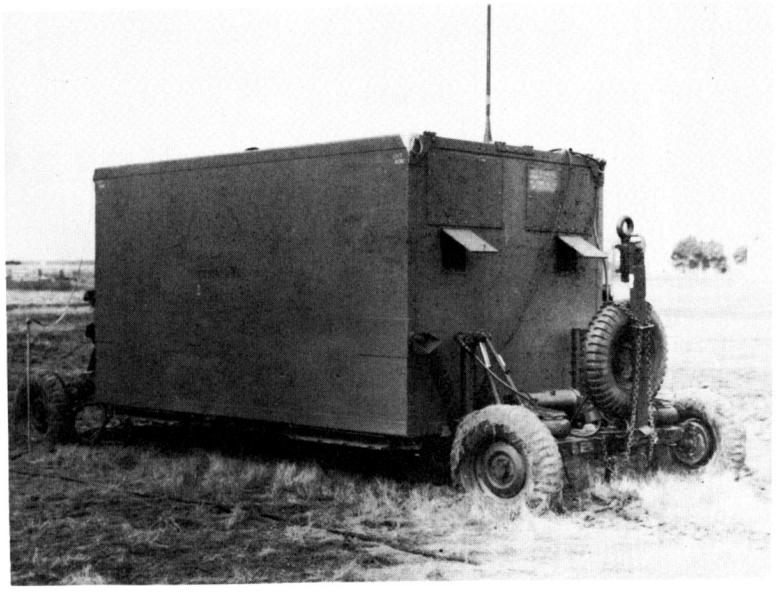
Chapter 8

MOBILITY SUPPORT EQUIPMENT



AN/GRM-94
RADIO MAINTENANCE FACILITY

DESCRIPTION: The AN/GRM-94 is a transportable radio maintenance facility designed to be employed under field conditions. It contains space for storage of test equipment necessary to perform field level maintenance on assigned electronic equipment. Its uses may be changed by deleting or adding test equipment for support of deployed electronic equipment. The unit has self-contained heating and air conditioning facilities, special tools and a small stock of interchangeable modules and parts for repairing radios. The AN/GRM-85 Supply Shelter is deployed with this facility and carries the bulk of parts and modules required.

CAPABILITIES: The AN/GRM-94 can be configured to support field level maintenance on any TACS C-E equipment. Its actual configuration will depend on the TACS facility it is designed to support.

FREQUENCY RANGE: NA.

POWER INPUT: 115/208 VAC, 400 Cps, 3 phase 7 KW.

SITING CRITERIA: Should be located on level ground and accessible by vehicle (up to 2½ ton). An adjacent parking area may be required for MRC-108, MRC-107, etc.

ERECTION TIME: Approximately 30 minutes.

PERSONNEL REQUIRED: 2 each 304X4s.

MAJOR COMPONENTS:

NOMENCLATURE	COMMON NAME
S-194G	Shelter.
S18-116TM5	Air Conditioner.
	Test Equipment.

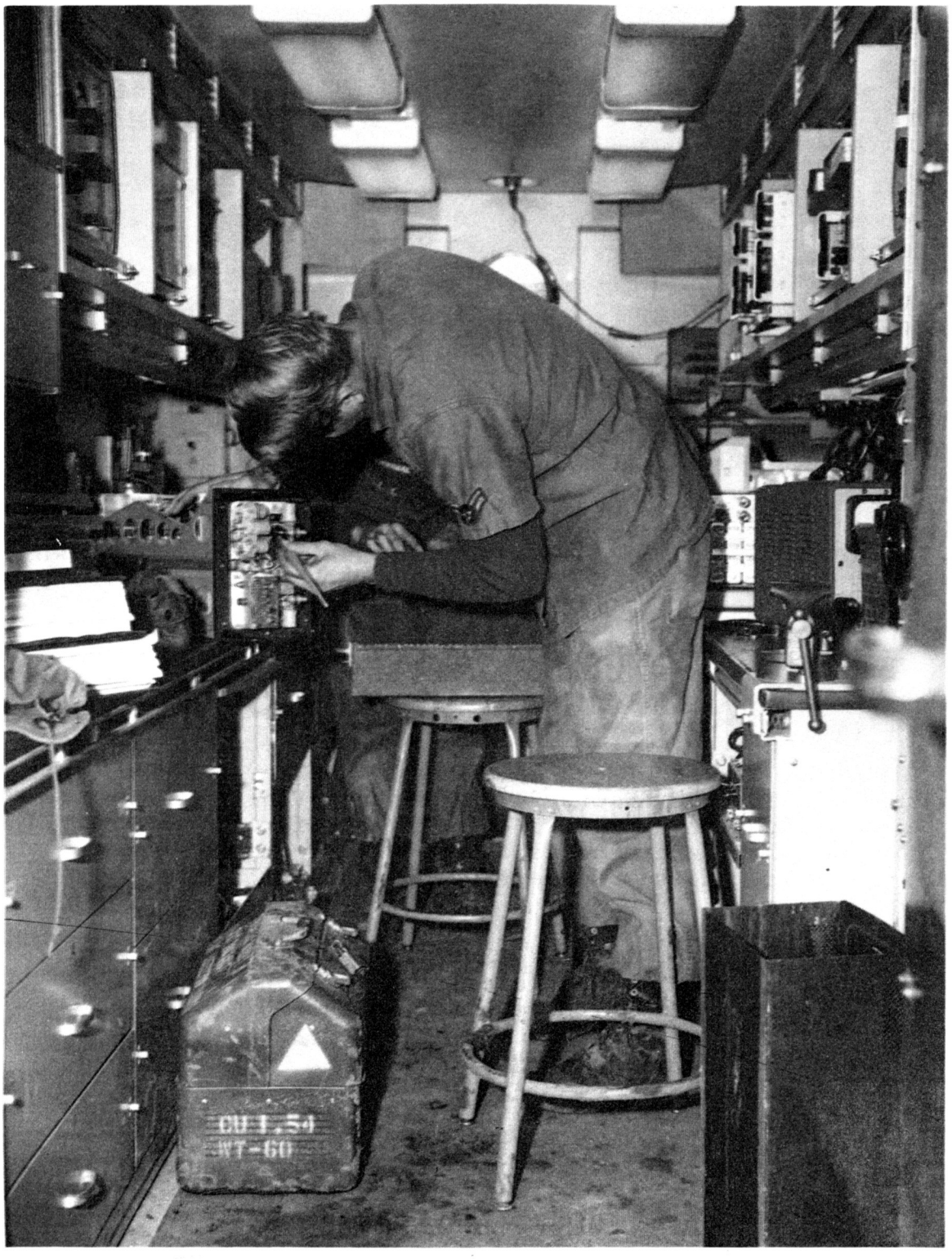
MANUFACTURER: Alpha Corporation (Collins Radio Co).

