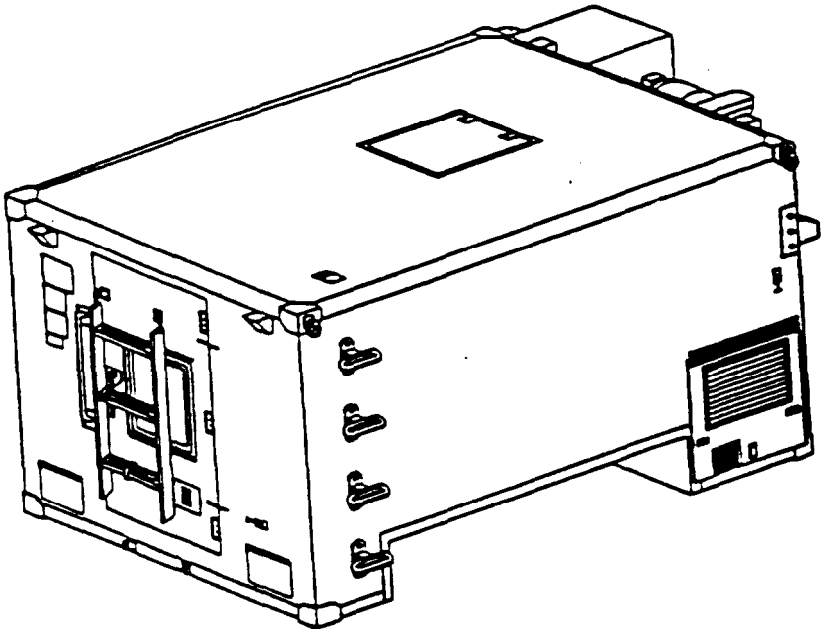
TM 10-5411-222-14



TECHNICAL MANUAL
OPERATOR'S, UNIT, DIRECT SUPPORT & GENERAL SUPPORT

MAINTENANCE MANUAL

FOR

SHELTER, STANDARDIZED INTEGRATED COMMAND POST SYSTEM (SICPS), TYPE II

(NSN 5411-01-333-0663)

This copy is a reprint which includes current pages from Change 1.

DISTRIBUTION STATEMENT A.

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29 JULY 1994

CHANGE

No. 1

HEADQUARTERS
DEPARTMENT OFTHE ARMY
WASHINGTON, D.C., 29 APRIL 1996

OPERATOR'S, UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE MANUAL FOR

SHELTER
STANDARDIZED, INTEGRATED COMMAND POST SYSTEM (SICPS)
MODEL S-78710
TYPE II, NSN 5411-01 -3334663

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited

TM 10-5411-222-14,29 July 1994, is changed as follows:

1. Remove and insert pages as indicated below. New or changed text material is indicated by a vertical bar in the margin. An illustration change is indicated by a miniature pointing hand.

Remove pages	Insert pages
3-3 through 3-10	3-3 through 3-10
B-7 and B-8	8-7 and B-8
C-1 through C-4	C-1 through C-4

2. Retain this sheet in front of manual for reference purposes.

By Order of the Secretary of the Army:

DENNIS J. REIMER
General, United States Army
Chief of Staff

Official:

JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
02142

DISTRIBUTION:

To be distributed in accordance with DA Form 12-25-E, block no. 6216, requirements for TM 10-5411-222-14.

WARNING

CARBON MONOXIDE

Carbon monoxide is without color or smell, but it can kill you. Breathing carbon monoxide produces symptoms of headache, dizziness, loss of muscular control, a sleepy feeling, and coma. Brain damage or death can result from heavy exposure. Carbon monoxide occurs in the exhaust fumes of fuel-burning heaters and internal combustion engines. When there is no air movement, carbon monoxide can become dangerously concentrated. Precautions must be followed to ensure crew safety when the personnel heater, main or auxiliary engine, or any vehicle is operated for any purpose.

- Do not operate personnel heater or engine of vehicle in a closed place unless there is sufficient air movement.

- Do not idle engine for long periods without operating the ventilator blower. If tactical situation permits, open hatches.

- Do not drive any vehicle with inspection plates, cover plates, or engine compartment doors removed unless necessary for maintenance purposes.

- Be alert at all times during vehicle operation for exhaust odors and exposure symptoms. If either is present, immediately ventilate personnel compartments. If symptoms persist, remove affected crew to fresh air; keep warm. Do not permit physical exercise. If necessary, give artificial respiration.

- Be aware; the field protective masks for chemical biological-radiological (CBR) protection will not protect you from carbon monoxide poisoning.

- For Artificial Respiration, refer to FM 21-11.

ELECTRICAL CURRENT

The shelter contains high electrical currents, to avoid injury:

- Remove all jewelry.

- Use electrically insulated tools.

- Take special precautions when working on or near electrical connections.

WARNING

ELECTRICAL CURRENT (CONT)

- Tag MAIN PWR switches when doing maintenance and ensure power is off.

- Verify the removal of electrical power at the Main Control Panel and Motor Controller before servicing electrical equipment.

- Never work on electronic equipment unless there is another person nearby who is familiar with the operation and hazards of the equipment and who is competent in administering first aid. When the technician is aided by operators, he must warn them about dangerous areas.

- Whenever possible, the power supply to the equipment must be shut off before beginning work on the equipment. Take particular care to ground every capacitor likely to hold a dangerous potential. When working inside the equipment, after the power has been turned off, always ground every part before touching it. Tag external power source.

- Be careful not to come in contact with high voltage connections or 115 V ac input connections when installing or operating this equipment.

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

- Before connecting primary power cables, connect the grounding cable from the ground lug on the external power panel to earth ground. Do not remove the grounding cable until the signal cables and primary power cables have been disconnected and the onboard generator has been shut down.

ELECTRICAL SHOCK

Low voltage/high current circuits can kill. The following safety steps shall be followed if someone is the victim of electrical shock:

- Do not try to pull or grab the individual.

- If possible, turn off the electrical power.

- If you cannot turn off the electrical power, pull, push, or lift the person to safety using a dry wooden pole or a dry rope or some other insulating material.

- Send for help as soon as possible.

WARNING

LIFTING

Improper lifting can cause personal injury. Use the following precautions when lifting:

- Use proper number of people when called for. When in doubt, use help.
- Be aware of all lifting points and follow procedures.
- Obey lift restrictions and utilize mechanical aids as required.
- Prevent back injury, lift with legs, not back.

COMPRESSED AIR

Compressed air is dangerous and can cause serious bodily harm if protective measures are not taken to prevent a chip or particle (of whatever size) from blowing into the eyes or into open cuts or wounds. Gloves are recommended when using compressed air. Compressed air shall not be used for cleaning purposes except where reduced to less than 30 pounds per square inch gage (30 psig) and then only with effective chip guarding and personnel protective equipment (Industrial safety glasses and full face shield). Do not use compressed air to dry parts when trichlorotriflourethane has been used.

HAZARDOUS MATERIALS

The chemicals (such as solvents, adhesives, sealants, paints, lubricants, etc.) used in maintenance procedures may present fire or chemical hazards if used without proper precautions. Observe manufacturers warning labels and the warnings and cautions contained in this manual. Ensure sufficient ventilation exists, protective clothing and equipment is used, and sources of ignition are removed.

ENTRY AND EGRESS

The shelter's height above the ground when mounted on a vehicle and low door frame present potential hazards during entry and egress. Use extreme care when climbing or descending the ladder to avoid falling. Be alert to the low door frame to avoid hitting your head.

CIRCUIT BREAKERS

If a circuit breaker does not stay in the on position when depressed, do not attempt to close (activate) repeatedly since an overload condition probably exist which could be hazardous to personnel and equipment.

TECHNICAL MANUAL

NO. 10-5411-222-14

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., 29 July 1994

OPERATOR'S, UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL FOR SHELTER, STANDARD INTEGRATED COMMAND POST SYSTEM (SICPS), TYPE II, MODEL NO. S-787/G NSN 5411-01-333-0663

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS
You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommending Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: U.S. Army Aviation and Troop Command, ATTN:AMSAT-I-MP, 4300 Goodfellow Blvd., St. Louis, MO, 63120-1798. A reply will be furnished to you.

Distribution Statement A. Approved for Public Release; Distribution is unlimited.

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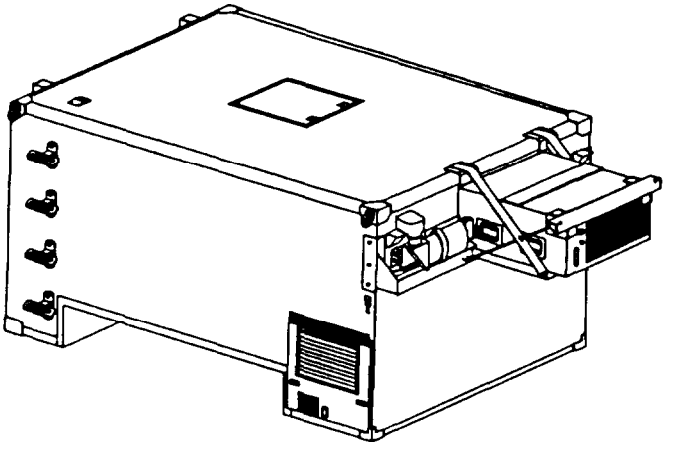
TABLE OF CONTENTS (CONT)



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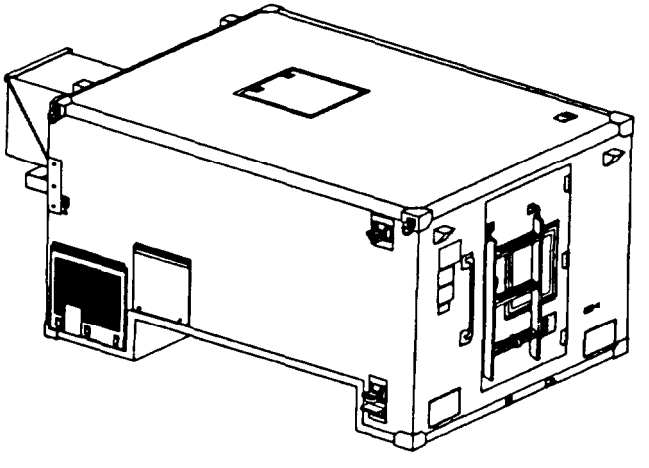


(ROADSIDE)

Figure 1-1. Standard, Integrated Command Post System (SICPS)

CHAPTER 1
INTRODUCTION

Section I. GENERAL INFORMATION

1-1. SCOPE.

a. Type of Manual. Operator's, Unit, Direct Support (DS), and General Support (GS) maintenance.

b. Equipment Name and Model Number, Shelter, Standardized Integrated Command Post System (SICPS), Type II, Model S-787/G.

c. Purpose of Equipment. The SICPS shelter is a lightweight transportable shelter which supports various configurations and installation layouts for tactical command, control, communications, and intelligence (C^3I) equipment. The SKIPS shelter is mounted on a M1097 High Mobility MultiPurpose Wheeled Vehicle (HMMWV) and is capable of both stationary and mobile operation.

1-2. MAINTENANCE FORMS AND PROCEDURES. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750, The Army Maintenance Management Systems (TAMMS).

1-3. DESTRUCTION OF ARMY MATERIAL TO PREVENT ENEMY USE. Refer to TM 750-244-3 for the destruction of the SICPS shelter and to prevent enemy use.

1-4. PREPARATION FOR STORAGE AND SHIPMENT. Reference Chapter 3.

1-5. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR).
If your SICPS shelter needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your shelter. Let us know why you don't like the design or performance. Put it on an SF 368 (Product Quality Deficiency Report). Mail it to: Commander, U.S. Army Aviation and Troop command, ATTN: AMSAT-I-MDO, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798.

1-6. WARRANTY INFORMATION. Details regarding warranty information may be found in TB 10-5411-222-14 (Warranty Technical Bulletin).

1-7. SAFETY CARE AND HANDLING. Many adhesives, cleaning, and bonding agents are used during skin repair procedures of the shelter. The prolonged use of these materials without proper protection can cause skin irritation and the inhalation of the vapors can be toxic if inhaled in quantity. When working on the shelter be familiar with all warnings posted in the front of this manual. Refer to FM 21-1 for first aid information.

1-8. CORROSION PREVENTION AND CONTROL. Corrosion prevention and control (CPC) of Army material is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items. While corrosion is typically associated with rusting of metals, it can also include deterioration of other materials, such as rubber and plastic. Unusual cracking, softening, swelling, or breaking of these materials may be a corrosion problem. If a corrosion problem is identified, it can be reported using Standard Form 368, Product Quality Deficiency Report. Use of keywords such as "corrosion", "rust", "deterioration", or "cracking" will ensure that the information is identified as a CPC problem. Standard form 368 should be submitted to: Commander, U.S. Army Aviation and Troop command, ATTN: AMSAT-I-MDO, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798.

1-9. NOMENCLATURE CROSS-REFERENCE LIST.

a. *Nomenclature Cross-Reference List.*

Common Name	Official Nomenclature
SICPS shelter	Shelter, Standardized Integrated Command Post System, Type II
HMMWV or Vehicle	High Mobility Multipurpose Vehicle M 1097 Utility Truck
Generator or engine	GENSET

b. *List of Abbreviations/Acronyms.*

APIU	Adaptive Programmable Interface Unit
APU	Auxiliary Power Unit
CB	Chemical/Biological
COMMO	Communications
CPC	Corrosion Prevention and Control
DNVT	Digital Non-Secure Voice Terminal
DSVT	Digital Secure Voice Telephone
EPUU	Enhanced PLARS User Unit
GENSET	Generator Set
FAX	Fascimile
FOMAU	Fiber Optic Medium Attachment Unit
GPFU	Gas Particle Filter Unit
HMMWV	High Mobility Multipurpose Wheeled Vehicle
JTIDS	Joint Tactical Information Data System
LAN	Local Area Network
MSRT	Mobile Cellular Telephone

b. List of Abbreviations/Acronyms (Continued).

PLARS	Positive Location and Reporting System
SEP	Signal Entry Panel
SICPS	Command Post, Rigid Wall, Integrated
SINCGARS	Single Channel Grounded Air System
TIP	Tent Interface Panel
TCU	Transportable Computer Unit

c. Glossary.

Delamination	The separation of the inner and outer portion of the shelter core which is filled with an adhesive epoxy and bonded to the aluminum panels.
Sue	The solvent resistant in chemical gloves.

Section II. EQUIPMENT DESCRIPTION AND DATA

1-10. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES.

a. *Characteristics.*

- Transportable via:
  Air
  Rail
  Helicopter (sling)
- Two-piece construction with honey-comb core.

b. *Capabilities and Features.*

- Mounted on M1097 HMMWV for mobility.
- Provides AC and DC operating power.
- Operates from internal or external power source.
- Provides radio frequency/electromagnetic interference (RFI/EMI) shielding.
- Provides hardware interface for various communication configurations.
- Rapid decompression capabilities.
- Environmentally controlled.

1-11. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS.

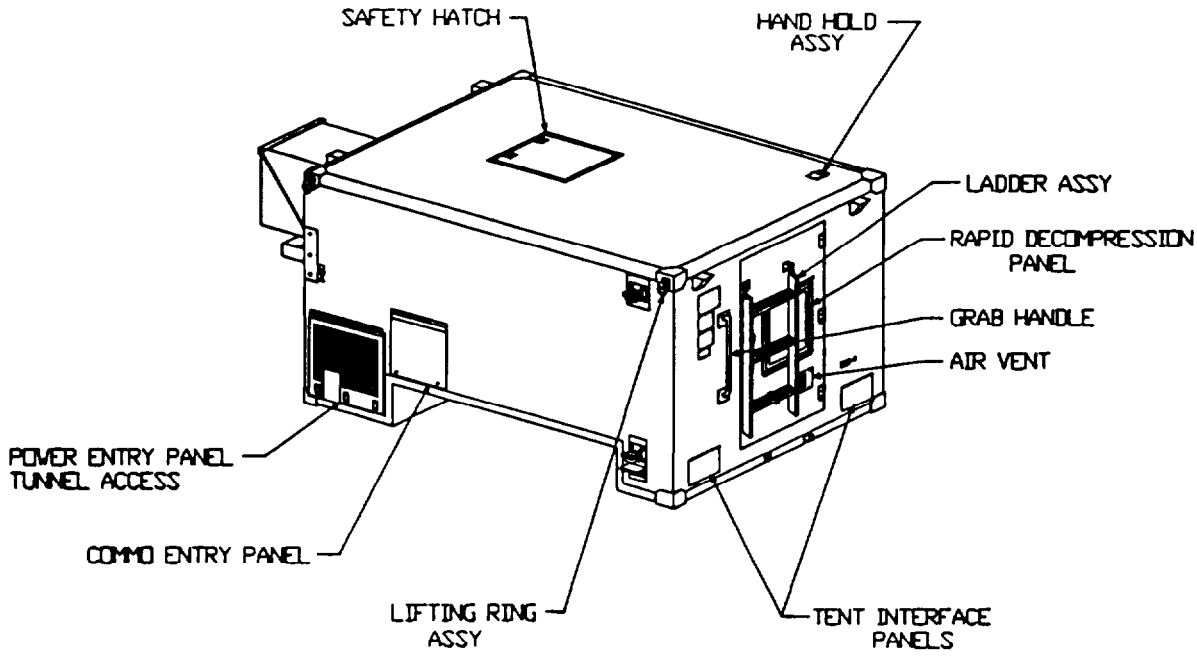


Figure 1-2. SICPS Shelter (Sheet 1 of 3)
(Roadside View)

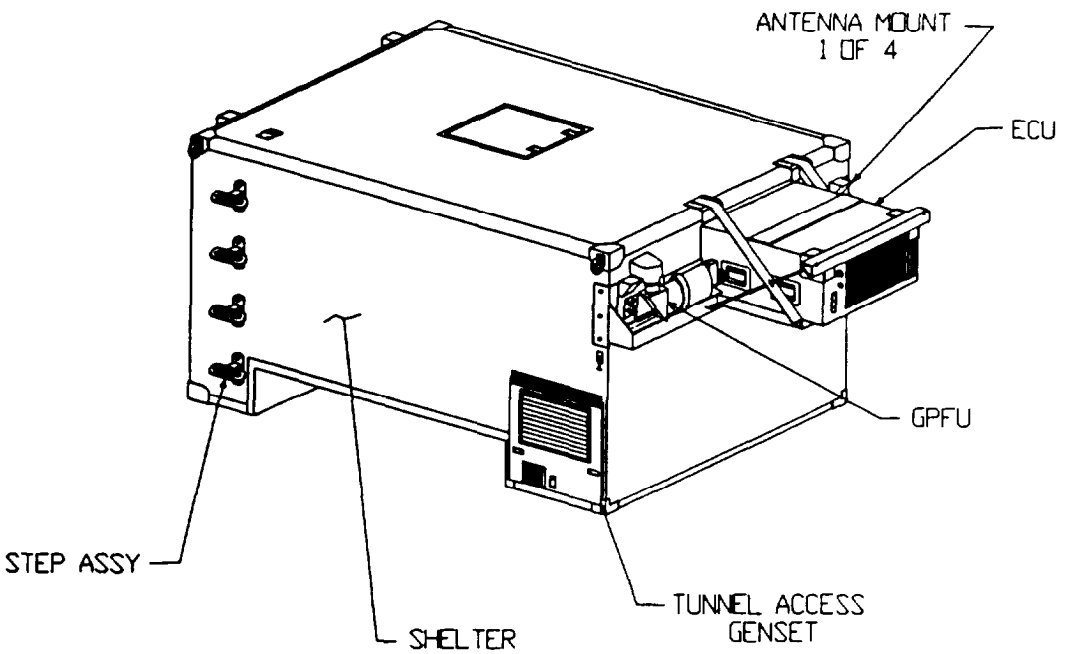


Figure 1-2. SICPS Shelter (Sheet 2 of 3)
(Curbside View)

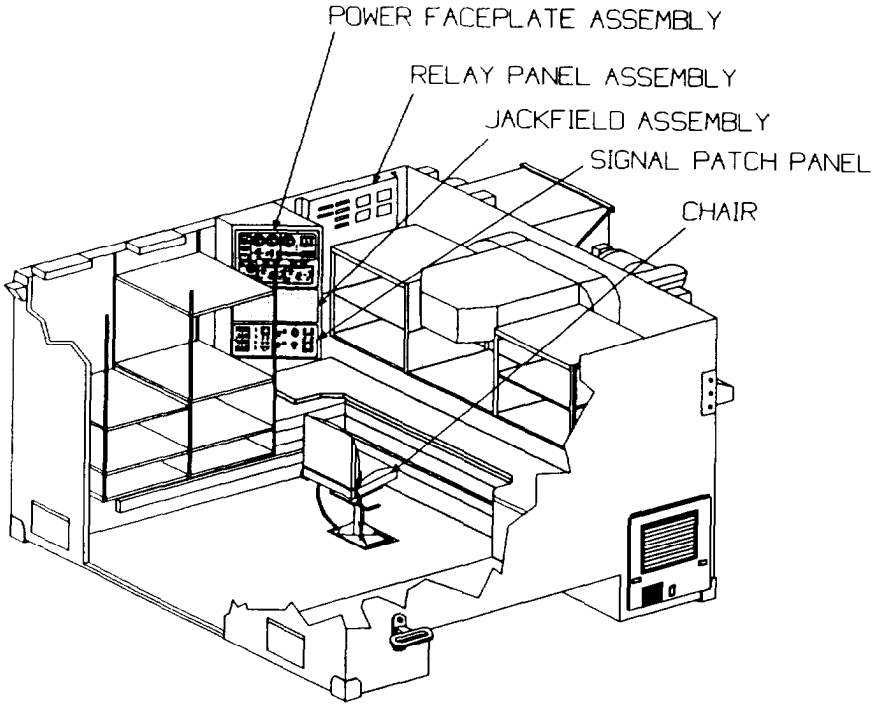


Figure 1-2. SICPS Shelter (Sheet 3 of 3)
(Internal View)

a- Power Distribution. The SICPS shelter utilizes power distribution equipment to provide, control, and monitor the 115 Vac and 28 Vdc operating power. The power distribution equipment consists of the following items:

- Power Entry Box
- Power Monitor Assembly
- Relay Panel
- Tent Interface Panel (TIP) Power Entry Assembly
- DC Power Supplies

(1) Power Entry Box. The Power Entry Box provides connections and control of the 115 Vac, 50/60 Hz power for the shelter. The Power Entry Box Assembly is located in the generator tunnel at the front (roadside) of the shelter. Two connectors, one for input power and the other for output power, are used to connect external power cables to the shelter. Each power link is protected by a push-to-reset circuit breaker. The onboard generator is also connected to the Power Entry Box. A source select switch is provided for selecting the external or onboard power source. A ground lug is provided for grounding the SICPS-shelter.

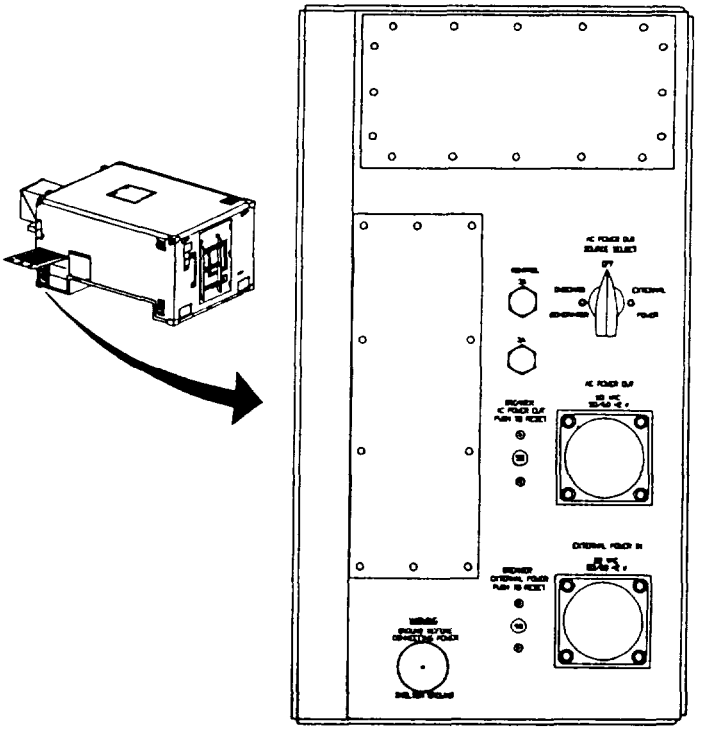


Figure 1-3. Power Entry Box

(2) *Power Monitor Assembly.* The Power Monitor Assembly contains panels for power distribution, signal distribution, environmental control, and monitoring the generator set (GENSET). It is located on the inside roadside wall of the shelter. The assembly consists of the AC Circuits Control Panel, DC Circuits Control Panel, DC Vent, Signal Patch Panel, Jackfield Assembly, ECU Control Panel, and Generator Control Panel.

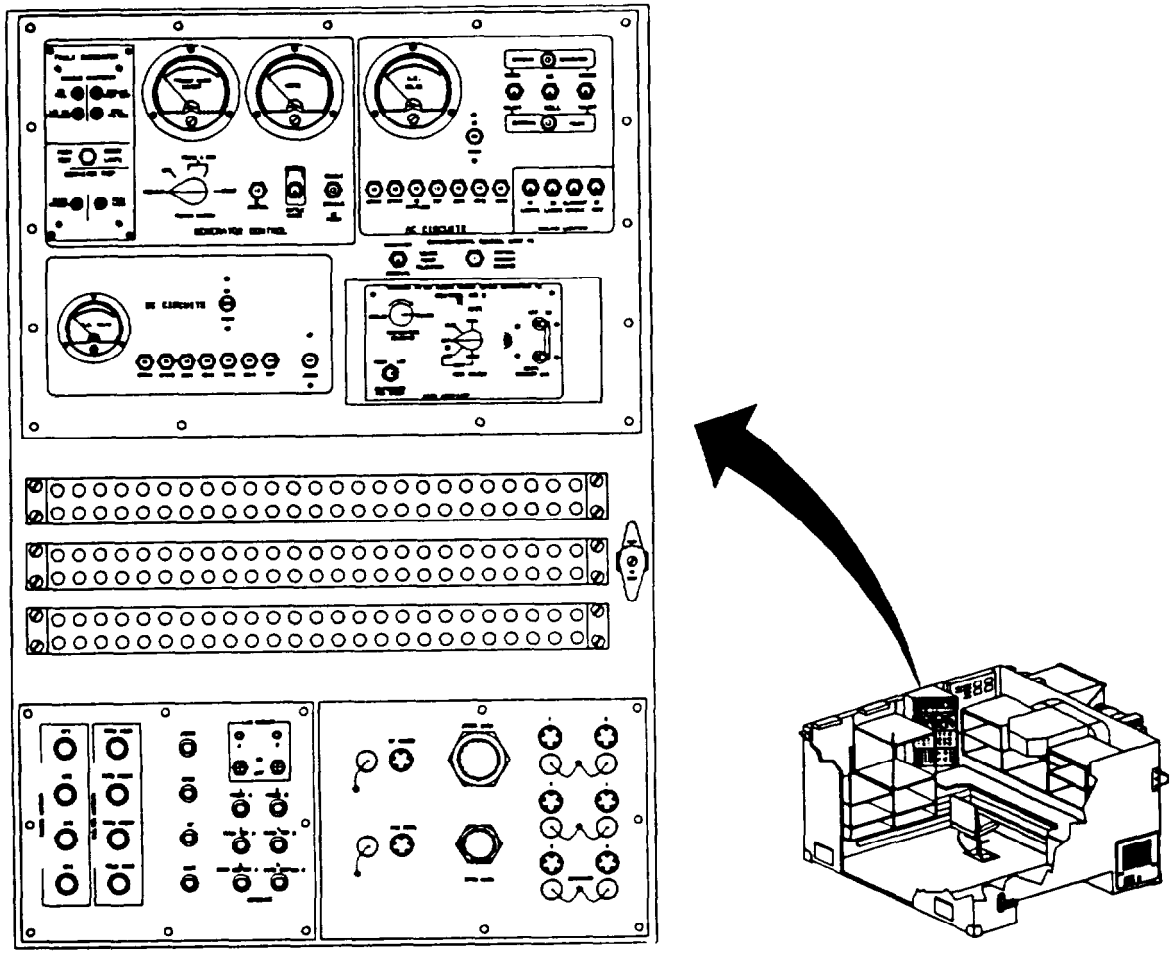


Figure 1-4. Power Monitor Assembly

(3) *Relay Panel Assembly.* The Relay Panel contains the relays for monitoring and controlling the GENSET and the relay for the blackout light system. The Relay Panel also contains two diode isolator assemblies for isolating the DC power supplies from the generator and from each other. The DC power supplies are located just below the Relay Panel. Terminal boards on the Relay Panel are provided for interfacing power and signal line terminations.

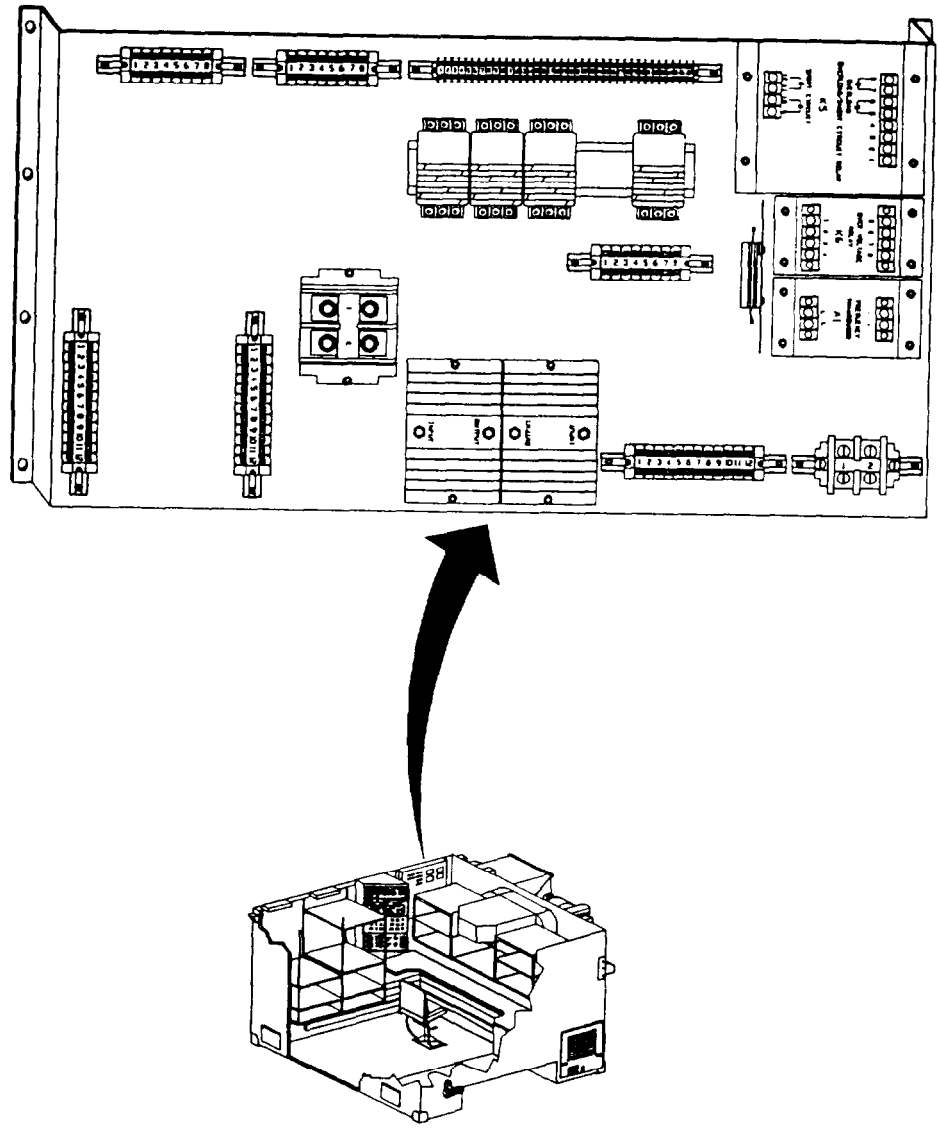


Figure 1-5. Relay Panel Assembly

(4) *Tent Interface Panel (TIP) Power Entry Assembly.* The TIP Power Entry Assembly is used to extend system data, signal, and power to the extension tent. The TIP Power Entry Panel Assembly is located at the lower rear roadside corner of the shelter.

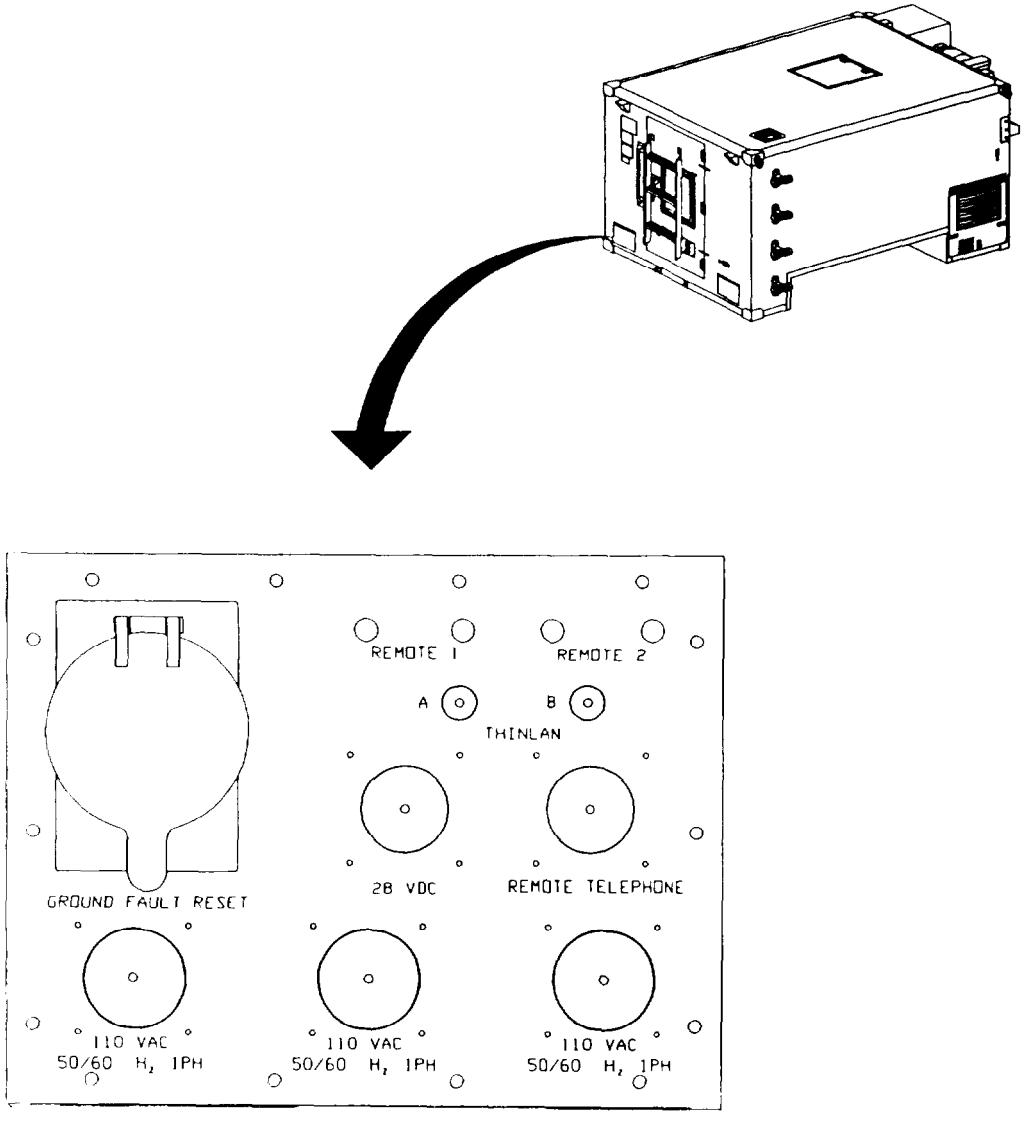


Figure 1-6. Roadside TIP Power Entry Panel Assembly

(5) *DC Power Supplies.* Two DC Power Supplies, located below the Relay Panel, provide 28 Vdc to various components and assemblies within the SICPS shelter.

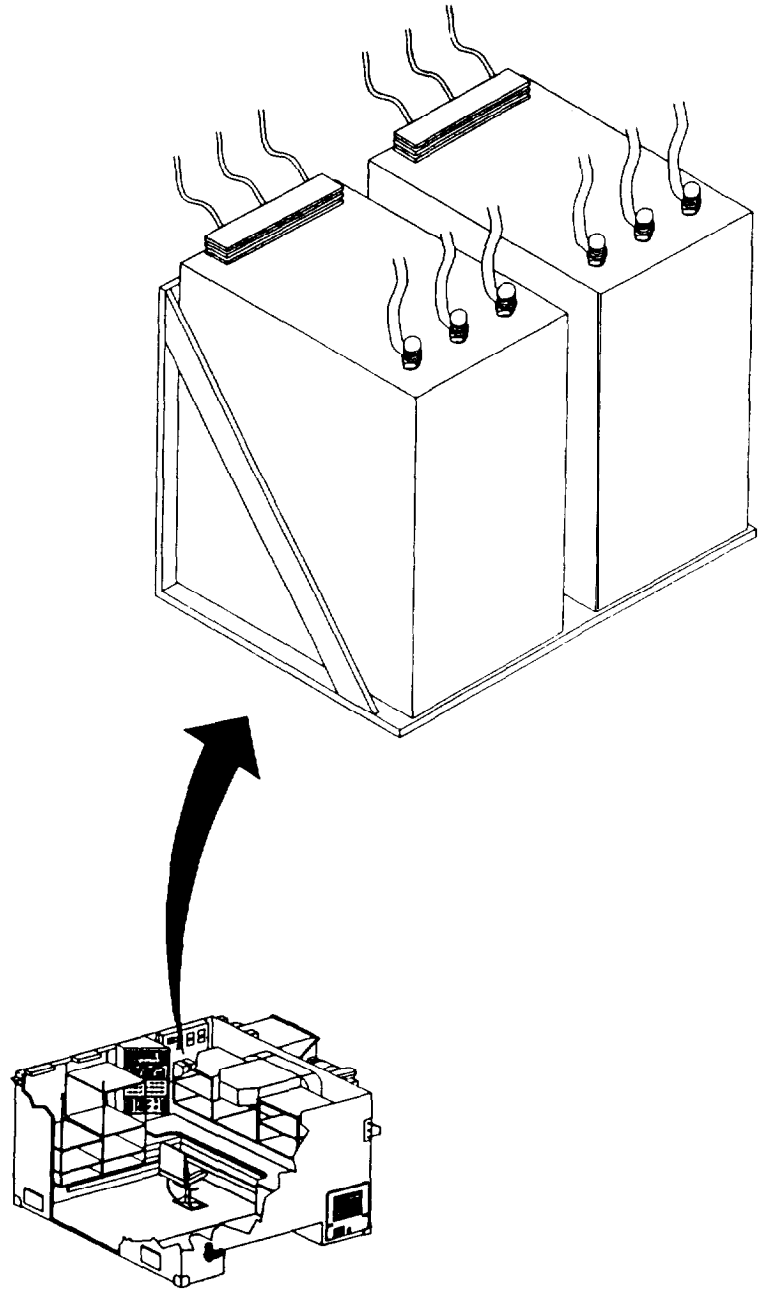


Figure 1-7. DC Power Supplies

b. *Signal Distribution.* The SICPS shelter contains Signal Distribution equipment for routing internal and external communication lines. The Signal Distribution equipment consists of the following:

- Phone Extension Box
- Tent Interface Panel (TIP) Faceplate Assembly
- Signal Patch Panel
- Communications (Commo) Entry Panel Assembly
- Signal Entry Panel (SEP) Electromagnetic Interference (EMI) Panel
- Jackfield Assembly.

(1) *Phone Extension Box.* The Phone Extension Box is an onboard component stored in the operator's compartment. It provides the extension of twelve telephone signal lines via a 20 foot cable. The electronics for the Phone Extension Box is contained in a water-resistant steel enclosure.

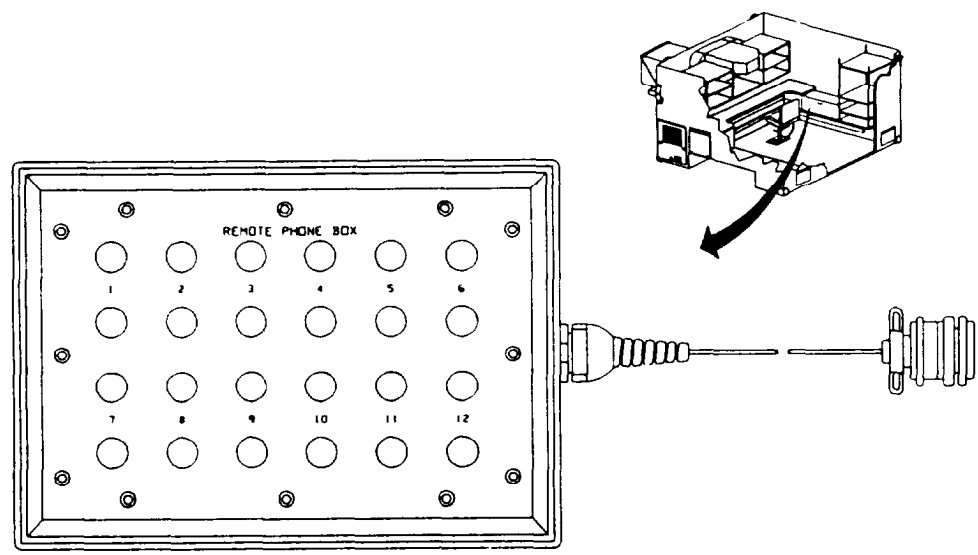


Figure 1-8. Phone Extension Box

(2) *Tent Interface Pane/ (TIP) Faceplate Assembly.* The TIP Faceplate Assembly is located at the lower rear, curbside of the shelter. The TIP Faceplate Assembly contains an RS-232 connector and a GRC-193 interface connector. The signals are protected by radio frequency interference (RFI) filters located internal to the assembly.

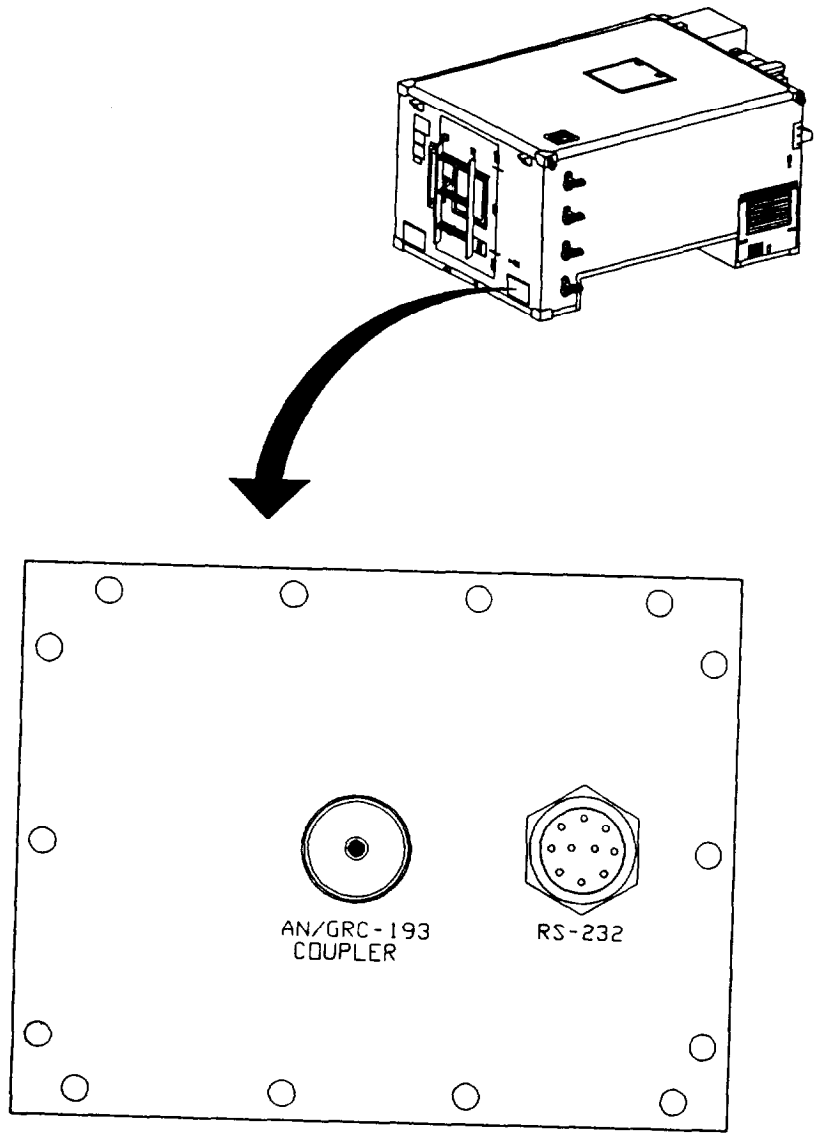


Figure 1-9. TIP Faceplate Assembly

(3) *Signal Patch Panels.* Two Signal Patch Panels are used to establish and direct routing of communications and signal data within the shelter and to also direct it outside of the shelter to designated communications links. Standard patch cords are used to make the appropriate connections on the panel. Labeling of the panel indicates the destinations of the connections that can made. The Signal Patch Panels are located below the Jackfield Assembly.

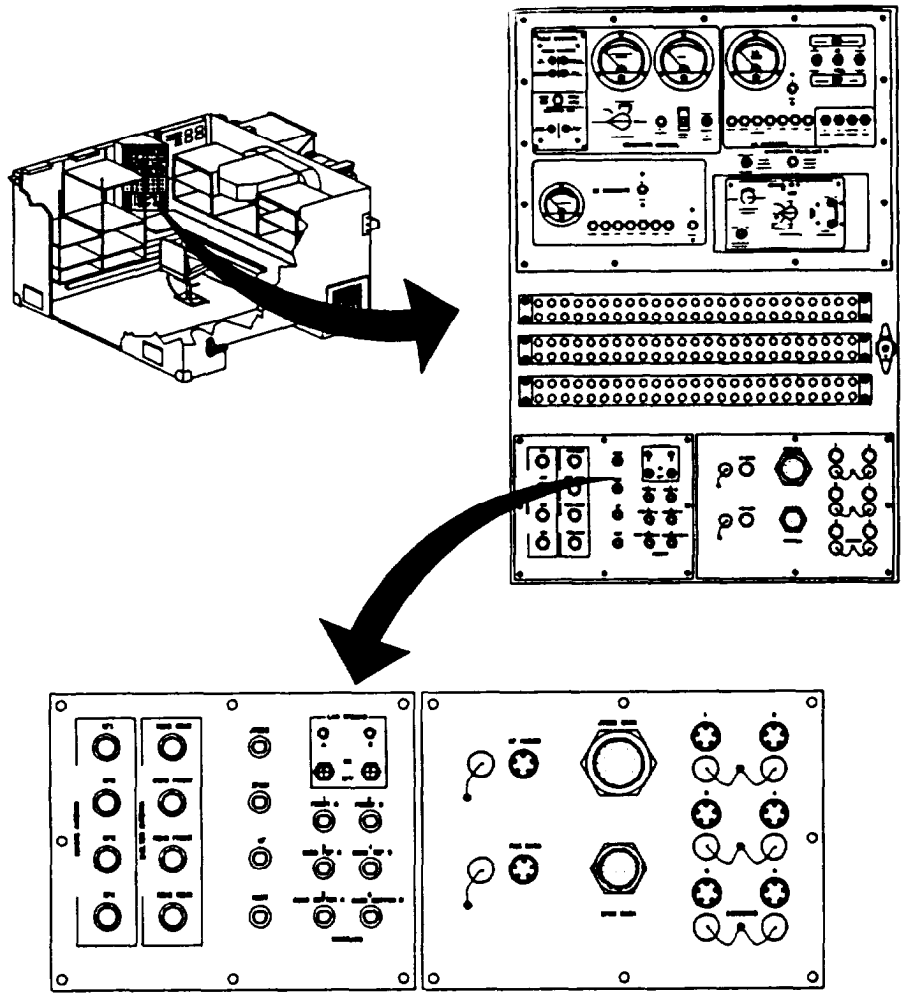


Figure 1-10. Signal Patch Panels

(4) *Communications (COMMO) Entry Panel Assembly.* The COMMO Entry Panel Assembly contains input and output connectors for communication lines. The COMMO Entry Panel Assembly is located just to the right of the roadside generator tunnel access door.

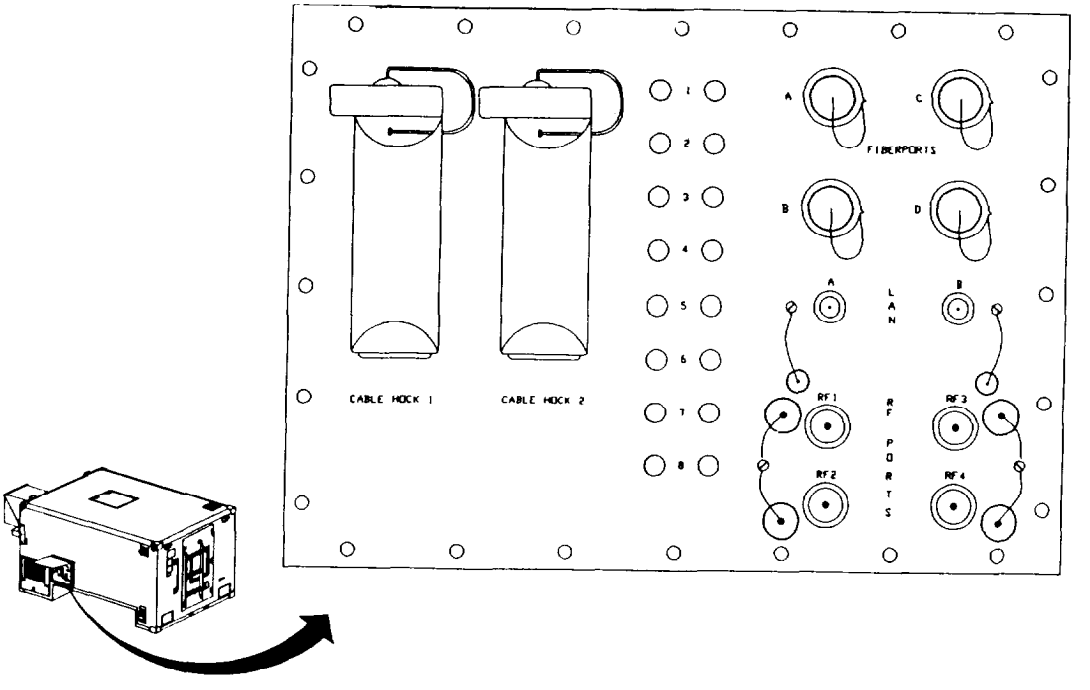


Figure 1-11. Communications Entry Panel Assembly

(5) *Signal Entry Panel (SEP) Electromagnetic Interference (EMI) Plate Assembly.* The SEP EMI Plate Assembly is located behind the Commo Entry Panel Assembly and contains EMI filters for protecting the signals entering/leaving the Commo Entry Panel Assembly.

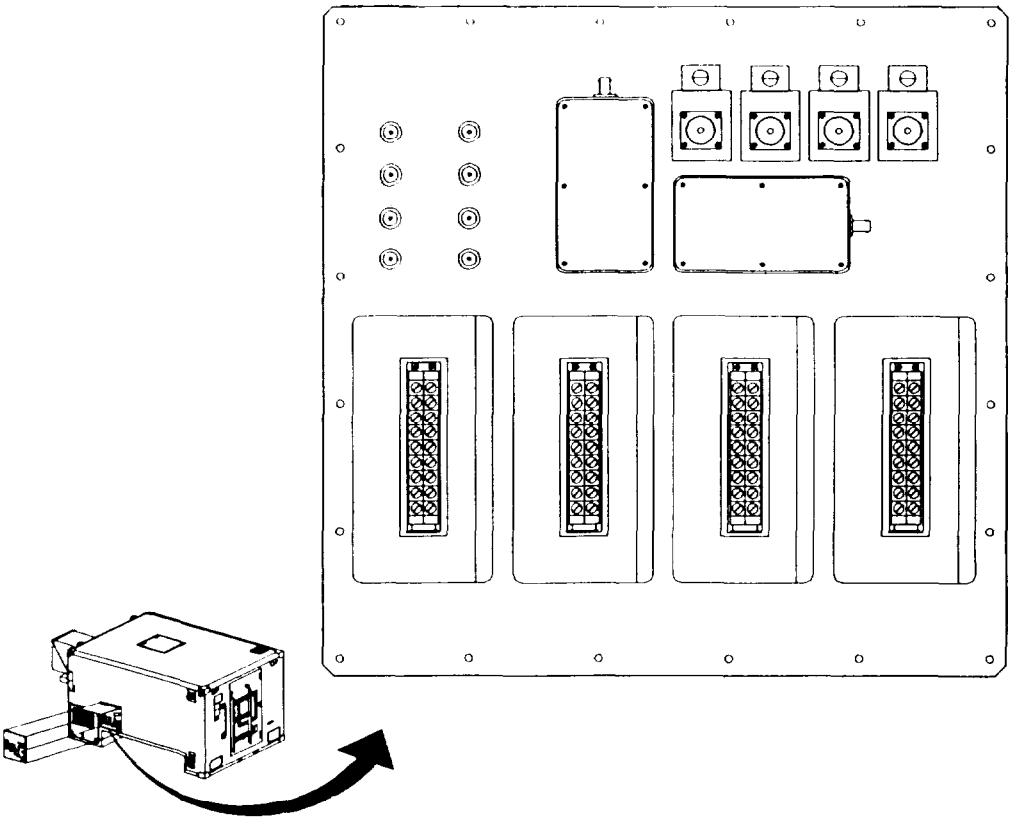


Figure 1-12. SEP EMI Plate Assembly

(6) *Jackfield Assembly.* The Jackfield Assembly contains three, 26-pair, standard switchboard type positions which are used to establish and direct routing of communications and signal data within shelter. Standard patch cords are used to make the appropriate connections on the panel. Labeling on the panel indicates the destinations of the connections. The Jackfield Assembly is located below the Power Faceplate Assembly.

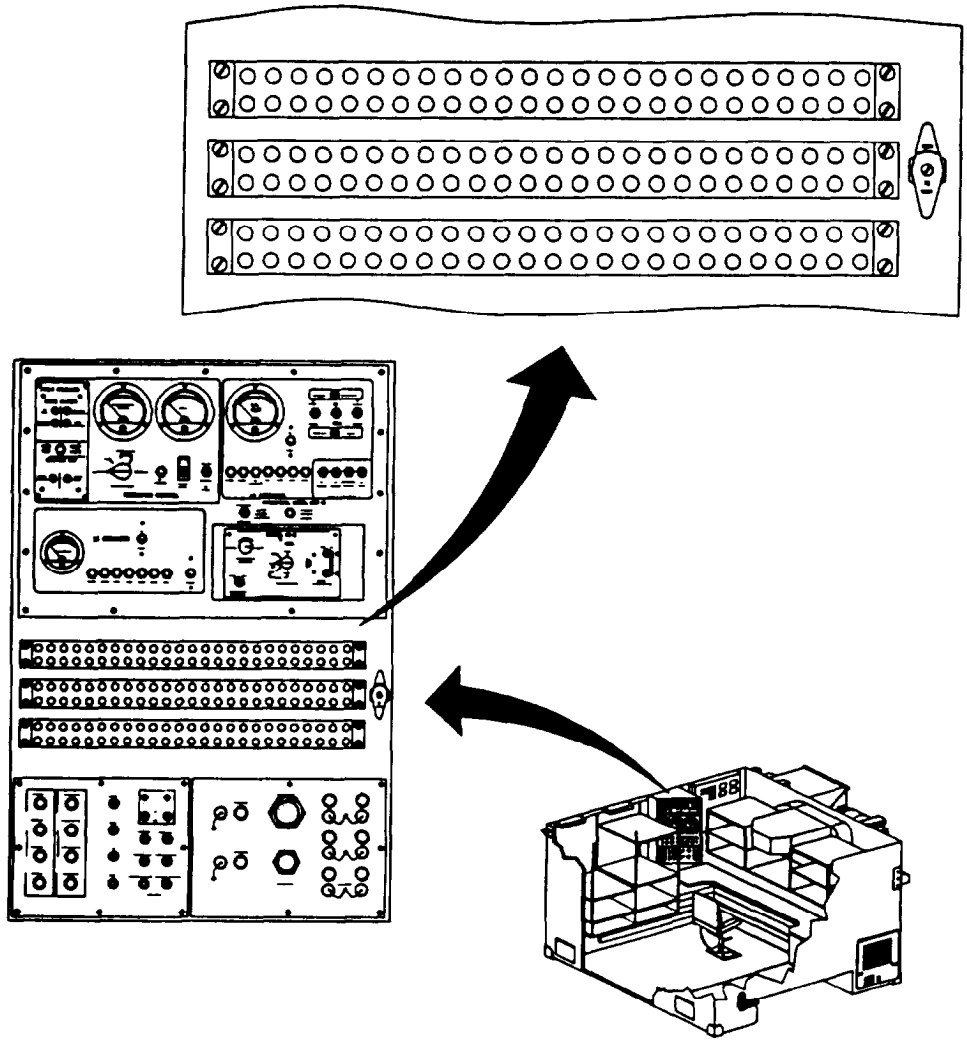


Figure 1-13. Jackfield Assembly

c. *Environmental,* The BlCPS shelter utilizes the following environmental equipment :

- Gas Particle Filter Unit (GPFU)
- Gas Particulate Filter Unit Control Panel
- Crew Blower Door
- Environmental Control Unit (ECU) Control Panel
- Environmental Control Unit
- Lighting Equipment

(1) *Gas Particulate Filter Unit (GPFU).* The Gas Particulate Filter Unit provides filtered air and over-pressurization inside the shelter to preclude chemical/biological (CB) infiltration. The GPFU is located outside the shelter and consists of a fan and an air filter, which filters any agents out of the incoming air to protect personnel operating within the shelter.

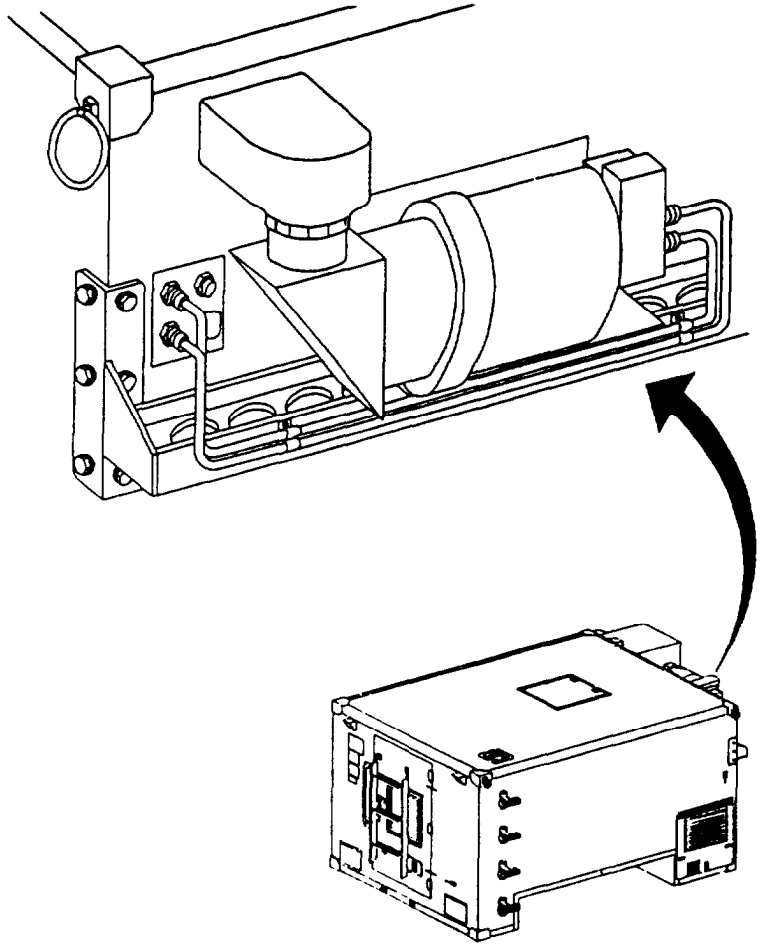


Figure 1-14. GPFU

(2) *Gas Particulate Filter Unit (GPFU) Control Panel.* The GPFU Control Panel is used to turn the Gas Particulate Filter Unit (GPFU) on and off. It is located inside the shelter, on the right top side of the shelter, in front of the right side rack. The panel has a buzzer that sounds if a fault in the GPFU is detected or if over-pressurization within shelter is lost. A warning indicator lights to signify a fault in the system.

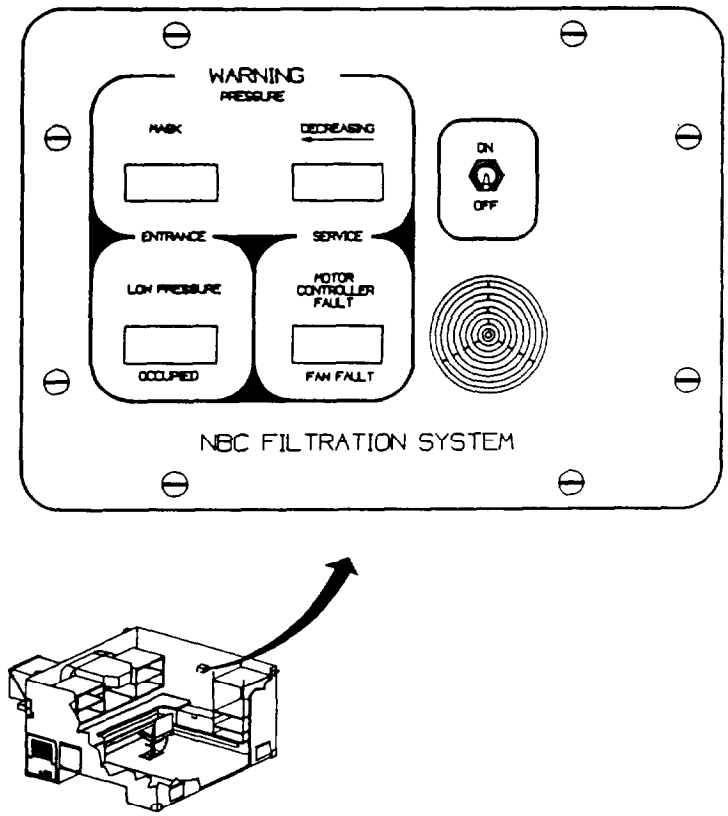


Figure 1-15. GPFU Control Panel

(3) *Crew Blower Door.* Door located on the inside front side of the SICPS shelter behind the Relay Panel. Opening and closing of the door is accomplished via a cable which is connected to the DIRECT CONTROL (DC) VENT lever located to the right of the Jackfield Assembly. When the lever is pulled, the cable forces the crew blower door open, allowing outside air to enter the shelter.

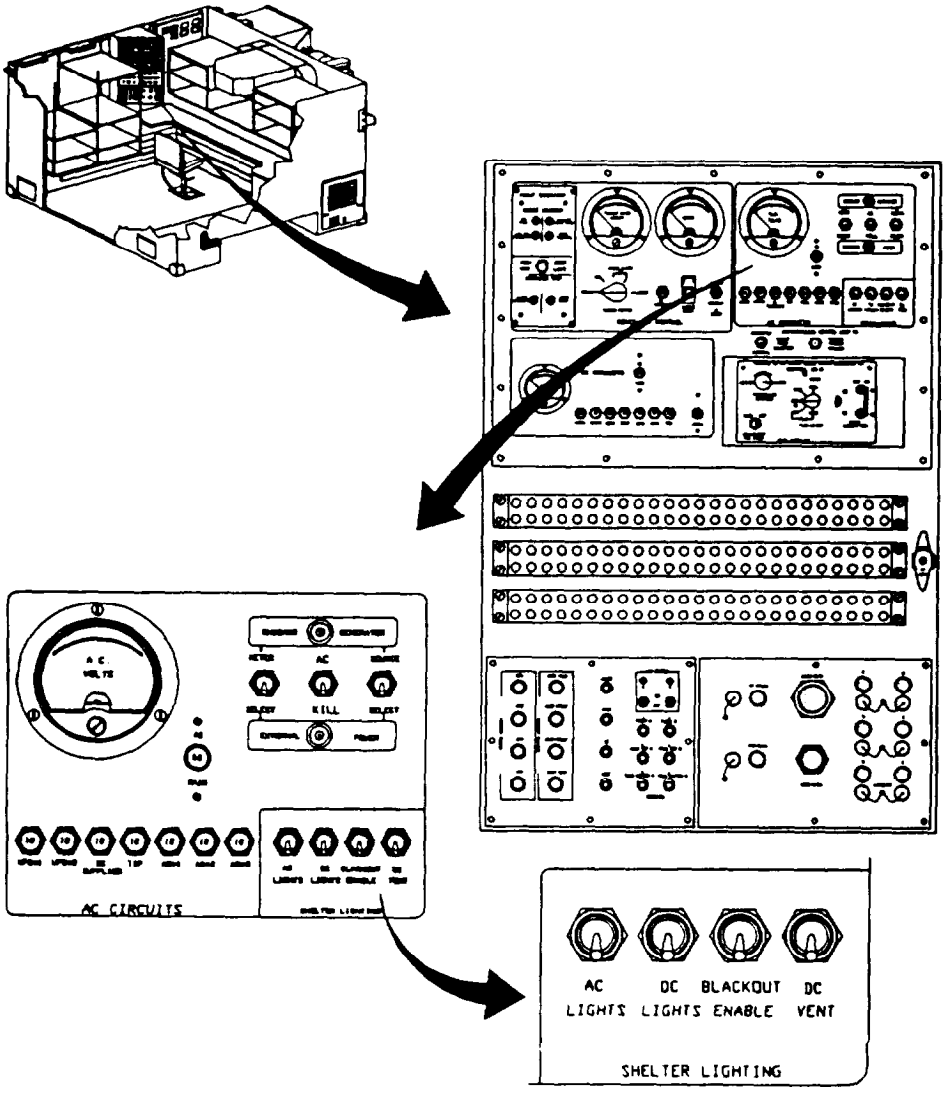


Figure 1-16. Crew Blower Door

(4) *ECU Control Panel.* The ECU Control Panel is used to control environmental conditions (cooling and heating) within the shelter, The ECU Control Panel is located on the right-hand corner of the Power Monitor Panel.

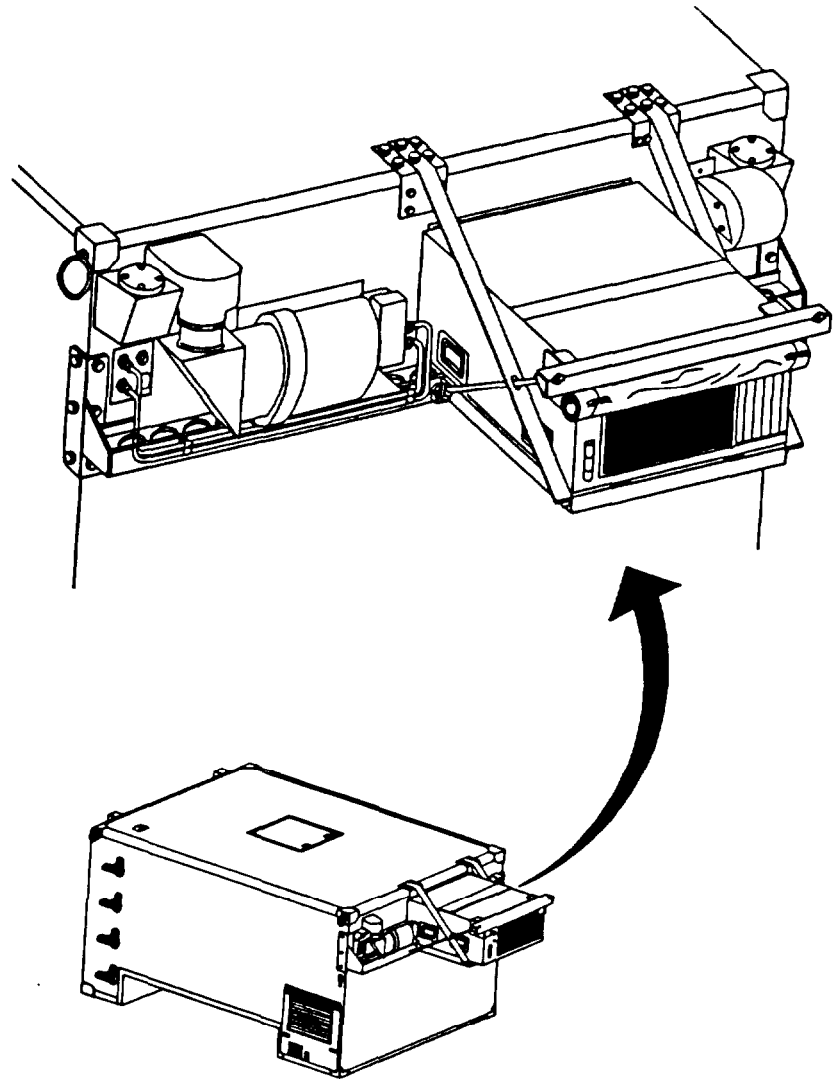


Figure 1-17. ECU Control Panel

(5) Environmental Control Unit (ECU). The Environmental Control Unit is a self-contained electrically powered unit that provides 8,000 BTU/Hr for cooling or 7,000 BTU/Hr for heating. The ECU is controlled by the ECU Control Unit located in the shelter. The ECU cools, warms, or circulates air already in the shelter, it does not bring in outside air.

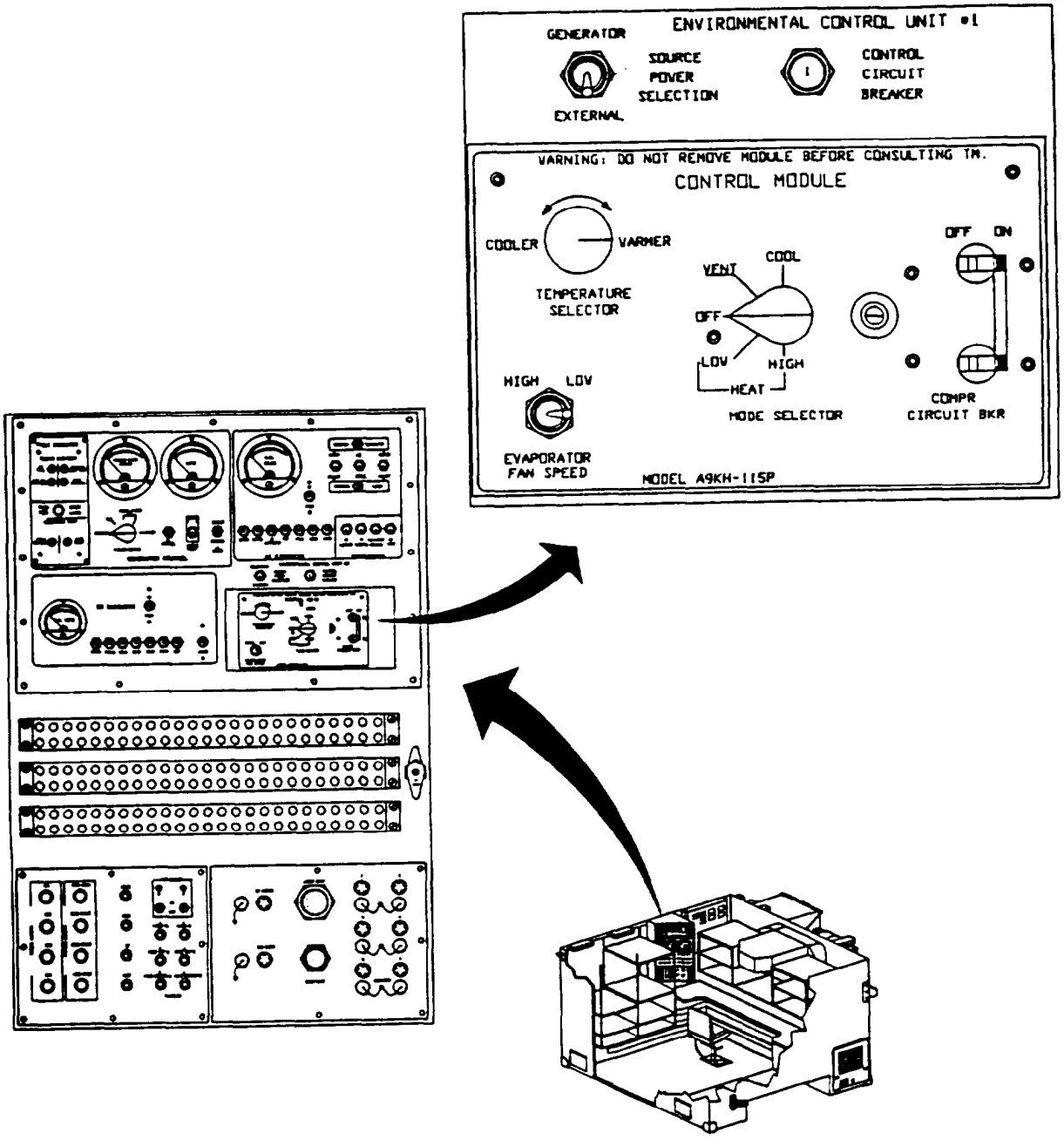


Figure 1-18. ECU

(6) *Lighting Equipment.* The SICPS shelter contains both a DC and AC lighting system, including provisions for blackout lighting. AC and DC lighting is controlled by the SHELTER LIGHTING controls located on the AC CIRCUITS Panel which is located at the top right corner of the Power Faceplate Assembly.

