

AIR COMM CORPORATION
3300 AIRPORT ROAD
BOULDER, COLORADO 80301

BELL HELICOPTER
MODEL 407

FLIGHT MANUAL SUPPLEMENT
407EC-1
Cabin Air Conditioning System

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 SR00222DE.

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.

Log of Pages

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Cabin Air Conditioning System

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CABIN AIR CONDITIONING SYSTEM

INTRODUCTION

The cabin air conditioning system is a R-134a refrigerant type which consists of an engine driven compressor, a condenser, and multiple evaporators.

The function of the compressor is to pump Refrigerant (R-134a) throughout the system circuit.

The function of the condenser is to remove heat energy from the refrigerant by forcing outside air across the condenser heat exchanger.

The evaporators are used to remove heat and moisture from the cabin, by forcing cabin air across the coils of the evaporator heat exchangers.

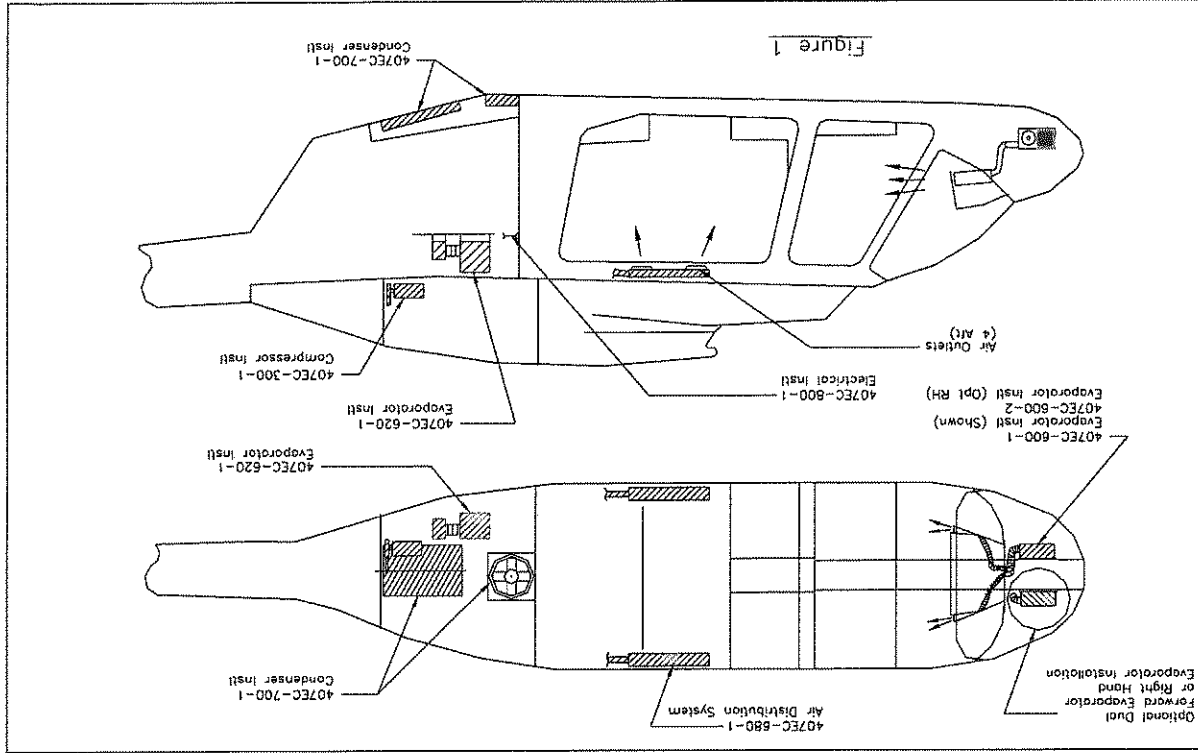
The system controls consist of a switch which can be positioned to AC, BLOWER, or OFF. In the AC mode, the complete cooling system is activated. In the BLOWER mode, only the evaporator blowers are operating as a means of cabin air circulation.

A HI/LO blower speed switch is located adjacent to the AC, BLOWER, OFF switch for air-flow adjustment.

The system also incorporates a capillary tube type switch, whose function is to prevent evaporator coil freeze-up and/or provide temperature control of the conditioned air. The switch controls a solenoid type refrigerant bypass valve. This arrangement provides system control without compressor clutch cycling.

