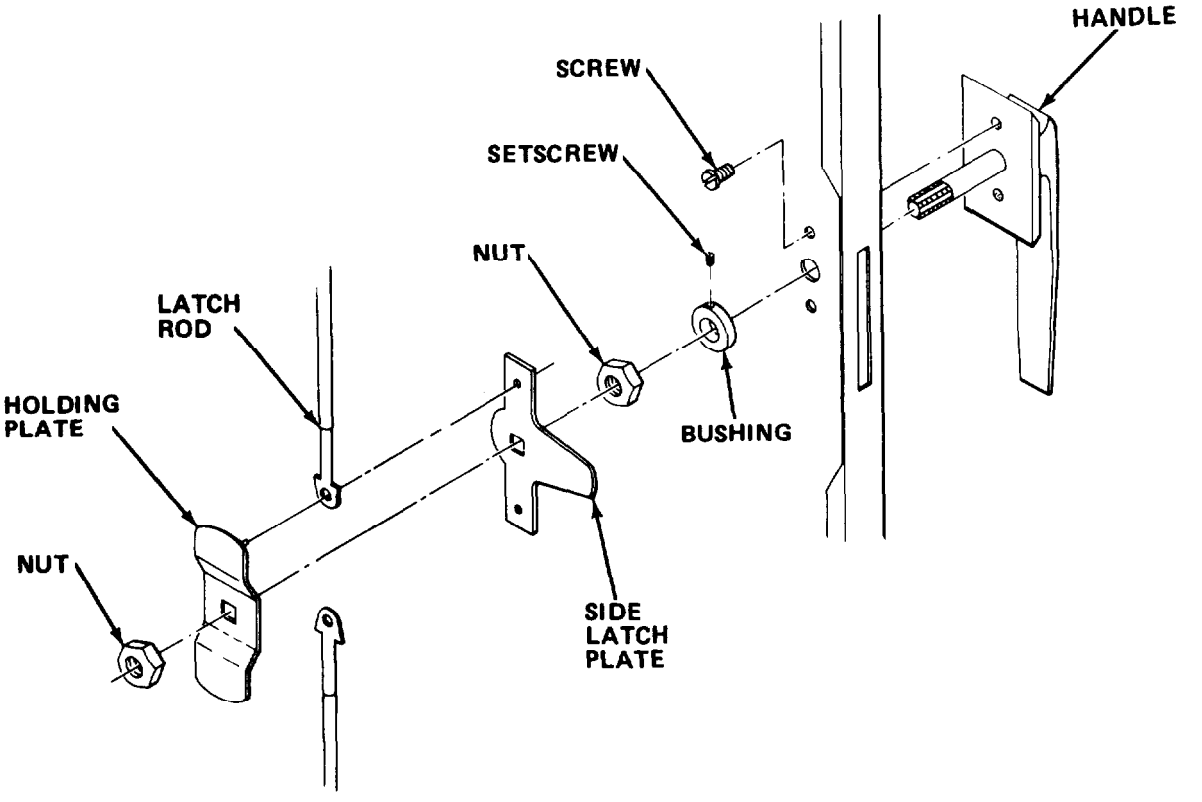
d. Remove temporarily installed screws and nuts, and install pop rivets.

5-16.2 Replace Door Latch (Wall Storage Cabinet).

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: 9/16 in. Combination Wrench
Flat Tip Screwdriver

SUPPLIES: Handle Type Latch



a. Remove holding plate retaining nut.

b. Remove holding plate and latch rods.

c. Remove side latch plate.

d. Remove handle retaining nut.

e. Loosen setscrew and remove bushing from handle shaft.

f. Remove handle retaining screws and remove handle.

g. Install new handle and secure with screws.

h. Reinstall bushing on handle shaft and tighten setscrew.

i. Reinstall handle retaining nut.

j. Install side latch plate.

k. Reinstall latch rod holding plate and latch rods.

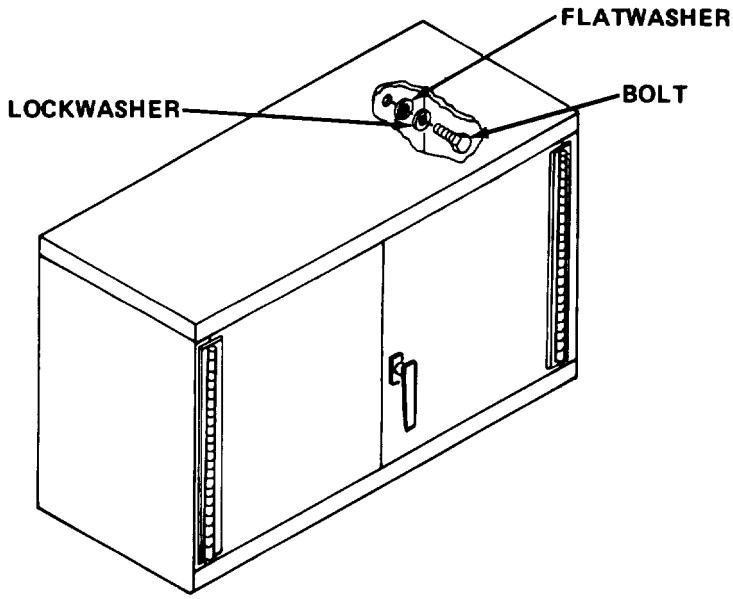
l. Reinstall holding plate retaining nut.

5-16.3 Remove/Install Wall Storage Cabinet.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: 1/2 in. Socket with 1/2 in. Drive
1/2 in. Drive Ratchet
1/2 in. Socket Extension, 2 in. long

SUPPLIES: Wall Storage Cabinet



a. Remove bolts, lockwashers and flat washers which secure cabinet to wall.

b. Remove defective cabinet.

