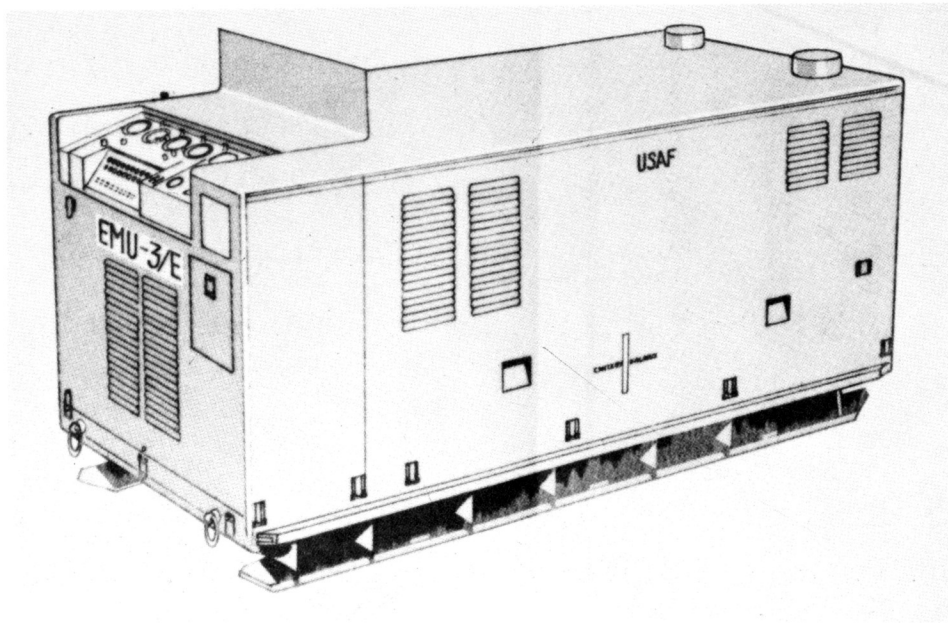


Chapter 1

AEROSPACE GROUND EQUIPMENT



EMU-3/E GENERATOR SET

DESCRIPTION: The EMU-3/E generator set is a light weight, skid mounted, air transportable unit with the ability to allow external heating during cold weather operation. The generator is driven by a Continental 4 cylinder, horizontally opposed engine (air cooled), which develops 110 hp at 2400 rpm. The entire unit is enclosed in a two piece, removable cover assembly containing access doors for normal operational service and adjustment. The 30 KW alternator is self-cooled, with a brushless permanent magnet exciter as an integral part of the alternator assembly. The generator set operates on aviation gasoline.

CAPABILITY:

The set will provide continuous power in a single unit configuration or may be operated in parallel with a companion generator set.

POWER INPUT:

The EMU-3/E employs a hydraulic starter, and has no requirement for external power.

POWER OUTPUT:

120/208 VAC at 60 cps, 3 phase, 30 KW

SITING CRITERIA: Level ground within 25 feet of an external fuel supply.

PERSONNEL REQUIRED: One each 42153

<u>MAJOR COMPONENTS:</u>	<u>NOMENCLATURE</u>	<u>COMMON NAME</u>
	3331002.....	Generator Assembly
	PE-150-10.....	Engine Assembly
	CS-36.....	Voltage Regulator

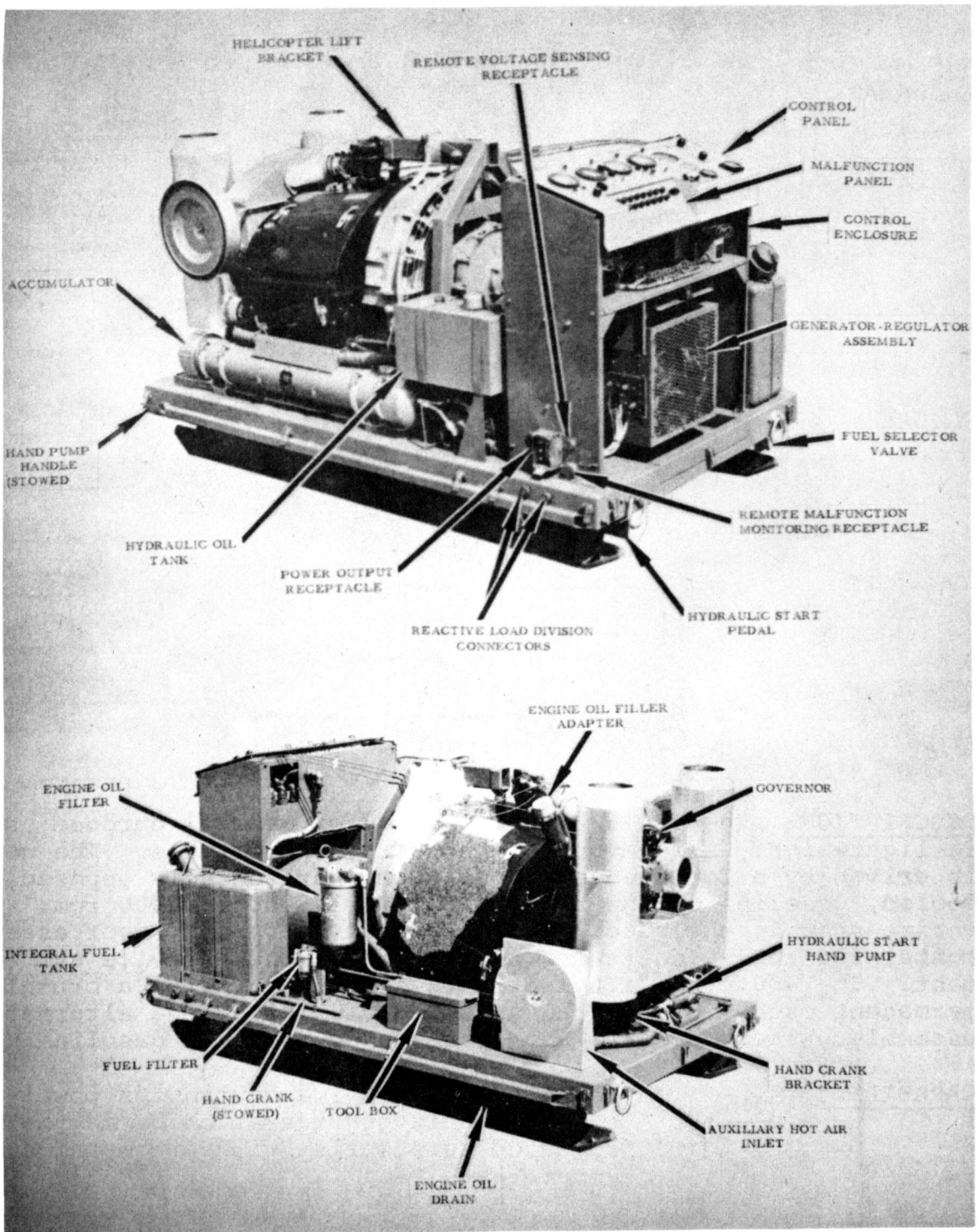
MANUFACTURER: Kurz and Root, Pacific Division