COST: $89,543.00.

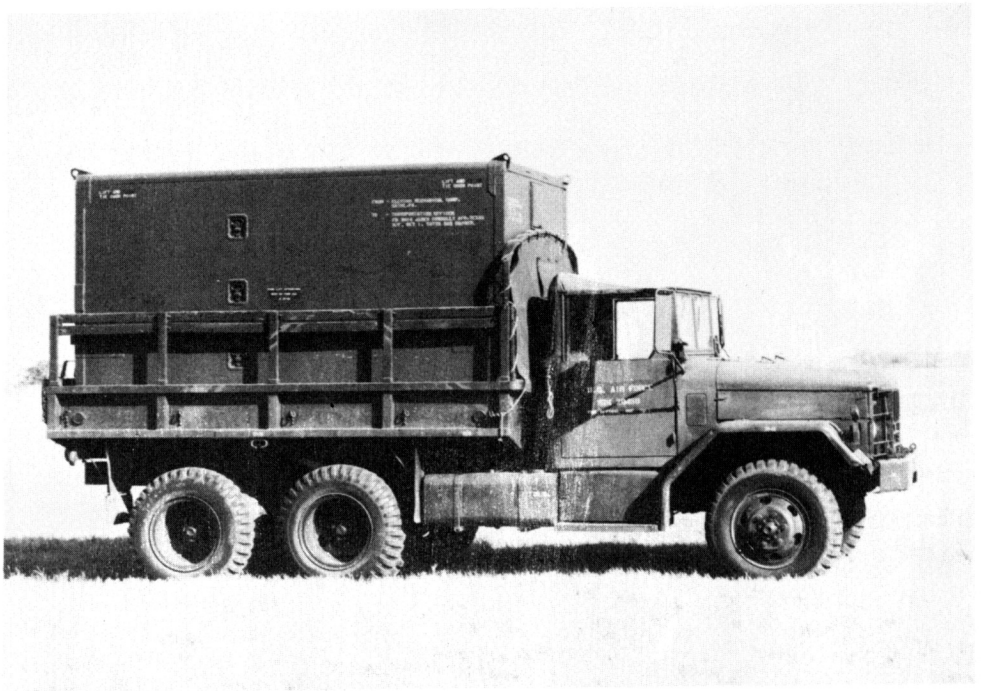
WEIGHT: 4500 lbs (less generator).

CUBE: 582 cu. ft.

APPLICABLE TOs: TM-02819B-15----------GRM-94 Operators' Instructions and Individual Equipment TOs.



Interior View AN/GRM-94

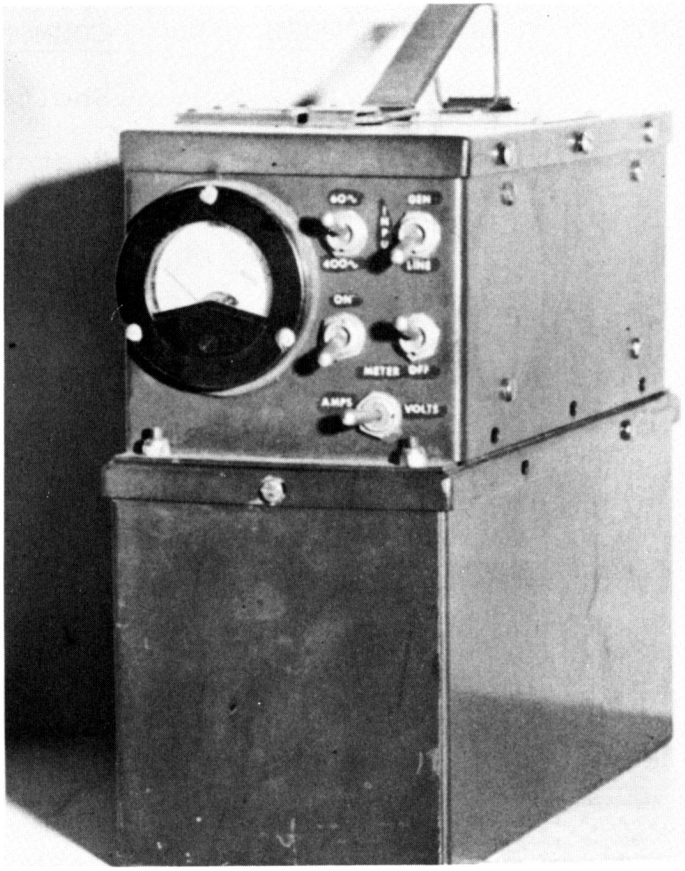


AN/GRM-85
RADIO MAINTENANCE SUPPLY VAN

DESCRIPTION: The AN/GRM-85 is a supply shelter deployed in conjunction with the AN/GRM-94 Maintenance Van. The van contains various size drawers and cabinets for storage of all the necessary spare parts and modules for repairing radio and electronics equipment used in the Tactical Air Control System.

CAPABILITY:	The AN/GRM-85 is capable of carrying a complete stock of running spare parts required by the AN/GRM-94 Maintenance Van. It contains its own heating system.
POWER INPUT:	115/208 VAC @ 400 Cps 3 phase.
SITING CRITERIA:	Locate with GRM-94 Maintenance Van.
ERECTION TIME:	Approximately 10 minutes.
PERSONNEL REQUIRED:	One each 645X0.