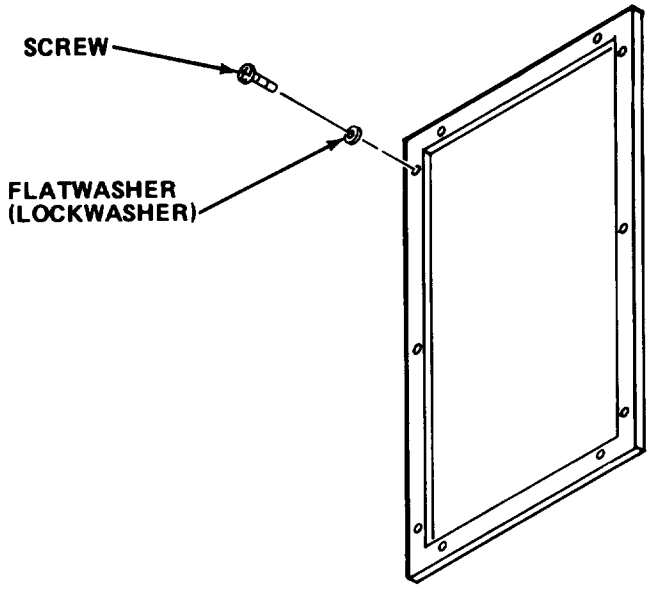
c. Install new cabinet and secure to wall with flat washers, lockwashers and bolts.

5-16.4 Remove/Install Corkboard.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Cross Tip Screwdriver

SUPPLIES: Corkboard



a. Remove attaching hardware securing defective corkboard to wall.

b. Remove defective corkboard.

c. Position new corkboard and aline mounting holes.

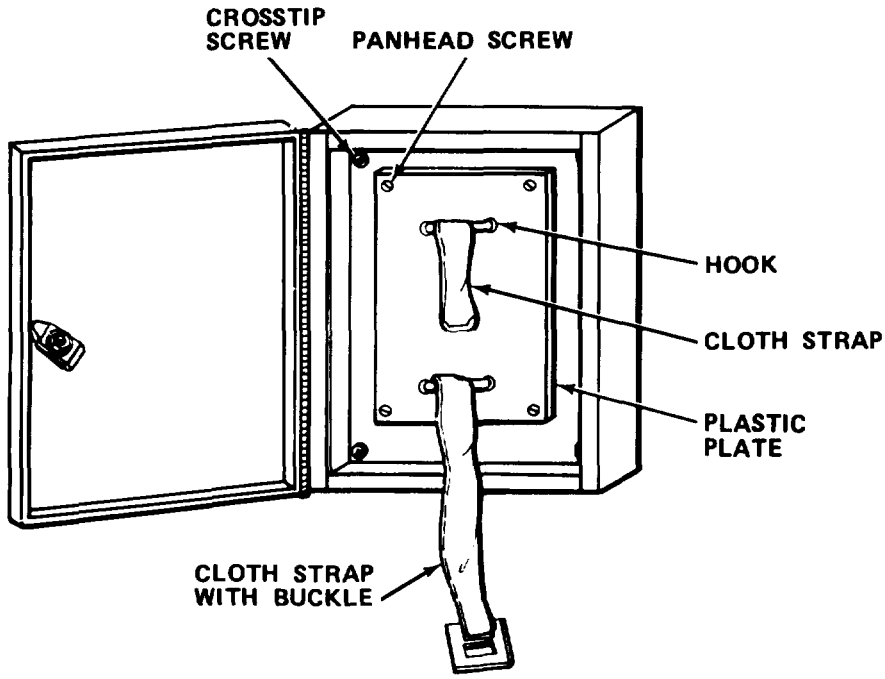
d. Secure new corkboard to wall with attaching hardware.

5-16.5 Remove/Install Humidity-Temperature Reader Cabinet.

MOS: 83FJ6, Reproduction Equipment Repairer

TOOLS: Cross Tip Screwdriver

SUPPLIES: Humidity-Temperature Reader Cabinet



a. Remove humidity-temperature reader from cabinet.

b. Remove screws securing defective cabinet to wall.

c. Remove defective cabinet.

d. Secure new cabinet to wall with screws.

e. Replace humidity-temperature reader and secure with cloth strap.

5-17. PREPARATION FOR STORAGE OR SHIPMENT. Contact your battalion for packing and shipping instructions.

Section V DIRECT/GENERAL SUPPORT MAINTENANCE

There are no direct/general support maintenance procedures assigned for this equipment.

APPENDIX A

REFERENCES

A-1. SCOPE.

This appendix lists all forms, field manuals, technical manuals and miscellaneous publications referenced in this manual.

A-2. FORMS.

Recommended Changes to Publications and Blank Forms . . . . . DA Form 2028

Recommended Changes to Equipment Technical Publications . . . . . DA Form 2028-2

Hand Receipt/Annex Number.. . . . . .. DA Form 2062

Equipment Inspection and Maintenance Worksheet . . . . . DA Form 2404

The Army Maintenance Management System (TAMMS). . . . . DA Pam 738-750

Quality Deficiency Report . . . . SF 368

A-3. FIELD MANUALS.

Camouflage. . . . . FM 5-20

Nuclear, Biological and Chemical (NBC)
Defense (Reprinted w/Basic Incl Cl) . . . . . .FM 21-40

Basic Cold Weather Manual FM31-70

Northern Operations . . . . . .FM 31-71

Metal Body Repair and Related Operations . . . . . FM 43-2

A-4. TECHNICAL MANUALS.

Administrative Storage of Equipment . . . . . TM 740-90-1

Chemical, Biological and Radiological (CBR)
Decontamination TM3-220

Operator, Organizational, Direct Support and General
Support Maintenance Manual: Air Conditioner, Horizontal,
Compact, 208-Volt, 3-Phase, 18,000 Btu Cooling, 12,000
Btu Heating. . . . . TM 5-4120-367-14

Operator, Organizational, Direct Support and General Support Maintenance Manual for Chassis, Semi-Trailer, Container Transporter (ADCOR) . . . . . TM 5-2330-305-14

Organizational, Direct Support and General Support Maintenance Repair Parts and Special Tools List (Including Depot Maintenance Repair Parts and Special Tools) for Air Conditioner/Heater . . . . . TM 5-4120-367-24P

Organizational, Direct Support and General Support Maintenance Repair Parts and Special Tools List (Including Depot Maintenance Repair Parts and Special Tools) for Chassis, Semi-Trailer, Container Transporter (ADCOR) . . . . . TM 5-2330-305-24P

Organizational , Direct Support and General Support Maintenance Repair Parts and Special Tools List (RPSTL) (Including Depot Maintenance Repair Parts and Special Tools) for Paper Conditioning Section . . . . . TM 5-3610-252-24P

Painting Instructions for Field Use . . . . . TM 43-0139

Procedure for the Destruction of Equipment to Prevent Enemy Use . . . . . .TM 750-244-3

Use and Care of Hand Tools and Measuring Tools . . . . . TM 9-243

A-5. MISCELLANEOUS PUBLICATIONS.