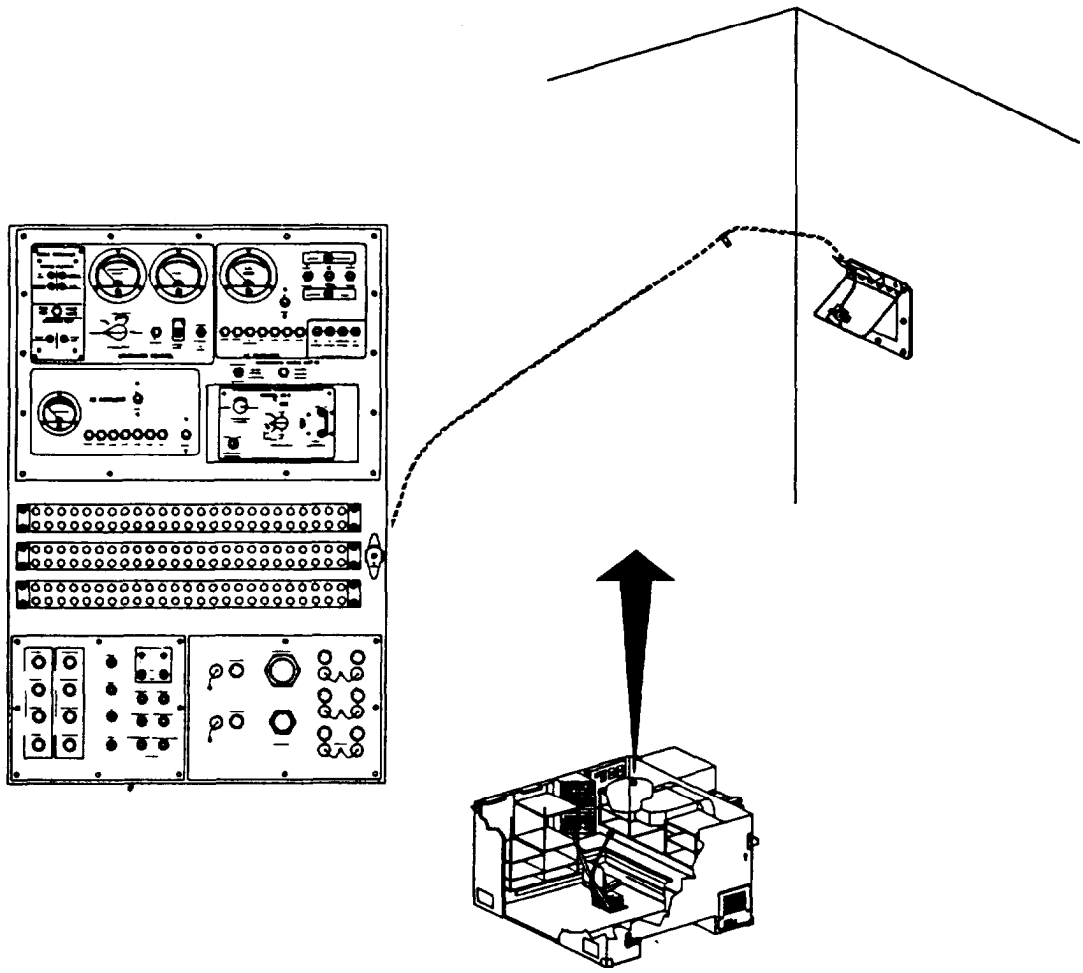


Figure 1-19. AC CIRCUITS Panel

d. *GENSET.* The generator set (GENSET) is a tactical quiet AC power system located in the tunnel of the SICPS shelter. The GENSET consists of a diesel engine, brushless generator , excitation system, speed governing system, fuel system, exhaust extension, 24 Vdc starting system, control system, and fault indication system. Operation, control, and fault monitoring are accomplished via the Power Monitor Panel. When set for onboard power, the GENSET supplies all of the AC power required to operate the shelter. Under operating conditions, an exhaust pipe extension is connected to the GENSET's exhaust outlet and protrudes through a port in the tunnel door.

(1) *Diesel Engine/Generator*

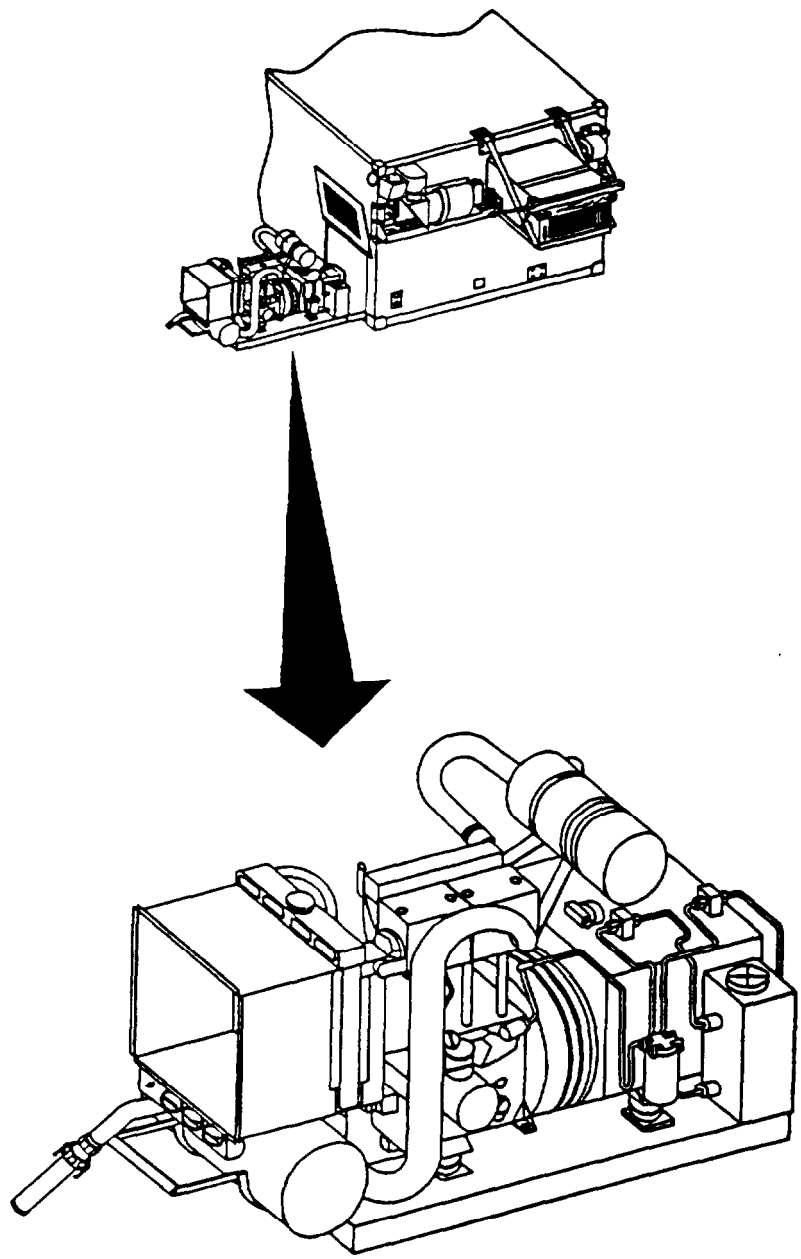


Figure 1-20. Diesel Engine/Generator

(2) *Generator Control Pane/.* The Generator Control Panel controls and monitors operation of the onboard GENSET. The panel is located at the top left corner of the Power Faceplate Assembly. A Fault Indicator Panel on the Generator Control Panel displays problems associated with the GENSET.

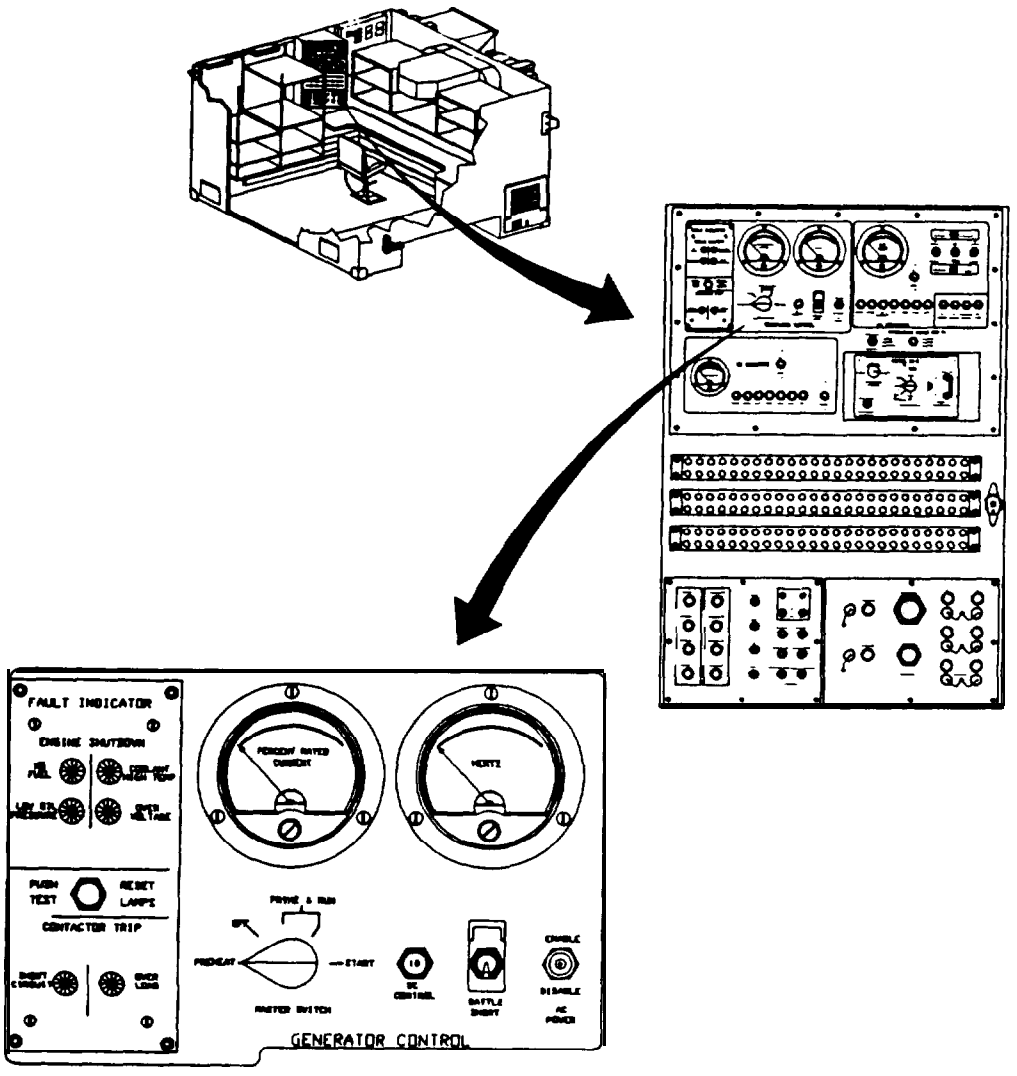


Figure 1-21. Generator Control Panel

1-12. EQUIPMENT DATA.

SICPS shelter

Height:	63 in.
Width:	84 in.
Length:	102 in.

Section III. PRINCIPLES OF OPERATION.

1-13. POWER DISTRIBUTION. The following paragraphs provide a block diagram description of the SICPS shelter's power distribution system. Reference figure 1-22 when reading the following paragraphs.

Operating power for the SICPS shelter is derived from an external power input source, via a cable, or from the onboard GENSET. The GENSET is connected to the HMMWV's batteries which are used to start the engine. The GENSET start and control signals are initiated at the Power Monitor Panel and are sent to the GENSET through the Relay Panel and the Power Entry Box. An earth ground lug is located on the GENSET to ground the shelter to a ground stake. 115 Vac and 28 Vdc entering the shelter is applied to the Power Entry Box .

The Power Entry Box contains the switch for selecting external or onboard power and the circuit breakers and fuses for protecting the input and output power lines from an overload condition. Internal to the Power Entry Box are the relays for applying power to the SICPS shelter, 115 Vac from the Power Entry Box is applied to a Circuit Breaker Assembly, which is located on the roadside inside wall of the shelter and to the ECU. The ECU Control Module controls the operation of the ECU. Outlets for 115 Vac and 28 Vdc are available on the GPFU/Fan Assembly, which is located on the roadside, outside wall of the shelter. When connected, 28 Vdc is applied to the fan and 115 Vac is applied to the GPFU.

115 Vac from the Power Entry Box is applied to two DC Power Supplies. The Power supplies, whose outputs are in parallel, rectify the AC inputs into a single 28 Vdc output. It is this 28 Vdc output from the power supplies which is used to operate the DC components in the shelter. The Power Entry Box also interfaces to the Relay Panel.

The Relay Panel contains relays and terminal blocks. All power and control lines pass through the Relay Panel. The relays control the operation of the GENSET. Should a problem occur with the GENSET, a signal would be sent from the GENSET, through the Power Entry Box, to the appropriate relay(s) on the Relay Panel. Activating the relays, would cause the GENSET to shut down and a signal to be sent to the Fault Indicator Panel on the Power Monitor.

NOTE

Certain warning signals (e.g., fuel low, oil low) are also sent to the Relay Panel from the GENSET; however, these signals pass through the Relay Panel to the Fault Indicator Panel and do not activate any relays, hence no shutdown occurs.

The 115 Vac and 28 Vdc entering the Relay Panel is also applied to the roadside and curbside junction boxes. From there, the voltages are applied to designated outlets and lights. The AC and DC voltages are also applied to Uninterruptable Power Supplies (UPS#1 and UPS#2) which provide 115 Vac and 28 Vdc outlets for the connecting of selected customer installed equipment.

The Power Monitor, located internal to the shelter, contains all of the operator controls, switches, circuit breakers and meters for operating the SICPS shelter.

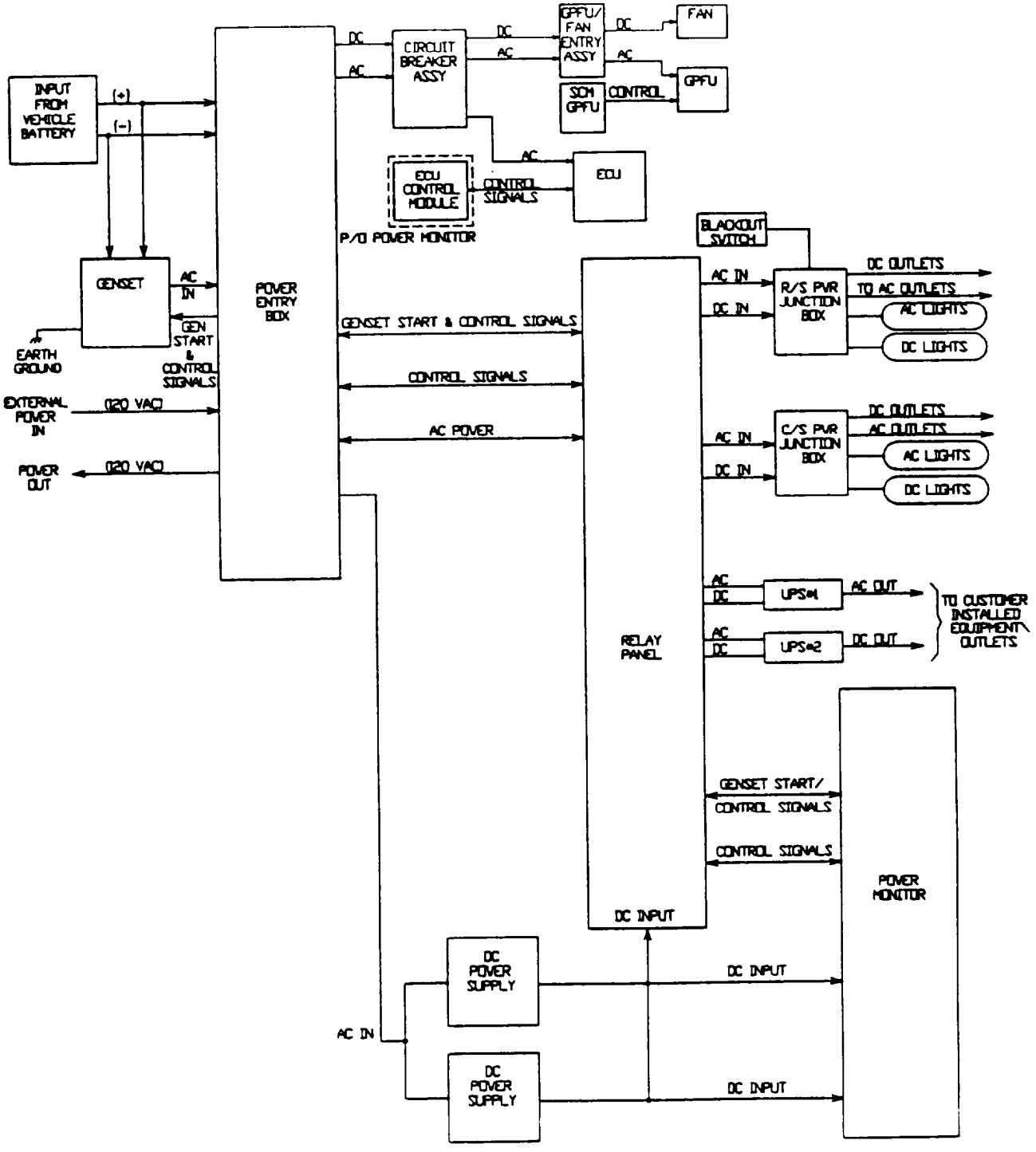


Figure 1-22. Block Diagram

1-14. SIGNAL DISTRIBUTION. Signal cables associated with the SICPS shelter are connected from a specific input point to the patch panels located on the control panel or are connected directly to a piece of equipment. Signal cables are broken down as follows (see figure 1-23):

NOTE

Unless otherwise specified, all signal cables are shielded from RFI and EMI.

a. *RF Signals.* RF signals encompass six Single Channel Grounded Air Radio System (SINCGARS), four shelter antennas, four remote antennas, high frequency (HF) antenna, Joint Tactical Information Data System (JTIDS), and the Enhanced Position Location and Reporting System (PLARS) User Unit (EPUU).

(1) *SINCGARS.* SINCGARS signals enter at the SINCGARS antennas normally mounted just below the shelter mounted antennas and are applied to the signal patch panel.

(2) *Shelter antennas.* The shelter antennas are located on each corner. The radio frequency (RF) signal from each antenna passes through an electromagnetic pulse filter and is applied to the signal patch panel.

(3) *Remote antennas.* The remote antennas are fed through the electromagnetic pulse filters on the filter panel to the signal patch panel.

(4) *HF.* The HF signal is not filtered and is directly connected from the radio to the signal patch panel.

(5) *JTIDS.* The JTIDS signal is not filtered and is directly connected to the signal patch panel.

(6) *EPUU.* The EPUU signal is not filtered and is directly connected to the signal patch panel.

b. *Audio Signals.* The audio signals encompass six SINCGARS, one HF, and sixteen patch lines.

(1) *SINCGARS.* SINCGARS audio signals enter at the SINCGARS antennas normally mounted just below the shelter mounted antennas and are applied to the signal patch panel.

(2) *HF.* The HF audio signal is not filtered and is directly connected from the radio to the signal patch panel.

(3) *Patch lines.* The patch lines originate at the commo entry panel and are filtered through the signal entry panel EMI to the Jackfield Assembly.

c. *Data Signals.* The data signals encompass six SINCGARS, one JTIDS, one Facsimile (FAX), and one EPUU.

(1) *SINCGARS.* SINCGARS data signals enter at the SINCGARS antennas normally mounted just below the shelter mounted antennas and are applied to the signal patch panel.

(2) *JTIDS.* The JTIDS data signal is not filtered and is directly connected to the signal patch panel.

(3) *FAX.* The FAX data signal is not filtered and is directly connected to the signal patch panel.

(4) *EPUU.* The EPUU data signal is not filtered and is directly connected to the signal patch panel.

d. *Telecommunications Signals.* The telecommunications signals encompass the remote phone lines, cable hocks A and B, and the mobile cellular telephone (MSRT).

(1) *Remote phone lines.* The remote phone lines originate at the remote phone box, enter the tent interface panel, and are filtered through the tent interface filter before being applied to the Jackfield Assembly.

(2) Cable hocks A and B. The cable hocks are connected at the commo entry panel filtered through the signal entry panel and applied to the jackfield assembly.

(3) *MSRT.* The MSRT phone lines are not filtered and are directly connected from the cellular telephone to the signal patch panel.

e. *Fiber Optic Signals.* The fiber optic signals enter through the commo entry panel and patched through the signal entry panel EMI without filtering to the Fiber Optic Medium Attachment Unit (FOMAU).

f. *Local Area Network (LAN).* The Local Area Network signals enter through the Tent Interface Panel and applied to FL3 and FL4 in the Tent Interface Filter Assembly. The LAN lines are throughput over the Front and roadside raceways to the Signal Entry panel where they are filtered through FL1 A and FL1 B and applied to the Commo Entry Panel.

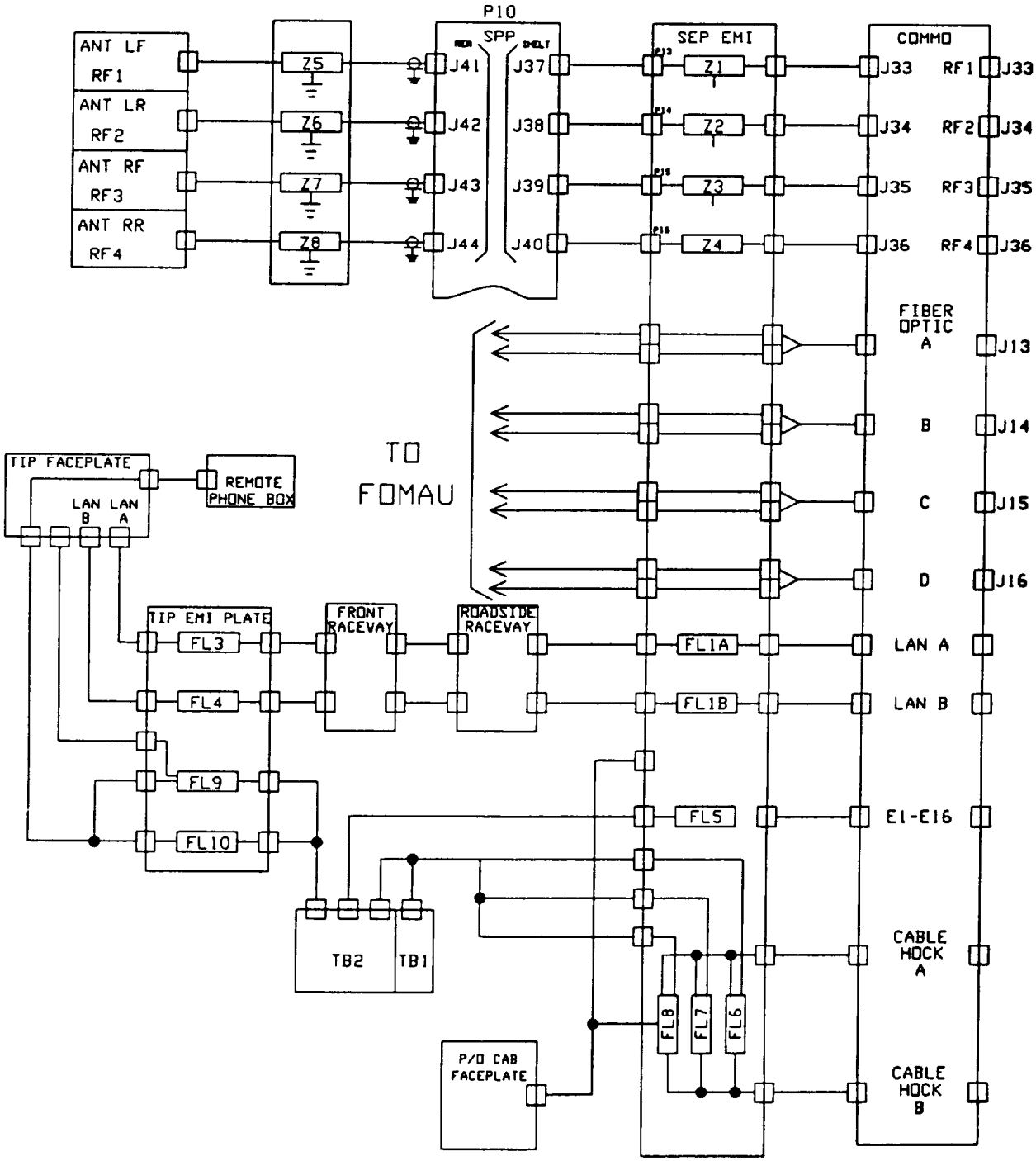


Figure 1-23. Signal Distribution (Sheet 1 of 2)

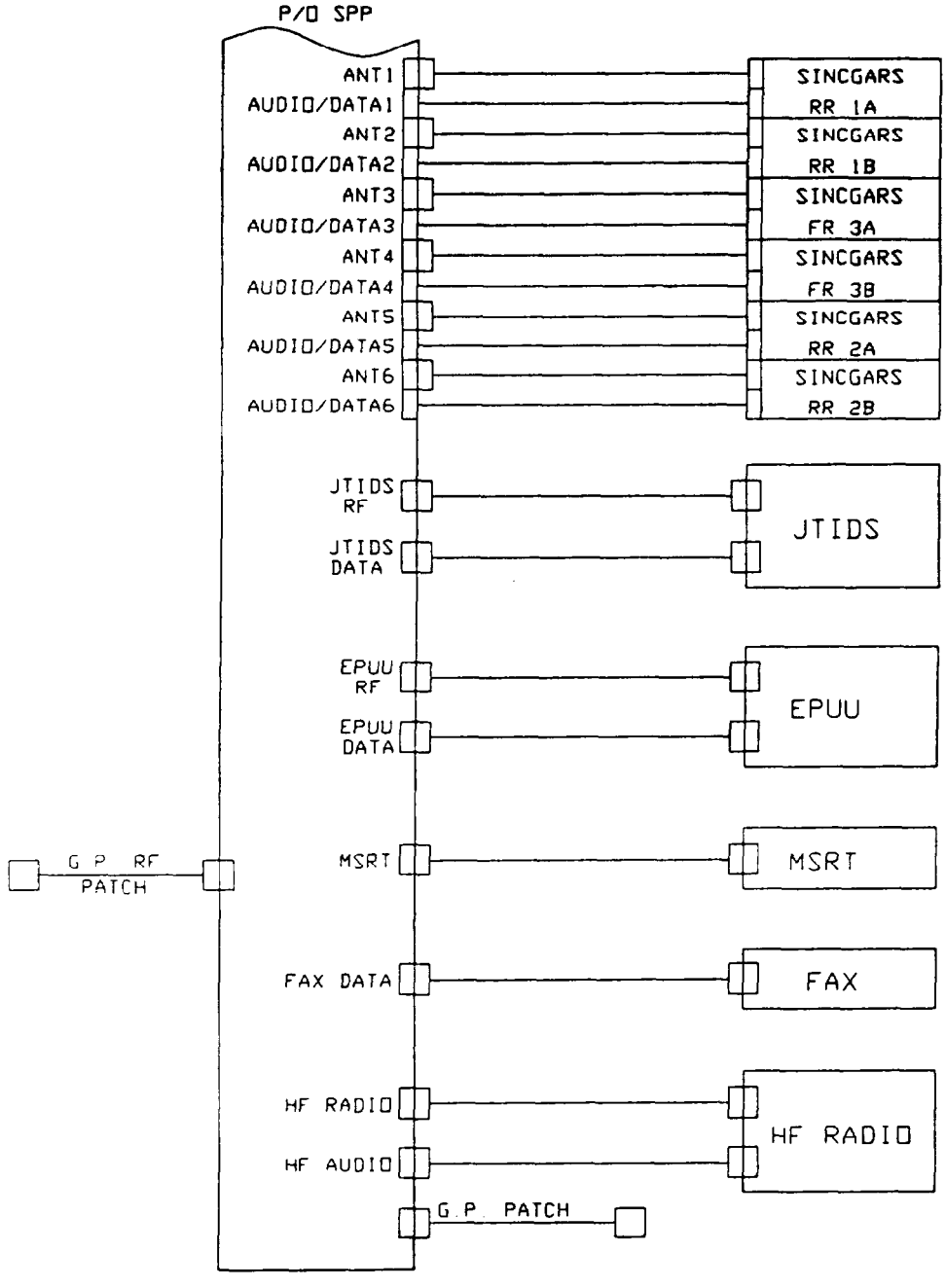


Figure 1-23. Signal Distribution (Sheet 2 of 2)

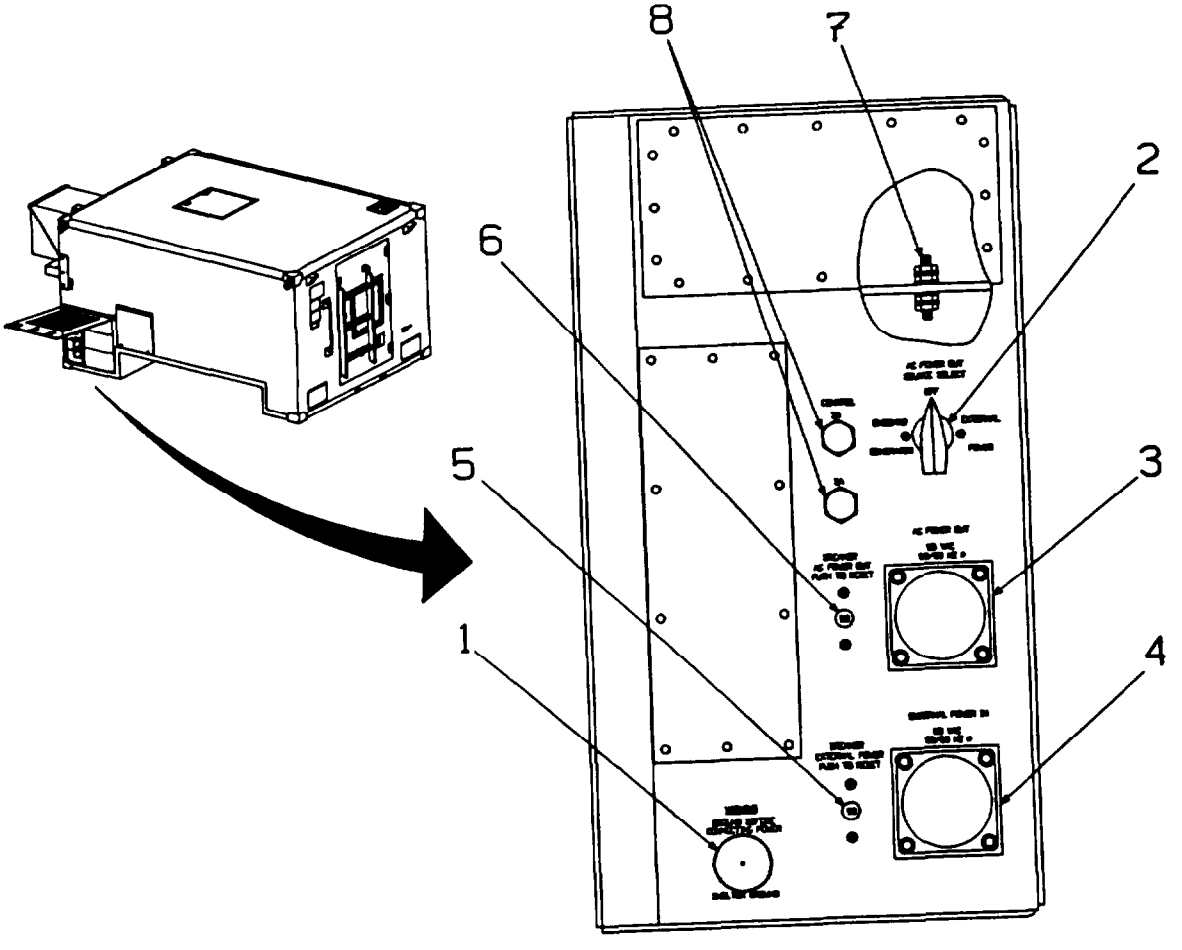
CHAPTER 2
OPERATING INSTRUCTIONS

CHAPTER 2
OPERATING INSTRUCTIONS

Section 1.
DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS

2-1. INTRODUCTION. This section identifies and describes the controls and indicators you, as the operator, will be using in support of the SICPS shelter.

2-2. POWER ENTRY BOX ASSEMBLY.



1 **SHELTER GROUND** Terminal lug
Terminal ground lug connection for shelter which connects to ground rod.

2 **ONBOARD GENERATOR AC POWER OUT SOURCE SELECT** Switch
3-position switch for selecting: onboard generator, external power source or off.

3 **AC POWER OUT** Connector
110 VAC 50/60 HZ 10 output connector for ac power.

4 **EXTERNAL POWER IN** Connector
110 VAC 50/60 HZ input power connector for an external ac power source.

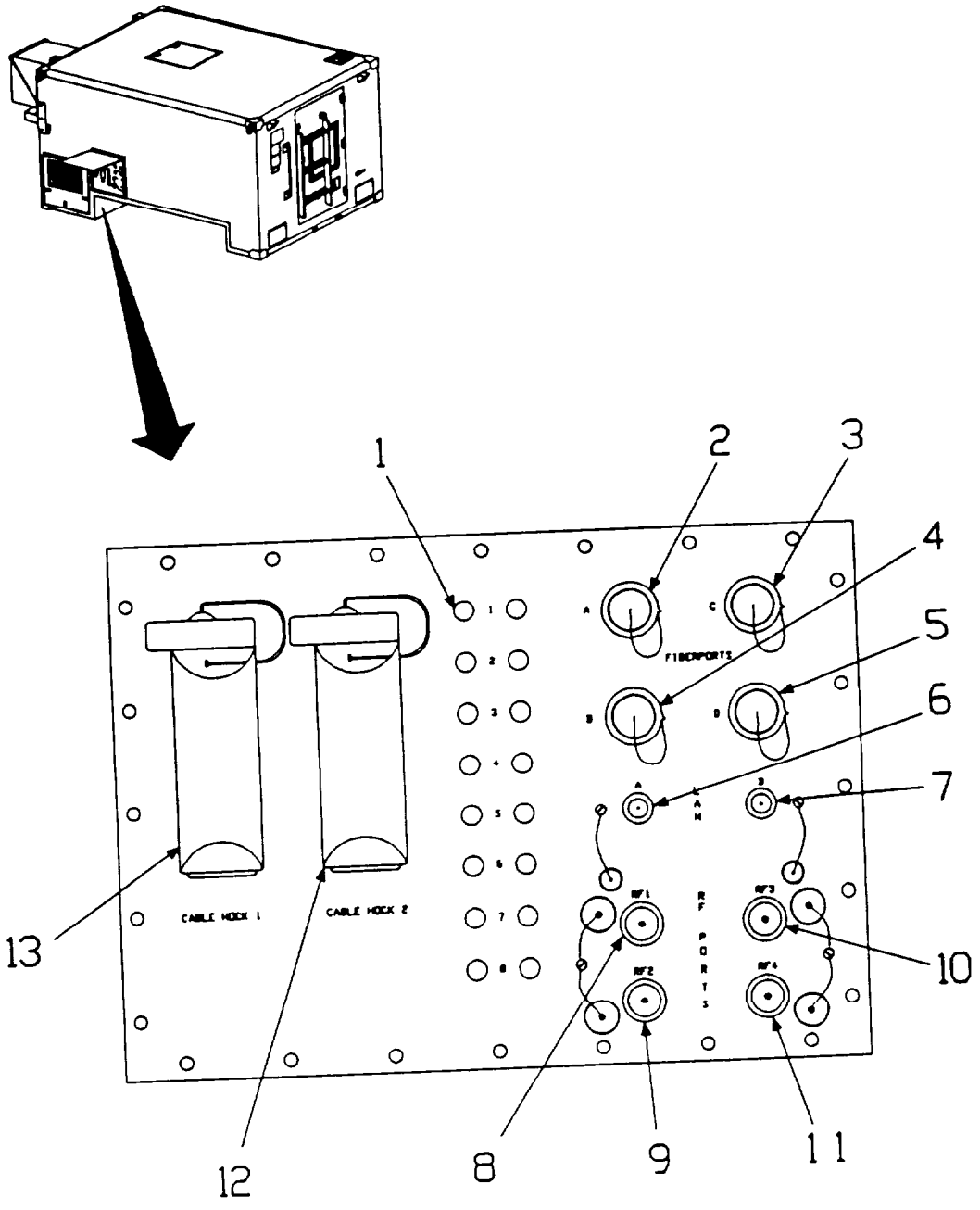
5 **BREAKER EXTERNAL POWER PUSH TO RESET**
90A circuit breaker for the external ac power input circuit.

6 **BREAKER AC POWER OUT PUSH TO RESET**
50A circuit breaker for the ac power output circuit.

7 **TERMINAL LUG.**
Terminal lug used for grounding the shelter.

8 **3A** Fuses
Provides overload protection for the onboard and external power lines.

2-3. COMMO ENTRY PANEL.



1 DATA PAIRS Binding posts (red and black)
E-1 thru E-16 data pair line input. Connects to FL5 at the SEP EMI faceplate through W23.

2 FIBER PORT A (J3) Connector
Initial entry point for fiber optic communications. Connects to J13 and J14 at the SEP EMI faceplate through W76.

3 FIBER PORT C (J4) Connector
Initial entry point for fiber optic communications. Connects to J15 and J16 at the SEP EMI faceplate through W77.

4 FIBER PORT B (J5) Connector
Initial entry point for fiber optic communications. Connects to J17 and J18 at the SEP EMI faceplate through W78.

5 FIBER PORT D (J6) Connector
Initial entry point for fiber optic communications. Connects to J19 and J20 at the SEP EMI faceplate through W79.

6 LAN A (J7) Connector
Initial entry point for local area network operations. Connects to FL1 (A) at the SEP EMI faceplate through W1.

7 LAN B (J8) Connector
Initial entry point for local area network operations. Connects to FL2 (B) at the SEP EMI faceplate through W2.

8 RF PORT RF1 J9 Connector
Initial entry point for radio frequency communications. Connects to RF1 at the SEP EMI faceplate through W15.

9 RF PORT RF2 (J10) Connector
Initial entry point for radio frequency communications. Connects to RF2 at the SEP EMI faceplate through W16.

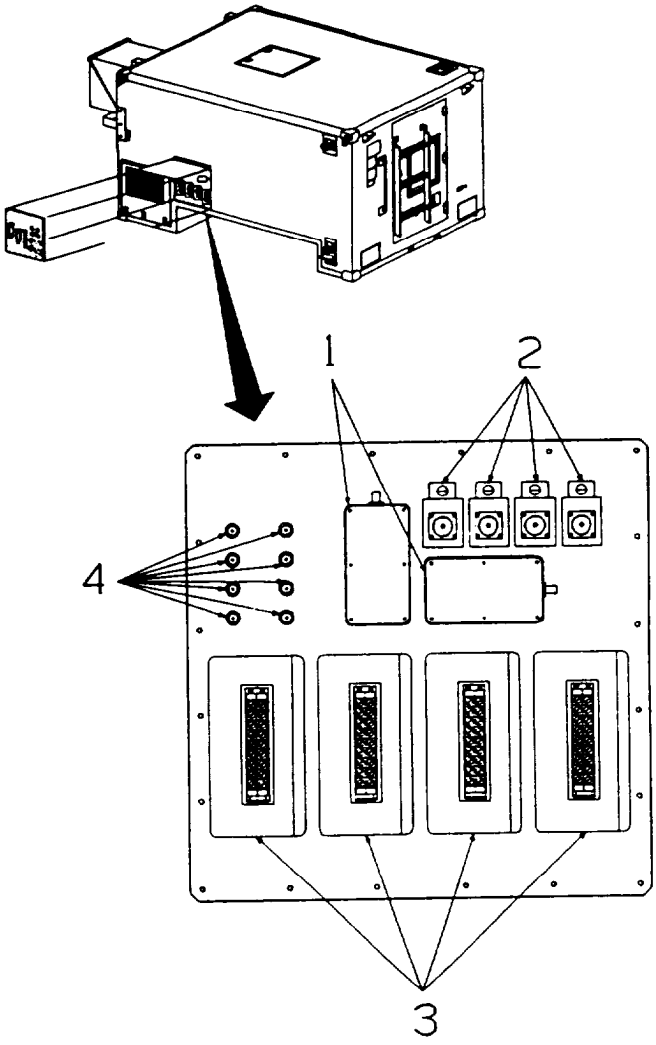
10 RF PORT RF3 (J11) Connector
Initial entry point for radio frequency communications. Connects to RF3 at the SEP EMI faceplate through W17.

11 RF PORT RF4 (J12) Connector
Initial entry point for radio frequency communications. Connects to RF4 at the SEP EMI faceplate through W18.

12 CABLE HOCK (J2) Connector
Cable Hock 2 data is routed to the SEP EMI Plate.

13 CABLE HOCK (J1). Connector
Cable Hock 1 data is routed to the SEP EMI Plate.

2-4. SEP EMI FACEPLATE ASSEMBLY.



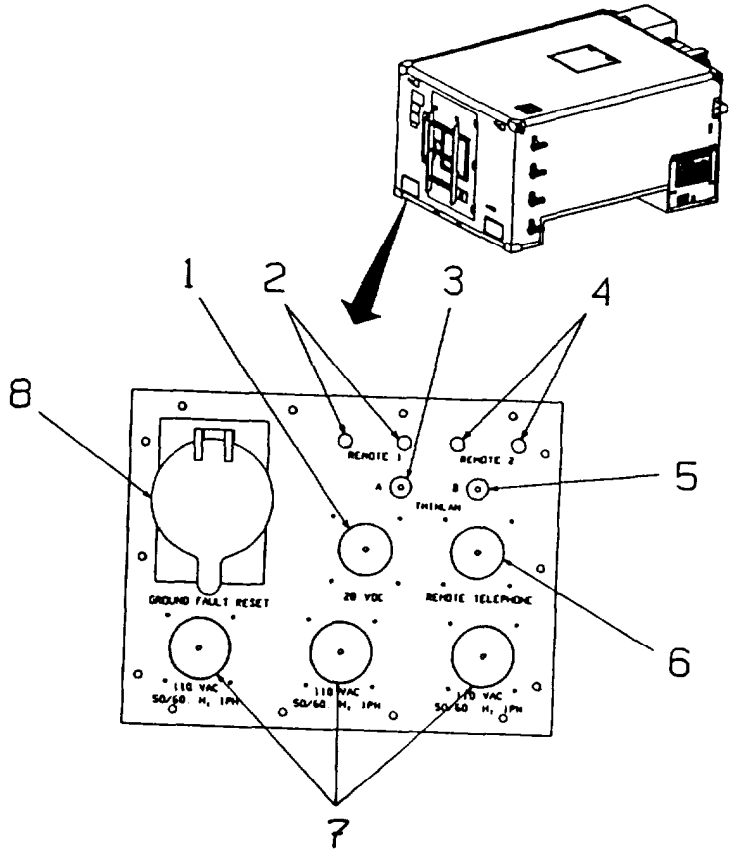
1 EMI-EMP Data filter
Used to filter electromagnetic interference and pulses from local area network A and B line input.

2 EMP Suppressor
Used to suppress electromagnetic pulses on the RF input lines.

3 EMI-EMP Data filter
Used to filter electromagnetic interference and pulses on the data pairs and cable hock A and B line input.

4 FIBER OPTIC Connectors
Input connectors J17 thru J24 from front rack for fiber optic cable pass through to COMMO Entry Panel.

2-5. TENT INTERFACE PANEL (TIP) POWER ENTRY ASSEMBLY.



1 **28 VDC** Connector
DC power outlet for the tent area.

2 **REMOTE 1** Binding posts (red and black)
Binding posts used as a pair red and black for remote hook-up.

3 **THINLAN A** Connector
Local area network interface between the shelter and the tent.

4 **REMOTE 2** Binding posts (red and black)
Binding posts used as a pair red and black for remote hook-up.

5 **THINLAN B** Connector
Local area network interface between the shelter and the tent.

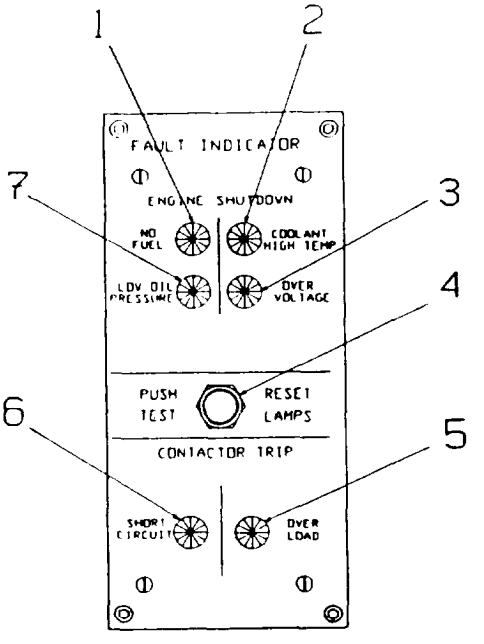
6 **REMOTE TELEPHONE** Connector
Input connector for the remote phone box.

7 **AC POWER** Connectors
AC power outlets for the tent area,

8 **GROUND FAULT RESET**
Reset switch used to enable/disable the ground fault system.

2-6. POWER MONITOR FACEPLATE ASSEMBLY.

a. *FAULT INDICATOR Panel.*



1 **NO FUEL** indicator
Turns on (red) when the generator day tank contains fuel for approximately four more minutes of time at the rated load.

2 **COOLANT HIGH TEMPERATURE** indicator.
Turns on (red) when the temperature of the generator coolant reaches 220°F (+ 217°F, + 223°F)

3 **OVERVOLTAGE** indicator
Turns on (red) when the generator voltage output in a 120-volt generator coil winding rises to and remains at any value greater than 153 (+ 150, + 156) volts for not less than 200 milliseconds.

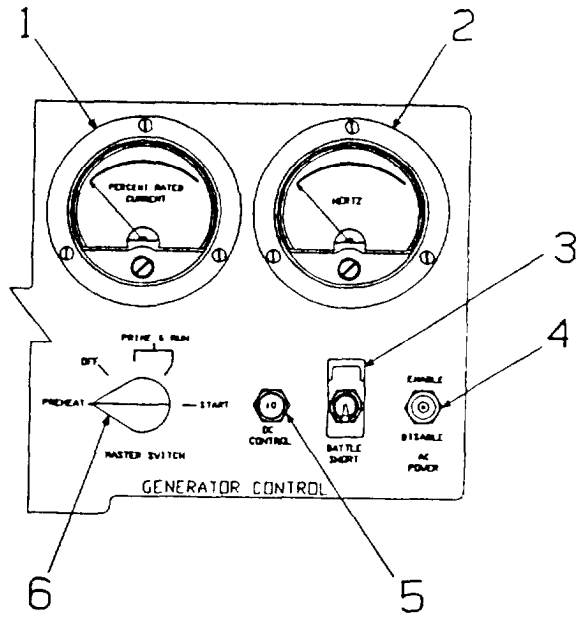
4 **PUSH TEST/RESET LAMPS PUSH TO TEST**
Provides a reset for any of the given fault indications and can be used to test the lamps for each of the fault indications.

5 **OVER LOAD** indicator
Turns on (red) when the load exceeds 130 percent of the rated current in any phase for 8 (+ 6, + 10) minutes.

6 **SHORT CIRCUIT** indicator
Turns on (red) when the set output in any phase exceeds 425 (-319, +531) volts for both series and parallel connections of the generator windings within 50 milliseconds of the event.

7 **LOW OIL PRESSURE** indicator.
Turns on (red) when the oil pressure drops to between 8 and 10 psi.

b. *GENERATOR CONTROL Panel.*



1 PERCENT RATED CURRENT meter.
Monitors the percentage of rated current from the output of the generator.

2 HERTZ meter.
Monitors the output frequency of the generator.

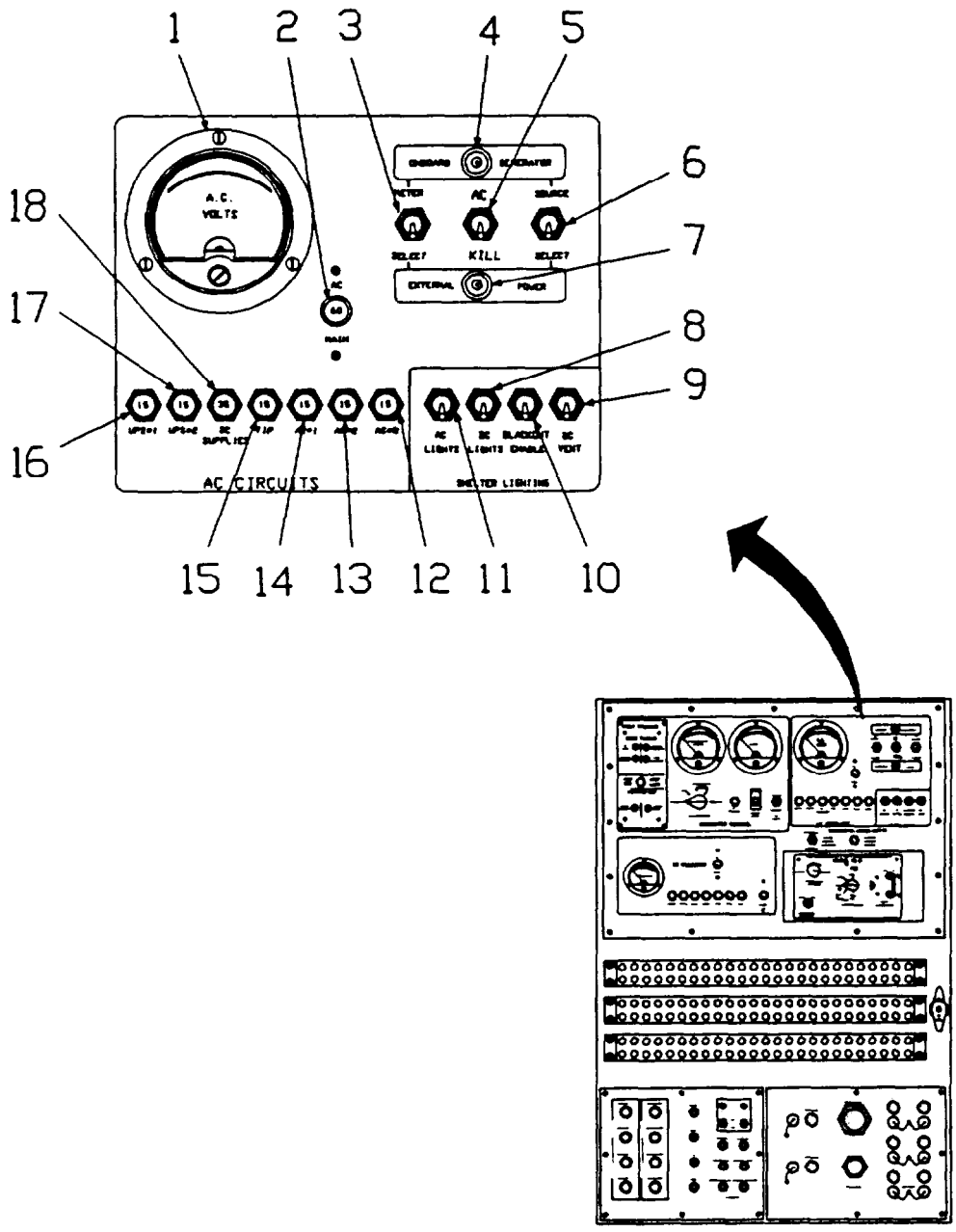
3 BATTLE SHORT
Override switch for electrical power from the generator to the shelter which ignores any fault indication that under normal circumstances would cause the generator to be shutdown.

4 AC POWER ENABLE/DISABLE
Switch that applies ac power from the generator to the shelter or removes ac power from the shelter.

5 DC CONTROL 10A circuit breaker
Circuit breaker rated at 10 amps for dc power.

6 MASTER SWITCH. Four position switch used for generator start-up and control.

c. *AC CIRCUITS Panel.*



1 **A.C. VOLTS** meter
Monitors the ac voltage in the shelter.

2 **AC MAIN** Circuit breaker
60A circuit breaker for main ac power input.

3 **METER SELECT** Switch
Selects on-board or external power monitoring.

4 **ONBOARD GENERATOR** Indicator
Turns on (green) if the on-board generator is selected.

5 **AC/KILL** Switch
Normally in the AC position. Automatic generator shutoff switch (KILL) when the normal shutdown procedure can not be used.

6 **SOURCE/SELECT** Switch
Selects either the onboard generator or an external ac power source.

7 **EXTERNAL POWER** Indicator
Turns on (green) when external ac power source is selected.

8 **DC LIGHTS** Circuit breaker
Circuit breaker rated at 10 amps for interior dc lights.

9 **DC VENT** Circuit breaker
10A circuit breaker for blower fan.

10 **BLACKOUT ENABLE** Circuit breaker
10A circuit breaker for blackout lights in the shelter.

11 **AC LIGHTS** Circuit breaker
10A circuit breaker for ac lighting in the shelter.

12 **AC#3** Circuit breaker
15A circuit breaker for curbside raceway floor ac outlets.

13 **AC#2** Circuit breaker
15A circuit breaker for CO Monitor, front wall raceway outlets J21, J22, and J23, rear lighting, and front lighting

14 **AC#1** Circuit breaker
15A circuit breaker for roadside raceway floor ac outlets.

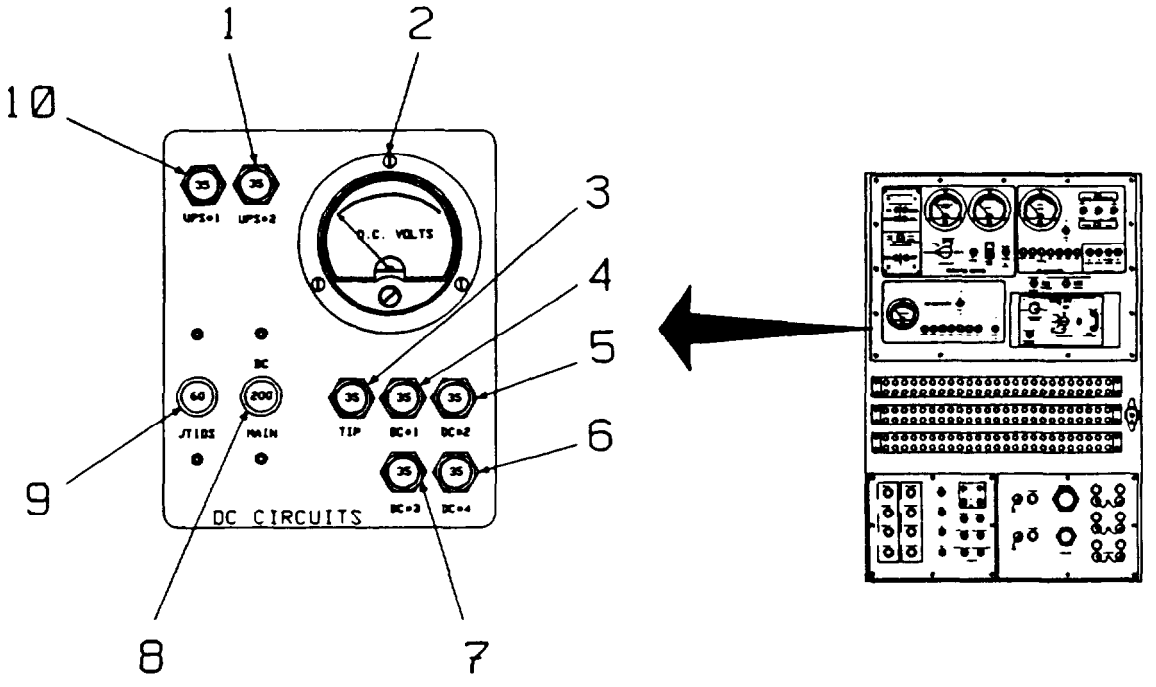
15 **TIP** Circuit breaker
15A circuit breaker for TIP ac outlets J2, J3, and J4.

16 **UPS#1** Circuit breaker
15A circuit breaker for uninterruptable power supply #1.

17 **UPS#2** Circuit breaker
15A circuit breaker for uninterruptable power supply #2.

18 **DC SUPPLIES** Circuit breaker
35A circuit breaker for dc power supplies PS1 and PS2.

d. ***DCC CIRCUITS Panel.***



1 **UPS#2** Circuit breaker
35A circuit breaker for uninterruptable power supply #2.

2 **D.C. VOLTS** meter
Monitors the dc voltage in the shelter.

3 **TIP** Circuit breaker
35A circuit breaker for the TIP dc outlet J1.

4 **DC#1** Circuit breaker
35A circuit breaker for J2 and J3 ceiling roadside raceway dc outlets.

5 **DC#2** Circuit breaker
35A circuit breaker for J4 and J5 ceiling roadside raceway dc outlets.

6 **DC#4** Circuit breaker
35A circuit breaker for J27 and J28 floor curbside raceway dc outlets.

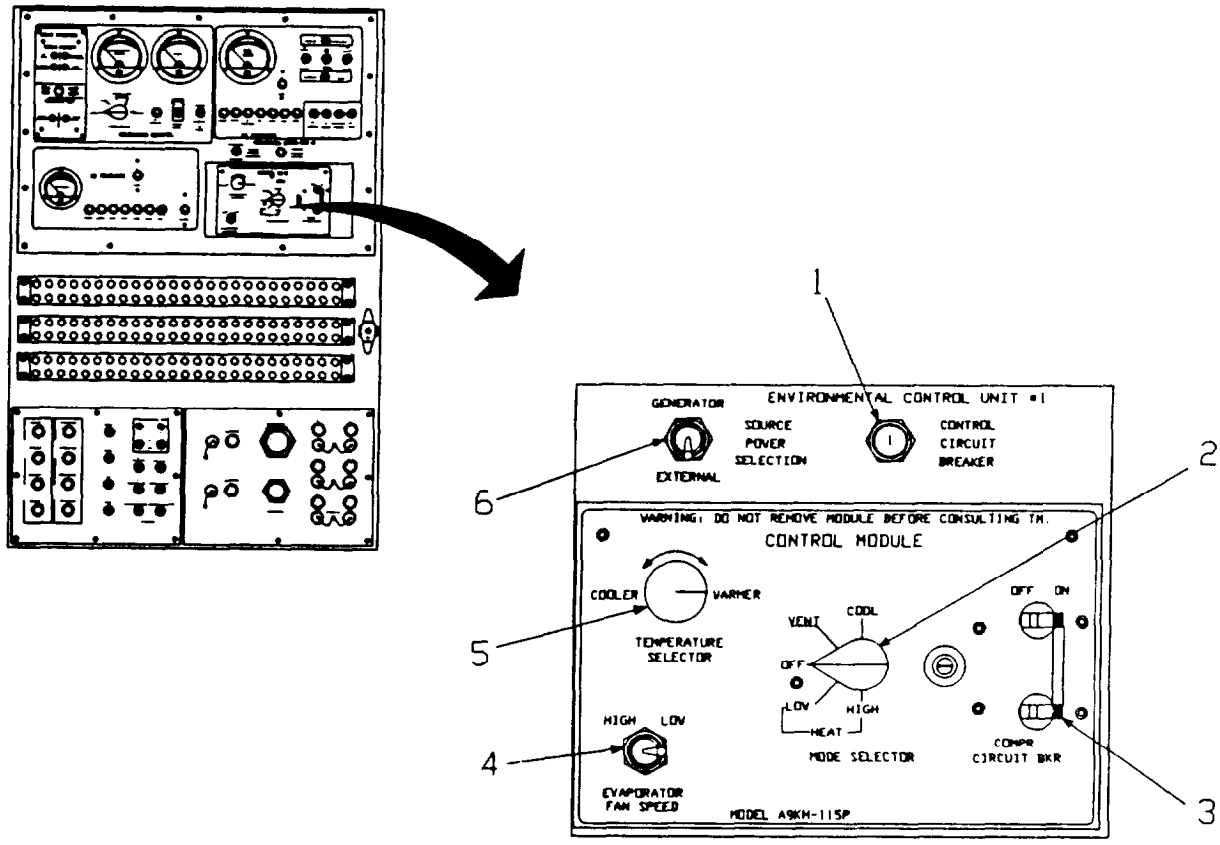
7 **DC#3** Circuit breaker
35A circuit breaker for J24, J25, and J26 front wall raceway dc outlets.

8 **DC MAIN** Circuit breaker
200A circuit breaker for primary dc power to shelter.

9 **JTIDS** circuit breaker
60A circuit breaker for J26 front wall raceway dc outlet.

10 **UPS#1** Circuit breaker
35A circuit breaker for uninterruptable power supply #1.

e. *Environmental Control Unit (ECU).*



1 **CONTROL** Circuit breaker
1A circuit breaker for the environmental control unit circuits.

2 **MODE SELECTOR** Switch
Selectable temperature control switch for heat, air conditioning or vent.

3 **COMPRESSOR CIRCUIT BREAKER ON/OFF**
On/off switch for the compressor.

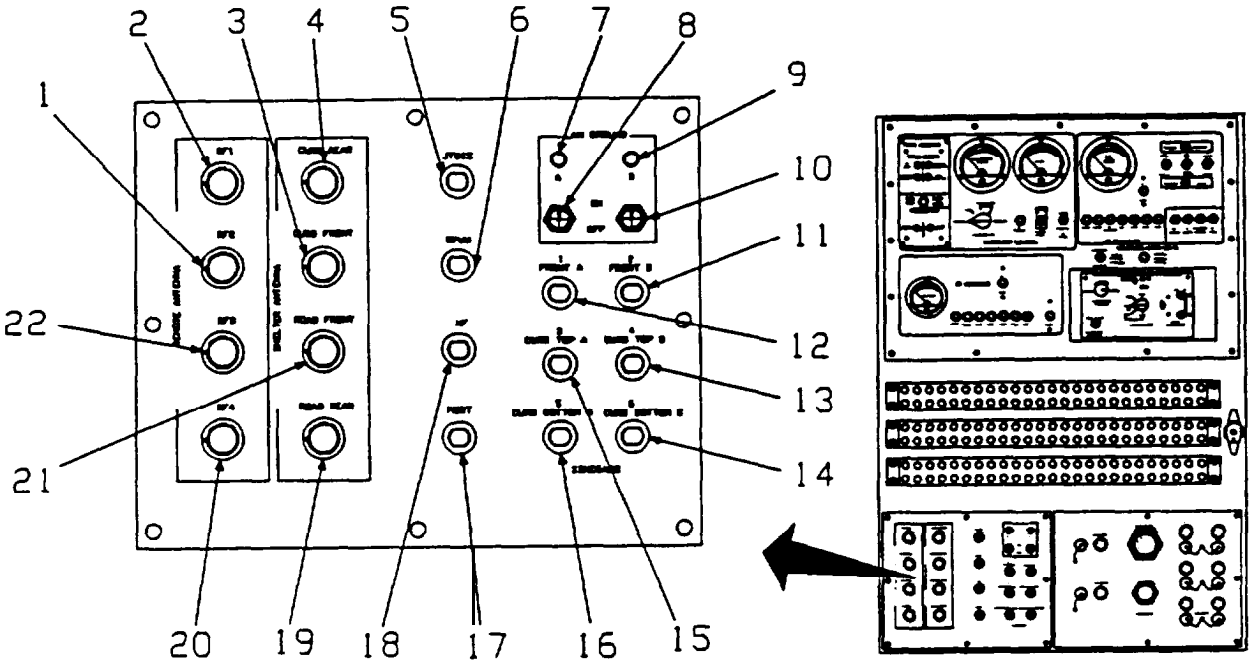
4 **EVAPORATOR FAN HIGH/LOW SPEED** Switch
2- position switch for either high or low fan speed.

5 **TEMPERATURE SELECTOR CONTROL**
Thermostat adjust for shelter temperature.

6 **SOURCE POWER SELECTION GENERATOR/EXTERNAL** Switch
Selects the either the generator or an external power source for the ECU primary input power.

2-7. SIGNAL PATCH PANELS.

a. *SIGNAL PATCH Panel (Left).*



1 **REMOTE ANTENNA RF2**
Radio frequency output from remote antenna.

2 **REMOTE ANTENNA RF1**
Radio frequency output from remote antenna.

3 **SHELTER ANTENNA CURB FRONT**
Curbside front antenna output.

4 **SHELTER ANTENNA CURB REAR**
Curbside rear antenna output.

5 **JTIDS**
Joint Tactical Information Data System RF output.

6 **EPUU**
Enhanced Position Location and Reporting User Unit RF output.

7 **LAN GROUND A** Indicator
Turns on (green) when LAN A switch is ON.

8 **LAN GROUND ON/OFF** Switch
2-position switch selects local area network A.

9 **LAN GROUND B INDICATOR**
Turns on (green) when LAN B switch is ON.

10 **LAN GROUND ON/OFF** Switch
Two position switch selects local area network B.

11 **SINCGARS 2 FRONT B**
Single Channel Grounded Air Radio System RF output.

12 SINCGARS 1 FRONT A
Single Channel Grounded Air Radio System RF output.

13 SINCGARS 4 CURB TOP B
Single Channel Grounded Air Radio System RF output.

14 SINCGARS 6 CURB BOTTOM B
Single Channel Grounded Air Radio System RF output.

15 SINCGARS 3 CURB TOP A
Single Channel Grounded Air Radio System RF output.

16 SINCGARS 5 CURB BOTTOM A
Single Channel Grounded Air Radio System RF output.

17 MSRT
Mobile cellular telephone output.

18 H F
High frequency radio RF output.

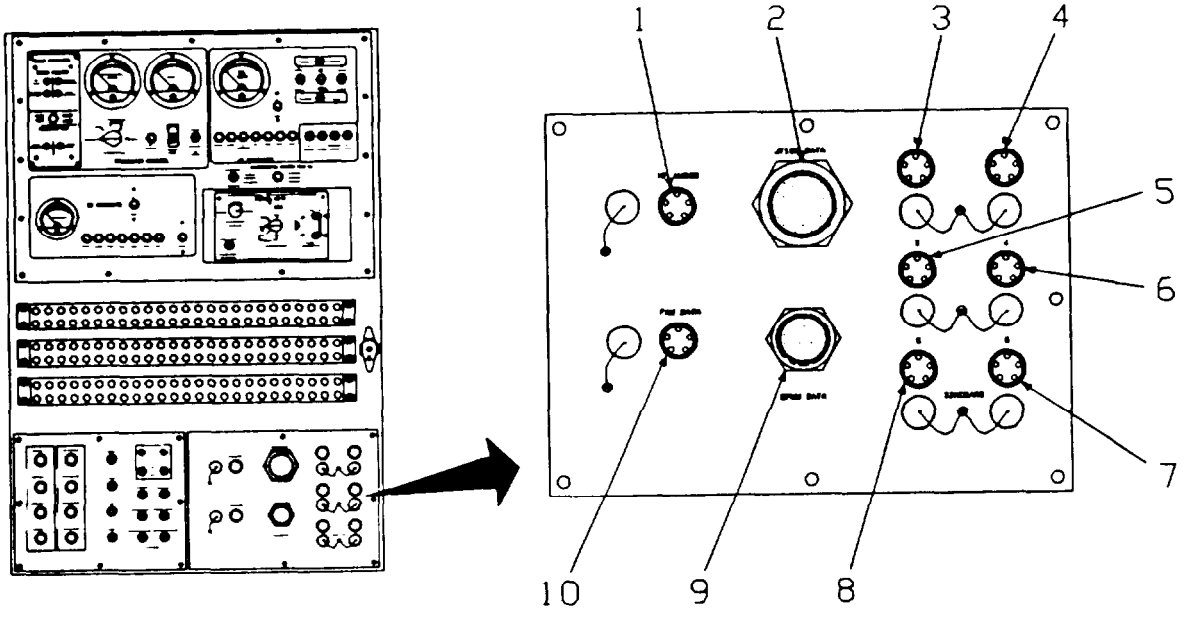
19 SHELTER ANTENNA ROAD REAR
Roadside rear RF antenna output

20 REMOTE ANTENNA RF4.
Radio frequency output from remote antenna.

21 SHELTER ANTENNA ROAD FRONT
Roadside front RF antenna output

22 REMOTE ANTENNA RF3
Radio frequency output from remote antenna.

b. *SIGNAL PATCH Panel (Right).*



1 **HF AUDIO**
High frequency radio audio output.

2 **JTIDS DATA**
Joint Tactical Information Data Systems data output.

3 **SINCGARS 1**
Single Channel Grounded Air Radio System data output.

4 **SINCGARS 2**
Single Channel Grounded Air Radio System data output.

5 **SINCGARS 3**
Single Channel Grounded Air Radio System data output.

6 **SINCGARS 4**
Single Channel Grounded Air Radio System data output.

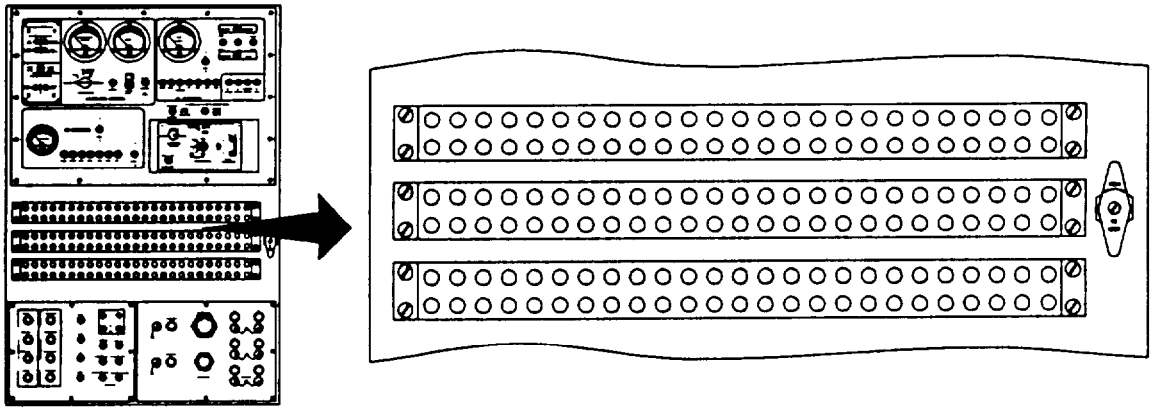
7 **SINCGARS 6**
Single Channel Grounded Air Radio System data output.

8 **SINCGARS 5**
Single Channel Grounded Air Radio System data output.

9 **EPUU DATA**
Enhanced Position Location and Reporting User Unit data output.