MAJOR COMPONENTS:	NOMENCLATURE	COMMON NAME
	S-194G.....	Shelter
	NA.....	Heater
MANUFACTURER:	Weckers.	
COST:	$18,000.00.	
WEIGHT:	2800 lbs.	
CUBE:	553.0 cu. ft.	
APPLICABLE TOs:	35E4-36-1----------	Operations Manual

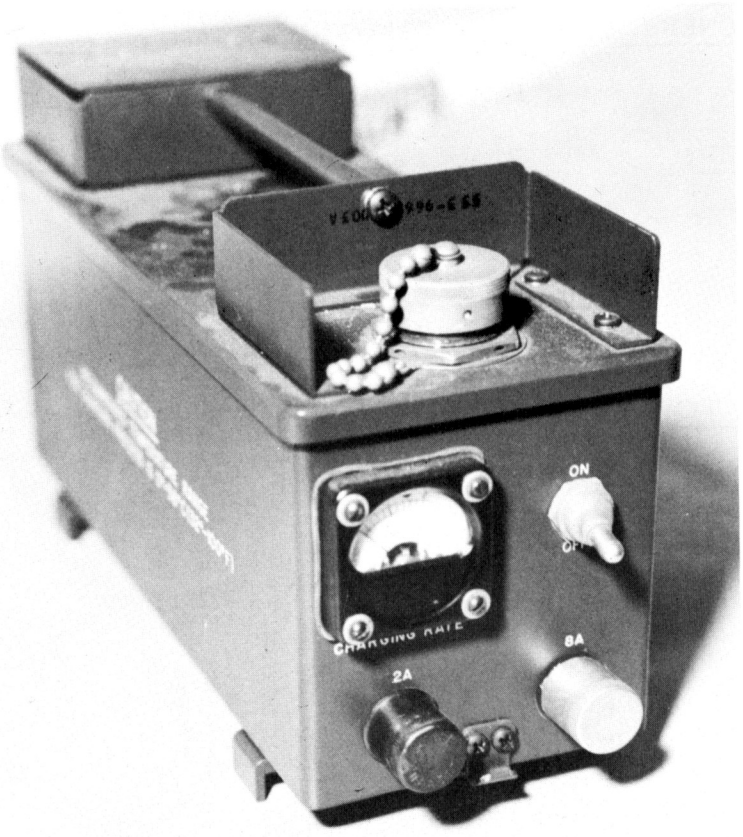


PP-3240/U
BATTERY CHARGER

DESCRIPTION: The PP-3240/U Battery Charger is a self-contained, transistorized unit designed for charging various types of nominal 24 volt wet cell storage batteries. This charger is being replaced with a more compact, light unit, PP-3906.

CAPABILITY:	Continuous operation; all weather; may be used as battery eliminator for short periods.
POWER INPUT:	108 to 132 VAC, single phase @ 60 or 400 Cps.
POWER OUTPUT:	Voltage: 27.8 VDC or 32.0 VDC, selectable. Current: 1 amp or 2 amps, selectable.
ERECTION TIME:	Approximately 5 minutes.

MAJOR COMPONENTS:	NOMENCLATURE	COMMON NAME
	PP-3240/U.....	Battery Charger.
MANUFACTURER:	Electromagnetic Industries, Inc.	
COST:	$278.00.	
WEIGHT:	48 lbs.	
CUBE:	2.0 cu. ft.	
APPLICABLE TO:	35C3-2-43-2----------	Service Instructions, Circuit Diagram and Illustration Parts Breakdown.



PP-3906/U
BATTERY CHARGER

DESCRIPTION: The PP-3906/U is a self-contained unit designed for charging batteries. It is a multi-input charger contained in a single waterproof welded aluminum case which is also designed to clamp on top of the battery being charged. This charger is used in conjunction with the AN/PRC-41 and AN/PRC-47.

CAPABILITIES: Battery Charger converts 22 to 28 VDC or 105 to 125 volts single phase AC (50 to 430 Cps) to 32 VDC. It can operate continuously and in all weather conditions.

POWER INPUT: 22 to 28 VDC or 105 to 125 volts single phase AC (50 to 430 Cps).

POWER OUTPUT: Voltage: 32 VDC.
Current: 2.5 amps maximum.

ERECTION TIME: Approximately five minutes.

MAJOR COMPONENTS:

NOMENCLATURE	COMMON NAME
PP-3906/U.....	Battery Charger.

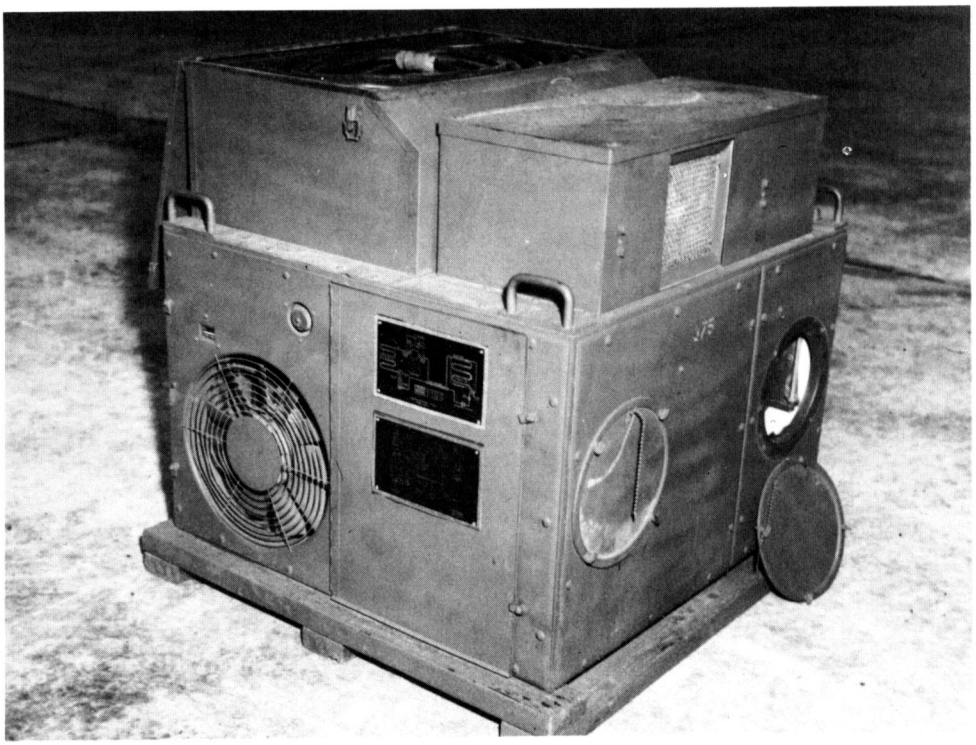
MANUFACTURER: Collins Radio Corp.

