AIR COMM CORPORATION
3300 AIRPORT ROAD
BOULDER, COLORADO 80301

EUROCOPTER EC130B4

CABIN AIR CONDITIONING SYSTEM

FLIGHT MANUAL SUPPLEMENT

Document No. EC130B4-1

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. SR00543DE.

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 _____
For Ronald F. May, Manager
Denver Aircraft Certification Office
Northwest Mountain Region
Denver, Colorado

Date APR 0 1 2004

Air Comm Corporation
Document No. EC130B4-1
SUPPLEMENT TO
EC130B4 RFM

CABIN AIR CONDITIONING SYSTEM

Log of Revisions			
Rev. No.	Pages	Date	FAA Approval
Original 1	1-11 1-11		Appl._____ _____ For Ronald F. May, Manager Denver Aircraft Cert. Office Northwest Mountain Region Denver, Colorado Date: APR 0 1 2004

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Revised _____

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CABIN AIR CONDITIONING SYSTEM

SECTION 1 INTRODUCTION

The EC130 air conditioner is a vapor cycle system that includes the following components:

Compressor
Condenser
Forward Mounted Evaporator
Aft Mounted Evaporator (Optional Fresh Air Inlet)
Plumbing System
Electrical System

The compressor is belt driven through an electric clutch by a sheave mounted on the output shaft of the main rotor transmission.

The condenser is mounted below the cabin floor and features a retractable scoop/blower assembly and a separate heat exchanger assembly.

The forward evaporator is mounted on the forward end of the instrument panel console structure. Conditioned air is delivered to the crew by means of two air ducts, one mounted on each side of the instrument panel console.

The aft evaporator assembly is mounted on the right hand side of the main rotor transmission deck aft of the cabin bulkhead and is enclosed by the main rotor transmission cowling. Cabin return air is ducted to the evaporator through a cutout in the aft cabin bulkhead. Conditioned air is pumped to the headliner ducting through four inlets in the aft cabin bulkhead.

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An optional fresh air assembly is available. This system features an actuator operated door in the aft evaporator, which can be positioned to either recirculate existing cabin air or to bring in outside fresh air. This door is typically positioned to recirculate existing cabin air during air conditioner operations to maximize cooling performance, but can be opened during air conditioner or fan only operations if desired.

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 of each other. A temperature control knob is provided to vary the output air temperature of the air conditioner. A dimmer control knob is provided to vary the back lighting intensity of the air conditioner control panel.

A blue compressor "ON" light is located on the instrument panel to provide a visual status of the compressor operation.

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

The air conditioner system features an auto load shed circuit that will de-energize the entire air conditioner system, including the compressor clutch, in the event of a generator/engine failure.

A "GND MAINT" switch, located on the AC Relay Panel in the aft equipment bay, is provided to allow maintenance personnel the means of powering the air conditioning system when the engine/generator is off-line. Pressing the "GND MAINT" switch latches a relay that overrides the air conditioner auto-load-shed circuit. The relay will unlatch when the generator is turned on following an engine start.

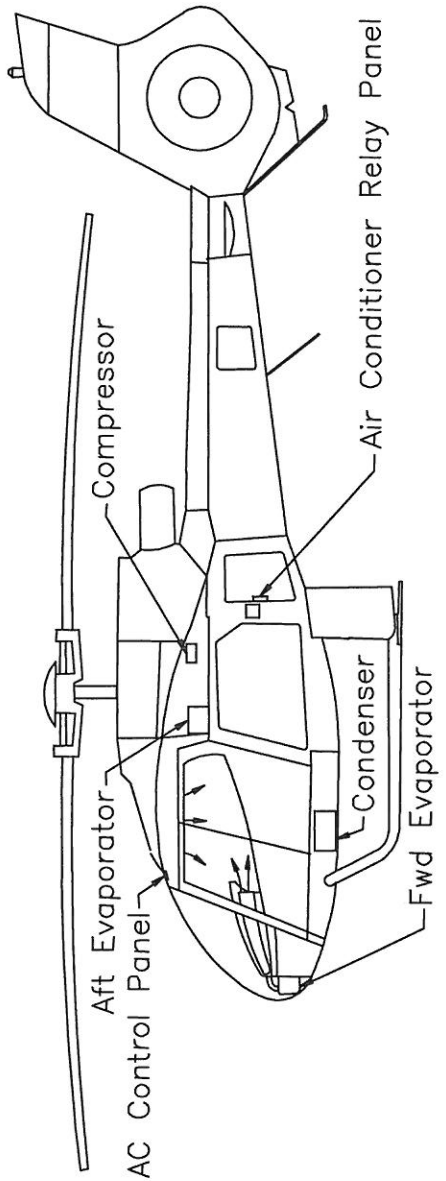
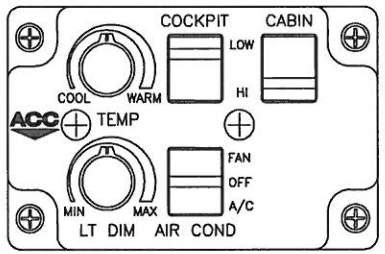