COST: \$8,237.00

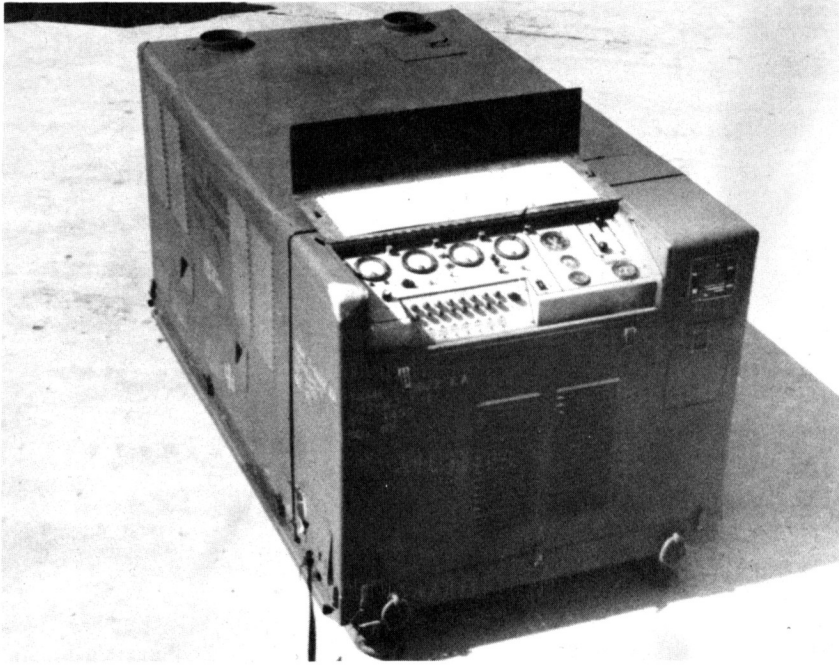
WEIGHT: 1800 lbs.

CUBE: 112 cu. ft.

<u>APPLICABLE TOs:</u>	
35C2-3-357-1.....	Operation and Service Instructions
35C2-3-357-3.....	Overhaul Instructions
35C2-3-357-4.....	Illustrated Parts Breakdown



EMU-3/E Generator Set



EMU-6/E GENERATOR SET

DESCRIPTION: The EMU-6/E is designed for general purpose use. It is lightweight, skid mounted, and air transportable. The generator is driven by a Continental 6 cylinder, horizontally opposed, air cooled, gasoline engine that develops 175 hp at 2400 rpm. The entire unit is enclosed in a two-piece, removable cover assembly containing access doors for normal operational service and adjustment. The 400 cycle alternator is self-cooled with a brushless permanent magnet exciter as an integral part of the alternator assembly. The generator set operates on aviation gasoline (AV-GAS)

CAPABILITY: The set will provide continuous power in a single unit configuration or may be operated in parallel with a companion generator set.

POWER INPUT: This equipment employs a hydraulic starter and has no requirement for external power.

POWER OUTPUT: 120/208 VAC at 400 cps, 3 phase, 4 wire, 60 KW.

SITING CRITERIA: Must be sited on no greater than 15° grade within 25 feet of an external fuel supply.

ERECTION TIME: 30 minutes

PERSONNEL REQUIRED: One each 42153

MAJOR COMPONENTS:

<u>NOMENCLATURE</u>	<u>COMMON NAME</u>
CS-39.....	Voltage Regulator
PE-150-10.....	Engine Assembly
3331007.....	Generator Assembly

MANUFACTURER: Kurz and Root, Pacific Division

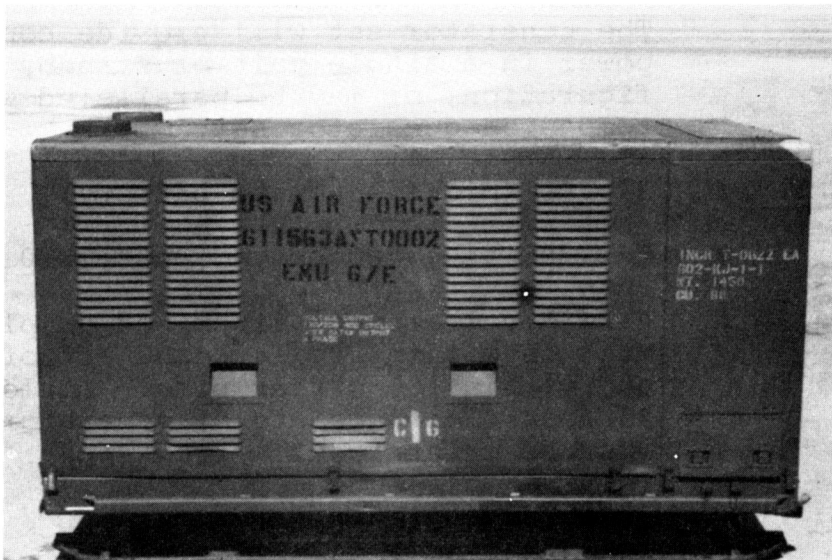
COST: \$9,200.00

WEIGHT: 1600 lbs.

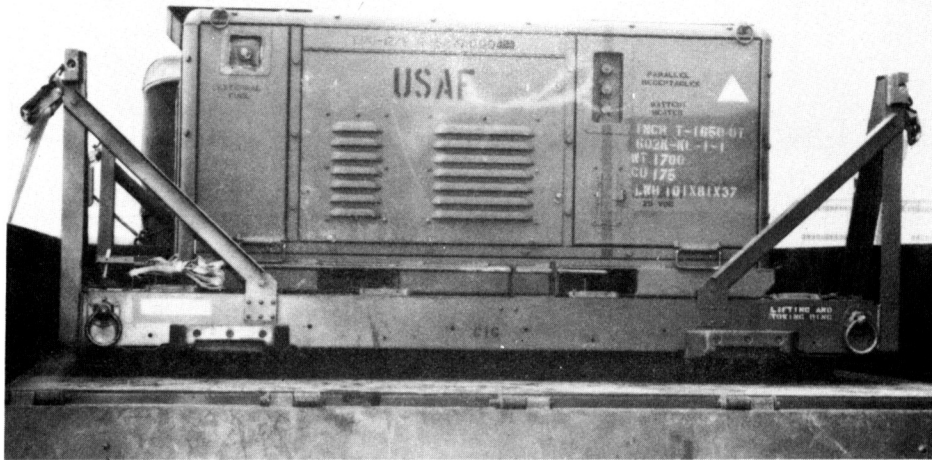
CUBE: 112 cu. ft.

APPLICABLE TOs:

35C2-3-360-1.....	Operation and Service Instructions
35C2-3-360-3.....	Overhaul Instructions
35C2-3-360-4.....	Illustrated Parts Breakdown



EMU-6/E Generator Set



EMU-12/E GENERATOR SET

DESCRIPTION: The EMU-12/E is a compact skid mounted, portable, self contained source of electrical power. The generator is driven by a gas turbine engine which is enclosed in a light weight aluminum enclosure. The set may be operated on JP4, JP5, kerosene, or diesel fuel.

CAPABILITIES: The generator set will provide continuous power in a single unit or standby configuration, or may be paralleled with a companion generator set.

POWER REQUIREMENTS: 24 VDC (Nickel-cadmium battery)

POWER OUTPUT: 120/208 VAC, 400 cps, 3 phase, 20 KW.