COST: $180.00.

WEIGHT: 10 lbs.

CUBE: 0.3 cu. ft.

APPLICABLE TO: 35C3-2-50-2---------Service and Circuit Diagram with Illustrated Parts Breakdown.

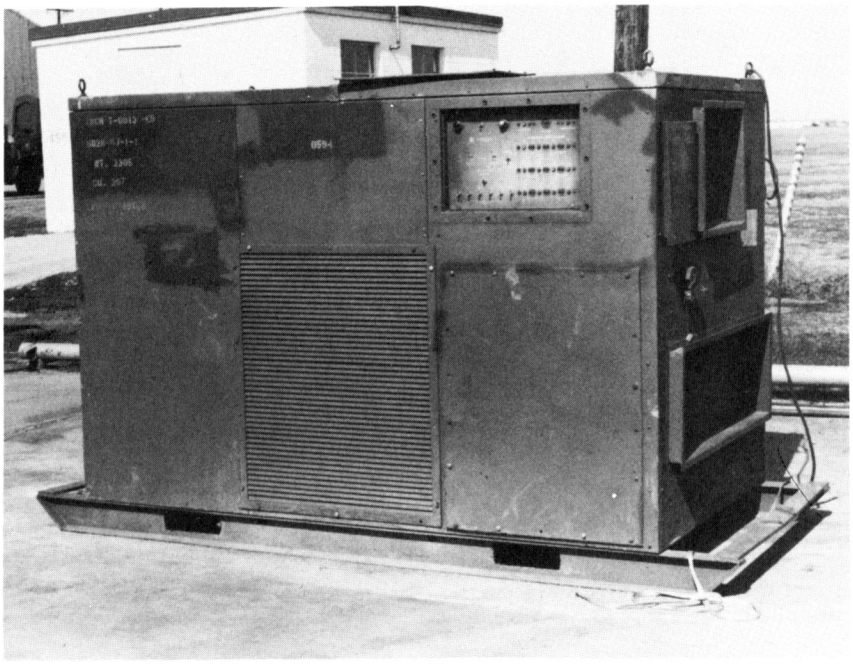


AF/32C
AIR CONDITIONER

DESCRIPTION: The AF/32C (Model BA-1) air conditioner is transportable and skid mounted. The unit uses two flexible, canvas-covered flex-wire ducts to transmit cooled air and exchange warm air. The unit is used with the S-138 Shelter, the AN/TSC-15 Radio Set, and similar shelters.

CAPABILITY:	24,000 BTU; manual or automatic temperature control.
POWER INPUT:	120 VAC @ 60 CPS, single phase. Running current 28 amps, starting current approximately 97 amps for approximately 3 seconds.
SITING CRITERIA:	The unit is sealed for all weather, but should be located in the shade for best operation.
ERECTION TIME:	Approximately one hour.

MAJOR COMPONENTS:	NOMENCLATURE	COMMON NAME
	70580-C	Motor Assembly.
	2S19-1	Compressor Assembly.
MANUFACTURER:	Thermo-King.	
COST:	$1,470.00.	
WEIGHT:	375 lbs.	
CUBE:	27 cu. ft.	
APPLICABLE TOs:	35E9-25-3	O/H Instructions.
	35E9-25-4	Illustrated Parts Breakdown.



MIL-63
AIR CONDITIONER

DESCRIPTION: The MIL-63 Air Conditioner is a self-contained unit suitable for outside operation in warm or cold climates. The unit will operate satisfactorily under extremes of weather and climate, in temperatures ranging from -65°F to +120°F, and will withstand storage temperatures ranging from -80°F to +160°F for protracted periods of time. A metal skid is provided which forms a base for the air conditioner when mounted outside. Four lifting eyes, one on each top corner, are provided to assist in installation. Flanged duct connections are provided on the unit for connection to the conditioned air supply and return air duct. The MIL-63 will provide conditioned air for any type of structure or enclosure, operating singularly or in multiples. Control Box required for multiple operation. This unit is usually used with S-80 or S-82 shelters.

CAPABILITY: 90,000 BTU/H. Automatic temperature control after controls are set. The MIL-63 is capable of cooling up to 20,000 cubic feet, with maximum outside temperature of +120°F. (Depending on type of building construction and internal heat generation)

ERECTION TIME:	1 hour.
MAJOR COMPONENTS:	Self contained unit.
MANUFACTURER:	Ellis & Watts
COST:	Approx. $10,000.00
WEIGHT:	MIL-63 - 2507lbs. Ducting - 155lbs.
APPLICABLE TOs:	Ellis & Watts Commercial Manual.