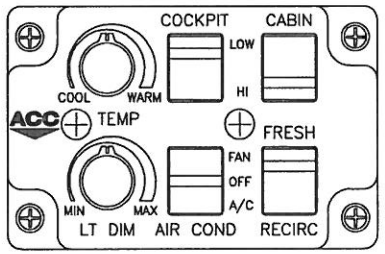
Figure 1
General Arrangement – Cabin Air Conditioner

SECTION 2 OPERATING LIMITATIONS

PLACARDS AND MARKINGS



AC Control Panel
without Fresh Air Switch



AC Control Panel
with Fresh Air Switch

Figure 2
AC Control Panel located in cockpit headliner
(Alternate Location – Anywhere on RH side of instrument panel)

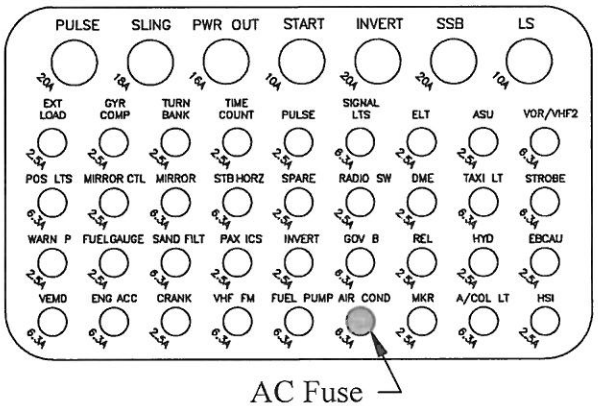


Figure 3
AC fuse is located in the cockpit fuse panel
on the RH side of the instrument panel console

PLACARDS AND MARKINGS (cont'd)

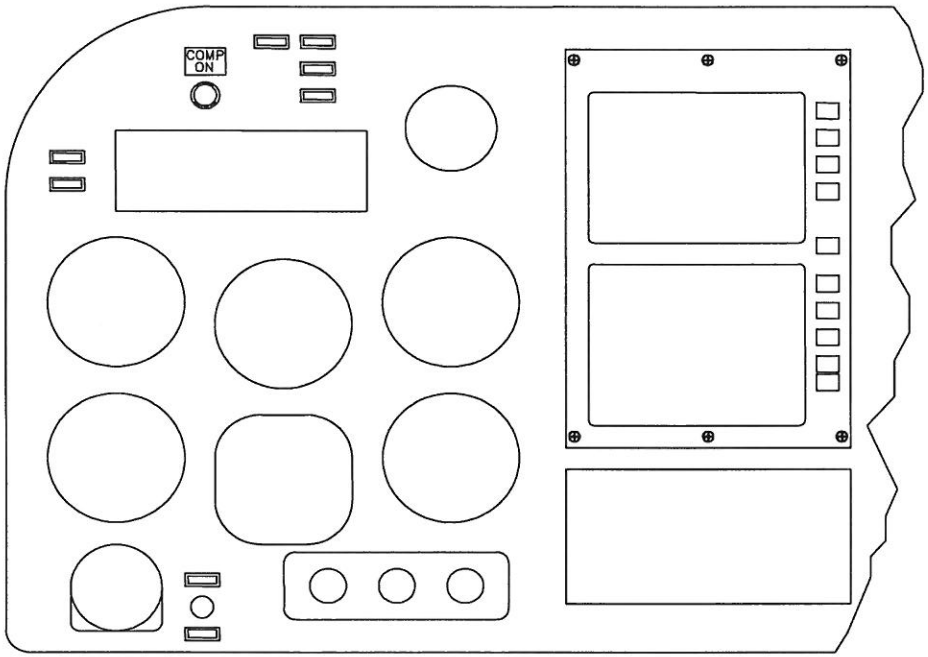


Figure 4
COMP ON Annunciator
(Approved Location – Anywhere on the instrument panel within view and reach of the pilot)

