AIR COMM CORPORATION
3300 AIRPORT ROAD
BOULDER,COLORADO 80301

EUROCOPTER EC120B

CABIN AIR CONDITIONING SYSTEM

FLIGHT MANUAL SUPPLEMENT

Document No. EC120B-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. SR00491DE.

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.

EUROCOPTER EC120B
FLIGHT MANUAL

CAB N AIR CONDITIONING SYSTEM

Log of Revisions		
Original 0		
Pgs	Rev No.	FAA Appl
4,6,7	1	JUL 2 1 2003
3 & 8	2	SEP 1 2006

FAA APPROVED:

Approved: _____ Date: MAR 1 0 2003

For Ron May, Manager
Denver Aircraft Certification Office,
Northwest Mountain Region
Denver, Colorado

CABIN AIR CONDITIONING SYSTEM

INTRODUCTION

The EC120 air conditioner is a vapor cycle system which includes the following components:

- Compressor
- Condenser
- Forward Mounted Evaporator (Optional)
- Aft Mounted Evaporator
- Plumbing System
- Electrical System

The compressor is belt driven through an electric clutch by a sheave integral to the forward tail rotor shaft coupler. The drive pulley is installed on the tail rotor output shaft of the main rotor transmission.

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

The optional forward evaporator is mounted on the forward end of the instrument panel console structure. Conditioned air is delivered to the crew by means of air ducts, mounted to the sides of the instrument panel console.

The aft evaporator assembly is mounted above the cabin top and is enclosed by the cabin top fairing. Cabin return air is ducted to the evaporator through a cutout in the cabin top structure. Conditioned air is pumped to the existing headliner ducting through the existing fresh air/heater inlet in the cabin top.

CABIN AIR CONDITIONING SYSTEM

An optional electrical actuator controlled airbox door is provided for control of the airbox door. This door is normally closed during operation of the air conditioner but can be opened when operating in the BLR mode.

The system controls feature AC-OFF-BLR functions incorporated into a single "three position" switch. Two additional adjustable blower speed controls are provided for the forward and aft evaporators. The forward and aft evaporator blower speeds can be operated independently of each other. A temperature control knob is provided to allow the flight crew the means of varying the output air temperature of the air conditioner.

A compressor "ON" light, is located in the air conditioner control panel, and provides a visual status of the compressor operation.

The refrigerant plumbing system features high and low pressure cutoff switches. Exceedence of the pressure limits will result in the loss of electrical power to the compressor magnetic clutch.

The air conditioner electrical system is designed to disconnect all electrical equipment included in the compressor clutch, in case of generator/engine failure.

A "GND MAINT" switch located on the AC Relay Panel in the RH baggage compartment is provided to allow maintenance personnel the means of powering on the air conditioning system when the engine and/or electrical generator are off. Momentarily pressing the "GND MAINT" switch latches an relay that overrides the air conditioner auto-load-shed feature. The relay will unlatch whenever the generator is turned on following an engine start.

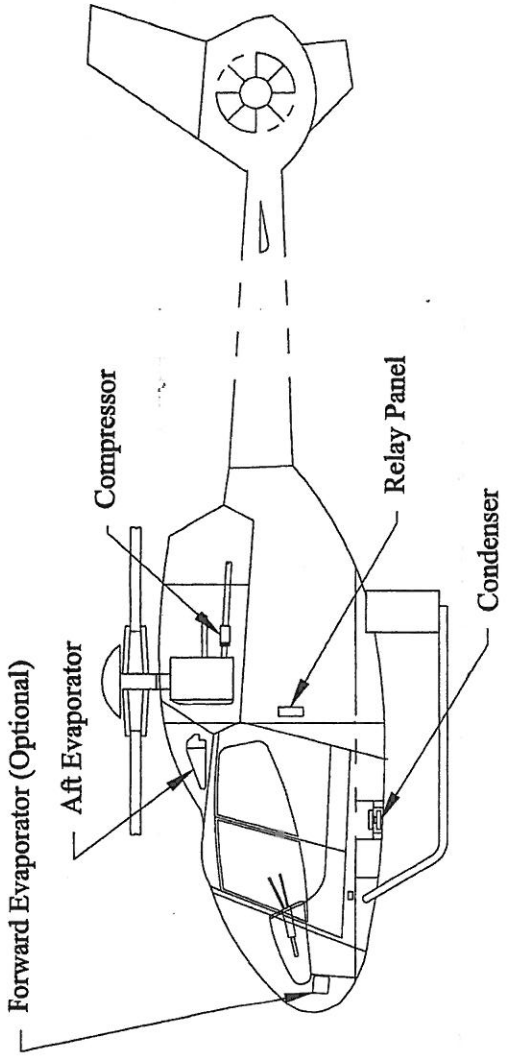
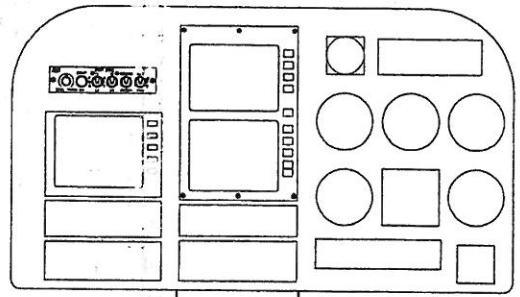


