

FAA APPROVED
ROTORCRAFT FLIGHT MANUAL SUPPLEMENT
FOR THE
BELL HELICOPTER
MODEL 407
WHEN EQUIPPED WITH THE
OEM BLEED AIR CABIN HEATING SYSTEM

REGISTRATION # _____ SERIAL # _____

The information contained in this supplement is FAA approved material and must be attached to the FAA approved Bell 407 Rotorcraft Flight Manual when the rotorcraft has been modified by the installation of the Air Comm Corporation Bleed Air Cabin Heating System in accordance with

STC No. SR00221DE

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

FAA Approved :	Date: <u>Dec 22, 2011</u>
<i>Hein Tong</i>	
for Manager, Flight Test Branch, ANM-160L Federal Aviation Administration Los Angeles Aircraft Certification Office Transport Airplane Directorate	

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LOG OF PAGES

Rev. No.	Page No.	Date	Description of Change	FAA Approved
1	2, 9	3/17/97		<i>Ray G. Chisley</i> <i>acting mgr</i>
2	1 3 7	12/22/11	Reformatted all pages Added "PFD" Updated Instl. P/Ns on Fig 1 Added Fig for G1000H Avionics	<i>Hein Tong</i> Mgr, Flt Test Br, ANM-160L FAA, Los Angeles ACO Transport Airplane Directorate <u>12-22-2011</u> Date

FAA Date:

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SYSTEM DESCRIPTION

The cabin heating system is a bleed air type which consists of bleed air plumbing, a heater control valve, and four heater ejectors as shown figure 1.

When the heater control valve is opened the bleed air flows from the engine compressor through the bleed lines to the ejectors, where it is mixed with cabin air and exhausted to both the front and rear passengers. Two of the ejectors are located under the front seats and two are located on the sides of the rear aft facing seats. For the front ejectors the warm air is ducted forward and through swivel outlets, which are located in the seat box structure. The aft ejectors are mounted on the sides of the aft cabin seat structure and warm air is ducted through the enclosures to the rear cabin area. The outlet flow can be individually adjusted by rotation of the swivel outlets or by rotating a flow control knob on the rear ejectors (opt-fwd and aft flow control outlets).

An electrically operated firewall-mounted shut-off valve is included. The ON-OFF switch is mounted on the overhead console. The valve will automatically close if there is a loss of electrical power to the valve.

Temperature sensors are installed as a part of the heater system. In the case of an over-temperature condition, the sensors will close, resulting in the illumination of an amber "heater over temp" light on the annunciator panel or PFD, if equipped, and automatic closure of the firewall shut-off valve. The heater ON-OFF switch must be set to OFF in order to reset the firewall shut-off valve and overtemp light. The heater control valve is mounted under the pilot's seat, and the heater control is located on the front of the seat box.

SYSTEM DESCRIPTION, CONT'D

The system also features a defroster system. The system consists of an ON-OFF valve, located in the center console, and ejectors, located in each defroster diffuser. The ejectors pump warm air across the windshield. The original defroster blowers are not required but may remain installed at the option of the operator. The defroster and heater may be used simultaneously. Both the "heater" and "defroster" valves are infinitely adjustable from OFF to FULL ON and may be set at the discretion of the operator.

A drain valve is also incorporated as a part of the heater system. This valve is used to drain cleaning solution overboard when washing the internal parts of the engine. The valve, which is located inside the RH engine access door, is automatic (closed by engine pressure).

An optional Chin Bubble defroster system may also be installed. This system shares bleed air with the defroster, thus when the defroster is on, the chin bubble defroster is operating.

An optional Hi-Output (Arctic) heater system may be installed. This system provides 70% more performance the standard heater.