SITING CRITERIA: Firm level ground, truck bed or platform. Must be within 20° fore and aft of level and within 10° either side. At least 25 feet clearance aft of generator set must be maintained.

ERECTION TIME: 30 minutes

PERSONNEL REQUIREMENTS: One each 42153

<u>MAJOR COMPONENTS:</u>	<u>NOMENCLATURE</u>	<u>COMMON NAME</u>
	GTP-30-67.....	Engine, Gas Turbine
	28B135-5C.....	Generator

MANUFACTURER: Consolidated Diesel

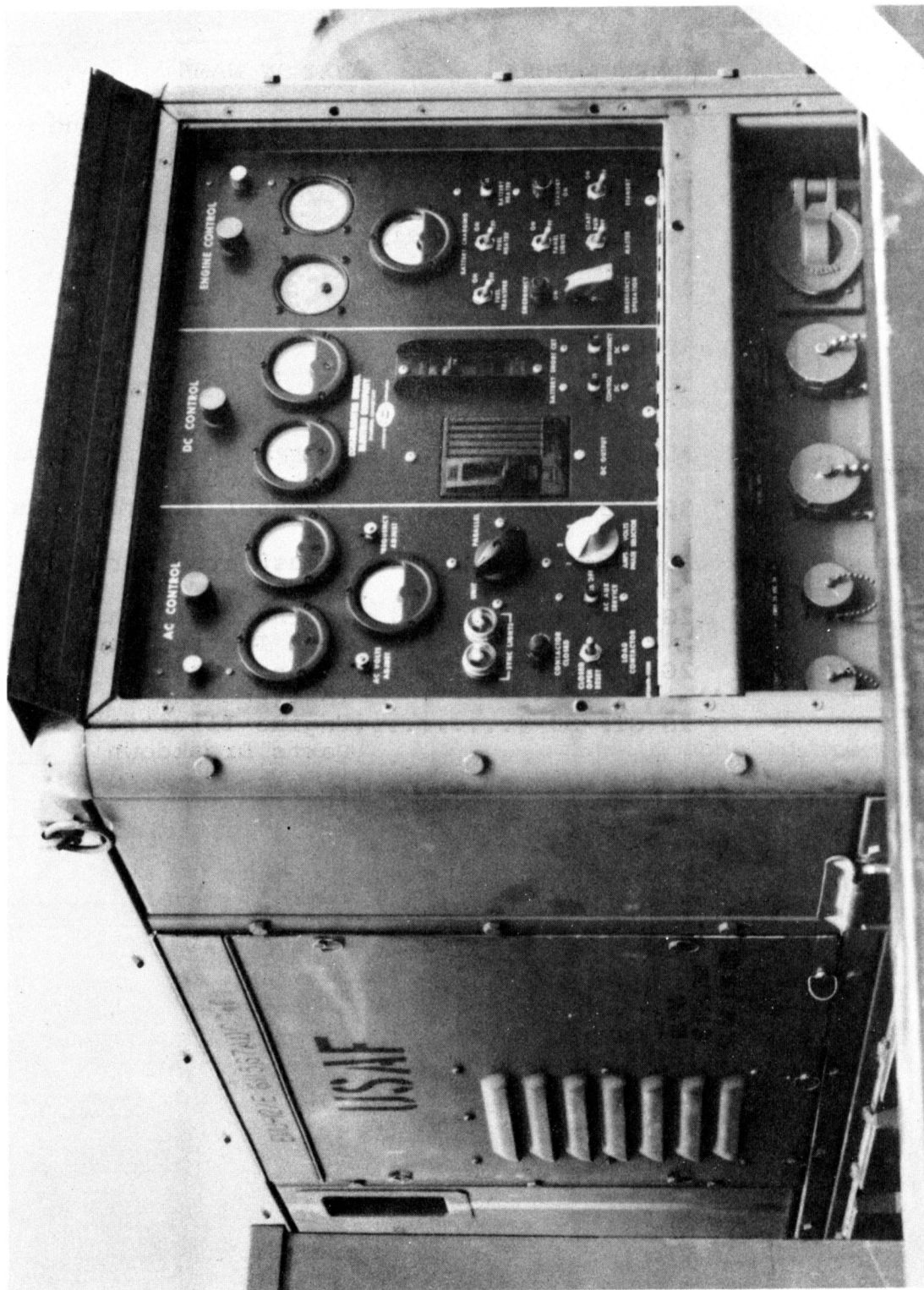
COST: \$13,497.00

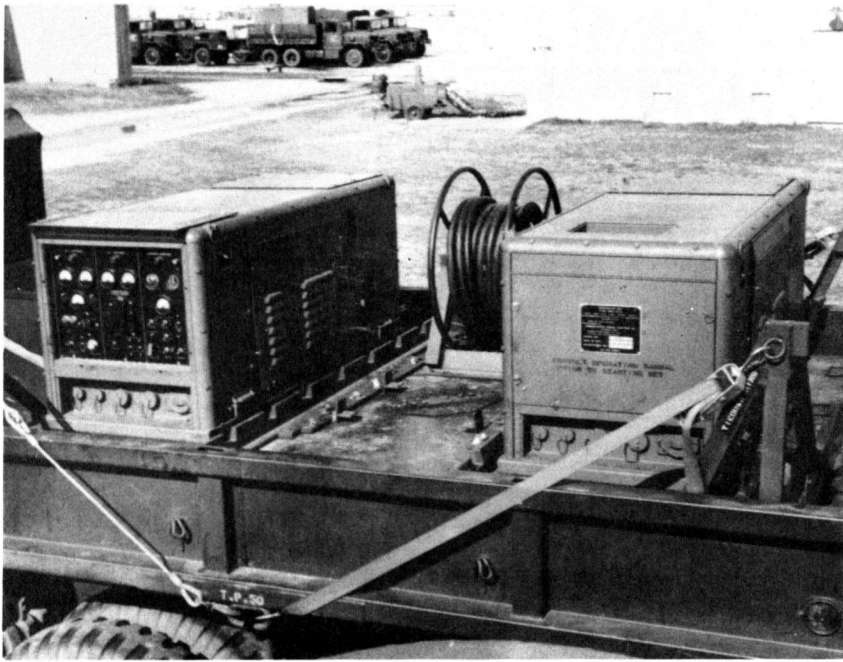
WEIGHT: 490 lbs.

CUBE: 25 cu. ft.

APPLICABLE TOs:

35C2-3-414-1.....	Operation and Service Instructions
35C2-3-414-3.....	Overhaul Instructions
35C2-3-414-4.....	Illustrated Parts Breakdown
2G-GTP-30-6.....	Engine Field Mainten- ance Instructions
2G-GTP-30-3.....	Engine Overhaul Instructions
2G-GTP-30-4.....	Engine Illustrated Parts Breakdown





MX-7828/T POWER PLANT

DESCRIPTION: The MX-7828T power plant consists of two EMU-12/E generator sets mounted on a pallet.

CAPABILITIES: The installed generator sets may be operated as a single unit, in a standby configuration, or they may be operated in parallel.

POWER REQUIREMENTS: Two 24 VDC Nickle-cadmium batteries in each generator set.