Lubrication Order: Topographic Support Paper Conditioning Section, Model ADC-TSS-15 . . . . . LO 5-3610-252-12

APPENDIX B

MAINTENANCE ALLOCATION CHART

Section I INTRODUCTION

B-1. GENERAL.

This section provides a general explanation of all maintenance and repair functions authorized at various maintenance categories.

b. The Maintenance Allocation Chart (MAC) in section II designates overall responsibility for the performance of maintenance functions on the identified end item or component. The application of the maintenance functions to the end item or component will be consistent with the capacities and capabilities of the designated maintenance categories.

Section III lists the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from Section II.

d. Section IV contains supplemental instructions and explanatory notes for a particular maintenance function.

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 by measuring the mechanical, pneumatic, hydraulic 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 (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases.

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

e. Aline. 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 equipment used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

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. "Replace" is authorized by the MAC and is shown as the 3d position code of the SMR code.

. Repair. [2]The application of maintenance services[1], including fault location/troubleshooting , removal/installation, and disassembly/assembly[3] procedures, and maintenance actions[4] to identify troubles and restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item or system.

j. Overhaul. That maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications (i.e., DMWR). 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 THE MAC, SECTION II.

Column 1, Group Number. Column 1 lists functional group code numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies and modules with the next higher assembly. End item group number shall be "00."

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

Column 3, Maintenance Function. Column 3 lists the functions to be performed on the item listed in Column 2. (For detailed explanation of these functions, see paragraph B-2.)

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[1]Services - Inspect, test, service, adjust, aline, calibrate and/or replace.

[2]Fault locate/troubleshoot - The process of investigating and detecting the cause of equipment malfunctioning; the act of isolating a fault within a system or unit under test (UUT).

[3]Disassemble/assemble - Encompasses the step-by-step taking apart (or breakdown) of a spare/functional group coded item to the level of its least componency identified as maintenance significant (i.e., assigned an SMR code) for the category of maintenance under consideration.

[4]Actions - Welding, grinding, riveting, straightening, facing, remachining and/or resurfacing.

d. Column 4, Maintenance Category. Column 4 specifies, by the listing of a work time figure in the appropriate subcolumn(s), the category 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 category of maintenance. If the number or complexity of the tasks within the listed maintenance function varies at different maintenance categories, appropriate work time figures will be shown for each category. The work time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item or system) to a serviceable condition under typical field operation conditions. This time includes preparation time (including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the Maintenance Allocation Chart. The symbol designations for the various maintenance categories are as follows:

C . . . . Operator or Crew

O . . . . Organizational Maintenance

F . . . . Direct Support Maintenance

H . . . . General Support Maintenance

L . . . . Specialized Repair Activity [6]

D . . . . Depot Maintenance

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. This column shall, when applicable, contain a letter code, in alphabetical order, which shall be keyed to the remarks contained in Section IV.

[5]This maintenance category is not included in Section II, column (4) of the Maintenance Allocation Chart. To identify functions to this category of maintenance, enter a work time figure in the “H” column of Section II, column (4), and use an associated reference code in the Remarks column (6). Key the code to Section IV, Remarks, and explain the SRA complete repair application there. The explanatory remark(s) shall reference the specific Repair Parts and Special Tools List (RPSTL) TM which contains additional SRA criteria and the authorized spare/repair parts.

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, Maintenance Category. The lowest category of maintenance authorized to use the tool or test equipment.

c. Column 3, Nomenclature. Name or identification of the tool or test equipment.

d. Column 4, National Stock Number. The National stock number of the tool or test equipment.

e. Column 5, Tool Number. The manufacturer's part number.

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

a. Column 1, Reference Code. The code recorded in Column 6, Section II.

b. Column 2, Remarks. This column lists information pertinent to the maintenance function being performed as indicated in the MAC, Section II.

Section II. MAINTENANCE ALLOCATION CHART

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Cat. C	O	F	H	D	(5) Tools and Eqpt	(6) Remarks
00	PAPER CONDITIONING SECTION	Overhaul					**		
01	VAN BODY (ISO CONTAINER)	Inspect	0.8						
		Service	0.9	0.5				5,6,8,11	B
		Repair		1.0	1.5	2.0		1,7	
	FLUORESCENT LIGHT ASSY	Repair	0.1	0.7				1,4	
	BLACKOUT/DOME LIGHT ASSY	Repair	0.2						
	EXHAUST FAN ASSEMBLY	Service	0.7						
		Repair		0.5		2.0		1,3,7	B
	AIR CONDITIONER/ HEATER ASSY	Replace				2.0		1	A
	ELECTRICAL ASSEMBLY	Repair		0.9	1.0			1,3	
	TELEPHONE BINDING POST ASSEMBLY	Repair		0.7				3	
	EMERGENCY LIGHT ASSY	Replace		0.3				1	
	LOCATION PALLET PLATE	Replace		0.3				3	
	LEVEL INDICATOR ASSY	Repair		0.6				2,3	
	BLACKOUT CURTAIN ASSY	Repair		1.0				4	

* * Depot will determine work time.

