GENERAL- INSTRUCTIONS FOR OPERATION OF AUXILIARY ELECTRIC POWER PLANTS INSTALLED IN B-17 SERIES, B-24 SERIES, B-26 SERIES, B-29, C-47, and AT-22

1. Auxiliary power plants are installed in aircraft to insure an adequate supply of electrical power for operation of aircraft electrical equipment and to eliminate the danger of operating the aircraft with discharged batteries. In B-29 airplanes the auxiliary power plants will be operated in flight during landing, takeoff, and in emergency conditions, such as failures of aircraft generators. In other airplanes the units will be operated for extended taxying operations and aloft when necessary to provide adequate electric power for safe flight. The power plants may be operated successfully during flight up to an altitute of approximately 10,000 feet; above this altitude the output of the unit rapidly decreases with a corresponding increase in altitude.

NOTE: Operation while the airplane is in flight can be maintained only on those airplanes in which the auxiliary power plant is provided with a permanent exhaust outlet through the skin. Paragraph 1, will be disregarded if a permament exhaust outlet is not provided.

2. On the ground, pilots and maintenance personnel will operate auxiliary power plants at all times when power is required for starting engines and for testing electrical equipment instead of using the aircraft battery or an aircraft engine as the source of power. The use of the auxiliary power plants either installed or external will materially reduce battery maintenance and replacement. Auxiliary power plants will charge the battery in the plane at a tapering constant potential rate if its capacity is not utilized for another purpose, The power plants will charge the battery only if the battery switch is closed and the power plant is delivering current into the airplane electric system. Whenever suitable ground equipment power plants are available, they should be used externally for routine checking to conserve the serviceability of the installed equipment. Type C-13 power plants are issued as alternates for the type C-10 as ground equipment and have a 200-ampere capacity.Type C-13 power plant or equivalent should be used for testing 28.5-volt equipment tha requires between 70 and 200 amperes continuous duty.

3. The power plants installed in airplanes should not be operated continuously while the airplane is on the ground unless it is certain that the unit is no overheating. The safe ambient temperature at the cooling air intake of the power plant should not exceed 120 F for continuous rated capacity. An overheated HRU-28 power plant usually produces a pinging sound caused by preignition and detonation. An overheated engine should be stopped and allowed to cool. Adequate cooling air should be provided by opening doors to the compartment of the auxiliary power unit. This applies particularly to the HRU-28 unit permanently installed in the B-24 series airplanes. The AAF Type D-2 power units are provided with a permament cooling duct leading through the skin of the airplane for expelling air used to cool the engine and thereby reducing the compartment temperatures considerably. The same feature is provided for in the installation of HRU-28 power plants in the C-46 airplane:

4. Observe the following safety precautions:

a. Keep the engines and surroundings free of fuel or oil.

b. Ground the filling container with static wire before filling the fuel tank

c. Stop auxiliary power plant if a crash landing is necessary.