

SECTION I

INTRODUCTION AND DESCRIPTION

1-1. INTRODUCTION.

1-2. This manual contains the information pertinent to the operation and service of USAF Type A/M32A-60 Generator Set. Refer to Section VII Difference Data Sheets for Model A/M32A-60B Generator Set.

1-3. PURPOSE OF EQUIPMENT.

1-4. The generator set is a completely self-contained source capable of providing ac and dc electrical power in addition to pneumatic power required for ground maintenance and testing of certain aircraft components.

1-5. DESCRIPTION.

1-6. **GENERAL.** The generator set is a self-contained unit consisting of a gas turbine engine, self-cooled aircraft type ac and dc generators, generator voltage regulators, engine fuel system batteries and engine electrical system for starting and control functions. The complete generator set is mounted on wheels and is completely enclosed in a sheet metal housing.

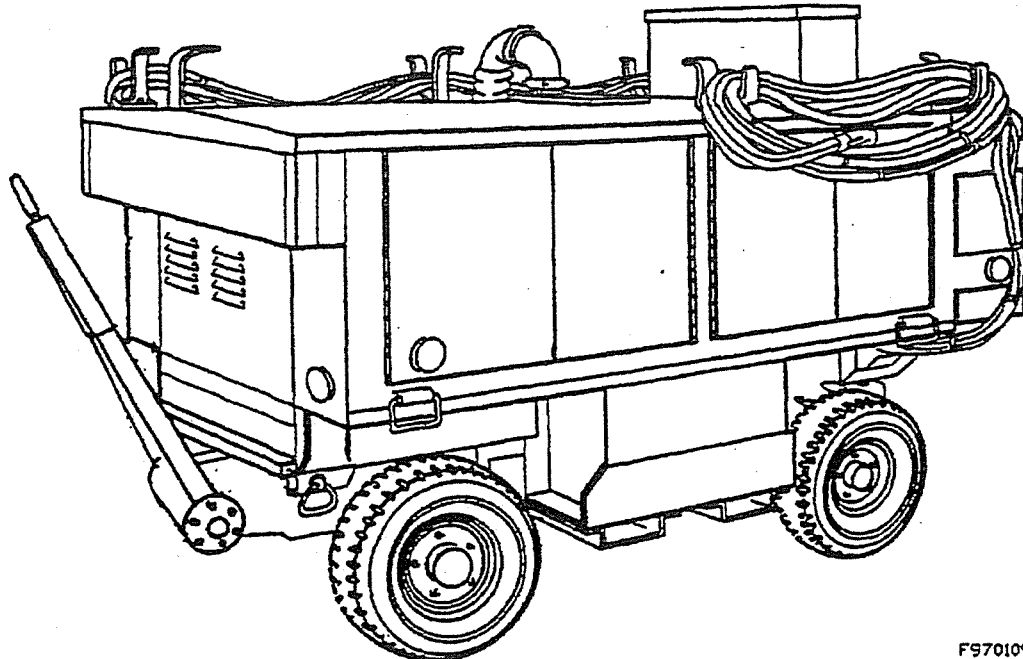
1-7. **DEFINITIONS.** Throughout this manual the terms left and right, when used to describe a particular side of the generator set, will be determined by standing at the auxiliary fuel tank end of the unit. This end is considered the rear of the set.

1-8. LEADING PARTICULARS.

1-9. Figure 1-2 is a tabular listing of the detail characteristics, capabilities and limitations of the generator set and its major components.

1-10. DETAILED DESCRIPTION OF COMPONENTS.

1-11. **HOUSING.** The engine and generator are protected from inclement weather by a sheet metal enclosure. This enclosure is designed to permit removal and reinstallation of the housing as one unit to facilitate maintenance of the unit. Access panels and doors provide easy access to control panels, engine, etc. These access panels and doors are secured closed by snap type latches.



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Figure 1-1. Generator Set, Gas Turbine Engine, Wheel Mounted, Type A/M32A-60

DC Generator (A/M32A-60 only. A/M32A-60B Has Battery Charger)

Type:	Lear-Siegler, Part Number G32-3 or G32-3FM, aircraft type.
Rated speed:	6000 rpm.
Continuous Power Output:	500 amperes at 28 volts \pm 1/2 volt at cable end.
Overload Current:	750 amps for maximum of 2 minutes
Constant voltage:	To 500 amperes.
Current Limiting:	1000 amperes for a maximum of 20 seconds.

AC Generator

Type:	General Electric, Model 2CM355C1, aircraft, brushless, self-cooled, 4-wire, Y-connected.
Rated speed:	6000 rpm
Power output:	
Single phase:	14.4KVA, 0.75PF, 120 volt.
Three phase:	75KVA, 0.75PF, 120/208 volt.
Regulation:	\pm 1% of regulated voltage at cable end.
Frequency:	400 cps \pm 1/4 of 1% under steady state load.
Total harmonic content:	Less than 2%

Combined AC and DC Load Limitations 60 KW AC, 500 Amps DC.

Prime Mover	<i>Sohn can you get just a POB for this?? Thanks Sohn</i>
Type:	
Pneumatic capability:	AirResearch Manufacturing Division, pneumatic and shaft power gas turbine engine, Part 380212-1 Series, Model GTCP85-397. 120 \pm 4 lbs./min. @ 49 \pm 2 psia (34.3 psig \pm 2 psig) 59°F, 29.92 in. Hg. Baro.

