

SUPPLEMENT TO
EC135 RFM

AIR COMM CORPORATION

3300 AIRPORT ROAD

BOULDER, COLORADO 80301

EUROCOPTER HELICOPTER

MODELS EC135P2, EC135P2+, EC135T2 & EC135T2+ |

CABIN AIR CONDITIONING SYSTEM

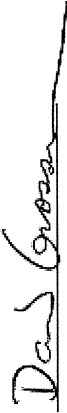
FLIGHT MANUAL SUPPLEMENT

Document No. EC135-1

FAA APPROVED

The information contained in this document is FAA approved material which must be carried in the basic Flight Manual after the rotorcraft has been modified by installation of the Cabin Air Conditioning System in accordance with Air Comm Corporation STC No. SR00565DE.

The information in this document supplements or supersedes the basic manual only in the items contained herein. For Limitations, Procedures, and Performance Data not contained in this supplement consult the basic Flight Manual.

FAA Approved 

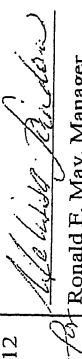
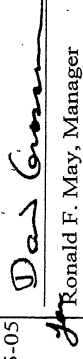
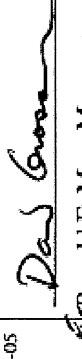
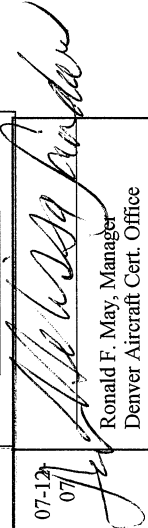
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Date NOV 24, 2004

REVISED: June 22, 2005

REVISED: July 16, 2007

CABIN AIR CONDITIONING SYSTEM

Log of Revisions				
Rev. No.	Pages	Date	FAA Approval	
Original	1-10	11-12	 Ronald F. May, Manager Denver Aircraft Cert. Office Northwest Mountain Region Denver, Colorado Date: <u>NOV 24 2004</u>	
1	3, 4, 5	01-25-05	 Ronald F. May, Manager Denver Aircraft Cert. Office Northwest Mountain Region Denver, Colorado Date: <u>MAR 14 2005</u>	
2	1, 2	06-22-05	 Ronald F. May, Manager Denver Aircraft Cert. Office Northwest Mountain Region Denver, Colorado Date: <u>June 22, 2005</u>	
3	1, 2	07-12-07	 Ronald F. May, Manager Denver Aircraft Cert. Office Northwest Mountain Region Denver, Colorado Date: <u>July 16, 2007</u>	

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SECTION 5

PERFORMANCE DATA

When the air conditioner is operating, the performance data in the basic flight manual should be reduced as shown below:

Rate of Climb Degradation

Reduce the rate of climb in the basic Flight Manual by the amount shown below:

R/C Reduction 34 ft/min (10 m/min)

Hover Ceiling In Ground Effect and Out of Ground Effect

Add 39 lb (18 kg) to the actual IGE/OGE hover gross weight for takeoff power or maximum continuous power when entering the chart to determine hover ceiling.

CABIN AIR CONDITIONING SYSTEM

SECTION 1

INTRODUCTION

The EC135 air conditioner is a vapor cycle system that includes the following components:

- Compressor
- Condenser
- Forward Evaporator (dual optional)
- Aft Evaporator
- Cabin Fresh Air Inlet System
- Plumbing System
- Electrical System

The compressor is belt driven from an accessory drive adapter mounted on the main rotor transmission by the compressor mounting assembly that is designed to properly position and support the compressor.

The condenser is mounted above the cabin on the aft-left-hand side of the upper deck and features a dual blower that forces cooling air through the condenser. A cutout is provided in the closeout cowl adjacent to the condenser to allow passage of the condenser cooling air.

The forward evaporator assembly is mounted on the left hand side of the instrument panel's support structure, (dual- one on each side), forward of the anti-torque pedals. Conditioned air is delivered to the crew by means of two air duct/vent assemblies installed on either side of the instrument panel.

The aft evaporator assembly is mounted under the cabin floor. Conditioned air is routed from the aft evaporator assembly to vents in the cabin headliner via a single floor to ceiling air duct located just aft of the center console.

Cabin return air is ducted from the cabin to the aft evaporator assembly via a single return air duct located in the floor under the pilot's seat.

