

Transport Canada Approved Flight Manual Supplement For AIR CONDITIONING SYSTEM

This supplemental manual is applicable to Air Conditioning System equipped airplanes.

This Supplement must be attached to the Transport Canada Approved Airplane Flight Manual when the FBA-2C3 or FBA-2C4 airplane is modified by the installation of an Air Conditioning System in accordance with Found Aircraft Canada Mater Drawing List MDL-2C3 Issue 1 Rev 4 and MDL-2C4 Issue 1 Rev IR, or later approved revisions.


The information contained herein supplements or supersedes the basic flight manual, airplane markings and/or placards only in those areas listed herein.

For Limitations, Procedures, and Performance information not contained in this Supplement, consult the airplane markings and placards and/or basic Airplane Flight Manual, (P/N: FM2C3 or FM2C4).



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LOG OF REVISIONS

Rev. No	Affected Pages	Approved	
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LIST OF EFFECTIVE PAGES

Page	Date		Page	Date	
1	11-February-2012				
2	11-February-2012				
3	11-February-2012				
4	11-February-2012				
5	11-February-2012				
6	11-February-2012				
7	11-February-2012				
8	11-February-2012				
9	11-February-2012				
10	11-February-2012				
11	11-February-2012				
12	11-February-2012				
13	11-February-2012				
14	11-February-2012				

TABLE OF CONTENTS

TITLE	PAGE
LOG OF REVISIONS.....	3
LIST OF EFFECTIVE PAGES	5
GENERAL	8
LIMITATIONS	9
EMERGENCY PROCEDURES	10
NORMAL PROCEDURES	11
PERFORMANCE	13
WEIGHT AND BALANCE.....	13
AIRPLANE AND SYSTEMS DESCRIPTION	14

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SECTION 1

GENERAL

This supplemental manual is applicable to Air Conditioning System equipped airplanes.

This supplement provides information and limitations not included in the Transport Canada approved markings and placards, and/or Airplane Flight Manual.

SECTION 2

LIMITATIONS

When the Air Conditioning System is in operation some load shedding is needed. The items that cannot be turned on while the Air Conditioning is operating are not typically needed in flight conditions where the Air Conditioning System is required. The Pitot Heat cannot be used when the Air Conditioning System is running.

The following placard is installed in the cockpit for the pilot's reference.

Do Not Operate the Air Conditioning System
When Pitot Heat is "ON"

SECTION 3

EMERGENCY PROCEDURES

There is no change to the standard airplane emergency procedures when the Air Conditioning System is installed.

AIR CONDITIONER FAILURE

If the Air Conditioning System fails to operate correctly or is exhibiting abnormal behaviour turn the Air Conditioning System off by pushing the center button on the Climate Controller marked "AC".

The system is now in "FAN" mode. The fan can be turned off by using the arrow keys on the right side of the Climate Controller. Push the left arrow key until the display reads "0".

If an overload condition occurs, the Air Conditioning System circuit breakers may trip. These breakers are located aft of the baggage compartment bulkhead in the aft fuselage and should not be reset until the aircraft returns to the ground.

ALTERNATOR FAILURE

The under-voltage light will illuminate and the alternator voltage can be checked by the AMPS/VOLTS indicators on the engine monitor. If the voltage shows 24 volts or less, the alternator has failed.

1. Turn Alternator Switch **OFF**
2. Shut down all non-essential equipment **STARTING WITH THE AIR CONDITIONER** as dictated for continued safe flight. Equipment may be activated or de-activated as procedures require.
3. Land the aircraft as soon as practical.

SECTION 4

NORMAL PROCEDURES

PRE-FLIGHT

Inspect the condenser inlet and outlet on the belly of the aircraft for obstructions. Clear obstructions if any are found.

GROUND OPERATION (ENGINE OFF)

This Air Conditioning System may be operated on the ground prior to engine start.

WARNING: Before connecting ground power to the aircraft ensure the area around the propeller is clear of people and equipment.

Plug an approved external power source into the ground service plug receptacle. The ground power unit must be capable of supplying more than 45 amps of current to the aircraft. There is a small “piezo-type” switch beside the ground power receptacle.

WARNING: Before activating the “piezo-type” switch ensure the area around the propeller is clear of people and equipment. Activation of this switch will engage the Master Relay which could result in the engine starting.

Press the “piezo-type” switch to start the Air Conditioning System. The “AC” light on the Climate Controller will flash indicating the system is functioning. In this mode there is no temperature adjustment available on the Climate Controller, the system will default to a maximum air conditioning setting.

Disconnect the ground service plug to turn off the Air Conditioning System.

GROUND OPERATION (ENGINE RUNNING) & IN-FLIGHT OPERATION

The air conditioning Climate Controller turns on when the aircraft Master Switch is activated.

The Climate Controller should be in "FAN" Mode during engine start-up

CAUTION: Do not start the engine while in "AC" mode.

In "FAN" mode the fan speed can be adjusted by using the arrow keys on the right hand side of the Climate Controller. The fan speed range is 0 to 5.

After engine start, the "AC" mode can be engaged by pressing the "AC" switch in the center of the Climate Controller. The arrows keys on the left hand side of the Climate Controller are used to set the desired cabin temperature (in degrees Fahrenheit). In "AC" mode the fan is set to maximum and there is no adjustment available.

In "AC" mode the engine RPM will need to be at 800 - 1 000 RPM to allow the alternator to output enough current to power the air conditioning system and the rest of the aircraft. The pilot should monitor the charging system for any signs of excessive charge or low volt indication. If this situation occurs, increase the engine RPM until enough power is being produced.

SECTION 5 PERFORMANCE

During maximum operating condition of the Air Conditioning System no more than 1.65 horsepower will be pulled off the engine.

The performance change of the aircraft is negligible with the Air Conditioning System installed.

The Air Conditioning System can be operated at any point during the flight.

SECTION 6 WEIGHT AND BALANCE

See current weight and balance data.

SECTION 7 AIRPLANE AND SYSTEMS DESCRIPTION

The Air Conditioning System supplies cool dry air to vents near the pilot, copilot and passenger seats. The cool air is supplied through an evaporator mounted in the aft fuselage. The system re-circulates the cabin air. The evaporator draws warm cabin air from an inlet at the top of the aft bulkhead, cools the air, and pumps it forward through ducts in the headliner.

The condenser and compressor for the system are also mounted in the aft fuselage behind the baggage compartment bulkhead.

The system is fully electric powered unlike some systems which have an engine-driven compressor. This allows the system to be operated without the engine running by connecting a ground power unit to the airplane.

The air conditioner system draws 30 to 40 amps depending on the outside air temperature and as such is the highest current load on the electrical system. In the event of an alternator failure the air conditioner must be the first piece of equipment switched off.

A Climate Controller is located on the copilot's side of the instrument panel. The Climate Controller is used to switch between "FAN" mode and "AC" mode. In "FAN" mode the pilot can select six fan speeds from 0 to 5. In "AC" mode the pilot can select the cabin temperature. In "AC" mode the fan speed is set to maximum by the Climate Controller.