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SECTION 2

OPERATING LIMITATIONS

PLACARDS AND MARKINGS (cont'd)

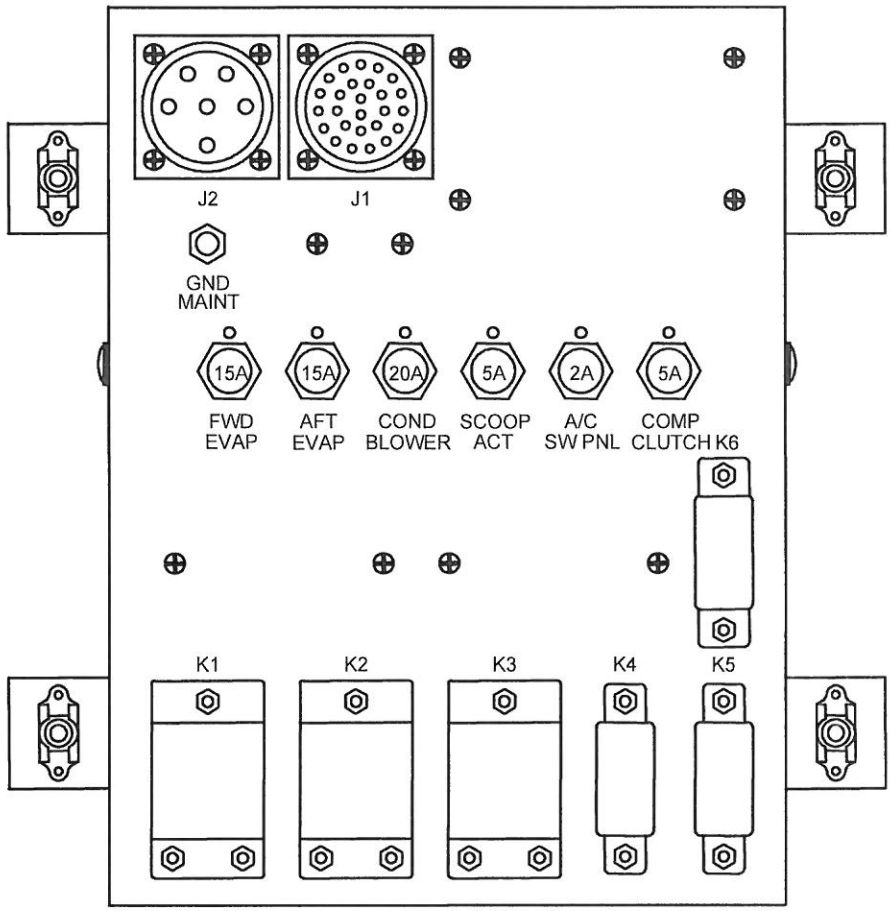

Figure 5
AC Relay Panel
(Mounted inside the right-hand baggage compartment)

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 air conditioner auto load shed circuitry, 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-postion switch) to the OFF or FAN position to preclude damage to the compressor.

SECTION 4 NORMAL PROCEDURES

PREFLIGHT CHECK (EXTERIOR)

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

ENGINE PRESTART Check A/C–OFF–FAN (3-postion switch) – OFF

BEFORE TAKEOFF

A/C–OFF–FAN (3-postion switch) – As desired
EVAP FANS – FAN SPEED SWITCH – As desired
FRESH AIR SWITCH – As desired

IN FLIGHT OPERATIONS

A/C–OFF–FAN (3-postion switch) – As desired
EVAP FANS – FAN SPEED SWITCH – As desired
FRESH AIR SWITCH – As desired

NOTE

Total air conditioning system electrical load is less than 25 amps. Monitor amps.

NOTE

Placing the FRESH/RECIRC switch in the FRESH position allows outside air to enter the aft evaporator. When maximum cooling is desired place this switch in the RECIRC position.

NOTE

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

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 ..... 46 ft/min (14 m/min)

Hover Ceiling In Ground Effect and Out of Ground Effect

Add 40 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.

SECTION 6 WEIGHT AND BALANCE

Installed Equipment	Weight (lbs)	Longitudinal		Lateral	
		Arm (in)	Moment (in – lbs)	Arm (in)	Moment (in – lbs)
EC130-200-2 Air Conditioning System	88.40	99.01	8,752	-3.30	-292

NOTE

Lateral calculations are minus (-) equal left-hand side of aircraft and positive (+) equals right-hand side of aircraft.