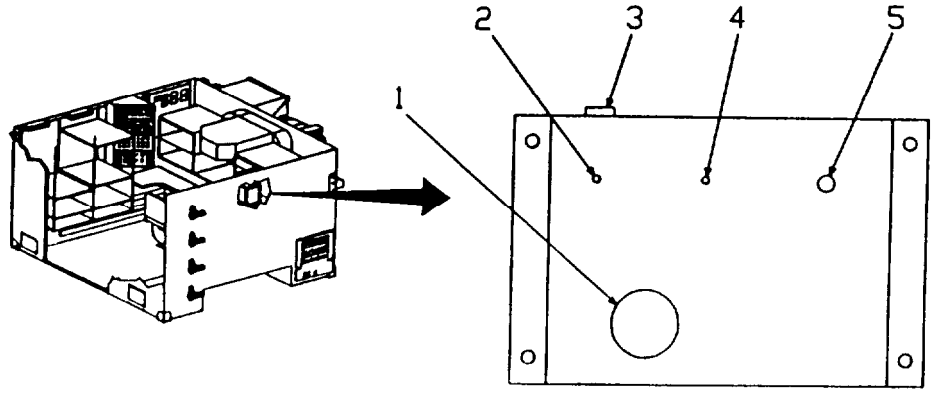
10 **FAX DATA**
Facsimile data output.

c. Jackfield Assembly (1 -3).



1 **TELEPHONE JACKS**
Twenty-four phone jacks used in pairs to interface (patch) telephone lines.

2-8. CO MONITOR.



1 **SENSOR**
Detects hydrocarbon gas or vapor.

2 ALARM INDICATOR
Lights (red) if **the** sensor detects hydrocarbon gas or vapor.

3 CALIBRATION ADJ SCREW
Used to adjust **the** sensitivity of the alarm potentiometer.

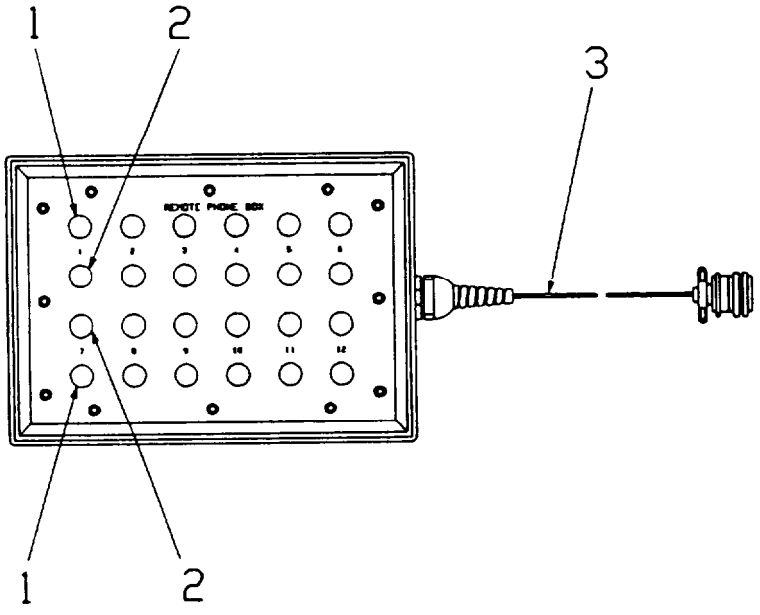
4 PILOT INDICATOR
Lights (green) during normal operations when power is applied.

5 ALARM ANNUNCIATOR
The alarm activates when hydrocarbon gas or vapor is detected.

2-9. PHONE EXTENSION BOX.

NOTE

This is an onboard component shipped with the SICPS shelter.



1 **BINDING POST**
Twelve (black) phone input connections used in pairs with the red binding post for landline communication links.

2 **BINDING POST**
Twelve (red) phone input connections used in pairs with the black binding post for landline communication links.

3 **CABLE ASSEMBLY** (W35)
Connects remote phone box assembly to J203 on the roadside TIP Faceplate Assembly.

Section II. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) FOR MODEL S-787/G, TYPE II SHELTER

2-10. INTRODUCTION. This section provides data necessary to keep the SICPS shelter in operational condition.

2-11. FUEL LEAKAGE. Wetness around fuel filters, seals, gaskets, fittings, or hoses indicates fuel leakage. A stain denotes leakage. If a fitting or hose is loose, try to tighten it. If broken or defective, report it to your supervisor. Use the following as a guide.

a. Class I. Leakage indicated by wetness or discoloration not great enough to form drops.

b. Class II. Leakage great enough to form drops, but not enough to cause drops to drip from item being checked/inspected.

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

CAUTION

Operations is allowed with Class I or II fuel leakage. When Operating with Class I or II leaks, check fluid levels frequently. Class III leaks must be reported immediately to your supervisor. Failure to do this may result in damage to vehicle and/or components.

2-12. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES.

a. *General.* Table 2-1 has been provided so you can keep your equipment in good operating condition and ready for its primary mission.

b. *Warnings and Cautions.* Always observe the WARNINGS and CAUTIONS appearing in your PMCS table. Warnings and cautions appear before applicable procedures. You must observe these WARNINGS and CAUTIONS to prevent serious injury to yourself and others or prevent your equipment from being damaged.

c. *Explanation of Table Entries.*

(1) *Item number column.* Numbers in this column are for reference. When completing DA Form 2404 (Equipment Inspection and Maintenance Worksheet), include the item number for the check/service indicating a fault. Item numbers also appear in the order that you must do checks and services for the interval listed.

(2) *Interval column.* This column tells you when you must do the procedure in the procedure column. BEFORE procedures must be done before you operate or use the equipment for its intended mission. DURING procedures must be done during the time you are operating or using the equipment for its intended mission. AFTER procedures must be done immediately after you have operated or used the equipment.

(3) *Location, check/service column.* This column provides the location and the item to be checked or serviced. The item location is underlined.

(4) *Procedure column.* This column gives the procedure you must do to check or service the item listed in the Check/Service column to know if the equipment is ready or available for its intended mission or for operation. You must do the procedure at the time stated in the interval column.

(5) Not fully mission capable if: column. Information in this column tells you what faults will keep your equipment from being capable of performing its primary mission. If you make check and service procedures that show faults listed in this column, do not operate the equipment. Follow standard operating procedures for maintaining the equipment or reporting equipment failures.

d. *Other Table Entries.* Be sure to observe all special information and notes that appear in your table.

NOTE

- If the equipment must be kept in continuous operation, do only the procedures that can be done without disturbing operation. Make complete checks and services when the equipment is shut down.

- When a check and service procedure is required for both weekly and before intervals, it is not necessary to do the procedure twice if the equipment is operated during the weekly period.

e. *Routing Diagram.* To assist you in the performance of PMCS, a routing diagram (figure 2-1) depicting the order by which the checks and services must be accomplished has been provided.

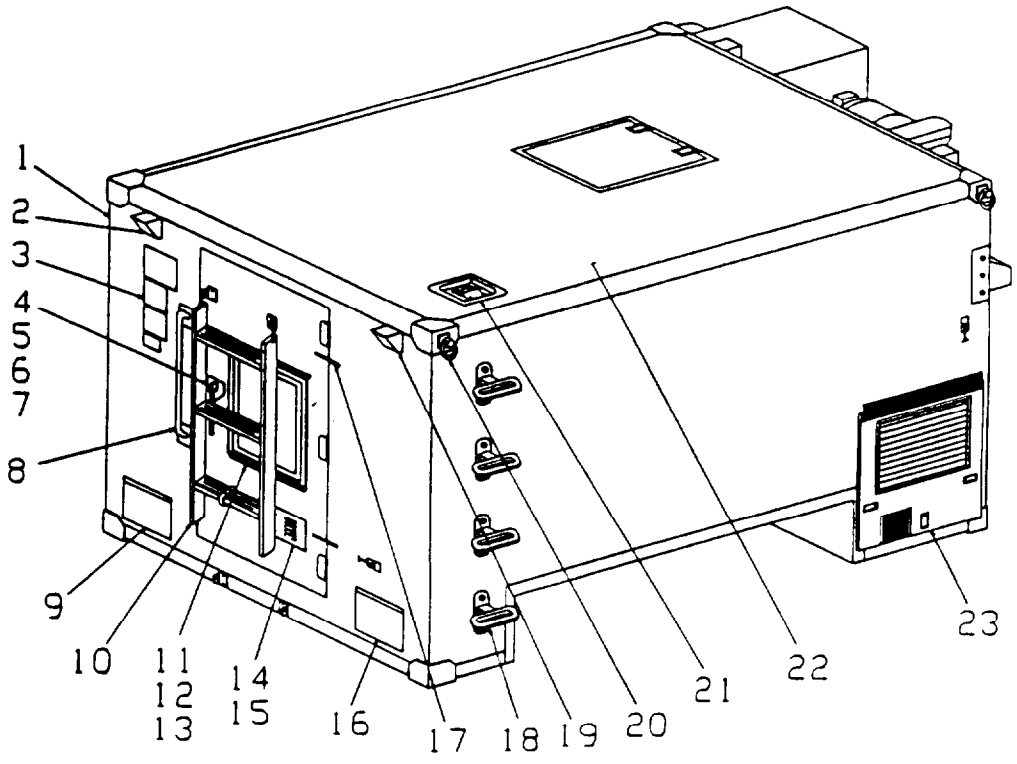


Figure 2-1. Routing Diagram (Sheet 1 of 4)

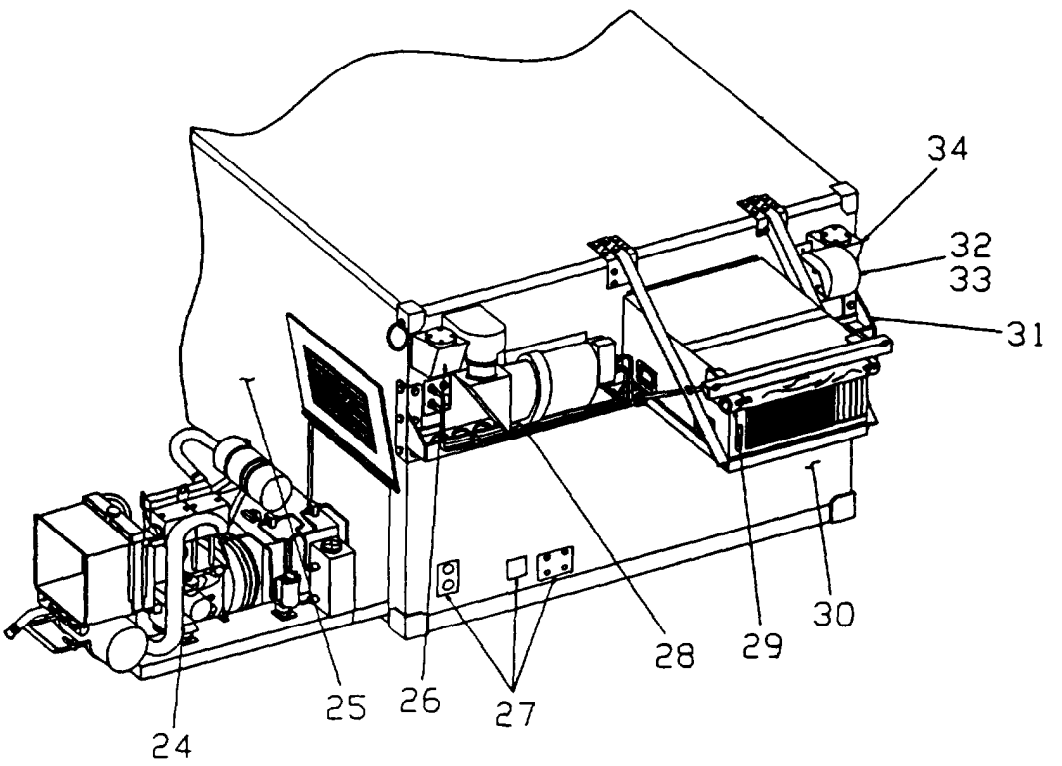


Figure 2-1. Routing Diagram (Sheet 2 of 4)

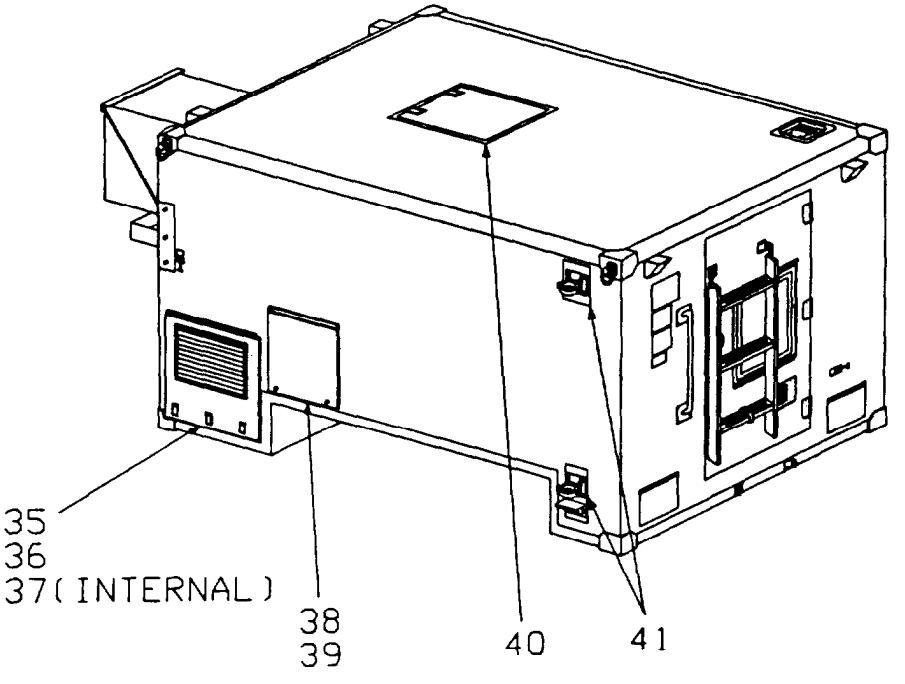
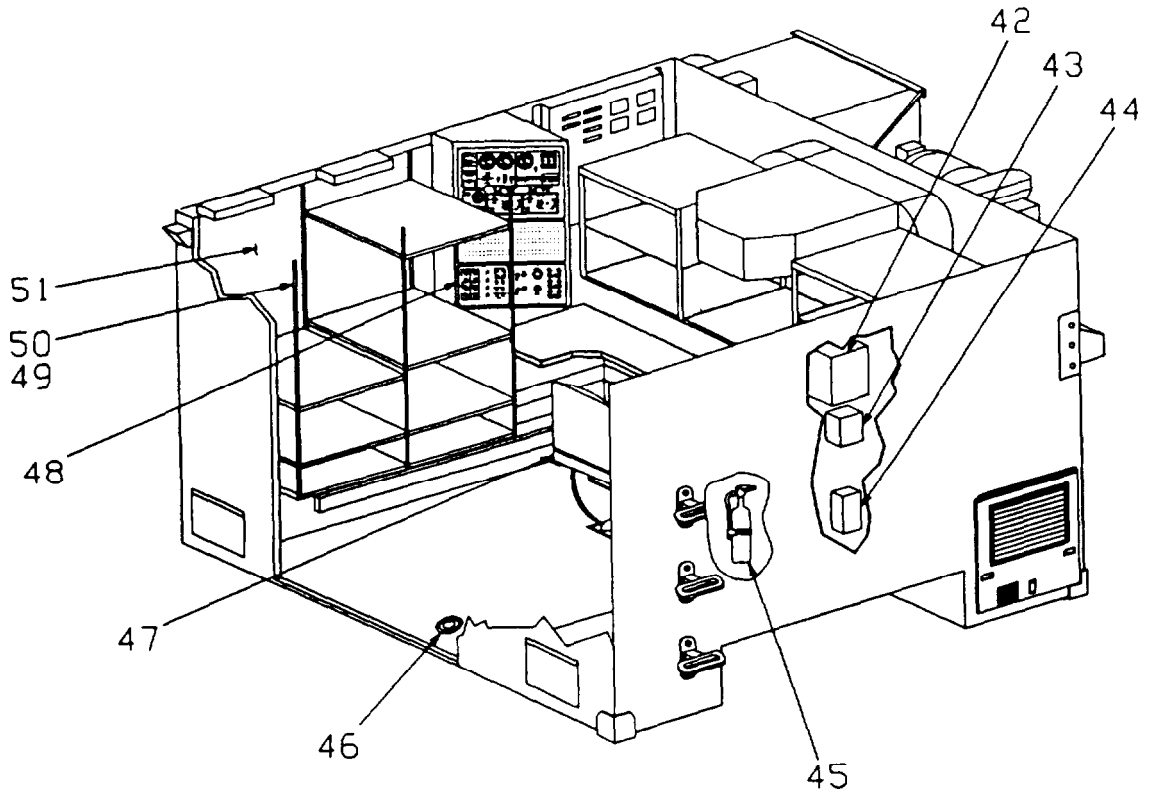


Figure 2-1. Routing Diagram (Sheet 3 of 4)



*** Item 50 (Lights) - Not Shown**

Figure 2-1. Routing Diagram (Sheet 4 of 4)

Table 2-1.
Operator Preventive Maintenance Checks and Services for SICPS Shelter, Model S-787/G, Type II

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY H - HOURS

Item No.	Interval	Location Item to Check/ Service	Procedure	Not Fully Mission Capable If:
1	B	Shelter (Rear)	Check surface for punctures and scratches.	If punctures are found.
2	B	Antenna Mount (Roadside Rear)	Check for missing parts and damage.	Damaged or unusable.
3	B	Data Plates	Check that data plates are not damaged and are readable.	
4	B	Door Assembly	Make sure door operates smoothly without binding. Check for loose/missing parts.	If door cannot be closed.
5	B	Door Weather Seal	Make sure weather seal on door is not damaged.	If damaged gasket prevents closing of the door.
6	B	Door RFI/EMI Seal	Make sure RFI/EMI seal is not damaged.	If RFI/EMI gasket is damaged.
7	B	Door Handle Assembly	Make sure handle operates smoothly without binding.	If door cannot be secured.
8	B	Shelter Handle	Check to see the handle is securely attached to shelter.	
9	B	TIP Power Entry Assembly (Roadside)	Make sure cover is not damaged and that the cover can be secured properly.	Cover is damaged.

Table 2-1.
Operator Preventive Maintenance Checks and Services for SICPS Shelter, Model S-787/G, Type II - Continued

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY H - HOURS

Item No.	Interval	Location: Item to Check/ Service	Procedure	Not Fully Mission Capable If:
10	B	Ladder	Check physical condition of ladder and belt.	
11	B	Rapid Decompression Assembly	Remove ladder. Loosen 10 twist-lock bolts on panel and make sure weather gasket is not damaged.	
12	B	Rapid Decompression Assembly	Make sure round rubber gasket is on all twist-lock bolts.	
13	B	Rapid Decom-pression Assembly	Open door and check if rapid decompression assembly RFI filter is damaged.	RFI filter is damaged.
14	B	Air Vent	Open door, ensure door and latches operate smoothly	Door cannot be closed.
15	B	Air Vent	Check RFI filter for damage.	RFI filter damaged.
16	B	TIP Assembly (Curbside)	Make sure cover is not damaged and can be secured properly.	Cover damaged

Table 2-1.
Operator Preventive Maintenance Checks and Services for SICPS Shelter, Model S-787/G, Type II - Continued

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY H - HOURS

Item No.	Interval	Location: Item to Check/ Service	Procedure	Not Fully Mission Capable If:
17	B	Door Assembly Ground Straps	Make sure ground straps are properly connected and not cut or frayed.	If both ground straps are cut.
18	B	Antenna Mount (Curbside, rear)	Check for missing parts and damage.	Unusable.
19	B	Step Assembly	Check for excessive wear and rust and check to see that all steps can be positioned for climbing. WARNING BE CAREFUL BEFORE CLIMBING ON ROOF OF SHELTER. ALWAYS USE HAND SUPPORTS. PERSONAL INJURY CAN RESULT FROM A FALL. NOTE. ITEMS 20-22 ARE ACCOMPLISHED WHILE ON THE TOP (ROOF) OF THE SHELTER.	

Table 2-1.
Operator Preventive Maintenance Checks and Services for SICPS Shelter, Model S-787/G, Type II - Continued

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY H - HOURS

Item No.	Interval	Location: Item to Check/ Service	Procedure	Not Fully Mission Capable If:
20	B	Lifting and Towing Brackets	Climb up steps to roof of shelter and make sure that lifting and towing brackets do not have rust and that they rotate freely.	
21	B	Support handle	While on the roof of the shelter, inspect support handle for wear and rust. Check that the handle can be positioned for climbing.	
22	B	Shelter (roof)	Check surface for punctures, delamination, dents and scratches.	If punctures or delamination is found.
23	B	GENSET Door	Check door and weather seal for condition and operation.	Door cannot be secured in closed condition.
24	B	GENSET	Make sure heat shield covers are not torn or damaged. Complete PMCS on GENSET per TM 9-6115-641 -10.	If GENSET fails PMCS per TM 9-6115-641-10.
25	B	Shelter (curbside)	Check surface for punctures, delamination, dents, and scratches.	Punctures and delamination are found.

Table 2-1.
Operator Preventive Maintenance Checks and Services for SICPS Shelter, Model S-787/G,Type II - Continued

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY H - HOURS

tern No.	Interval	Location Item to Check/ Service	Procedure	Not Fully Mission Capable If:
26	B	Antenna Mount (Front,Curbside)	Check for missing parts and damage.	Unusable.
27	B	Fuel Ports/External Outlets	Check fuel entry ports and outlets for damage/missing parts	Damaged or leaking fuel lines prevents operation (class III leak).
28	B	GPFU	Check connectors, hoses, and clamps for damage.	If damage is a safety hazard or is class III leak.
29	B	ECU	Check water protector cover for damage, loose/missing hardware.	
30	B	Shelter (front)	Check surface for punctures, delamination, dents, and scratches.	Punctures or delaminations are found.
31	B	ECU Frame	Inspect frame for damage, rust, and missing hardware	
32	B	Filter Blower Assembly	Remove cover and inspect filters. If dirty, clean with warm soapy water.	Filters dirty.
33	B	Filter Blower	Check cables for damage/missing parts.	Connectors damaged.
34	B	Antenna Mount (Roadside, front)	Check for missing parts and damage	Unusable

Table 2-1.
Operator Preventive Maintenance Checks and Services for SICPS Shelter, Model S-787/G,Type II - Continued

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY H - HOURS

Item No.	Interval	Location: Item to Check/ Service	Procedure	Not Fully Mission Capable If:
35	B	Tunnel Access Door	Open door and make sure door can be latched in the open position and weather gasket is not damaged	Door cannot be secured in closed position
36	B	Tunnel Access Door	Inspect for rust and damage.	Door cannot be secured in closed position.
37	B	Power Entry Box (roadside)	Make sure all protective covers for connectors are installed and that the switches are in the OFF position.	
38	B	Commo Panel Cover	Check cover for damage and missing parts.	Cover damaged.
39	B	Commo Panel	Make sure all protective caps are installed on connectors	
40	B	Hatch	Unlock safety hatch (inside), ensure it opens and closes smoothly.	Hatch will not secure
41	B	Antenna Mount (Roadside)	Check for damage and missing parts.	
42	B	GPFU Control Panel	Check connector and hose, for missing parts and damage.	If damaged.

Table 2-1.
Operator Preventive Maintenance Checks and Services for SICPS Shelter, Model S-787/G, Type II - Continued

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY H - HOURS

Item No.	Interval	Location: Item to Check/ Service	Procedure	Not Fully Mission Capable If:
43	B	CO Monitor	Check for damage/missing parts.	If damaged.
44	B	Circuit Breaker Panel	Ensure circuit breakers are off. Check RFI seal.	RFI Seal damaged.
45	B	Fire Extinguisher	Check charge on fire extinguisher. If not charged, notify supervisor.	Fire extinguisher not charged.
46	B	Drain Plug	Make sure drain plug is screwed in.	Drain plug cannot be screwed in.
47	B	Seat	Check seat and straps for damage, loose/missing parts.	Seat damaged.
48	B	Panel Assembly	Check that covers are on unused connectors and that all switches are off.	
49	B	Equipment Racks	Check for missing parts and damage.	Missing hardware or damaged
50	B	Interior Lights	Check for missing parts and damage,	
51	B	Shelter (internal)	Inspect for punctures, delamination, dents, and scratches. Inspect for water intrusion, loose/ missing parts.	Punctures, dents, delamination or water intrusion is detected.

Table 2-1.
Operator Preventive Maintenance Checks and Services for SICPS Shelter, Model S-787/G, Type II - Continued

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY H - HOURS

Item No.	Interval	Location: Item to Check/ Service	Procedure	Not Fully Mission Capable If:
52	D	Door Assembly	Make sure door operates smoothly without binding. Check for loose/missing parts.	If door cannot be closed.
53	D	Door Handle Assembly	Make sure handle operates smoothly without binding.	If door cannot be secured.
54	D	Air Vent	Open door, ensure door and latches operate smoothly.	Door cannot be closed.
55	D	Air Vent	Check RFI filter for damage.	RFI filter damaged.
56	D	GENSET	Complete PMCS on GENSET per TM 9-6115-641-10.	If GENSET fails PMCS per TM 9-6115-641-10.
57	D	Fuel Ports/ external outlets	Check fuel entry port and outlet for damage.	Fuel leaks prevent operation.
58	D	GPFU	Check connectors, hoses, and clamps.	If damaged item is a safety hazard or creates a class Ill leak.

Table 2-1.
Operator Preventive Maintenance Checks and Services for SICPS Shelter, Model S-787/G, Type II- Continued

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY H - HOURS

Item No.	Interval	Location: Item to Check/ Service	Procedure	Not Fully Mission Capable If:
59	D	ECU	Check water protector cover for damage, loose or missing hardware.	
60	D	Filter Blower Assembly	Remove cover and inspect filters. If dirty, clean with warm soapy water.	Filters dirty.
61	D	Tunnel Access Door	Inspect for rust and damage. Make sure weather flap is not damaged.	Door cannot be secured.
62	D	Power Entry Box (roadside)	Open cover and make sure all protective covers for unused connectors are installed. Ensure all switches are in “OFF” position.	
63	D	Commo Panel	Make sure all protective caps are installed on unused connectors.	

Table 2-1.
Operator Preventive Maintenance Checks and Services for SICPS Shelter, Model S-787/G,Type II - Continued

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY H - HOURS

Item No.	Interval	Location: Item to Check/ Service	Procedure	Not Fully Mission Capable If:
64	D	Fire Extinguisher	Check charge on fire extinguisher. If not charged, notify supervisor.	Fire extinguisher not charged.
65	D	Drain Plug	Make sure drain plug is screwed in.	Drain plug cannot be screwed in.
66	D	Seat	Check operation of seat.	Seat not operating properly.
67	D	Interior Lights.	Check operation.	Not operating correctly.

Table 2-1.
Operator Preventive Maintenance Checks and Services for SICPS Shelter, Model S-787/G, Type II

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY H - HOURS

Item No.	Interval	Location: Item to Check/ Service	Procedure	Not Fully Mission Capable If:
68	A	Shelter (Rear)	Check surface for punctures and scratches.	If punctures are found.
69	A	Antenna Mount (Roadside Rear)	Check for missing parts and damage.	Damaged or unusable.
70	A	Data Plates	Check that data plates are not damaged and are readable.	
71	A	Door Assembly	Make sure door operates smoothly without binding. Check for loose/missing parts.	If door cannot be closed.
72	A	Door Weather Seal	Make sure weather seal on door is not damaged.	If damaged gasket prevents closing of the door.
73	A	Door RFI/EMI Seal	Make sure RFI/EMI seal is not damaged.	If RFI/EMI gasket is damaged.
74	A	Door Handle Assembly	Make sure handle operates smoothly without binding..	If door cannot be secured.
75	A	Shelter Handle	Check to see the handle is securely attached to shelter.	
76	A	TIP Power Entry Assembly (Roadside)	Make sure cover is not damaged and that the cover can be secured properly.	Cover is damaged.

Table 2-1.
Operator Preventive Maintenance Checks and Services for SICPS Shelter, Model S-787/G, Type II - Continued

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY H - HOURS

Item No.	Interval	Location: Item to Check/ Service	Procedure	Not Fully Mission Capable If:
77	A	Ladder	Check physical condition of ladder and belt.	
78	A	Rapid Decompression Assembly	Remove ladder. Loosen 10 twist-lock bolts on panel and make sure weather gasket is not damaged.	
79	A	Rapid Decompression Assembly	Make sure round rubber gasket is on all twist-lock bolts.	
80	A	Rapid Decom-pression Assembly	Open door and check if rapid decompression assembly RFI filter is damaged.	RFI filter is damaged.
81	A	Air Vent	Open door, ensure door and latches operate smoothly	Door cannot be closed.
82	A	Air Vent	Check RFI filter for damage.	RFI filter damaged.
83	A	TIP Assembly (Curbside)	Make sure cover is not damaged and can be secured properly.	Cover damaged

Table 2-1.
Operator Preventive Maintenance Checks and Services for SICPS Shelter, Model S-787/G, Type II - Continued

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY H - HOURS

Item No.	Interval	Location: Item to Check/ Service	Procedure	Not Fully Mission Capable If:
84	A	Door Assembly Ground Straps	Make sure ground straps are properly connected and not cut or frayed.	If both ground straps are cut.
85	A	Antenna Mount (Curbside, rear)	Check for missing parts and damage.	Unusable.
86	A	Step Assembly	Check for excessive wear and rust and check to see that all steps can be positioned for climbing. **WARNING** BE CAREFUL BEFORE CLIMBING ON ROOF OF SHELTER. ALWAYS USE HAND SUPPORTS. PERSONAL INJURY CAN RESULT FROM A FALL. **NOTE** ITEMS 87-89 ARE ACCOMPLISHED WHILE ON THE TOP (ROOF) OF THE SHELTER.	

Table 2-1.
Operator Preventive Maintenance Checks and Services for SICPS Shelter, Model S-787/G,Type II - Continued

R - BEFORE D - DURING A - AFTFR W - WEEKLY M - MONTHLY H - HOURS

Item No.	Interval	Location: Item to Check/ Service	Procedure	Not Fully Mission Capable If:
87	A	Lifting and Towing Brackets	Climb up steps to roof of shelter and make sure that lifting and towing brackets do not have rust and that they rotate freely.	
88	A	Support handle	While on the roof of the shelter, inspect support handle for wear and rust. Check that the handle can be positioned for climbing.	
89	A	Shelter (roof)	Check surface for punctures, delamination, dents and scratches.	If punctures or delamination is found.
90	A	GENSET Door	Check door and weather seal for condition and operation.	Door cannot be secured in closed condition.
91	A	GENSET	Make sure heat shield covers are not torn or damaged. Complete PMCS on GENSET per TM 9-6115-641 -10.	If GENSET fails PMCS per TM 9-6115-641-10.
92	A	Shelter (curbside)	Check surface for punctures, delamination, dents, and scratches.	Punctures and delamination are found.

Table 2-1.
Operator Preventive Maintenance Checks and Services for SICPS Shelter, Model S-787/G,Type II - Continued

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY H - HOURS

Item No.	Interval	Location: Item to Check/ Service	Procedure	Not Fully Mission Capable If:
93	A	Antenna Mount (Front,Curbside)	Check for missing parts and damage.	Unusable.
94	A	Fuel Ports/External Outlets	Check fuel entry port and outlets for damage/missing parts	Damaged or leaking fuel lines prevents operation. (class Ill leak)
95	A	GPFU	Check connectors, hoses, and clamps.	If damage is a safety hazard or is class III leak.
96	A	ECU	Check water protector cover for damage, loose/missing hardware.	
97	A	Shelter (front)	Check surface for punctures, delamination, dents, and scratches.	Punctures or delaminations are found.
98	A	ECU Frame	Inspect frame for damage, rust, and missing hardware	
99	A	Filter Blower Assembly	Remove cover and inspect filters. If dirty, clean with warm soapy water.	Filters dirty.
100	A	Filter Blower	Check cables for damage/missing parts.	Connectors damaged.
101	A	Antenna Mount (Roadside, front)	Check for missing parts and damage	Unusable
102	A	Tunnel Access Door	Open door and make sure door can be latched in the open position and weather gasket is not damaged.	Door cannot be secured in closed position.

Table 2-1.
Operator Preventive Maintenance Checks and Services for SICPS Shelter, Model S-787/G,Type II - Continued

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY H - HOURS

Item No.	Interval	Location: Item to Check/ Service	Procedure	Not Fully Mission Capable If:
103	A	Tunnel Access Door	Inspect for rust and damage.	Door cannot be secured in closed position.
104	A	Power Entry Box (roadside)	Make sure all protective covers for connectors are installed and that the switches are in the OFF position.	
105	A	Commo Panel Cover	Check cover for damage and missing parts.	Cover damaged.
106	A	Commo Panel	Make sure all protective caps are installed on connectors.	
107	A	Hatch	Unlock safety hatch (inside), ensure it opens and closes smoothly	
108	A	Antenna Mount (Roadside)	Check for damage and missing parts.	Hatch will not secure.
109	A	GPFU Control Panel	Check connector and hose, for missing parts and damage.	If damaged.

Table 2-1.
Operator Preventive Maintenance Checks and Services for SICPS Shelter, Model S-787/G, Type II - Continued

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY H - HOURS

Item No.	Interval	Location: Item to Check/ Service	Procedure	Not Fully Mission Capable If:
111	A	CO Monitor	Check for damage/missing parts.	If damaged.
112	A	Circuit Breaker Panel	Ensure circuit breakers are off. Check RFI seal.	RFI Seal damaged.
113	A	Fire Extinguisher	Check charge on fire extinguisher. If not charged, notify supervisor.	Fire extinguisher not charged.
114	A	Drain Plug	Make sure drain plug is screwed in.	Drain plug cannot be screwed in.
115	A	Seat	Check seat and straps for damage, loose/missing parts.	Seat damaged.
116	A	Panel Assembly	Check that covers are on unused connectors and that all switches are off.	
117	A	Equipment Racks	Check for missing parts and damage.	Missing hardware or damaged
118	A	Interior Lights	Check for missing parts or damage.	Inoperative.
119	A	Shelter (internal)	Inspect for punctures, delamination, dents, and scratches. Inspect for water intrusion.	Punctured, dented, delaminated or water intrusion is detected.

Table 2-1.
Operator Preventive Maintenance Checks and Services for SICPS Shelter, Model S-787/G, Type II - Continued

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY H - HOURS

Item No.	Interval	Location: Item to Check/ Service	Procedure	Not Fully Mission Capable If:
120	W	Door Assembly	Make sure door operates smoothly without binding. Check for loose/missing parts.	If door cannot be closed.
121	W	Door Handle Assembly	Make sure handle operates smoothly without binding.	If door cannot be secured.
122	W	Rapid Decom-pression Assembly	Open door and check if rapid decompression assembly RFI filter is damaged.	RFI filter is damaged.
123	W	Air Vent	Open door and make sure air vent door opens and closes smoothly without binding and latches work properly.	Door cannot be closed.
124	W	Air Vent	Check RFI filter for damage.	RFI filter damaged.
125	W	GENSET	Make sure heat shield covers are not torn or damaged. Complete PMCS on GENSET per TM 9-6115-641-10.	If GENSET fails PMCS per TM 9-6115-641-10.
126	W	ECU	Check water protector cover for damage, loose/missing parts. Check for loose/ missing hardware.	

Table 2-1.
Operator Preventive Maintenance Checks and Services for SICPS Shelter, Model S-787/G, Type II - Continued

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY H - HOURS

Item No.	Interval	Location: Item to Check/ Service	Procedure	Not Fully Mission Capable If:
127	W	Filter Blower Assembly	Remove cover and inspect filters. If dirty, clean with warm soapy water..	Filters dirty.
128	W	Tunnel Access Door	Inspect for rust and check weather gasket for damage.	Door cannot be secured in closed position.
129	W	Power Entry Box (roadside)	Open cover and make sure all protective covers for connectors are installed and that the switches are in the off position.	
130	W	Commo Panel	Make sure all protective caps are installed on connectors.	
131	W	Fire Extinguisher	Check charge on fire extinguisher. If not charged, notify supervisor.	Fire extinguisher not charged.
132	W	Seat	Check for missing parts, seat operation and strap condition.	Hardware missing, straps damaged.

Table 2-1.
Operator Preventive Maintenance Checks and Services for SICPS Shelter, Model S-787/G, Type II - Continued

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY H - HOURS

Item No.	Interval	Location: Item to Check/ Service	Procedure	Not Fully Mission Capable If:
133	M	Shelter (Rear)	Check surface for punctures and scratches.	If punctures are found.
134	M	Data Plates	Check that data plates are not damaged and are readable.	
135	M	Door Weather Seal	Make sure weather seal on door is not damaged.	If damaged gasket prevents closing of the door.
136	M	Door RFI/EMI Seal	Make sure RFI/EMI seal is not damaged.	If RFI/EMI gasket is damaged.
137	M	Door Handle Assembly	Make sure handle operates smoothly without binding.	If door cannot be secured.
138	M	Shelter Handle	Check to see that it is securely attached to shelter.	
139	M	TIP Power Entry Assembly (Roadside)	Make sure cover is not damaged and that the cover can be secured properly.	Damaged cover.
140	M	Ladder	Check for safe physical condition.	

Table 2-1.
Operator Preventive Maintenance Checks and Services for SICPS Shelter, Model S-787/G, Type II - Continued

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY H - HOURS

Item No.	Interval	Location: Item to Check/ Service	Procedure	Not Fully Mission Capable If:
141	M	Rapid Decompression Assembly	Remove ladder. Loosen 10 twist-lock bolts on panel and make sure weather gasket is not damaged.	
142	M	Rapid Decompression Assembly	Make sure round rubber gasket is on all twist-lock bolts.	
143	M	TIP Assembly (Curbside)	Make sure cover is not damaged and can be secured properly.	Damaged cover.
144	M	Door Assembly Ground Straps	Make sure ground straps are properly connected and not cut or frayed.	If both ground straps are cut.
145	M	Step Assembly	Check for excessive wear and rust and check to see that all steps can be positioned for climbing.	

Table 2-1.
Operator Preventive Maintenance Checks and Services for SICPS Shelter, Model S-787/G,Type II - Continued

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY H - HOURS

Item No.	Interval	Location: Item to Check/ Service	Procedure	Not Fully Mission Capable If:
			WARNING BE CAREFUL BEFORE CLIMBING ON ROOF OF SHELTER. ALWAYS USE HAND SUPPORTS. PERSONAL INJURY CAN RESULT FROM A FALL. **NOTE** ITEMS 146-148 ARE ACCOMPLISHED WHILE ON THE TOP (ROOF) OF THE SHELTER.	
146	M	Lifting and Towing Brackets	Climb up steps to roof of shelter and make sure that lifting and towing brackets do not have rust and that they rotate freely.	
147	M	Support handle	While on the roof of the shelter, inspect support handle for wear and rust. Check that the handle can be positioned for climbing.	

Table 2-1.
Operator Preventive Maintenance Checks and Services for SICPS Shelter, Model S-787/G, Type II - Continued

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY H - HOURS

Item No.	Interval	Location Item to Check/ Service	Procedure	Not Fully Mission Capable If:
148	M	Shelter (roof)	Check surface for punctures, delamination, dents and scratches.	If punctures or delamination is found.
149	M	GENSET Door	Make sure door can be secured. Check weather gasket and door for damage.	Door cannot be secured in closed position.
150	M	GENSET	Open door and make sure heat shields covers are not torn or damaged. Complete PMCS on GENSET per TM 9-6115-641-10.	If GENSET fails PMCS per TM 9-6115-641-10.
151	M	Shelter (curbside)	Check surface for punctures, delamination, dents, and scratches.	Punctures and delamination are found.
152	M	ECU	Check water protector cover for damage, loose/missing parts.	
153	M	Shelter (front)	Check surface for punctures, delamination, dents, and scratches.	Punctures or delaminations are found.
154	M	Frame	Inspect frame for damage and rust and ensure no parts are missing.	

Table 2-1.
Operator Preventive Maintenance Checks and Services for SICPS Shelter, Model S-787/G, Type II - Continued

B - BEFORE D - DURING A - AFTER W - WEEKLY M - MONTHLY H - HOURS

Item No.	Interval	Location: Item to Check/ Service	Procedure	Not Fully Mission Capable If:
155	M	Tunnel Access Door	Open door and make sure door can be latched in open position and weather gasket is not damaged.	Door cannot be secured in the closed position.
156	M	Commo Panel Cover	Check cover for damage and missing parts.	Cover damaged.
157	M	Commo Panel	Make sure all protective caps are installed on connectors.	Cover cannot be secured
158	M	Hatch	From inside shelter, unlock safety hatch and ensure it opens and closes smoothly.	Hatch cannot be closed.
159	M	Fire Extinguisher	Check charge state of fire extinguisher. If not charged, notify supervisor.	Fire extinguisher not charged.
160	M	Shelter (internal)	Inspect for punctures, delamination, dents, and scratches. Inspect for water intrusion.	Punctures, dents, delaminations or water intrusion is detected.

Section III. OPERATION UNDER USUAL CONDITIONS

2-13. ASSEMBLY AND PREPARATION FOR USE.

a. *Unpacking.* The SICPS shelter does not require any special unpacking instructions, refer to the end item technical manual for additional unpacking instructions.

b. *Assembly.* The SICPS shelter does require some assembly depending on the mode of operation. For operation on the move, there are no assembly instructions. To operate the SICPS shelter in a fixed site mode of operation use the following procedures.

(1) Ladder Assembly. Loosen retaining strap securing ladder to the door assembly and lift ladder off of the stowage brackets. Place ladder hooks in the slotted brackets located below the personnel door to provide access into the SICPS shelter.

(2) Ground connection. In a multiple shelter configuration, use the central system ground rod and connect the ground cable from the ground rod to the power entry panel ground lug.

(3) Primary power. Select the power source ONBOARD or EXTERNAL at the Power Faceplate Assembly.

- If ONBOARD is selected, refer to paragraph c. for generator starting procedures.
- If EXTERNAL is selected, refer to the technical manual for the external power source for starting procedures. The external power input is connected at the power entry box assembly EXTERNAL POWER IN connector.
- Apply primary power.

c. Generator Starting Instructions. Perform the PMCS in table 2-1.

CAUTION

To prevent damage, do not attempt to start generator set until engine and generator shafts have stopped rotating.

(1) Connect exhaust hose extension (Item 13, appendix C) to the output exhaust of the generator. See figure 2-2.

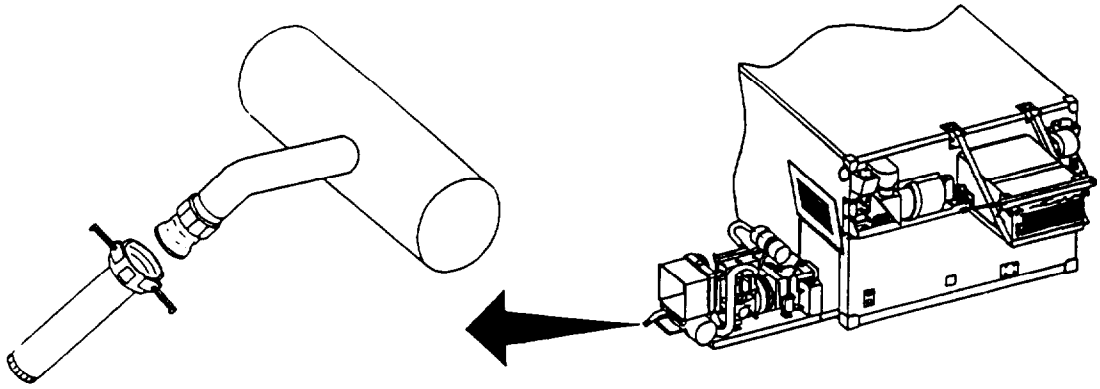


Figure 2-2. Exhaust Hose Extension

(2) Move MASTER SWITCH to PRIME & RUN position. LOW OIL PRESSURE indicator will light and stay on until the pressure in the lubrication system reaches approximately 8 to 10 psi.

CAUTION

To prevent damage to equipment, ensure that the red MALFUNCTION indicator lights on the Power Faceplate Assembly are closely monitored during operation. When a red light comes on, the engine should automatically shut down. If automatic shut down does not occur, immediately move the MASTER SWITCH to OFF position. Do not attempt restart until malfunction has been determined and corrected.

(3) Move MASTER SWITCH to START position and release. Engine should start and accelerate to rated speed within one minute.

CAUTION

If engine rotates but no ignition occurs, do not attempt restart. Check malfunction indicator lights on the Power Faceplate Assembly and perform troubleshooting as necessary.

NOTE

Engine life can be enhanced by allowing engine to run for a short period of time under no load condition.

(4) Allow engine to run a minimum of five minutes.

(5) Once engine start and run-up is accomplished, move MASTER SWITCH to OFF.

d. *SICPS shelter Turn-on sequence.* Perform the following actions at the Power Faceplate Assembly:

- Place AC/KILL switch to AC.
- Turn on AC MAIN circuit breaker.
- Turn on SHELTER LIGHTING circuit breakers.
- Turn on AC CIRCUITS circuit breakers.
- Turn on DC MAIN circuit breaker.
- Turn on DC CIRCUITS circuit breakers.
- Momentarily set the ENABLE/DISABLE switch (S3) to the enable position and release.

e. *Start-w ECU.* Refer to TM 5-4120-378-14, Operator's Organizational, Direct Support and General Support Maintenance Manual for Air Conditioner Horizontal, Compact, 9,000 BTU/HR.

f. *Installation Instructions.* Tighten the drain plug which was loosened for shipment.

2-14. INITIAL ADJUSTMENTS.

a. *Routine Checks.* Routine checks include the inspection of the wall panels, roof, floor, and door for missing or loose hardware. Check the door and vents for a secure fil of locks seals and latches. Surface area checks should include inspection for paint damage, corrosion, cracks and punctures.

b. *Adjustments.* The SICPS shelter is ready for use upon receipt and requires no additional adjustments. Refer to the end item technical (TM 11-7010-260-12&P) and auxilliary equipment manuals for initial adjustments. (See appendix A.)

2-15. OPERATING PROCEDURES. There are no operating procedures set aside for the SICPS shelter excepting the initial set-up procedures. Refer to the end item technical (TM 11-7010-260-12&P) and auxiliary equipment manuals for additional instructions applicable to the shelter configuration. (See appendix A.)

2-16. DECALS AND INSTRUCTION PLATES. The decals and instruction plates are located on the shelter as shown in figure 2-3.

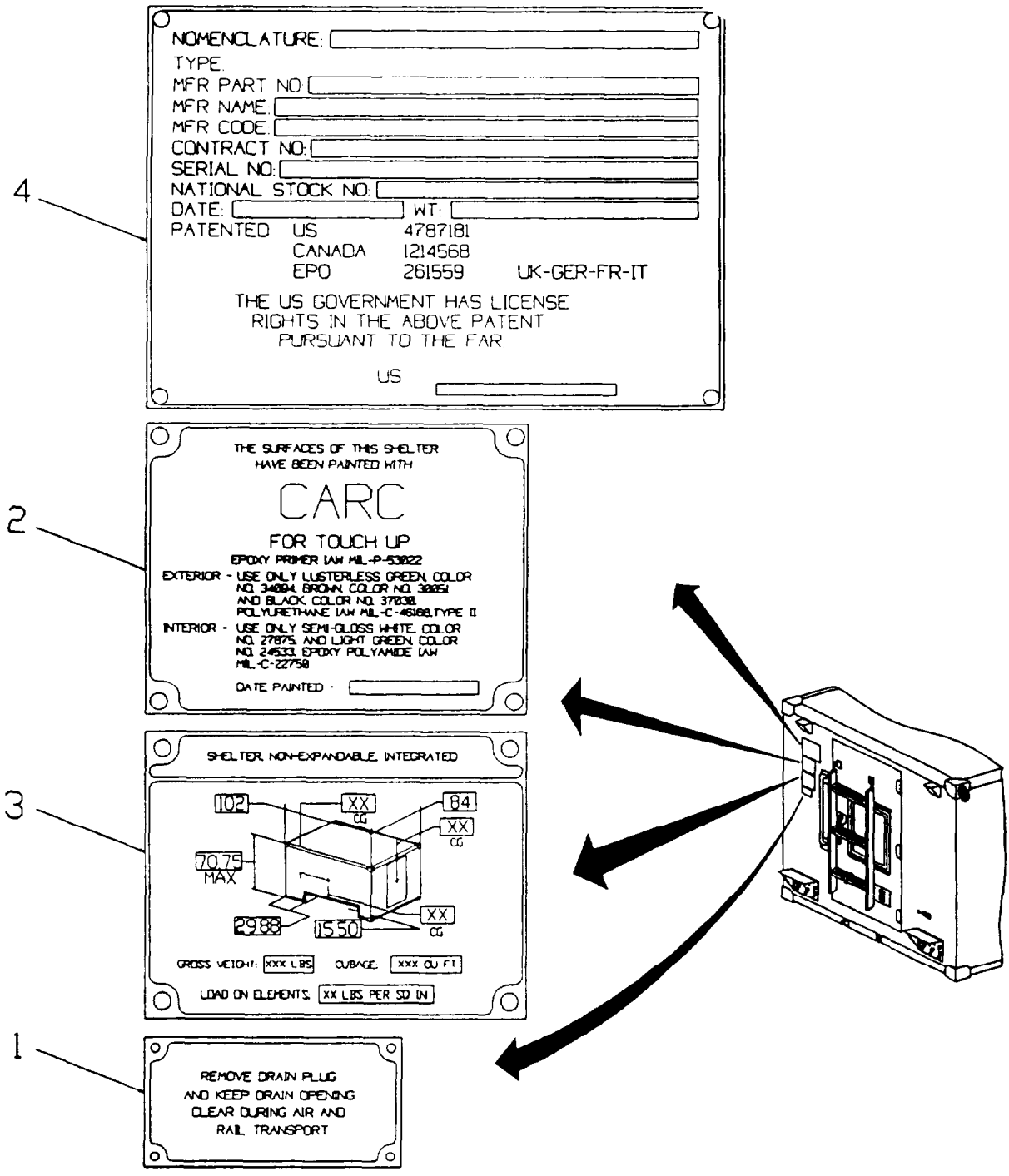


Figure 2-3. Data Plate Location

INDEX	ITEM	DESCRIPTION
1	WARNING PLATE	Keep drain plug loose during air and rail transport.
2	INSTRUCTION PLATE	The surfaces of this shelter have been painted with CARC For touch-up Epoxy primer IAW MIL-P-53022 Exterior - Use only lusterless green color no. 34094, polyurethane IAW MIL-C-46168, type II. Interior - Use only semi-gloss white, color no. 27875 and light green, color no. 24533, epoxy polyamide IAW MIL-C-22750
3	INSTRUCTION PLATE	Aircraft loading data plate.
4	INSTRUCTION PLATE	Nameplate

2-17. PREPARATION FOR MOVEMENT. The SICPS shelter is designed for operation on the move and requires no preparation for movement in this configuration. From a stationary site, all external connections must be removed before movement can take place. Refer to the end item technical manual for any other requirements necessary for movement. The following instructions detail the procedures for preparing for a movement.

a. *Preparation for Movement.*

(1) Refer to the end item technical manual (TM 11-7010-260-12P) for shutdown procedures.

(2) Turn off the DC CIRCUITS circuit breakers.

(3) Turn off the DC MAIN circuit breaker.

(4) Turn off the AC CIRCUITS circuit breakers.

(5) Turn off the SHELTER LIGHTING circuit breakers.

(6) Turn off AC MAIN circuit breaker.

(7) Turn off primary power source using step a for an external source or step b for the onboard generator.

(a) Shut down external power source and disconnect the external power cable from the Power Entry Box Assembly EXTERNAL POWER IN connector.

(b) Place AC/KILL switch to KILL position and MASTER SWITCH to OFF position.

(8) Disconnect the ground wire from the ground lug on the Power Entry Box Assembly.

(9) Lift ladder off of the bracket and place hooks in the slotted stowage bracket on the personnel access door. Secure ladder in place using the retaining strap.

WARNING

Extremely hot temperatures exists. Allow exhaust hose to cool before removing.

(10) Remove exhaust hose extension and secure in shelter.

Section IV. OPERATION UNDER UNUSUAL CONDITIONS

2-18. UNUSUAL ENVIRONMENT/WEATHER. The SICPS shelter is designed for operation in all weather conditions. However, certain environmental conditions dictate special inspection requirements. Shelters located along coastal areas are subject to salt air deterioration, shelters along beaches or desert areas are subject to wind-driven sand and/or coral dust, and shelters in tropical areas are subject to high humidity and high heat conditions. PMCS (table 2-1) may have to be completed more frequently or after an unusual environmental/weather occurrence to ensure a timely determination of maintenance and repair needs. Your supervisor will dictate any change to your inspection schedule. Additional requirements for operation under unusual conditions may be found in the end item technical manual.

2-19. FORDING AND SWIMMING. Refer to TM 9-2320-280-10, Operator's Manual for M1097 Utility Truck (HMMWV).

2-20. EMERGENCY PROCEDURES.

a. Any emergency of the electrical system or the GENSET requires the immediate shutdown of the engine and the removal of power. If an emergency occurs, IMMEDIATELY SET THE AC KILL SWITCH TO KILL AND SET THE MASTER SWITCH TO OFF.

b. Punctures or damages which allow water intrusion and results in the breakdown of the RFI/EMI integrity shall be patched immediately. In an emergency, any kind of tape or water resistant material may be used to cover a puncture or a large hole. Temporary patches must be replaced with permanent patches as soon as possible.

2-21. NUCLEAR, BIOLOGICAL, AND CHEMICAL (NBC) DECONTAMINATION.

WARNING

Contaminants are NBC agents that have been formulated to kill or to incapacitate human beings.

a. Containments may be absorbed on the shelter by certain materials such as paints and lubricants, on exposed surfaces, and retained in crevices, seams, concaves, and even horizontal surfaces of the shelter. They may also be absorbed by dust, mud, or vegetation which may adhere to the shelter or vehicle's surfaces. They can be transferred to personnel by direct contact, through vaporization and subsequent inhalation, ingestion or infusion.

b. The actual time that the shelter remains contaminated and poses a threat to personnel depends upon the properties of the agent, the duration of exposure of the shelter to the agent, the amount of agent remaining with the shelter after exposure, and environmental conditions.

c. Decontaminants are substances whose purpose is to detoxify, physically remove, seal, or otherwise make harmless a contaminant. Among the most effective decontaminants, particularly for chemical agents, are time and isolation. However, time and isolation require that the shelter be removed from service for an indefinite period. Rather than rely upon natural processes, it is recommended that a decontaminant substance such as water or steam be used to decontaminate the shelter. The attached listing identifies other decontaminants. Under all circumstances, notify your supervisor before decontaminating your shelter.

Table 2-2. Decontaminants for NBC Agents[1]

Decontaminant	Remarks
Acetylene tetrachloride	Attacks metals in presence of moisture.
Air/Heat	Evaporates, dissipates agent.
Alcohol	Removes, does not neutralize.
Ammonia	
ASH (Activated Solution of Hypochlorite)	
Baking Soda	
Bleach	Corrosive to metals.
Carbon tetrachloride	Removes, does not neutralize.
Caustic potash	
Caustic potash, alcoholic	
Caustic soda	Corrosive to metal; damages cotton, wool.
Caustic soda, alcoholic	
Charcoal slurry	Absorbs, does not destroy.
Chlormide powder	
Chloramine - B	Used in M258 Personal Decon Kit.
Chloramine - T	
Chloride	

Table 2-2. Decontaminants for NBC Agents [1] (Continued)

Decontaminant	Remarks
Detergent solution	Any liquid detergent and water.
Detrochlorite	Very corrosive to metals.
Dichloramine - T	
Diesel Fuel	Removes, does not neutralize.
Dry - cleaning fluid	Removes, does not neutralize.
DS-2 (Standard Vehicle Decontaminant)	Promotes corrosion of metals, paint, deteriorates most organic removes most acrylic or alkyd material, optical lenses.
Ethylene oxide - fluorinated	
Gunk	Gunk in kerosene, added to water. Removes, does not neutralize.
HTH (high-test bleach)	Highly corrosive to metals.
Naphtha	Removes, does not neutralize.
PCE	Removes, does not neutralize.
Soap solution	Preferably lye soap and water.
Sodium bisulfite solution	
Steam	Hydrolyzes some agents.
Washing soda	
Water	Removes, does not neutralize.

[1] These decontaminants may be used against chemical and/or biological agents, as appropriate. They do not reduce the radiation hazard of nuclear agents. Such agents must be removed and disposed of or shielded until natural decay reduces the hazard level.

CHAPTER 3
UNIT MAINTENANCE INSTRUCTIONS

CHAPTER 3
UNIT MAINTENANCE INSTRUCTIONS (CONT)

CHAPTER 3
UNIT MAINTENANCE INSTRUCTIONS

Section I. LUBRICATION INSTRUCTIONS

3-1. LUBRICATION INSTRUCTIONS. Lubricate door hinges, latches and locking mechanisms, door brace assemblies, roof access steps, and lifting and towing bracket assemblies to prevent rust and corrosion. Lubricate these parts frequently to be sure they are adequately lubricated, Lubricate with solid film lubricant, MIL-L-23398 (Item 18, Appendix E). Reference TM-9-61 15-641-10 and Lubrication Order (LO) 9-6115-641-12 for lubrication of the GENSET.

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

3-2. TOOLS AND EQUIPMENT. A list of common tools and tool kits may be found in Section Ill of Appendix B, Maintenance Allocation Chart. For authorized common tools and equipment, refer to the Modified Table of Organizational and Equipment (MTOE) applicable to your unit. No special tools or equipment are required to support the SICPS shelter.

3-3. REPAIR PARTS. Repair parts for unit maintenance are listed and illustrated in TM 10-5411-222-24P, Repair Parts and Special Tools List (RPSTL) Manual.

Section III. SERVICE UPON RECEIPT

3-4. SERVICE UPON RECEIPT OF SHELTER. Inspect shelter for damage incurred during shipment. If the shelter has been damaged, report the damage in accordance with the instructions in the Warranty Technical Bulletin, TB 10-5411-224-24. Tighten the drain plug (figure 3-1) located inside of the shelter.

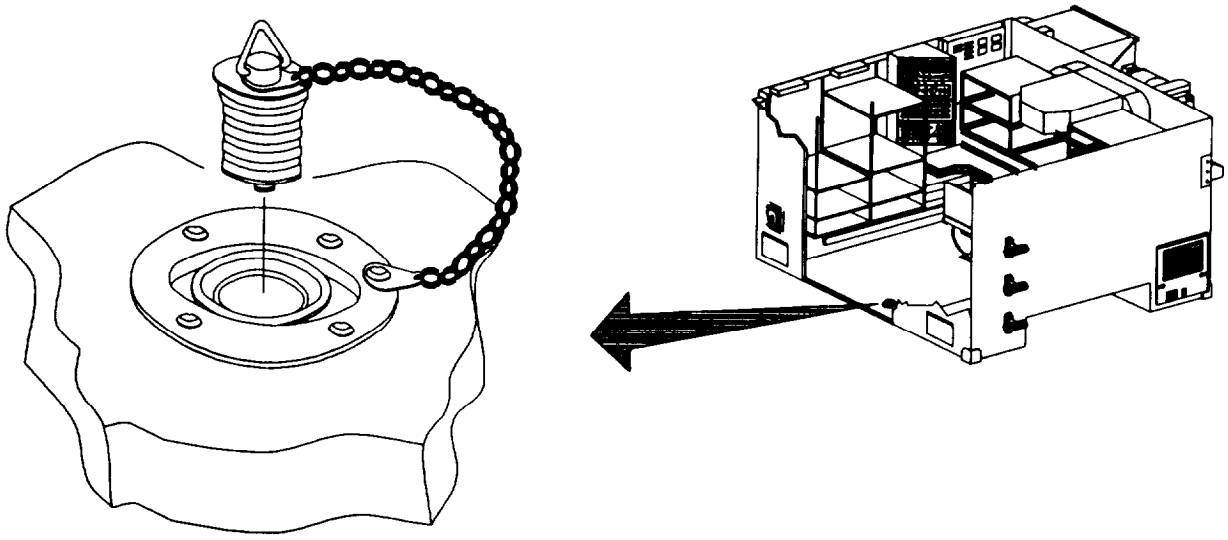


Figure 3-1. Drain Plug

If the shelter is crated or pallet-mounted, refer to the end item technical manual for unpacking instructions. If the shelter is to be loaded onto a new HMMWV, perform the following:

NOTE

- For shelters to be replaced or moved from one vehicle to another and for any component of the installation mounting kit which requires maintenance, perform only the steps which are applicable.

- Prior to performing the following procedures, remove Shelter-To-Vehicle Mounting Kit and inventory per Table C-l.

a. *Vehicle Preparations.* (Refer to Figure 3-2)

(1) Remove wheel well side panels located on each side of vehicle per TM 9-2320-280-20.

(2) Remove antenna mount from rear of vehicle per TM 9-2320-280-20. Carefully feed antenna cable back through wheel well grommet, place protective cap over connectors, and secure cables behind cross member support in wheel well.

(3) From inside the curbside rear wheel well, remove the wiring harness clamp mounting bracket.

(4) Remove cable clamps from wiring.

(5) Remove tail lights from HMMWV lower frame per TM 9-2320-280-20. Retain hardware.

(8) Secure tail lights (1) to tail light mounting brackets (2) using bolts and washers removed in step (5).

(7) Make a single cut through grommet and place it around the tail light wiring.

(8) Remove camlock fasteners from the vehicle mounting beam located in the front of the vehicle's bed, both sides. Refer to TM 9-2320-280-20.

(9) Remove strap tie down ring from the front of the bed floor, passenger side. Refer to TM 9-2320-280-20.

b. *Rear Shelter Preparations.* (Refer to Figure 3-2)

WARNING

Be sure shelter is properly positioned on support stands capable of supporting 2000 Lbs. Failure to observe safety procedures when working under the shelter could result in severe injury or death.

CAUTION

Do not use excessive force when tightening nuts. Damage to the equipment can occur.

NOTE

During procedure, threaded holes may be fouled with paint/primer/sealer preventing full insertion of bolts. Should this occur use a bottom tap to clean foreign matter from holes.

(1) Secure clamping bracket and shim (3) to lower section of rear mounting bracket (4) using screw (5), lockwasher (6), flat washer (7), and nut (8). Do not tighten.

(2) Remove nuts (9), bolts (IO), lockwashers (1 1), flat washers (12) securing curbside rear bumper to vehicle frame. Retain nuts (9), lockwashers (11) and flat washers (12).

(3) Position and secure lower section of rear mounting bracket (4) to rear bumper using (new) longer bolts (10) and nuts (9), lockwashers (11) and flat washers (12) from step 2. Tighten all bolts/nuts.

(4) Locate tail light mounting bracket (2) with tail light (1) to lower section of rear mounting bracket (4) and secure with lockwasher (13), flat washer (14), screw (15), and nut (16).

(5) Insert tail light wiring connectors through hole in lower section of rear mounting bracket (4), across top of rear bumper and reconnect to vehicle wiring harness. Install grommet (29) in hole in rear mounting bracket (4).

(6) On the bottom of the shelter, remove all paint and sealer from any rivet head that may come in contact with the rear mounting bracket.

(7) Insert an isolator mounting screw (17), flat washer (18), and isolator mount washers (19) down through each opening in the lower section of rear mounting bracket (4).

(8) Position and secure upper section of rear mounting bracket (4) to shelter using screws (20, 21, 22, and 23), flat washers (24 and 25), and lockwashers (26 and 27).

(9) Repeat steps 1 through 8 for other side of shelter.

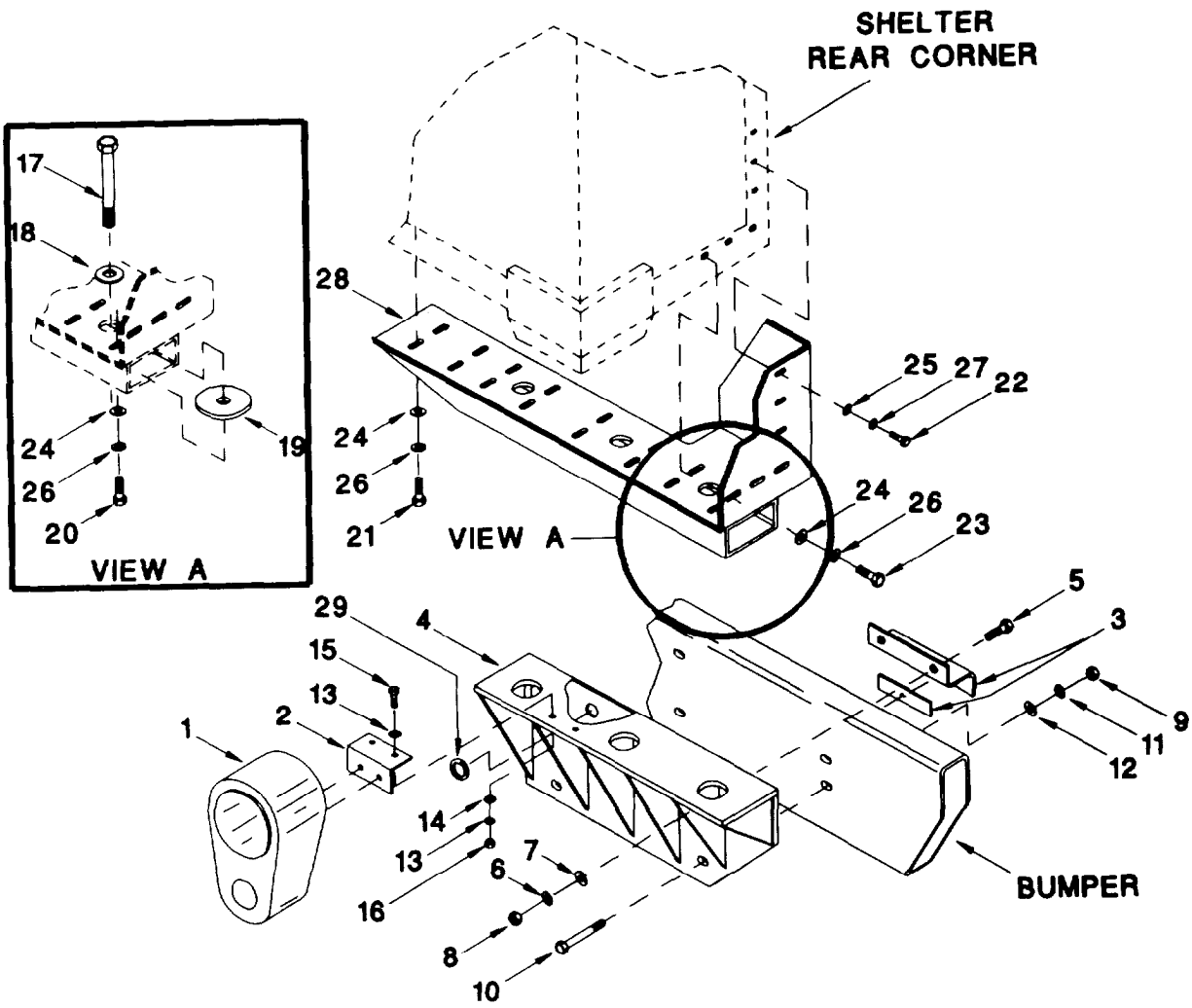


Figure 3-2. Rear Bracket Mounting Assembly

c. *Front Shelter Preparations.* (Refer to Figure 3-3)

(1) Remove bolts/plugs from the front and bottom front surfaces of the shelter.

CAUTION

Do not use excessive force when tightening bolts. Damage to equipment may occur.

(2) Set mounting angle assembly (1) to shelter and secure front section with screws (2) lockwashers (3), flat washers (4) and bottom section with bolts (5) and flat washers (6). Tighten screws/bolts to 8-10 ft-lbs.

(3) Insert screw (7), flat washer (8), isolator mount washer (9), and isolator (10) into each slot of mounting angle assembly (1).

(4) Repeat steps 1 through 3 for other side of shelter.

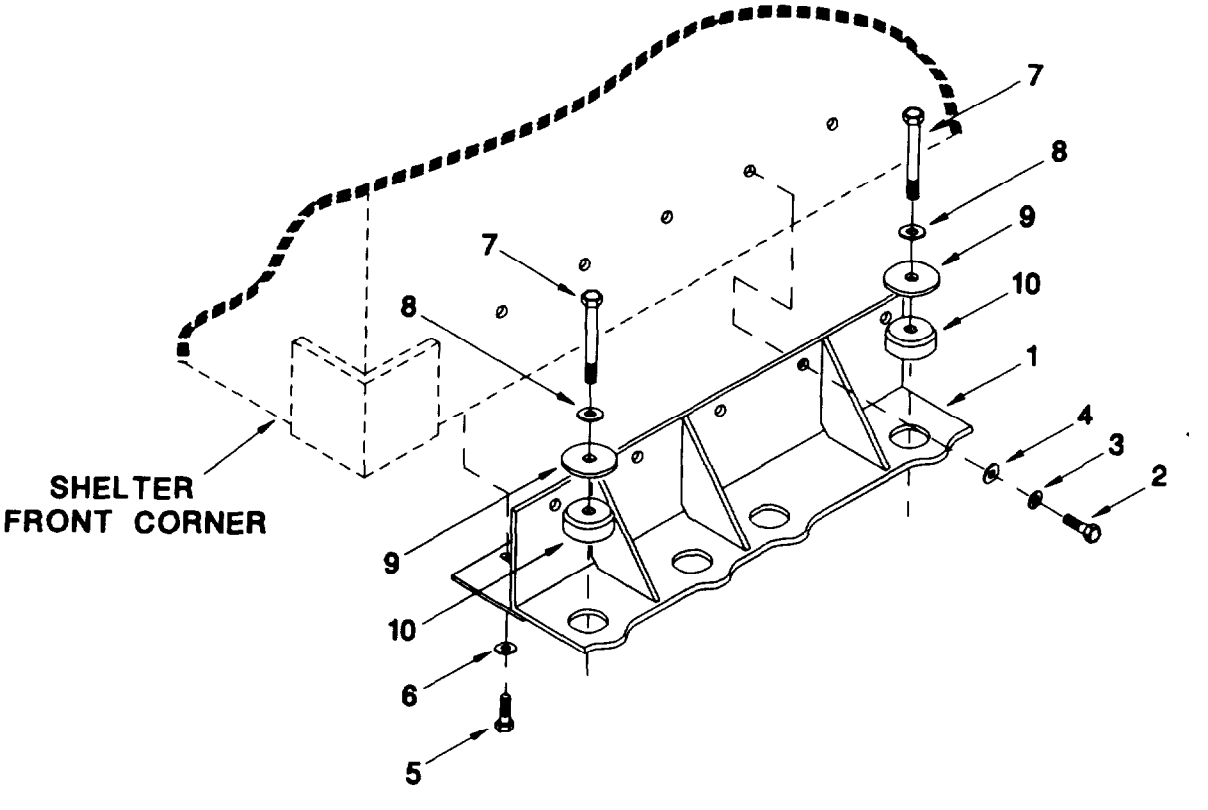


Figure 3-3. Front Bracket Mounting Assembly

d. *Mounting Shelter on Vehicle* (Refer to Figure 3-4)

WARNING

- To prevent injury or death to personnel, ensure hooks of lifting device are inspected and securely attached before lifting shelter.
- Slings and hoists must be properly certified. Use of an uncertified sling, or a sling which is not currently certified, may result in equipment damage or severe injury or death to personnel.
- Do not use handling and lifting equipment of less capacity than the gross shelter weight. Failure to observe warning may result in equipment damage or severe injury or death to personnel.
- SICPS shelter weighs in excess of 3500 pounds. Failure to follow safety procedures when the shelter is being lifted and handled can result in severe injury or death.

CAUTION

- Do not jerk, bounce, or jar shelter when lifting. Avoid swinging shelter from side to side. Do not attempt to butt or push shelter into place with a forklift. If shelter is crated or palleted, follow the stenciled instructions for forklift operations.
- If shelter panel is punctured during loading or securing, repair puncture as soon as possible to prevent moisture from seeping into panels and to restore RFI/EMI shielding.

(1) Attach certified sling assembly (1) to all four lifting rings (2) on shelter using the four sling hooks (3) at opposite ends of cables from sling assembly lifting ring (4).

(2) Insert lifting hook (5) of the lifting device into sling assembly lifting ring (4).

(3) Slowly lift shelter with lifting device so the isolator mounting screws (6 and 20) are located over their respective mounting holes on the vehicle.

(4) Slowly lower the shelter so that the front isolator mounting screws (6) are located slightly above the vehicle beam (7).

(5) Slide isolator spacer (8) isolators (9) spacer sleeves (10) and isolator washers (11) onto mounting screws (6) and slowly lower into front vehicle mounting holes. (Two people may be required to hold hard-ware on mounting screws when lowering shelter to prevent hardware from falling off.)