The cabin's fresh air inlet system features a fresh air box that is mounted above the cabin headliner and connected to the cabin headliner vents. The fresh air box is equipped with a close-off door that is electrically actuated by the FRESH/RECIRC switch located on the air conditioner control panel. The "FRESH/RECIRC" switch must be in the FRESH position to bring outside fresh air into the cabin and must be in the RECIRC position to allow the existing cabin air to be recirculated. The EC135 helicopter also features a cockpit fresh air inlet system that is controlled by a bowen wire knob located at the aft end of the center console (Refer to the basic Flight Manual for a description of operation). Both the cockpit and cabin fresh air inlets can be opened as desired by the crew to bring outside fresh air into the cabin during both air conditioner or fan operations. However, to maximize the cooling performance of the air conditioner both the cockpit and cabin fresh air inlets are typically closed so that existing cabin air can be recirculated.

The air conditioner system controls feature A/C – OFF – FAN functions incorporated into a single "three position" switch. Two fan speed switches are provided to control the forward and aft evaporator fans, which can be operated independently. A temperature control knob is provided to vary the output air temperature of the air conditioner. Dimming control for the back lit air conditioner control panel is provided by the center console light dimming system.

A blue compressor "ON" annunciator is located on the air conditioner control panel to provide a visual status of the compressor's operation.

SECTION 4

NORMAL PROCEDURES

PREFLIGHT CHECK (EXTERIOR)

Compressor – Check security
Compressor Drive Belt – Check tension and general condition

ENGINE PRESTART

Check A/C–OFF–FAN (3-position switch) – OFF

BEFORE TAKEOFF

A/C–OFF–FAN (3-position switch) – As desired
EVAP FANS – FAN SPEED SWITCHES – As desired
FRESH/RECIRC SWITCH – As desired

IN FLIGHT OPERATIONS

A/C–OFF–FAN (3-position switch) – As desired
EVAP FANS – FAN SPEED SWITCHES – As desired
FRESH/RECIRC SWITCH – As desired

NOTE

Total air conditioning system electrical load is less than 40 amps. Monitor amps.

NOTE

Placing the FRESH/RECIRC switch in the FRESH position and/or pulling out the cockpit's bowen wire fresh air knob will allow outside fresh air to enter the cabin. For maximum cooling place the FRESH/RECIRC switch in the RECIRC position and push in the cockpit's bowen wire fresh air knob to close off the outside air inlets and recirculate existing cabin air.

NOTE

Simultaneous operation of the cabin heater and air conditioner can be used to achieve cabin defogging.

SECTION 3

EMERGENCY PROCEDURES

Place the A/C-OFF-FAN (3-position switch) to the OFF position for any of the following emergencies:

- Smoke in the cabin
- Engine failure
- Engine over-temperature
- Generator failure
- Water landing

NOTE

Loss of generator output will activate the EC135 helicopter's auto load shed system, which will de-energize the entire air conditioning system, including compressor clutch.

NOTE

If outlet air is not cool, place the A/C-OFF-FAN (3-position switch) to the OFF or FAN position to preclude damage to the compressor.

The refrigerant plumbing system features a high/low pressure cutoff switch. Exceeding the pressure limits will de-energize the compressor's magnetic clutch.

The EC135 helicopter features an auto load shed system that de-energizes the power feed to the entire air conditioner system, including the compressor clutch, in the event of a generator/engine failure.

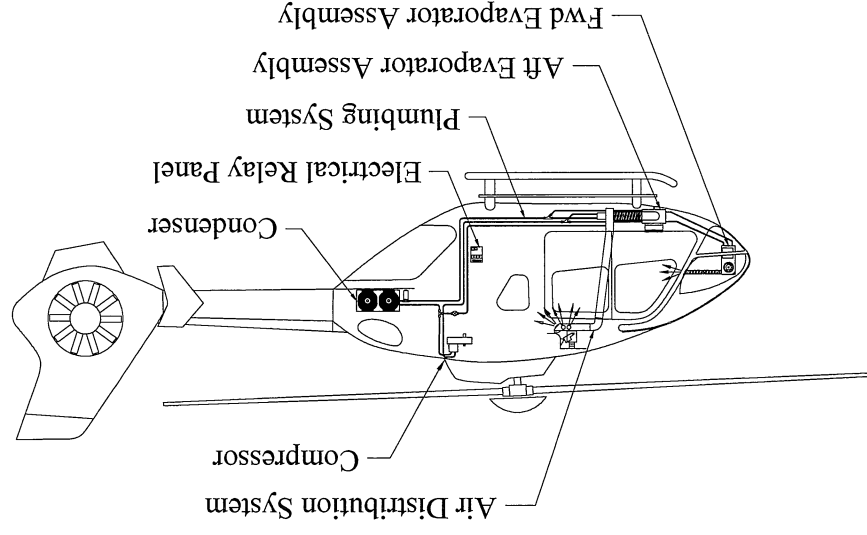


Figure 1

General Arrangement – Cabin Air Conditioner

SECTION 2

OPERATING LIMITATIONS

SECTION 2

PLACARDS AND MARKINGS

PLACARDS AND MARKINGS (cont'd)