POWER OUTPUT: 120/208 VAC, 400 cps, 3 phase, 20 KW or 40 KW when operating in parallel.

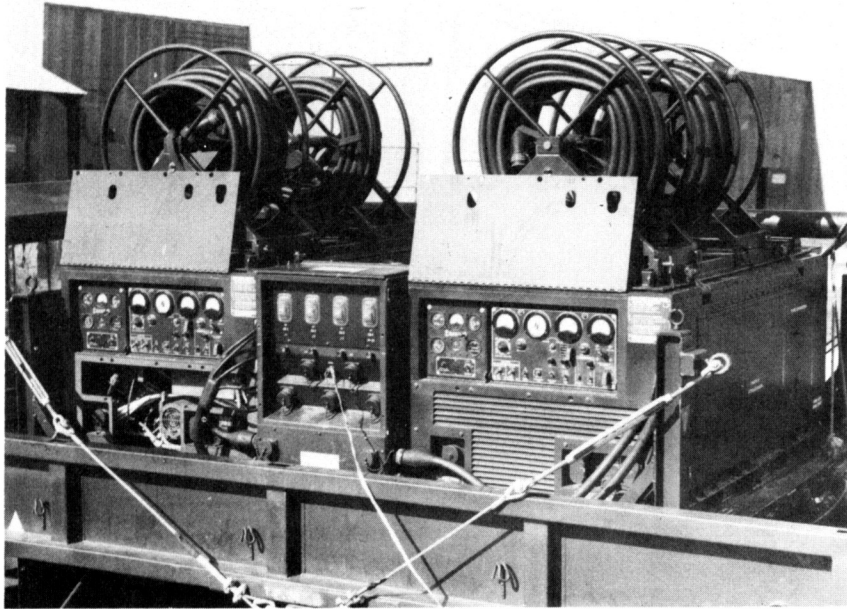
SITING CRITERIA: Firm, level ground, truck bed, or platform. A clearance of 25 feet aft of the generator set must be maintained.

ERECTION TIME: 30 minutes

PERSONNEL REQMTS: One each 42153

<u>MAJOR COMPONENTS:</u>	<u>NOMENCLATURE</u>	<u>COMMON NAME</u>
	EMU-12/E (two)	Generator Set Pallet

MANUFACTURER: Cardion Electronics, Inc.
COST: \$30,000.00
WEIGHT: 1700 lbs.
CUBE: 175 cu. ft.
APPLICABLE TOs: 35C2-3-414-1.....Operation and Service
35C2-3-414-3.....Overhaul Instructions
35C2-3-414-4.....Illustrated Parts
Breakdown
2G-GTP-30-6.....Engine Field Mainten-
ance Instructions
2G-GTP-30-3.....Engine Overhaul
Instructions
2G-GTP-30-4.....Engine Illustrated
Parts Breakdown



PU-705/G POWER PLANT

DESCRIPTION: The PU 705/G Power Unit consists of two EMU 14/E generator sets mounted on a pallet and connected to a power distribution panel. This gas turbine engine generator set is a lightweight compact source of AC power.

CAPABILITIES:

Provides continuous AC power in a single unit configuration. May be connected in an automatic standby start, or in a parallel configuration with a companion generator set.

POWER INPUT:

Two 12V batteries connected in series.

POWER OUTPUT:

120/208 VAC or 240/416 VAC, 400Hz, 60 kw;
and 70 amps of 28 VDC power.

SITING CRITERIA:

Firm and reasonably level surface with at least 30 inches of unobstructed space at the front end and at least four feet of clear space at the rear. The unit must be within 25 feet and no higher than twelve feet above, the auxiliary fuel source.

ERECTION TIME: 30 minutes

PERSONNEL REQUIRED: Two each 42153

<u>MAJOR COMPONENTS:</u>	<u>NOMENCLATURE</u>	<u>COMMON NAME</u>
	GTP 70-52.....	Engine Turbine generator

MANUFACTURER: AiResearch

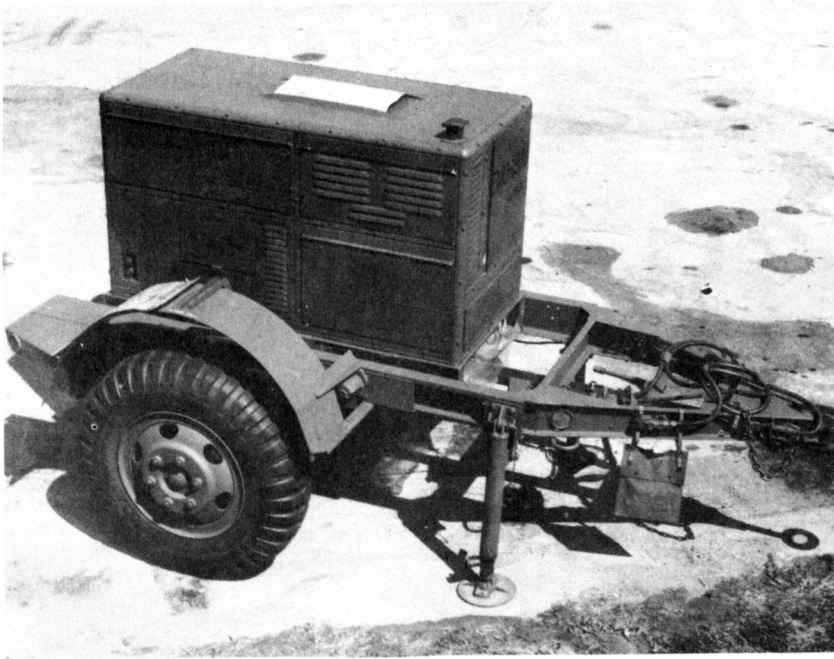
COST: \$39,803.00

WEIGHT: Approx. 2200 lbs.

CUBE: Approx 110 cu. ft.

APPLICABLE TOs:

35C2-3-415-1-----	Operation and Service Istr.
35C2-3-415-4-----	Illustrated Pts. Breakdown.
2G-GTP 70-26-----	Field Maintenance (Engine)
2G-GTP 70-23-----	Overhaul Instr.
2G-GTP 70-24-----	Illustrated Pts Breakdown.



EMU-19/U GENERATOR SET

DESCRIPTION: The EMU-19/U generator set is a portable, trailer mounted, fully enclosed, air cooled diesel driven power unit. It has incorporated a complete winterization system.

CAPABILITY: The EMU-19/U provides continuous electrical power in single unit operation, and may be connected in a standby configuration or operated in parallel with companion generator sets.

POWER INPUT: Two 12V batteries in series to furnish 24 VDC for starting and control.