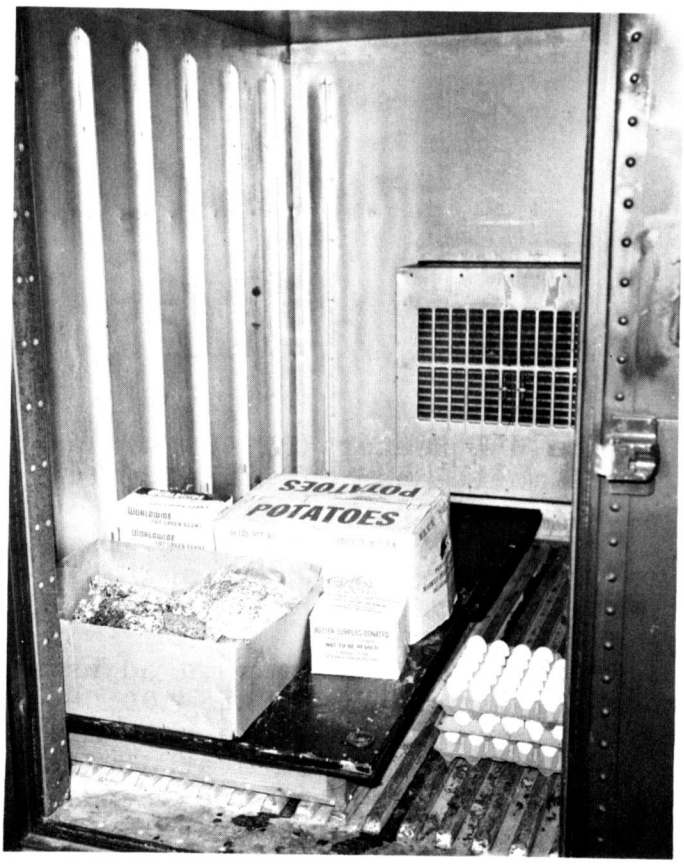
150 AL
FIELD REFRIGERATOR

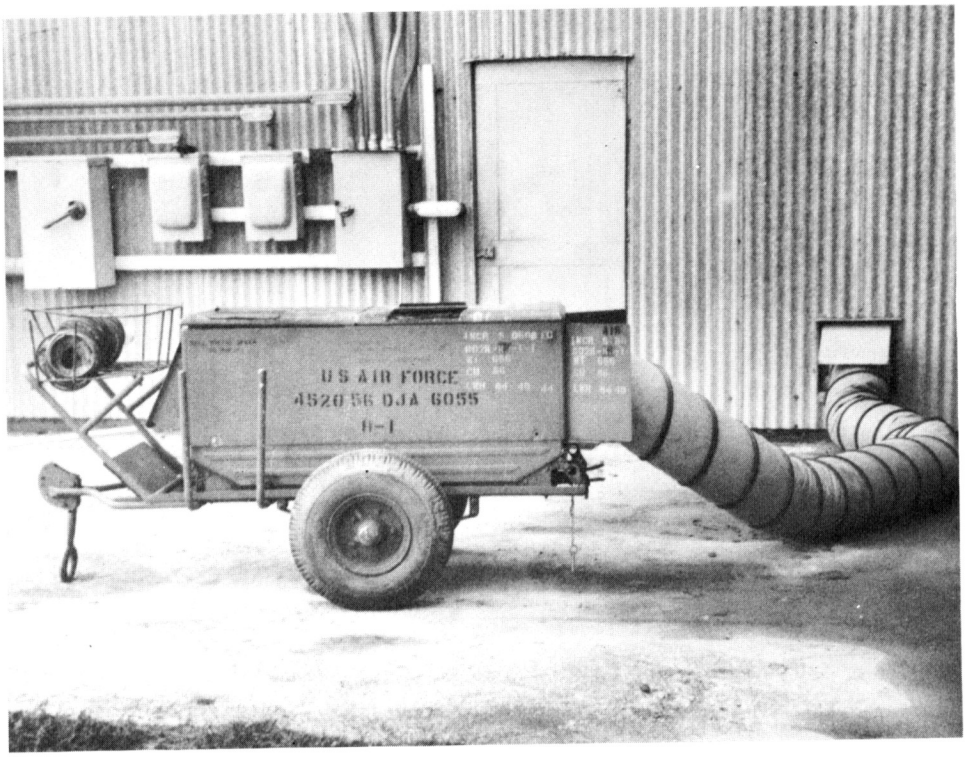
DESCRIPTION: The Model 150 AL Field Refrigerator is a skid mounted, 150 cubic foot, walk-in gasoline powered refrigerator. The unit is designed to maintain a selected temperature between -10°F and +70°F in an ambient temperature of 130°F. The interior is aluminum finished and is equipped with lighting. The unit employs the 6000 BTU/Hr. cooling. The box is equipped with lifting eyes on the top four corners to facilitate movement.

CAPABILITY:	6000 BTU/Hr.
ERECTION TIME:	½ hour with wrecker.
MAJOR COMPONENTS:	Main box assembly; condensing unit.
MANUFACTURER:	Esco Cabinet Co., Inc.
COST:	$1,297.00
WEIGHT:	1,905 lbs.

CUBE: 370.5 cu. ft.

APPLICABLE TOs: Commercial Manual:
Esco Cabinet Co., Inc.
Keco Industries, Inc.





H-1 HEATER

DESCRIPTION: The H-1 Heater (BT-400 series) is a portable, gas-burning type mounted on a trailer. It is used with one or more flexible ducts connected to the hot air discharge end. Heat output is adjustable and the equipment will withstand adverse environmental conditions. It is used for heating various types of shelters.

CAPABILITY: Will deliver an adjustable heat output from 40,000 to 400,000 BTU/hr. Delivery rate is adjustable from 435 to 815 CFM; will operate at altitudes up to 6,000 ft and can withstand rain, mildew and salt spray.

POWER INPUT: Single cylinder, four cycle, air cooled gasoline engine which develops 2¼ hp at 3450 rpm.

SITING CRITERIA: No particular siting criteria, except: if located inside shelter or tent, it must have exhaust system to outside.

ERECTION TIME: Approximately 30 minutes, which includes ducting into shelter or tent.

MAJOR COMPONENTS:

NOMENCLATURE	COMMON NAME
BT400-1	Gasoline Engine Prime Motor
No Number	Heat Generator
TCA472A	Cabinet Assembly
TOA432A	Fuel Control
BBT102	Trailer Assembly (Earlier Model)
MA-1	Trailer Assembly

MANUFACTURER: Herman Nelson Division, American Air Filter Company, Inc.