(6) Position bar assembly (12) under the vehicle mounting beam (7) and thread the mounting screws of the three outside isolator assemblies into the bar assembly (12). Do not tighten.

(7) Place fiat washer (13) and self locking nut (14) on the inside isolator mounting screw (6). Do not tighten. (There is no isolator washer in this mounting hole).

(8) Repeat for other side of shelter.

(9) Raise rear of the shelter just far enough to allow access to the bottom mounting screws for the rear mounting brackets (16). Loosen front mounting screws more if more clearance is required.

(10) Slide isolator (17), isolator spacers (18) and sleeve spacers (19) onto each mounting screw (20) between upper and lower rear mounting brackets (15 and 16).

(11) Slide isolators (17) isolator washers (21) and flat washers (22) into each mounting screw (20) and secure with self locking nut (23).

(12) Repeat for other side.

CAUTION

Do not use excessive force when tightening bolts. Damage to equipment may occur.

(13) Recheck and tighten all screws/nuts to 8-10 ft-lbs.

(14) Lower the shelter all the way and remove the lifting sling from the lift rings.

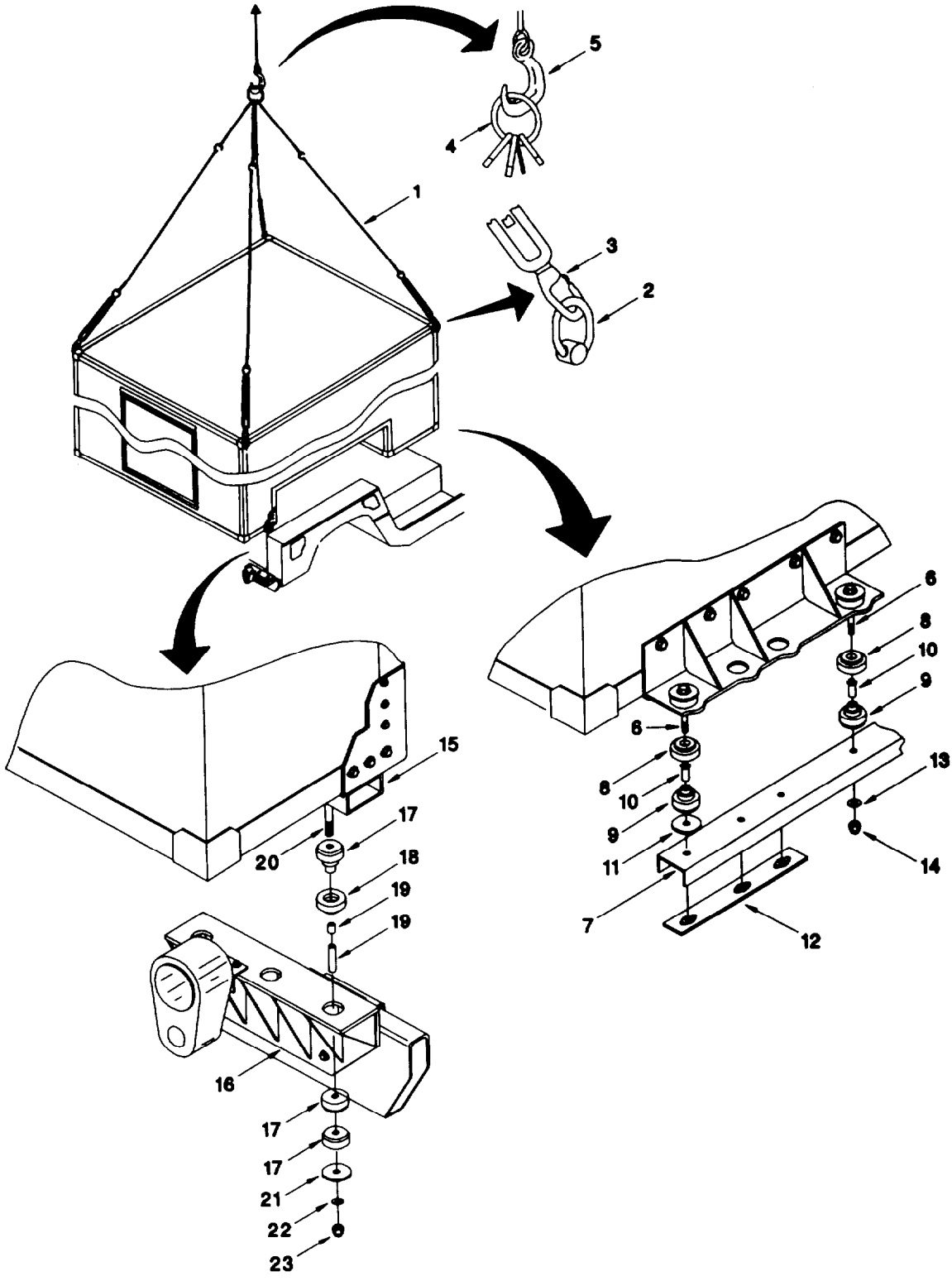


Figure 3-4. Mounting Shelter to Vehicle

Section IV. MAINTENANCE PROCEDURES

3-5. GENERAL. The SICPS shelter contains sensitive electronic equipment that is not easily removed. Unit level maintenance and repair will primarily involve the removal and replacement of components and assemblies which are easily accessible.

WARNING

When working on the SICPS shelter, do not operate electronic equipment when floors, ceilings, or walls show evidence of water intrusion. Electrical shock can cause personal injury or death.

3-6. AUXILIARY EQUIPMENT.

a. *GENSET.* Reference TM 9-6115-641 -10, TM 9-6115-641 -24, and TM 9-2815-252-24 for malfunctions and maintenance instructions on the GENSET and Fault Indicator Panel.

NOTE

The Fault Indicator Panel located on the Power Monitor Faceplate protects the GENSET against potential hazardous faults and provides a visual indication of faults associated with the engine (e.g., low oil, engine hot, overvoltage). Activation of any of the faults identified on the Fault Indicator Panel will cause the ac interrupter relay (K3) on the Relay Panel to deenergize, the generator to shutdown, and a fault indicator lamp to light. To reset the fault, push the PUSH TEST & RESET LAMPS switch on the Fault Indicator Panel and move the master switch to OFF. The fault must be corrected before any attempt is made to restart the GENSET.

b. *GPFU.* Reference TM 3-4240-325-20&P, TM 3-4240-302-30&P-8, and TM 3-4240-302-30&P-7 for malfunctions and maintenance instructions on the GPFU, GPFU Control Panel, and GPFU centrifugal fan.

C. ECU. Reference TM 5-4120-378-14 for malfunctions and maintenance instructions on the ECU and its control panel.

3-7. REPAIR PROCEDURES. General repair procedures apply for the removal of components and assemblies associated with the SICPS shelter. No attempt has been made to identify removal and replacement procedures for all components and assemblies.

3-8 TOUCH-UP PAINTING. When required to prevent rust and corrosion, touch-up painting of small areas (damaged or chipped paint) is authorized at the unit level and should be accomplished in accordance with TM 43-0139. Under all circumstances, safety instructions for the use of CARC paint shall apply. If large areas of painting are required, notify your supervisor.

3-9. DOOR ASSEMBLY.

This task covers: a. Replace b. Adjust

INITIAL SETUP

Tools:
General Mechanics Tool Kit (Item 1 Appendix B)

Materials/Parts:
Door Assembly
Cotter Pin (Item 3, Appendix E)
Lockwashers (Item 9, Appendix E)
Lockwashers (Item 14, Appendix E)
Shim (Item 20, Appendix E)
Shim (Item 21, Appendix E)
Shim (Item 22, Appendix E)
Shim (Item 23, Appendix E)
Shim (Item 24, Appendix E)
Shim (Item 25, Appendix E)

Personnel Required: 2

REPLACE

1. At the shelter door (1), loosen strap (2) securing ladder (3), and remove ladder (3).

2. Remove screw (4), lockwasher (5), and flat washer (6) securing ground jumpers (7) to door (1).

3. Open shelter door (1).

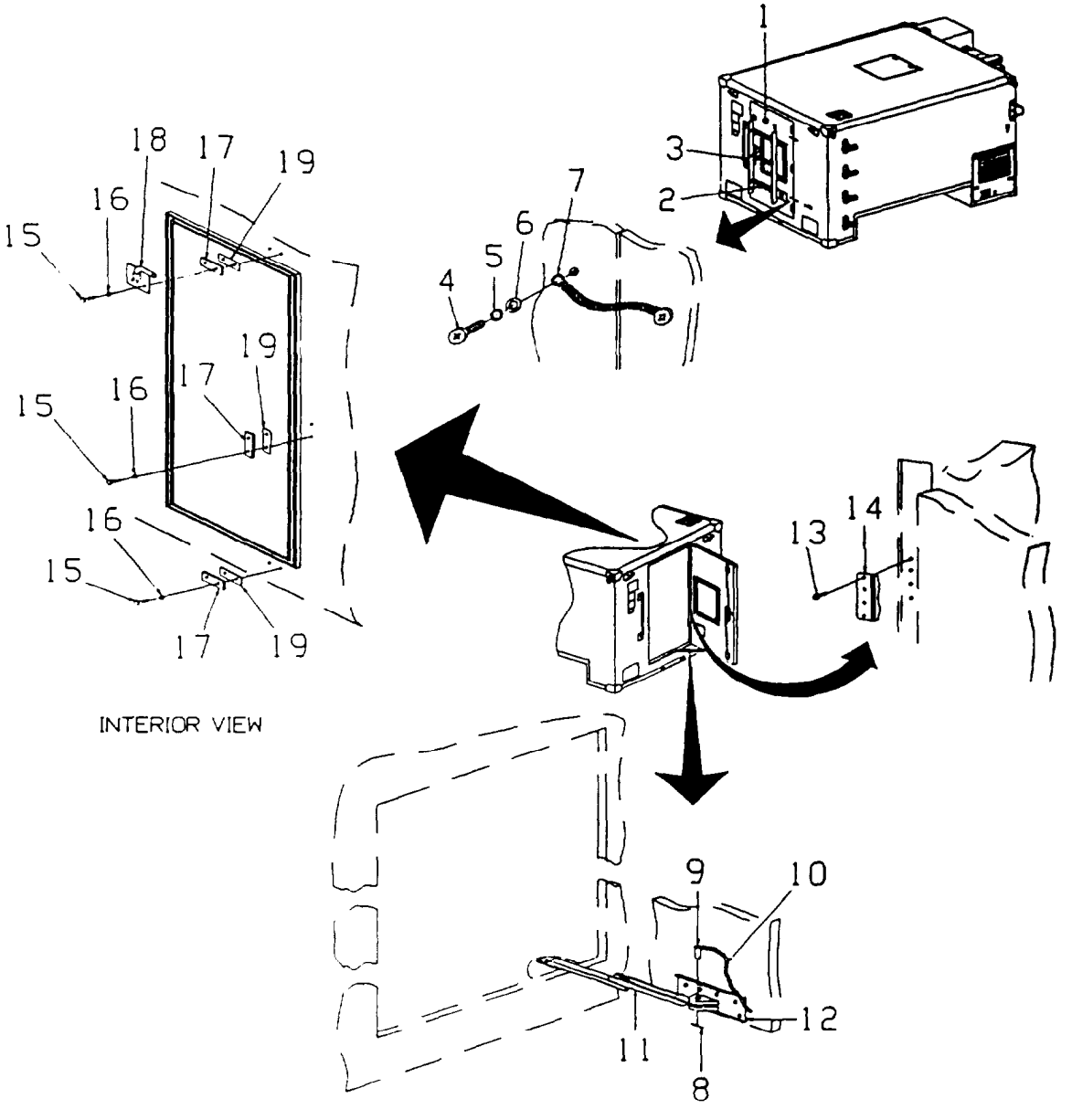
4. Remove cotter pin (8) and pin (9) from chain and pin assembly (10) and slide door brace (11) from door bracket (12).

WARNING

Door assembly weighs in excess of 50 pounds. Use two people to support door during removal or serious injury may result.

5. Remove screws (13) securing hinges (14) to shelter and remove door (1).

3-9. DOOR ASSEMBLY - Continued.



3-9. DOOR ASSEMBLY - Continued.

WARNING

Door assembly weighs in excess of 50 pounds. Use two people to support door during installation or serious injury may result.

6. Locate door (1) on shelter positioning hinges (14) over the holes and secure to shelter using screws (13).

7. Secure ground jumpers (7) in place using flat washer (6), lockwasher (5) and screw (4).

8. Position ladder (3) and secure to door (1) using strap (2).

9. Slide door brace (11) into door bracket slot (12), align holes, and install pin (9) of chain and pin assembly (10).

10. Secure chain and pin assembly (10) in place using cotter pin (8).

11. Test the door assembly for proper closure pressure as follows:

a. Place a single piece of paper 0.005 inches thick by 2 1/2 inches wide (e.g., a dollar bill) between the door silicone weather gasket and its bearing surface.

b. Close and latch the door and withdraw the paper. Do this at the top, middle, and bottom sections of the door. If there is resistance to the withdrawal at each of the test points, sufficient seal pressure exists and no adjustments are necessary. If no resistance is noted, use the following adjustment procedure to increase gasket compression.

ADJUSTMENT

1. Open the door and remove bolts (15) and lockwashers (16) securing striker plate (17) requiring adjustment.

2. Insert shim(s) (19) between striker plate (17) and shelter panel.

3. Locate striker plate (17) with shim(s) (19) between shelter and blackout switch (18) and secure with bolts (15) and lock washers (16).

4. Retest door assembly per step 11 above and repeat adjustment procedure as necessary.

3-10. ROLLER LATCH ASSEMBLY.

This task covers: a. Replace

INITIAL SETUP

Tools:
General Mechanics Tool Kit (Item 1, Appendix B)
Paint Brush (Item 2, Appendix B)

Materials/Parts:
Lockwashers (Item 10, Appendix E)

REPLACE

1. Remove bolts (1), lockwashers (2), flat washers (3), roller latch door shim (4), and roller latch spacers (5) from upper (6) and lower (7) roller locks.

2. Remove bolts (8), lockwasher (9), flat washers (10), shim (11), and spacers (12) from handle (13).

3. Remove handle (13) and upper/lower roller locks (6 and 7) from door .

4. Locate handle (13) and upper/lower roller locks (6 and 7) on door assembly.

NOTE

Do not tighten bolts until all shims are installed.

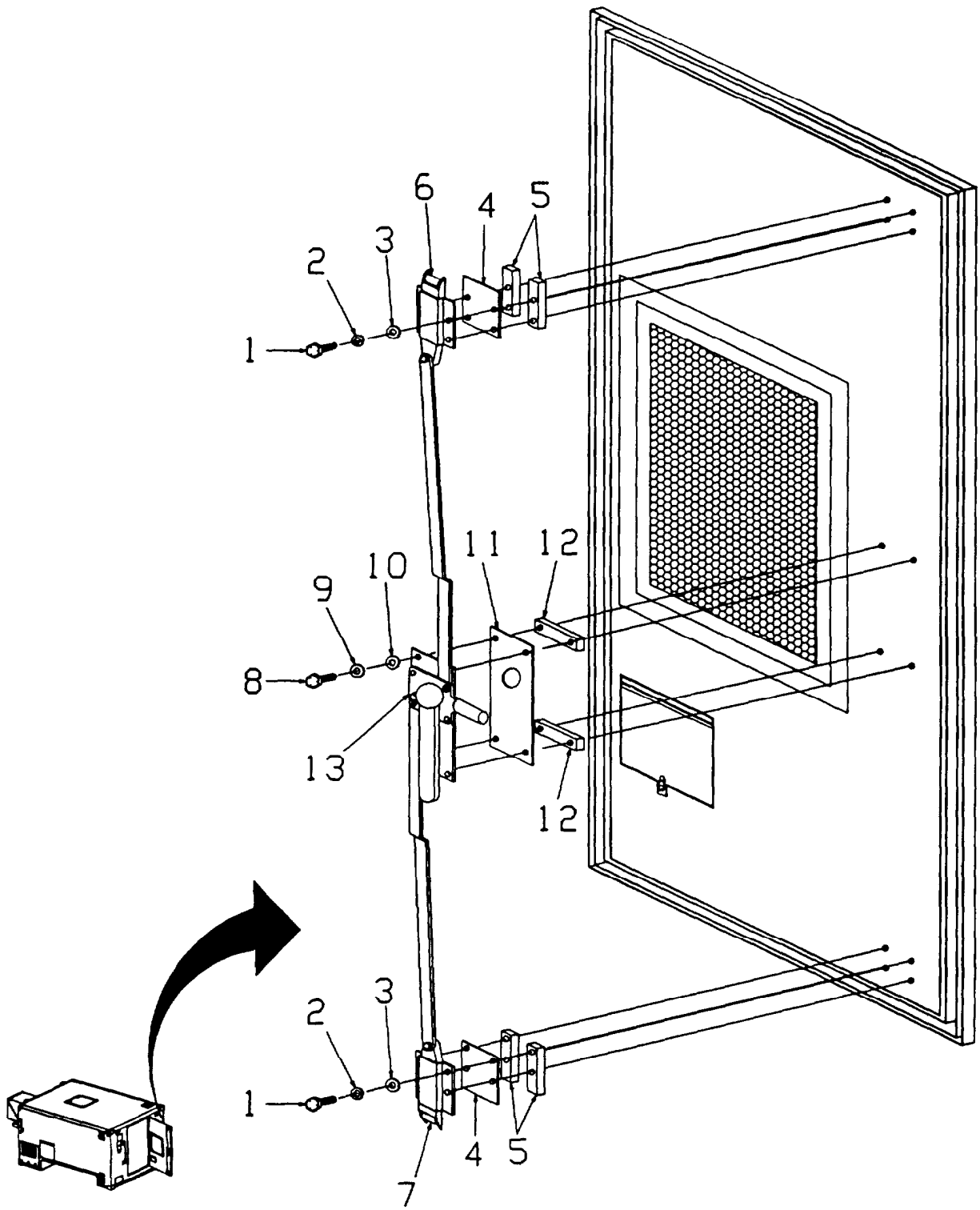
5. Secure handle (13) to door assembly using flat washers (10), lockwashers (9), screws (8), shim (11), and spacers (12).

6. Secure upper (6) and lower (7) roller locks to door assembly using bolts (1), lockwashers (2), flat washers (3), shim (4), and spacers (5).

7. Tighten bolts to 25 (± 2) ft/lb of torque.

8. Test and adjust door assembly for proper closure pressure per 3-9, step 11.

3-10. ROLLER LATCH ASSEMBLY - Continued.



3-11 DOOR HANDLE ASSEMBLY.

This task covers: a. Replace

INITIAL SETUP

Tools:
General Mechanics Tool Kit (Item 1, Appendix B)

Materials/Parts:
Door Handle
Lockwasher (Item 16, Appendix E)
Sealer (Item 19, Appendix E)
Isoprophyl Alcohol (Item 33, Appendix E)
Rags

REPLACE

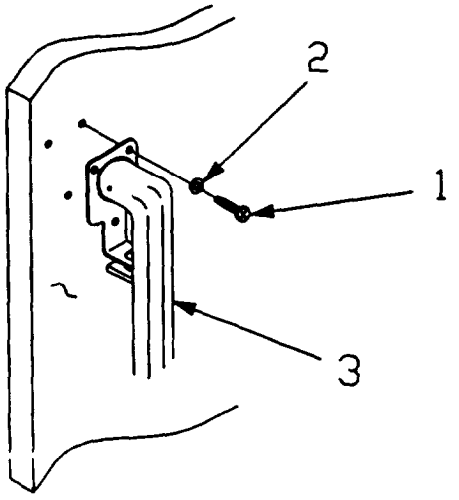
1. Remove bolts (1), and lockwashers (2) securing Door Handle Assembly (3) to shelter.

2. Remove Door Handle Assembly (3).

3. Remove sealant on Door Handle Assembly (3) and shelter using rags and isoprophyl alcohol.

4. Apply sealer to handle.

5. Locate Door Handle Assembly (3) and secure with bolts (1) and lockwashers (2).



3-12. AIR VENT FRAME RFI FILTER.

This task covers: a. Replace

INITIAL SETUP

Tools;
General Mechanics Tool Kit (Item 1, Appendix B)

Materials/Parts:
RFI Filter
Lockwasher (Item 14, Appendix E)

REPLACE

1. Open shelter door (1).

2. Release bottom latch (2), lift cover (3), and lock in place with latch (4).

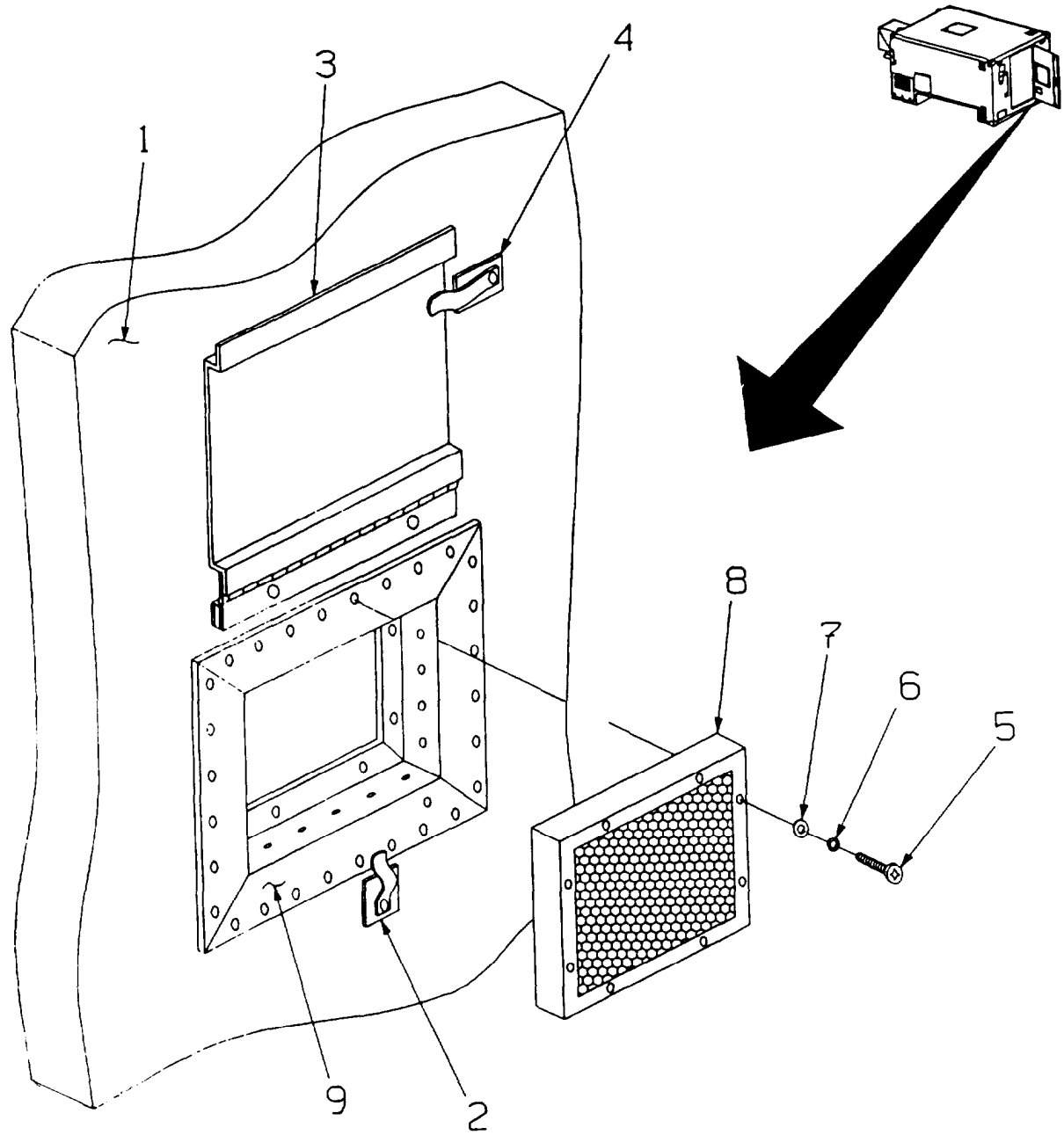
3. Remove the eight screws (5), lockwashers (6) and flat washers (7) securing RFI filter (8) to door panel (9).

4. Remove filter (8).

5. Install RFI filter (8) and secure to door panel (9) using flat washers (7), lockwashers (6) and screws (5).

6. Release latch (4), lower cover (3), and secure with bottom latch (2).

3-12. AIR VENT FRAME RFI FILTER - Continued.



3-13. DOOR WEATHER SEAL.

This task covers: a. Replace

INITIAL SETUP

Tools:
General Mechanics Tool Kit (Item 1, Appendix B)
Caulking Gun (Item 8, Appendix B)

Materials/Parts:
Gasket (Appendix F, Figure F-1, -1)
Adhesive (Item 2, Appendix E)
Isopropyl Alcohol (Item 33, Appendix El
Rags (Item 7, Appendix E)

REPLACE

1. Open door and remove weather gasket (1) from track (2) around door.

WARNING

Alcohol solvents are flammable. Keep away from heat, sparks, and open flames. Keep containers closed when not in use. Use only in well-ventilated areas. Avoid prolonged breathing of vapors or repeated contact with skin.

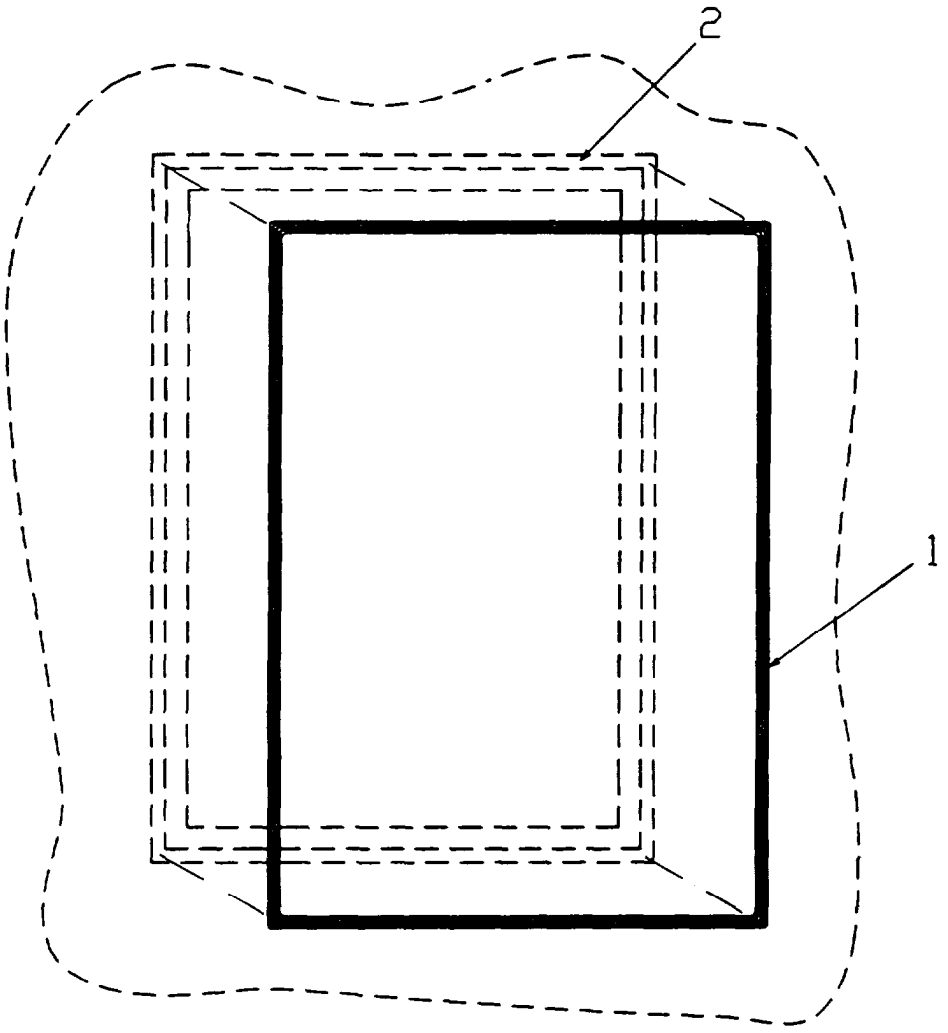
2. Clean remaining adhesive and dirt from track (2) using rags and alcohol.

3. Cut length of gasket (1) to fit around top, bottom and sides of door tracks (2). Cut ends of gasket at a 45° miter.

4. Apply a bead of adhesive in track (2) and carefully press gasket section (1) in place.

5. Fill corners with adhesive and where ends meet.

3-13. DOOR WEATHER SEAL - Continued.



3-14. DOOR BRACE ASSEMBLY.

This task covers: a. Repair

INITIAL SETUP

Tools;
General Mechanics Tool Kit (Item 1, Appendix 6)

Materials/Parts:
Cotter pin (Item 5, Appendix E)
Cotter pin (Item 6, Appendix E)
Lockwasher (Item 13, Appendix E)
Lockwasher (Item 15, Appendix E)

REPAIR

Disassemble

1. Remove cotter pin (1) and pin (2) from door stop bracket (3).

2. Slide door brace (4) away from door stop bracket (3).

3. Remove screw (5) and lockwasher (6) securing chain and pin assembly (7) to the door (8).

4. Remove screws (9), lockwashers (10) and flat washers (11) securing the door stop bracket (3) to the door (8).

6. Remove cotter pin (12), nut (13), washer (14), and bolt (15) from angle door stop (16).

7. Remove bolts (17) securing angle door stop (16) to shelter (18).

8. Remove cotter pin (19), castle nut (20), washers (21) and bolt (22) securing upper and lower braces together.

Assemble

1. Install bolt (22), washer (21), castle nut (20,) and cotter pin (19) to secure upper and lower braces together.

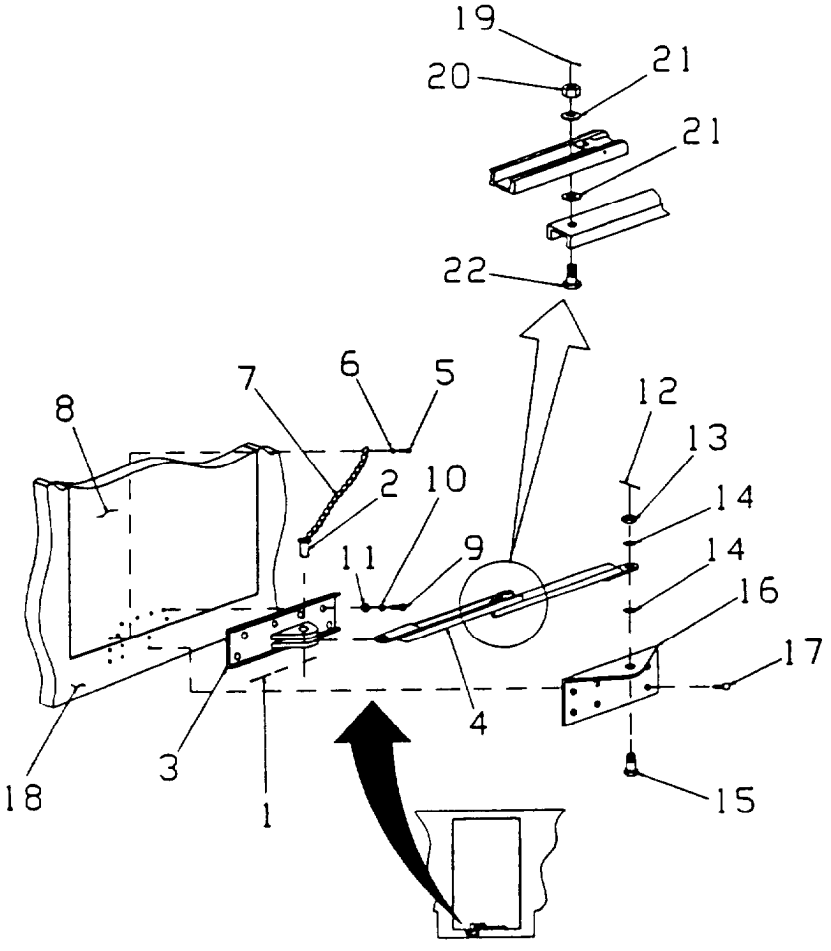
2. Locate angle door stop (16) and secure with bolts (17)

3-14. DOOR BRACE ASSEMBLY.

Assemble (Continued)

3. Slide brace (4) into angle door stop (16) and secure with bolt (15), flat washer (11), castle nut (13), and cotter pin (12). Locate door stop bracket (3) on door (8) and secure using screws (9), lockwashers (10, and flat washers (11).

4. Secure chain and pin assembly (7) to shelter using screw (5) and lockwasher (6).



3-15. REAR LADDER.

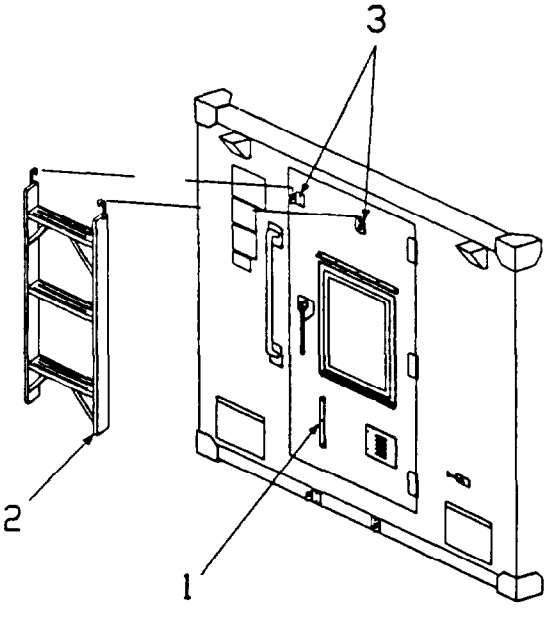
This task covers: a. Replace

INITIAL SETUP

Materials/Parts:
Ladder

REPLACE

1. Loosen retaining strap (1) securing ladder (2) to door.
2. Lift ladder off of brackets (3).
3. Place ladder (2) in brackets (3), and secure with strap (1).



3-16. HATCH.

This task covers: a. Replace

INITIAL SETUP

Tools:
General Mechanics Tool Kit (Item 1, Appendix 6)

Materials/Parts:
Hatch
Rags (Item 7, Appendix E)
Sealer (Item 19, Appendix E)
Isopropyl Alcohol (Item 33, Appendix E)

REPLACE

1. From inside of shelter, release hatch (1) but do not open.

WARNING

Use caution when climbing and descending ladder steps. Use support handles in all cases. Personal injury can result from a fall.

2. Carefully climb to roof of shelter.

3. Remove screws (2) securing hinge (3) to shelter roof (4).

4. Remove hatch (1) from shelter roof (4).

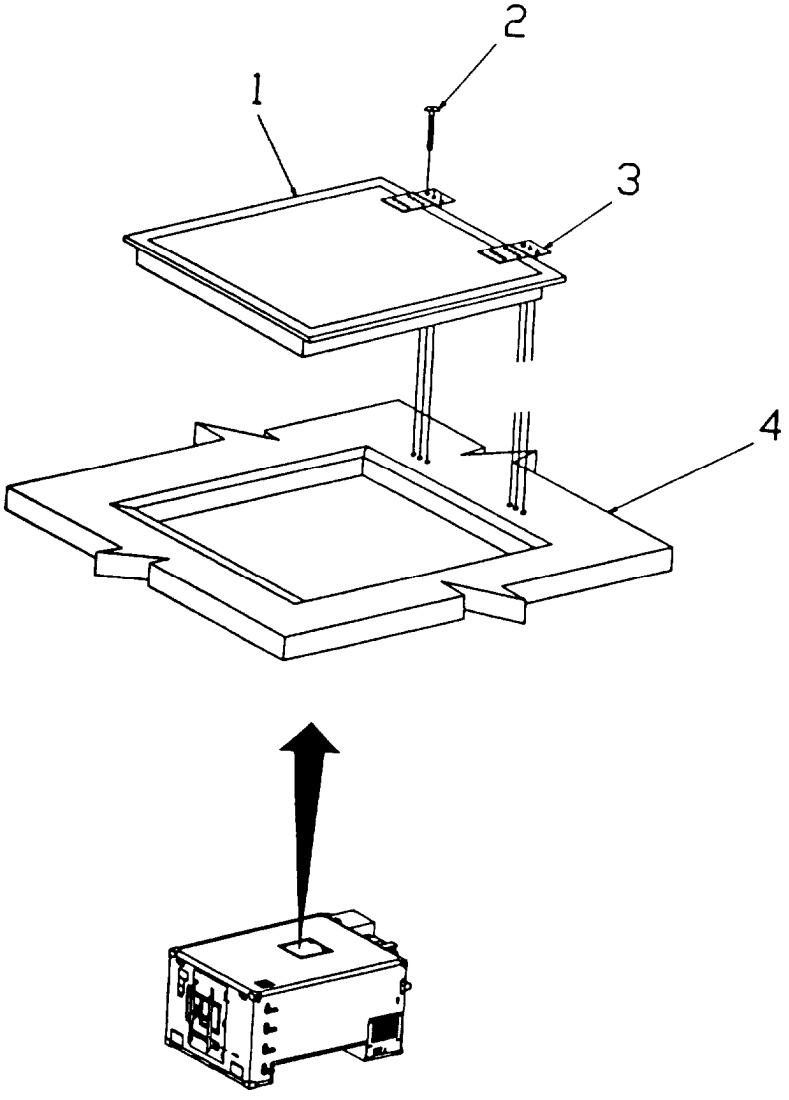
5. Remove sealer from shelter roof (4), clean with alcohol and rags.

6. Apply sealer to hinge (3).

7. Position hatch (1) and secure hinges (3) to shelter roof (4) using screws (2).

8. Close hatch.

3-16. HATCH - Continued.



3-17. HATCH WEATHER SEAL.

This task covers: a. Replace

INITIAL SETUP

Tools:
General Mechanics Tool Kit (Item 1, Appendix B)
Caulking Gun (Item 8, Appendix B)

Materials/Parts:
Gasket (Appendix F, Figure F-1, -2)
Adhesive (Item 2, Appendix E)
Isopropyl Alcohol (Item 33, Appendix E)
Rags (Item 7, Appendix E)

Equipment conditions:
Hatch removed (para 3-16)

REPLACE

1. Remove weather seal (1) from track (2) around door.

WARNING

Alcohol solvents are flammable. Keep away from heat, sparks, and open flames. Keep containers closed when not in use. Use only in well-ventilated areas. Avoid prolonged breathing of vapors or repeated contact with skin.

2. Clean remaining adhesive and dirt from track using rags and alcohol.

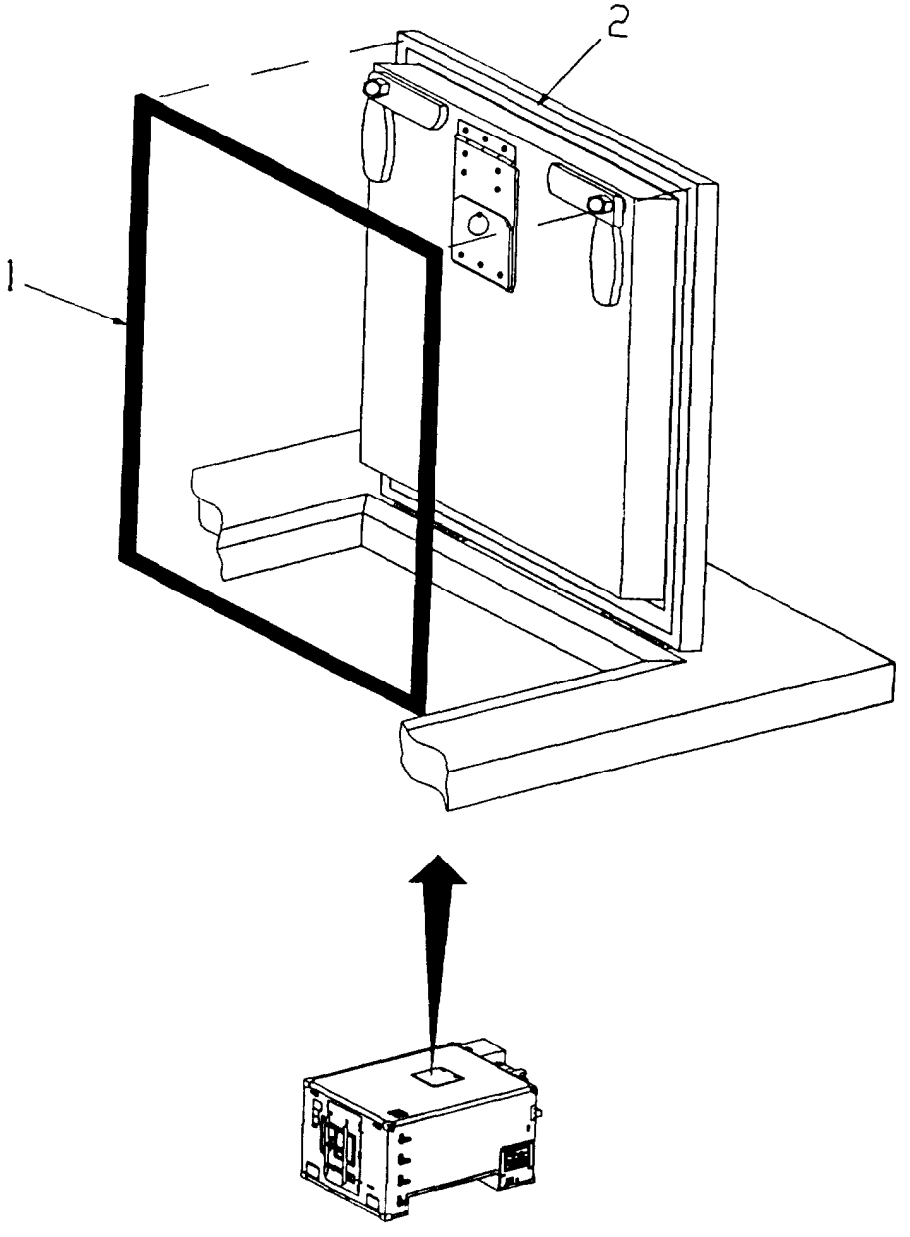
3. Cut length of seal (1) to fit around door track (2). Cut ends of seal at a 45° miter.

4. Apply a bead of adhesive in track (2) and carefully press seal section **(1)** in place.

5. Fill corners with adhesive and where ends meet.

Follow-on maintenance: replace hatch (para 3-16).

3-17. HATCH WEATHER SEAL - Continued.



3-18. STEP ASSEMBLY.

This task covers: a. Replace

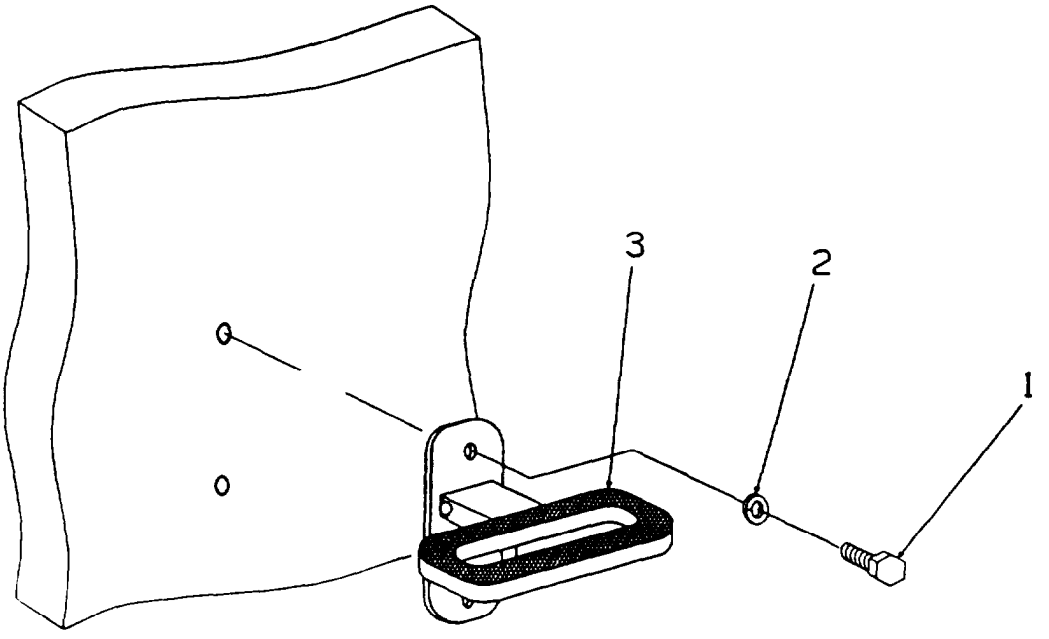
INITIAL SETUP

Tools:
General Mechanics Tool Kit (Item 1, Appendix B)

Materials/Parts:
Step
Lockwasher (Item 11, Appendix E)

REPLACE

1. Remove bolts (1) and lockwashers (2) securing step (3) to shelter.
2. Remove step (3).
3. Locate step (3) on shelter.
4. Secure step (3) using bolts (1) and lockwashers (2).



3-19. COMMO ENTRY COVER ASSEMBLY.

This task covers: a. Replace

INITIAL SETUP

Tools;
General Mechanics Tool Kit (Item 1, Appendix B)

Materials/Parts
COMMO Entry Cover
Lockwasher (Item 9, Appendix E)

REPLACE

1. Unscrew fasterners (1).

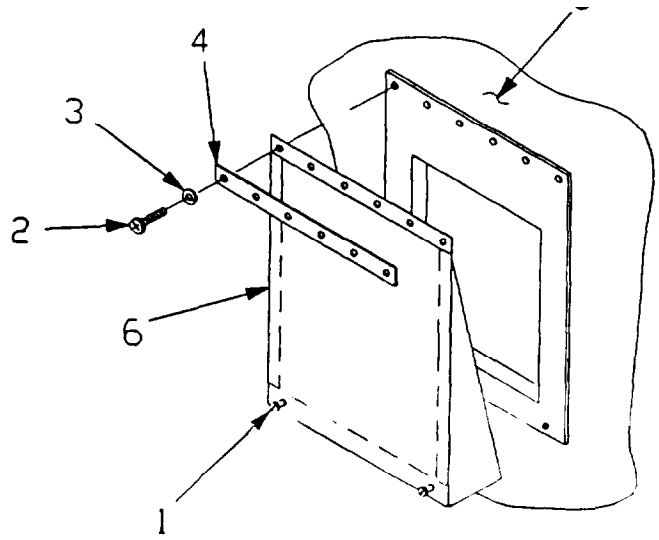
2. Remove screws (2) and lockwashers (3) securing door cap strip (4) to the shelter (5).

3. Remove cover (6).

4. Locate cover (6) on shelter (5).

5. Locate door cap strip (4) over cover (6) and secure with lockwashers (3) and screws (2).

6. Secure with fasteners (1).



3-20. TIP ENTRY PANEL COVER ASSEMBLY.

This task covers: a. Replace

INITIAL SETUP

Tools:
General Mechanics Tool Kit (Item 1, Appendix B)

Materials/Parts:
TIP Entry Panel Cover
Lockwasher (Item 9, Appendix E)

REPLACE

NOTE

The following procedure applies to both the Power and Interface panel covers.

1. Unscrew fasterners (1).

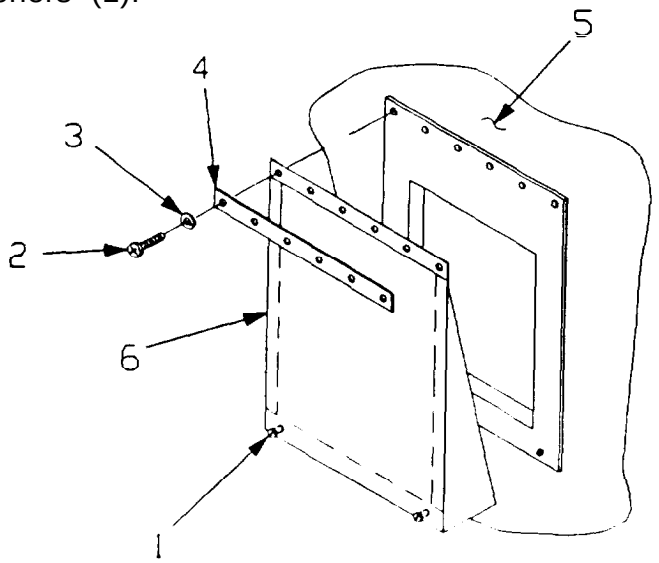
2. Remove screws (2) and lockwashers (3) securing door cap strip (4) to the shelter (5).

3. Remove cover (6).

4. Locate cover (6) on shelter (5).

5. Locate door cap strip (4) over cover (6) and secure with lockwashers (3) and screws (2).

6. Secure with fasteners (1).



3-21. CREW BLOWER DOOR ASSEMBLY.

This task covers: a. Repair

INITIAL SETUP

Tools:
General Mechanics Tool Kit (Item 1, Appendix B)

Materials/Parts
Crew Blower Door
Cable
Cotter Pin (Item 4, Appendix E)
Lockwasher (Item 8, Appendix E)
Lockwasher (Item 15, Appendix E)

REPAIR

Disassemble

1. Remove screws (1) and slide screen (2) to gain access to Relay Panel Assembly area.

2. Loosen screw (3) on cable clamp (4).

3. Remove nuts (5), screws (6) and cable clamp (7) on cable support (8).

4. Remove cotter pin (9) and loosen screw (10) on cable pivot (11) and slide cable assembly (12) from cable pivot (11).

5. Remove nut (13) and lockwasher (14) from cable assembly (12).

6. Remove cable assembly (12) by pulling through hole in Power Monitor Assembly (15).

7. Remove screws (16) and lockwashers (17) securing crew door (18).

8. Remove crew door (18).

Assemble

1. Locate crew door (18) and secure with lockwashers (17) and screws (16).

2. Slide cable assembly (12) through hole in Power Monitor Faceplate Assembly (15).

3-21. CREW BLOWER DOOR - Continued.

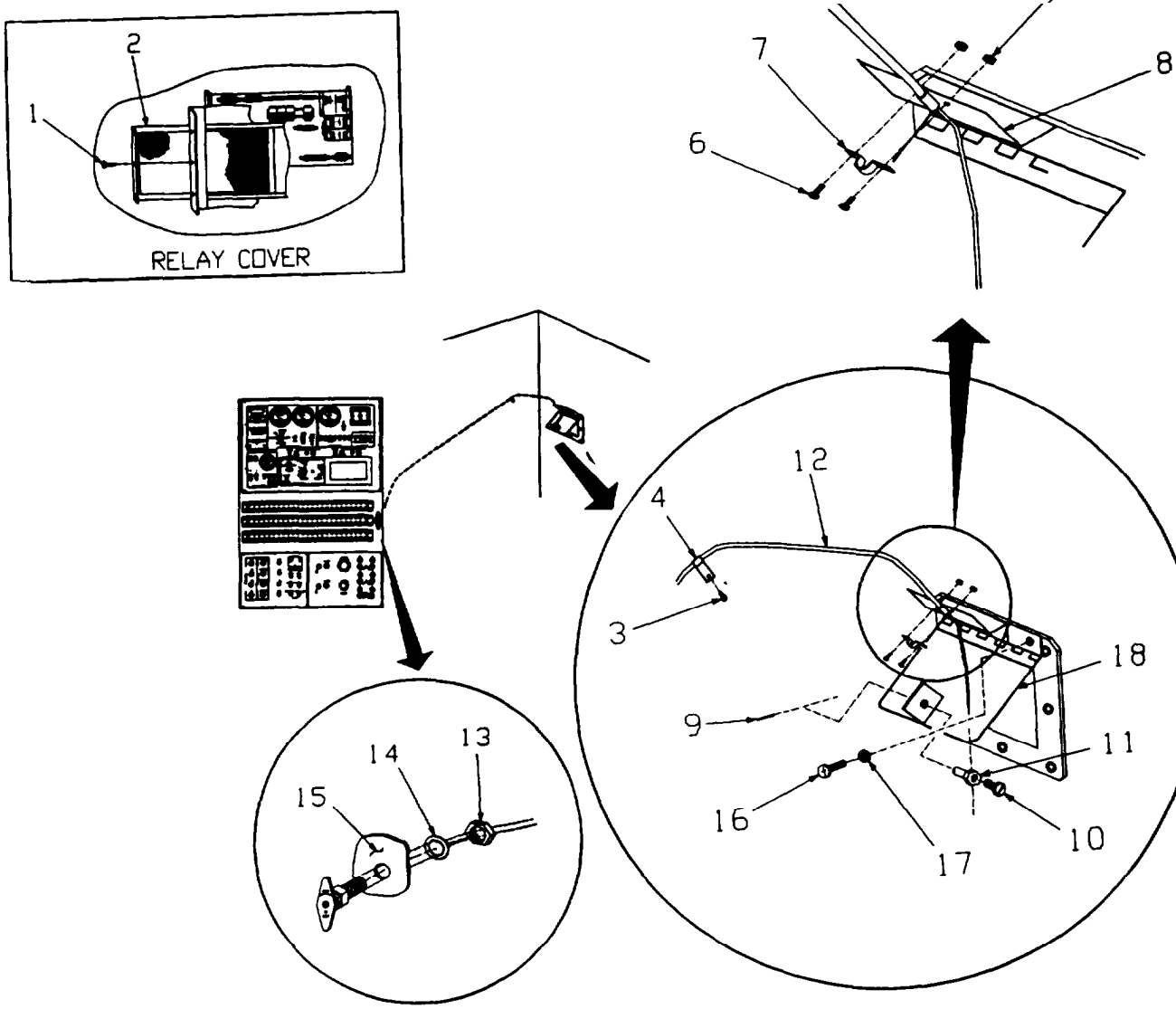
3. Slide lockwasher (14) and nut (13) onto cable assembly (12) and secure cable assembly (12) to Power Monitor Faceplate Assembly (15).

4. Slide cable into cable pivot (11), tighten screw (10) and secure with cotter pin (9).

5. Position cable clamp (7) on cable support (8) and secure using screws (6) and nuts (5).

6. Secure cable clamp (4) to roadside wall with screw (3).

7. Slide screen (2) into position and secure with screws (1).



3-22. POWER ENTRY DOOR ASSEMBLY.

This task covers: a. Repair

INITIAL SETUP

Tools:
General Mechanics Tool Kit (Item 1, Appendix B)

Materials/Parts:
Power Entry Door
Door Latch
Gasket (Appendix F, Figure F-5)
Adhesive (Item 2, Appendix E)
Lockwasher (Item 9, Appendix E)
Isopropyl Alcohol (Item 33, Appendix E)
Rags (Item 7, Appendix E)

REPAIR

Disassemble

1. Open three latches (1) securing power entry door (2) to the shelter by lifting latch (1) and turning 45 degrees in a counterclockwise direction.

2. While supporting the power entry door, remove the screws (3) and lockwashers (4) securing the hinge (5) and two shims (6) to the shelter. Remove power entry door (2).

3. Remove gaskets (7, 8, 9, and 10) from power entry door.

4. Clean with Isopropyl alcohol and rags.

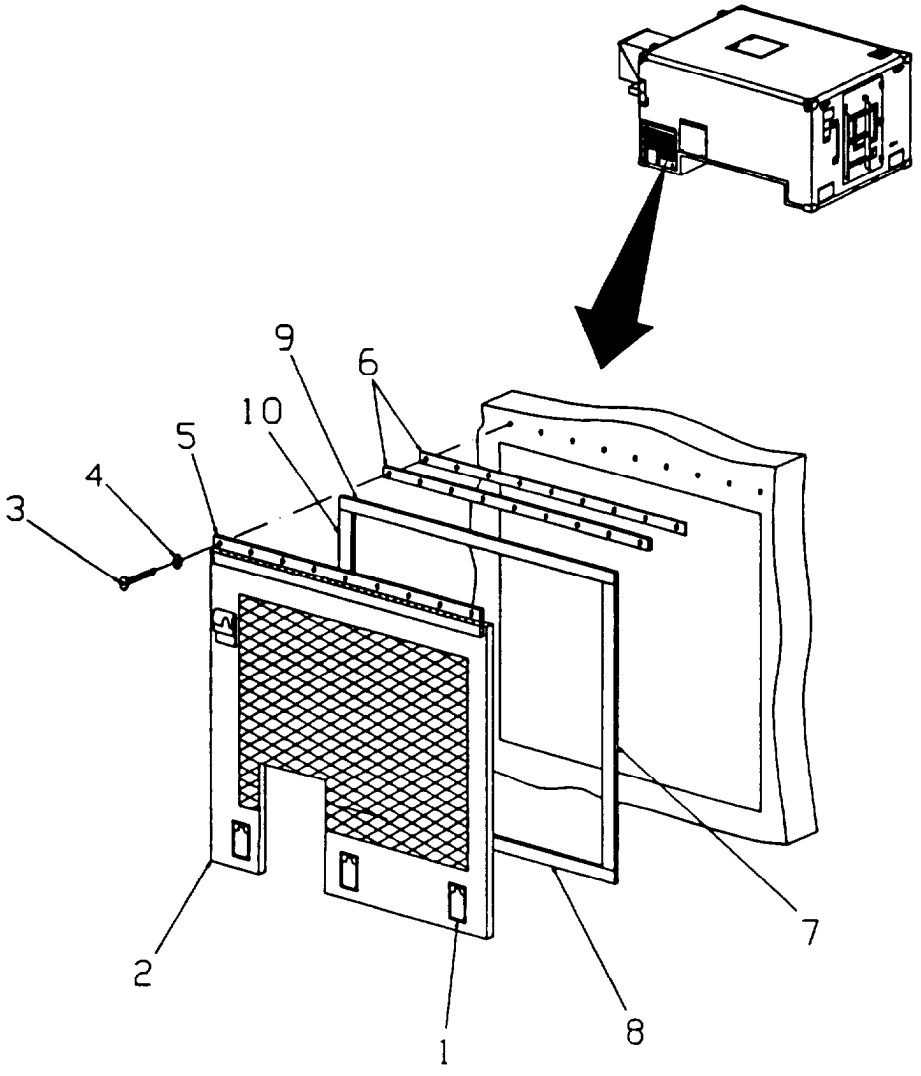
Assemble

1. Install and secure gaskets (7, 8, 9, and 10) with adhesive.

2. Position power entry door (2), shims (6), and hinge (5) on shelter and secure using screws (3) and lockwashers (4).

3. Close and secure power entry door (2) using latches (1).

3-22. POWER ENTRY DOOR ASSEMBLY - Continued.



3-23. GENSET DOOR ASSEMBLY.

This task covers: a. Repair

INITIAL SETUP

Tools:
General Mechanics Tool Kit (Item 1, Appendix B)

Materials/Parts:
GENSET Door
Seal
Seal holder
Gasket (Appendix F, Figure F-5, F-7, F-8)
Adhesive (Item 2, Appendix E)
Isopropyl Alcohol (Item 33, Appendix E)
Rags (Item 7, Appendix E)
Cotter Pin (Item 3, Appendix E)
Lockwasher (Item 9, Appendix E)

REPAIR

Disassemble

1. Open three latches (1) securing GENSET door (2) to the shelter by lifting latch (1) and turning 45 degrees in a counterclockwise direction.

2. While supporting the GENSET door (2), remove the screws (3) and lockwashers (4) securing the hinge (5) and shims (6) to the shelter. Remove GENSET door (2).

3. Remove screws (7) and nuts (8) securing each seal bracket (9) to the GENSET door (2).

4. Remove cotter pin (10) securing seal (11) to bracket (9).

5. Remove gaskets (12, 13, 14, and 15) from GENSET door (2).

6. Clean with Isopropyl alcohol and rags.

Assemble

1. Secure gaskets (12, 13, 14, and 15) GENSET door (2) with adhesive.

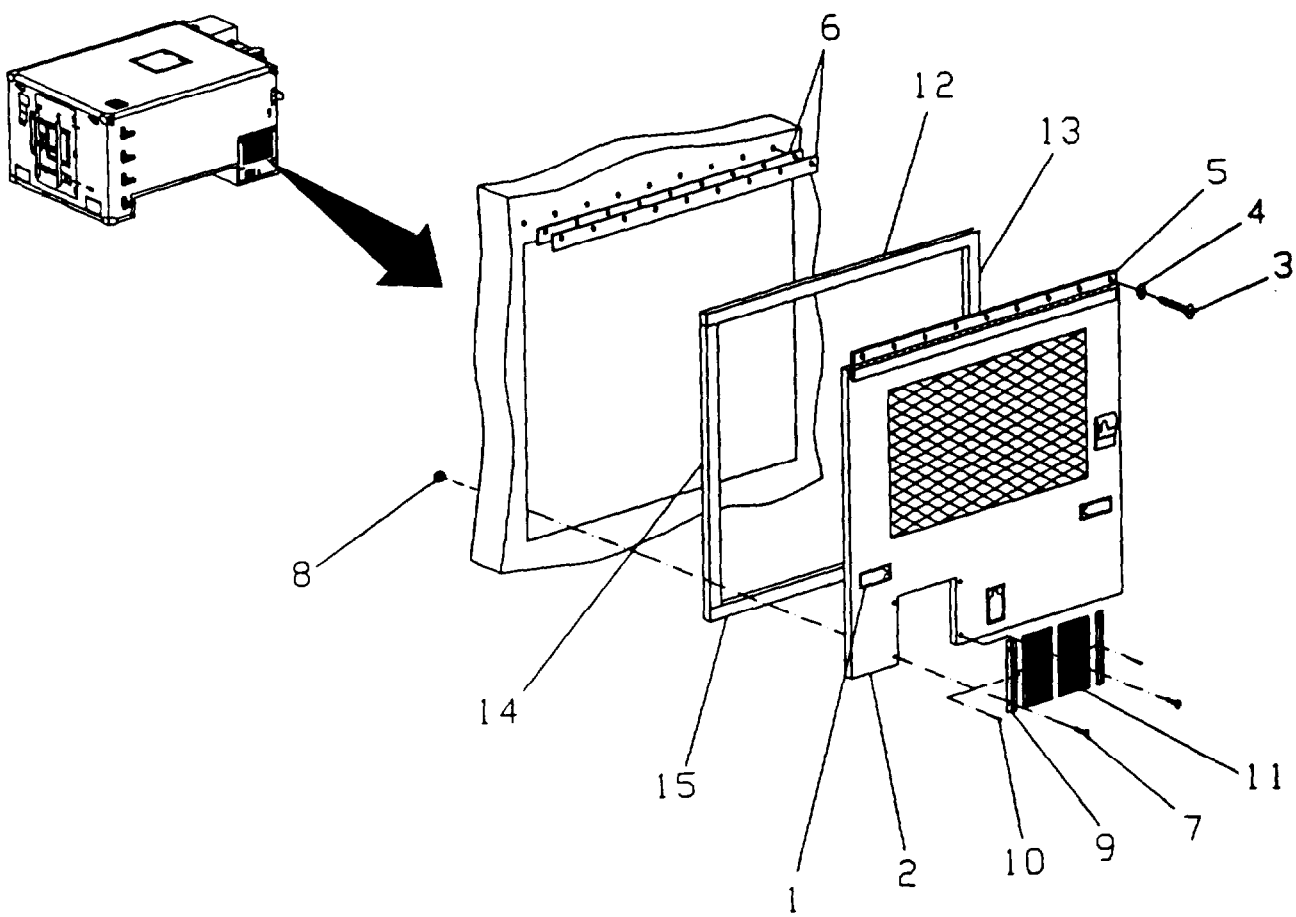
2. Locate seal (11) on seal bracket (9) and secure with cotter pin (10).

3-23 GENSET DOOR ASSEMBLY - Continued

3. Locate seal bracket (9) and secure to GENSET door (2) using screws (7), nuts (8).

4. Locate GENSET door hinge (5) and shims (6) on shelter and secure using screws (3) and lockwashers (4).

5. Close and secure tunnel access door (2) using latches (1).



3-24. FOLDING BACK SEAT.

This task covers: a. Repair

INITIAL SETUP

Tools:
General Mechanics Tool Kit (Item 1, Appendix B)

Materials/Parts
Eye Bolt
Strap Assembly
Lockwasher (Item 16, Appendix E)
Folding Back Seat

Personnel Required: 2

REPAIR

Disassemble

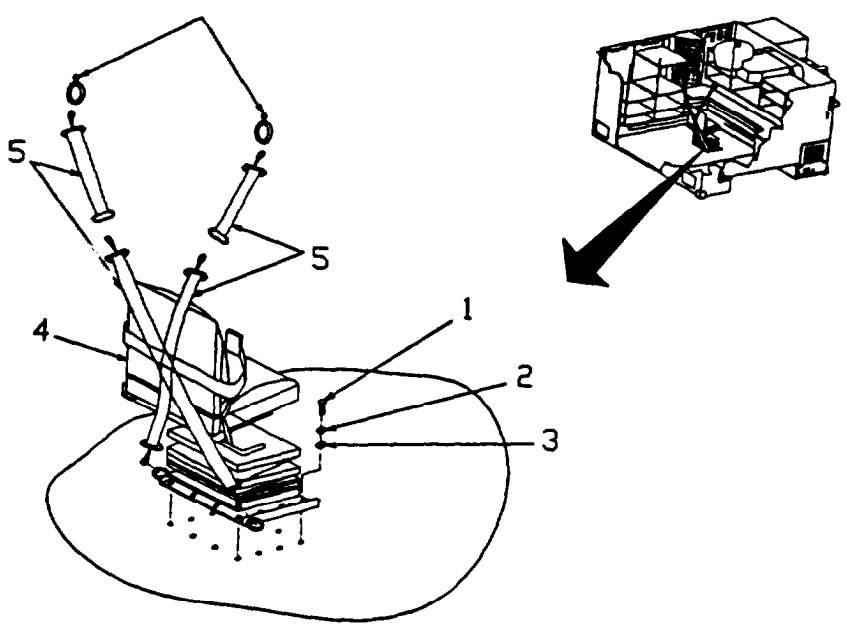
1. Remove strap (5) from seat (4) and ceiling hooks (6).

2. Remove bolts (1), lockwashers (2), and flat washers (3) securing seat (4) to floor.

Assemble

1. Secure strap (5) to seat (4) and ceiling hooks (6).

2. Locate seat (4) on floor and secure with bolts (1) lockwashers (2) and flat washers (3).



3-25. UPPER (LOWER) ANTENNA MOUNT.

This task covers: a. Replace

INITIAL SETUP

Tools:
General Mechanics Tool Kit (Item 1, Appendix B)

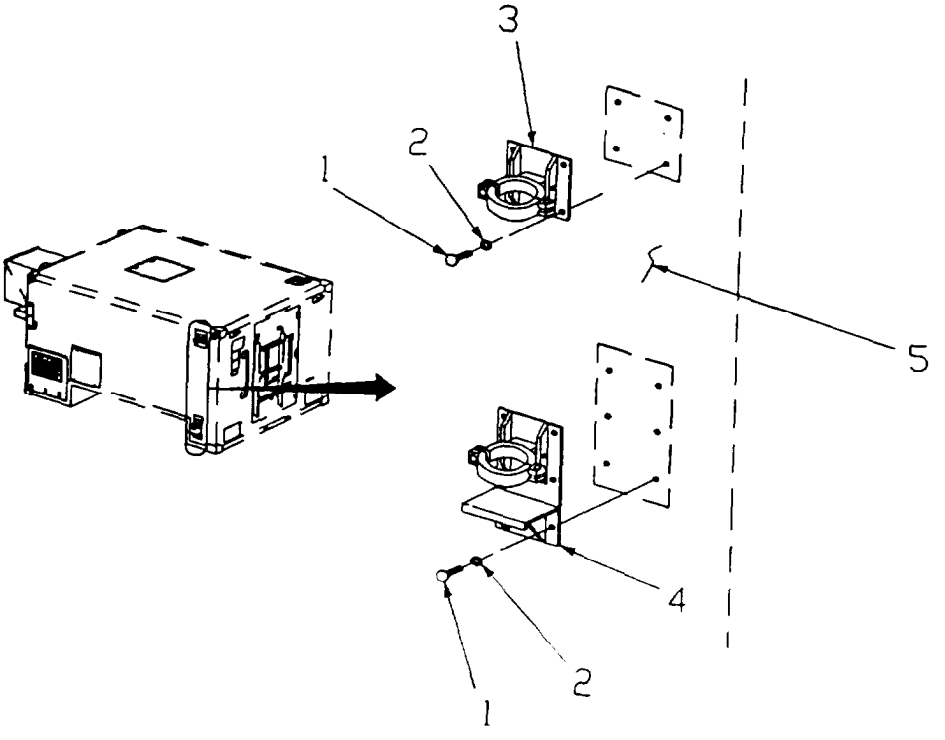
Materials/Parts:
Upper Antenna Mount
Lower Antenna Mount
Lockwasher (Item 17, Appendix E)

Equipment Conditions
Antenna removed.
Refer to TM 11-7010-260-12&P

REPLACE

1. Remove screws (1) and lockwashers (2) securing antenna mount (3 or 4) to shelter (5).

2. Secure antenna mount (3 or 4) to shelter (5) using screws (1) and lockwashers (2).



Follow-on maintenance: replace antenna. Refer to TM 11-7010-260-12&P

3-26. ANTENNA MOUNT.

This task covers: a. Replace

INITIAL SETUP

Tools:
General Mechanics Tool Kit (Item 1, Appendix B)

Materials/Parts:
Antenna Mount
Cover
Lockwasher (Item 17, Appendix E)

Equipment Conditions
Antenna removed.
Refer to TM 11-7010-260-12&P.

REPLACE

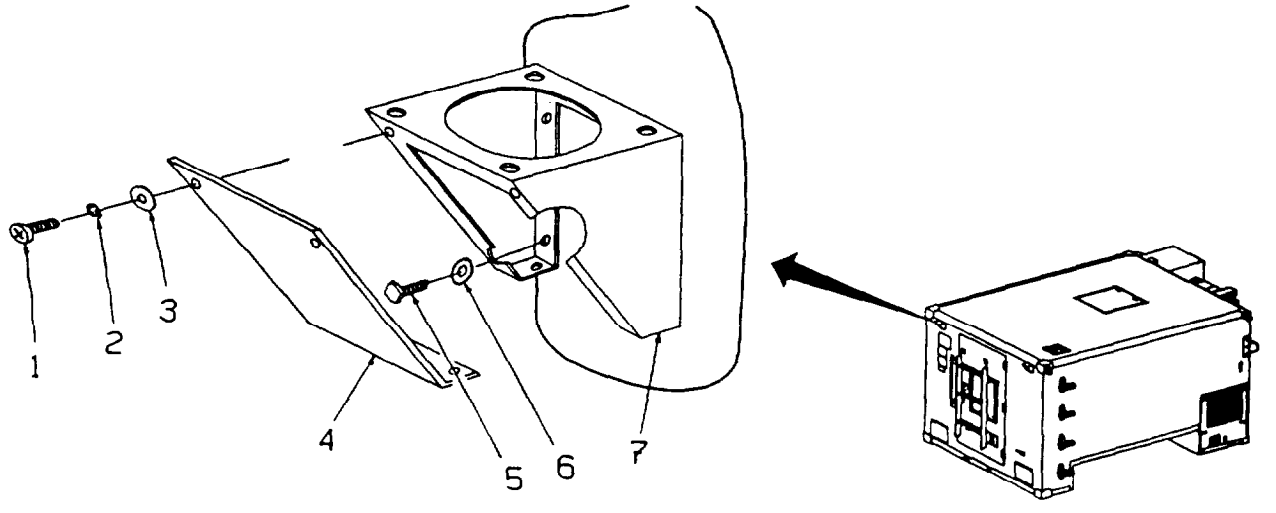
1. Remove screws (1) lockwashers (2) and flat washers (3) securing the antenna mount cover (4) and remove cover.

2. Remove bolts (5) and lockwashers (6) securing the antenna mount (7) to the shelter.

3. Position antenna mount (7) on shelter and secure with lockwasher (6) and bolts (5).

4. Position antenna mount cover (4) on antenna mount (7) and secure with flat washers (2), lockwashers (3), and screws (1).

Follow-on maintenance: replace antenna. Refer to TM 11-7010-260-12&P.



3-27. RAPID DECOMPRESSION RFI FILTER.