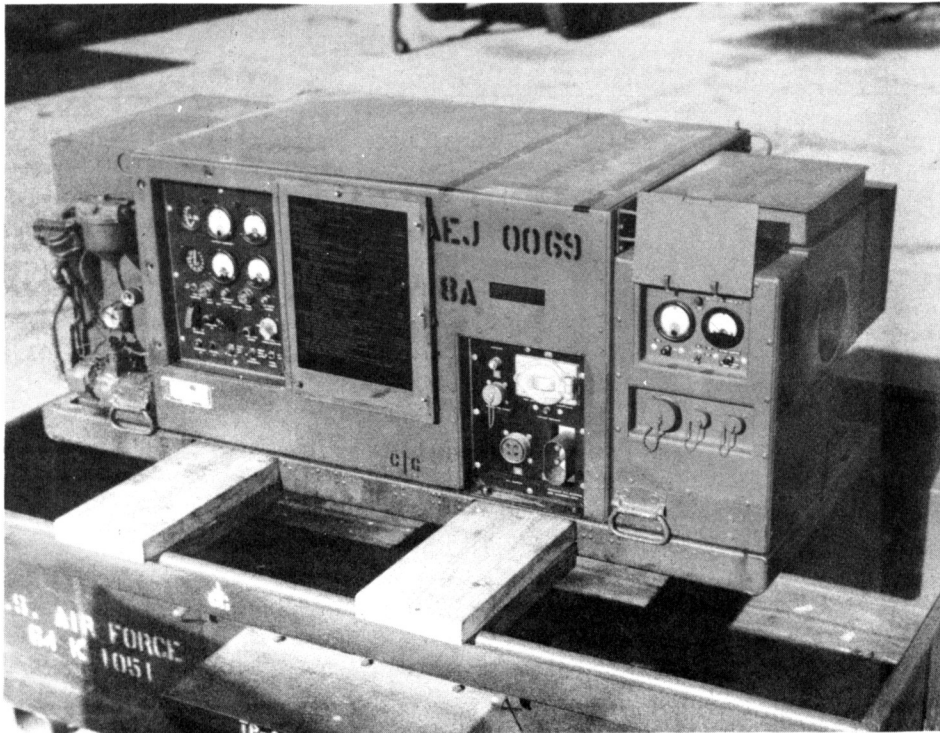
POWER OUTPUT: 120/208 VAC, 3 phase, 4 wire, 400 cps, 10 KW; reconnectable to 120 VAC, single phase, 2 wire and 120/240 VAC, single phase, 3 wire.

SITING CRITERIA: Level and firm ground (within 30° grade).

ERECTION TIME: 20 minutes with two men.

PERSONNEL REQUIRED: Two each 42153

<u>MAJOR COMPONENTS:</u>	<u>NOMENCLATURE</u>	<u>COMMON NAME</u>
	08103-0100-02.....	Engine, Diesel
	13900.....	Generator
<u>MANUFACTURER:</u>	Consolidated Diesel Electric Co.	
<u>COST:</u>	\$5,000.00	
<u>WEIGHT:</u>	3,063 lbs.	
<u>CUBE:</u>	577 cu. ft.	
<u>APPLICABLE TOs:</u>	35C2-3-418-1 35C2-3-418-3 35C2-3-418-4	



GTGE-30-18 (A) GENERATOR SET

DESCRIPTION: The GTGE-30-18A generator set is a compact, skid mounted, portable, self-contained source of electrical power. The generator is driven by a turbine engine and is enclosed in lightweight aluminum housing. The set may be operated on either JP4, JP5, kerosene or diesel fuel.

CAPABILITIES: The generator set will supply continuous power in single unit or standby configuration. The set may also be operated in parallel with a companion generator set.

POWER OUTPUT: 120/208 VAC at 400 hz, 3 phase, 20 KW.

POWER REQMTS: 28 VDC (nickel-cadmium batteries).

SITING CRITERIA: Firm, hard ground, truck bed, or platform within 20° fore and aft of level and within 10° of either side.

ERECTION TIME: 30 minutes

PERSONNEL REQUIRED: One each 42153

<u>MAJOR COMPONENTS:</u>	<u>NOMENCLATURE</u>	<u>COMMON NAME</u>
	28B135-5-C.....	Generator Assembly
	GTP-30-67.....	Engine Assembly, Gas Turbine
	692945.....	Battery (24 VDC)

MANUFACTURER: Air Research

COST: \$14,572.00

WEIGHT: 400 lbs.

CUBE: 20 cu. ft.

APPLICABLE TOs:

35C2-3-392-1.....	Operation and Service
35C2-3-392-3.....	Overhaul Instructions
35C2-3-392-4.....	Illustrated Parts Breakdown
2G-GTP30-6.....	Field Maintenance (Engine)
2G-GTP30-3.....	Overhaul Instructions (Engine)
2G-GTP30-4.....	Illustrated Parts Breakdown (Engine)



MB-5 GENERATOR SET

DESCRIPTION: The MB-5 Generator Set is a self-contained, trailer-mounted, air transportable power facility. A Hercules DIX-4D Diesel Engine is directly coupled to a generator capable of delivering 10 kilowatts of closely regulated single-phase, 3 wire 120/140 volts, or 2 wire 120 volts, 60 cycle power. This unit has a fuel consumption of 2.0 gph. The recommended towing vehicle is the truck, cargo 2½ ton. General application is for powering the teletype and switchboard vans as well as tent lighting.

CAPABILITIES: Capable of delivering continuous 60 hz electrical power at rated capacity.

POWER INPUT: 24 VAC lead-acid aircraft type batteries.

SITING CRITERIA: Location should be accessible to fuel truck.

ERECTION TIME: 20 minutes.

PERSONNEL REQUIRED: One each 42153

<u>MAJOR COMPONENTS:</u>	<u>NOMENCLATURE</u>	<u>COMMON NAME</u>
	SO6006.....	Engine, diesel
	H1685-74.....	Generator, 10 KW

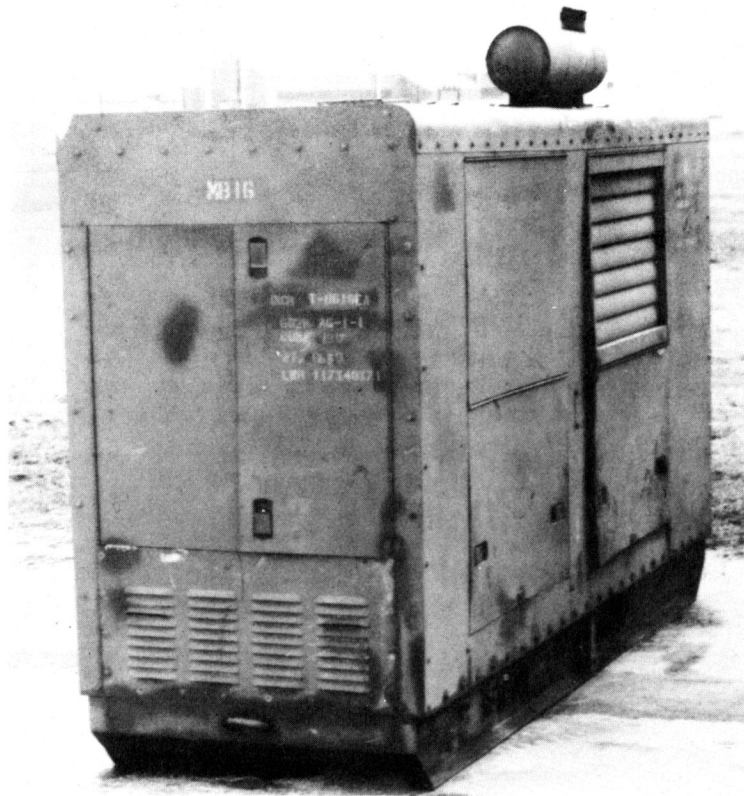
MANUFACTURER: John R. Hollingworth Corp.,
Libbey Welding Co..