Section II. MAINTENANCE ALLOCATION CHART - Cont

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Cat. C	O	F	H	D	(5) Tools and Eqpt	(6) Remarks
01	VAN BODY - Cont ISO Container)								
	PERSONNEL LADDER ASSY	Repair		0.8				4,7	B
	PERSONNEL/CARGO DOOR ASSY	Replace Repair			1.5 2.0			4 4	
02	HAND LIFT TRUCK	Inspect Service Adjust Replace Repair	0.17	0.33 0.25 3.33 0.08 1.50				 3 t 1,3,4, 10,12	 B
03	HUMlDITY-TEMPERATURE READER	Inspect Test Service Replace Repair	0.17 0.17 0.25 0.08 0.17	 0.08 				8.9	
04	MASON-TYPE PSYCHROMETER	Inspect Service Replace Repair	0.08 0.17 0.08 0.08						
05	FURNITURE AND CABINETS	Inspect Remove/ Install Repair	0.5	 0.9 0.7				 1 3,7	 B

Section II. MAINTENANCE ALLOCATION CHART

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Cat. C	O	F	H	D	(5) Tools and Eqpt	(6) Remarks
00	PAPER CONDITIONING SECTION								
01	VAN BODY (IS0 CONTAINER)	Inspect	0.8						
		Service	0.9					8,10,16	
		Repair		1.0	1.5	2.0		1,4,6	
	FLUORESCENT LIGHT ASSY	Repair	0.1	0.7				1	
	BLACKOUT/DOME LIGHT ASSY	Repair	0.2					1	
	EXHAUST FAN ASSEMBLY	Service	0.7					9	
		Replace		0.4				4,6,19, 20	
		Repair		0.5				2	
	AIR CONDITIONER/ HEATER ASSY	Service	0.7						A
		Replace				2.0		1,7	
		Repair		0.3	0.5				A
	ELECTRICAL ASSEMBLY	Repair		0.9	1.0			2,6,18	
	TELEPHONE BINDING POST ASSEMBLY	Repair		0.7				4	
	EMERGENCY LIGHT ASSY	Replace		0.3				4	
	TIEDOWN SOCKET ASSY	Replace		0.3				6	
	LEVEL INDICATOR ASSY	Repair		0.6				6,13	
	BLACKOUT CURTAIN ASSY	Repair		1.0				6	

Section II. MAINTENANCE ALLOCATION CHART - Cont

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Cat. C	O	F	H	D	(5) Tools and Eqpt	(6) Remarks
01	VAN BODY - Cont (IS0 Container)								
	PERSONNEL LADDER ASSY	Repair		0.8				6	
	PERSONNEL/CARGO DOOR ASSY	Replace			1.5			6	
		Repair			2.0			6	
02	HAND LIFT TRUCK	Inspect	0.17	0.33					
		Service		0.25				3	
		Adjust		0.33				3	
		Replace		0.08					
		Repair		1.50				3,12, 14,16	
03	HUMIDITY-TEMPERATURE READER	Inspect	0.17					11	
		Test	0.17						
		Service	0.25						
		Replace	0.08	0.08					
		Repair	0.17						
04	MASON-TYPE PSYCHROMETER	Inspect	0.08						
		Service	0.17						
		Replace	0.08						
		Repair	0.08						
05	FURNITURE AND CABINETS	Inspect	0.5						
		Remove/ Install		0.9				1,19,21	
		Repair		0.7				1	

Section III TOOL AND TEST EQUIPMENT REQUIREMENTS

(1) Reference Code	(2) Maintenance Category	(3) Nomenclature	(4) National/NATO Stock Number	(5) Tool Number
1	0	Shop Kit, Automotive Maintenance and Repair Common #1 Plus Metric Option	4910-00-754-0654	
2	0	Tool Kit, Carpenters, Engineer Squad	5180-00-293-2875	
3	0	Tool Kit, General Mechanic's Automotive Plus Metric Option	5180-00-177-7033	
4	O,F,H	Tool Kit, Light Machine Repair	5180-00-596-1540	
5	c	Wrench, Adjustable 6 in.	5120-00-264-3795	
6	c	Brush, Wire	7920-00-291-5815	
7	O,F,H	Rivet Gun	5120-00-017-2849	
8	c	Screwdriver, Flat Tip	5120-00-234-8910	
9	c	Typewriter Brush	7510-00-550-8446	
10	o	Seal Driver Set	5120-00-150-7762	
11	0	Spring Scale	6670-00-238-9777	
12	0	Wrench, Open End 2 3/16 x 2 3/8	5120-00-084-1102	

Section IV REMARKS

Reference Code	Remarks
A	See TM 5-4120-367-14 for maintenance procedures.
B	Maintenance personnel and TSS Section 7, maintenance van (which carries the required tools) are authorized by HHC TOE 05336 H600.

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 the Paper Conditioning Section 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:

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 or 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 Paper Conditioning Section in operation, to operate it, and to perform emergency repairs. Although shipped separately packaged, BII must be with the Paper Conditioning Section 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 Number). This column indicates the number of the illustration in which the item is shown.

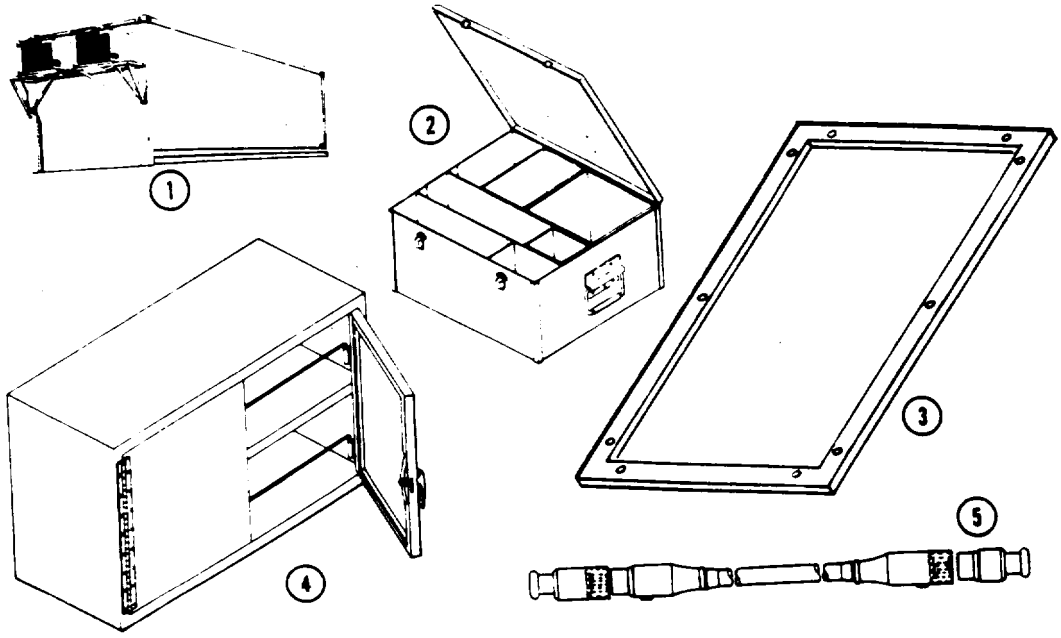
b. Column (2): National Stock Number. Indicates the National stock number assigned to the item and will be used for requisitioning purposes.