This task covers: a. Replace

INITIAL SETUP

Tools:
General Mechanics Tool Kit (Item 1, Appendix B)

Materials/Parts:
RFI Filter
Lockwasher (Item 14, Appendix E)

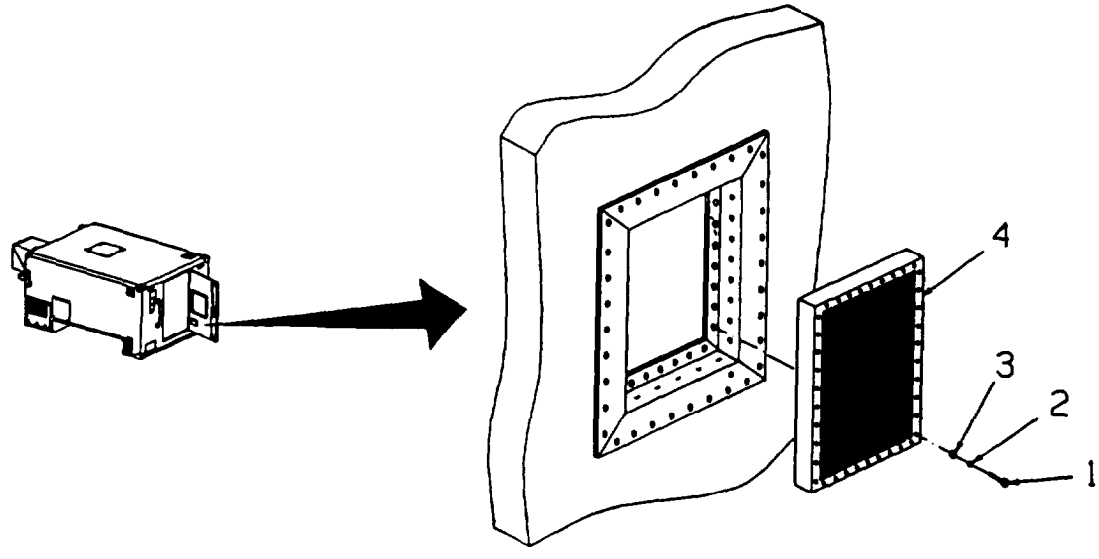
REPLACE

1. Open shelter door and remove screws (1), lockwashers (2), and flat washers (3) securing the RFI filter (4).

2. Remove RFI filter (4).

3. Locate RFI filter (4) and secure RFI filter (4) using flat washers (3), lockwashers (2), and screws (1).

4. Close shelter door.



3-28. GENSET.

This task covers: a. Replace

INITIAL SETUP

Tools:
Automotive Tool Kit (Item 1, Appendix B)

Materials/Parts:
GENSET
Teflon Pipe Tape (Item 79, Appendix E)

Equipment Conditions:
GENSET door removed (para. 3-23).

REPLACE

WARNING

- Generator is hot and can cause serious burns if skin comes in direct contact. Let generator cool down for 60 minutes before removing.
- The generator is extremely heavy and bulky, use extreme care when removing and installing. Personal injury may occur.

1. Remove exhaust pipe extension (1).
2. Remove safety pin (2).
3. Pull and turn release handle (3) and pull generator (4) out as far as it will go.
4. Tag and remove fuel lines (5 and 6). Place them out of the way.

WARNING

With safety wire removed, the GENSET can be removed from the shelter tunnel. Do not pull GENSETout until a crane is attached or a fork lift is in position. Personnel injury or death may occur.

5. Remove nuts (7) on U-bolt (8) for the safety wire (9).

3-28. GENSET - Continued.

NOTE

The GENSET is removed using a forklift or crane. If a forklift is used go to step 6. If a crane is used go to step 7. A forklift or similar device is recommended.

6. Position forklift tines under GENSET and lift tines until they contact the bottom of the GENSET. Go to step 8.

7. Using a crane with a chain (10), attach chain (10) to the GENSET lift point (1 1), lift the GENSET only far enough to place tension (no slack) on the chain.

8. Carefully slide the GENSET out just far enough to gain access to the electrical cables.

9. Tag and disconnect electrical cables. (refer to GENSET manual TM 9-6115-641-10) Make *sure* no other lines, cables, or other devices are in the way for removal of the generator.

10. Slowly lift and remove the generator (4) from the shelter.

WARNING

The generator is extremely heavy and bulky, use extreme care when removing and installing. Personal injury may occur.

11. Using a forklift or crane with a chain (10) connected to the GENSET's lift point (11), carefully guide the GENSET (4) into the tunnel entrance.

12. Guide the GENSET (4) rollers onto the roller guides (12) a short distance.

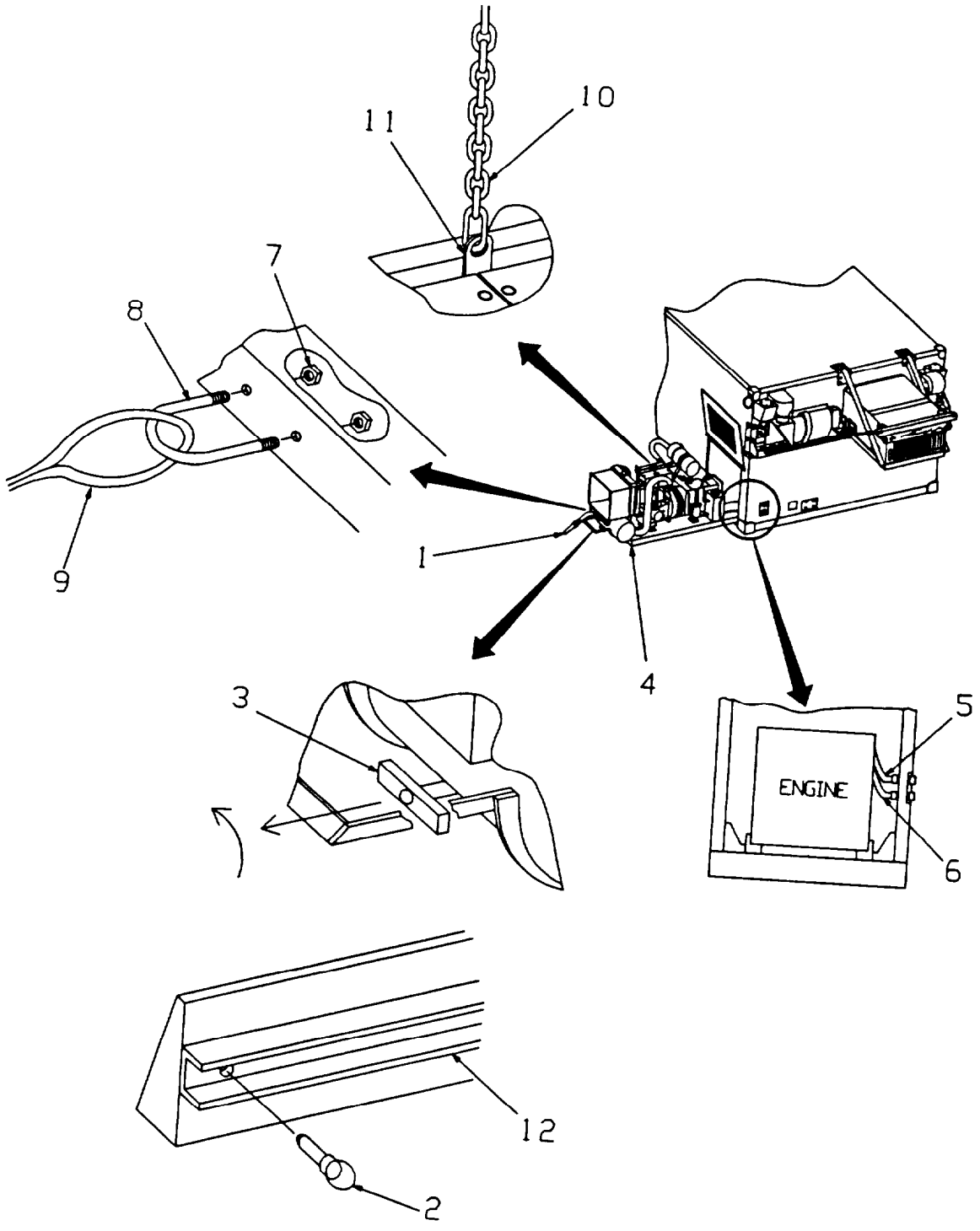
13. Release the tension on the chain (10) slightly (if using a crane) and push the generator (4) into the tunnel, on the roller guides (12).

14. With the chain still attached to GENSET, (or GENSET still resting on tines if a forklift is being used) connect all electrical cables. Remove tags attached in step 9 above.

15. Slide generator into the tunnel enough to attach and secure generator's safety wire (9) with U-bolt (8) and nuts (7).

16. If using a crane, release tension on chain (10) and remove from lift point (11). For forklift operation, lower the tines and back the forklift out.

3-28. GENSET - Continued.



17. Apply Teflon tape to the threaded male component of the fuel line connections (5 and 6).

18. Connect fuel lines (5 and 6), remove tags installed in step 4.

19. Slide generator (3) into tunnel and attach safety Pin (1).

Follow-on maintenance: Replace GENSET door (para. 3-23).

3-29. GPFU.

This task covers: a. Replace

INITIAL SETUP

Tools:
General Mechanic's Tool Kit (Item 1, Appendix B)

Materials/Parts
GPFU
Lockwasher (Item 15, Appendix E)

Personnel Required: 2

REPLACE

1. Disconnect GPFU electrical connectors (1).

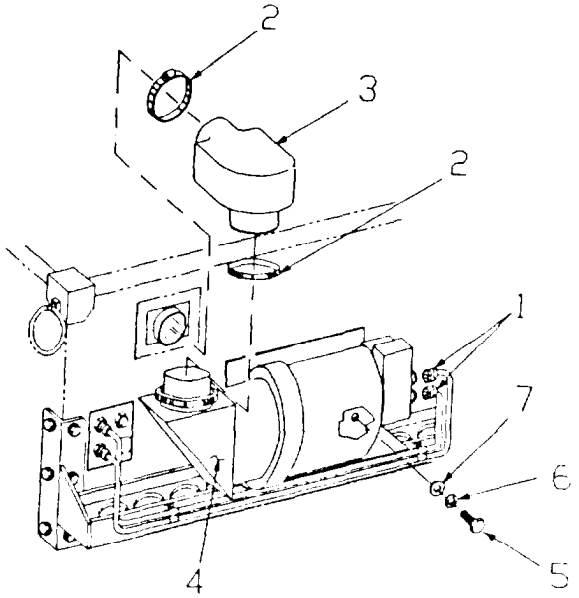
2. Loosen support clamps (2) from output hose (3).

3. While supporting GPFU (4), remove bolts (5) lockwashers (6) flat washers (7).

4. Locate GPFU (4) against shelter and secure with flat washers (7), lockwashers (6), and bolts (4).

5. Slide output hose (3) into position and secure support clamps (2).

6. Connect electrical connectors (1).



3-30. GPFU CONTROL PANEL.

This task covers: a. Replace

INITIAL SETUP

Tools:
General Mechanics Tool Kit (Item 1, Appendix B)

Materials/Parts
GPFU Control Panel
Lockwasher (Item 15, Appendix E)

REPLACE

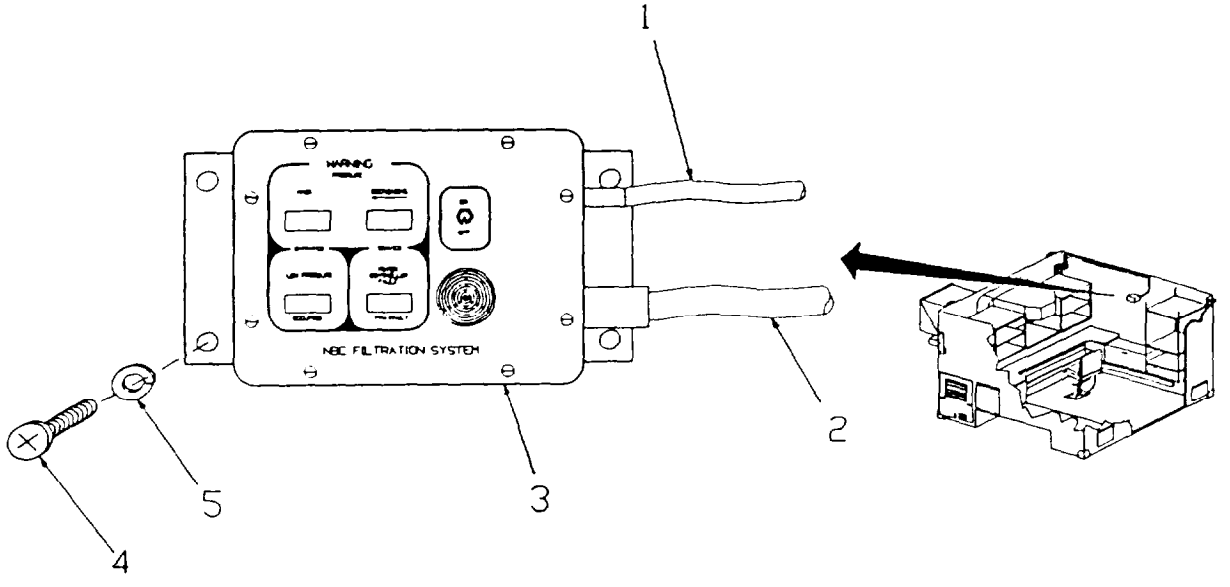
1. Disconnect GPFU Control Panel hose (1) and power cable (2) from unit.

2. While supporting GPFU Control Panel (3), remove screws (4) and lockwashers (5).

3. Remove GPFU Control Panel (3).

4. Locate GPFU Control Panel (3) against shelter and secure with lockwashers (5), and screws (4).

5. Connect GPFU power cable (2) and hose (1) to unit.



3-31. ENTRANCE PANEL ASSEMBLY

This task covers: a. Repair

INITIAL SETUP

Tools:
General Mechanics Tool Kit (Item 1, Appendix B)

Materials/Parts:
Entrance Panel Assembly
Hook
Rope Channel
Top Support Assembly
Left Support Assembly
Right Support Assembly
Lockwasher (Item 16, Appendix E)

REPLACE

Disassemble

1. Remove Entrance Panel Assembly (1) from velcro attachment.

2. Remove screw (2), lockwasher (3), and flat washer (4) from left (5), top (6), and right (7) support assemblies and from the rope channel (8).

3. Remove cape.

4. Remove nut (9) and lockwashers (10) and screw (12) securing hook (11).

Assemble

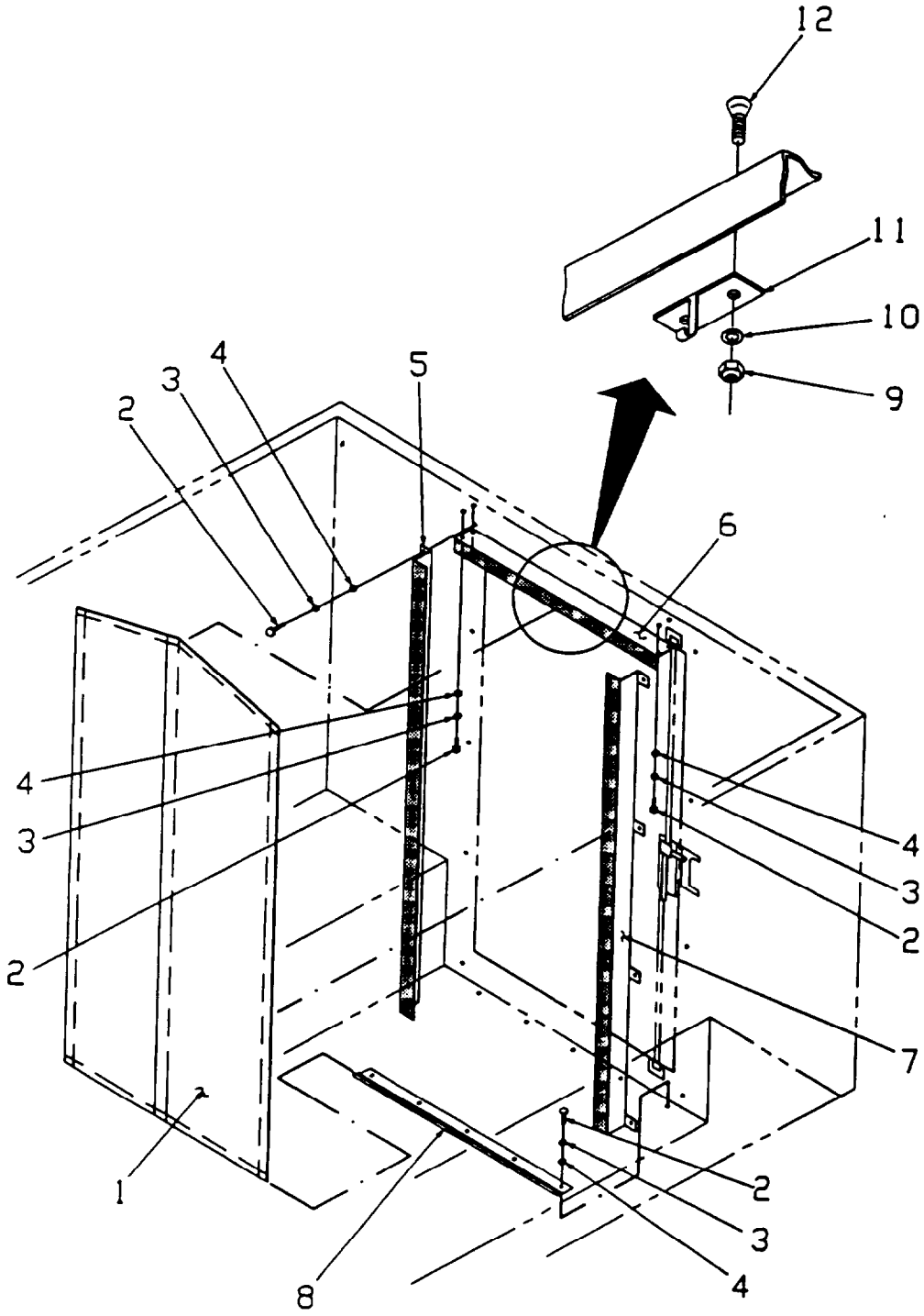
1. Position left (5), top (6), and right (7) support assemblies and secure each with flat washer (4), lockwasher (3), and screw (2).

2. Position rope channel (8) and secure with flat washer (4), lockwasher (3), and screw (2).

3. Position hook (11) and secure using screws (12) and lockwashers (10) and nut (9).

4. Secure Entrance Panel Assembly (1) to velcro attachment.

3-31. ENTRANCE PANEL ASSEMBLY - Continued.



INTERIOR REAR VIEW

3-32. AIR CONDITIONER.

This task covers: a. Repair

INITIAL SETUP

Tools:
General Mechanics Tool Kit (Item 1, Appendix B)

Materials/Parts:
Air Conditioner
Lockwasher (Item 15, Appendix E)
RFI Filter
Alcohol
Rags
Weather Gasket (Appendix F, Figure F-3, F-4)
Adhesive (Item 2, Appendix E)

Personnel Required: 2

DISASSEMBLE

1. From inside shelter, remove Air Conditioner access panel (1) by loosening it's captive screws.

2. Loosen captive screws and disconnect Air Conditioner control modules (2).

3. Disconnect power cord connector (3).

4. Remove bolts (4), flat washers (5), rubber shocks (6) and spacers (7) from bottom of air conditioner (8).

5. Loosen nuts (9), lockwasher (10), and flat washer (11) on support rod (12).

6. Remove angle support (13).

WARNING

Air conditioner weighs in excess of 250 pounds, use proper lifting techniques. Personnel injury may result.

7. Slide Air Conditioner (8) from its frame (14).

8. Remove RFI filters (15) and (16) by removing screws (17), lockwashers (18) and flat washers (19).

3-32. AIR CONDITIONER - Continued.

9. Remove Air Conditioner Frame Assembly (14) by removing screws (20), lockwashers (21), and flat washers (22) from the sides; screws (23), lockwashers (24) and flat washers (25) from the front; screws (26), lockwashers (27) and flat washers (28) from the top.

10. Inspect weather seal (29), if replacement is required, remove old seal (29), clean adhesive and residue from inside the Weather Seal Mounting Frame using a rag and alcohol. Coat the inside of the Weather Seal Mounting Frame with adhesive and press new weather seal (29) in place. Allow adhesive to cure for one hour before proceeding.

ASSEMBLE

1. Position air conditioner Frame Assembly (14) to the front of the shelter and secure using screws (26), lockwashers (27) and flat washers (28) in the top; screws (23), lockwashers (24) and flat washers (25) in the front; screws (20), lockwashers (21), and flat washers (22) in the sides

2. Position RFI Filters (15) and (16) and secure in place using screws (17), lockwashers (18) and flat washers (19).

3. Slide air conditioner (8) into position on Air Conditioner Frame Assembly (14).

4. Position angle support (13) and attach rod support (12). Secure rod support with nuts (9), lockwashers (10), and flat washer (11).

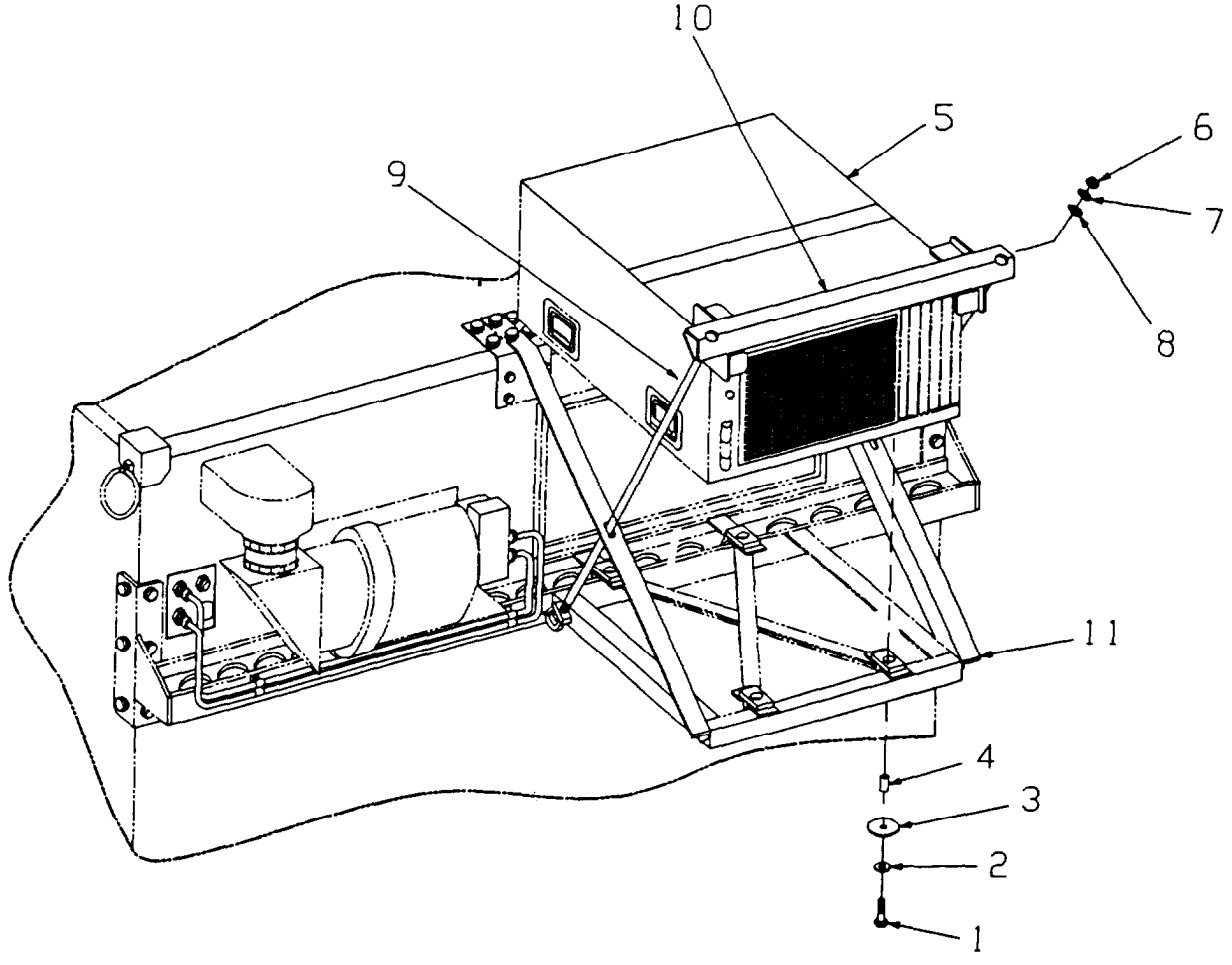
5. Secure air conditioner (8) to Air Conditioner Frame Assembly (14) using bolts (4), flat washers (5), rubber shocks (6), spacers (7).

6. Inside the shelter, connect Power cord (3) to Air Conditioner (8).

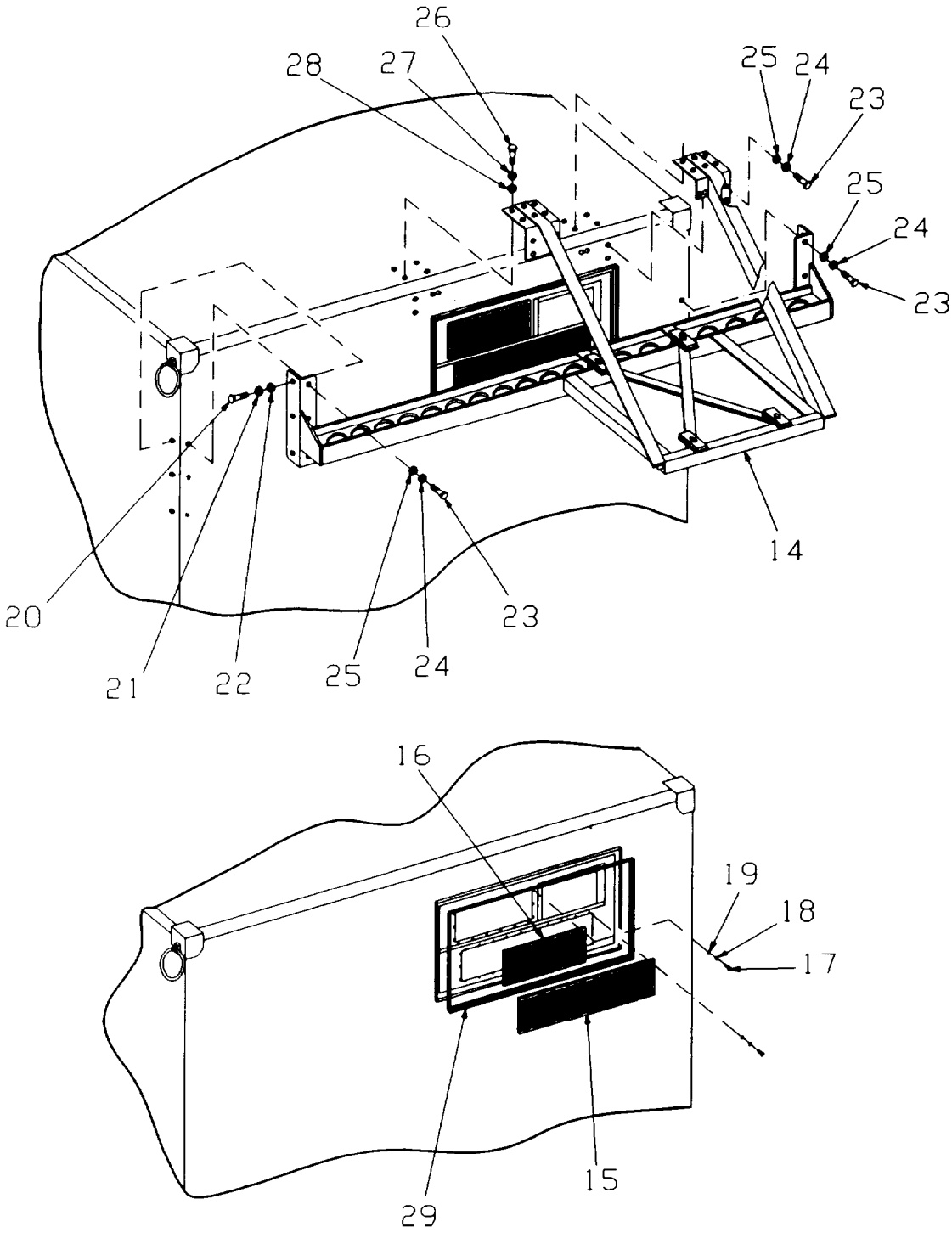
7. Connect Air Conditioner control modules (2) to Air conditioner (8), tighten captive screw.

8. Position Air Conditioner access panel (1), secure by tightening captive screws.

3-32. AIR CONDITIONER - Continued.



3-32. AIR CONDITIONER - Continued.



3-33. ROOF HANDLE ASSEMBLY.

This task covers: a. Replace

INITIAL SETUP

Tools:
General Mechanics Tool Kit (Item 1, Appendix B)

Material/Parts:
Handle
Lockwasher (Item 15, Appendix E)

REPLACE

WARNING

Use caution when climbing and descending ladder steps. Use support handles in all cases. Personal injury can result from a fall.

1. To remove handle (1), remove bolts (2) and lockwashers (3)

3. Locate handle (1) on shelter.

4. Secure handle (1) using bolts (2) and lockwashers (3).

SECTION V. PREPARATION FOR SHIPMENT AND STORAGE.

3-34. GENERAL. No special preparation is required for shipment of the shelter other than making sure that the correct sling assembly is available and in good condition, the skids are in good condition and securely mounted to the shelter, and the drain plug is loosened for air or rail transport.

3-35. LOADING. Shelters may be shipped in Type 1AA ANSI/ISO containers only when crated or pallet-mounted. Block crates or pallets securely in the container to prevent movement and damage during transit.

3-36. UNLOADING. Shelters may be unloaded per the instructions contained in paragraph 3-4, Service Upon Receipt of Shelter.

3-37. STORAGE. Accumulation of moisture within the shelter resulting from temperature and humidity fluctuations can damage equipment. Minimize moisture accumulation by keeping the shelter doors, louver covers, and drain holes open during indoor storage. During outdoor storage, keep doors and drain holes closed, but, keep louver covers open. A free breather assembly may also be used, when available, to absorb moisture inside the shelter. When using the free breather assembly, doors, louver covers, and drain holes must be closed. For usage information, refer to the applicable drawing for the free breather system being used.

3-38. SPECIAL INSTRUCTIONS FOR ADMINISTRATIVE STORAGE. Placement of equipment in administrative storage should be for short periods of time when a shortage of maintenance effort exists. Items should be in mission readiness within 24 hours or within the time factors as determined by the directing authority. During the storage period appropriate maintenance records will be kept. Before placing equipment in administrative storage, current maintenance services and Equipment, Serviceable Criteria (ESC) evaluations should be completed, shortcomings and deficiencies should be corrected, and all Modification Work Orders (MWOs) should be applied.

Storage site selection. Inside storage is preferred for items selected for administrative storage. If inside storage is not available, trucks, vans, conex containers, and other containers may be used.

CHAPTER 4
DIRECT SUPPORT MAINTENANCE INSTRUCTIONS

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

4-1. COMMON TOOLS AND EQUIPMENT. A list of common tools and tool kits may be found in Section Ill of Appendix B, Maintenance Allocation Chart. For authorized common tools and equipment, refer to the Modified Table of Organizational and Equipment (MTOE) applicable to your unit.

4-2. SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT. There are no special tools or test equipment needed to maintain the SICPS shelter.

4-3. REPAIR PARTS. Repair parts are listed and illustrated in TM 10-5411-222-24P (RPSTL).

Section II. PRINCIPLES OF OPERATION.

4 4. POWER DISTRIBUTION. The following paragraphs identify the power distribution for the SICPS shelter. The principles of operation encompass primary ac power (both on-board and external), ac distribution, grounds, and dc distribution. Reference figure 4-1 when reading the following paragraphs.

NOTE

Relay Panel and Power Entry Box each contain relays identified as K1, K2, K3, etcetera. When reviewing the schematic (figure 4-1), take note of which relay on which assembly is being talked about.

a. *Onboard Generator Power.* The 115 Vac from the GENSET is applied to the Power Control Box (TB3E-2 AC hot and TB3E-1 neutral). Filtering of the AC input is accomplished through electromagnetic pulse filters RV5 and RV6 and through electromagnetic interference filters FL15 (hot) and FL17 (neutral). Monitoring and control of the GENSET is accomplished via the Fault Indicator Panel located on the Power Monitor Faceplate.

During the SICPS shelter turn-on sequence (para. 2-13), the ENABLE/DISABLE GENERATOR AC PWR switch (S3) is momentarily set to the enable position. This causes current to flow from the negative (-) terminal of DC connector J1, through pins B and A of relay K3, through pins 3 and 2 of the ENABLE/DISABLE GENERATOR AC PWR switch (S3), through the closed contacts 3 and 9 to the positive (+) side of J1, via pin 13 and 11 of S3 and the DC circuit breaker CB1. Energizing AC INTERRUPT relay K3, closes contacts 4 and 7 of K3 which energizes PWR SELECT RELAY K1. With relay K1 energized, its contacts A1 and A2 (AC hot line) and C1 and C2 (AC neutral line) are closed. 115 Vac is applied to the AC KILL switch (S3) and to the metering circuits located on the Power Monitor Faceplate, via the 3A fuse (F1) located on the Power Entry Box.

NOTE

- Initial DC power for energizing relay K3 is derived from the vehicle's battery voltage which is applied to connector J1. The voltage on J1 from the battery is also applied to the GENSET for starting the generator.

- When the ENABLE/DISABLE GENERATOR AC PWR switch (S3) is released, relay K3 is kept energized through contacts 6 and 9 of K3 and pins 6 and 5 of the ENABLE/DISABLE GENERATOR AC PWR switch (S3). This also keeps relay K1 energized.

Current is monitored through pick-off transformer CT1. The current flows through R1 and the A.C. % RATED CURRENT meter (M3). Should an overload condition occur, the voltage across R1 increases, energizing OVERLOAD/SHORT CIRCUIT relay K5. Energizing K5, opens contacts 11 and 12, which causes relay K1 to deenergize, removing AC power from the shelter.

With no overload condition, power is applied through AC KILL switch (S5), through the Main Power SOURCE SELECT switch (S6) to the appropriate set of relays, which are determined upon whether onboard or external power is selected. If onboard power is selected, relay K3 and relay K5 energize, via the close contacts (A2 and Al) of relays K2 and K4. If external power is selected, relay K2 and relay K4 energize, via the close contacts (A2 and A1) of relays K3 and K5. Energizing K3 and K5 (onboard power) or K2 and K4 (external power) applies AC power to the interrupted power supplies (UPS1 and UPS2), ECU, GPFU, DC power supplies, AC lights, and to the appropriate AC outlets. Each circuit is protected from overload conditions by a circuit breaker.

The 115 Vac applied to the two DC Power Supplies (PS1 and PS2) is rectified and filtered to an output of 28 Vdc. To meet the high current draw of the system, the outputs from the power supplies are connected to the system in parallel. Diodes D1 and D2 are used as isolation diodes to isolate the vehicle's battery voltage from the power supplies and to isolate the power supplies from each other. The 28 Vdc is applied to the interrupted power supplies (UPS1 and UPS2), the DC lights, and to the appropriate DC outlets. Each circuit is protected from overload conditions by a circuit breaker

b. *External Power Source.* Any external power source meeting the power input criteria of 115 volts ac, 50/60 hertz, single phase, 90 amps can provide the necessary power for the SICPS shelter. An external power source is connected at J2-A (ac hot) and J2-N (neutral). Power is applied to the system in a similar manner as the onboard generator power. The input lines pass through electromagnetic pulse filters RV3 and RV4 to the electromagnetic interference filters FL10 (hot) and FL12 (neutral). The input is protected by a 90A EXTERNAL POWER circuit breaker (CB2). The AC input is applied to the metering circuit for monitoring the external power and to relay K8 (1A1A3). Energizing relay K8, closes contacts 6 and 8 which, in turn, applies the AC input to the AC KILL switch and the MAIN PWR SOURCE SELECT switch (S6). Relay K8 also monitors the AC input for over/under voltage. Distribution is as shown on figure 4-1.

c. *System Ground Technique.* In order to provide optimum use of the shelter, the ground system ties both the ac neutral, safety ground, and dc ground to the same electrical point E1, E2, and E3. During stationary operations, ground is supplied by the common earth ground connected to the shelter ground terminal lug E1 on the Power Entry Box. The engine ground or chassis ground system is connected at E3. During operations on the move. the chassis ground provides the primary ground. This technique makes any difference of potential between earth and chassis ground completely transparent to the shelter regardless of the operational mode.

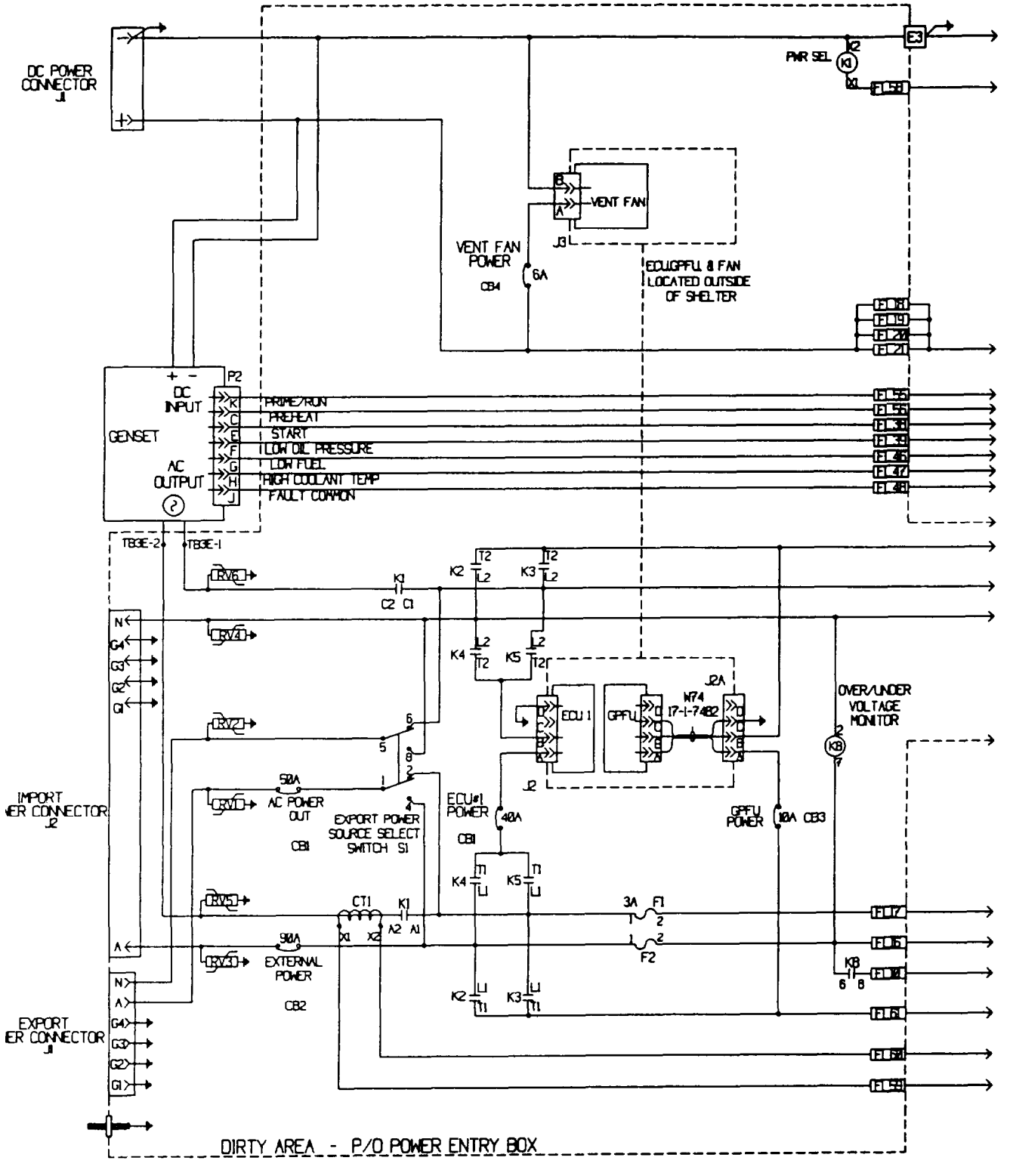


Figure 4-1. Power Distribution Schematic
(Sheet 1 of 4)

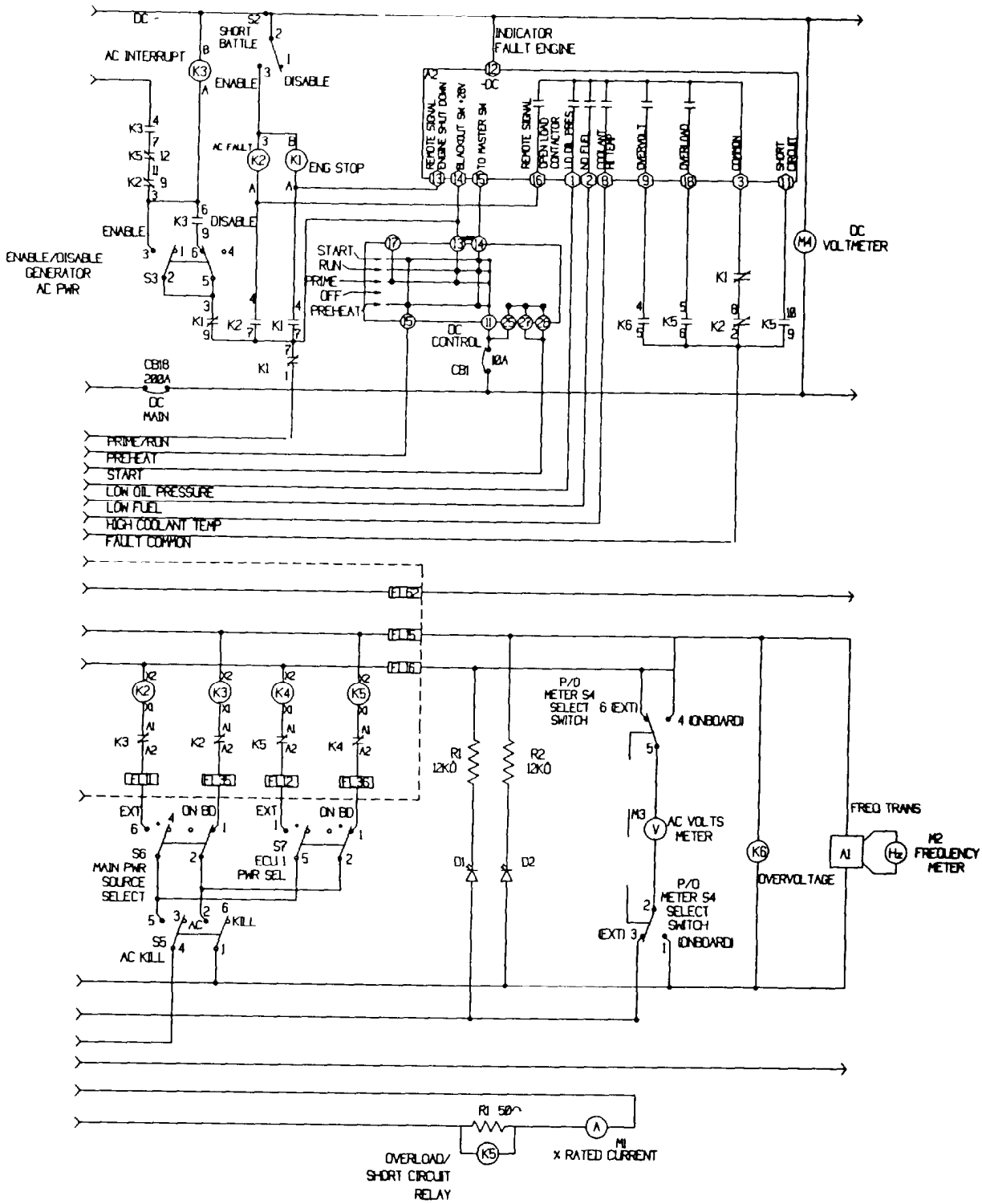


Figure 4-1. Power Distribution Schematic (Sheet 2 of 4)

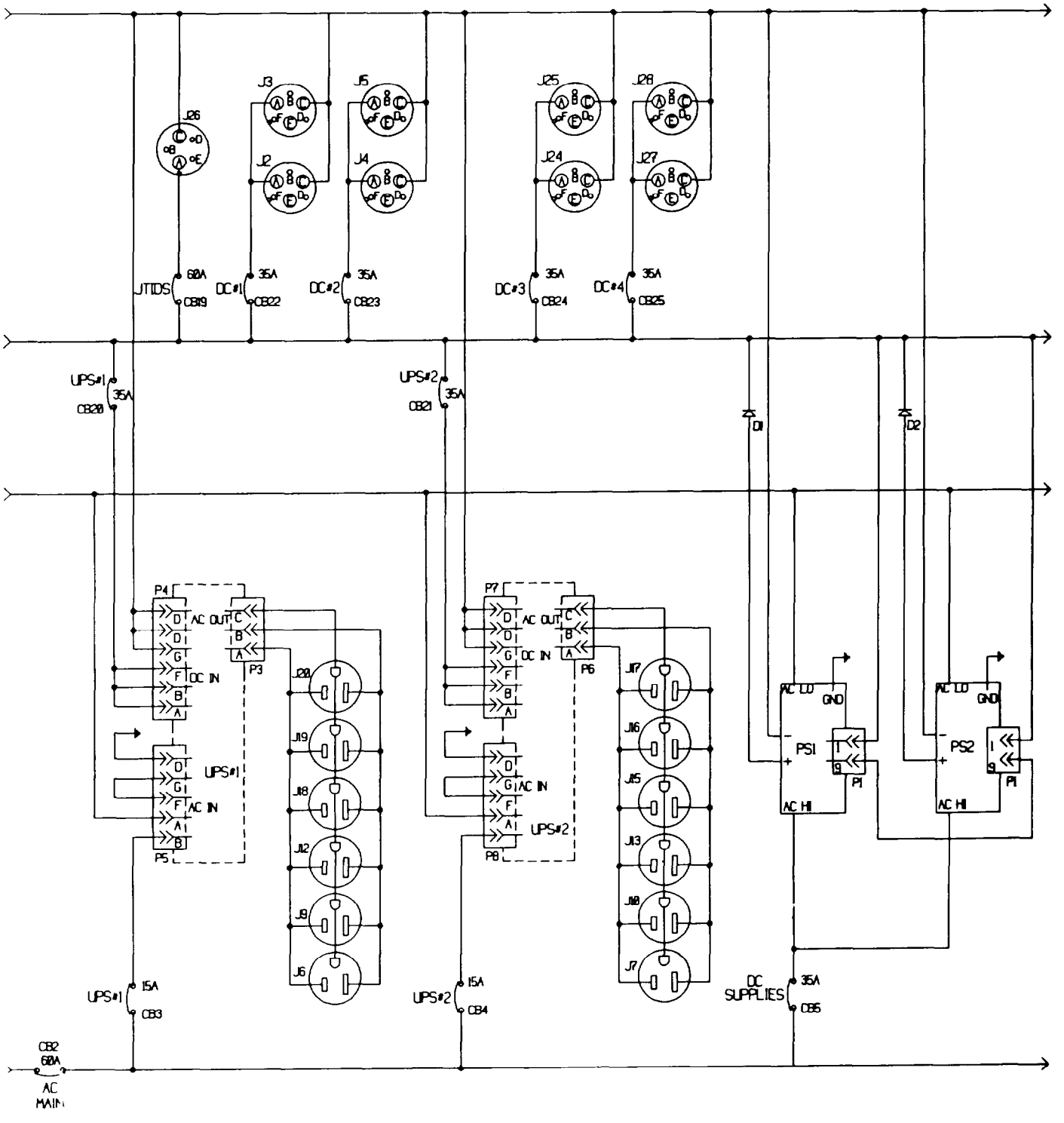


Figure 4-1. Power Distribution Schematic
(Sheet 3 of 4)

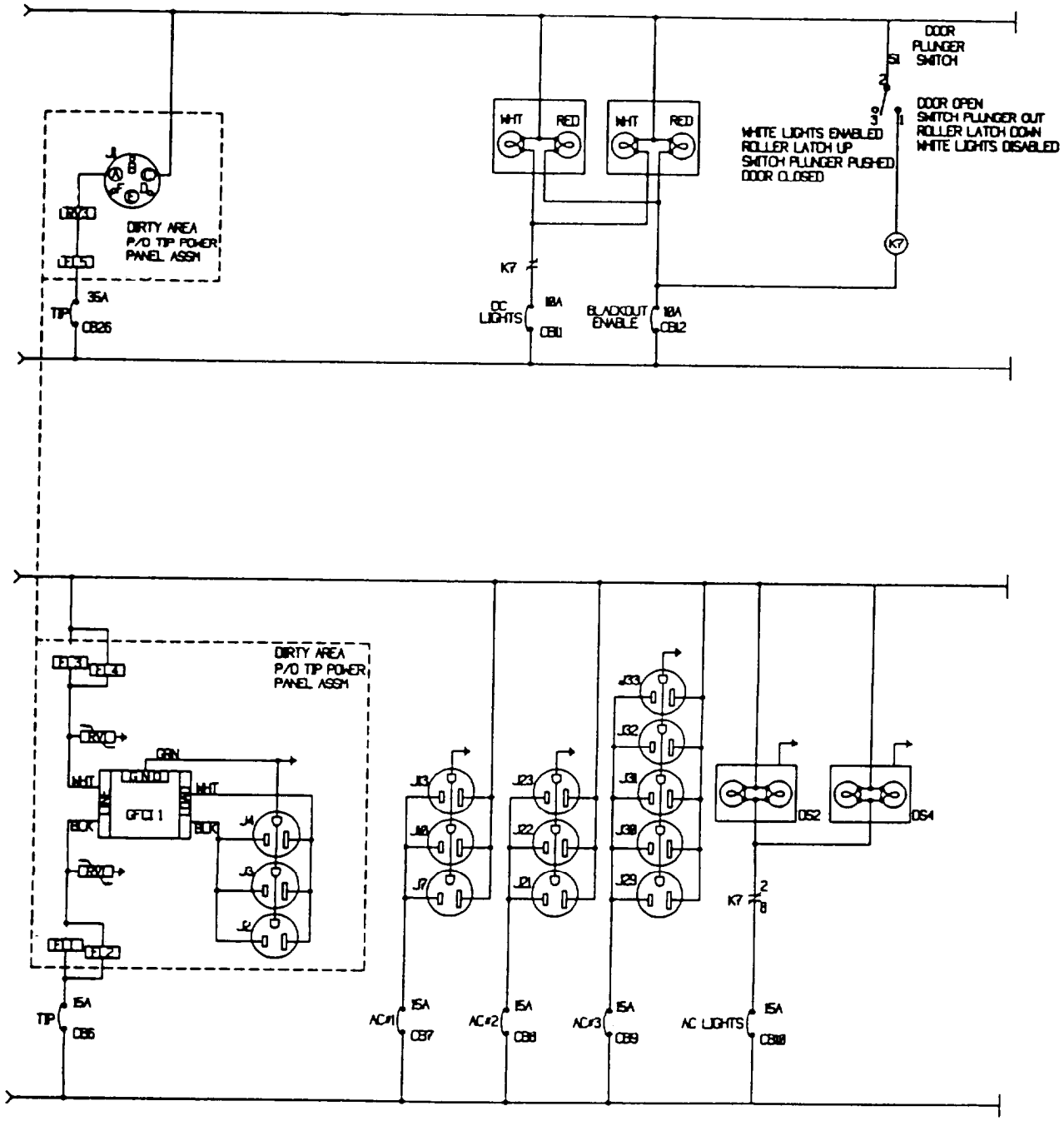


Figure 4-1. Power Distribution Schematic
(Sheet 4 of 4)

SECTION III. TROUBLESHOOTING

4-5. GENERAL. This section contains troubleshooting information for malfunctions which may develop during maintenance or operation. Maintenance is limited to those components which may be repaired or replaced at the direct support level. Table 4-1 identifies each malfunction followed by the test or inspection followed by a corrective action. These tests or inspections and corrective actions should be performed in the order listed. An index is provided to assist you in quickly locating a problem. This manual cannot list all malfunctions that may occur. If you encounter a malfunction that is not listed or that cannot be corrected by the listed corrective actions, notify your supervisor.

4-6. CABLES/ELECTRICAL WIRING. Although cables within the SICPS shelter can be tested for continuity using a multimeter, troubleshooting and testing of cables are accomplished under a system configuration (refer to TM 11-7010-260-12&P). Figure 42 provides a wiring diagram for the SICPS shelter signal/data lines. Maintenance of cables and electrical lines at the direct support level is limited to the removal of cables from raceways located along the shelter walls. Although some of the raceways can be accessed relatively easy, many require the removal of the racks (para 4-24), which in turn requires the removal of installed equipment. If a cable or electrical problem is found, notify your supervisor.

4-7. AUXILIARY COMPONENTS. Troubleshooting of the GENSET, GPFU, ECU, and their control panels is covered under separate manuals. See Appendix A.

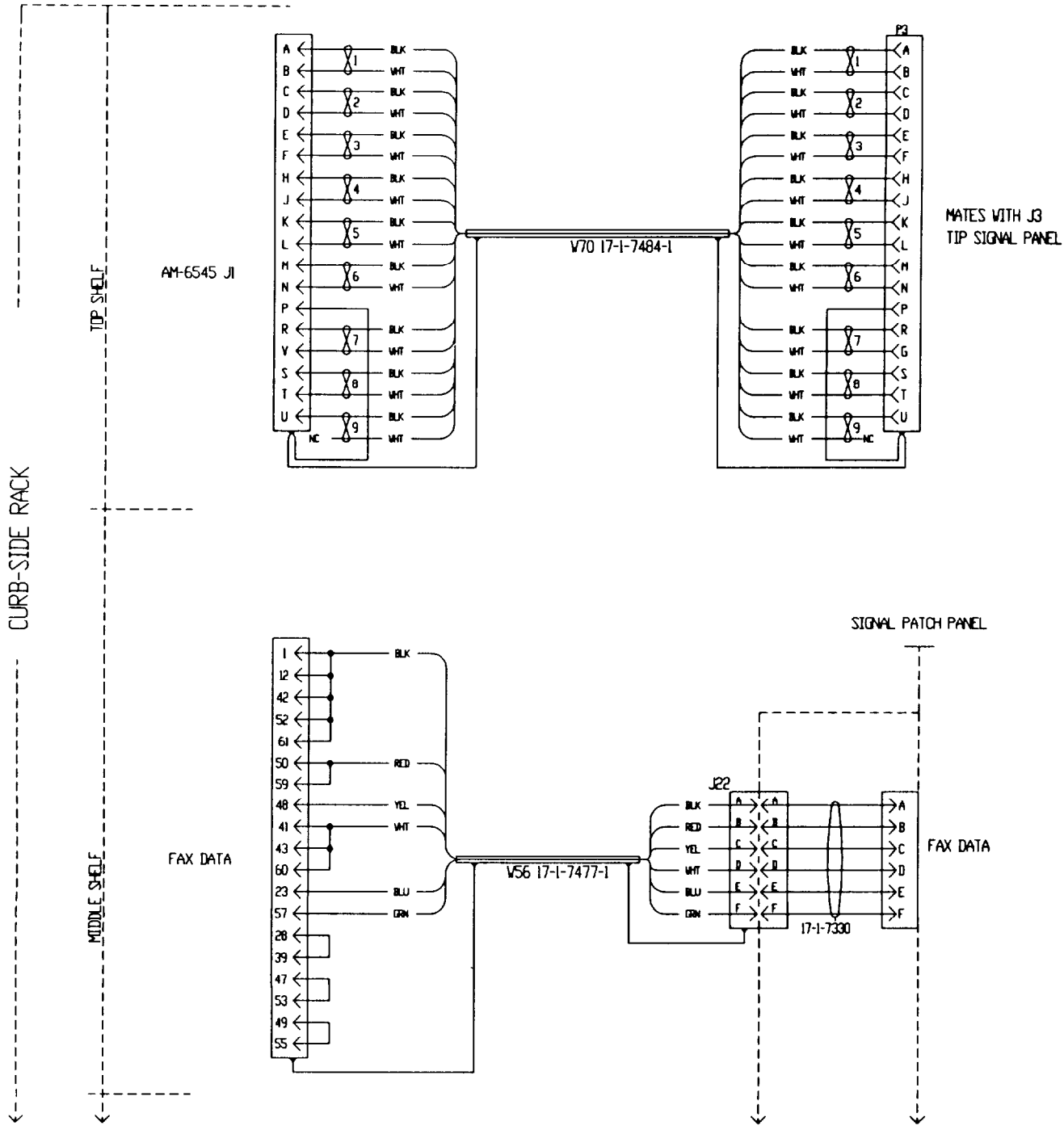


Figure 4-2. Signal/Data Wiring Diagram
(Sheet 1 of 11)

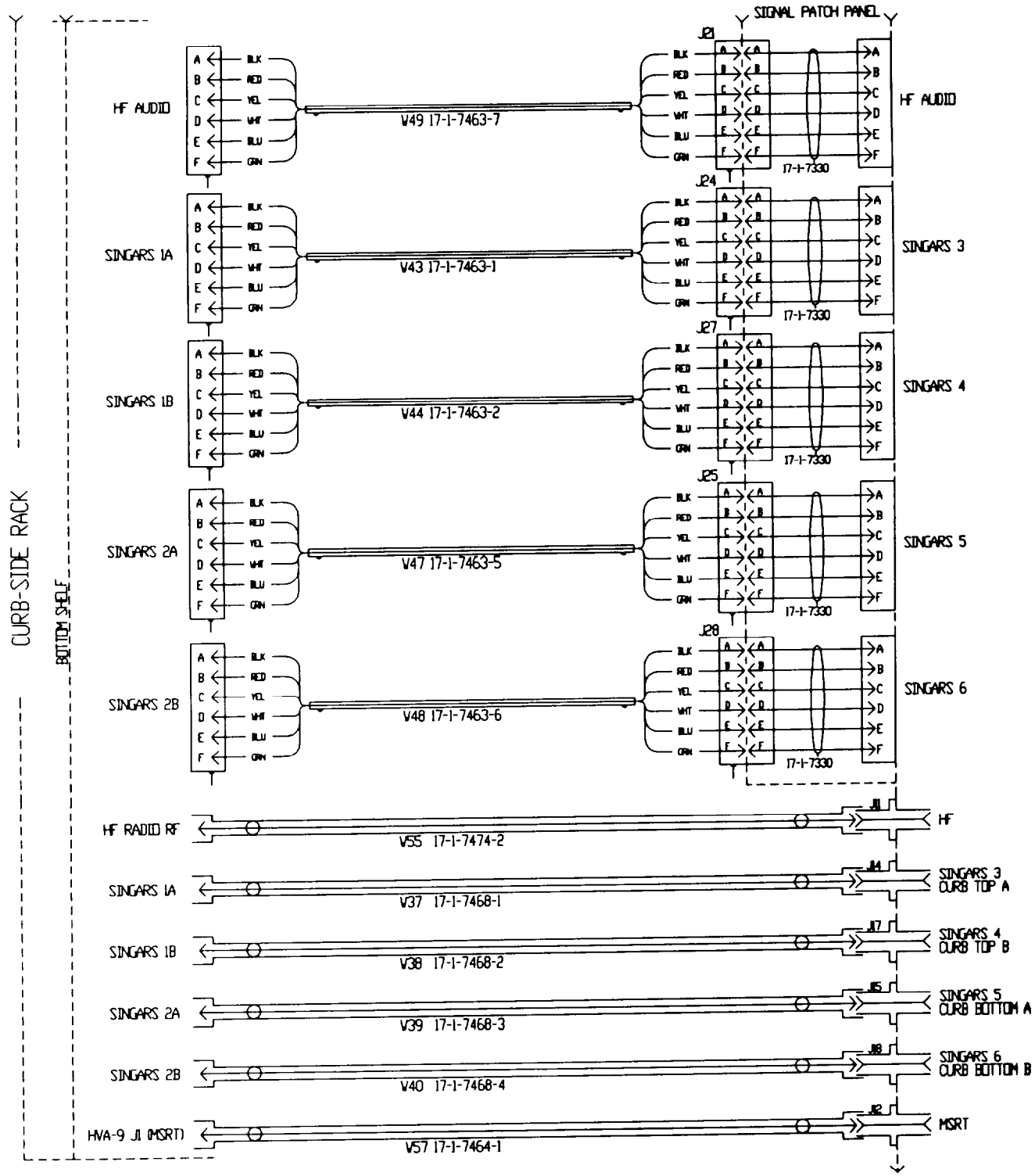


Figure 4-2. Signal/Data Wiring Diagram (Sheet 2 of 11)

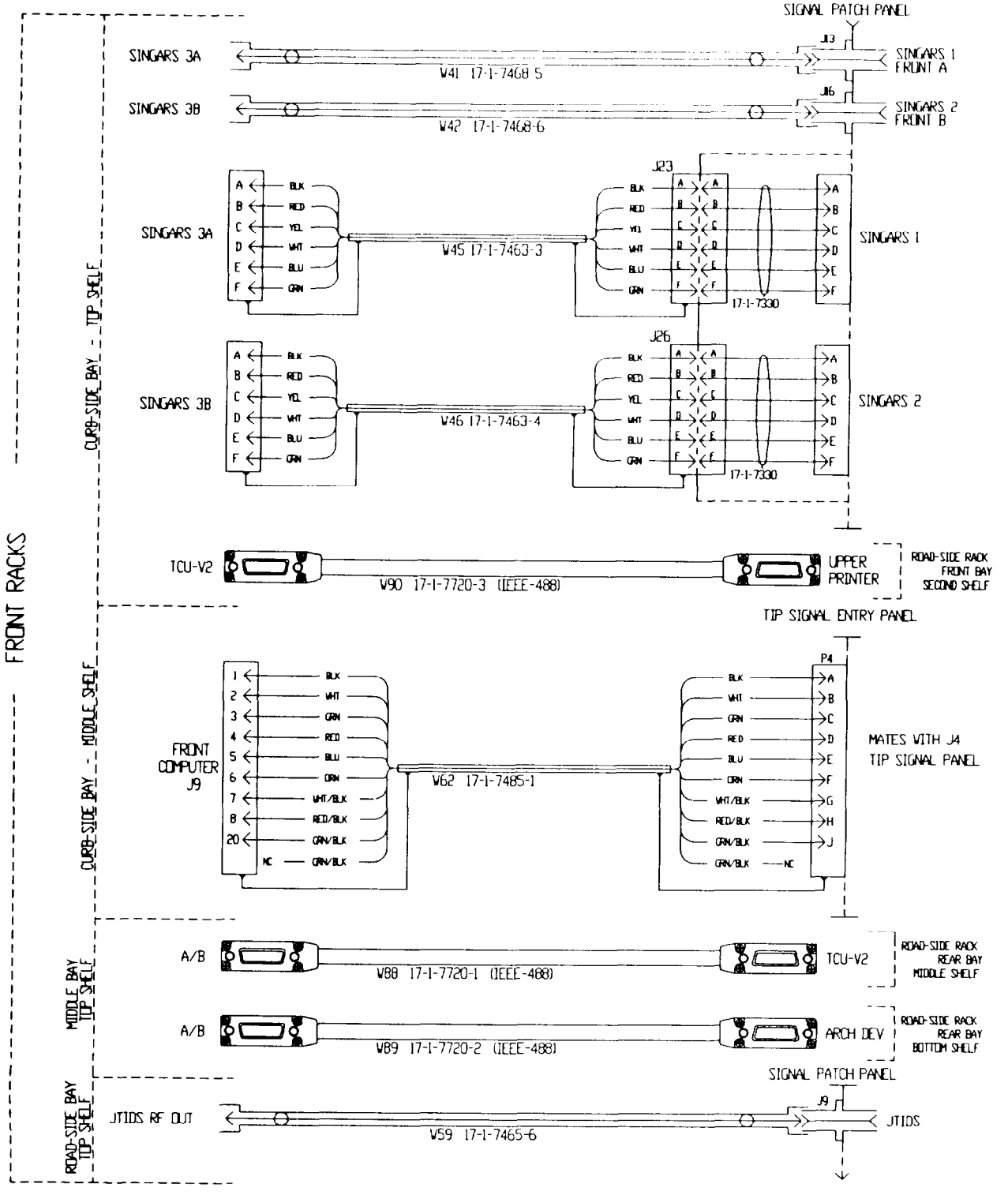


Figure 4-2. Signal/Data Wiring Diagram
(Sheet 3 of 11)

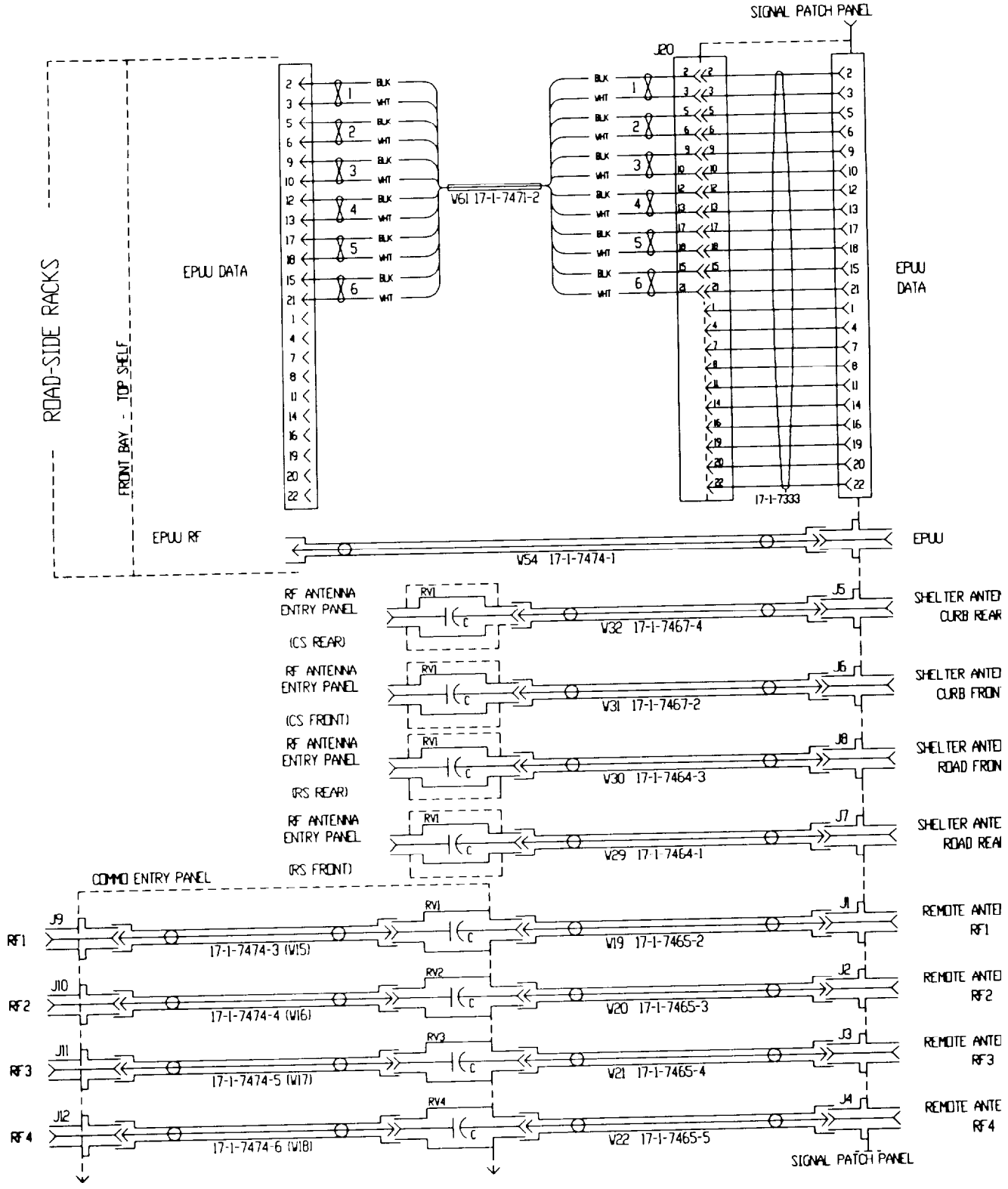


Figure 4-2. Signal/Data Wiring Diagram (Sheet 4 of 11)

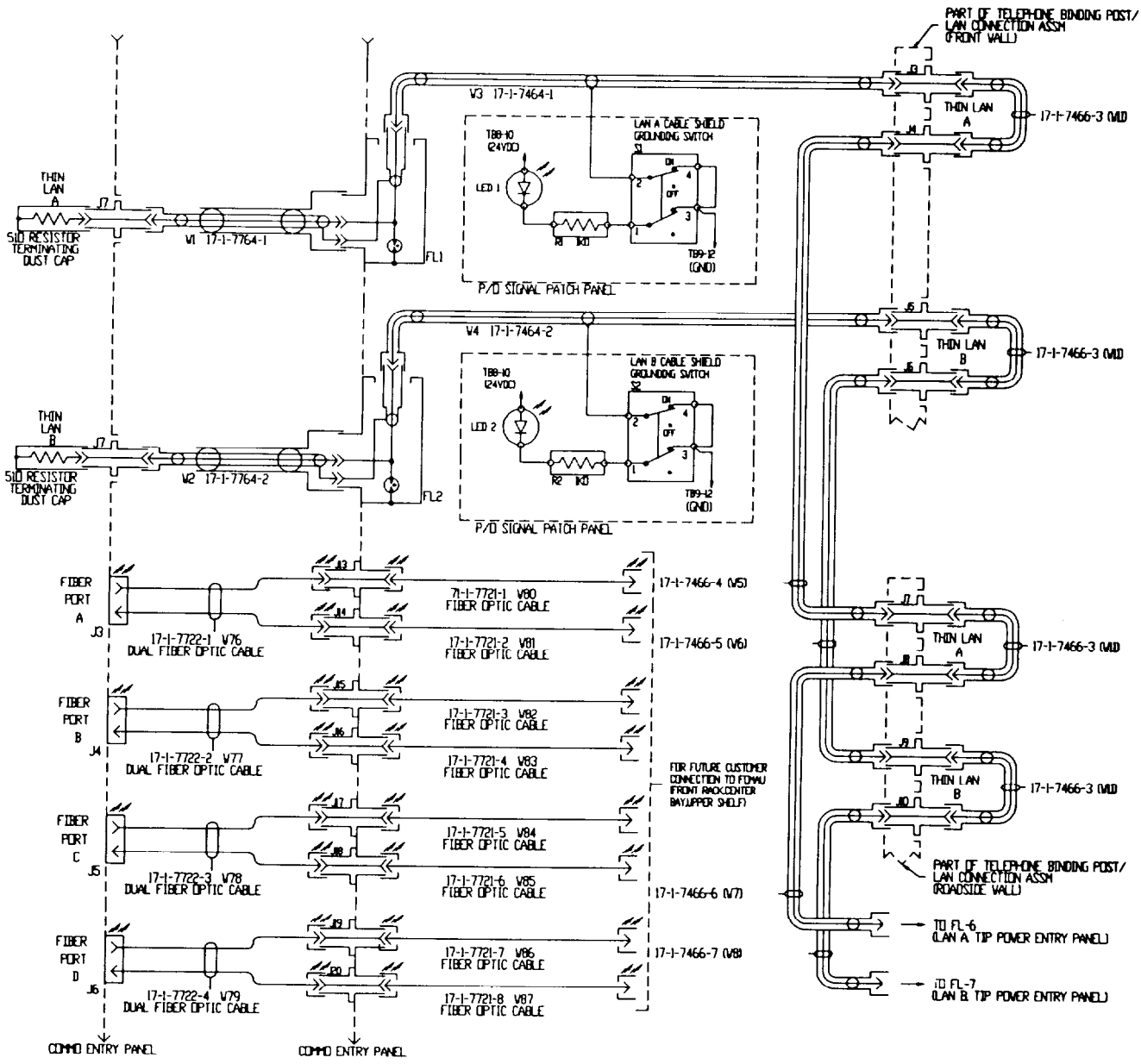


Figure 4-2. Signal/Data Wiring Diagram
(Sheet 5 of 11)