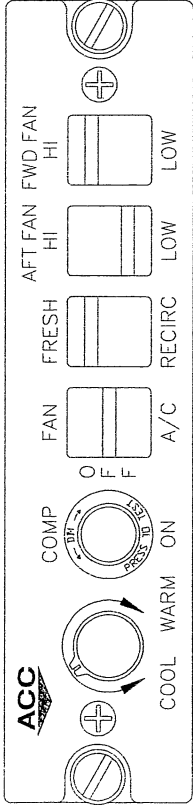


Figure 2
Air Conditioner Control Panel
(Located in center console)

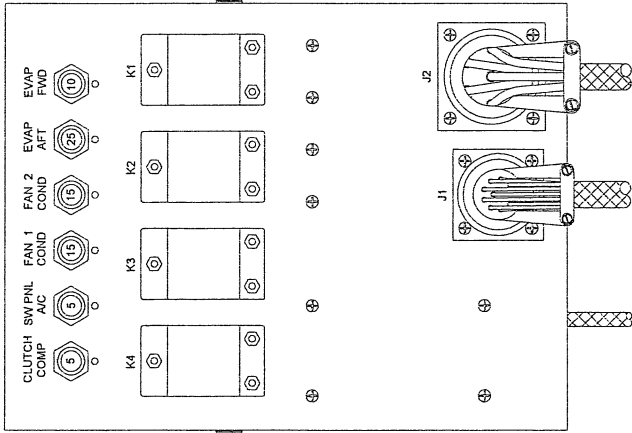


Figure 3
Air Conditioner Relay Panel
(Mounted inside the aft-left-hand cabin wall
behind the interior closeout panel)

Location of Air Conditioner control Circuit Breaker.
(Location in Shed Bus may vary)

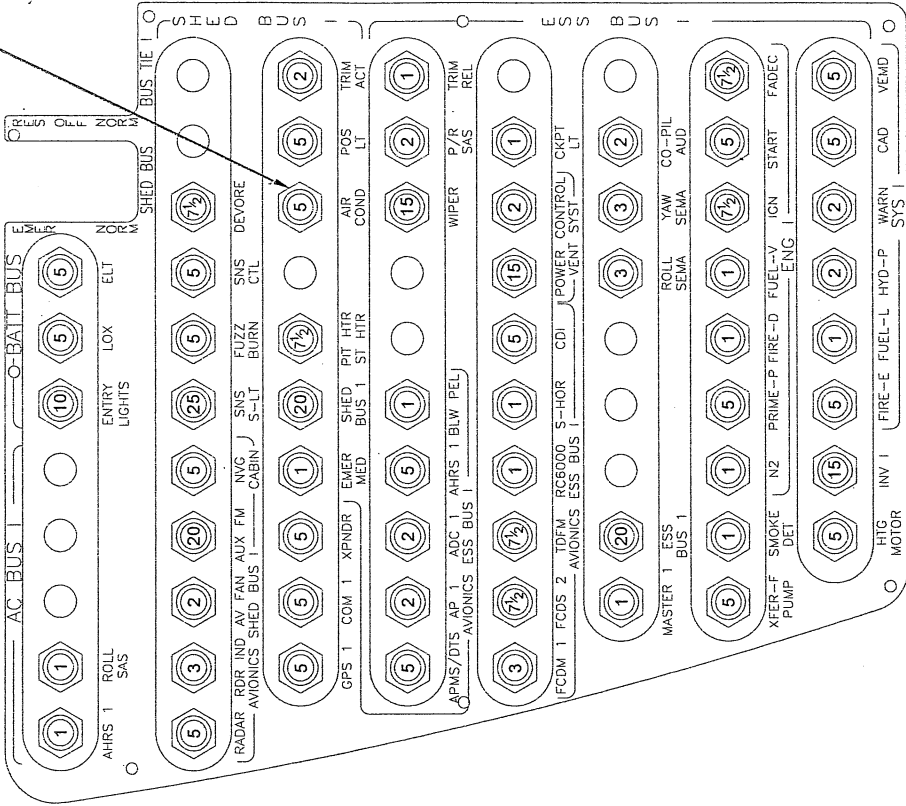


Figure 4
Air Conditioner Control Circuit Breaker
(located on left-hand cockpit overhead circuit breaker panel)