c. Column (3): Description. Indicates the Federal item name and, if required, a minimum description to identify and locate the item. The last line for each item indicates the FSCM (in parentheses) followed by the part number.

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).

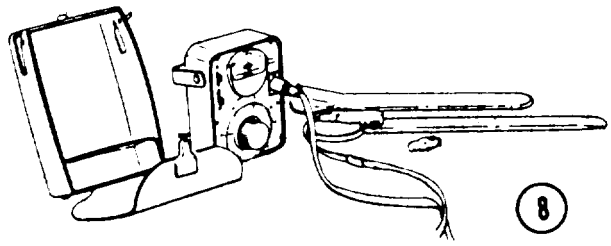
e. Column (5): Quantity Required (Qty Rqr). Indicates the quantity of the item authorized to be used with/on the equipment.

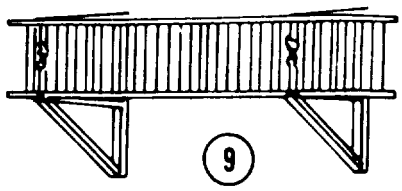
Section II COMPONENTS OF END ITEM

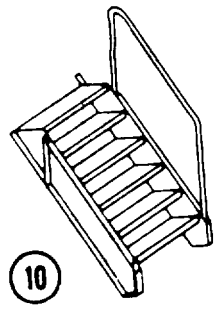


(1) Illus Number	(2) National Stock Number	(3) Description FSCM and Part Number	(4) U/M	(5) Qty Rqr
1	4120-00-974-7206	AIR CONDITIONER (81349) MIL-A-52767	ea	2
1A	6675-01-215-4777	VAN ASSEMBLY: MODIFIED (97403) 13225E3040	ea	1
		BOX, VEHICULAR ACCESSORIES FOR VACUUM CLEANER: (97403) 13225E3490	ea	1
3	7195-00-105-7941	BULLETIN BOARD: (7981 9) T5-2303	ea	1
4		CABINET. STORAGE: TECH MANUALS (51 745) 13225E4648	ea	1
5	6150-00-134-0847	CABLE ASSEMBLY, POWER ELECTRICAL: (901 29) RC 1736-5, except 50.5 ft lg	ea	2
	5110-00-121-5836	CUTTER, STEEL STRAPPING (39428) 3675A11	ea	1

Section II COMPONENTS OF END ITEM - Cont

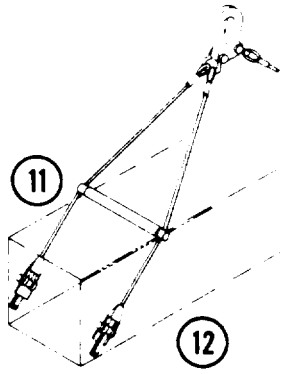


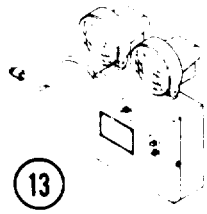


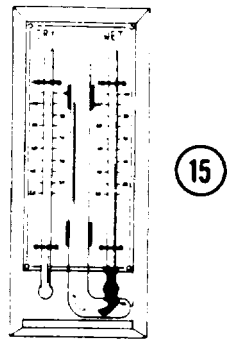


(1) Illus Number	(2) National Stock Number	(3) Description FSCM and Part Number	(4) U/M	(5) Qty Rqr
6	Deleted			
7	Deleted			
8		HYDROSCOPE, PAPER MOISTURE CONTENT: (02356) L15-3032D	se	1
9	5440-01-152-7751	LADDER, EXTENSION - FOLDING: (39428) 8028T16	ea	1
10	2540-01-133-9726	LADDER, VEHICLE BOARDING: (51745) 13225E3074	ea	2

Section II COMPONENTS OF END ITEM—Cont.

