AIRBORNE AUXILIARY POWER - MAINTENANCE PRACTICES

EFFECTIVITY: AIRCRAFT WITH APU T-62T-40C11

1. General

   A. This section gives the ground safety precautions and operating limitations for the APU operation during maintenance procedures.

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2. APU Ground Safety Precautions

A. Be careful during the APU operation to prevent injury to persons and damage to material. Some of the general safety items are given below. Others will be added when applicable at the specific maintenance procedures.

WARNING:

- **DO NOT PERMIT THE EXHAUST GASES TO TOUCH YOUR EYES AND SKIN NOR BREATHE THEM TO PREVENT RESPIRATORY IRRITATION.**
- **DURING THE APU OPERATION, USE A DEVICE FOR EAR PROTECTION. A VERY HIGH NOISE CAN CAUSE DAMAGE TO THE EARS.**
- **DO NOT OPERATE THE APU NEAR FLAMMABLE MATERIALS OR FUEL VENT. EXPLOSIONS CAN OCCUR.**
- **THE APU IGNITION SYSTEM CAUSES HIGH ENERGY. THIS ENERGY MAKES THE SYSTEM A DANGEROUS SOURCE OF ELECTRICAL SHOCK. THERE IS THE DANGER OF DEATH UNLESS THE PRECAUTIONS ARE OBEYED. DO NOT DO MAINTENANCE TASKS ON THE APU IGNITION SYSTEM WHEN IT IS ON. TO DO THE IGNITION SYSTEM MAINTENANCE, ALWAYS REFER TO THE PROCEDURES IN THE MAINTENANCE SOURCE DATA OF SUNDSTRAND.**
- **ALL JET FUEL AND LUBRICATING OILS CAUSE INJURY TO THE SKIN. DO NOT PERMIT THIS FLUIDS TO TOUCH YOU.**
- **DO NOT TOUCH THE EXHAUST DUCT AND APU COMPONENTS UNTIL THEY ARE COOL. THE TEMPERATURE CAN STAY HOT FOR A LONG TIME AFTER THE APU STOPS.**
- **IF THE FIRE BOTTLE DISCHARGES, DO NOT BREATHE THE HALON GASES, NOR GET HALON ON YOUR SKIN OR EYES AND CLEAN THE AREA. MAKE SURE THAT THE AREA HAS A GOOD FLOW OF AIR. HALON GASES CAN CAUSE IRRITATION TO THE SKIN AND EYES.**

CAUTION:

- EMBRAER AND HAMILTON SUNDSTRAND DO NOT RECOMMEND APU OPERATION DURING THE AIRCRAFT DEICING/ANTI-ICING PROCEDURE. IF THE APU IS KEPT IN OPERATION DURING THE DEICING/ANTI-ICING PROCEDURE, DAMAGE CAN OCCUR TO IT. IF APU OPERATION IS ABSOLUTELY NECESSARY, MAKE SURE THAT THE APU BLEED VALVE IS CLOSED, PACKS ARE SET TO OFF, AND THE DEICING/ANTI-ICING FLUID WILL NOT BE APPLIED DIRECTLY TO OR NEAR THE APU AIR INLET.
- REMOVE ALL DEICING/ANTI-ICING FLUID BUILD-UP BEFORE THE ENGINE OR THE APU START. IF NOT, DAMAGE TO COMPONENTS CAN OCCUR.

B. The maintenance services in the APU must be done only in ventilated areas which permit free movement of fire fighting equipment and persons.

C. The air inlet screens must be kept clean. Be careful not to permit objects such as caps, glasses, cloths, etc., to go into the engine.

3. Operating Limits

A. Table 201 below gives the operating limitations of the APU.

Table 201 - AUXILIARY POWER UNIT (APU) STARTING AND NORMAL OPERATING LIMITS

ITEM	CONDITION	REQUIRED LIMIT
Compressor Intake Air Temperature (Ambient Temperature)	- Any Operation Condition	-54°C (-65°F) (Min) 50°C (122°F) (Max) at sea level
Exhaust Gas Temperature (EGT)	- Starting cycle until you have 95% RPM plus 7 seconds	873°C ± 11°C (1604°F ± 20° F)
	- Stable condition (More than 95% RPM plus 7 seconds)	706°C ± 11°C (1303°F ± 20°F)
Fuel Pressure and Temperature	- All Operation Conditions	-50 psig (Max) and 57°C (Max)
Oil Temperature	- All Operation Conditions	165.6°C ± 2.8°C (330°F ± 5°F)
Oil Pressure	- Usual Operation	6 psig ± 1.5 psig (Min)
Starting	-Tailwind	30 kt (Max) (For JAA certified aircraft only)
Starting Cycles	- Starting Cycles Until you have 95% RPM plus 7 seconds	- 3 (three) starting cycles one after the other, with a cooling period of 1 (one) minute between each cycle, are permitted. After each 3 (three) starting cycles one after the other, obey a 30 (thirty)-minute cooling period before you try a new start
Acceleration Time	- Usual Operation	30 seconds (Max)
Oil Sump Capacity	- Any Operation Condition	2.5 U.S. quarts (2366 cc)
Bleed Duct Pressure	- APU bleed valve closed	0 psig (0 kPa)
	- APU bleed valve opened	51 psia (352 kPa)
Engine Speed	- Usual operation	100% to 104% Speed
	- Overspeed Shutdown	108% Speed
	- Underspeed shutdown	Less than 95% after stable condition