Generator Set

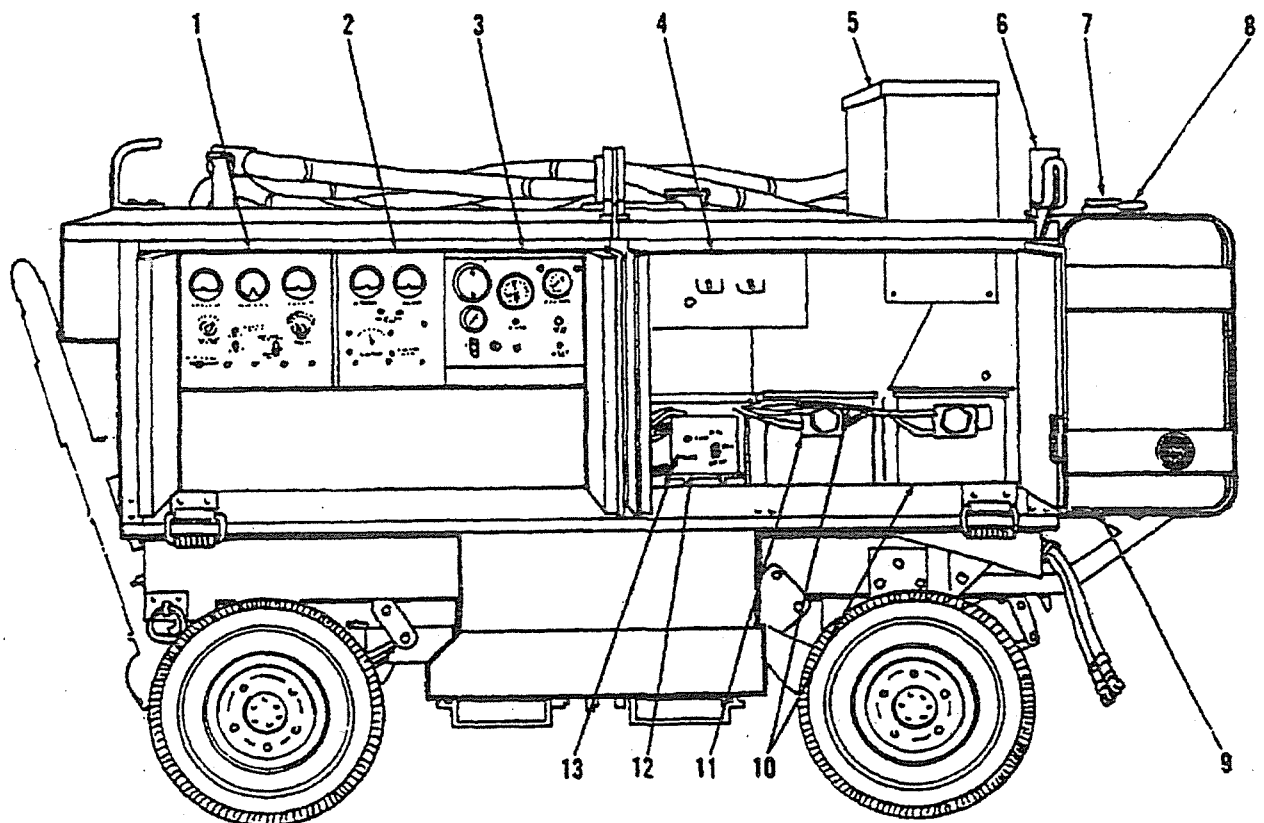
Dimensions:	
Length:	118 inches
Width:	68 inches
Height:	67 inches
Weight:	2800 pounds
Ground Clearance:	
At differential:	6 inches
At all other points:	8 inches
Angle of Approach:	50 degrees
Angle of Departure:	75 degrees
Turning Radius:	127 inches
Speed	
Towing:	20 mph (Max.)

Figure 1-2. Generator Set Leading Particulars

1-12. CONTROL PANELS. There are three separate control panels; an ac, dc and turbine engine. (1, 2 and 3, figure 1-3.) These control panels are mounted in individual boxes located on the left hand forward side of the generator set. Each control panel contains all the switches and indicators necessary to perform its individual function. The front panel of each control box is hinged at the bottom and secured at the top by thumb screws to facilitate access to the internal wiring and components. Each control box may be removed

individually by releasing lock on handle and sliding box from rack.

1-13. The turbine engine control panel contains the various instruments and controls necessary for the starting, operating and stopping of the engine. Included on this panel is the bleed air switch, bleed air pressure indicator, master switch, turbine start switch, turbine speed indicator, exhaust temperature, panel light switch



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|-----------------------------|------------------------|-------------------------------|
| 1. AC Instrument Panel | 6. Cable Bracket | 10. Battery (NICAD shown) |
| 2. DC Instrument Panel | 7. Fuel Filler Cap | 11. Battery Connector |
| 3. Turbine Instrument Panel | 8. Fuel Gage | 12. External Start Receptacle |
| 4. Battery Charger | 9. Auxiliary Fuel Tank | 13. Circuit Breaker Panel |
| 5. Exhaust Door | | |

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Figure 1-3. Generator Set, Left Side View - Access Doors Open