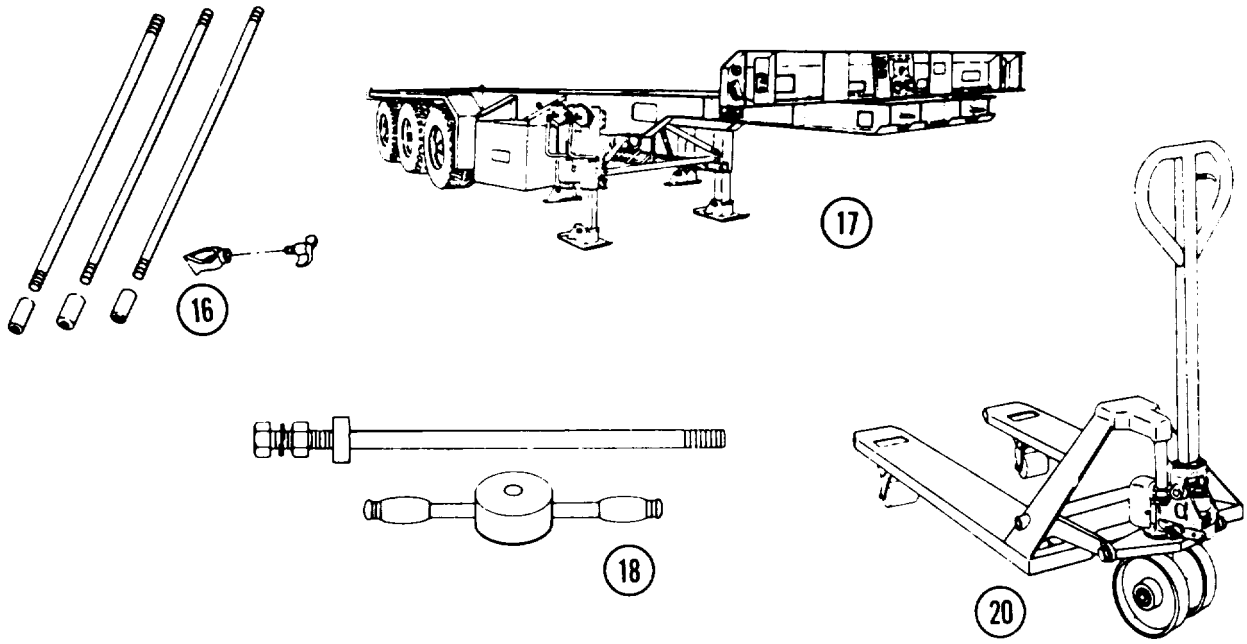






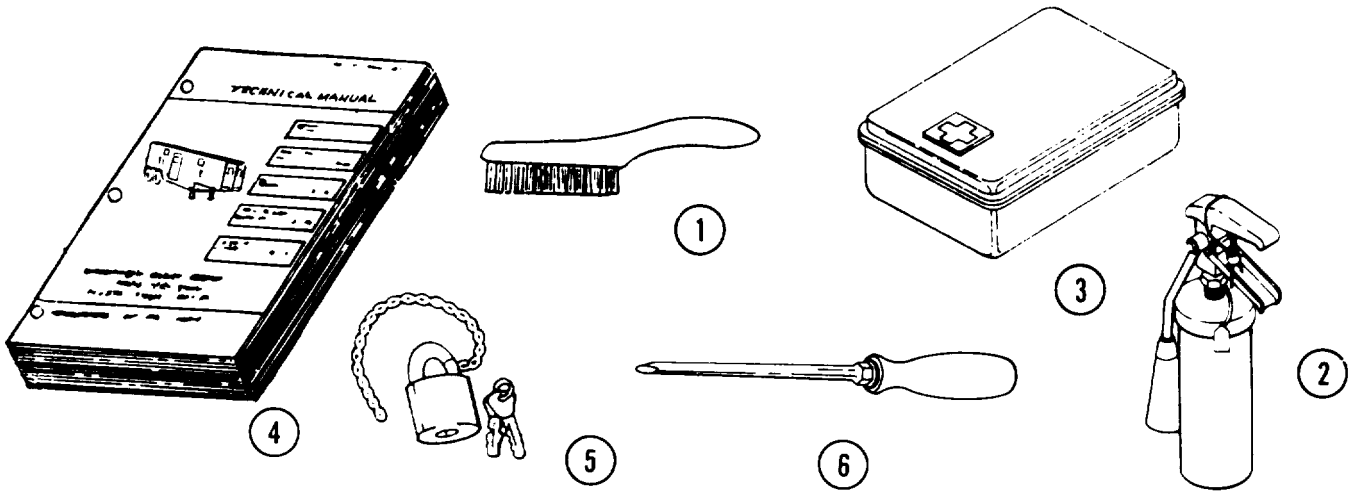
(1) Illus Number	(2) National Stock Number	(3) Description FSCM and Part Number	(4) U/M	(5) Qty Rqr
11		LIFTING AND TIEDOWN DEVICE, TRANSPORTABLE SHELTER: Left hand (52555) 1390-4	ea	
12		LIFTING AND TIEDOWN DEVICE, TRANSPORTABLE SHELTER: Right hand (52555) 1390-3	ea	
13		LIGHT, EMERGENCY (97403) 13225E3396	ea	
14	Deleted			
15	6685-00-641-3580	PSYCHROMETER: (7D560) 89039	ea	

Section II COMPONENTS OF END ITEM - Cont



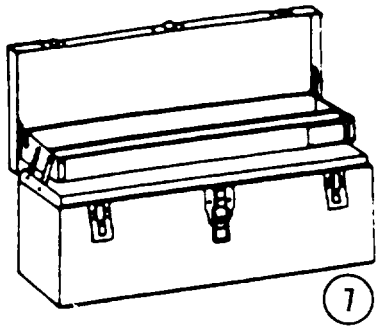
(1) Illus Number	(2) National Stock Number	(3) Description FSCM and Part Number	(4) U/M	(5) Qty Rqr
16	5975-00-878-3791	ROD, GROUND: (82370) A104	ea	1
17	2330-01-076-4797	SEMITRAILER, FLATBED: (97403) TL/MIL-B-13207, par. 3.11, fig 12, tables Ill and IV	ea	1
18	5120-01-013-1676	SLIDE HAMMER, GROUND ROD EMPLACEMENT: (45225) P74-144	ea	1
19	Deleted			
20		TRUCK, HYDRAULIC PALLET: (04135) MSK 20-42-5	ea	1
		WRENCH, ASSEMBLY, EYEBOLT PALLET (51 745) 13225E4605	ea	1

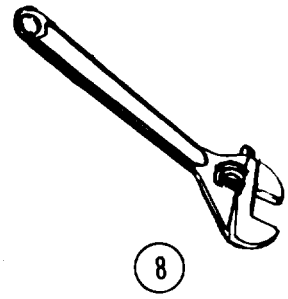
Section III BASIC ISSUE ITEMS



(1) Illus Number	(2) National Stock Number	(3) Description FSCM and Part Number	(4) U/M	(5) Qty Rqr
1	7920-00-291-5815	BRUSH, WIRE, SCRATCH: (39428) 7187T2	ea	1
2		EXTINGUISHER, FIRE, MONOBROMOTRI-FLUOROMETHANE: (33525) T2	ea	2
3		FIRE AID KIT, GENERAL PURPOSE: (89875) SC C-6545-IL vol 2	ea	1
4		MANUALS, TECHNICAL		
	TM 5-3610-252-14	OPERATOR'S ORGANIZATIONAL, DIRECT SUPPORT AND GENERAL SUPPORT, TSS, PAPER AND CONDITIONING SECTION	ea	1
	LO 5-3610-252-12	LUBRICATION ORDER, TSS, PAPER CONDITIONING SECTION	ea	1
5		PADLOCK SET: (77765) MS21313-52	se	1
6	5120-00-234-8910	SCREWDRIVER, FLAT TIP: (78525) 1006	ea	1

Section III BASIC ISSUE ITEMS—Cont.