COST: \$5,063.00

WEIGHT: 3900 lbs.

CUBE: 450.0 cu. ft.

APPLICABLE TOs: 35C2-3-275-1.....Operators Manual
35C2-3-275-3.....Organizational/
Depot Maintenance
35C2-3-275-4.....Illustrated Parts
Breakdown



MB-16 GENERATOR SET

DESCRIPTION: The MB-16 engine-generator set, which is mounted on a skid base, consists of an engine group, a generator group, a control system, a winterization system, and housing equipment. The engine group consists of a cooling system, a fuel system, an electrical start and protective system, and a battery charging system.

CAPABILITIES: Provides continuous power in a single unit configuration or may be paralleled with a companion generator set. The set may be operated in extreme environmental conditions.

POWER INPUT: Two 12V batteries connected in series.

POWER OUTPUT: 100KW, 60 Hz, 120/208 or 240/416 volts AC; convertible to 75KW, 50 Hz, 110/190 or 220/380 volts AC.

SITING CRITERIA: No more than 15⁰ from level on a hard surface.

ERECTION TIME: 15 minutes.

PERSONNEL REQUIRED: One each 42153

MAJOR COMPONENTS:

NOMENCLATURE

COMMON NAME

NH220.....Engine, Diesel

5SJ4444P21Y4.....Generator

MANUFACTURER:

International Fermont Inc.

COST:

\$7,696.00

WEIGHT:

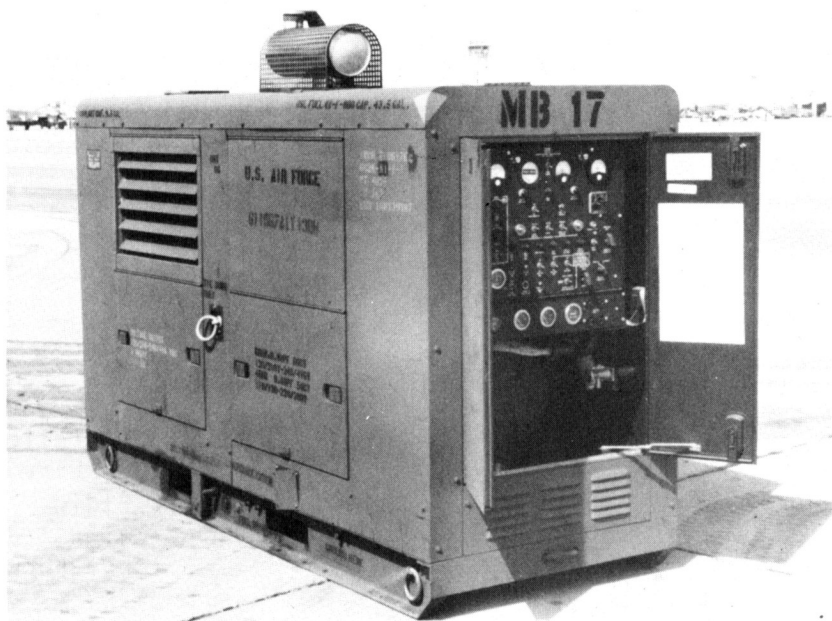
6650 lbs.

CUBE:

210 cu. ft.

APPLICABLE TOs:

35C2-3-340-1-----Operator & Service
35C2-3-340-3-----Overhaul instructions
35C2-3-340-4-----Illustrated Parts
breakdown



MB-17 GENERATOR SET

DESCRIPTION: The MB-17 engine-generator set, which is mounted on a skid base, consists of an engine group, a generator group, a control system, a winterization system, and housing equipment. The engine group consists of a cooling system, a fuel system, an electrical start and protective system, and a battery charging system.

CAPABILITIES: Provides continuous power in a single unit configuration or may be paralleled with a companion generator set. The set may be operated in extreme environmental conditions.

POWER INPUT: Two 12V batteries connected in series.

POWER OUTPUT: 60 KW, 60 Hz, 120/208 or 240/416 VAC; Convertible to 45 KW, 50 Hz, 110/190 or 220/380 VAC.

SITING CRITERIA: No more than 15⁰ from level on a hard surface.

ERECTION TIME: 15 minutes.

PERSONNEL REQUIRED: One each 42153

MAJOR COMPONENTS:

NOMENCLATURE

COMMON NAME

NHC-4.....Engine, Diesel

SSJ4404P21Y5.....Generator

MANUFACTURER:

International Ferment Inc.

COST:

\$6,231.00

WEIGHT:

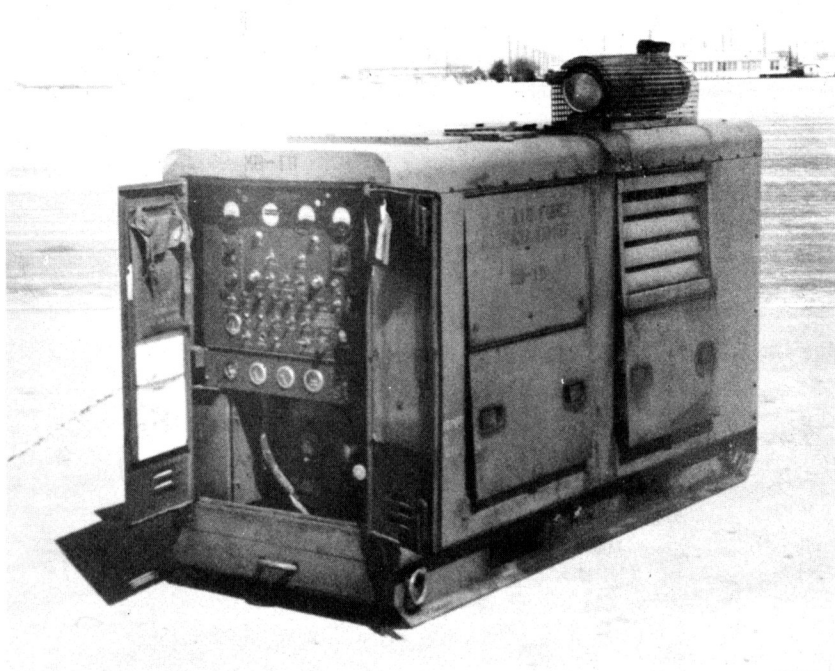
4885 lbs.

CUBE:

148 cu. ft.

APPLICABLE TOs:

35C2-3-341-1.....Operation and
Service Instructions
35C2-3-341-3.....Field Maintenance
35C2-3-341-4.....Illustrated Parts
Breakdown



MB-18 GENERATOR SET

DESCRIPTION: The MB-18 engine generator set, mounted on a skid base, consists of an engine group, a generator group, a control system, a winterization system and housing equipment. The engine group consists of a cooling system, a fuel system, an electrical start and protective system, and a battery charging system.

CAPABILITIES: Provides continuous power in a single unit configuration or may be paralleled with a companion generator set. The set may be operated in extreme environmental conditions.

POWER INPUT: Two 12V batteries connected in series.

POWER OUTPUT: 100 KW, 60 Hz, 120/208 or 240/416 VAC; convertible to 75 KW, 5 Hz, 110/190 or 220/380 VAC.