The system incorporates a binary pressure switch. This switch is designed to protect the system in case of loss of refrigerant (low pressure) or in case of a system over pressure. The system cut-out pressures are 50 and 325 psig for the low and high pressures, respectively.

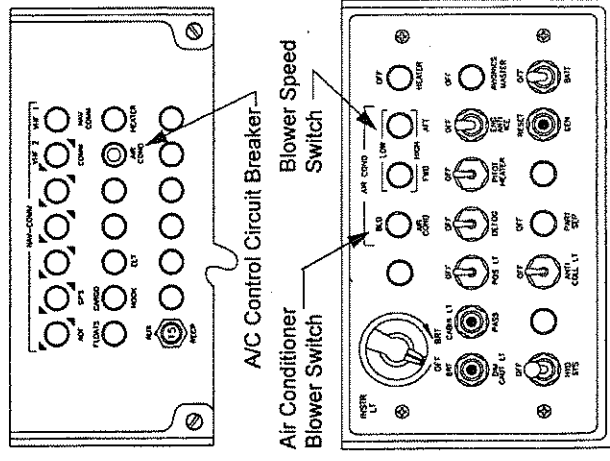
Model 407



CABIN AIR CONDITIONING SYSTEM

SECTION 1 OPERATING LIMITATIONS

PLACARDS AND MARKINGS



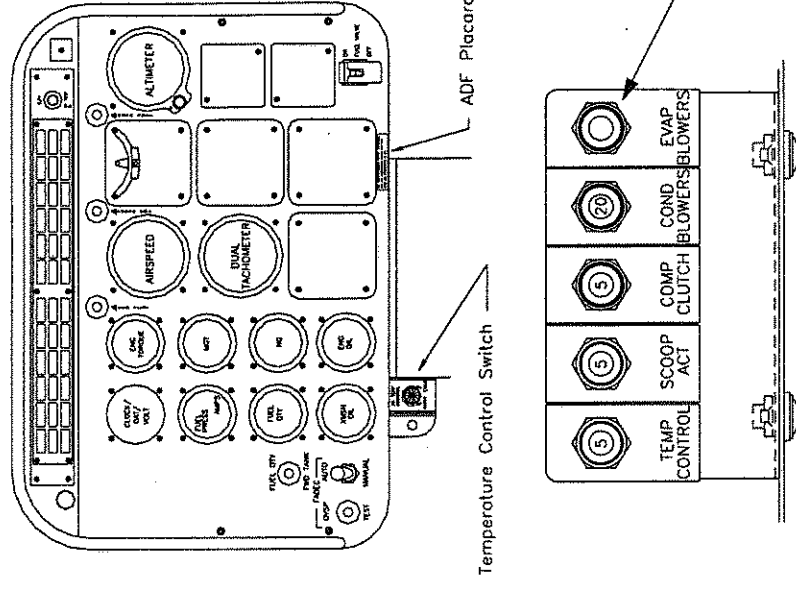
Located in overhead console

Locate on instrument panel. This placard not required when the ADF antenna is installed in the forward location.

CABIN AIR CONDITIONING SYSTEM

SECTION 1 (cont) OPERATING LIMITATIONS

PLACARDS AND MARKINGS



Circuit Breaker Labels located on circuit breaker panel above baggage compartment.

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SECTION 2 NORMAL PROCEDURES

PREFLIGHT CHECK (EXTERIOR)

- Compressor - Check security.
- Compressor Drive Belt - Check tension and general condition.
- Condenser - Check security.

ENGINE PRESTART CHECK

Air Cond Switch - OFF

BEFORE TAKEOFF

Air Cond switch - Air Cond (ON) as desired.
Select HI / LO blower as desired.

IN FLIGHT OPERATIONS

Air Cond switch - Air Cond (ON) as desired.
Select HI / LO blower as desired.

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CABIN AIR CONDITIONING SYSTEM

SECTION 3 EMERGENCY PROCEDURES

Air Cond switch - OFF

Operate Air Conditioner switch to - OFF,
for any of the following emergencies:

- Engine Failure
- Engine Over temperature
- Generator Failure

SECTION 4 MALFUNCTION PROCEDURES

If outlet air is not cool, turn Air Cond. to OFF, or to
BLO to preclude damage to the compressor.

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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.....67 ft/min.

Hover Ceiling In Ground Effect and Out of Ground Effect

Subtract 50 pounds (22.68 kilograms) from IGE/OGE hover gross weight for takeoff power or maximum continuous power..