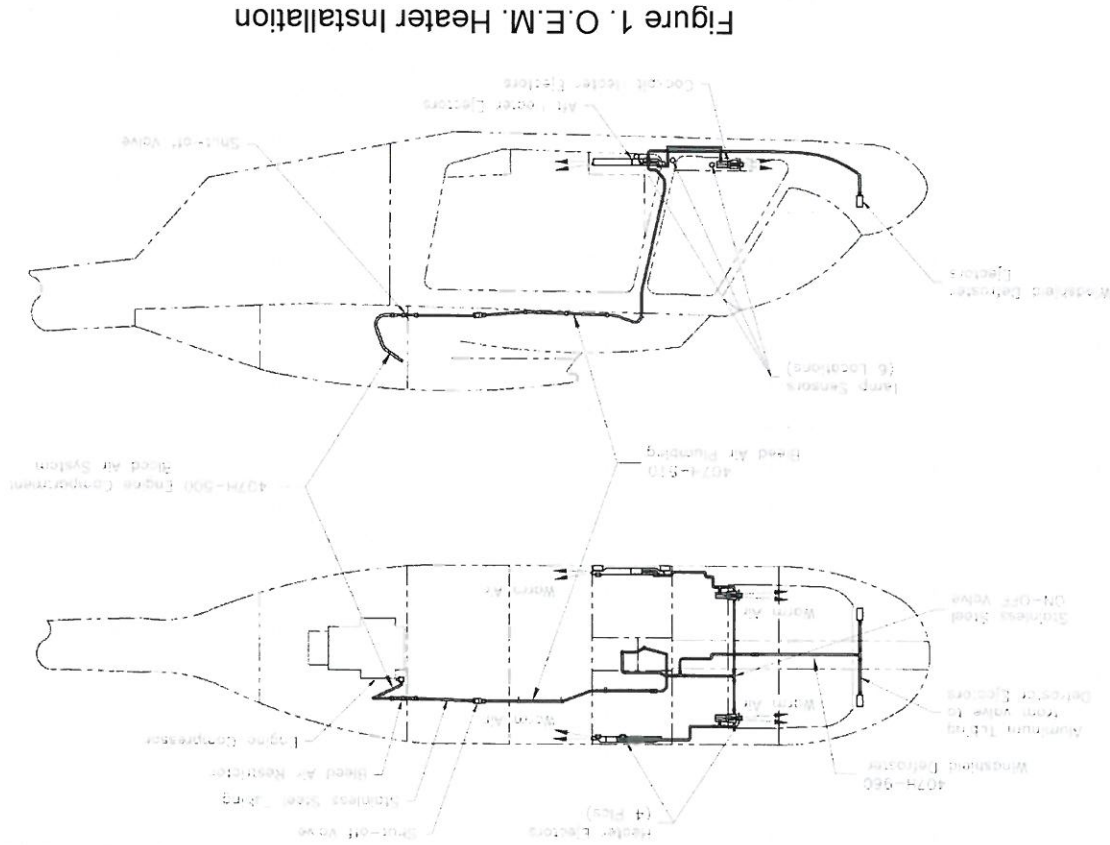
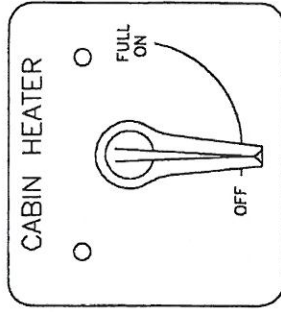
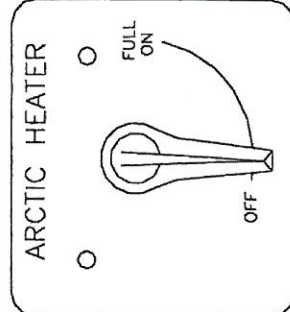


Figure 1. O.E.M. Heater Installation

PLACARDS AND MARKINGS

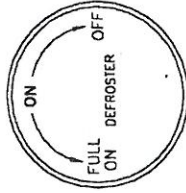


Located on the front side of the RH seat support box.

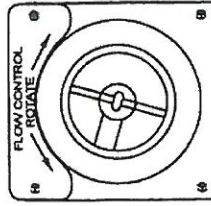


Located on the front side of the RH seat support box
(Optional Hi-Output heater)

PLACARDS AND MARKINGS (cont'd)



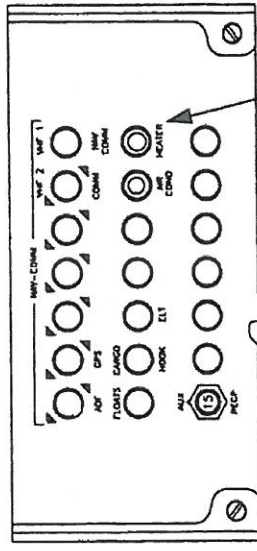
Located on the Defroster Control Knob.