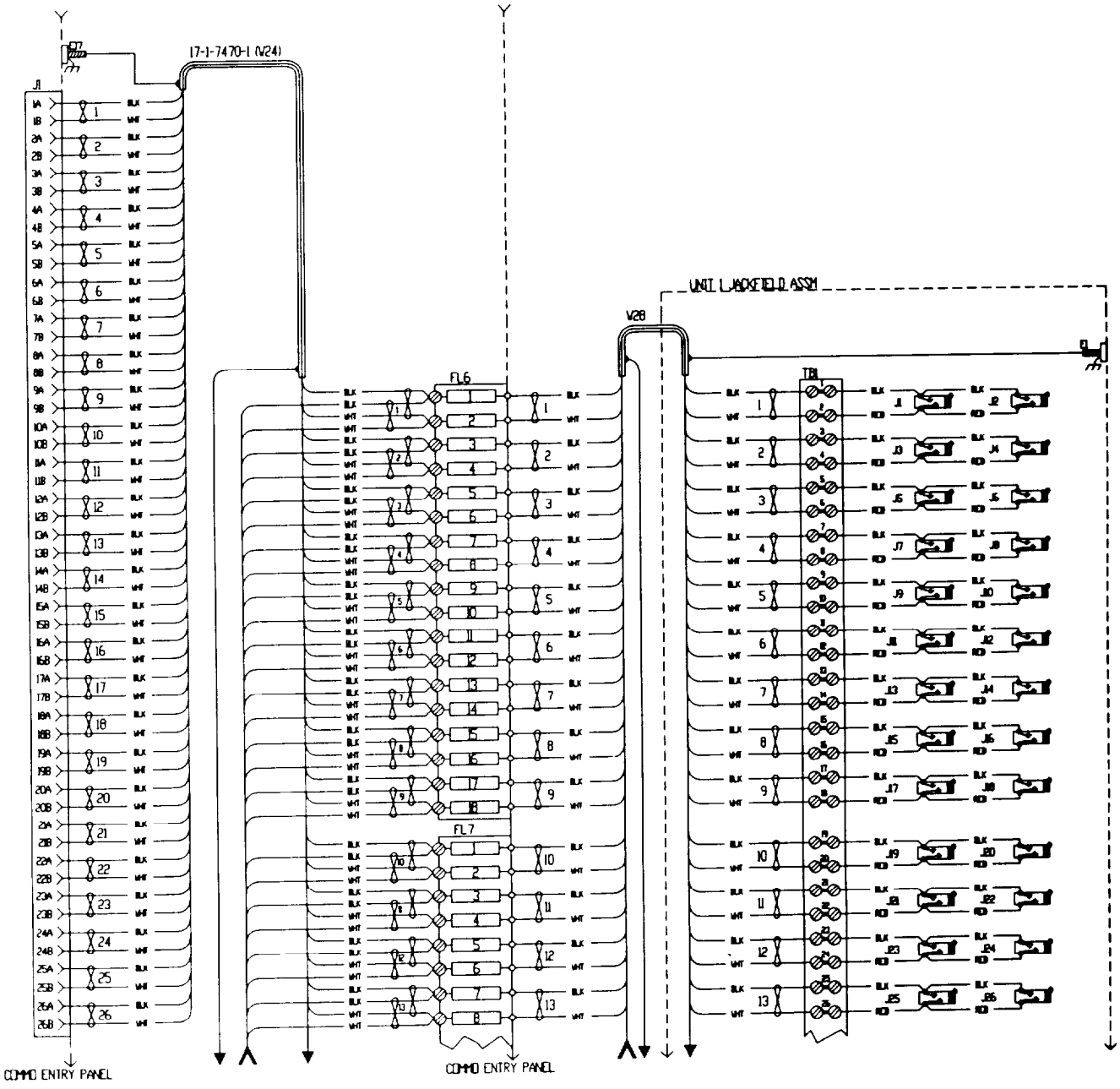


Figure 4-2. Signal/Data Wiring Diagram
(Sheet 6 of 11)

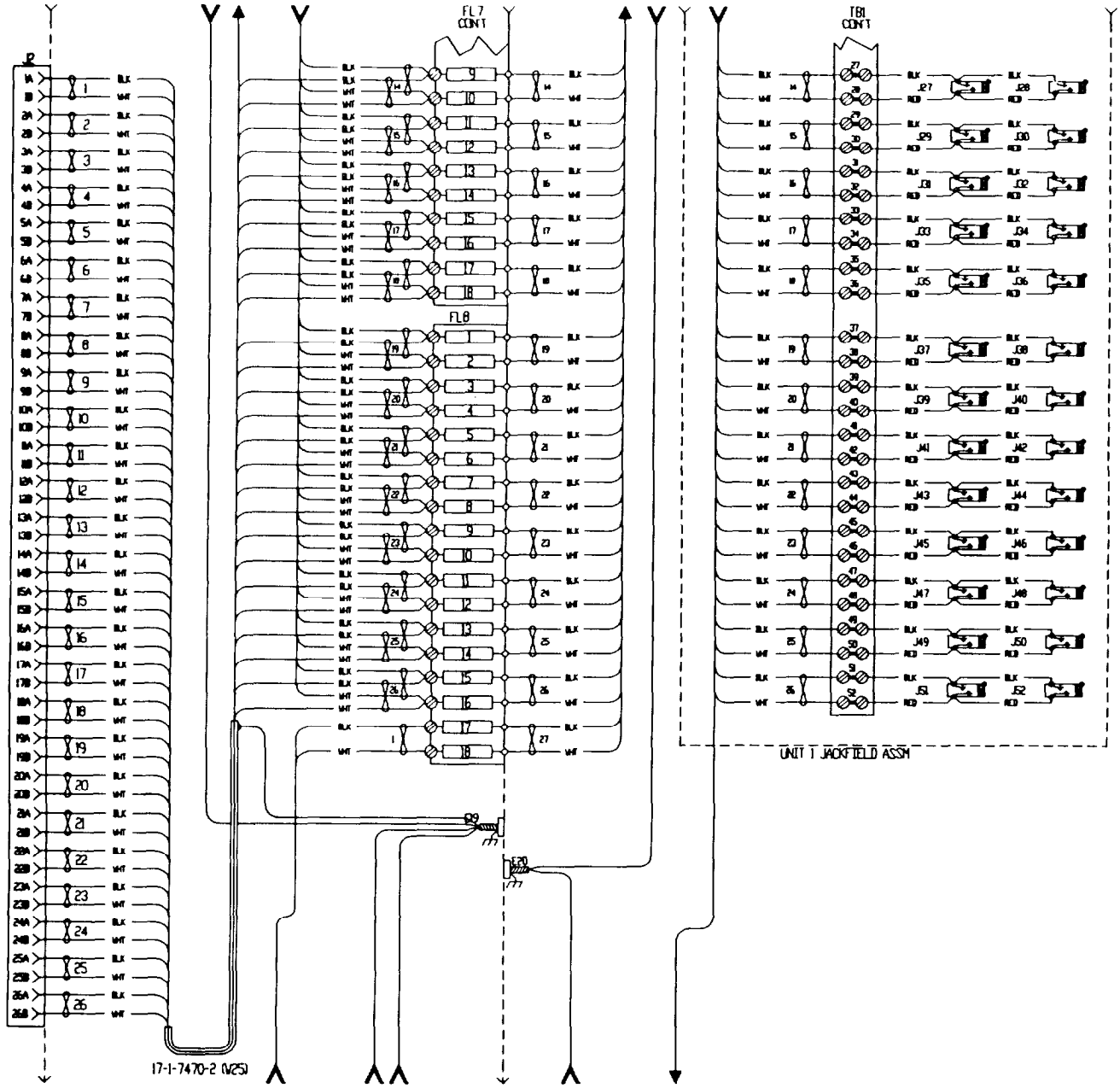


Figure 4-2. Signal/Data Wiring Diagram
(Sheet 7 of 11)

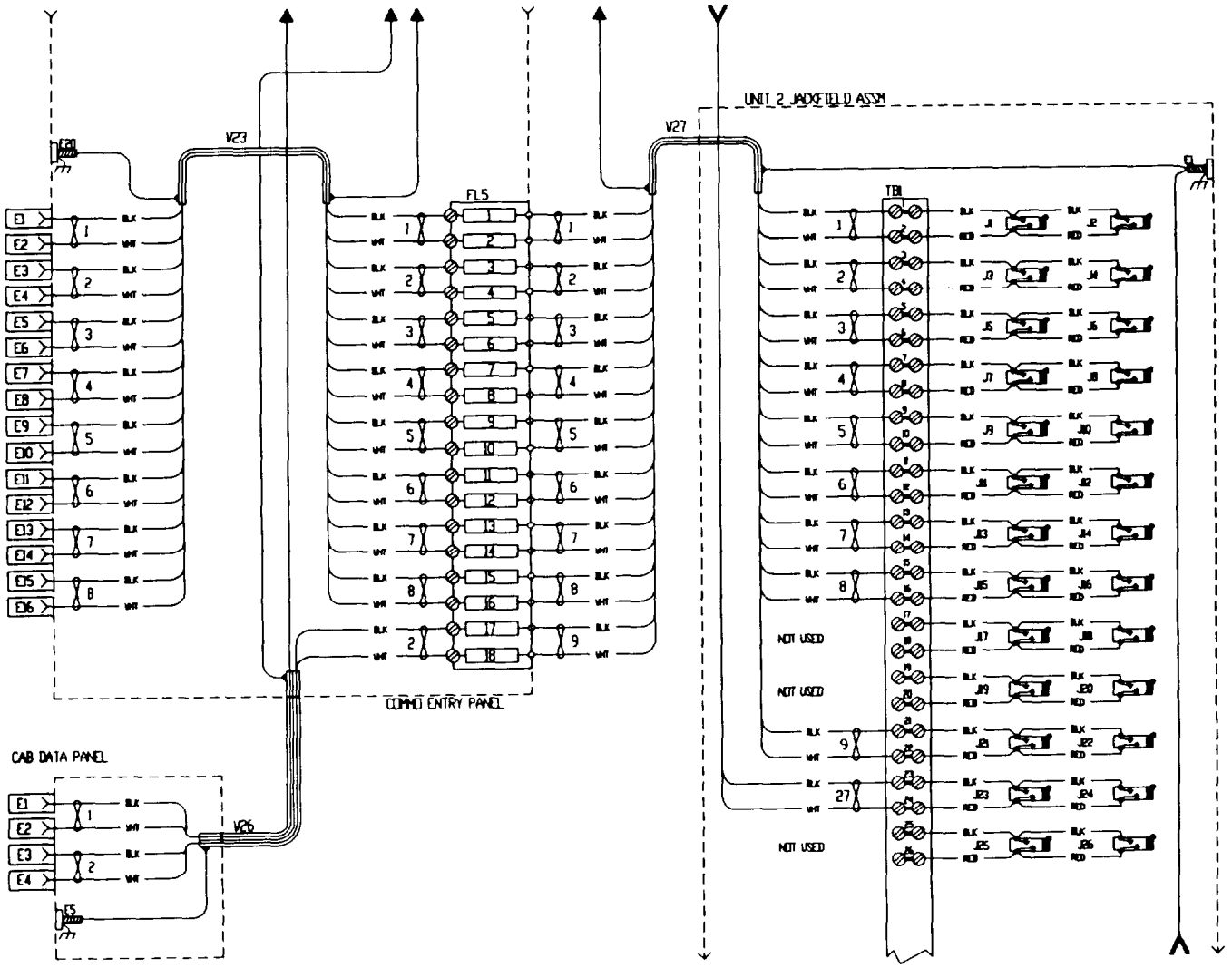


Figure 4-2. Signal/Data Wiring Diagram
(Sheet 8 of 11)

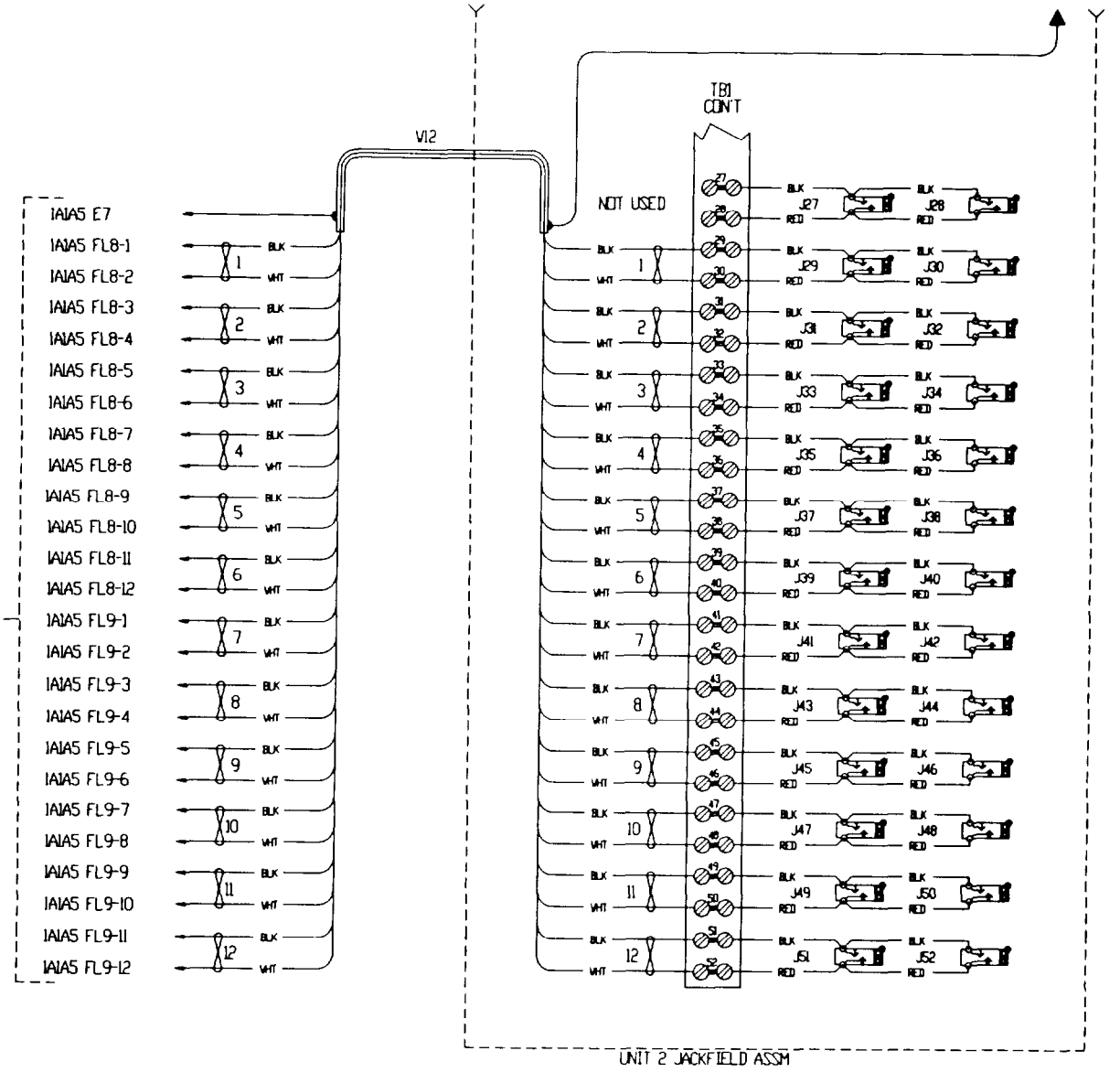


Figure 4-2. Signal/Data Wiring Diagram
(Sheet 9 of 11)

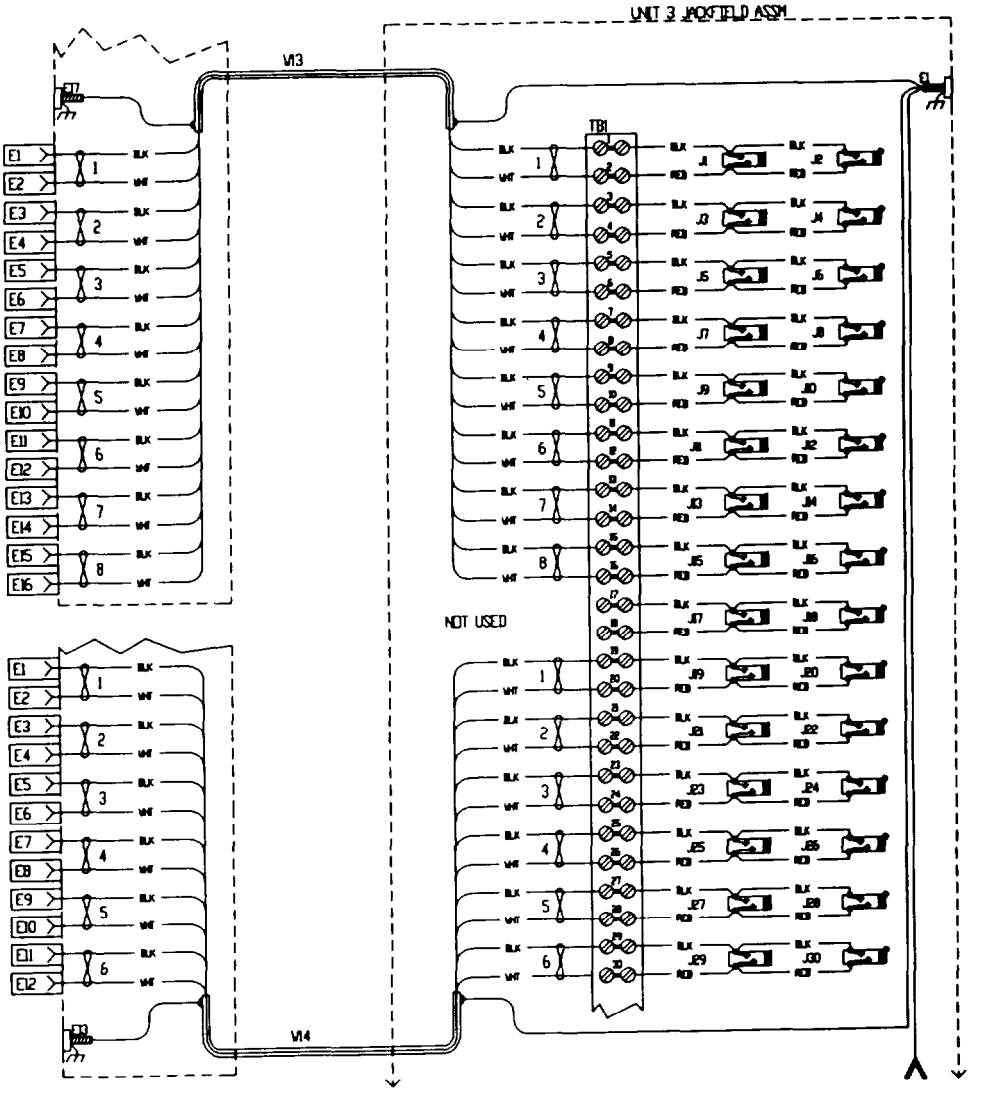


Figure 4-2. Signal/Data Wiring Diagram
(Sheet 10 of 11)

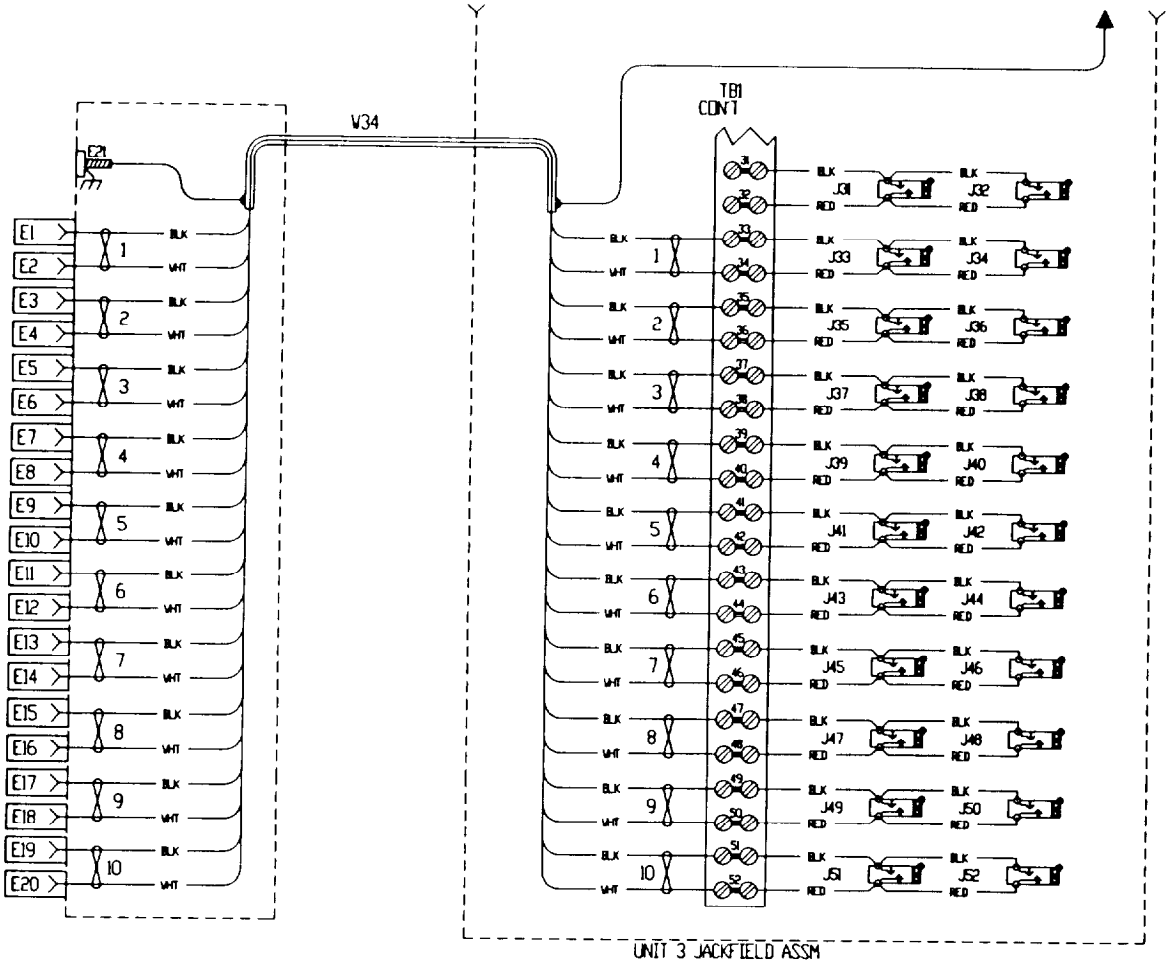


Figure 4-2. Signal/Data Wiring Diagram
(Sheet 11 of 11)

Malfunction index

Table 4-1. Troubleshooting

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

NOTE

- Reference figure 4-1 when troubleshooting the SICPS shelter.
- Access to the Relay Panel and other components of the SICPS shelter may require the removal of racks (para 4-24) and system equipment (TM11-7010-260-12&P). In such cases, notify your supervisor.

1. GENERATOR SHUTS DOWN WITH OVERVOLTAGE FAULT INDICATION.

WARNING

- Shelter contains high electrical currents. To prevent electrical shock, turn power switches off, remove power cable if external power is being used or battery cables if onboard power is being used, and tag Power Monitor Panel and Power Entry Box areas.
- Remove jewelry and observe all safety rules for working around potentially high voltages.

Step 1. Remove relay K6 from Relay Panel per 4-22.

Step 2. Connect ohmmeter across pins 4 and 5 and measure for an open condition (maximum resistance).

If not open, replace relay per 4-22.

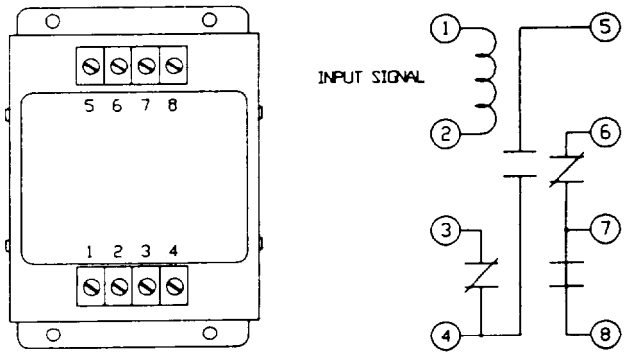
Table 4-1. Troubleshooting

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

Step 3. Apply 120 Vac across pins 1 and 2 and slowly increase voltage until the ohmmeter reads 0 resistance (pins 4 and 5 closed). Input voltage should be 153 (150 - 156) Vac.

If pins 4 and 5 do not close with the specified input voltage, replace relay per 4-22.

Step 4. Reference TM 9-6115-641-24 for further troubleshooting.



2. GENERATOR SHUTS DOWN WITH OVERLOAD OR SHORT CIRCUIT FAULT INDICATION.

WARNING

- Shelter contains high electrical currents, To prevent electrical shock, turn power switches off, remove power cable if external power is being used or battery cables if onboard power is being used, and tag Power Monitor Panel and Power Entry Box areas.

- Remove jewelry and observe all safety rules for working around potentially high voltages.

Step 1. Remove relay K5 from Relay Panel per 4-22 and measure:

a. Between pins 5 and 6 for maximum resistance - Normally open
b. Between pins 9 and 10 for maximum resistance - Normally open
c. Between pins 11 and 12 for continuty - Normally closed

If not in normally closed/open position, replace relay per 4-22.
If overvoltage condition, go to step 3.
If short circuit condition, go to step 5.

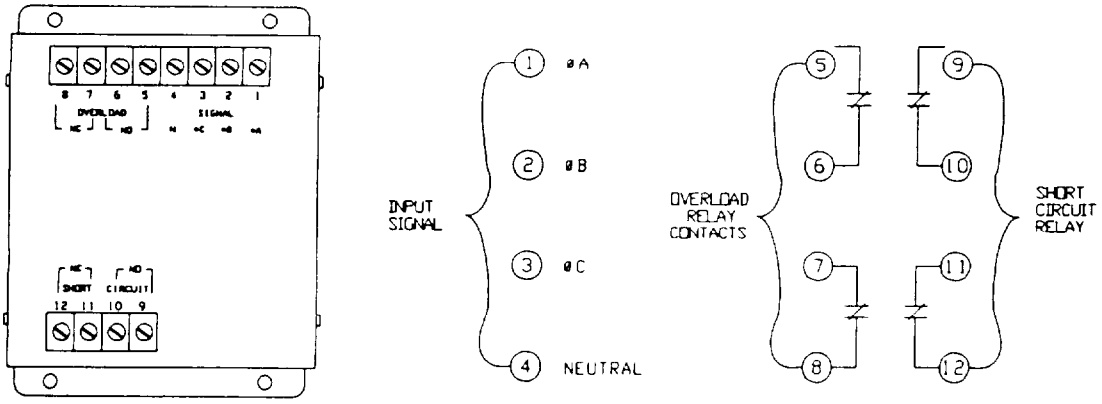


Table 4-1. Troubleshooting

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

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2. GENERATOR SHUTS DOWN WITH OVERLOAD OR SHORT CIRCUIT FAULT INDICATION - Continued.

NOTE

Pins 5 and 6 are used for overload conditions and pins 9 through 12 are used for short circuit conditions.

Step 3. Apply 5.62 Vac, 60 Hz (100% rated load) across pins 3 and 4.
Step 4. With an ohmmeter across pins 5 and 6, slowly increase input load to 130% (7.30 Vac) of rated value. Pins 4 and 5 should close in 8 ±3 minutes.

If pins do not close, replace relay per 4-22.

Short Circuit Operation

Step 5. Increase input voltage on pins 3 and 4 from 5.62 Vac to 23.9 ± 1.4 Vac. Pins 9 and 10 should close and pins 11 and 12 should open.

If pins do not close/open as indicated, replace relay per 4-22.

Step 6. Reference TM 9-6115-641-24 for further troubleshooting.

3. GENERATOR SHUTS DOWN WITH COOLANT HIGH TEMP, LOW OIL PRESSURE, OR LOW FUEL FAULT INDICATION (SYSTEM SERVICED).

Reference TM 9-6115-641-24 for troubleshooting.

4. LED ON FAULT INDICATOR PANEL FAILS TO COME ON WITH KNOWN GENSET PROBLEM OR FAILS TO LIGHT UNDER PRESS-TO-TEST.

Reference TM 9-6115-641-24 for troubleshooting.

Table 4-1. Troubleshooting

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

5. NO AC TO SHELTER.

Step 1. Check 3A fuse F1 (top) or F2 (bottom) on Power Entry Box.

If open, replace fuse.

Step 2. If external power is used, verify that CB2 on Power Entry Box is depressed (ON). If onboard power is being used, verify that circuit breakers on Power Monitor Faceplate Panel are depressed and momentary set AC POWER switch (S3) to ENABLE.

WARNING

- Shelter contains high electrical currents, To prevent electrical shock, turn power switches off, remove power cable if external power is being used or battery cables if onboard power is being used, and tag Power Monitor Panel and Power Entry Box areas.
- Remove jewelry and observe all safety rules for working around potently high voltages.

Step 3. If onboard power is being used, remove cover to Relay Panel and remove relays K1, K2, and K3. If external power is being used go to step 7.

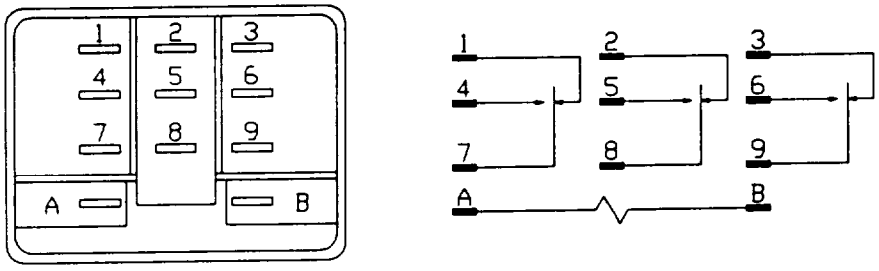
Step 4. For each relay, measure:

a. Between pins 1 and 7 for continuty - Normally closed
b. Between pins 2 and 8 for continuty - Normally closed
C. Between pins 3 and 9 for continuty - Normally closed
d. Between pins 1 and 4 for maximum resistance (infinity) - Normally open
e. Between pins 2 and 5 for maximum resistance (infinity) - Normally open
f. Between pins 3 and 6 for maximum resistance (infinity) - Normally open

If not in normally closed or open position, replace relay per 4-22.

Table 4-1. Troubleshooting

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
5. NO AC TO SHELTER - Continued.



Step 5. For each relay, apply 24Vdc across pins A and B and measure:

a. Between pins 1 and 7 for maximum resistance - open
b. Between pins 2 and 8 for for maximum resistance - open
c. Between pins 3 and 9 for for maximum resistance - open
d. Between pins 4 and 7 for continuity - closed
e. Between pins 5 and 8 for for continuity - closed
f. Between pins 6 and 9 for continuity - closed

If relay does not open/close as indicated in step 3, replace per 4-22.

Step 6. Test ENABLE/DISABLE GENERATOR AC PWR switch (S3).

If bad, replace per 4-21.

Step 7. Check continuity of lines. Refer to figure 4-1.

Repair.

Table 4-1. Troubleshooting

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

6. NO AC TO SHELTER - METER READINGS NORMAL.

Step 1. Verify that the MAIN POWER SOURCE (S6) is set to the correct position (GEN if the generator power is being used or IMP if import power is being used).

Step 2. Verify that the AC KILL switch (S5) is set to AC.

WARNING

- Shelter contains high electrical currents, To prevent electrical shock, turn power switches off, remove power cable if external power is being used or battery cables if onboard power is being used, and tag Power Monitor Panel and Power Entry Box areas.

- Remove jewelry and observe all safety rules for working around potently high voltages.

Step 3. Remove Power Entry Box covers, tag and remove leads from relays K1, K2, K4, and K8 if export power is being used or K3, K5 and K8 if onboard power is being used, and test relays as follows.

Step 4. For relay K1, measure:

a. Between pins A1 and A2 for maximum resistance - Normally open
b. Between pins C1 and C2 for maximum resistance - Normally open

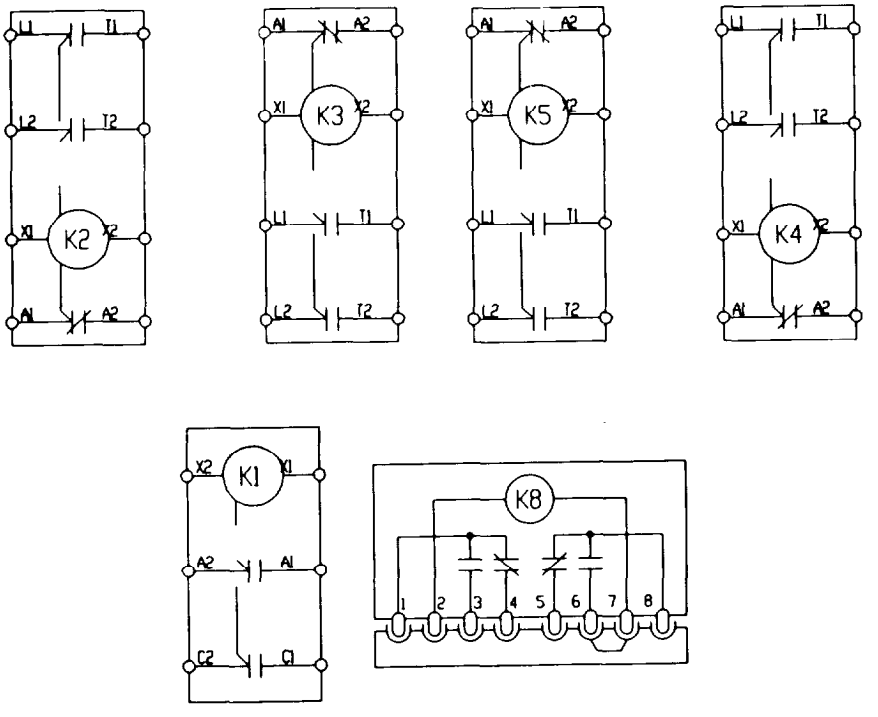
Step 5. Apply 115 Vac across pins X1 and X2 and measure:

a. Between pins A1 and A2 for continuity - closed
b. Between pins C1 and C2 for continuity - closed

Table 4-1. Troubleshooting

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

6. NO AC TO SHELTER - METER READINGS NORMAL - Continued



Step 6. For relays K2 through K5, measure:

a. Between pins A1 and A2 for continuty - Normally closed
b. Between pins L1 and T1 for maximum resistance - Normally open
e. Between pins L2 and T2 for maximum resistance - Normally open

Step 7. Apply 115 Vac across pins X1 and X2 and measure:

a. Between pins A1 and A2 for maximum resistance - open
b. Between pins L1 and T1 for continuty - closed
e. Between pins L2 and T2 for continuty - closed

Step 8. For relay K8, measure:

a. Between pins 1 and 4 for continuty - Normally closed
b. Between pins 5 and 8 for continuty - Normally closed
c. Between pins 1 and 3 for maximum resistance - Normally open
d. Between pins 6 and 8 for maximum resistance - Normally open

Table 4-1. Troubleshooting

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
6. NO AC TO SHELTER - METER READINGS NORMAL - Continued.
Step 9. Apply 115 Vac across pins 2 and 7 and measure: a. Between pins 1 and 4 for maximum resistance - open b. Between pins 5 and 8 for for maximum resistance - open c. Between pins 1 and 3 for continuty - closed d. Between pins 6 and 8 for continuty - closed
Step 10. Test AC KILL and MAIN POWER SOURCE SELECT switches. If bad, replace.
Step 11. Check continuity of lines. Refer to figure 4-1. Repair
7. ECU INOPERATIVE - AC NORMAL.
Step 1. Verify that the ECU SOURCE POWER SELECTION switch (S7) is set to the correct position. (GEN if the generator power is being used or IMP if import power is being used.)
Step 2. Verify that the ECU (40A) circuit breaker (CB1) and ECU Control Panel (1A) circuit breaker (CB14) are depressed (ON).
WARNING ● Shelter contains high electrical currents, To prevent electrical shock, turn power switches off, remove power cable if external power is being used or battery cables if onboard power is being used, and tag Power Entry Box areas. ● Remove jewelry and observe all safety rules for working around potently high voltages.
Step 3. Remove cover and verify that circuit breaker switch on ECU is set to on.

Table 4-1. Troubleshooting

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

7. ECU INOPERATIVE - AC NORMAL - Continued.

Step 4. Test ECU per TM 5-4120-378-14. Ref to TM 5-4120-378-24.

Step 5. Remove Power Entry Box covers, tag and remove leads, remove relays K4 and K5, and test relays per malfunction 6, step 6.

If bad, replace.

Step 6. Remove Power Monitor Panel Faceplate per 4-21 and test ECU SOURCE POWER SELECTION switch (S7).

If bad, replace per 4-21.

Step 7. Check continuity of lines. Refer to figure 4-1.

Repair

8. NO READING ON A.C. VOLTSMETER - LED ON.

WARNING

- Shelter contains high electrical currents, To prevent electrical shock, turn power switches off, remove power cable if external power is being used or battery cables if onboard power is being used, and tag Power Entry Box areas.

- Remove jewelry and observe all safety rules for working around potently high voltages.

Step 1. Remove Power Monitor Faceplate per 4-21.

Step 2. Open lead on one side of A.C. VOLTS METER (M3) and measure meter for 20K.

If open, replace per 4-21.

Step 3. Check continuity of wires from METER SELECT switch to meter. Refer to figure 4-1.

Repair.

Table 4-1. Troubleshooting

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

9. READING ON A.C. VOLTS METER - LED OFF.

WARNING

- Shelter contains high electrical currents, To prevent electrical shock, turn power switches off, remove power cable if external power is being used or battery cables if onboard power is being used, and tag Power Entry Box areas.

- Remove jewelry and observe all safety rules for working around potently high voltages.

Step 1. Remove Power Monitor Faceplate per 4-21.

Step 2. Open lead on one side of diode (D1 for onboard or D2 for external power) and test diode.

If bad, replace per 4-21.

Step 3. Remove lead from one side of resistor (R1 for onboard or R2 for external power) and measure for 12 Kohm.

If open, replace per 4-21.

Step 4. Check continuity of wires in LED circuit. Refer to figure 4-1.

Repair.

Table 4-1. Troubleshooting

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

10. NO READING ON FREQUENCY METER (M2).

WARNING

- Shelter contains high electrical currents, To prevent electrical shock, turn power switches off, remove power cable if external power is being used or battery cables if onboard power is being used, and tag Power Entry Box areas.

- Remove jewelry and observe all safety rules for working around potently high voltages.

Step 1. Remove Power Monitor Faceplate per 4-21.

Step 2. Open one side of meter M2 and test for open condition.

If open, replace per 4-21.

Step 3. Remove relay K5 from Relay Panel and connect a microampmeter capable of reading up to 300 microamps between pins (+) and (-).

Step 4. With 120 Vac applied across pins L, increase the input frequency from 55 Hz to 65 hz. Current out should increase proportionally and linear from 0 microamps to 200 microamps.

If bad, replace per 4-21.

Step 5. Reference TM 9-6115-641-24 for further troubleshooting.

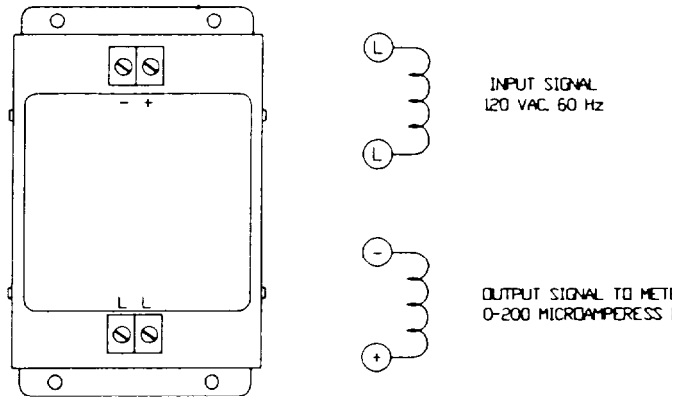


Table 4-1. Troubleshooting

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

11. NO READING ON % RATED CURRENT METER (M3).

WARNING

- Shelter contains high electrical currents, To prevent electrical shock, turn power switches off, remove power cable if external power is being used or battery cables if onboard power is being used, and tag Power Entry Box areas.

- Remove jewelry and observe all safety rules for working around potently high voltages.

Step 1. Remove Power Monitor Faceplate per 4-21, open lead on one side of % RATED CURRENT meter M3, and test for open condition.

If open, replace per 4-21.

Step 2. Open lead on one side of resistor R1 and measure for 50 ohms across resistor.

If bad, replace per 4-21.

Step 3. Measure for continuity across pick-off coil CT1.

If open, replace per 4-21.

Step 4. Check continuity of wires in pick-off coil circuit. Refer to figure 4-1.

Repair.

Table 4-1. Troubleshooting

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

12. NO AC OR DC POWER TO OUTLET(S).

- Shelter contains high electrical currents, Use proper safety procedures when testing circuits.
- Remove jewelry and observe all safety rules for working around potently high voltages.

Step 1. Verify that the AC (or DC) circuit breaker(s) are depressed (ON).

Step 2. Check outlet for AC (or DC) voltage.

If no reading, carefully remove outlet and test wires for voltage.

Step 3. If AC (or DC) voltage on wires, switch power off and replace outlet.

If no AC (or DC) voltage on wires, notify your supervisor.

13. FILTER BLOWER INOPERATIVE.

WARNING

- Shelter contains high electrical currents, Use proper safety procedures when testing circuits.
- Remove jewelry and observe all safety rules for working around potently high voltages.

Step 1. Verify that vent fan (CB4) circuit breaker (located in the circuit box on the inside, roadside wall of the shelter) is depressed (ON).

Step 2. Disconnect Filter Blower Assembly power cable and measure for 28 Vdc at the power outlet connector (J3) located on the outside, back, roadside corner of the shelter.

If voltage present, replace Filter Blower Assembly (para 4-10).

Table 4-1. Troubleshooting

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

13. FILTER BLOWER INOPERATIVE - Continued.

Step 3. Remove power, open circuit breaker panel, and remove CB4 for testing as follows: Remove screws (1), lockwashers (2) and flat washers (3) securing circuit breaker (4) to panel. Carefully pull circuit breaker out of panel and remove screws (5) and lockwashers (6) securing wires to circuit breaker.

If bad, replace.

Step 4. Check continuity of wires. Refer to figure 4-1.

Repair.

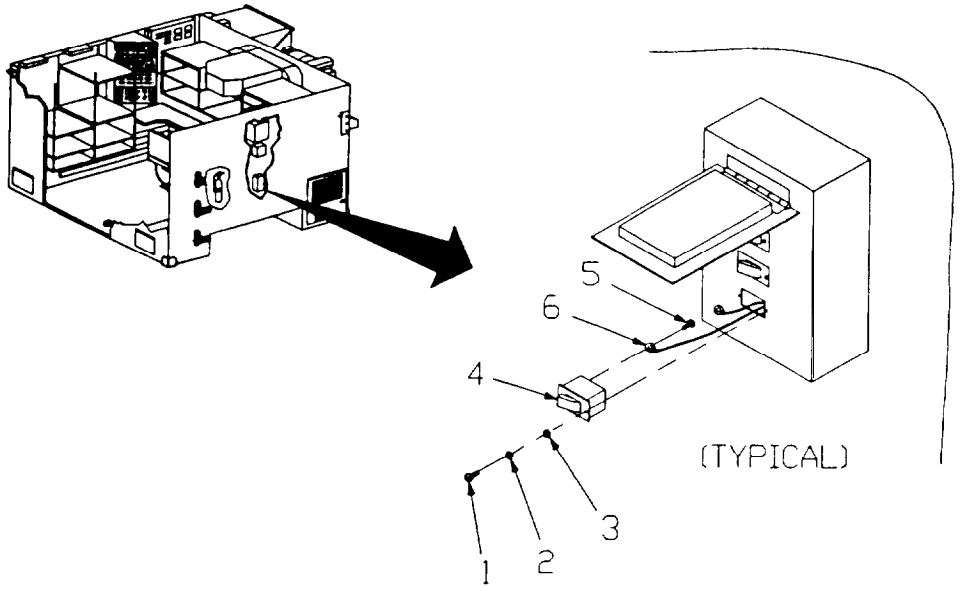


Table 4-1. Troubleshooting

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

14. GPFU INOPERATIVE.

WARNING

- Shelter contains high electrical currents, Use proper safety procedures when testing circuits.
- Remove jewelry and observe all safety rules for working around potently high voltages.

Step 1. Verify that GPFU (CB3) circuit breaker (located in the circuit box on the inside, roadside wall of the shelter) is depressed (ON).

Step 2. Disconnect GPFU power cord and measure for 28 Vdc at the power outlet connector (J2) located on the outside, back, roadside corner of the shelter.

If voltage present, reference TM 3-4240-302-330&P-8.

Step 3. Remove power, open circuit breaker panel, and remove and test CB3. (Refer to figure under 13.)

If bad, replace.

Step 4. Check continuity of wires. Refer to figure 4-1.

Repair.

Table 4-1. Troubleshooting

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

15. NO OUTPUT FROM EXPORT POWER CONNECTOR (J1).

WARNING

- Shelter contains high electrical currents, To prevent electrical shock, turn power switches off, remove power cable if external power is being used or battery cables if onboard power is being used, and tag Power Entry Box areas.

- Remove jewelry and observe all safety rules for working around potently high voltages.

Step 1. Verify that the EXPORT POWER SOURCE SELECT switch (S1) is set to the correct position (GEN if the generator power is being used or IMP if import power is being used).

Step 2. Verify that the AC POWER OUT (CB1) circuit breaker at the Power Entry Box is depressed (ON).

Step 3. Remove Power Entry Box covers and test EXPORT POWER SOURCE SELECT switch (S1).

If bad, replace.

Step 4. Check continuity of lines. Refer to figure 4-1.

Repair.

Table 4-1. Troubleshooting

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

16. INTERIOR DC (WHITE) LIGHT DOES NOT COME ON.

WARNING

- Shelter contains high electrical currents, To prevent electrical shock, turn power switches off, remove power cable if external power is being used or battery cables if onboard power is being used, and tag Power Entry Box areas.

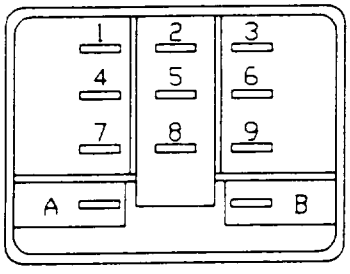
- Remove jewelry and observe all safety rules for working around potently high voltages.

Step 1. If both lights are out, verify light (10A) circuit breaker (CB11) on Power Monitor Faceplate is depressed (ON). If one light is out, go to step 4.

Step 2. Gain access to Relay Panel, remove relay K7 per 4-22, and measure:

a. Between pins 1 and 7 for continuty - Normally closed
b. Between pins 2 and 8 for continuty - Normally closed
c. Between pins 3 and 9 for continuty - Normally closed
d. Between pins 1 and 4 for maximum resistance - Normally open
e. Between pins 2 and 5 for maximum resistance - Normally open
f. Between pins 3 and 6 for maximum resistance - Normally open

If not in normally closed or open position, replace relay per 4-22.



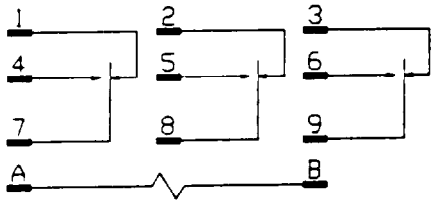


Table 4-1. Troubleshooting

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

16. INTERIOR DC (WHITE) LIGHT DOES NOT COME ON - Continued.

Step 3. Apply 24Vdc across pins A and B and measure:

a. Between pins 1 and 7 for maximum resistance - open
b. Between pins 2 and 8 for for maximum resistance - open
a. Between pins 3 and 9 for for maximum resistance - open
b. Between pins 1 and 4 for continuity - closed
c. Between pins 2 and 5 for for continuity - closed
d. Between pins 3 and 6 for continuity - closed

If relay does not open/close as indicated in step 3, replace relay per 4-22.

Step 4. If only one of the lights are out, remove cover and replace light bulb.

If replacing the light bulb does not rectify problem, check continuity of lines. Refer to figure 4-1.

17. INTERIOR DC WHITE LIGHTS FAIL TO GO OFF WHEN DOOR IS OPENED - BLACKOUT ENABLE CIRCUIT BREAKER ACTIVATED.

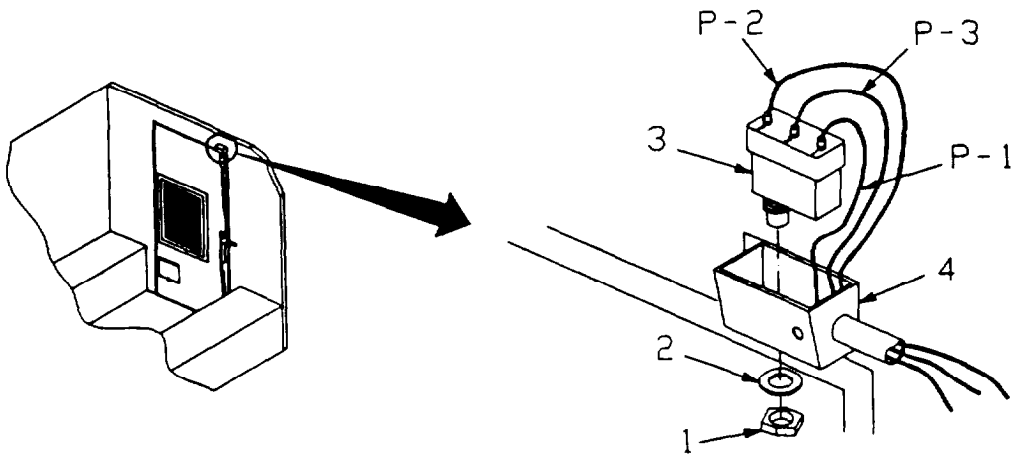
WARNING

- Shelter contains high electrical currents, To prevent electrical shock, turn power switches off, remove power cable if external power is being used or battery cables if onboard power is being used, and tag Power Entry Box areas.

- Remove jewelry and observe all safety rules for working around potently high voltages.

Table 4-1. Troubleshooting

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION



Step 1. Remove leads from blackout switch above the door and measure:

Pins 3 and 2 for maximum resistance - door open
Pins 2 and 1 for continuity - door open
Pins 2 and 1 for maximum resistance - door closed
Pins 3 and 2 for continuity - door closed

If bad, replace.

Step 2. Remove K7 from Relay Panel per 4-21 and test relay K7 per malfunction 16, steps 2 and 3.

18. INTERIOR AC LIGHTS DO NOT COME ON.

WARNING

- Shelter contains high electrical currents, To prevent electrical shock, turn power switches off, remove power cable if external power is being used or battery cables if onboard power is being used, and tag Power Entry Box areas.

- Remove jewelry and observe all safety rules for working around potently high voltages.

Table 4-1. Troubleshooting

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

18. INTERIOR AC LIGHTS DO NOT COME ON - Continued.

Step 1. If both lights are out, verify light circuit breaker (CB10) on Power Monitor Faceplate is depressed (ON). If one light is out, go to step 4.

Step 2. Remove K7 from Relay Panel per 4-21 and test relay K7 per malfunction 16, steps 3 and 4.

If one of the lights are out, remove cover and replace light bulb.

If replacing the light bulb does not rectify problem, check continuity of lines. Refer to figure 4-1.

19. CO MONITOR INOPERATIVE.

Step 1. Verify that the CO Monitor's circuit breaker (AC#2) on Power Monitor Faceplate depressed (ON).

Step 2. Make sure CO Monitor's power cord is plugged in.

Step 3. Remove power cord and test outlet per malfunction 12.

Step 4. Remove Power Monitor Faceplate per 4.21 and test CB AC#2.

If bad, replace.

Step 5. Check continuity of wires. Refer to figure 4-1.

Repair.

SECTION IV. DIRECT SUPPORT MAINTENANCE PROCEDURES

4-8. GENERAL. The procedures, as identified under this heading, are general in nature and may be used during repair or replacement of shelter components.

4-9. RIVETS.

a. *Blind Rivets.* Blind rivets are used in locations where only one side of the area to be worked on is accessible. Blind pop rivets must be used in the shelter honey comb panels since the hammering required to install conventional rivets would damage the material. The types of rivets used in the shelter are shown in figure 4-3 and described in table 4-2. When installing floor patches, countersunk head rivets (styles K and T) are preferred, but dome head rivets (styles R and S) are an acceptable alternate. When installing interior wall patches, countersunk head rivets shall be used in any instance where dome head rivets will interfere with the installation of equipment. Closed end rivets (styles K and R) must be used for exterior repairs and floor repairs to prevent moisture and dirt from entering panels.

NOTE

Use open end rivets only where moisture and dirt intrusion will not effect the shelter.

NOTE

- When installing new rivets in the same location as a rivet that has been removed, use next larger diameter rivet for replacement.
- Clean rivets with solvent before installing.

(1) Installation. (figure 4-4)

(a) Determine type, size, and grip range of rivet to be used. Grip length equals the combined thickness of the materials being riveted together. Grip range of the rivet must encompass the grip length.

WARNING

Drilling creates metal chips which can enter eyes and cause serious injury. Eye protection is required.

CAUTION

Use a drill stop when drilling to prevent damage to the reverse skin of the shelter.

NOTE

Drill hole size must match the size of the rivet being used. Quantities of sheets may be drilled at the same time when held together with sheet fasteners.

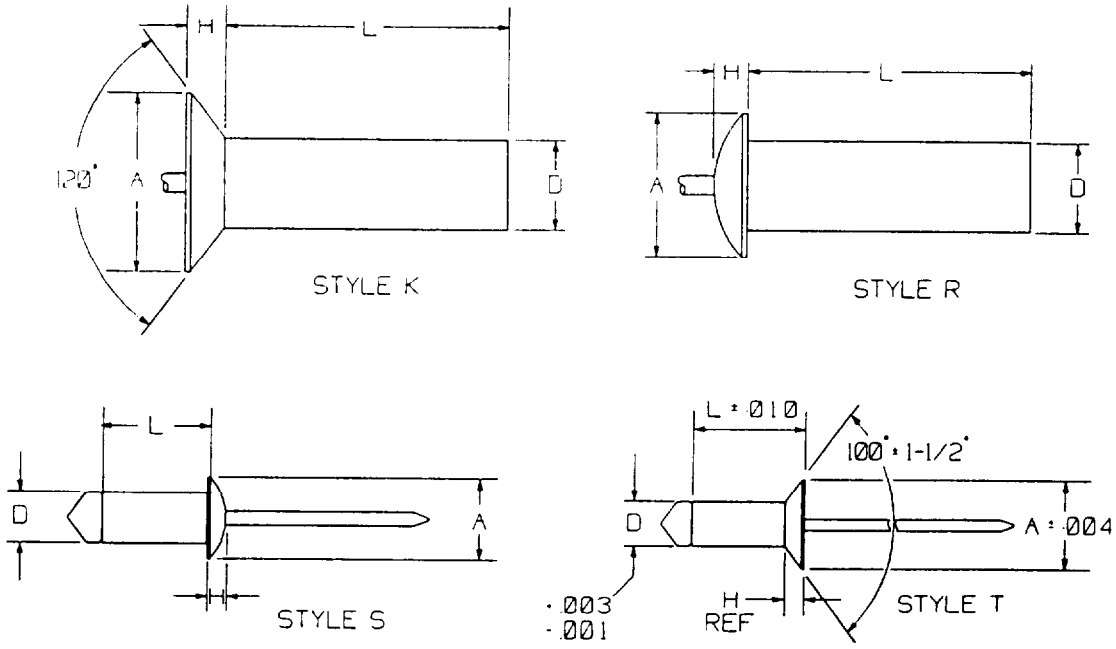


Figure 4-3. Rivet Styles

Table 4-2 Blind Rivets

Part No.*	Style	Dim A	Dim H	Dim D	Dim L
AD42H	R	0.236	0.051	1/8	0.361
AD43H	R	0.236	0.051	1/8	0.377
AD45H	R	0.236	0.051	11/8	0.502
AD62H	R	0.375	0.081	3/16	0.345
AD64H	R	0.375	0.081	3/16	0.470
AD68H	R	0.375	0.081	3/16	0.720
AD42S	R	0.236	0.051	1/8	0.361
MS20470AD6-8	R	0.375	0.080	3/16	0.375
NAS1398D4-3	R	0.250	0.067	0.156	0.326
NAS1398D4-4	R	0.250	0.067	0.156	0.388
NAS139806-3	R	0.375	0.080	0.187	0.350
NAS1398D6-5	R	0.375	0.080	0.187	0.475
NAS1398D6-8	R	0.375	0.080	0.187	0.662
NAS139904-4	R	0.225	0.042	0.125	0.385
NAS1399D6-6	R	0.353	0.070	0.187	0.537
NAS1739E4-3	R	0.286	0.047	0.173	0.375

* Part No. Code Explanations

D 4 4 A H

Rivet Body Material

A = Aluminum

Head Style

D = Dome head
K = Countersunk

Rivet Diameter in 32nds of an inch

Example: 4 = 4/32 or 1/8 body diameter

Max. Grip in 16ths of an inch

Example 4 = 4/16 or 1/4 inch maximum grip range

Mandrel Material

A = Aluminum
No letter = Carbon steel

Core Design

H = Hollow core
S = Solid core

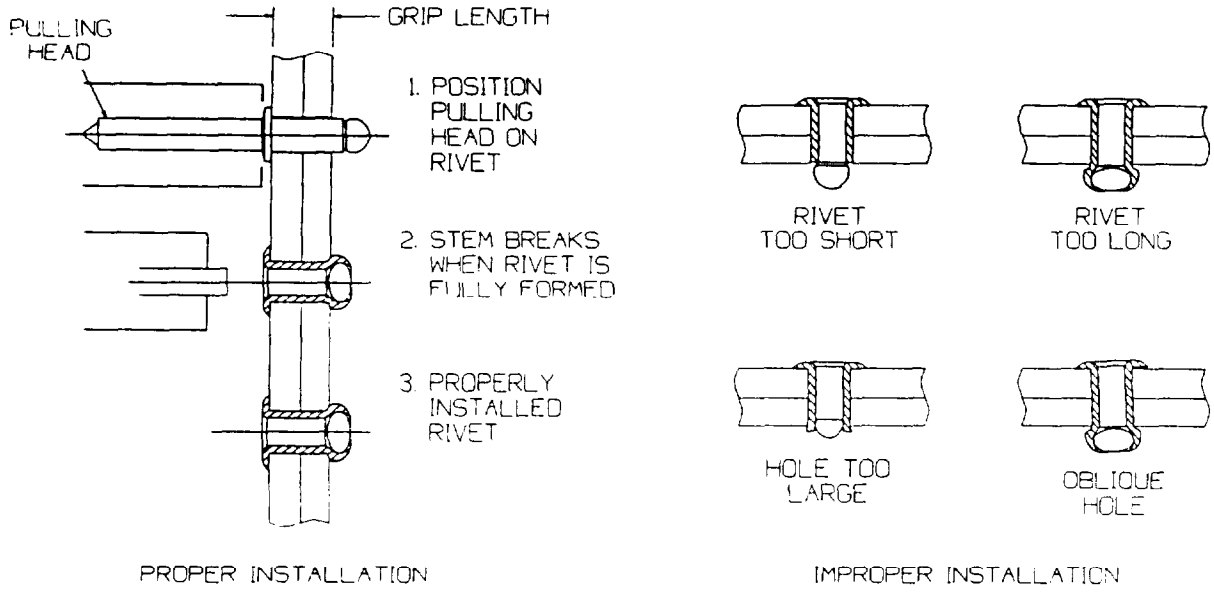


Figure 4-4. Rivet installation

(b) Drill hole in structure.

(c) Remove all metal chips and burrs from drilled holes.

(d) If flush head rivet is being installed, countersink hole using a loo-degree or 120-degree machine countersink.

(e) Coat all rivet bodies with fiber filled polyester resin (Item 36, Appendix E) before installing.

(f) Insert rivet in hole. Make sure sheets are held tightly together before upsetting or pulling rivet.

(g) Select proper pulling head for rivet being installed and install pulling head on rivet gun.

(h) Insert stem of rivet into pulling head.

(i) With pulling head parallel to axis of rivet, upset rivet. Exert firm pressure but do not bend or buckle metal sheets. Stem will break off below rivet head surface. No trimming should be required.

(j) Make sure riveted parts are not loose, rivet does not rotate, and rivet head is seated tightly against riveted surface. If rivet is loose or improperly installed, remove the rivet and repeat steps (a) through (j).

(2) Removal. (figure 4-5)

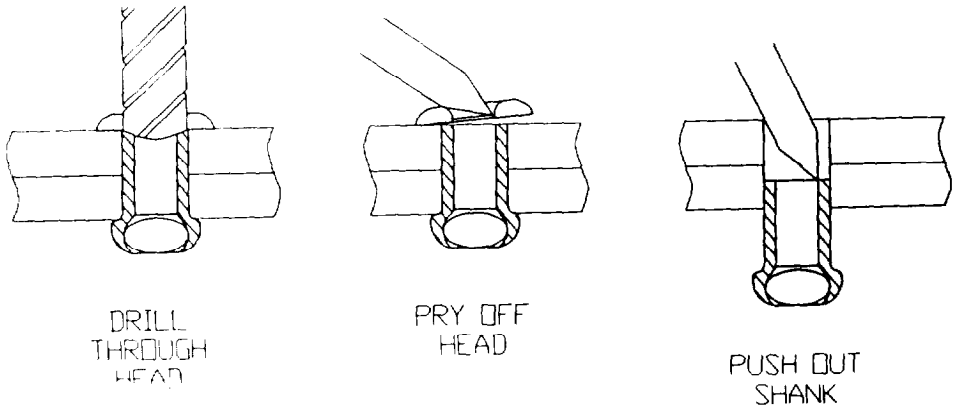


Figure 4-5. Removal

WARNING

Drilling creates metal chips which can enter eyes and cause serious injury. Eye protection is required.

NOTE

When drilling through rivet head, be careful not to enlarge hole in structure. Keep drill perpendicular to material being drilled and do not use excessive pressure, or replacement rivets will be too loose.

(a) Drill through head of rivet only, using hole in rivet as a guide. Use the proper drill size as follows:

Rivet Size (in.)	Drill Size
1/8	No. 30
5/32	No. 20
3/16	No. 11
1/4	1/4 inch

(b) Using a pin punch pry off rivet head.

CAUTION

Do not punch rivet shanks out or damage to the reverse skin may result.

b. *Rivnut Installation and Removal.* Rivnuts (threaded inserts) are tubular rivets with internal threads and are used throughout the shelter wherever blind threads are required. The types of rivnuts used in the shelter are shown on figure 4-6 and described in table 4-3.

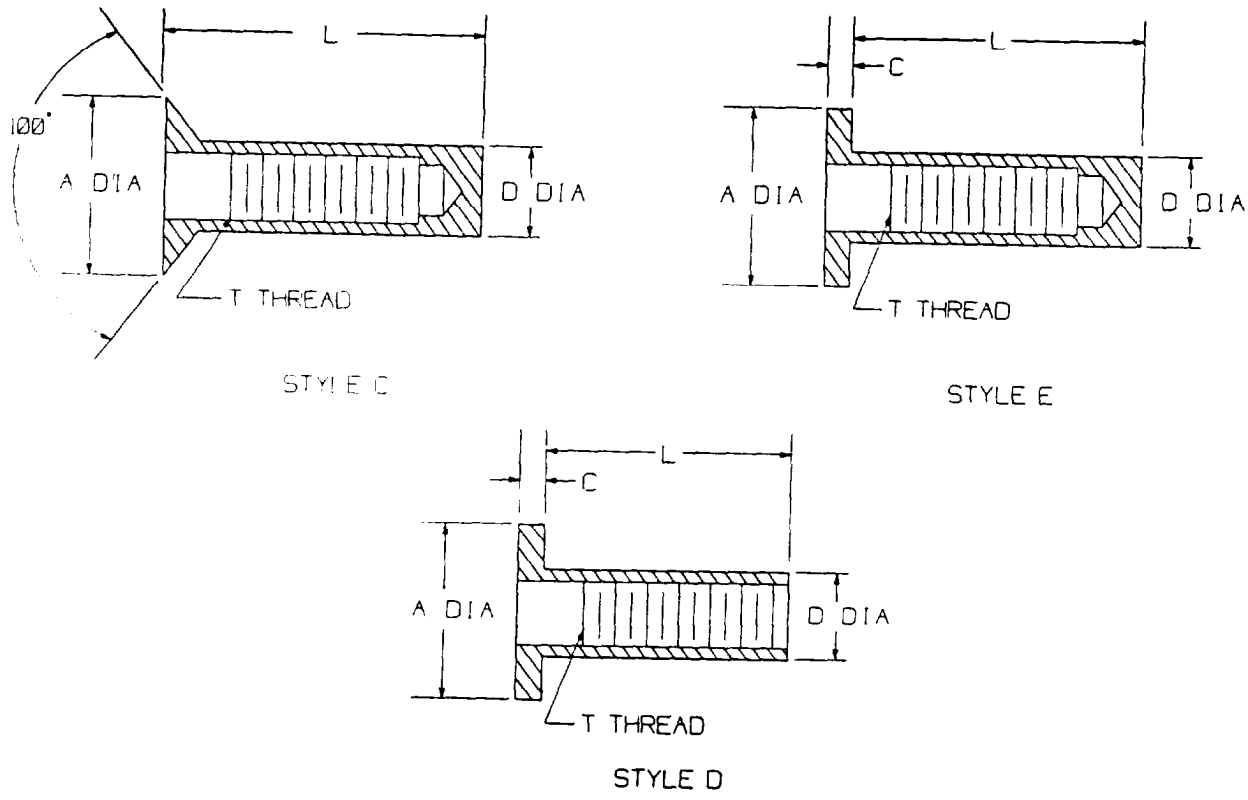


Figure 4-6 Types of Rivnuts

Table 4-3. Rivnuts

Dash No.	Part No.	Style	Dim A	Dim D	Di m L	T	Dim C	Grip Range
SM-C-563711-1	S25B151	C	0.529	0.332	1.000	1/4-20 UNC-3B		.089 - .151
SM-C-563711-2	S258211	C	0.529	0.332	1.062	1/4-20 UNC-3B		.151 - .211
SM-C-563711-3	S25B451	C	0.529	0.332	1.312	1/4-20 UNC-3B		.391 - .451
SM-C-563711-4	S10B366	C	0.391	0.250	1.094	10-32 UNC-3B		.316 - .366
SM-C-563711-5	S25B140	E	0.475	0.332	1.000	1/4-20 UNC-3B	0.058	.080 - .140
SM-C-563711-6	S8B106	C	0.355	0.221	0.687	8-32 UNC-38		.065 - .106
SM-C-563711-7	S31B350	D	0.665	0.413	1.032	5/1 6-18 UNC-3B	0.062	.275 - .350
SM-C-563711-8	S31B125	E	0.665	0.413	1.187	5/16-18 UNC-3B	0.062	.030 - .125
SM-C-563711-9	S31B481	C	0.656	0.413	1.562	5/16-18 UNC-3B		.406 - .481
SM-C-563711-10	S8B201	C	0.355	0.221	0.687	8-32 UNC-3B		.161 - .201
SM-C-563711-11	S8B161	C	0.355	0.221	0.687	8-32 UNC-3B		.106 - .161
SM-C-563711-12	S25B320	E	0.475	0.332	1.187	1/4-20 UNC-3B	0.058	.260 - .320
SM-C-563711-13	S31B425	E	0.665	0.413	1.531	5/16-UNC-3B	0.062	.350 - .425
SM-C-563711-14	S31B350	E	0.665	0.413	1.437	5/16-18 UNC-3B	0.062	.275 - .350

Flat head rivnuts (style D and E) may be used wherever head thickness will not interfere with the installation of equipment. Countersunk head rivnuts (style C), are used for flush installation. Keyed rivnuts are used in locations which are subject to vibration and torque. Closed end rivnuts (styles C and E) must be used for exterior repairs and floor repairs to keep moisture and dirt from entering panels. Open end rivnuts (style D) may be used in areas where sealing is not required.

(1) Installation (figure 4-7)

NOTE

When installing new rivnuts in the same location as a rivnut that has been removed , use the next larger diameter rivnut for replacement.

(a) Determine thread size, grip range, style, and material of rivnut to be used. Grip length equals combined thickness of materials being fastened together. Grip range of rivnuts must encompass grip length.

WARNING

Drilling creates metal chips which can enter eyes and cause serious injury. Wear eye protection when drilling.

CAUTION

Do not drill deeper than necessary to install rivet or damage to reverse skin can result.

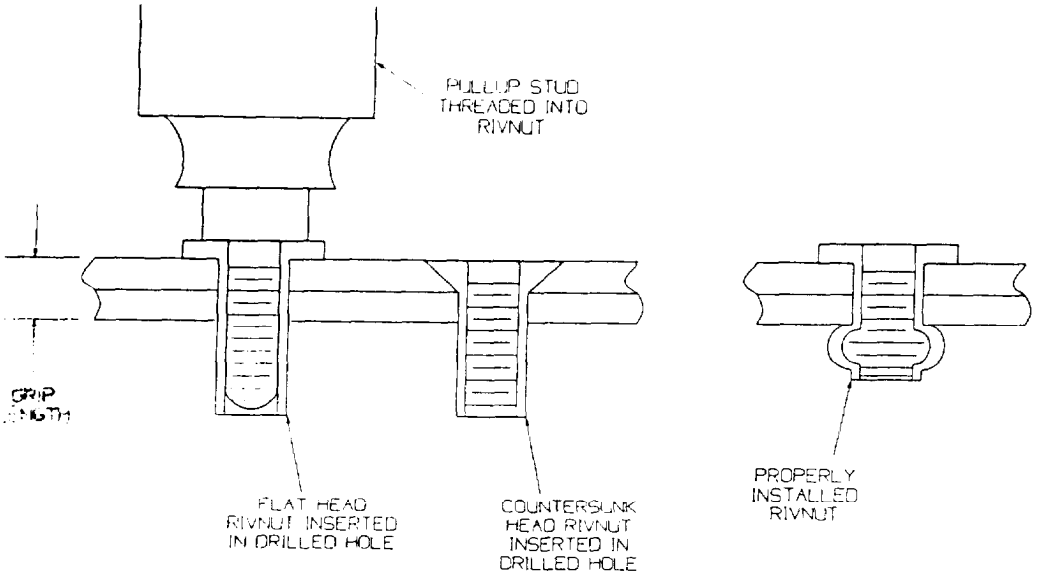


Figure 4-7 Rivnut Installation

NOTE

Drill hole size must match size of rivnut being in-stalled. Quantities of sheets may be drilled at the same time when held together with sheet fasteners.

(b) Drill hole in structure.

(c) Remove all metal chips and remove burrs from drilled holes.

(d) If a countersunk rivnut is being installed, countersink hole using a 100-degree machine countersink.

(e) Thread stem of appropriate pull-up stud into rivnut. Stud should protrude through open end rivnuts or be 1-1/2 threads from bottoming in closed end rivnuts.

(f) Coat rivnut body with fiber filled polyester resin before installing.

(g) insert rivnut in hole. Make sure sheets are held tightly together before pulling.

(h) With pull-up stud parallel to axis of rivnut, pull up on rivnut. Exert firm pressure but do not bend or buckle metal sheets.

(i) Make sure fastened parts are not loose, rivnut does not rotate, and rivnut head is seated tightly against surface. Make sure rivnut threads are in good condition. If threads are damaged or rivnut is improperly installed, remove it and install a new one.

(2) Removal (figure 4-8)

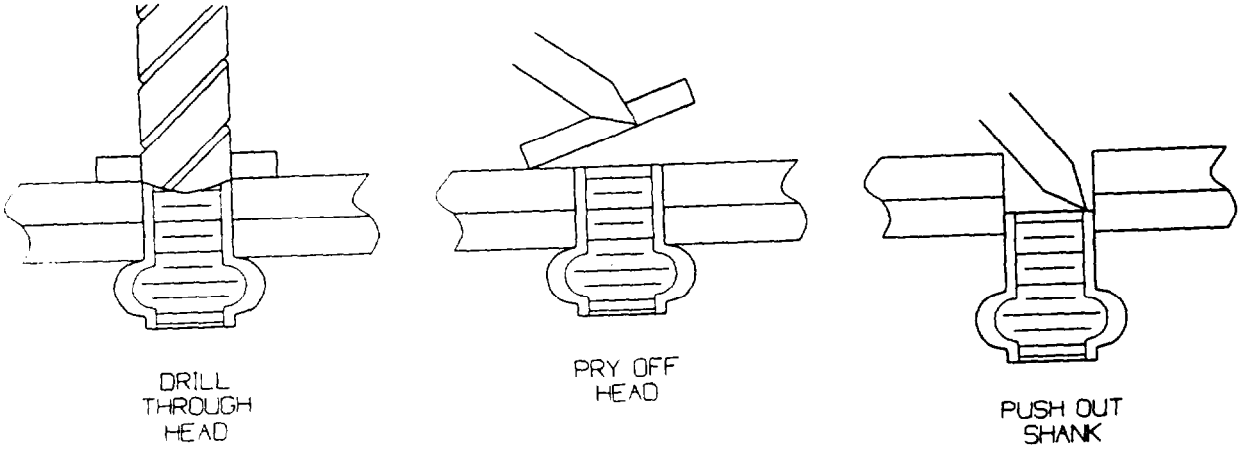


Figure 4-8 Rivnut Removal

WARNING

Drilling creates metal chips which can enter eyes and cause serious injury. Wear eye protection when drilling.