Figure 1 General Arrangement – Cabin Air Conditioner

SECTION 1 OPERATING LIMITATIONS

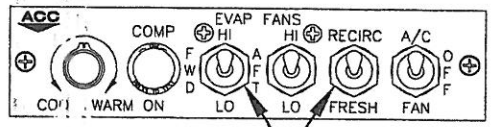
PLACARDS AND MARKINGS

AC Contol Panel
Approved Location No. 2
Any open space on instrument panel

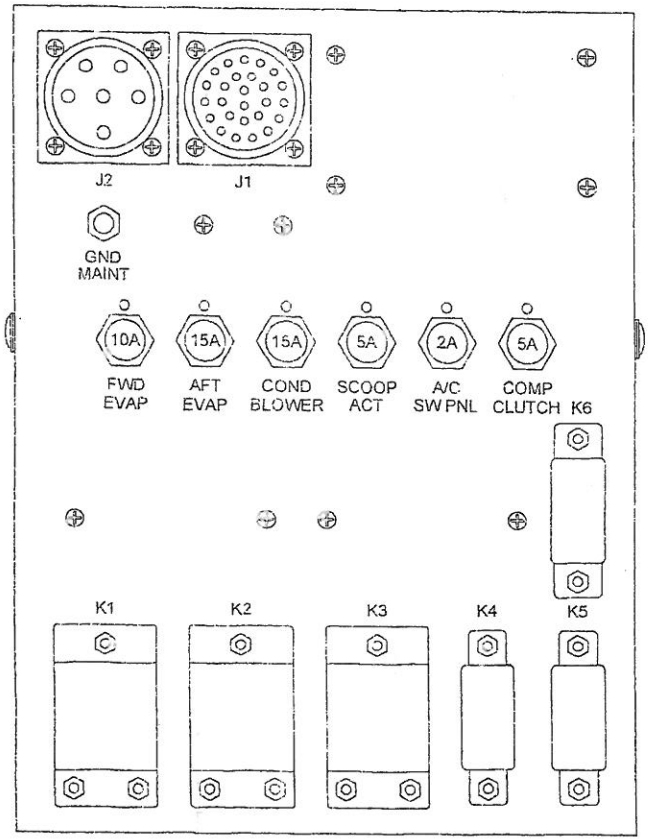


AC Contol Panel
Approved Location No. 1
Any open space in the center pedestal not under the Collective Controller

Typical Location
A/C Disconnect
Circuit Breaker



SECTION 1 OPERATING LIMITATIONS
PLACARDS AND MARKINGS (cont'd)



Relay Panel mounted inside the RH baggage compartment

SECTION 2 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 – BLR – OFF Switch – OFF

BEFORE TAKEOFF

A/C – BLR – OFF Switch – As desired
EVAP BLOWERS – BLOWER SPEED – As desired
FRESH AIR SWITCH – RECIRCULATE

SECTION 2 NORMAL PROCEDURES (cont'd)

IN FLIGHT OPERATIONS

A/C – BLR – ORR Switch – As desired
EVAP BLOWERS – BLOWER SPEED – As desired
FRESH AIR SWITCH – RECIRCULATE

NOTE

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

NOTE

Selection of FRESH AIR allows outside air to enter the aft evaporator. When cooling is desired this switch should be in the RECIRCULATE position.

NOTE

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

FAA APPROVED
SUPPLEMENT

EUROCOPTER EC120B
FLIGHT MANUAL

CABIN AIR CONDITIONING SYSTEM

SECTION 3 EMERGENCY PROCEDURES

A/C – BLR – OFF Switch – OFF

Operate switch to OFF for any of the following emergencies:

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

NOTE

Loss of generator output results in automatic disconnect of the air conditioner electrical system, including compressor clutch.

SECTION 4 MALFUNTION PROCEDURES

If outlet air is not cool, turn the A/C – BLR – OFF Switch to OFF or BLR to preclude damage to the compressor.

EUROCOPTER EC120B
FLIGHT MANUAL

CABIN AIR CONDITIONING SYSTEM

SECTION 5 PERFORMANCE DATA

When the A/C 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 ..... 67 ft/min (20 m/min)

Hover Ceiling In Ground Effect and Out of Ground Effect

Add 46 lb (21 kg) to the actual IGE/OGE hover gross weight for takeoff power or maximum continuous power when entering the chart to determine hover ceiling.