(1) Illus Number	(2) National Stock Number	(3) Description FSCM and Part Number	(4) U/M	(5) Qty Rqr
7	514000-315-2747	TOOL BOX, PORTABLE: (75206) CS16	ea	1
8	5120-00-264-3795	WRENCH, ADJUSTABLE: (80244) GGG-W-631 TY1 CL1	ea	1

APPENDIX D

ADDITIONAL AUTHORIZATION LIST

Section I INTRODUCTION

D-1 . SCOPE.

This appendix lists additional items you are authorized for the support of the Paper Conditioning Section.

D-2. GENERAL.

This list identifies items that do not have to accompany the Paper Conditioning Section and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA or JTA.

D-3. EXPLANATION OF LISTING.

National stock numbers, descriptions and quantities are provided to help you identify and request the additional items you require to support this equipment. The items are listed in alphabetical sequence by item name under the type document (i.e., CTA, MTOE, TDA, or JTA) which authorizes the item(s) to you.

Section II ADDITIONAL AUTHORIZATION LIST

(1) National Stock Number	(2) Description FSCM and Part Number	(3) U/M	(4) Qty Auth
	TOE AUTHORIZED ITEMS		
6115-00-258-1622	Generator Set, DSL Eng: 60 kW	ea	1

APPENDIX E

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

Section I INTRODUCTION

E-1 . SCOPE.

This appendix lists expendable supplies and materials you will need to operate and maintain the Paper Conditioning Section. This listing is for information purposes only and is not. authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (except Medical, Class V, Repair Parts and Heraldic Items), or CTA8-100, Army Medical Department Expendable/ Durable Items.

E-2. EXPLANATION OF COLUMNS.

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 5, Appendix E.”).

b. Column (2) - Level. This column identifies the lowest level of maintenance that requires the listed item.

C - Operator/Crew

0 - Organizational Maintenance

F - Direct Support Maintenance

H - General Support Maintenance

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

Column (5) - Unit of Measure (U/M). Indicates the measure used in performing the actual maintenance function. This measure is expressed by two-character alphabetical abbreviations (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 Numb	(2) Level	(3) National Stock Number	(4) Description	(5) U/M
1	O	8040-00-174-2610	Adhesive, Rubber	cn
2	F	8040-00-152-0063	Adhesive, Waterproof	cn
2A	C		BATTERY, DRY: 3.5 V (02356) H22-006-03	ea
2B	C		BATTERY, DRY: 5.5 V (02356) H22-006-04	ea
3	O	7930-00-664-6910	Cleaner, Glass	co
4	C	8305-00-222-2423	Cloth, Cheesecloth	yd
5	c	7930-00-530-8067	Detergent, General Purpose	gl
6	o	9150-00-935-9807	Fluid, Hydraulic	qt
7	0	9150-00-181-7724	Grease, Wide Temp. Range	tu
8	c	9150-00-754-2595	Grease, Molybdenum	lb
9	F	9150-00-273-2389	Oil, Lubricating, General Purpose	cn
10	c	9150-00-186-6681	Oil, HDO 30	qt
11	o	8010-01-131-6254	Paint, Black	kt
11A	0	8010-01-160-6745	Paint, Brown	kt
11B	0	8010-01-162-5578	Paint, Green	kt
12	0	801 ()-()0-298-3859	Paint, Light Green, INT.	gl
13	c	5350-00-619-9166	Paper, Abrasive	pk
14	o	7920-00-982-1203	Paper Towels	bx
14A	0	8010-01-193-0520	Primer	kt
15	0		Screen, Nylon (39428) 1017A31	ro
16	0	8040-00-851-0211	Sealant, Silicone	tu
17	0	6850-00-274-5421	Solvent, P-D-680	cn

Section II EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST-Cont

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description	(5) U/M
18	c	6850-00-880-1013	Spray, Silicone	cn
19	o		Sprayfoam Sealant (39428) 7627T1	cn
20	0	5640-00-103-2254	Tape, Cloth, Duct Sealing, 2 in.	ro
21	0	8030-00-829-4554	Thread Locking Compound	bt

*U.S. GOVERNMENT PRINTING OFFICE: 1986 652-126/20208

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By Order of the Secretary of the Army:

JOHN A. WICKHAM, JR.
General, United States Army
Chief of Staff

Official:

DONALD J. DELANDRO
Brigadier General, United States Army
The Adjutant General

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FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)
PFC JOHN DOE
COA, 3d ENGINEER BN
FT. LEONARDWOOD, MO 63108

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 5-3610-252-14	17 May 85	Topographic Support System Paper Section Model ADC-TSS-15

BE EXACT. PIN-POINT WHERE IT IS

PAGE NO	PARAGRAPH	FIGURE NO	TABLE NO
6	2-1 a		
B1		4-3	
125	line 20		

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

In line 6 of paragraph 2-1a the manual states the engine has 6 Cylenders. The engine on my set only has 4 Cylenders. Clange the manual to show 4 Cylenders.

Callout 16 on figure 4-3 is pointing at a bolt. In key to figure 4-3, item 16 is called a shim - Please correct one or the other.

