FAA APPROVED

AIRPLANE FLIGHT MANUAL SUPPLEMENT

FOR

PA-44-180

28VDC AUXILIARY BUS

Aircraft SN: _____

Aircraft Registration Number: _____

This supplement must be attached to the FAA approved flight manual when the Kelly Aerospace Air Conditioning system is installed in accordance with STC _____. The information contained in this document supplements or supersedes the basic manual only in those areas listed. For limitations, procedures, performance, and loading information not contained in this supplement, consult the basic FAA Airplane Flight Manual.

FAA-Approved _____
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LOG OF REVISIONS

REV.	PAGES	DESCRIPTION	APPROVED BY	DATE
1	1 - 7	Complete Supplement	Steven L. Lardinois Manager, Systems & Flight Test, Chicago ACO, Des Plaines, Il	

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SECTION 1
GENERAL

This supplement supplies information necessary for the operation of the airplane when the 28 VDC Auxiliary Bus System is installed in accordance with FAA Approved Data, either STC or Original Equipment.

SECTION 2
LIMITATIONS

1) Auxiliary Bus can only be operated when the left engine is in operation or when the bus is being powered by the ground power receptacle.
2) Maximum Current draw on the Auxiliary Bus is 60 amps. 80% of maximum is 49 amps.
3) When the aux bus is powered via the ground power receptacle the Aux Power switch must be in the "OFF" position. This prevents the ground power unit from charging the aux battery.
4) For maximum climb performance in the event of ANY engine failure or single engine operation, the Aux Bus should be turned off.
5) Placards

In full view of the pilot, in the area of the Aux Bus Ammeter

AUX BUS MAX
60 AMPS

WARNING
AUX BUS MUST BE OFF DURING
TAKEOFF and SINGLE ENGINE OPERATIONS.

SECTION 3
EMERGENCY PROCEDURES

AUX BUS EMERGENCY PROCEDURES

"AUX BUS" AMMETER INDICATING 60 AMPS or MORE

1) Move "AUX BUS" switch to "OFF" position.
2) Turn "OFF" (Secure) any system tied to the "AUX BUS".

AUX BUS EMERGENCY INDICATIONS

1) "AUX BUS" Ammeter current reading indicates 60 amps or higher, then system must be shut down.
2) Move "AUX BUS" switch to the "OFF" position.
3) Inspect and perform required maintenance after the flight.

SECTION 4
NORMAL PROCEDURES

AUX BUS LEFT ENGINE PROCEDURE

BEFORE ENGINE START

1) Ensure AUX BUS switch is "OFF"
2) Insure all components connected to the auxiliary bus are turned "OFF".
3) Follow normal procedures for engine start-up.
4) AUX BUS ammeter should read Zero

AUX BUS ACTIVATION

1) Insure all components connected to the auxiliary bus are turned "OFF".
2) Move AUX BUS switch to "ON"
3) Turn "ON" components connected to the auxiliary bus.

ENGINE SHUT-DOWN

1) Turn "OFF" all components connected to the auxiliary bus.
2) Move AUX BUS switch is OFF

3) Follow normal procedures for engine shut-down

AUX BUS GROUND OPERATION PROCEDURE

1) Insure the "AUX BUS" switch is "OFF"
2) Connect External Power to 28 VDC ground power plug (Minimum 50 AMPS)

SECTION 5
PERFORMANCE

1) Left Engine Single Engine Climb Performance may be reduced by 15 feet per minute if there is an electric Air Conditioning System in operation in conjunction with the AUX BUS.
2) Placards

In full view of the pilot, in the area of the air conditioner controls

WARNING
AIR CONDITIONER MUST BE OFF DURING
TAKEOFF and SINGLE ENGINE OPERATIONS.

SECTION 6
LOADING INFORMATION

The addition of the AUX BUS System has been accounted for/included in the aircraft's basic empty weight and center of gravity. The Standard Aircraft Loading and CG envelope remain unchanged. Proper weight and balance calculations must be performed prior to flight to insure aircraft is properly loaded and within operating limitations.

SECTION 7
DESCRIPTION AND OPERATION OF THE AUX BUS SYSTEM

Description

The Auxiliary Bus System consists of an ES6024 Alternator, 24 Volt Battery and associated control and monitoring devices. The ES6024 alternator is a belt driven alternator and is capable of outputting a maximum of 60 amps. This alternator is mounted on the left engine.

The regulator for this alternator is located on the left engine firewall. A 60amp current limiter for the Aux Bus Alternator is installed on the left engine firewall. If the current exceeds 60amps this limiter will open and protect the rest of the bus.

Power from the alternator is also passed through a shunt. This shunt is connected to the "AUX BUS" ammeter located on the copilots side of the instrument panel. The "AUX BUS" current draw can be monitored through this ammeter. This ammeter indicates current from the battery and the alternator. If the alternator is not operating and current draw is being shown on the ammeter then the battery is being drained.

The auxiliary bus has a Concorde RG-120, 0.7 amp hour, 24 VDC battery as part of its system. This battery is used to absorb any voltage spikes produced by the alternator and protects any equipment connected to the bus. It is not intended that the battery be used to power any items on the bus.

The auxiliary bus can also be powered by an external power source. A 24 VDC external power jack is located on the left side nose of the aircraft. This is a standard 24VDC external power receptacle. An external power supply capable of supplying 50amps should be utilized.