COST: $2,000.00.

WEIGHT: 555 lbs.

CUBE: 63.2 cu. ft. for BB102 Trailer mounted BT400 Heater; 67.2 cu. ft. for MA-1 trailer mounted BT400 Heater.

APPLICABLE TOs:

35E7-2-3-1	Operation and Service Manual
35E7-2-3-3	Overhaul Manual
35E7-2-3-4	Illustrated Parts Breakdown.

250 GAL COLLAPSIBLE FUEL TANK

DESCRIPTION: This is a plastic and rubber combination fuel tank which collapses into a very small compact unit for storage. There is no restriction as to the type of fuel which can be put into the tank, but it must be completely purged before another type of fuel can be stored. The unit has a metal neck and screw cap and can be filled or emptied by either using a manual hand pump or an electric pump. The pump normally used is the electric driven demand-type, D-16. The fuel tank may be transported in any size trailer from ¼-ton on up or in the truck bed (3/4 ton minimum). Fuel carried within the tank must be adjusted depending on the cargo space available within the carrier.

CAPACITY: 250 U.S. gallons.

FUEL DELIVERY METHOD: Hand Operated and electrically operated pumps may be used or the tank can be located to permit gravity feed operations.

SITING CRITERIA:	Must be protected from sharp objects.
ERECTION TIME:	About 10 minutes. Filling time depends on the method used.
MANUFACTURER:	Goodyear Company, Inflated Products.
COST:	$483.00.
WEIGHT:	Empty: 90 lbs; Full: Approximately 1840 lbs.
CUBE:	Empty: 4.6 cu. ft.; Full: 186 cu. ft.
APPLICABLE TO:	Manufacturer's instructions.

S-80
OPERATIONS SHELTER

DESCRIPTION: The shelter is a canvas covered frame building used as a Radar Operations shelter in the TACC, CRC, and CRP facilities. Flooring consists of 32 floor panels held together by metal tie plates. Nine semi-circular wooden arches, braced by horizontal purlins, make up the main framework. Double doors at either end of the shelter provide access to the inside, and both entrances are protected by canvas vestibules. The shelter is equipped with openings for two exhaust fans and two shelter heaters.

STRUCTURAL DATA:

Height: 20'; Vestibule 6'6"
Length: 32' plus Vestibule 3' ea.
Width: 28'
Usable floor space: Aprox. 800 sq. ft.

MATERIAL:

The fabric is made of a waterproof, fire resistant canvas and plastic combination. There is fiberglass insulation, 1½ inches thick, sandwiched between the two layers of fabric. The fabric is issued as two end blanket assemblies and eight roof blankets.

HEATING AND AIR CONDITIONING:	An output of approximately 180,000 BTU per hour is necessary to heat or cool this shelter with equipment in operation.
CARE:	Shelter parts (excluding arches) are stored and transported in the floor panels. Seasonal inspection should be made of the shelters wooden parts and for wearing and corrosion of metal parts. A shelter repair kit is provided for canvas and framing parts.
ERECTION TIME:	Maximum: 8 hours; Favorable Conditions: 4 hours.
PERSONNEL REQUIRED:	Ten (10) men.
COST:	$12,099.00
WEIGHT:	8663 lbs.
CUBE:	1162.3 cu. ft.
APPLICABLE TOs:	35E4-35-11----------Service and Erection 35E4-35-4----------Parts Catalog

M-1948 SHELTER

DESCRIPTION: The M-1948 shelter is a canvas covered frame building designed to be used as a general purpose tent or as a personnel shelter. This type shelter is used as office space for CRC/CRP/TACC facilities and often as a Operations Shelter for the FACP, when erected semi-permanently. A door is provided at each end of the shelter, with a vestibule that may be attached to either end of the shelter.

STRUCTURAL DATA:

Height: Tent 8'; vestibule 6'6"
Length: Tent 16'; vestibule 3'10"
Floor Space: Tent 256 s. ft.; vestibule 11 sq. ft.
Width: Tent 16'; vestibule 3'1"

MATERIAL:

Fabric is of 14.5 ounce cotton duck. There is fiberglass insulation, 1 inch thick, sandwiched between two layers of fabric. The fabric is issued in blanket assemblies, two blanket end assemblies, and four blanket roof assemblies. The doors are made of plywood with fiberglass insulation and each has a door latch.

HEATING:

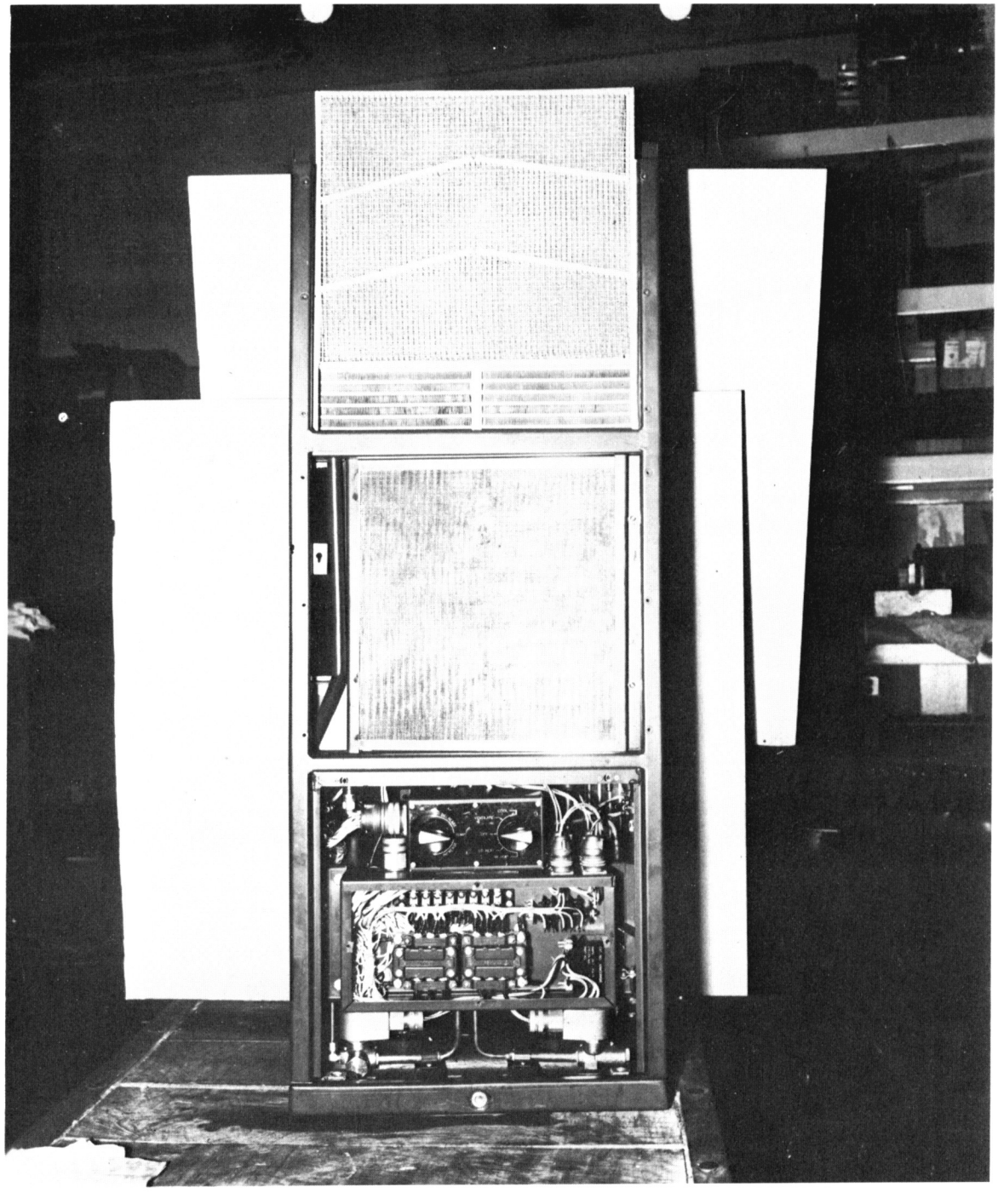
The shelter can be heated by one or two arctic stoves.

A/E 32C-17
ENVIRONMENTAL CONTROL UNIT

DESCRIPTION: The A/E 32C-17 is designed to provide ventilation, cooling, heating, pressurization, filtering, and dehumidification to meet electronics and personnel environmental control requirements. This unit is used in support of the S-376/G.

CAPABILITIES:	18,000 BTU/HR cooling; manual or automatic temperature control.
POWER INPUT:	208 VAC, 60/50 Hz, 3-phase, 52 amps.
SITING CRITERIA:	The unit is sealed for all weather, but should be located in the shade for best operation.
ERECTION TIME:	N/A
MAJOR COMPONENTS:	Self contained.
MANUFACTURER:	Keco Industries and Trane Company
COST:	$2,276.00
WEIGHT:	450 pounds
CUBE:	N/A
APPLICABLE TOs:	35E9-117-1