I ordered a gasket, item 19 on figure B-16 by NSN 2910-00-762-3001. I got a gasket but it doesn't fit. Supply says I got what I ordered, so the NSN is wrong. Please give me a good NSN

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER
JOHN DOE, PFC (268) 317-7111

SIGN HERE John Doe
JOHN DOE

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THEN. . JOT DOWN THE DOPE ABOUT IT ON THIS FORM, CAREFULLY TEAR IT OUT, FOLD IT AND DROP IT IN THE MAIL!

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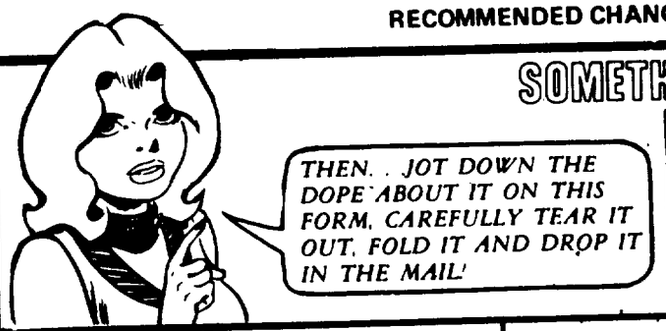

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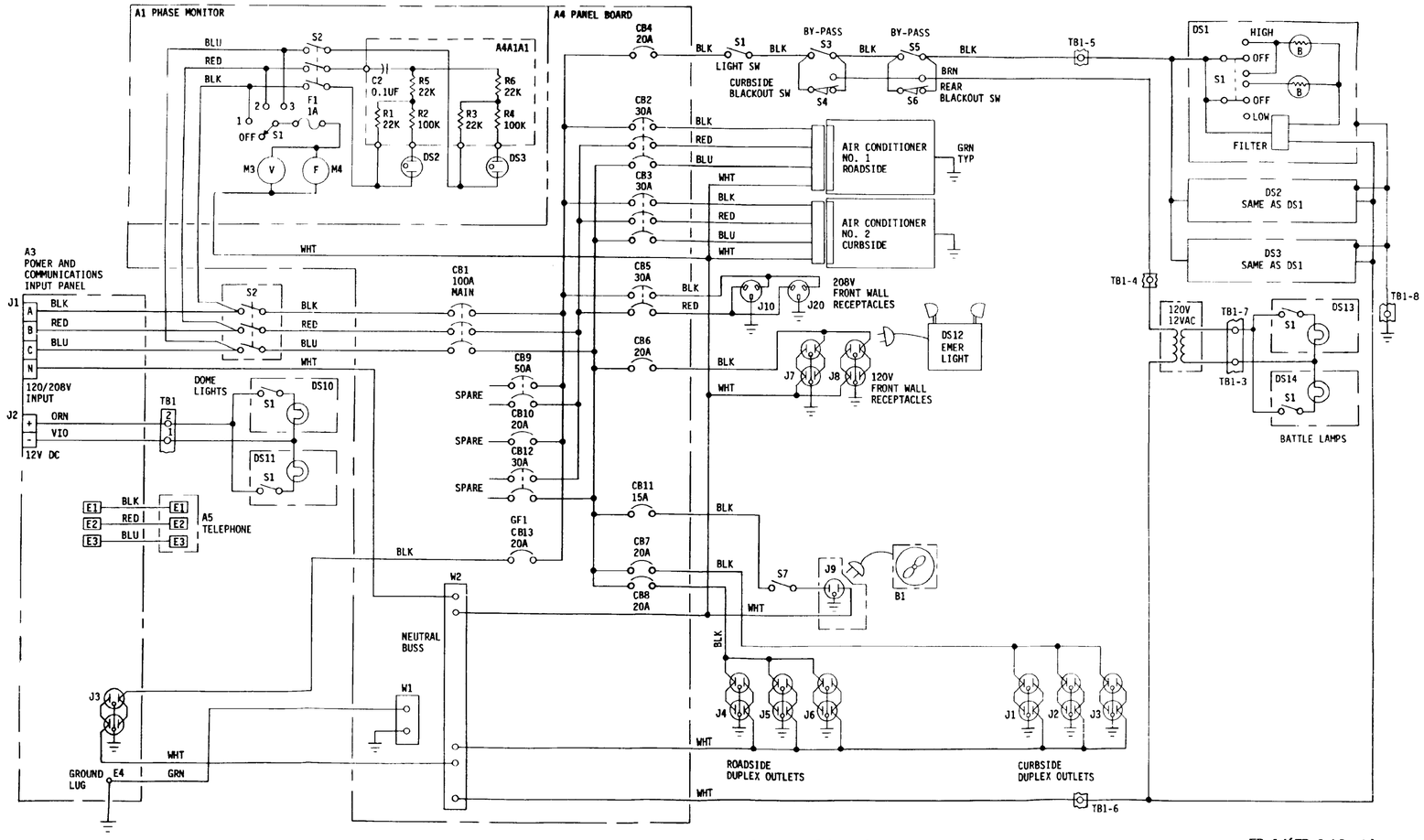

FO-1. **Paper Conditioning Section Electrical Schematic**

☆U.S. GOVERNMENT PRINTING OFFICE: 1985-564-126/10150

The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
1 decimeter = 10 centimeters = 3.94 inches
1 meter = 10 decimeters = 39.37 inches
1 dekameter = 10 meters = 32.8 feet
1 hectometer = 10 dekameters = 328.08 feet
1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
1 decigram = 10 centigrams = 1.54 grains
1 gram = 10 decigram = .035 ounce
1 dekagram = 10 grams = .35 ounce
1 hectogram = 10 dekagrams = 3.52 ounces
1 kilogram = 10 hectograms = 2.2 pounds
1 quintal = 100 kilograms = 220.46 pounds
1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce
1 deciliter = 10 centiliters = 3.38 fl. ounces
1 liter = 10 deciliters = 33.81 fl. ounces
1 dekaliter = 10 liters = 2.64 gallons
1 hectoliter = 10 dekaliters = 26.42 gallons
1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
inches	centimeters	2.540	ounce-inches	newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29,573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	newton-meters	1.356	metric tons	short tons	1.102
pound-inches	newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C