SITING CRITERIA: No more than 15° from level on a hard surface.

ERECTION TIME: 15 minutes.

PERSONNEL REQUIRED: One each 42153

MAJOR COMPONENTS:

NOMENCLATURE

COMMON NAME

DD298.....Engine, Diesel

5SJ4324P2Y8.....Generator

MANUFACTURER:

International Fermt Inc.

COST:

\$4,947.00

WEIGHT:

2840 lbs.

CUBE:

70 cu. ft.

APPLICABLE TOs:

35C2-3-342-1-----Operation and
Service Instructions
35C2-3-342-3-----Overhaul Instruc-
tions.
35C2-3-342-4-----Illustrated Parts
Breakdown.



PU-632 GENERATOR SET

DESCRIPTION: Self-contained, air-cooled, gasoline engine-driven, electric power unit equipped with rope starter. It provides primary or emergency power within its rated capability for communications equipment (MRC-107) lighting or testing equipment or other electrically powered equipment. Fuel consumption between 1.0 and 1.5 gph.

CAPABILITY: Provides a continuous source of 28 VDC power.

ERECTION TIME: Approximately 20 minutes.

PERSONNEL REQUIRED: One each 42153.

<u>MAJOR COMPONENTS:</u>	<u>NOMENCLATURE</u>	<u>COMMON NAME</u>
	28016-113	Engine
	13213E2800.....	Generator

POWER OUTPUT: 28 VDC at 53.5 amps (1.5 kw).

MANUFACTURER:

Engine: HOL-GAR Manufacturing Co.
Generator: Oman Div., Studebaker

COST:

\$815.00

WEIGHT:

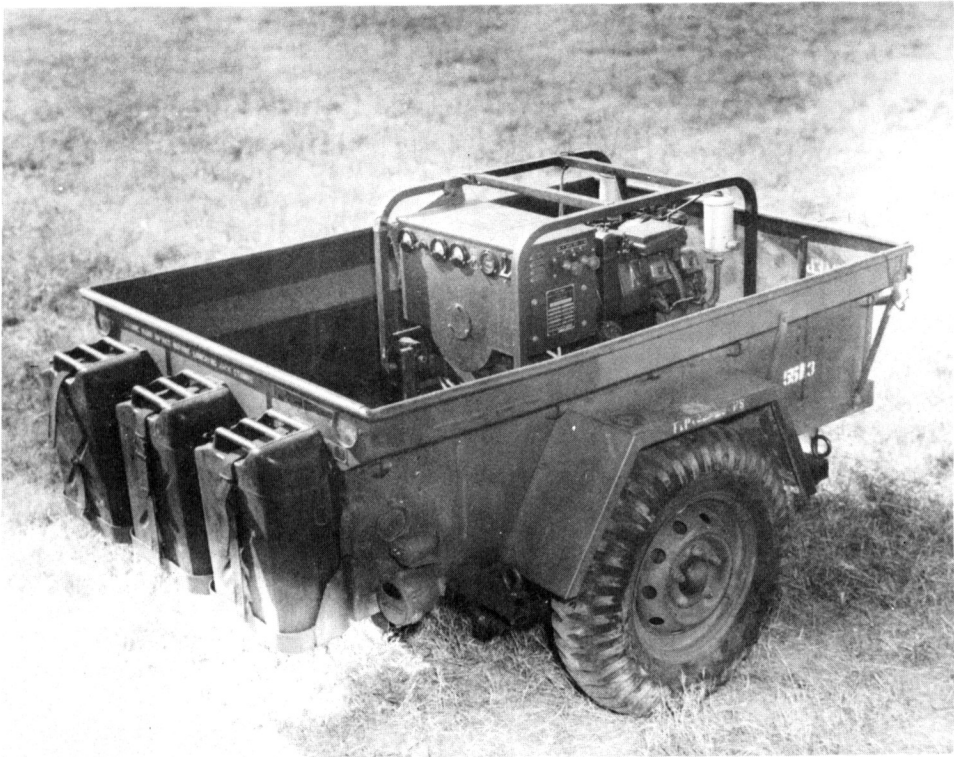
121 lbs.

CUBE:

6 cu. ft.

APPLICABLE TOs:

35C2-3-388-1 Organizational and
Depot Maintenance
38G2-74-12..... Operator's Manual



PU-630 GENERATOR SET

DESCRIPTION: Self-contained, air-cooled, gasoline engine-driven electric power unit equipped with rope starter. It provides primary or emergency power within its rated capacity for communications equipment (MRC-108), lighting or testing equipment or other electrically powered equipment. Fuel consumption rate is between 1.5 and 2.0 gph.

CAPABILITY: Provides continuous source of 28 VDC electrical power within rated capacity.

POWER OUTPUT: 28 VDC at 100 amps, 3.0 kw.

ERECTION TIME: Approximately 20 minutes

<u>MAJOR COMPONENTS:</u>	<u>NOMENCLATURE</u>	<u>COMMON NAME</u>
	M-416.....	Trailer
	4A 0321.....	Engine
	2A 016-111.....	Generator

MANUFACTURER: Engine: Continental
Generator: Bogue Electric

COST: \$1,384.00

WEIGHT: 275 lbs.

CUBE: 10 cu. ft.

APPLICABLE TOs: 35C2-3-386 Series

PERSONNEL REQUIRED: One each 42153



M-105 ELECTRICAL SUPPORT TRAILER

DESCRIPTION: The M-105 Electrical Support Trailer is used to prevent voltage fluctuations due to location of equipment and shelters deployed in the field. It provides faster and safer installation of power for deployed equipment. This increment is essential for the storage and repair of power cables, junction boxes used in the power distribution system, and miscellaneous hardware items used in the life support element of the facility. One side of the trailer is adapted for 400 cycle requirements and the opposite side for 60 cycle requirements. Both sides utilize a main circuit breaker panel, safety disconnect switches, and utility outlets. This trailer is also supported by junction boxes and 10 reels of electrical cable. The reels of cable are as follows: 1 each, 700 foot reel of 10 gauge, 3 conductor cable; 2 each, 500 foot reel of 12 gauge, 3 conductor cable; 5 each, 250 foot reel of 2 gauge, 4 conductor cable; 1 each, 250 foot reel of 4 gauge, 4 conductor cable; and 1 each 150 foot reel of 00 gauge, 4 conductor cable.

CAPABILITY: Distribute 400 Hz and 60 Hz power.

ERECTION TIME: Depends on the facility with which it is deployed.