(a) Drill through head of rivnut, using same size drill used to make original hole. Counterbore in rivnut will act as a drill guide.

(b) Remove head of rivnut.

CAUTION

Do not puncture opposite face sheet of panel when punching out rivnut shank.

(c) Punch out shank of rivnut using a pin punch slightly smaller than hole in structure. Punch only enough to disengage. Move rivnut aside to install new rivnut.

(3) Repair. (figure 4-9) When excessive torque is applied on screws attached on rivnuts, it may cause a rivnut to spin (turn). Table 4-4 provides the maximum torque requirement for hardware to prevent rivnut turning. To correct a spinning rivnut, proceed as follows:

Table 4-4. Maximum Torque Requirements for Rivnut Screws.

Screw Size	Torque lbs/in.)
4 - 40	8 inch lb
6 - 32	12 inch lb
8 - 32	20 inch lb
10-32	20 inch lb
1/4 - 20	50 inch lb
5/16 - 18	65 inch lb
3/8 - 16	120 inch lb

(a) Drill a .062 (+ .003, - .001) diameter hole by 1.00 inch long on the stem of the spinning rivnut as shown in figure 4-8.

(b) Install a headless straight pin.

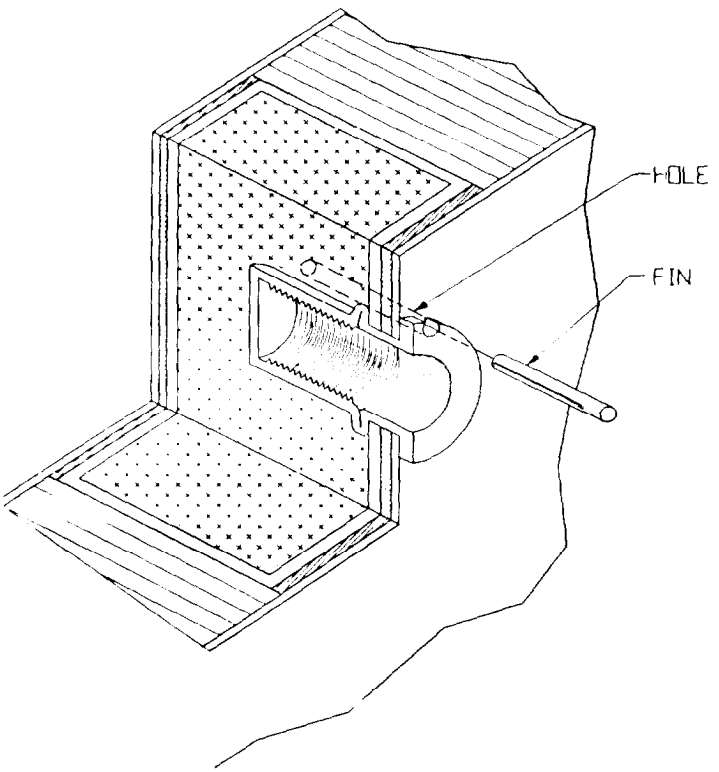


Figure 4-9. Spinning Rivnut

4-10. FILTER BLOWER ASSEMBLY.

This task covers: Repair

INITIAL SETUP

Tools:
General Mechanics Tool Kit (Item 1, Appendix B)

Materials/Parts:
Filter Blower Assembly
RFI Filter
Foam Filter
Polyester Filter
Rags (Item 7, Appendix E)
Alcohol, Isopropyl (Item 33, Appendix E)
Gasket (Appendix F, Figure F-5, -1 and -2)
Gasket (Appendix F, Figure F-6, -1 and -2)
Lockwasher (Item 14, Appendix E)
Lockwasher (Item 15, Appendix E)
Lockwasher (Item 16, Appendix 5)

REPAIR

Disassemble

1. Disconnect Filter Blower Assembly (1) from power outlet (2).

2. Remove nuts(3), lockwashers (4), and flat washers (5) securing the cable support (6) to frame (7). Remove bolts (8) and cable support clamps (6) from power cable (91.

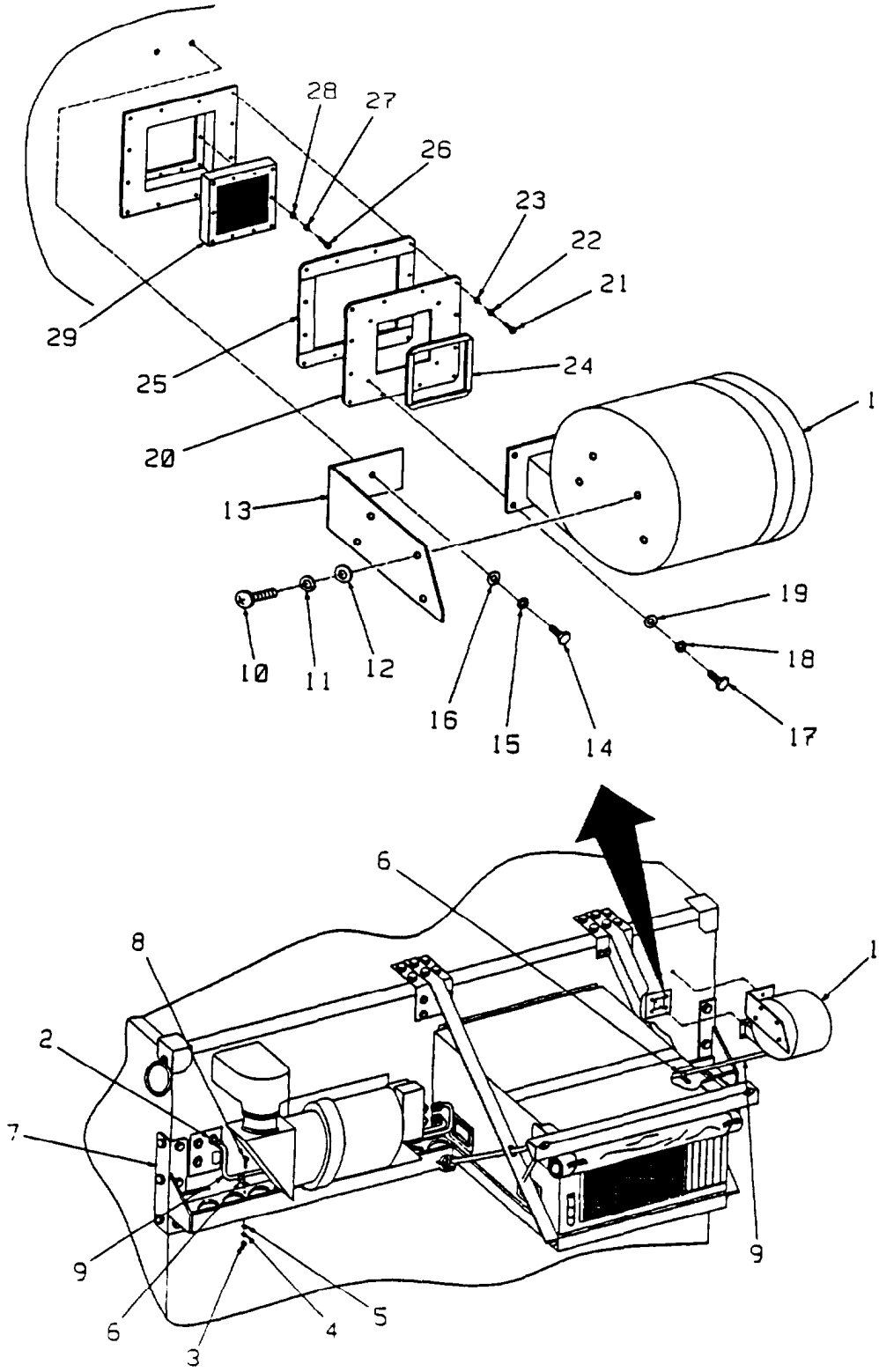
3. While supporting Filter Blower Assembly (1), remove the screws (10), lockwashers (11), and flat washers (12) securing Filter Blower Assembly (1) to the bracket (13).

4. Remove screws (14), lockwashers (15), and flat washers (16) securing bracket (13) to shelter (1).

5. Remove screws (17), lockwashers (18), and flat washers (19) securing RFI filter.

6. Remove weather gasket (20).

4-10. FILTER BLOWER ASSEMBLY - Continued.



4-10. FILTER BLOWER ASSEMBLY - Continued.

8. Remove screws (26), lockwashers (27), and flat washers (28) securing RFI Filter (29) to Filter Blower Assembly Frame.Assemble

Assemble

1. Using rags and isopropyl alcohol, clean weather gasket channel and secure weather gasket to channel using adhesive.

2. Secure RFI Filter (29) to Filter Blower Assembly Frame using screws (26), lockwashers (27), and flat washers (28).

3. Secure Weather Gasket Mounting Plate (20) and RFI Gasket plate (25) to Filter Blower Assembly Frame using screws (21), lockwashers (22), and flat washers (23).

4. Secure bracket (13) to shelter with screws (14), lockwashers (15), and flat washers (16).

5. Locate Filter Blower Assembly (1) on bracket (13) and secure with screws (10), lockwashers (II), and flat washers (12.

6. Secure power cable (9) to shelter using support clamps (6) nuts (3), lockwashers (4), and bolts (5).

7. Connect Filter Blower power cable (9) to outlet.

4-11. STRUCTURE ASSEMBLY - REPAIR OF DENTS.

This task covers: a. Repair

INITIAL SETUP

Tools:
General Mechanics Tool Kit (Item 1 Appendix B)
Oscillating Sander (Item 4, Appendix B)
Putty Knife (Item 16, Appendix B)
Safety Glasses (Item 9, Appendix B)

Materials/Parts:
Alcohol, Isopropyl (Item 33, Appendix E)
Rags (Item 7, Appendix E)
Fiber Filled Polyester Resin (Item 36, Appendix E)
Gloves, Rubber (Item 37, Appendix E)
Sandpaper, 80-grit Abrasive (Item 38, Appendix E)
Polysulfide Sealer (Item 49, Appendix E)

REPAIR

1. Using an oscillating sander, roughen the skin surface with 80 grit abrasive sandpaper to remove all paint and foreign matter from around the dent.

WARNING

- Alcohol solvents are flammable. Keep away from heat, sparks, and open flame. Keep containers closed when not in use. Use only in well ventilated areas. Avoid prolonged breathing of vapors or repeated contact with skin or death or serious injury may result.

- To avoid injury or death to personnel, no smoking is allowed when working with flammable materials.

NOTE

Make sure that the area is completely clean. Do not touch the area with hands or any item that may leave an oily residue.

4-11. STRUCTURE ASSEMBLY - REPAIR OF DENTS - Continued.

2. Wear rubber gloves and use a clean cotton cloth with alcohol to clean entire surface.

3. Use a putty knife and a fiber filled polyester resin (or suitable substitute for body putty), to fill dent and smooth the surface evenly.

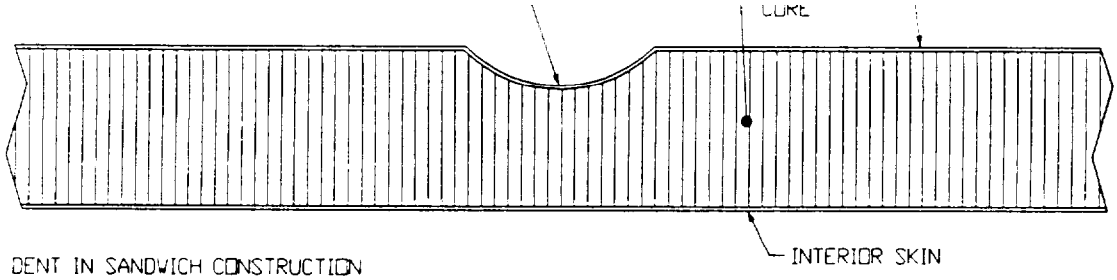
4. Allow resin to cure (approximately one hour, depending on ambient air temperature) in accordance with manufacturer's recommendations.

WARNING

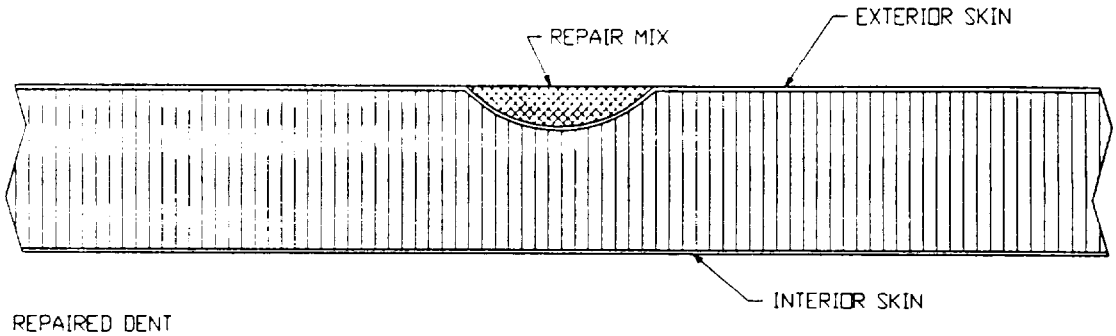
To avoid injury to personnel, safety glasses must be worn during drilling and sanding operations

5. Using an oscillating sander, sand off excess material to a flat smooth finish.

6. Prime and paint repaired surface in accordance with paragraph 3-8.



DENT IN SANDWICH CONSTRUCTION



REPAIRED DENT

4-12. STRUCTURE ASSEMBLY- REPAIR OF EXTERIOR PUNCTURES/NO CORE DAMAGE.

This task covers: a. Repair

INITIAL SETUP

Tools:
Drill (Item 6, Appendix B)
General Mechanics Tool Kit (Item 1, Appendix B)
Oscillating Sander (Item 4, Appendix B)
Putty Knife (Item 16, Appendix B)
Riveting Tool (Item 15, Appendix B)
Safety Glasses (Item 9, Appendix B)

Materials/Parts;
Alcohol, Isopropyl (Item 33, Appendix E)
Aluminum (Item 39, Appendix E)
Brush , Applicator (Item 74, Appendix E)
Rags (Item 7, Appendix E)
Fiber Filled Polyester Resin (Item 36, Appendix E)
Gloves, Rubber (Item 37, Appendix E)
Polysulfide Sealer (Item 49, Appendix E)
Rivet, Domehead (Item 46, Appendix E)
Sandpaper, 80-grit abrasive (Item 38, Appendix E)

REPAIR

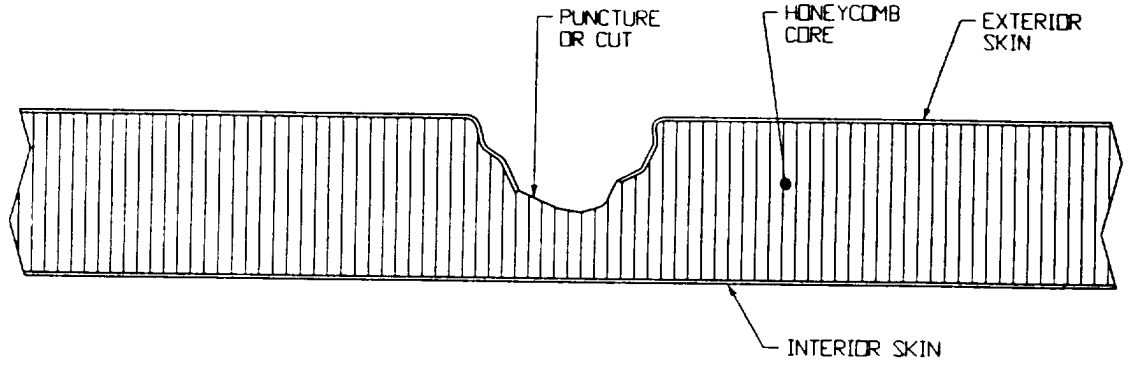
1. Select an aluminum patch that overlaps the puncture or cut by one-inch in all directions.

2. Roughen the skin surface with 80-grit abrasive sandpaper around the damaged area.

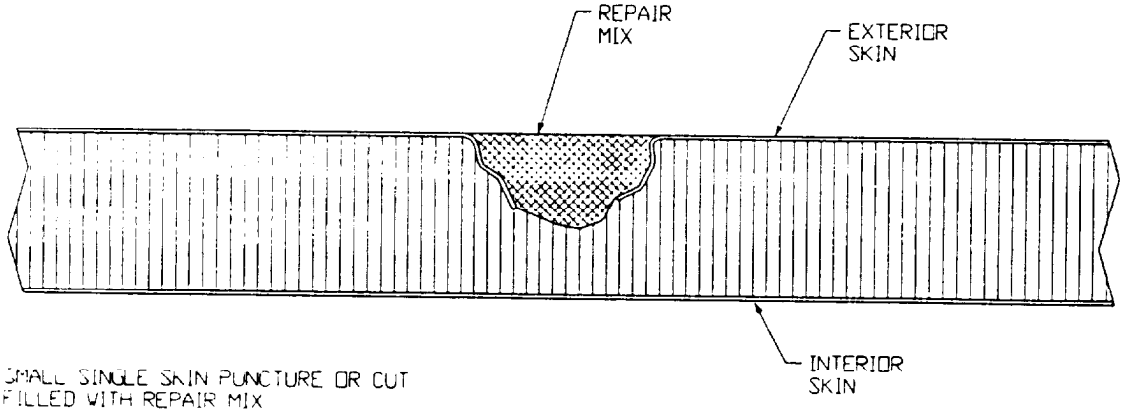
3. Use a putty knife and a fiber filled polyester resin (or suitable substitute for body putty), fill the dent and smooth the surface evenly.

4. Allow resin to cure (approximately 1 hour depending on ambient air temperature) in accordance with manufacturers recommendations.

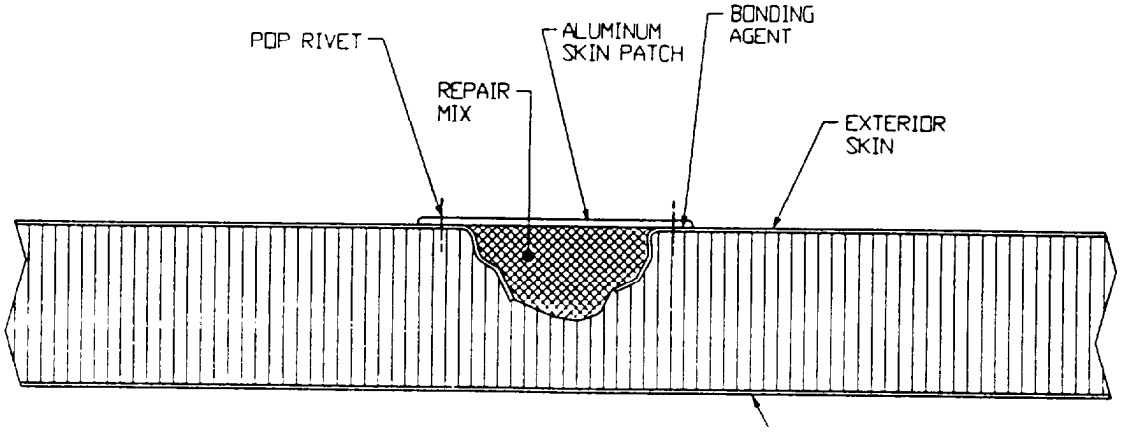
4-12. STRUCTURE ASSEMBLY- REPAIR OF EXTERIOR PUNCTURES/NO CORE DAMAGE - Continued.



SMALL SINGLE SKIN PUNCTURE OR CUT IN SANDWICH CONSTRUCTION



SMALL SINGLE SKIN PUNCTURE OR CUT FILLED WITH REPAIR MIX



4-12. STRUCTURE ASSEMBLY- REPAIR OF EXTERIOR PUNCTURES/NO CORE DAMAGE - Continued.

WARNING

To avoid injury to personnel, safety glasses must be worn during drilling and sanding operations

5. Using an oscillating sander, sand off excess material to a flat smooth finish.

WARNING

Drilling creates metal chips which can enter eyes and cause serious injury. Eye protection is required.

CAUTION

Make sure drill bit has a stop attached to keep the drill from exceeding **a** depth of 5/8 inch.

6. Locate patch to the shelter and drill holes for 3/16-inch pop rivets (#11 drill bit) through the patch and skin of the shelter (approximately one-inch spacing between centers and one-half inch from the edge of the patch.

WARNING

Alcohol solvents are flammable. Keep away from heat, sparks, and open flame. Keep containers closed when not in use. Use only in well ventilated areas. Avoid prolonged breathing of vapors or repeated contact with skin or death or serious injury may result.

4-12. STRUCTURE ASSEMBLY- REPAIR OF EXTERIOR PUNCTURES/NO CORE DAMAGE - Continued.

7. Wearing rubber gloves and safety glasses use a clean cotton cloth with alcohol and remove all dust and residue.

WARNING

To avoid injury to personnel, gloves must be worn when working with polysulfide sealer.

8. Dip pop rivets in polysulfide sealer and using a pop rivet gun, secure aluminum patch to the skin.

WARNING

Alcohol solvents are flammable. Keep away from heat, sparks, and open flame. Keep containers closed when not in use. Use only in well ventilated areas. Avoid prolonged breathing of vapors or repeated contact with skin or death or serious injury may result.

NOTE

Make sure that the area is completely clean. Do not touch the area with hands or any item that may leave an oily residue.

9. Wear rubber gloves and use a clean cotton cloth with alcohol and clean the entire surface.

10. Apply **a** bead of polysulfide sealer around the edge of the patch.

11. Prime and paint the repaired surface in accordance with para 3-8.

4-13. STRUCTURE ASSEMBLY - REPAIR OF EXTERIOR PUNCTURES/DAMAGE TO CORE.

This task covers: a. Repair

INITIAL SETUP

Tools:

Circular Saw (Item 7, Appendix B)
Drill (Item 6, Appendix B)
General Mechanics Tool Kit (Item 1, Appendix B)
Oscillating Sander (Item 4, Appendix B)
Paint Brush (Item 2, Appendix B)
Putty Knife (Item 16, Appendix B)
Riveter (Item 5, Appendix B)
Safety Glasses (Item 9, Appendix B)

Materials/Parts:

Adhesive, Polysulfide sealer (Item 49, Appendix E)
Alcohol, Isopropyl (Item 33, Appendix E)
Aluminum (Item 39, Appendix E)
Brush, Applicator (Item 74, Appendix E)
Chalk (Item 31, Appendix E)
Rags (Item 7, Appendix E)
Core, Honeycomb (Item 35, Appendix E)
Gloves, Rubber (Item 37, Appendix E)
Rivet, AD64H (Item 59, Appendix E)
Sandpaper (Item 38, Appendix E)

NOTE

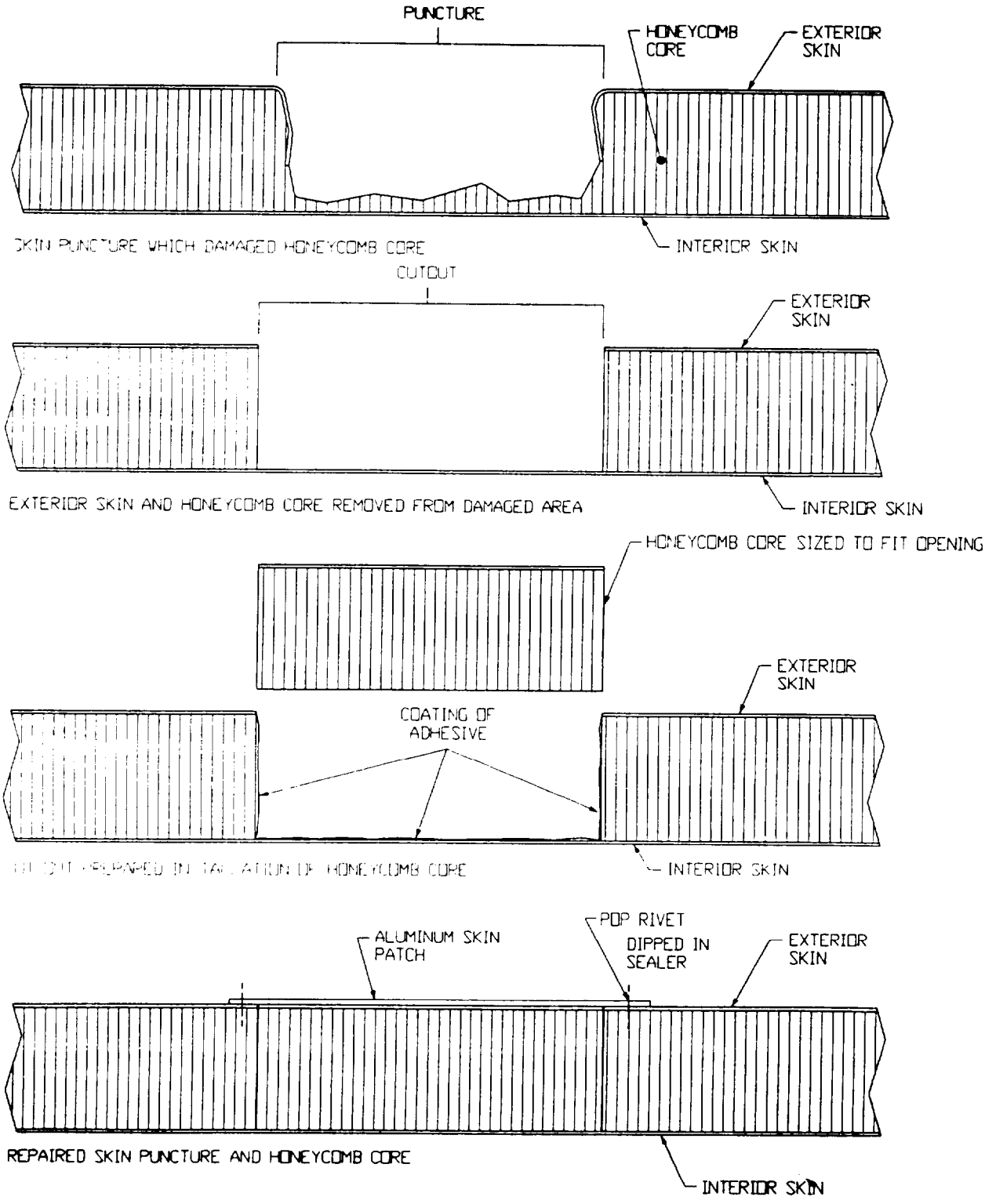
The following repair procedures are used for punctures and for delaminations that exceed ten square inches. If the puncture or cut is in the interior of the shelter, use the procedures in paragraph 4-15.

REPAIR

1. Use a piece of chalk to mark off an area one-inch around the puncture.

2. Use a circular saw to make a cutout around the puncture using the chalk mark as a guide.

4-13. STRUCTURE ASSEMBLY - REPAIR OF EXTERIOR PUNCTURES/DAMAGE TO CORE - Continued.



4-13. STRUCTURE ASSEMBLY - REPAIR OF EXTERIOR PUNCTURES/DAMAGE TO CORE - Continued.

CAUTION

Make sure knife does not cut opposite skin of the shelter or RFI/EMI integrity will be lost.

3. Select an aluminum patch that overlaps the cutout by one-inch.

4. Using a putty knife, cut the honeycomb core evenly using the cutout as a guide and maintaining straight lines perpendicular to the skin.

5. Remove the honeycomb core.

6. Select a piece of honeycomb core of the same type of construction as the piece that was removed.

7. Size the honeycomb to fit the cutout.

WARNING

Drilling creates metal chips which can enter eyes and cause serious injury. Eye protection is required.

CAUTION

Make sure drill bit has a stop attached to keep the drill from exceeding a depth of 5/8 inch.

8. Locate patch to the shelter and drill holes for 3/16-inch pop rivets (#11drill bit) through the patch and skin of the shelter (approximately one inch spacing between centers and 1/2 inch from the edge of the patch.

9. Place patch aside for later use.

4-13. STRUCTURE ASSEMBLY - REPAIR OF EXTERIOR PUNCTURES/DAMAGE TO CORE - Continued.

WARNING

- Alcohol solvents are flammable. Keep away from heat, sparks, and open flame. Keep containers closed when not in use. Use only in well ventilated areas. Avoid prolonged breathing of vapors or repeated contact with skin or death or serious injury may result.
- To avoid injury or death to personnel, no smoking is allowed when working with flammable materials.

10. Wear rubber gloves and use a clean cotton cloth with alcohol and remove all dust and residue.

NOTE

Make sure that the area is completely clean. Do not touch the area with hands or any item that may leave an oily residue.

11. Using an applicator brush, coat the interior of the cutout with adhesive.

12. Using an applicator brush, coat the entire piece of replacement honeycomb with adhesive.

13. Insert the replacement honey-comb into the cutout.

14. Position the aluminum skin patch.

15. Dip pop rivets in polysulfide sealer and use the riveting tool to install pop rivets to secure the skin patch to the shelter skin.

16. Apply a bead of polysidlfide sealer around the edge of the aluminum patch.

4-13. STRUCTURE ASSEMBLY - REPAIR OF EXTERIOR PUNCTURES/DAMAGE TO CORE - Continued.

WARNING

- Alcohol solvents are flammable. Keep away from heat, sparks, and open flame. Keep containers closed when not in use. Use only in well ventilated areas. Avoid prolonged breathing of vapors or repeated contact with skin or death or serious injury may result.

- To avoid injury or death to personnel, no smoking is allowed when working with flammable materials.

17. Wear rubber gloves and use a clean cotton cloth with alcohol and remove all excess polysulfide sealer.

18. Prime and paint the repaired surface in accordance with paragraph 3-8.

4-14. STRUCTURE ASSEMBLY - REPAIR OF INTERIOR PUNCTURES/NO CORE DAMAGE.

This task covers: a. Repair

INITIAL SETUP

Tools:
Drill (Item 6, Appendix B)
General Mechanics Tool Kit (Item 1, Appendix B)
Oscillating Sander (Item 4, Appendix B)
Putty Knife (Item 16, Appendix B)
Riveting Tool (Item 15, Appendix B)
Safety Glasses (Item 9, Appendix B)

Materials/Parts:
Adhesive, Polysulfide Sealer (Item 49, Appendix E)
Alcohol, Isopropyl (Item 33, Appendix E)
Aluminum (Item 39, Appendix E)
Brush , Applicator (Item 74, Appendix E)
Rags (Item 7, Appendix E)
Fiber Filled Polyester Resin (Item 36, Appendix E)
Gloves, Rubber (Item 37, Appendix E)
Rivet, AD64H (Item 59, Appendix E)
Sandpaper, 80-grit abrasive (Item 38, Appendix E)
VY Compound (Item 73, Appendix E)

REPAIR

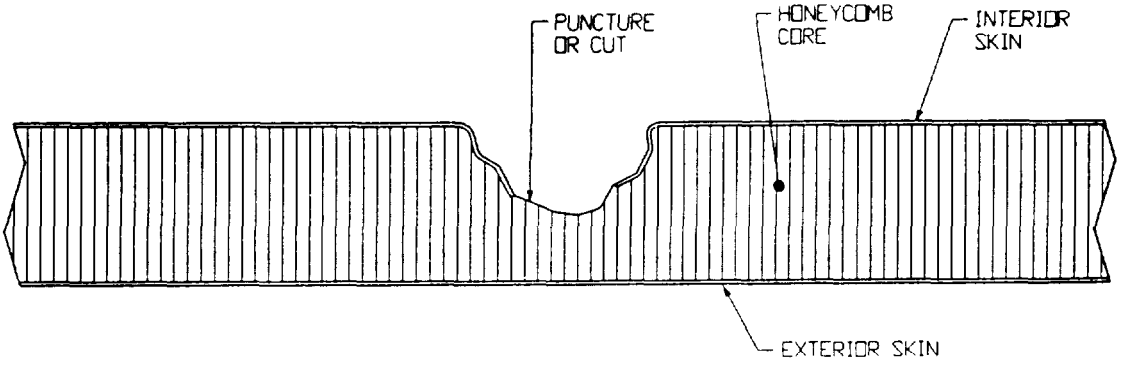
1. Select an aluminum patch that overlaps the puncture or cut by one-inch in all directions.

2. Roughen the skin surface with 80-grit abrasive sandpaper around the damaged area.

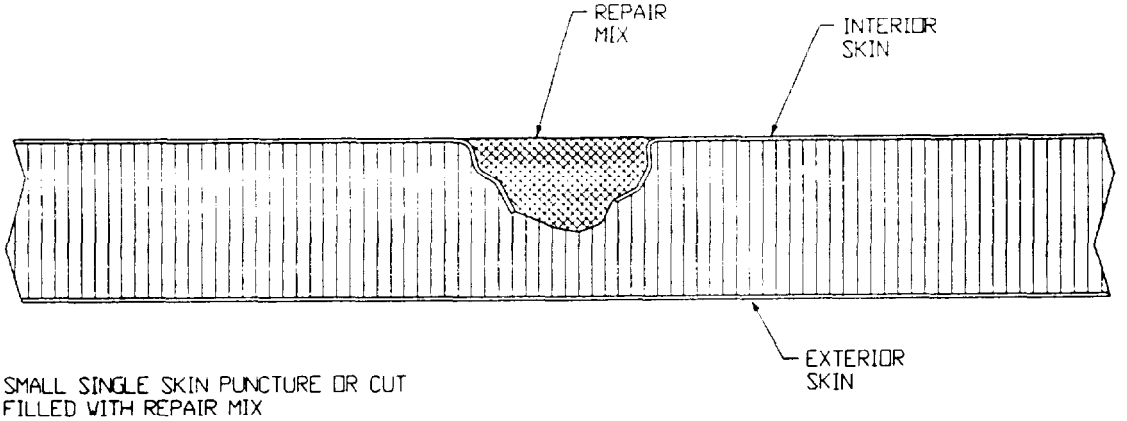
3. Use a putty knife and a fiber filled polyester resin (or suitable substitute for body putty) and fill the dent and smooth the surface evenly.

4. Allow resin to cure (approximately 1 hour depending on ambient air temperature) in accordance with manufacturers recommendations.

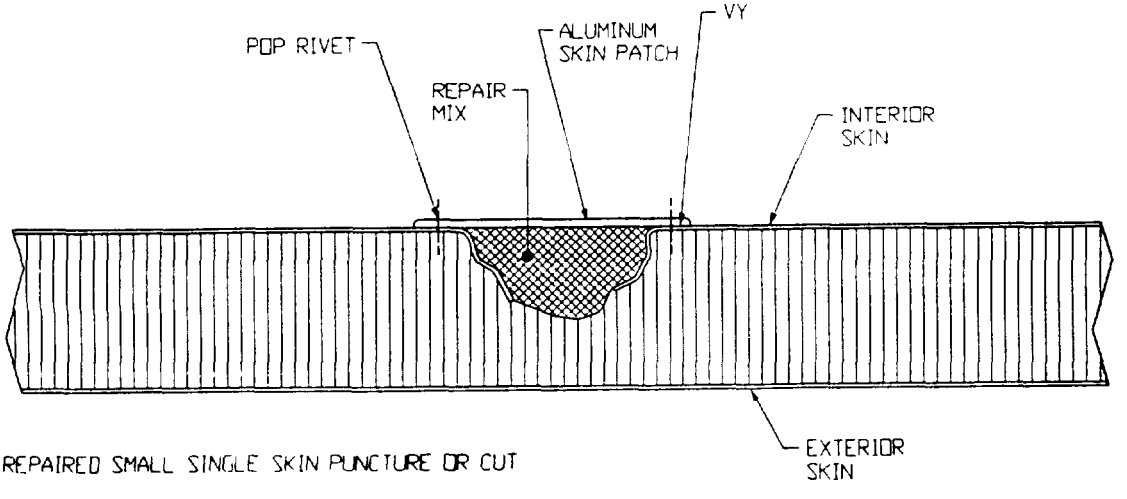
4-14. STRUCTURE ASSEMBLY - REPAIR OF INTERIOR PUNCTURES/NO CORE DAMAGE - Continued.



SMALL SINGLE SKIN PUNCTURE OR CUT IN SANDWICH CONSTRUCTION



SMALL SINGLE SKIN PUNCTURE OR CUT FILLED WITH REPAIR MIX



REPAIRED SMALL SINGLE SKIN PUNCTURE OR CUT

4-14. STRUCTURE ASSEMBLY - REPAIR OF INTERIOR PUNCTURES/NO CORE DAMAGE - Continued.

WARNING

To avoid injury to personnel, safety glasses must be worn during drilling and sanding operations

5. Using an oscillating sander, sand off excess material to a flat smooth finish.

WARNING

Drilling creates metal chips which can enter eyes and cause serious injury. Eye protection is required.

CAUTION

Make sure drill bit has a stop attached to keep the drill from exceeding a depth of 5/8 inch.

6. Locate patch to the shelter and drill holes for 3/16-inch pop rivets (#11 drill bit) through the patch and skin of the shelter (approximately one-inch spacing between centers and one-half inch from the edge of the patch.

WARNING

Alcohol solvents are flammable. Keep away from heat, sparks, and open flame. Keep containers closed when not in use. Use only in well ventilated areas. Avoid prolonged breathing of vapors or repeated contact with skin or death or serious injury may result.

7. Wearing rubber gloves and safety glasses use a clean cotton cloth with alcohol and remove all dust and residue.

4-14. STRUCTURE ASSEMBLY - REPAIR OF INTERIOR PUNCTURES/NO CORE DAMAGE - Continued.

WARNING

To avoid injury to personnel, gloves must be worn when working with polysulfide sealer and VY Compound.

8. Apply a bead of VY compound along the inside of the hole pattern of the aluminum skin patch and position over the cutout.

9. Dip pop rivets in polysulfide sealer, and use a pop rivet gun to secure aluminum patch to the skin.

WARNING

Alcohol solvents are flammable. Keep away from heat, sparks, and open flame. Keep containers closed when not in use. Use only in well ventilated areas. Avoid prolonged breathing of vapors or repeated contact with skin or death or serious injury may result.

NOTE

Make sure that the area is completely clean. Do not touch the area with hands or any item that may leave an oily residue.

10. Wear rubber gloves and use a clean cotton cloth with alcohol and clean the entire surface.

11. Apply a bead of polysulfide sealer around the edge of the patch.

12. Prime and paint the repaired surface in accordance with paragraph 3-8.

4-15. STRUCTURE ASSEMBLY - REPAIR OF INTERIOR PUNCTURES/DAMAGE TO CORE.

This task covers: a. Repair

INITIAL SETUP

Tools:
Circular Saw (Item 7, Appendix B)
Drill (Item 6, Appendix B)
General Mechanics Tool Kit (Item 1, Appendix B)
Oscillating Sander (Item 4, Appendix B)
Paint Brush (Item 2, Appendix B)
Putty Knife (Item 16, Appendix B)
Riveter (Item 5, Appendix B)
Safety Glasses (Item 9, Appendix B)

Materials/Parts:
Adhesive, Polysulfide sealer (Item 49, Appendix E)
Alcohol, Isopropyl (Item 33, Appendix E)
Aluminum (Item 39, Appendix E)
Brush , Applicator (Item 74, Appendix E)
Chalk (Item 31, Appendix E)
Rags (Item 7, Appendix E)
Core, Honeycomb (Item 35, Appendix E)
Gloves, Rubber (Item 37, Appendix E)
Rivet, AD64H (Item 59, Appendix E)
Sandpaper (Item 38, Appendix E)
VY Compound (Item 73, Appendix E)

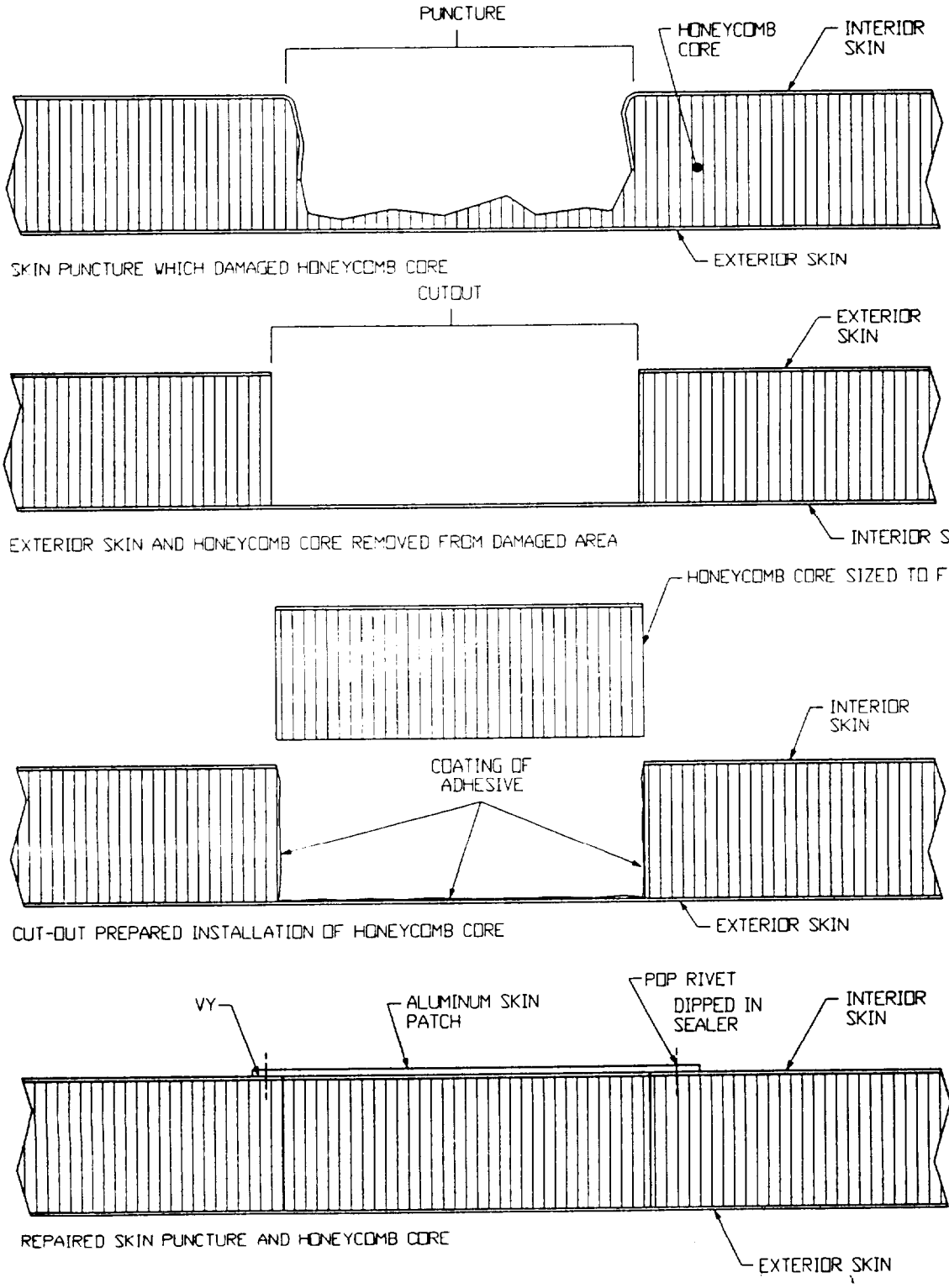
NOTE

The following repair procedures are used for punctures and for delaminations that exceed ten square inches. If the puncture or cut is in the interior of the shelter, use the procedures in paragraph 4-15.

REPAIR

1. Using a piece of chalk, mark off an area one-inch around the puncture.

4-15. STRUCTURE ASSEMBLY - REPAIR OF INTERIOR PUNCTURES/DAMAGE TO CORE - Continued.



4-15. STRUCTURE ASSEMBLY - REPAIR OF INTERIOR PUNCTURES/DAMAGE TO CORE - Continued.

2. Using a circular saw, make a cutout around the puncture using the chalk mark as a guide.

3. Select an aluminum patch that overlaps the cutout by one-inch.

CAUTION

Make sure knife does not cut opposite skin of the shelter or RF/EMI integrity will be lost.

4. Using a putty knife, cut the honeycomb core evenly using the cutout as a guide and maintaining straight lines perpendicular to the skin.

5. Remove the honeycomb core.

6. Select a piece of honeycomb core of the same type of construction as the piece that was removed.

7. Size the honeycomb to fit the cutout.

WARNING

Drilling creates metal chips which can enter eyes and cause serious injury. Eye protection is required.

CAUTION

Make sure drill bit has a stop attached to keep the drill from exceeding a depth of 5/8 inch.

8. Locate patch to the shelter and drill holes for 3/16-inch pop rivets (#11drill bit) through the patch and skin of the shelter (approximately one-inch spacing between centers and one-half inch from the edge of the patch.

9. Place patch aside for later use.

4-15. STRUCTURE ASSEMBLY - REPAIR OF INTERIOR PUNCTURES/DAMAGE TO CORE - Continued

WARNING

- Alcohol solvents are flammable. Keep away from heat, sparks, and open flame. Keep containers closed when not in use. Use only in well ventilated areas. Avoid prolonged breathing of vapors or repeated contact with skin or death or serious injury may result.

- To avoid injury or death to personnel, no smoking is allowed when 10. Wear rubber gloves and use a clean cotton cloth with alcohol to remove all dust and residue.

NOTE

Make sure that the area is completely clean. Do not touch the area with hands or any item that may leave an oily residue.

10. Using an applicator brush, coat the interior of the cutout with adhesive.

11. Using an applicator brush, coat the entire piece of replacement honeycomb with adhesive.

12. Insert the replacement honey-comb into the cutout.

WARNING

To avoid injury to personnel, gloves must be worn when working with polysulfide sealer and VY Compound.

13. Apply a bead of VY compound along the inside of the hole pattern of the aluminum skin patch and position over the cutout.

4-15. STRUCTURE ASSEMBLY - REPAIR OF INTERIOR PUNCTURES/DAMAGE TO CORE - Continued.

14. Dip pop rivets in polysulfide sealer and use the riveting tool to install pop rivets to secure the skin patch to the shelter skin.

15. Apply a bead of polysidlfide sealer around the edge of the aluminum patch.

WARNING

Alcohol solvents are flammable. Keep away from heat, sparks, and open flame. Keep containers closed when not in use. Use only in well ventilated areas. Avoid prolonged breathing of vapors or repeated contact with skin or death or serious injury may result.

To avoid injury or death to personnel, no smoking is allowed when working with flammable materials.

16. Wear rubber gloves and use a clean cotton cloth with alcohol and remove all excess polysulfide sealer.

17. Prime and paint the repaired surface in accordance with paragraph 3-8.

4-16. STRUCTURE ASSEMBLY - REPAIR OF DELAMINATIONS.

This task covers: a. Repair

INITIAL SETUP

Tools:
Drill (Item 6, Appendix B)
General Mechanics Tool Kit (Item 1, Appendix B)
Paint Brush (Item 2, Appendix B)
Putty Knife (Item 16, Appendix B)
Riveting Tool (Item 15, Appendix B)
Safety Glasses (Item 9, Appendix B)
Caulking Gun (Item 8, Appendix B)

Materials/Parts:
Alcohol, Isopropyl (Item 33, Appendix E)
Caulking Cartridge (Item 40, Appendix E)
Chalk (Item 31, Appendix E)
Rags (Item 7, Appendix E)
Container, Unwaxed (Item 41, Appendix E)
Epoxy Resin (Items 44 and 45, Appendix E)
Fiber Filled Polyester Resin (Item 36, Appendix E)
Gloves, Rubber (Item 37, Appendix E)
Plywood (Item 75, Appendix E)
Polyethylene, Wrap (Item 32, Appendix E)
Rivet, AD64H (Item 59, Appendix E)
Tape, Masking (Item 76, Appendix E)

REPAIR

NOTE

The area between the inner and outer aluminum panels is filled with a honeycomb core bonded to the panels with an epoxy adhesive. Separation of this core from the aluminum panel will cause a structural weakness called a delamination. Delaminated areas produce a light hollow sound similar to the sound the bottom of an oil can makes when hit lightly with a hammer. A bonded area produces a dull solid sound. The sound may change somewhat when crossing reinforced areas. Large delaminations, greater than 10-inches square should be repaired as soon as possible using the procedures identified for the repair of a puncture. Delaminations of less than lo-inches square can be repaired using the following repair procedures.

4-16. STRUCTURE ASSEMBLY - REPAIR OF DELAMINATIONS - Continued.

1. Using **a** tapping hammer to identify the limits of the delamination, use chalk to mark the limits of the delamination.

WARNING

Drilling creates metal chips which can enter eyes and cause serious injury. Eye protection is required.

CAUTION

To ensure that the opposite shelter wall is not punctured, make sure the drill bit has a drill stop attached to prevent exceeding a depth of 5/8 in. or damage to the other shelter wall will occur.

2. Using the chalk limits marked in step 1, approximate the center of the delamination and drill a 3/16 in. diameter hole.

3. Using the chalk limits marked in step 1, use chalk to mark points approximately 2 inches apart, no further away than 1/2 inch from the delaminated area.

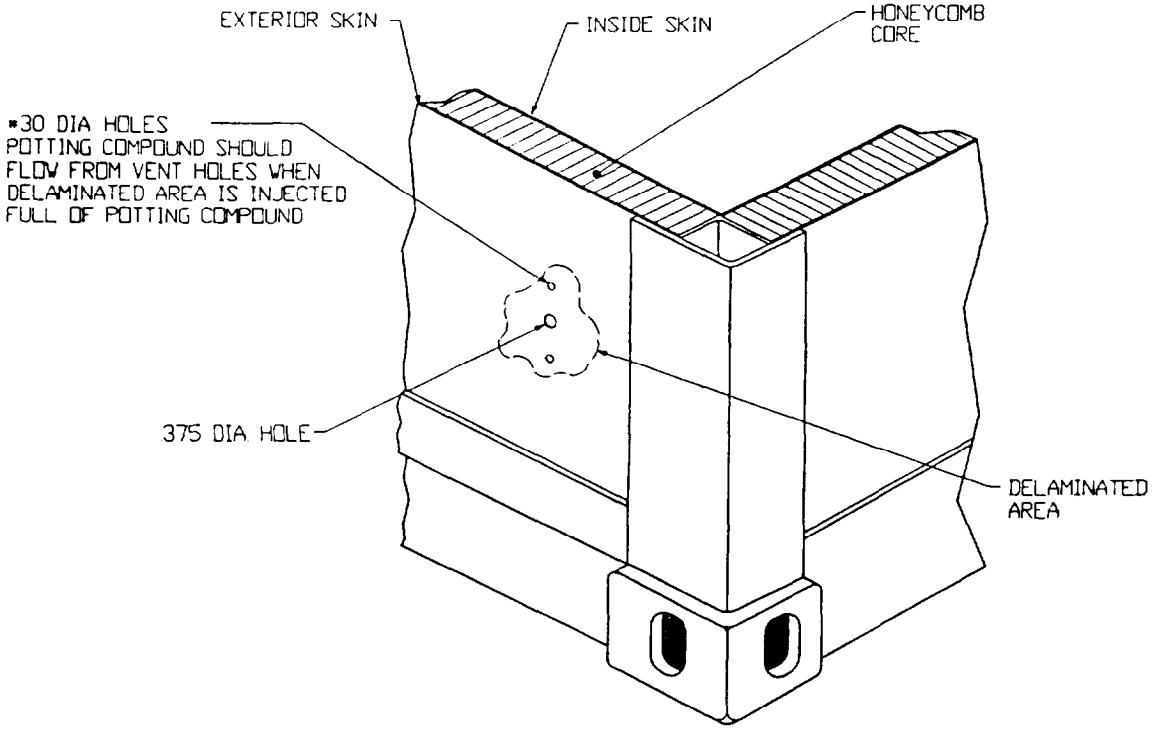
WARNING

Drilling creates metal chips which can enter eyes and cause serious injury. Eye protection is required.

CAUTION

To ensure that the opposite shelter wall is not punctured, make sure the drill bit has a drill stop attached to prevent exceeding a depth of 5/8 in. or damage to the other shelter wall will occur.

4-16. STRUCTURE ASSEMBLY - REPAIR OF DELAMINATIONS - Continued.



4-16. STRUCTURE ASSEMBLY - REPAIR OF DELAMINATIONS - Continued.

4. Drill 3/16 in. pressure relief holes at each point marked in step 3.

5. Using the chalk outline of the delamination, use Kraft wrapping paper and masking tape to mask off the surrounding area to a width of about two feet.

6. Mix adhesive in an unwaxed clean container using either of the following methods:

WARNING

Gloves are to be worn when mixing and applying adhesive material due to possible skin irritation caused by adhesive coming into contact with the body skin surface.

NOTE

The Versamid material is extremely sensitive to moisture absorption. Make sure Versamid 140 container lid is secure after material has been removed from the shipping or storage container. Both the Epic R1003 and the Versamid 140 materials have a shelf life of one-year.

a. Mixing by weight - Use 15 ounces of Epic R1003 to 5 ounces of Versamid 140.

b. By volume - 2 parts of Epic R1003 to 1 part of Versamid 140.

7. Fill a caulking cartridge with the adhesive and insert into a caulk gun.

CAUTION

- The following repair procedures must be accomplished within one-hour of mixing the adhesive. Do not attempt repairs unless temperature is between 60°F and 85°F.
- Inject adhesive slowly. If adhesive is injected too quickly, additional delamination of the area may occur causing more damage.

4-16. STRUCTURE ASSEMBLY - REPAIR OF DELAMINATIONS - Continued.

8. Place nozzle of caulking gun in the bottom center pre-drilled 3/16 in. hole.

9. Inject adhesive into the hole.

10. When the lower area is filled, adhesive will start to seep from the adjacent pre-drilled holes.

WARNING

Gloves are to be worn when mixing and applying adhesive material due to possible skin irritation caused by adhesive coming into contact with the body skin surface.

11. Dip rivets in polysulfide sealer and rivet each hole when adhesive starts to seep out of the hole.

12. When the holes on each side of the injection hole are riveted, install a rivet in the injection hole, and use the next series of pre-drilled holes to continue injecting adhesive.

WARNING

Alcohol solvents are flammable. Keep away from heat, sparks, and open flame. Keep containers closed when not in use. Use only in well ventilated areas. Avoid prolonged breathing of vapors or repeated contact with skin or death or serious injury may result.

13. Use rubber gloves and a cotton cloth saturated with alcohol and wipe off any excess adhesive or polysulfide sealer.

14. Cover the delaminated area with a sheet of polyethylene.

15. Place a 1/2 in. sheet of plywood against the polyethylene sheet. Brace the plywood so that an even pressure is maintained over the repaired area for at least 24-hours.

4-16. STRUCTURE ASSEMBLY - REPAIR OF DELAMINATIONS - Continued.

16. After adhesive has been allowed to cure for the required time, remove plywood and polyethylene sheet.

17. Prime and paint repaired panel surface in accordance with paragraph 3-8.

4-17. DOOR ASSEMBLY - RFI SEAL.

This task covers: a. Replace

INITIAL SETUP

Tools:
Drill (Item 6, Appendix B)
Safety Glasses (Item 9, Appendix B)
Riveting Tool (Item 15, Appendix B)

Materials/Parts:
RFI Seal (Appendix F, Figure F-2)
Metal Strips (Horizontal)
Metal Strips (Vertical)
Alcohol, Isopropyl (Item 33, Appendix E)
Rags (Item 7, Appendix E)
Gloves, Rubber (Item 37, Appendix E)
Rivet (Item 54, Appendix E)

REPLACE

NOTE

For the removal and replacement of rivets reference paragraph 4-9a. For removal and replacement of rivnuts, reference paragraph 4-9b.

1. Open door.

WARNING

Drilling creates metal chips which may enter eyes and cause serious injury. Eye protection is required.

CAUTION

Make sure the drill bit has a drill stop attached to prevent the drill bit from exceeding a depth of one inch.

2. Using a No. 30 drill bit, drill out the 58 rivets (1) securing metal strips (2), (3), (4), (5), and RFI seal (6) around track of door and remove strips and RFI seal.

4-17. DOOR ASSEMBLY - RFI SEAL - Continued.

3. If track needs cleaning, clean with rags and alcohol.

4. Press RFVEMI gasket (6) in track around perimeter of door, starting midway on hinged side. Ensure there is an overlap at the ends.

5. Position metal strip (2) in channel of RFI seal (6) at the top of the door and align holes by pushing two or three rivets (1) through strip and RFI seal (6) material and into holes in track.

6. Secure strip (2) and RFI seal (6) in track at top of door with 11 rivets (1).

7. Firmly press RFI seal (6) around top corner and down the handle side of door.

8. Position metal strip (3) in channel of RFI seal (6) on the handle side of door and align strip holes by pushing several rivets (1) through strap (3) and RFI seal material and into holes in track.

9. Secure strip (3) and RFI seal (6) in track along handle side of door with 18 rivets (1).

10. Firmly press RFI seal (6) around bottom corner and continue around corner at hinged side of door.

11. Position metal strip (4) in channel of RFI seal (6) at the bottom of the door and align strip holes by pushing two or three rivets (1) through strip (4) and RFI seal material and into holes in track.

12. Secure strap (4) and RFI seal (6) in track along bottom of door with 11 rivets (1).

13. Firmly press RFI seal in track and at overlap of RFI seal material on the hinged side of door, trim all but a one inch excess.

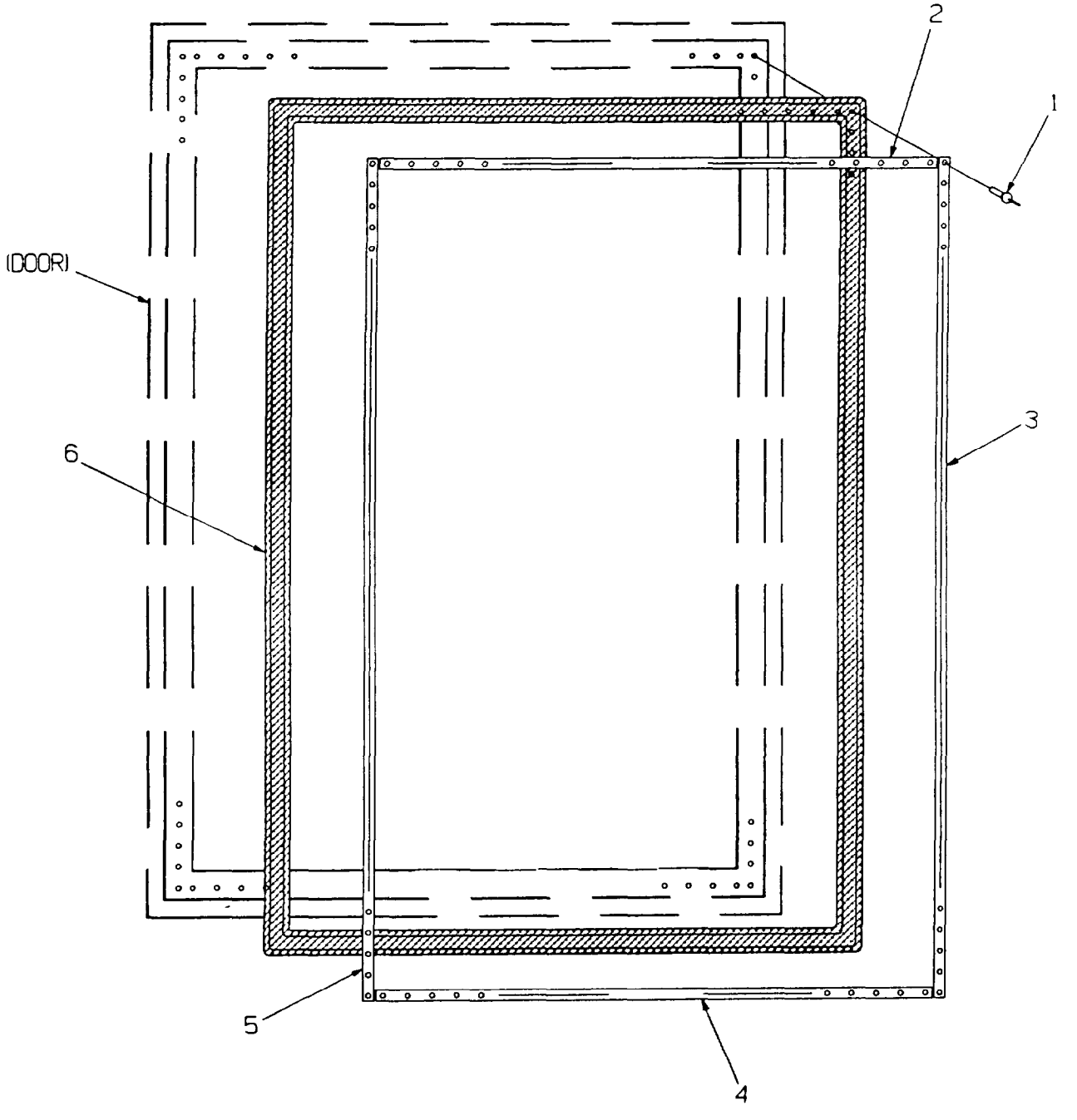
14. Roll back approximately one inch of the braided shield at the ends of the RFI seal (6) and cut 1/2 inch off the core material of each end.

15. Butt the two ends of the RFI seal (6) and roll the braid of one end over the braid of the other and firmly press RFI seal (6) into the track.

16. Position metal strip (5) in channel of RFI seal (6) on the hinged side of door and align strip holes by pushing several rivets (1) through strip (5) and RFI seal material and into holes in track.

17. Secure strip (5) along hinged side of door with 18 rivets (1).

4-17. DOOR ASSEMBLY - RFI SEAL - Continued.



4-18. HATCH ASSEMBLY - RFI SEAL.

This task covers: a. Replace

INITIAL SETUP

Tools:
General Mechanics Tool Kit (Item 1, Appendix B)
Drill (Item 6, Appendix B)
Safety Glasses (Item 9, Appendix B)
Riveting Tool (Item 15, Appendix 8)

Materials/Parts:
Metal Strips (Horizontal)
Metal Strips (Vertical)
RFI Seal (Appendix F, Figure F-2)
Alcohol, Isopropyl (Item 33, Appendix E)
Rags (Item 7, Appendix E)
Gloves, Rubber (Item 37, Appendix E)
Rivet (Item 54, Appendix E)

Equipment Conditions:
Hatch removed (para 3-16)

REPLACE

NOTE

For the removal and replacement of rivets reference pargraph 4-9a. For removal and replacement of rivnuts, reference paragraph 4-9b.

WARNING

Drilling creates metal chips which may enter eyes and cause serious injury. Eye protection is required.

CAUTION

Make sure the drill bit has a drill stop attached to prevent the drill bit from exceeding a depth of one inch.

1. Using a No. 30 drill bit, drill out the 52 rivets (1) securing the closure angle (metal strips) (2), (3), (4), (5), and RFI seal (6) around track of hatch and remove strips and RFI seals.

4-18. HATCH ASSEMBLY - RFI SEAL - Continued.

2. If track needs cleaning, clean with cloth and alcohol.

3. Press RFI seal (6) in track, starting midway on hinged side. Ensure there is an overlap at the ends.

4. Position metal strip (2) in channel of RFI seal (6) at the top of the hatch and align holes by pushing two or three rivets (1) through strip and RFI seal (6) material and into holes in track.

5. Secure strip (2) and RFI seal (6) in track at top of hatch with rivets (1).

6. Firmly press RFI seal (6) around top corner.

7. Position metal strip (3) in curbside channel of RFI seal (6) and align strip holes by pushing several rivets (1) through strip (3) and RFI seal material and into holes in track,

8. Secure strip (3) and RFI seal (6) in track along handle side of door with rivets (1).

9. Firmly press RFI seal (6) around bottom corner and continue around corner.

10. Position metal strip (4) in roadside channel of RFI seal (6) and align strip holes by pushing two or three rivets (1) through strip (4) and RFI seal material and into holes in track.

11. Secure strip (4) and RFI seal (6) in track along bottom of door with 11 rivets (1).

12. Firmly press RFI seal in track and at overlap of RFI seal material on the hinged side of hatch trim all but a one inch excess.

13. Roll back approximately one inch of the braided shield at the ends of the RFI seal (6) and cut 1/2 inch off the core material of each end.

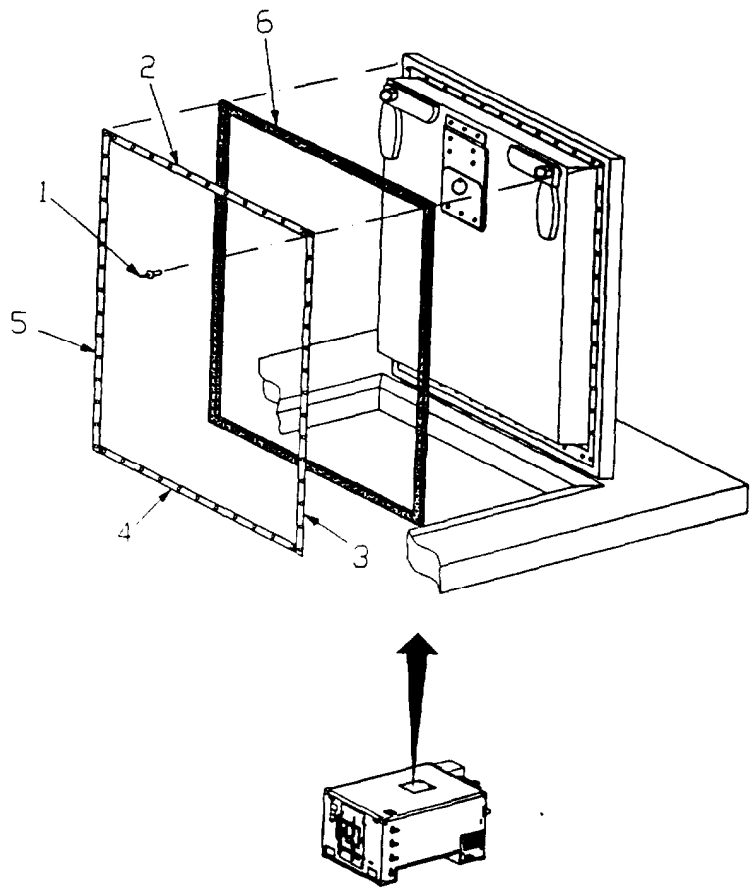
14. Butt the two ends of the RFI seal (6) and roll the braid of one end over the braid of the other and firmly press RFI seal (6) in the track.

15. Position metal strip (5) in channel of RFI seal (6) on the hinged side and align strip holes by pushing several rivets (1) through strip (5) and RFI seal material and into holes in track.

16. Secure strip (5) along hinged side of hatch with rivets (1).

Follow-on maintenance: Replace hatch per 3-16.

4-18. HATCH ASSEMBLY - RFI SEAL - Continued.



4-19. CO MONITOR.

This task covers: a. Replace

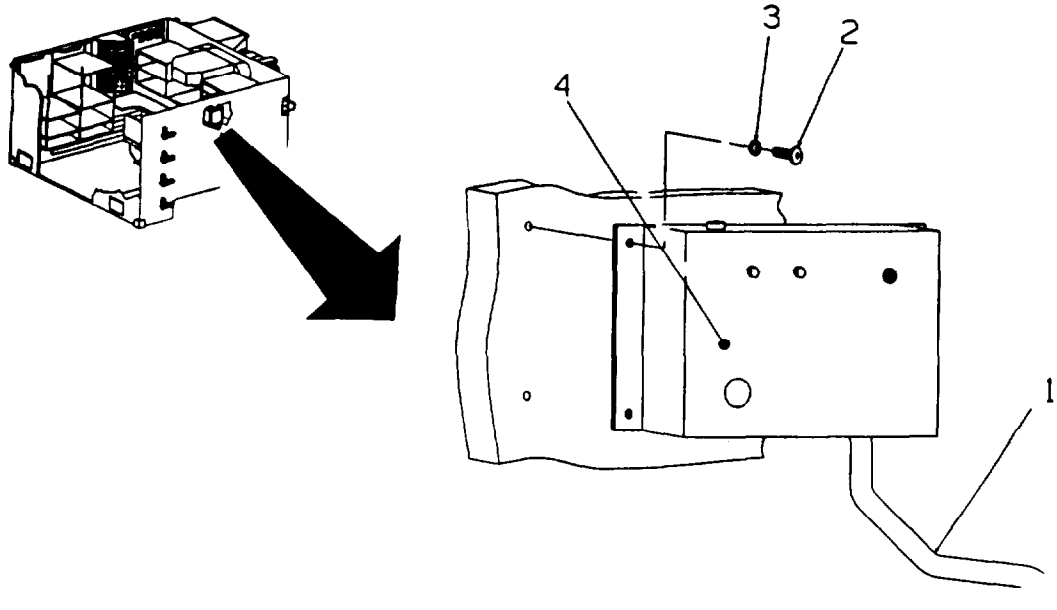
INITIAL SETUP

Tools:
General Mechanics Tool Kit (Item 1, Appendix B)

Materials/Parts
CO Monitor
Ty-raps (Item 1, Appendix E)
Lockwasher (Item 15, Appendix E)

REPLACE

1. Disconnect power cable (1) from outlet.
2. Cut four ty-wraps securing power cable (1).
3. While supporting CO Monitor (4), remove the four screws (2) and lockwashers (3).
4. Remove CO Monitor (4).
5. Position CO Monitor (4) on shelter wall.
6. Secure CO Monitor with screws (2) and lockwashers (3).
7. Reconnect CO Monitor power cable (1) to outlet.
8. Secure cable with ty-wraps (four locations).



4-20. DC POWER SUPPLY.

This task covers: a. Replace

INITIAL SETUP

Tools;
General Mechaics Tool Kit (Item 1, Appendix 6)

Materials/Parts
DC Power Supply
Lockwasher (Item 14, Appendix E)

Equipment conditions:
Generator power connector disconnected.

REPLACE

1. Remove screws (1) and slide screen (2) to gain access to Relay Panel area.

2. Remove screws (3) securing upper screen support bracket (4) and remove bracket.

3. Remove screws (5) and lockwashers (6) securing power supply frame (7) to shelter (8).

4. Tag and remove wires/plugs (9) from power supplies (10).

WARNING

Use proper lifting procedures when removing power supplies from its location. Prevent back injuries by lifting with your legs not with your back.

5. Carefully lift power supplies/frame from its location.

6. Remove screws (11), flat washer (12), and lockwashers (13) securing power supply (10) to frame (7).

7. Locate power supply (10) on power supply frame (7) and secure with screws (1 1), flat washers (12) and lockwashers (13).

8. Reconnect wires/plug (9) and remove tags.

4-20. DC POWER SUPPLY - Continued.

WARNING

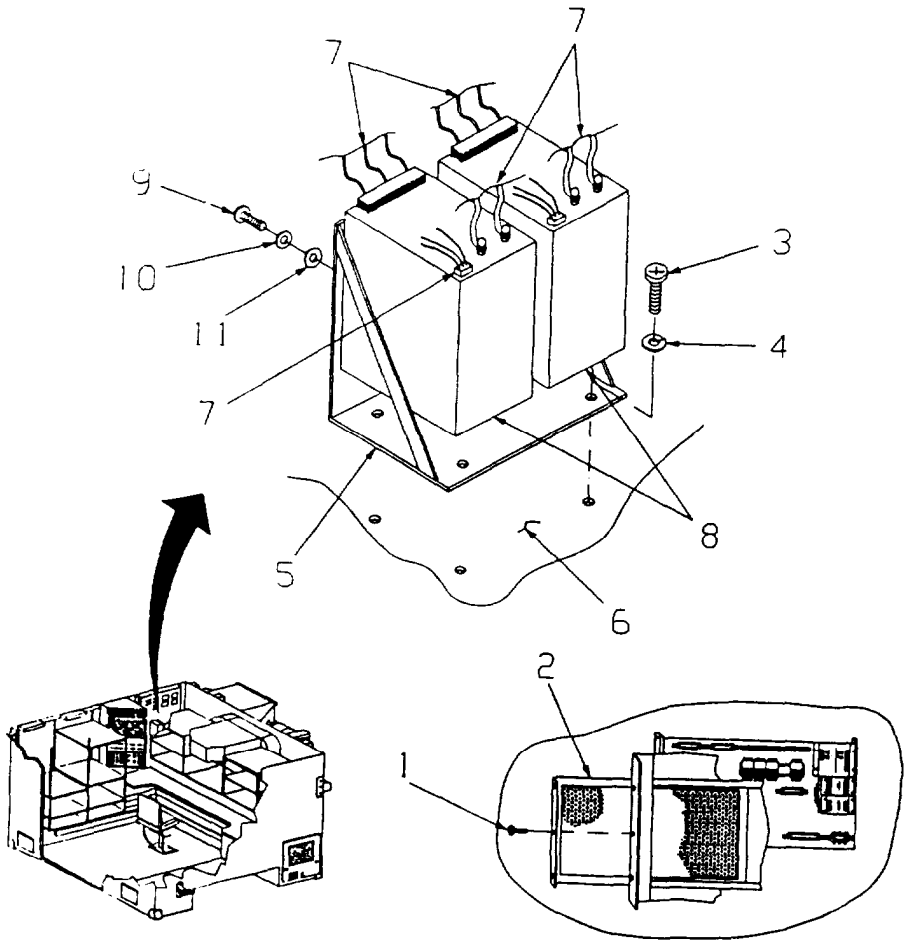
Use proper lifting procedures when installing power supplies into its location. Prevent back injuries by lifting with your legs not with your back.