Located adjacent to the two forward air outlets.
(optional flow control feature)

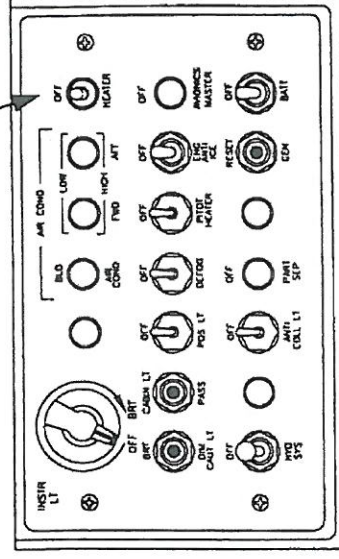


Located on the control knob at aft heater outlets
(optional flow control feature)



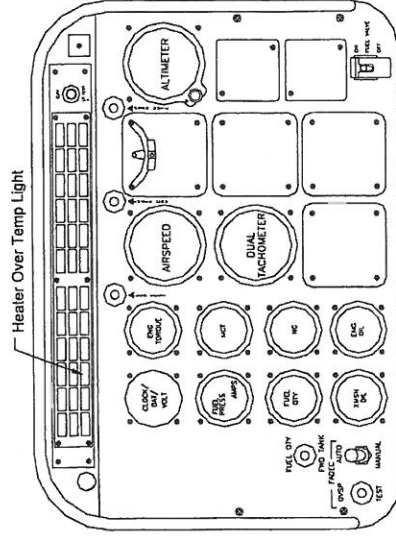
Heater Control Circuit Breaker

Heater ON/OFF Switch

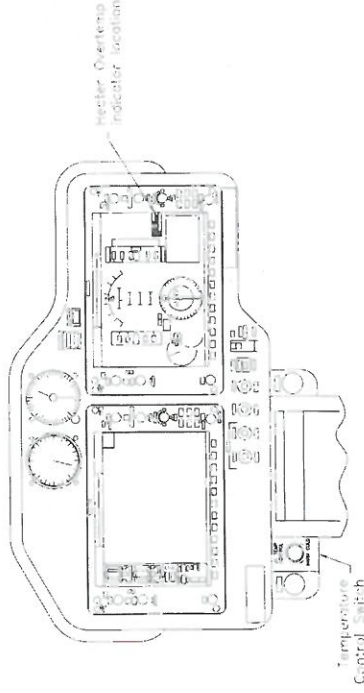


Located in overhead switch panel

Heater OVER TEMP Warning Light



Instrument Panel, Standard 407



Instrument Panel Configuration if Garmin G1000H Avionics System is installed

SECTION 1 - LIMITATIONS

1. Limitations

- 1.1 Heater and Defroster Control shall be OFF during engine startup and shutdown.

SECTION 2 - NORMAL PROCEDURES

ENGINE PRESTART CHECK

- Heater switch – OFF
- Cabin heater valve – As desired
- Defroster Control Knob – As desired

BEFORE TAKEOFF

- Heater switch – As desired
- Cabin heater valve – As desired
- Defroster Control knob – As desired

IN FLIGHT OPERATIONS

- Heater switch – As desired
- Cabin heater valve – As desired
- Defroster Control knob – As desired

DESCENT AND LANDINGS

- Heater switch – As desired
- Cabin heater valve – As desired
- Defroster Control knob – As desired

SECTION 3 - EMERGENCY PROCEDURES

Heater Switch – OFF
for any of the following emergencies:

Engine failure
Engine over-temperature
Onboard Fire

SECTION 4 - MALFUNCTION PROCEDURES

Indications:

Heater Over Temp light – Illuminated

Procedures:

Heater Switch – OFF

SECTION 5 - PERFORMANCE

For operations involving Heater / Defroster only:

Refer to the basic Flight Manual FM-1 for take-off, hover and landing data.

Subtract 55 fpm from the basic FM for Heater on R/C performance.

For operations involving Heater / Defroster and the particle separator:

Refer to Particle Separator Supplement FMS-3 for applicable performance data.