PERSONNEL REQUIRED: One each 42153

MAJOR COMPONENTS: M-105 Cargo Trailer
10 each reels of heavy duty electrical cable
8 Fire Extinguishers

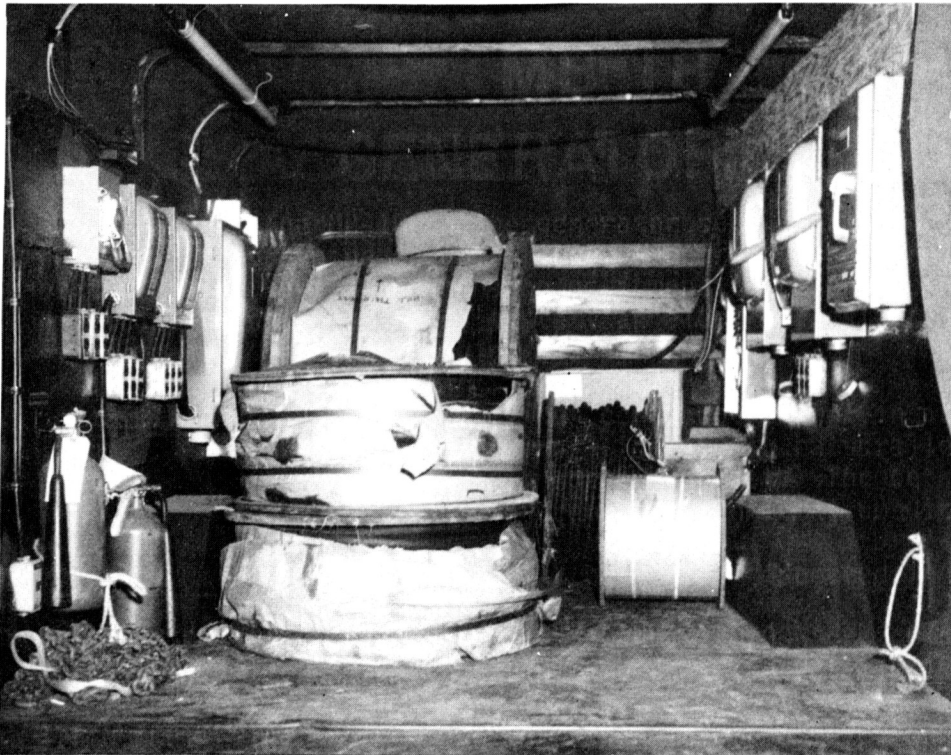
MANUFACTURER: Local manufacture.

COST: Estimated \$2,500.00

WEIGHT: 6,010 lbs.

CUBE: 789 cu. ft.

APPLICABLE TOs: None



A/E 24U-8

POWER PLANT

DESCRIPTION: The A/E 24U-8 is a transportable 60/120 KW, 400 Hz Power Plant consisting of two fully-equipped EMU-30/E gas turbine generators and associated distribution equipment mounted on a pallet. The Power Plant will operate in all-weather, global environmental conditions for extended periods. One generator will automatically start if the other one degrades.

CAPABILITIES: The Power Plant is capable of operation with either one generator set operating singly or with two generator sets operating in electrical parallel. It is capable of supplying electrical power continuously from no load to 120 KW.

POWER REQUIREMENTS: 24 VDC.

POWER OUTPUT: 30/60/120 KW, 400 Hz, 3-phase, 4-wire, 120/208 VAC or 240/416 VAC.

SITING CRITERIA: The site area may have a slope no greater than 15 deg.

ERECTION TIME: 20 minutes, after off-loading.

PERSONNEL REQUIREMENTS: One each 543X0

<u>MAJOR COMPONENTS:</u>	<u>NOMENCLATURE</u>	<u>COMMON NAME</u>
	T-62-T-32	Engine, Gas Turbine
	General Electric	Generator

MANUFACTURER: Solar Division International Harvester Corp.

COST: \$48,000.00

WEIGHT: 3500 pounds

CUBE: 476 cu ft

APPLICABLE TOs: 35C2-3-436-1

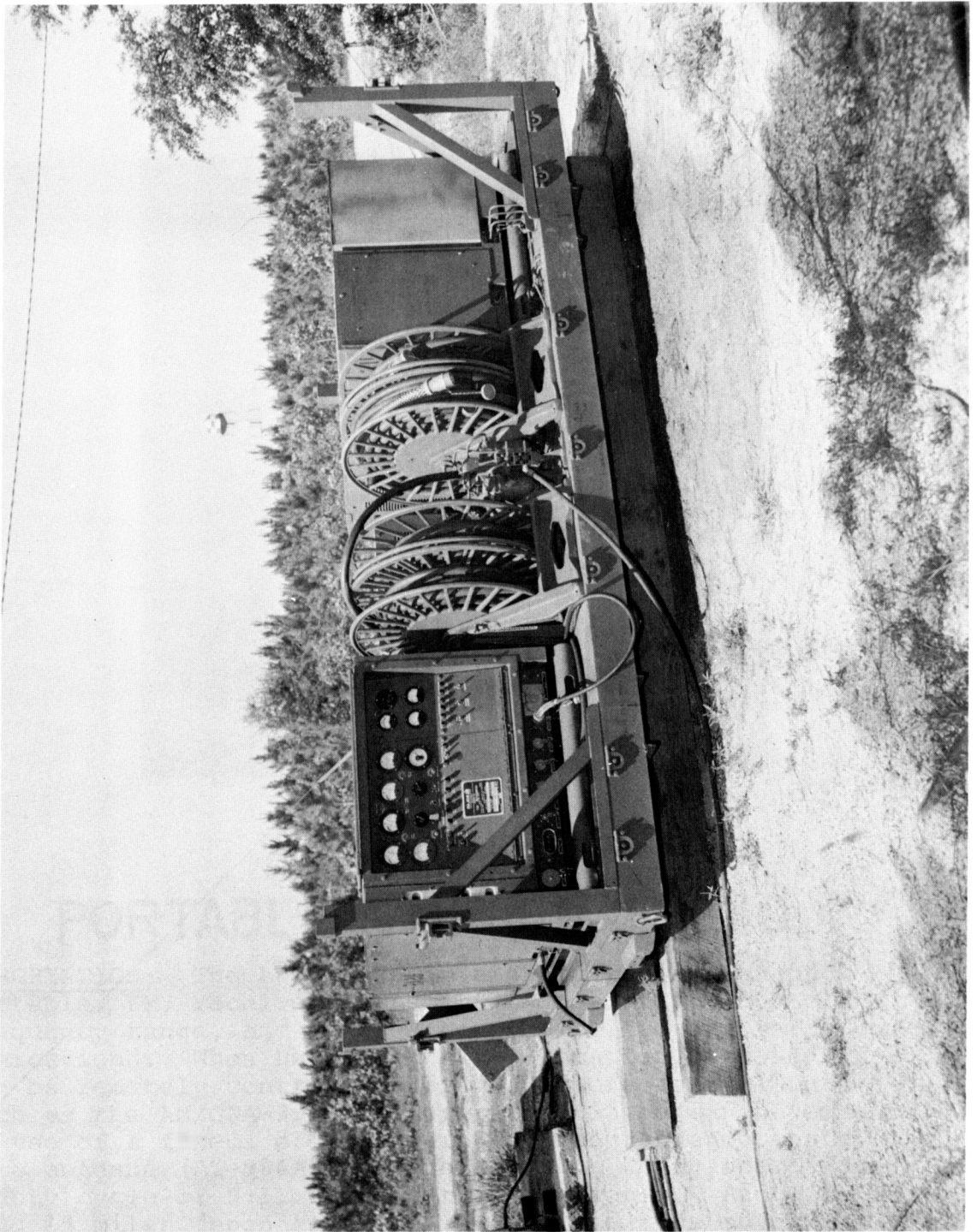
35C2-3-436-4

2G-T62T-14

2G-T62T-16



A/E 24U-8 Power Plant



A/E 24U-8 Power Plant