9. Locate power supplies/frame and secure with screws (5) and lockwashers (6).

10. Secure upper screen support bracket (4) with screws (3).

11. Install and secure screen (2) with screws (1).

Follow-on maintenance: Connect generator power connector.



4-21. POWER MONITOR FACEPLATE.

This task covers: a. Repair

INITIAL SETUP

Tools:
Electronics Equipment Tool Kit (Item 11, Appendix B)

Materials/Parts
Lockwasher (Item 14, Appendix E)
Lockwasher (Item 16, Appendix E)
Solder (Item 77, Appendix E)

Equipment conditions:
Generator power connector disconnected.

REPAIR

1, Remove screws (1), lockwasher (2), and flat washers (3) securing Power Monitor Faceplate Panel (4) to frame (5).

Meters

2. Remove nuts (6) and lockwashers (7) securing wires to meter.

3. Remove screws (8), lockwashers (9) and nuts (10) securing meter (11) to Power Monitor Faceplate.

Circuit Breakers

4. Tag wires and remove from circuit breaker by removing screw (12) and lockwashers (13). (If a buss bar is used in place of wire disconnect one end).

5. Two types of circuit breakers are used, one type is removed by removing screws (14) securing circuit breaker (15) to panel (4).

6. To remove the second type of circuit breaker, remove nut (16) and lockwasher (17) securing circuit breaker (18) to panel (4).

Toggle Switches

7. Tag wires and remove from switch (19) by removing screws (20) and lockwashers (211).

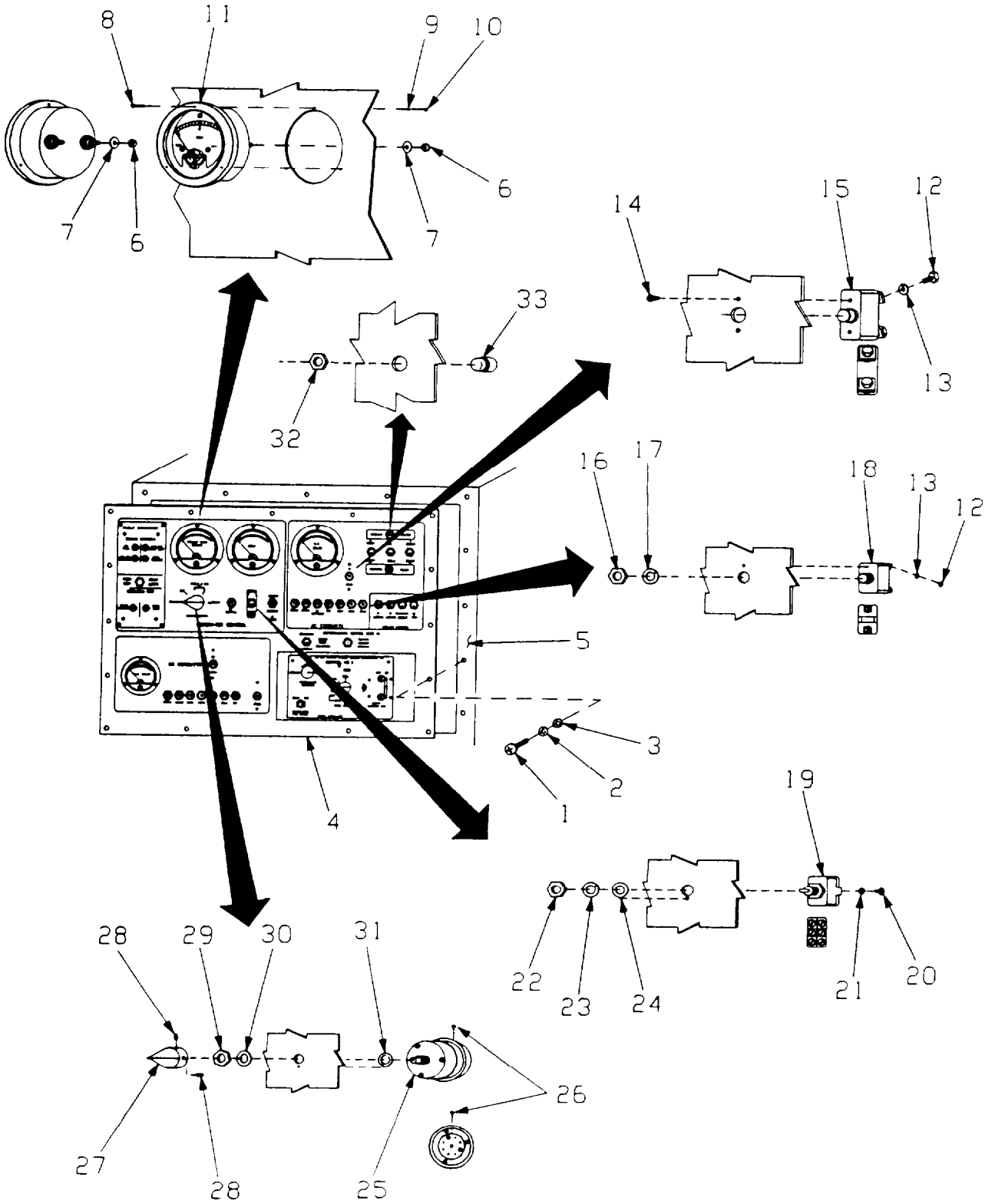
8. Remove nuts (22), lockwashers (23) and flat washer (24) securing switch (19) to Power Monitor Faceplate.

Rotary Switch

9. Tag wires and remove from switch (25) by loosening screws (26).

10. Remove knob (27) by loosening set screws (28).

4-21. POWER MONITOR FACEPLATE - Continued.



4-21. POWER MONITOR FACEPLATE - Continued.

11. Remove nut (29), lockwasher (30), positioning washer (31), and switch (25).

Light Emmiting Diodes (LEDs)

12. Remove nut (32) securing LED (33) to panel (4).

13. Unsolder LED (33) connections.

Rotary Switch

14. Position switch (25) on panel (4) and secure using nut (29), Lockwasher (30) and positioning washer (3 1).

15. Position knob (27) on switch (25) and secure by tightening set screws (28).

16. Remove tags and secure wires in correct location by tightening screws (26)

Toggle Switches

17. Position switch (19), secure using nut (22), lockwasher (23) and flat washer (24).

18. Remove tags and secure wires to switch using screws (20) and lockwashers (21).

Circuit Breaker

19. To install circuit breaker (18), secure with Nut (16) and lockwasher (17). To install circuit breaker (15), secure using screws (14).

20. Remove tags and secure wires to circuit breaker(s) using screws (12) and lockwashers (13).

Meters

21. Position meter (11) to panel (4) and secure using screws (8), lockwashers (9) and nuts (10).

22. Secure wires to the meter (11) using nuts (6) and lockwashers (7).

Light Emmiting Diodes (LEDs)

23. Solder LED (33) connections.

24. Insert LED (33) in mounting hole and secure with nut (32)

25. Install Power Monitor Faceplate (4) to Frame (5) using screws (1), lockwashers (2), and flat washers (3).

Follow-on maintenance: Connect generator power connector.

4-22. RELAY PANEL.

This task covers: a. Repair

INITIAL SETUP

Tools:
Electronics Equipment Tool Kit (Item 11, Appendix B)

Materials/Par@
Lockwasher (Item 14, Appendix E)
Lockwasher (Item 15, Appendix E)
Solder (Item 77, Appendix E)

Equipment condition
Generator power connector disconnected.

REPAIR

1. Remove screws (1) and slide screen (2) to gain access to Relay Panel (3).

Relays K1, K2, K3 and K7
2. Release hold-down spring (4) securing relay to socket and remove relay.

Relays K5, K6, and Frequency Transducer **A1**
3. Tag and remove wires from relay.

4. Remove screws (5) and lockwashers (6) securing relay to Relay Panel (3).

Resistor R1
5. Unsolder resistor R1 (7).

Relays K1, K2, K3 and K7
6. Secure relay to socket using hold-down spring (4).

Relays K5, K6, and Frequency Transducer Al
7. Secure relay to Relay Panel (3) with screws (5) and lockwashers (6).

8. Secure wires to relay and remove tags..

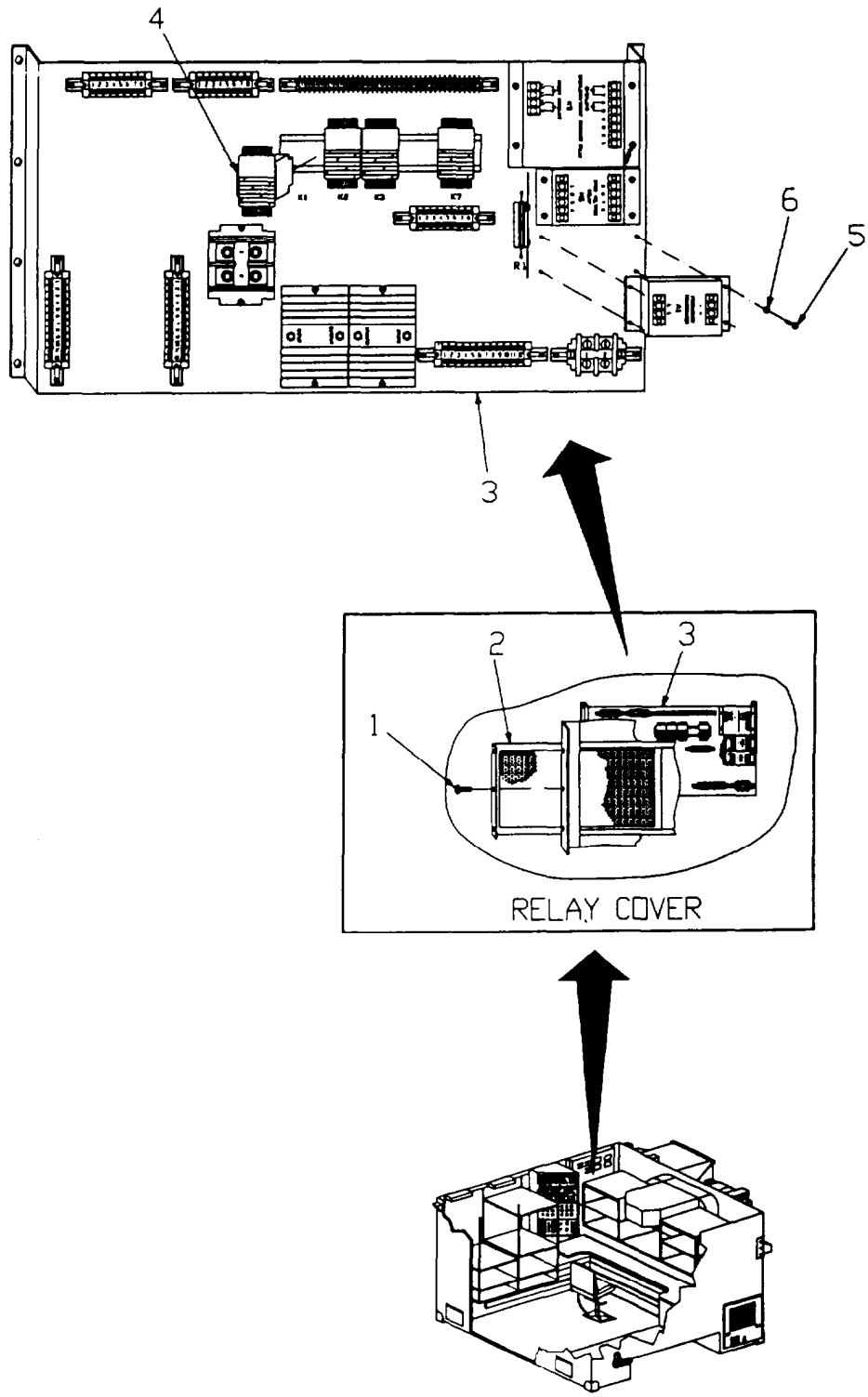
Resistor R1
9. Solder resistor R1 (7) to contacts on Relay Panel.

10. Slide Screen (2) into position and secure with screws (1).

Follow-on maintenance: Connect generator power connector.

4-22. RELAY PANEL - Continued.

Follow-on maintenance: Connect generator power connector.



4-23. DATA PLATES

This task covers: a. Replace

INITIAL SETUP

Tools:
General Mechanics Tool Kit (Item 1, Appendix B)
Drill (Item 6, Appendix B)
Safety Glasses (Item 9, Appendix B)
Riveting Tool (Item 15, Appendix B)

Materials/Parts:
Warning Plate
Instruction (CARC Painting) Plate
Instruction (Aircraft Loading) Plate
Instruction (Nameplate) Plate
Alcohol, Isopropyl (Item 33, Appendix E)
Rags (Item 7, Appendix E)
Gloves, Rubber (Item 37, Appendix E)
Rivet (Item 54, Appendix E)
Rivenut (Item 43, Appendix E)
Sealer (Item 47, Appendix E)

REPLACE

NOTE

For the removal and replacement of rivets and rivnuts reference paragraph 4-9.

W A R N I N G

Drilling creates metal chips which may enter eyes and cause serious injury. Eye protection is required.

CAUTION

Make sure the drill bit has a drill stop attached to prevent the drill bit from exceeding a depth of one inch.

4-23. DATA PLATES - Continued.

1. Using a 5/32 drill bit, drill out the rivnuts (1) securing the nameplate (2) and remove nameplate.

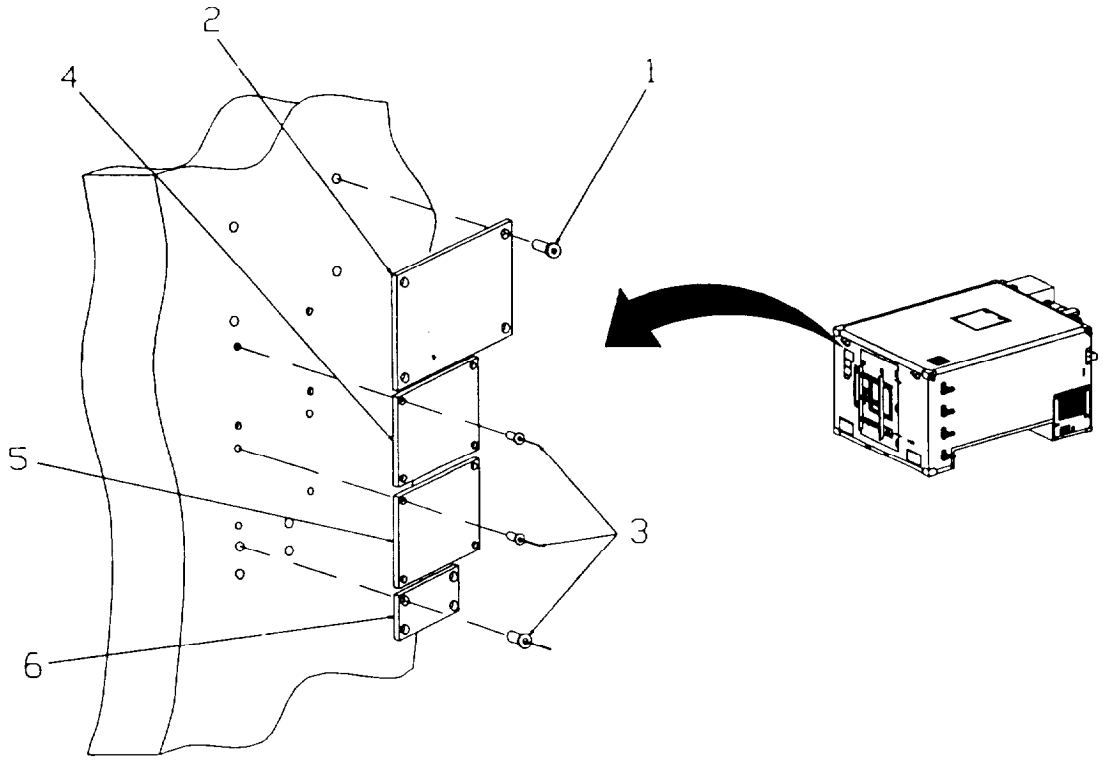
2. Using a No. 30 drill bit, drill out the rivnuts (3) securing the nameplate (4, 5, or 6) and remove nameplate.

NOTE

Rivnuts must be dipped in sealer prior to installing.

3. Clean area with cloth and alcohol.

4. Position nameplate and secure with rivnuts (1) or rivets (3).



4-24 RACK ASSEMBLY.

This task covers: a. Repair

INITIAL SETUP

Tools:
General Mechanics Tool Kit (Item 1, Appendix B)

Materials/Parts
Lockwasher (Item 16, Appendix E)
Lockwasher (Item 78, Appendix E)
Shelve
Shelve
Rack Support Bracket

Equipment conditions;
Generator power connector disconnected.
Equipment removed (refer to TM 11-7010-260-12&P)

REPAIR

NOTE

Procedure applies to front, left and right side brackets.

1, Remove screws (1) securing shelves (2) to rack assembly (3) and remove shelves.

2. Remove screws (4), lockwashers (5) and flat washers (6) securing rack support brackets (7) to shelter ceiling and floor.

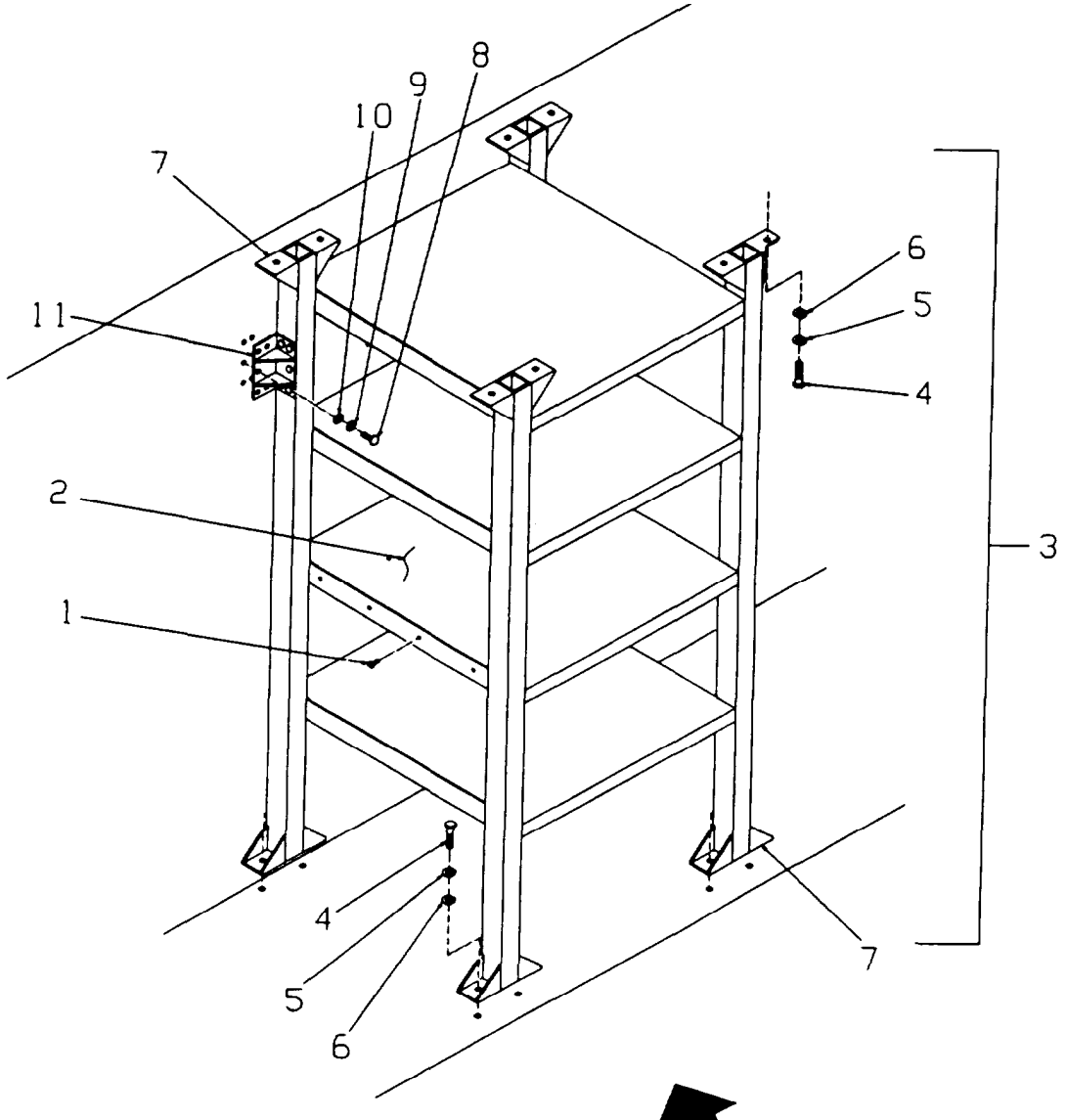
3. Remove screws (8), lockwashers (9) and flat washers (10) securing rack wall support brackets (11) to shelter wall.

4. Install rack wall support bracket (11) to wall and secure using screws (8), lockwashers (9) and flat washers (10).

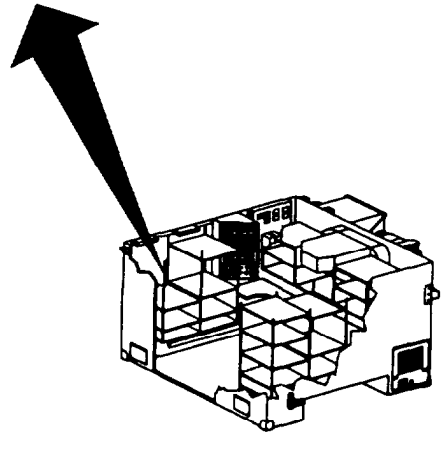
5. Install rack support brackets (7) to shelter floor and ceiling and secure using screws (4), lockwashers (5) and flatwashers (6).

6. Install shelves (2) to rack assembly (3) and secure using screws (1).

4-24. RACK ASSEMBLY - Continued.



ALL RACKS REMOVED TYPICALLY



CHAPTER 5
GENERAL SUPPORT MAINTENANCE INSTRUCTIONS

There are no General Support Maintenance Procedues

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.

Recommend Changes to Publications and Blank Forms DA-2028

Product Quality Deficiency Report SF-368

Equipment Inspection & Maintenance Worksheet DA-2404

A-3. FIELD MANUALS.

First Aid . . . . . FM 21-11

A4. LUBRICATION ORDERS.

Generator Set Skid Mounted, Tactical Quite 5KW, 60 Hz . . . . . LO 9-6115-641-12

A-5 TECHNICAL MANUALS.

Destruction of Army Equipment to Prevent Enemy Use . . . . . TM 750-244-3

Technical Manual Operator, Unit, Direct Support and General Support Maintenance Manual Repair Parts and Special Tools Lists for Shelter, Integrated Command Post, (SICPS), Type II . . . . . TM 11-5411-222-24P

System Manual Operator, Unit, Direct Support and General Support Maintenance Manual for shelter, Integrated Command Post, (SICPS), Type II . . . . . TM 7010-260-12&P

Painting Instructions for Field Use . . . . . TM 43-0139

Operator's Manual for M1097 Utility Truck (HMMWV) . . . . . TM 9-2320-280-10

Operator's Manual for Generator Set Skid Mounted, Tactical Quite 5KW, 60 Hz . . . . . TM 9-6115-641-10

Technical Manual, Repair Parts and Special Tools List Diesel Engine . . . . . TM 9-2815-252-24P

A-5 TECHNICAL MANUALS - Continued.

Technical Manual Unit, Direct Support and General Support Maintenance Repair Parts and Special Tools List for Air Conditioner, Horizontal, Compact 9,000 BTU/Hr . . . . . TM 5-4120-378-24P

Technical Manual, Unit Maintenance Manual including Repair Parts and Special Tools List for Filter Unit (GPFU) . . . . . TM 3-4240-325-20P

Technical Manual, Intermediate Direct Support Maintenance Manual including Repair Parts and Special Tools List for System Control Module . . . . . TM 3-4240-302-30&P-7

Technical Manual, Intermediate Direct Support Maintnenance Manual (including Repair Parts and Special Tools List for Centrifugal Fan . . . . . TM 3-4240-302-30&P-8

Unit, Direct Support and General Support Maintenance Manual for Generator Set Skid Mounted, Tactical Quite 5KW, 60 Hz . . TM 9-6115-641-24

Operator's, Unit, Direct Support and General Support Maintenance Manual for Air Conditioner, Horizontal, Compact 9,000 BTU/Hr . . . . . TM 5-4120-378-14

Warranty Program for Shelter, Standardized Integrated Command Post, Model S-787/G, Type II . . . . . TB 10-5411-222-24

A6. PAMPHELTS.

The Army Maintenance Management System . . . . . .DA Pamphlet 738-750

APPENDIX B
MAINTENANCE ALLOCATION CHART (MAC)

SECTION I. INTRODUCTION

B-1. THE ARMY MAINTENANCE SYSTEM MAC.

a. This section provides a general explanation of all maintenance and repair functions authorized at various maintenance levels under the standard Army Maintenance System concept.

b. The Maintenance Allocation Chart (MAC) in section II designates overall authority and responsibility for the performance of maintenance functions on the identified end item or component. The application of the maintenance functions to the end item or component will be consistent with the capacities and capabilities of the designated maintenance levels, which are shown on the MAC in column (4) as:

Unit - includes two subcolumns, C (operator/crew) and 0 (unit) maintenance.

Direct Support - includes an F subcolumn.

General Support - includes an H subcolumn.

c. Section Ill 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 are 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 position, or by setting the operating characteristics to specified parameters.

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

f. *Calibrate.* To determine and cause corrections to be made or to be adjusted on instruments or test, measuring, and diagnostic 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 assigned maintenance level is shown as the 3rd position code of the SMR code.

i. Repair. The application of maintenance services[1], including fault location/troubleshooting[2], 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.

---

[1] Services - Inspect, test, service, adjust, align, calibrate, and/or replace.

[2] Fault location/troubleshooting - The process of investigating and detecting the cause of equipment malfunctioning; the act of isolating a fault within a system or unit under test (UUT).

[3] Disassembly/assembly - The step-by-step breakdown (taking apart of a spare/functional group coded item to the level of its least component, that is assigned an SMR code for the level of maintenance under consideration (i.e., identified as maintenance significant).

[4] Actions - Welding, grinding, riveting, straightening, facing, machining, and/or resurfacing.

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/action necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (e.g., hours/miles) considered in classifying Army equipment/components.

B-3. EXPLANATION OF COLUMNS IN THE MAC, SECTION II.

a. Column 7, 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.

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

c. Column 3, Maintenance Function. Column 3 list the functions to be performed on the item listed in Column 2.
(For detailed explanation of these functions, see paragraph B-2.)

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

C ..... Operator or Crew
0 ..... Unit Maintenance
F ..... Direct Support Maintenance
H ..... General Support Maintenance

e. Column 5. Tools and Test Equipment Reference Code Column 5 specifies, by code, those common tool sets (not individual tools), common TMDE, and special tools , special TMDE, and special support equipment required to perform the designated function. Codes are keyed to tools and test equipment in section Ill.

f. Column 6. Remarks. When applicable, this column contains a letter code, in alphabetical order, which is keyed to the remarks contained in Section IV.

B-4. Explanation of Columns in Tool and Test Equipment Requirements, Sectlon Ill.

a. Column 7. 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 Level. The lowest maintenance level 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, model number, or type number.

B-5. Explanation of Columns in Remarks, Section IV.

a. Column 7. Remarks 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 FOR SICPS SHELTER

(1)	(2)	(3)	(4) Maintenance level				(5)	(6)
			Unit		Direct support	General support	Tools end Equipment Ref Code	Remarks Code
Group Number	Component/ Assembly	Maintenance Function	D	U	F	H		
00	SICPS Shelter	INSPECT	0.1					A
		INSPECT		0.1			2	&GE
01	Filter Blower Assembly	INSPECT	0.1					A
		SERVICE	0.1					A
		REPAIR			0.5		3, 11	C
		REPLACE			0.3		11	E
	RFI Seal	REPLACE			0.5		1.2.5.6.9.15	E
	Weather Seal	REPLACE		0.5			1.8	
02	Shelter Assembly	INSPECT	0.1					A
	Structure Assembly	INSPECT	0.1					A
		REPAIR			4.0		1,2,3,4,5,6,7.8. 9.12.13.14.15	
	Door Assembly	INSPECT	0.1					A
		REPLACE		0.5			1	
		ADJUST		0.3			1	
		TEST		0.1				
	Roller Latch Assembly	INSPECT	0.1					A
		REPLACE		0.3			1.2	D.E
	Handle Assembly, Door	INSPECT	0.1					A
		REPLACE		0.3			1 2	D,E
	Air Vent Frame	INSPECT	0.1					A
	Air Vent Frame	INSPECT	0.1					A
	RFI Seal	REPLACE		0.2			1	
	Weather Seal	INSPECT	0.1					A
		REPLACE		2.0			1.8	
	RFI Seal	INSPECT	0.1					A
		REPLACE			2.0		1,2.5,6,9,15	E

Section II. MAINTENANCE ALLOCATION CHART FOR SICPS SHELTER - Continued

(1)	(2)	(3)	(4) Maintenance level				(5)	(6)
			Unit		Direct Support	General Support	Tools and Equipment Ref Code	Remarks Code
Group Number	Component/ Assembly	Maintenance Function	O	U	F	H		
	Brace Assembly	INSPECT REPAIR	0.1	 0.3			 1.2	A D,E
	Rear Ladder	INSPECT REPLACE	0.1	 0.1				A B
	Hatch Assembly	INSPECT REPLACE	0.1	 0.3			 1	A
	Weather Seal	INSPECT REPLACE	0.1	 2.0			 1.8	A
	RFI Seal	INSPECT REPLACE	0.1		 2.0		 1.2.5.6.9.15	A E
	Step Assembly	INSPECT REPLACE	0.1	 0.2			 1	A
	Hand Hold	INSPECT REPLACE	0.1	 0.2			 1	A
03	Bracket Assembly	INSPECT	0.1					A
	Cover Assembly, COMMO Entry	INSPECT REPLACE	0.1	 0.2			 1	A
	Cover Assembly, TIP Entry Panel	INSPECT REPLACE	0.1	 0.2			 1	A
	Door, Crew Blower	INSPECT REPAIR	0.1	 0.3			 1,2	A.D
	Door Assembly, Power Entry	INSPECT REPAIR	0.1	 0.5			 1,2	A,D
	Door Assembly. GENSET	INSPECT REPAIR	0.1	 0.5			 1,2	A,D
	Seat, Folding Back	INSPECT REPAIR	0.2	 0.5			 1.2	A,D
	Upper (Lower) Mount, Antenna	INSPECT REPLACE	0.1	 0.3			 1	A,B

Section II. MAINTENANCE ALLOCATION CHART FOR SICPS SHELTER - Continued

(1)	(2)	(3)	(4) Maintenance level				(5)	(6)
			Unit		Direct support	General support	Tools and Equipment Ref Code	Ramarks Code
Group Number	Compenent/ Assembly	Maintenance Funation	O	U	F	H		
	Antanna Mount	INSPECT REPLACE	0.1	0.2			1	A.B
	Shelter Modification	INSPECT	0.1					A
	Rack Assemblies	INSPECT REPAIR	0.1		4.0		1	A
	CO Monitor	TEST REPAIR REPLACE	0.1		0.6 0.2		11 11	A
	Power Entry Installation	INSPECT REPAIR	0.1		4.0		3.11	A
	DC Power Supply	REPAIR REPLACE			0.0 0.6		3.11 '1	
	Power Monitor Faceplate	INSPECT REPAIR	0.1		1.0		3,11	A
	Relay Panel Assembly	REPAIR			1.2		3.11	
	TIP Faceplate Assembly	INSPECT REPAIR	0.1		0.6		3.11	A
	Signal Patch Pond	INSPECT REPAIR	0.1		0.6		3.11	A
	SEP EMI Plate Assembly	REPAIR			1.1		3.11	A
	Tip Power Entry Assembly	INSPECT REP AIR	0.1		1.1		3,11	A
	COMMO Entry Panel Assembly	INSPECT REPAIR	0.1		1.2		3,11	A

Section I. MAINTENANCE ALLOCATION CHART FOR SICPS SHELTER - Continued

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQUIPMENT	(6) REMARKS
			UNIT		DS	GS	DEPOT		
			C	O	F	H	D		
	Watefall Panel Assembly. COMMO Entry	INSPECT REPAIR	0.1		0.2 1.0			3.11	A
	PIate Assembly, TIP Signal Entry	INSPECT REPAIR	0.1		0.2 1.0			3,11	A
	Signal Patch Panel	INSPECT REPAIR	0.1		0.2 1.0			3,11	
	Rapid Decompression Installation	INSPECT	0.1						A
	Rapid Decompression Filter	REPLACE		0.2				1	
04	GENSET Installation	INSPECT REPLACE	0.1	0.5				1	B,C
05	Gas Particular Filter Unit	INSPECT REPLACE	0.1	0.5				1	A C
06	GPFU Control Panel	INSPECT REPLACE	0.1	0.3				1	A C
07	Nanmplate Installation	INSPECT REPLACE	0.1		1.0			1,2,4,5,6,9.15	A E
08	Entrance Panel Assembly	INSPECT REPAIR	0.1	0.3				1	A B
09	Air Conditioner Installation	INSPECT REPLACE	0.1	0.3				1	A C
	RFI Seals	REPLACE		0.5				1,2,5,6,15	E
	Weather Seal	REPLACE	0.5					1.8	
10	HMMWV MOUNTING KIT	INSPECT REPAIR	0.1	0.3				1	A B

Section III. TOOLS AND TEST EQUIPMENT REQUIREMENTS FOR SICPS SHELTER

Tool or test equipment ref code	Maintenance catagory	Nomenclature	National NATO stock number	PN Tool number
1	0	Tool Kit, General Mechanics	5180-00-177-7033	SC5180-90-CL-N26
2	O/F	Paint Brush	8020-00-256-6480	
3	O/F	Multimeter	6625-01-139-2512	AN/PSM/45
4	F	Oscillating Sander	5130-00-409-8653	00-S-90
5	F	Riverter, Blind, Hand	5120-00-017-2849	250K
6	F	Drill, Electric, Portable, 1/4 inch Cap with Drill Bits	5130-00-561-1389	W-D-661
7	F	Circular Saw	5130-00-089-3354	GGG-S-51
8	F	Caulking Gun	5120-00-072-6977	A6372
9	F	Safety Glasses	6520-01-140-5364	
10	F	Tool Kit, Shop Equipment, Automotive	4910-00-754-0654	SC4910-95CLA74
11	F	Tool Kit, Electronics Equipment	5920-00-241-1441	
12	F	Welding Equipment	4940-00-209-6240	SC4940-95CLA64
13	F	Crimping Tool	5130-00-863-8006	MS25441
14	F	Crimping Die	5130-00-863-2991	MS23002
15	F	Riveting Tool	3530-00-8902-4631	GGG-R-00395

Section IV. REMARKS

Reference code	Remarks
A	Routine maintenance/PMCS.
B	Replace damaged or missing pert. Reference RPSTL for breakdown.
C	Test and repair using component-specific technical manual/drawing package.
D	Lubricate hinges as needed.
E	Use touch-up paint as needed.

APPENDIX C
COMPONENTS OF END ITEM (COEI) LIST AND BASIC ISSUE ITEMS (BII)

SECTION I. INTRODUCTION

C-1. SCOPE.

This appendix lists components of the end item and basic issue items for the SICPS shelter to help you inventory the items for safe and efficient operation of the equipment.

C-2. GENERAL.

The Components Of End Item (COEI) and Basic Issue Items (BII) Lists are divided into the following sections:

a. *Section II. Components of End Item.* As components of the SICPS shelter, these items must be issued or transferred between property accounts. Items of COEI are removed and separately packaged for transportation or shipment only when necessary. This listing is for information purposes only and is not authority to requisition replacements. Illustrations are furnished to help you find and identify the items.

b. *Section III. Basic Issue Items. sue Items,* These items are required to place the SICPS shelter in operation, operate it, and do emergency repairs. Although packaged and shipped separately, basic issue items must be with the SICPS shelter during operation and when it is transferred between property accounts. This list is your authority to request/requisition basic issue items for replacement, based on authorization of the end item by the TOE/MTOE. Illustrations are furnished to help you find and identify the items.

C-3. EXPLANATION OF COLUMNS.

a. Column (1), lllus Number, gives you the number of the item illustrated.

b. Column (21, National Stock Number, identifies the stock number of the item to be used for requisitioning purposes,

c. Column (3), Description and Usable On Code, identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The last line below the description is the Commercial and Government Entity Code (CAGEC) (in parentheses! and the part number.

d. Column (4), U/I (unit of issue), indicates how the item is issued for the National Stock Number shown in column two.

e. Column (5), Qty Rqd, indicates the quantity required.

SECTION II. COMPONENTS OF END ITEM

(1) Illus number	(2) National Stock number	(3) Description CAGEC and Part number	(4) U/I	(5) Qty rqr
1		MOUNTING KIT,SHELTER TO HMMWV (81337) 17-1-8584-1 (SEE TABLE C-1 FOR BREAKDOWNI)	EA	1
2		PHONE EXTENSION BOX ASSEMBLY (81337) 17-1-7561	EA	1
3		RF PATCH CORD (81337) 17-1-7485	EA	6
4		PWR INPUT, AC (Extension) (81337) 17-1-7461	EA	1
5		PWR INPUT, AC (pigtail) (81337) 17-1-7475	EA	1
8		PATCH, JACKFIELD (120") (81337) 17-1-7462-1	EA	2
7		PATCH, JACKFIELD (36") (81337) 17-1-7462-2	EA	2
8		PATCH, DATA (81337) 17-1-7473	EA	3
9		PWR INPUT, DC (NATO Plug) (81337) 17-1-7478	EA	1
10		ANGLE ADAPTER (81337) M55339/03-00027	EA	1
11		FUEL SUPPLY HOSE (81337) 17-1-7573	EA	1
12		EXHAUST HOSE EXTENSION (81337) 17-1-7575	EA	1
13		RF COAX CABLE (81337) 17-1-7468-7	EA	4
14		FUEL RETURN HOSE (81337) 17-1-7586	EA	1
15		PORTABLE FUEL HOSE (813371 17-1-7587	EA	1
16		JF PATCH CORD (81337) 17-1-6802-1	EA	20
17		JF PATCH CORD (81337) 17-1-6802-2	EA	15
18		LADDER ASSEMBLY (Stored on door) (81337) 17-1-3619-1	EA	1

TABLE C-l. HMMWV Mounting Kit Parts List (29381) 17-1-8584-1

Part Number	Nomenclature	Quantity
17-1-8583-1	MOUNTING ASSEMBLY, REAR	1
17-1-8220-1	BRACKET, REAR MOUNTING	1
17-1-8220-2	BRACKET, REAR MOUNTING	1
17-1-8221-1	ADAPTER, MOUNTING	1
17-1-8221-2	ADAPTER, MOUNTING	1
17-1-3607-1	ISOLATOR	12
17-1-3605-2	WASHER, ISOLATOR MOUNT	6
17-1 -3606-1	WASHER, ISOLATOR MOUNT	12
AN960C816	WASHER, FIAT	16
MS21045C8	NUT, SELF LOCKING	6
NAS43HT8-156	SPACER, SLEEVE	6
MS35308-426	SCREW, CAP	6
B1821BH050C325N	SCREW, CAP	8
MS35307-307	SCREW, CAP	6
MS15795-810	WASHER, FLAT	6
MS35338-139	WASHER, LOCK	6
MS35307-360	SCREW, CAP	6
MS35338-141	WASHER, LOCK	42
MS15795-814	WASHER, FLAT	46
MS35307-363	SCREW, HEX	8
MS35307-361	SCREW, HEX	28
B1B21BH050C150N	SCREW, HEX	4
MS35338-48	WASHER, LOCK	4
MS51967-14	NUT, HEX	4
17-1-8245-1	BRACKET, CLAMP	2
17-1-8244-1	SHIM, BRACKET	2
17-1-8243-1	SPACER	6
MS51971-3	NUT, HEX	4
17-1-8246-1	BRACKET, TAIL LIGHT	2
17-1-6854-1	GROMMET	2
17-1-3597-1	BAR ASSEMBLY, MOUNTING KIT	2
17-1-3599-1	ANGLE ASSEMBLY, MOUNTING	1
17-1-3599-2	ANGLE ASSEMBLY, MOUNTING	1
NAS43HT8-156	SPACER, SLEEVE	8
17-1-3605-1	WASHER, ISOLATOR MOUNT	8
MS35307-410	SCREW, HEX	10
17-1-3606-1	WASHER, ISOLATOR MOUNT	16
17-1-3607-1	ISOLATOR, MOUNTING INSTALLATION	8
AN8C7A	BOLT, MACHINE	8
MS21045C8	NUT, SELF LOCKING	2
MS35308-426	SCREW, HEX	8
AN960C816	WASHER, FLAT	28
MS35338-143	WASHER, LOCK	10

SECTION III. BASIC ISSUE ITEMS (BII)

(1) Illus number	(2) National Stock number	(3) Description CAGEC and Part number	(4) U / I	(5) Q t y rqr
		WARRANTY PROGRAM FOR SHELTER, STANDARDIZED INTEGRATED COMMAND POST, MODEL S-787, TYPE II TB 10-5411-222-24	EA	1
	5411-01-333-0663	OPERATOR, UNIT DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LIST FOR SHELTER, STANDARDIZED INTEGRATED COMMAND POST SYSTEM, TYPE II TM 10-5411-222-24P	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 SICPS shelter.

D-2. **GENERAL.** This list identifies items that do not have to accompany the SICPS shelter and 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 COLUMNS.** National stock numbers, descriptions, and quantities are provided to help you identify and request additional items you require to support this equipment. The items are listed in alphabetical sequence by item name. If the item you require differs between serial numbers of the same model, effective serial numbers are shown in the last line of the description. If item required differs for different models of this equipment, the model is shown under the “Usable on” heading in the description column. These codes are not required for this model.

SECTION II. ADDITIONAL AUTHORIZED ITEMS LIST

(1) NATIONAL STOCK NUMBER	(2) DESCRIPTION CAGEC & PART NUMBER USABLE ON CODE	(3) U/I	(4) QTY RECM

APPENDIX E
EXPENDABLE AND DURABLE ITEMS LIST

SECTION I. INTRODUCTION

E-1. SCOPE.

This appendix lists expendable and durable items that you will need to operate and maintain the SICPS Shelter. This listing is for information only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-790, Expendable/Durable Items (except medical, class V repair parts, and heraldic items), or CTA 8-100, Army Medical Department Expendable/Durable Items.

E-2. EXPLANATION OF COLUMNS.

a. *Column 1. Item Number.* This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the item (e.g. “Use cleaning compound, item 5, Appendix E”.)

b. *Column 2. Level.* This column identifies the lowest level of maintenance that requires the item.

c. *Column 3. National Stock Number.* This is the national stock number assigned to the item which you can use to requisition it.

d. *Column 4. Item Name Description, Commercial and Government Entity Code* (CAGEC), and Part Number. This provides the other information you need to identify the item.

e. *Column 5. Unit of Measure.* This code shows the physical measurement or count of an item, such as gallon, dozen, gross, etc.

SECTION II. EXPENDABLE AND DURABLE ITEMS LIST

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) ITEM NAME, DESCRIPTION CAGEC, PART NUMBER	(5) U/M
1	0		CABLE TIE (96906) MS5281-R4	EA
2	0		ADHESIVE (81349) M4610611DWY	GL
3	0	5315-00-839-5820	COTTER PIN (96906) MS24665-134	EA
4	0	5315-00-842-3044	COTTER PIN (96906) MS24665-283	EA
5	0	5315-00-234-1863	COTTER PIN (96906) MS24665-300	EA
6	0	5315-01-359-1451	COTTER PIN (96906) MS24665-285	EA
7	0	7920-00-148-9666	RAG, WIPING (58536) A-A531	LB
8	0	5310-00-576-5752	LOCKWASHER (96906) MS35333-39	EA
9	0	5310-00-550-1130	LOCKWASHER (96906) MS35333-40	EA
10	0	5310-00-592-5965	LOCKWASHER (96906) MS35338-44	EA
11	0	5310-01-338-7338	LOCKWASHER (96906) MS35338-45	EA
12	0	5310-00-933-8118	LOCKWASHER (96906) MS35338-135	EA
13	0	5310-00-929-6395	LOCKWASHER (96906) MS35338-136	EA
14	0	5310-00-933-8119	LOCKWASHER (96906) MS35338-137	EA
15	0	5310-00-933-8120	LOCKWASHER (96906) MS35338-138	EA
16	0	5310-00-933-8121	LOCKWASHER (96906) MS35338-139	EA

SECTION II. EXPENDABLE AND DURABLE ITEMS LIST (CONT)

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) ITEM NAME, DESCRIPTION CAGEC, PART NUMBER	(5) U/M
17	O	5310-00-067-6357	LOCKWASHER (96906) MS45904-69	EA
18	O	9158-00-759-0014	LUBRICANT, SOLID FILM (81349) MIL-L-23398	A/R
19	O	8030-01-136-8953	SEALER (800631 SM-B-563756	GL
20	O		SHIM (81337) 17-1-3565-1	EA
21	O		SHIM (81337) 17-1-3565-2	EA
22	O		SHIM (81337) 17-1-3565-3	EA
23	O		SHIM (81337) 17-1-3566-1	EA
24	O		SHIM (81337) 17-1-3566-2	EA
25	O		SHIM (81337) 17-1-3566-3	EA
26	F		SEALER, CONDUCTIVE (80063) 17-1-6612-1	AR
27	F	8040-00-078-9774	ADHESIVE (80063) M4610611 DWY	GL
28	F		ADHESIVE, GASKET (81337) 17-1-6626-1	GL
29	F		ADHESIVE (80063) 17-1-6612	GL
30	F	8040-01-197-0228	ADHESIVE (80063) SM-B-563559	GL
31	F	7830-00-884-4014	CHALK (71207) 7-10-8	GR
32	F		POLYETHELYENE WRAP	SH

SECTION II. EXPENDABLE AND DURABLE ITEMS LIST (CONT)

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) ITEM NAME, DESCRIPTION CAGEC, PART NUMBER	(5) U/M
33	F	6810-00-286-5435	ALCOHOL, ISOPROPYL (81349) TT1735	GL
34	F		COMMERCIAL BODY FILLER WHITELIGHTNIN 01125	GL
35	F		CORE, HONEYCOMB Ceiling: 17-1-6628-1 (81337) Walls: 17-1-6629-1 (81337) Floor: 17-1-6630-1 (81337)	AR
36	F	8040-01-197-0028	FIBER FILLED POLYESTER RESIN (80063)	GL
37	F	8415-00-009-1900	GLOVES, RUBBER (05963) N35	PR
38	F	5350-00-161-9043	SANDPAPER (81348) P-P-121	SH
39	F	5420-00-501-6998	ALUMINUM (81348) QQ-A-250, 6061-T6, .042”	AR
40	F	5120-00-673-1886	CARTRIDGE, DISPOSABLE (92108)	EA
41	F		CONTAINER, UNWAXED UU-C-80611	EA
42	F	5315-00-839-5820	COTTER PIN (96069) MS24665-134	EA
43	F		RIVNUT NAS1329S04B85	EA
44	F	8040-00-222-9059	EPOXY RESIN (11884) Versimid 140	GL
45	F	8040-01-197-0228	EPOXY RESIN (53462) EPIC R1003	GL
46	F	5320-00-956-7355	RIVET, DOMED HEAD, POP, (07707) AD64H	EA
47	F	8030-01-136-8953	SEALER (80063) SM-B-563756	AR
48	F	8030-01-136-8953	SEALER (80063) SM-B-563756	AR
49	F	8030-01-136-8953	POLYSULFIDE SEALER	AR

SECTION II. EXPENDABLE AND DURABLE ITEMS LIST (CONT)

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) ITEM NAME, DESCRIPTION CAGEC, PART NUMBER	(5) U/M
50	F	5320-00-882-3375	RIVET,DOMED,HEAD,POP (07707) AD66H	EA
51	F	5320-01-032-6534	RIVET, DOMED HEAD, POP (07707) AD68H	EA
52	F	5320-01-210-7955	FASTENER, BLIND (96906) MS90354U0603	EA
53	F		SEALER, CONDUCTIVE (29381) 17-1-5706-1	AR
54	F		RIVET, BLIND (07707) 17-1-5711-1	EA
55	F	5320-01-295-9924	RIVET, DOMED HEAD, POP (07707) AD42H	EA
56	F	5320-00-882-8388	RIVET, BLIND (07707) AD43H	EA
57	F	5320-00-882-8386	RIVET, BLIND (07707) AD44H	EA
58	F	5320-00-956-7362	RIVET, BLIND (07707) AD62H	EA
59	F	5320-00-956-7355	RIVET, BLIND (07707) AD64H	EA
60	F		RIVET, BLIND (07707) AD86H	EA
61	F	5320-00-143-6149	RIVET, BLIND (07707) AK43H	EA
62	F	5320-00-420-2165	RIVET, BLIND (07707) AK64H	EA
63	F	5320-00-490-5523	RIVET, BLIND (07707) AK66H	EA
64	F		RIVET, BLIND (07707) AK68H	EA
65	F		RIVET, BLIND (07707) AK86H	EA
66	F		RIVET, BLIND (81349) MS24243/10AH2	EA

SECTION II. EXPENDABLE AND DURABLE ITEMS LIST (CONT)

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) ITEM NAME, DESCRIPTION CAGEC, PART NUMBER	(5) U/M
67	F	5320-00-117-6885	RIVET, BLIND (96906) MS20426AD5-8	EA
68	F	5320-00-117-6886	RIVET, BLIND (96906) MS20426AD5-9	EA
69	F	5320-00-117-7522	RIVET, BLIND (96906) MS20470AD8-10	EA
70	F		ADHESIVE (81349) M4610611 DWY	AR
71	F		ADHESIVE (81349) M4610611 DGY	AR
72	F	8040-01-197-0228	ADHESIVE (80063) SM-B-563559	AR
73	F	8030-00-181-7225	VY COMPOUND (04552) ECCOSHIELD VY	LB
74	F	7920-01-115-4727	BRUSH, APPLICATOR (17987) 110313	EA
75	F		PLYWOOD	EA
76	F	7510-00-680-2395	TAPE, MASKING 180244) MIL-T-21595	RO
77	F	3439-00-224-3567	SOLDER (81348) QQ-S-571	RO
78	F	5310-00-974-6623	LOCKWASHER (96906) MS35338-140	EA
79	F	8030-01-333-4123	TEFLON PIPE TAPE (03950) MIL-T-27730	RO

APPENDIX F
ILLUSTRATED LIST OF MANUFACTURED ITEMS

F-1. INTRODUCTION. This appendix includes complete instructions for making items authorized to be manufactured or fabricated at unit support maintenance level.

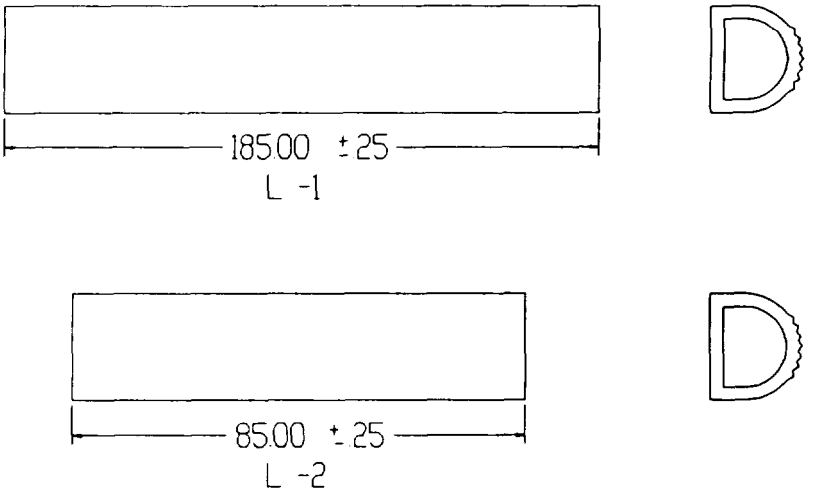
A Part number index in alphanumeric order is provided for cross-referencing the part number of the item to be manufactured to the figure which covers fabrication criteria.

All bulk materials needed for manufacture of an item are listed by part number or specification number in a tabular list on the illustration.

F-2. MANUFACTURED ITEMS PART NUMBER INDEX. Table F-l provides a list of those items that are manufactured at unit support maintenance level.

Table F-1. Unit Level Manufactured Items

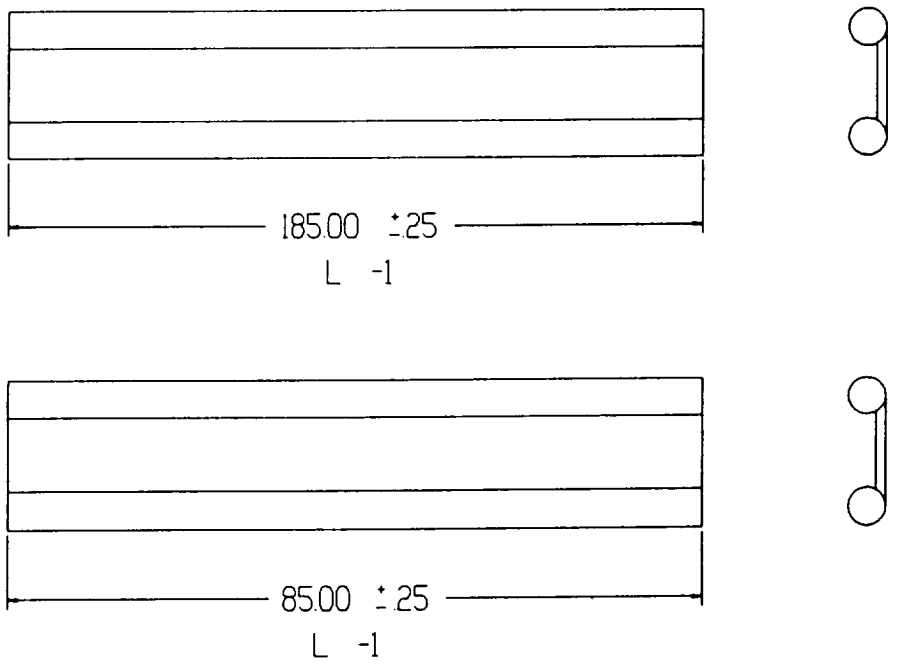
Part No.	Figure
17-1-3704	F-1
17-1-3705	F-2
17-1-8037	F-3
17-1-8041	F-4
17-1-8078	F-5
17-1-8079	F-6
17-1-8158	F-7
17-1-8181	F-8
17-1-8507	F-9
17-1-8552	F-10



MATERIALS	
DESCRIPTION	PART NUMBER
RUBBER, NEOPRENE, DUROMETER 40, D-SHAPE, EXTRUDED, OVZL4.	B1-12009-40

NOTES:
1. DIMENSIONS SHOWN ARE IN INCHES.
2. WORKMANSHIP IAW MIL-STD-454, REQT 9.

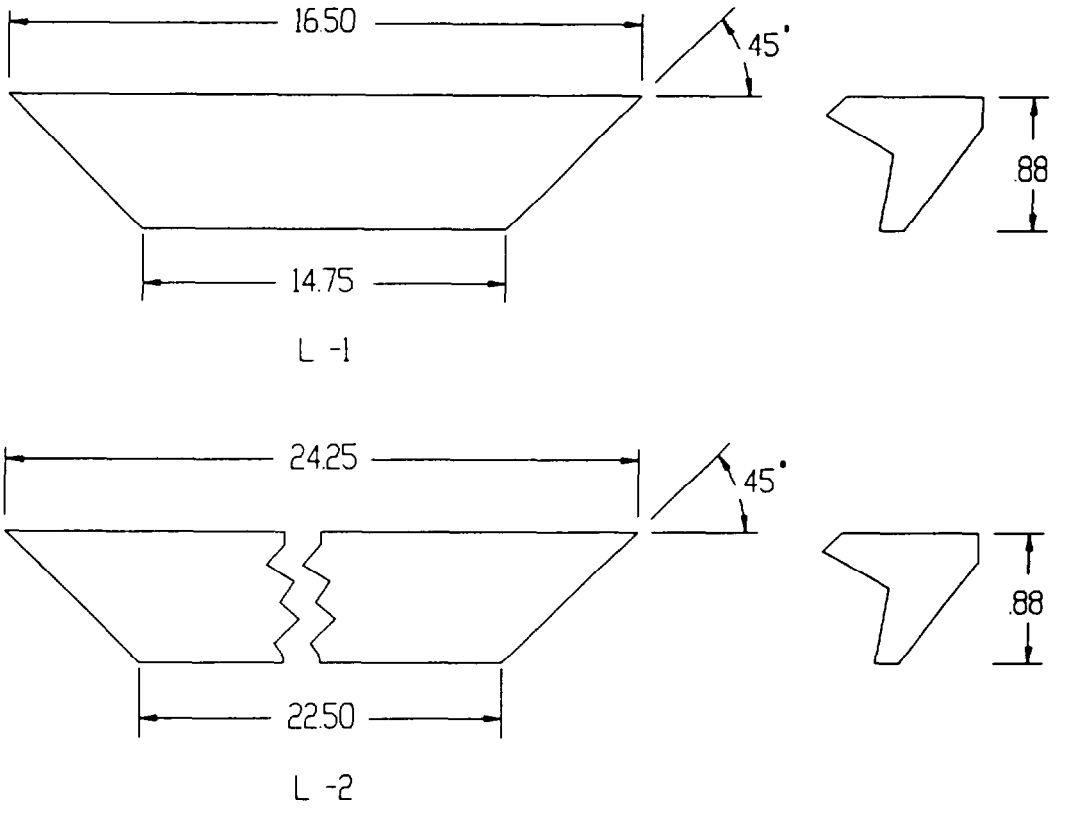
Figure F-1. Personnel Door Environmental Gasket



MATERIALS	
DESCRIPTION	PART NUMBER
.025 O.D. X .045 SILICONE TUBING PER ZZ-R-765, CLASS II, GRADE 40 WITH 3 COVERS,.0045 DIA FERREX WIRE MESH PER ASTM B-520,18565.	01-0504-6424

NOTES:
1. DIMENSIONS SHOWN ARE IN INCHES.
2. WORKMANSHIP IAW MIL-STD-454, REQT 9.

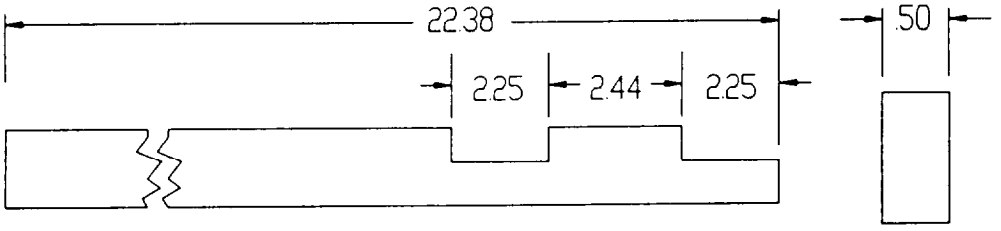
Figure F-2. RFI/EMI Gasket



MATERIALS	
DESCRIPTION	PART NUMBER
(2 Each Required)	17-1-8037-1 17-1-8037-2

NOTES:
1. DIMENSIONS SHOWN ARE IN INCHES + 0.6 IN.
2. WORKMANSHIP IAW MIL-STD-454, REQT 9.

Figure F-3. Air Conditioner Weather Gasket

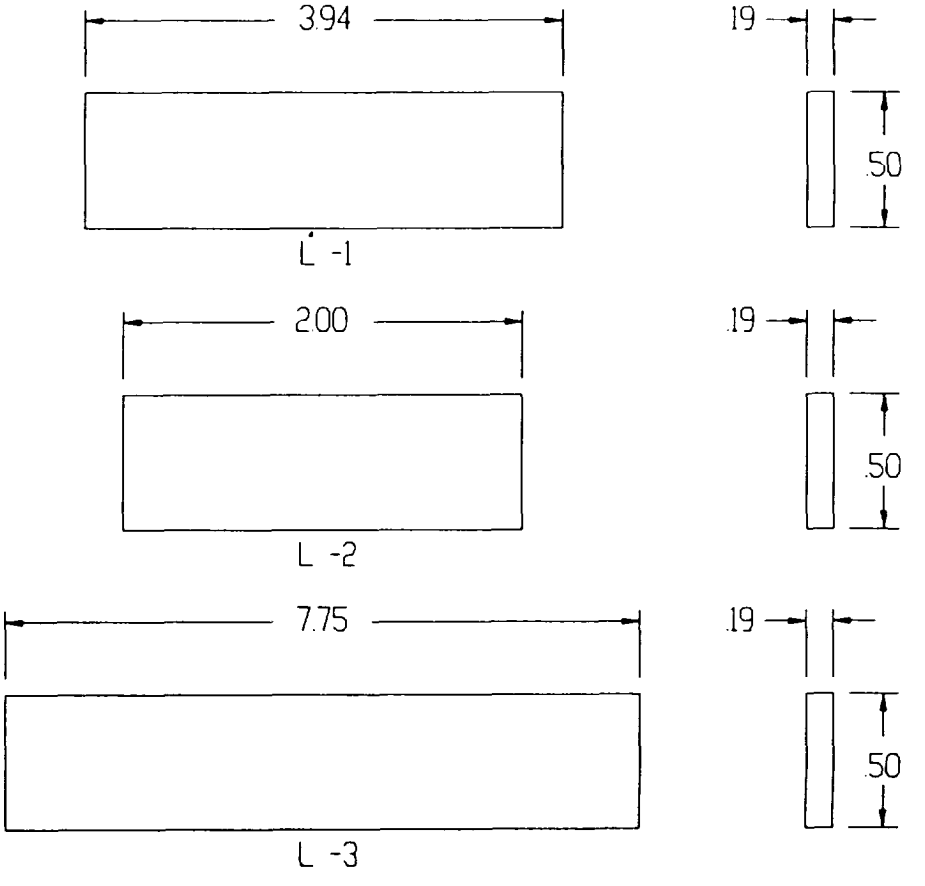


L -1

MATERIALS	
DESCRIPTION	PART NUMBER
.50 X .75 Flexible Polyurethane Foam. Open Cell. Color Gray.	17-1-8041

NOTES:
1. DIMENSIONS SHOWN ARE IN INCHES.
2. WORKMANSHIP IAW MIL-STD-454, REQT 9.

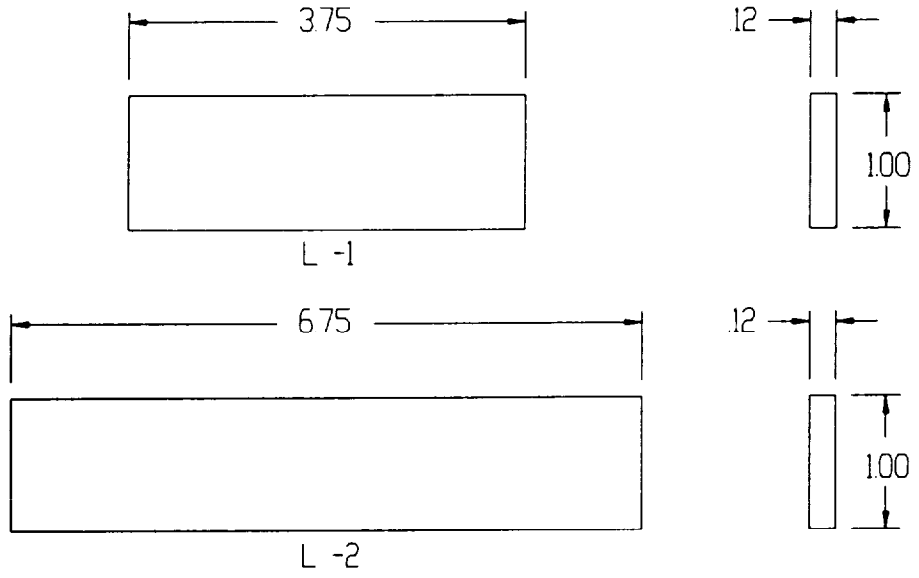
Figure F-4. Air Conditioner Weather Gasket



MATERIALS	
DESCRIPTION	PART NUMBER
(MAKE-FROM), 71643	200A

NOTES:
1. DIMENSIONS SHOWN ARE IN INCHES.
2. WORKMANSHIP IAW MIL-STD-454, REQT 9.

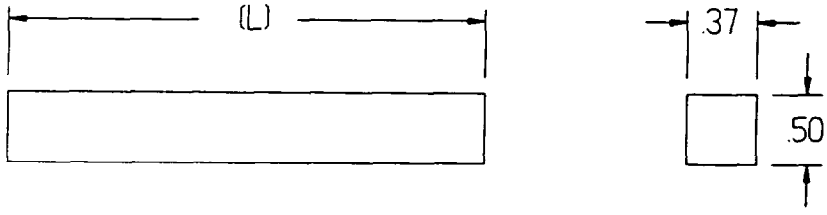
Figure F-5. Blower/GENSET Door Environmental Gasket



MATERIALS	
DESCRIPTION	PART NUMBER
Material, 81337	17-1-6609

NOTES:
1. DIMENSIONS SHOWN ARE IN INCHES.
2. WORKMANSHIP IAW MIL-STD-454, REQT 9.

Figure F-6. Filter blower Environmental Gasket

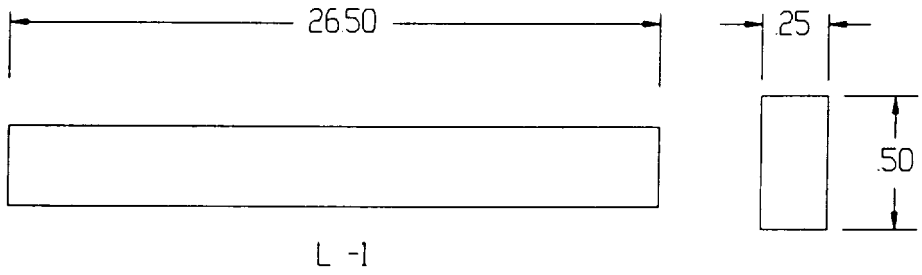


PN	LENGTH (L)
-1	7.75
-2	26.75
-3	2.62
-4	14.12
-5	30.50
-6	5.62

MATERIALS	
DESCRIPTION	PART NUMBER
Material, 81337	17-1-6715

NOTES:
1. DIMENSIONS SHOWN ARE IN INCHES.
2. WORKMANSHIP IAW MIL-STD-454, REQT 9.

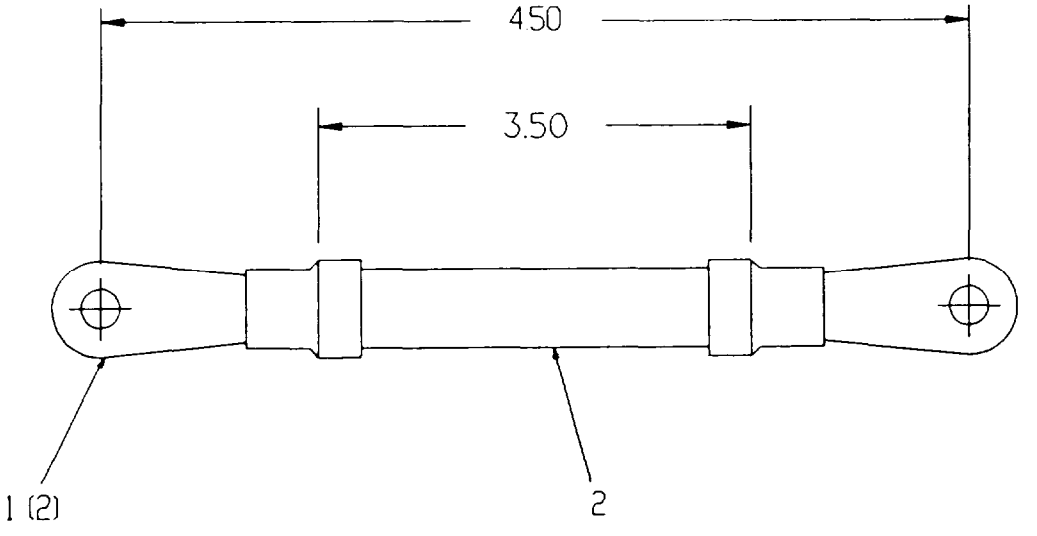
Figure F-7. Power **Entry/GENSET Door Environmental Gasket**



MATERIALS	
DESCRIPTION	PART NUMBER
Material, 81337	17-1-67161

NOTES:
1. DIMENSIONS SHOWN ARE IN INCHES.
2. WORKMANSHIP IAW MIL-STD-454, REQT 9.

Figure F-8. Power Entry/GENSET Door Environmental Gasket



MATERIALS	
DESCRIPTION	PART NUMBER
1. TERMINAL LUG, 96906 2. WOVEN TINNED COPPER BRAID ROLLED FLAT GROUND STRAP, 92191	MS25036-119 1234

NOTES:
1. DIMENSIONS SHOWN ARE IN INCHES ±0.6 IN.
2. WORKMANSHIP IAW MIL-STD-454, REQT 9.
3. CUT ITEM 2 TO 3.5 ± .25 IN. AND CRIMP ITEM 1 ON BOTH ENDS USING TOOL MS25441 AND DIE MS23002.

Figure F-9. Ground Jumper

MATERIALS	
DESCRIPTION	PART NUMBER
STAINLESS STEEL HINGE AND PIN, TYPE 304, QQ-S-763, 6 FOOT LENGTH, 03007	SS09080711

NOTES:
1. DIMENSIONS SHOWN ARE IN INCHES.
2. REMOVE ALL BURRS AND SHARP EDGES R.005 - R.015.
3. UNTOLERANCED DIMENSIONS LOCATING TRUE POSITION ARE BASIC
4. WELD END (2 PLACES) TO RETAIN PIN PER MIL-STD-2219, CL C.

Figure F-10. Personnel Door Hinge

ALPHABETICAL INDEX

By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army
Chief of Staff

Official:

MILTON H. HAMILTON
Administrative Assistant to the Secretary of the Army
07080

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COA, 3d ENGINEER BN
FT. LEONARDWOOD, MO 63108

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 10-5411-222-14	29 Jul 94	SHELTER STANDARDIZED

BE EXACT PIN-POINT WHERE IT IS

PAGE NO	PARAGRAPH	FIGURE NO	TABLE NO	IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:
6	2-1 a			In line 6 of paragraph 2-1a the manual states the engine has 6 Cylenders. The engine on my set only has 4 Cylenders. Change the manual to show 4 Cylenders.
81		4-3		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.
125	line 20			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
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SIGN HERE John Doe
JOHN DOE

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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** = decigram = .035 ounce
1 dekagram = 10 = .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 milliters = .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 millimeters = .155 inch
1 sq. decimeter = 100 centimeters = 15.5 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 dekameters = 2.47 acres
1 sq kilometer = 100 hectometers = .386 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	2540	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	1.496
acres	square hectometers	,405	square kilometers	square miles	,386
cubic feet	cubic meters	,023	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	3.765	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

PIN: 072932-001