A/e 32C-17 Environmental Control Unit



A/E 32C-17 Environmental Control Unit

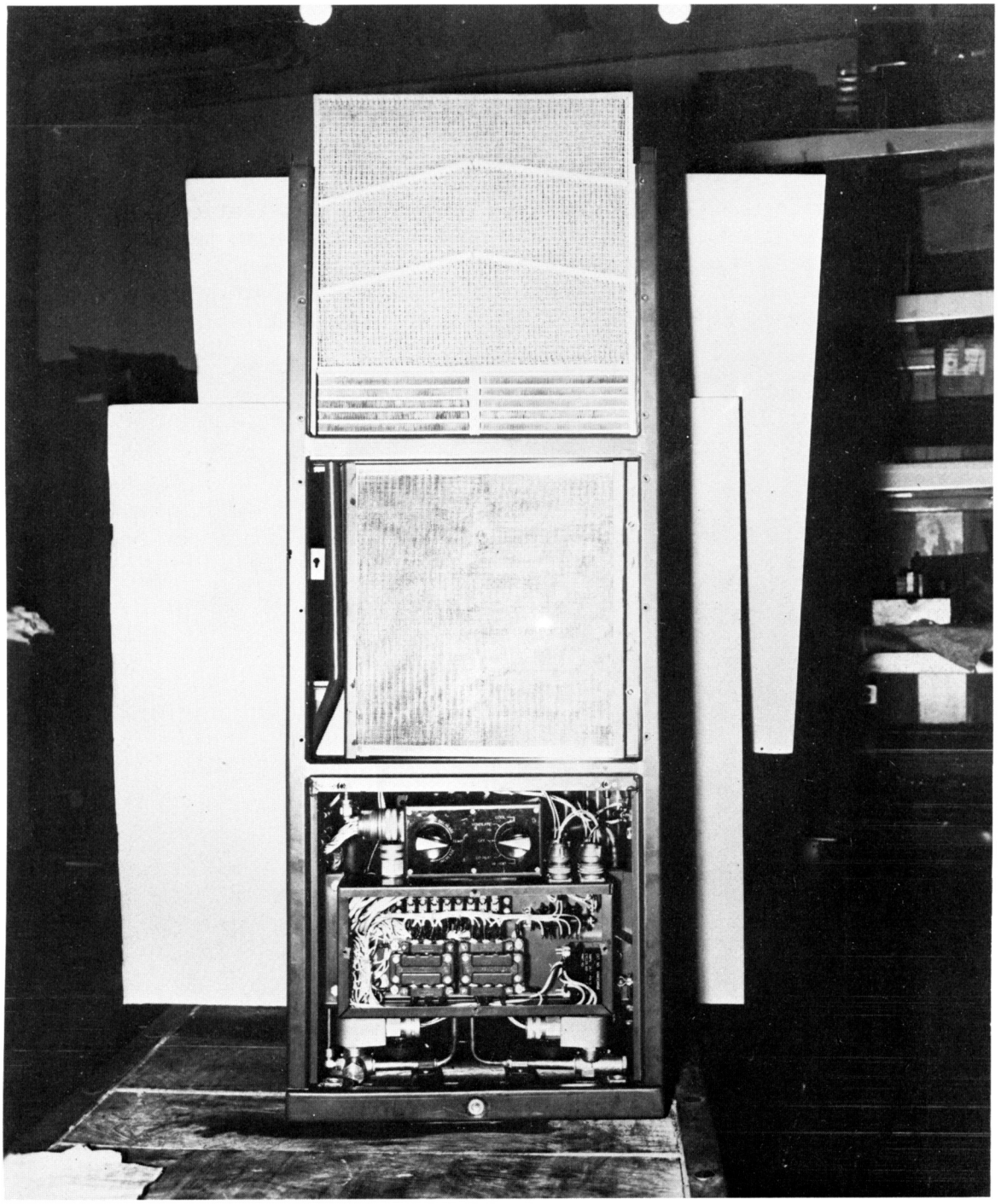
A/E 32C-18

ENVIRONMENTAL CONTROL UNIT

DESCRIPTION: The A/E 32C-18 is designed to provide ventilation, cooling, heating, pressurization, filtering, and dehumidification to meet electronics and personnel environmental control requirements. This unit is used in support of the S-376/G.

CAPABILITIES:	18,000 BTU/HR cooling; manual or automatic temperature control.
POWER INPUT:	208 VAC, 400 Hz, 3-phase, 21 amps.
SITING CRITERIA:	The unit is sealed for all weather, but should be located in the shade for best operation.
ERECTION TIME:	N/A
MAJOR COMPONENTS:	Self contained.
MANUFACTURER:	Keco Industries and American Air Filter.
COST:	$2,462.00
WEIGHT:	200 pounds
CUBE:	N/A
APPLICABLE TOs:	35E9-118-1

A/E 32C-18 Environmental Control Unit



A/E 32C-18 Environmental Control Unit

A/E 32C-24

ENVIRONMENTAL CONTROL UNIT

DESCRIPTION: The A/E 32C-24 is designed to provide ventilation, cooling, heating, pressurization, filtering, and dehumidification to meet electronics and personnel environmental control requirements. This unit is mounted on the pallet assembly and supports the following equipment: AN/TSC-62, AN/TGC-27, AN/TSW-7, AN/TSC-60(V)-1, AN/TPN-19.

CAPABILITIES:	36,000 BTU/HR cooling; manual or automatic temperature control.
POWER INPUT:	32 amps.
SITING CRITERIA:	The unit is sealed for all weather, but should be located in the shade for best operation.
ERECTION TIME:	N/A
MAJOR COMPONENTS:	Self contained.
MANUFACTURER:	Keco Industries
COST:	$3,198.00
WEIGHT:	450 pounds
CUBE:	N/A
APPLICABLE TOs:	35E9-102-1

A/E 32C-24 Environmental Control Unit

A/E 32C-25

ENVIRONMENTAL CONTROL UNIT

DESCRIPTION: The A/E 32C-25 is designed to provide ventilation, cooling, heating, pressurization, filtering, and dehumidification to meet electronics and personnel environmental control requirements. This unit is mounted on the pallet assembly and supports the following equipment: AN/TSC-62, AN/TGC-27, AN/TSC-60(V)-1, AN/TGC-26, AN/TGC-28.

CAPABILITIES:	36,000 BTU/HR cooling; manual or automatic temperature control.
POWER INPUT:	208 VAC, 400 Hz, 3-phase, 32 amps.
SITING CRITERIA:	The unit is sealed for all weather, but should be located in the shade for best operation.
ERECTION TIME:	N/A
MAJOR COMPONENTS:	Self contained.
MANUFACTURER:	American Air Filter Trane Company
COST:	$3,489.00
WEIGHT:	450 pounds
CUBE:	N/A
APPLICABLE TOs:	35E9-102-1

A/E 32C-25 Environmental Control Unit

A/E 32C-27

ENVIRONMENTAL CONTROL UNIT

DESCRIPTION: The A/E 32C-27 is designed to provide ventilation, cooling, heating, pressurization, filtering, and dehumidification to meet electronics and personnel environmental control requirements. This unit is mounted on the pallet assembly and supports the following equipment. AN/TSQ-91(V), AN/TSQ-92(V), AN/TSQ-93(V).

CAPABILITIES:	54,000 BTU/HR cooling; manual or automatic temperature control.
POWER INPUT:	208 VAC, 400 Hz, 3-phase, 53 amps
SITING CRITERIA:	The unit is sealed for all weather, but should be located in the shade for best operation.
ERECTION TIME:	N/A
MAJOR COMPONENTS:	Self contained
MANUFACTURER:	Keco Industries
COST:	$4,271.00
WEIGHT:	565 pounds
CUBE:	N/A
APPLICABLE TOs:	35E9-140-1

A/E 32C-27 Environmental Control Unit

WILLIAM W. MOMYER, General, USAF
Commander

JOSEPH F. MISENKO, Colonel, USAF
Director of Administration

Summary of Revised, Deleted, or Added Material

This publication provides reference for new 407L facilities and equipment which have been and will be introduced into the Tactical Air Control System during 1971 and 1972.

TOT CYS	NO CYS	
5		USAF/XOOSV
4	2	NGB/DO
	2	DC
1		State AGs: AL, CT, GA, IA, IL, MA, MD, MI, MO, NY, OR, OH, PA, TN and WA
15	5	PACAF/DOOC
	10	7AF/DO
5		USAFE/DOOC
5		ATC/DO
5		ADC/DOTE
14	10	AFSC/DO
	2	4 Mbl Comm Gp
	2	5 Mbl Comm Gp
2		USAFSS/XR
10		Armed Forces Staff College/AFSC-U461, Norfold VA 23511
5		AFSC (ESD/TYS)
25		Tech Tng Cen/407L Keesler AFB MS 39534
25		Tech Tng Cen/ST-S Sheppard AFB TX 76311