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FAA APPROVED ROTORCRAFT FLIGHT MANUAL SUPPLEMENT

FOR THE
BELL HELICOPTER MODEL
B-429

WHEN EQUIPPED WITH THE
BLEED AIR HEATER SYSTEM

REGISTRATION #: _____ SERIAL #: _____

The information in this supplement is FAA approved material and must be attached to the FAA Approved Bell 429 Rotorcraft Flight Manual when the rotorcraft has been modified by the installation of Air Comm Bleed Air Heater System in accordance with:

STC # SR00692DE

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

FAA Approved: *Hieu Tong*

fn Manager, Flight Test Branch, ANM-160L
Federal Aviation Administration
Los Angeles Certification Office
Transport Airplane Directorate

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Air Comm Corporation
3300 Airport Rd
Boulder, CO. 80301

Supplement to the Bell Helicopter RFM for
Models B-429
when modified with the
Bleed Air Heater System

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Rev No.	Pg No.	Date	Description of Change	FAA Approved
0	Cvr i 1-9	31 Jul 2009	Initial Release	<i>Hieu Tong</i> for Mgr, Flight Test Br., ANM-160L FAA, Los Angeles ACO Transportation Directorate DATE: <u>7/31/2009</u>
1	2 9	8 July 2010	Revised Figure 1 skid gear and Performance statement to include RFM Revision.	<i>S. James Black</i> Mgr, Flight Test Br., ANM-160L FAA, Los Angeles ACO Transportation Directorate DATE: <u>July 8, 2010</u>
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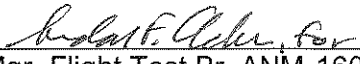
Rev No.	Pg No.	Date	Description of Change	FAA Approved
3	6	25 Nov 2011	Revised DEFOG PULL placard shape, deleted "Co-pilot"	 Mgr, Flight Test Br, ANM-160L FAA, Los Angeles ACO Transport Airplane Directorate <i>November 25, 2011</i> Date

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SYSTEM DESCRIPTION

The cabin heater system is a bleed air type which incorporates the multiple ejector concept as shown by Figure 1.

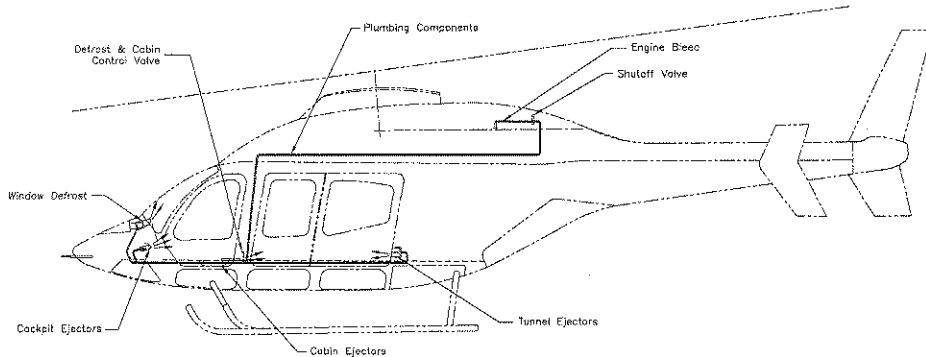


Figure 1. General Arrangement - Cabin Heater System

The system consists of a series of small heater ejector assemblies which are located as follows: Two cockpit ejectors, located forward of the anti-torque pedals; two cabin ejectors, located under the cockpit seats; and two tunnel ejectors, located in the fuselage side panels. Two additional ejectors are included to provide warm air for windshield defogging.

The heater ejectors mix engine bleed air with re-circulated cabin air and exhausts warm air to the floor area of the cabin. The air circulation through the ejector is achieved by the bleed air pressure.

The CABIN HEAT switch has three positions: "OFF," "ON," and "OVRD ON," see Figure 2.

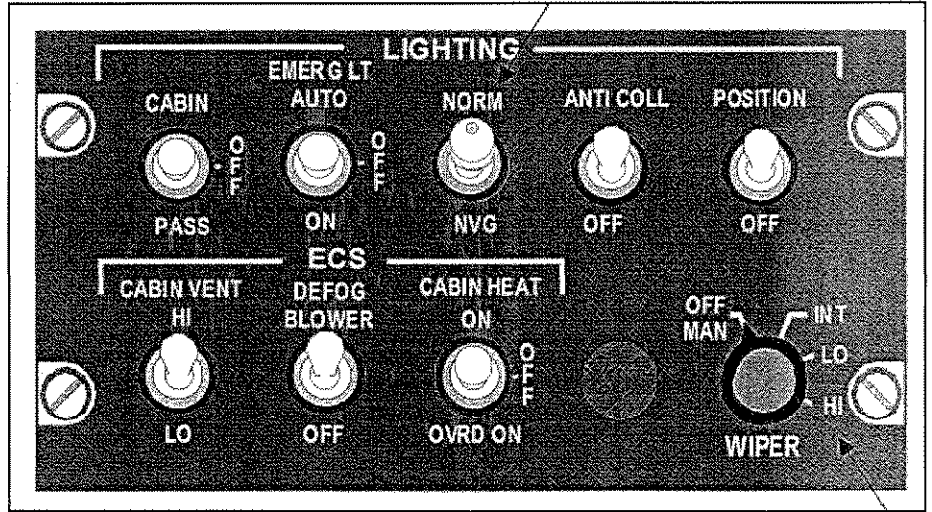


Figure 2. Cabin Heat Control Switch - Center Console Aft

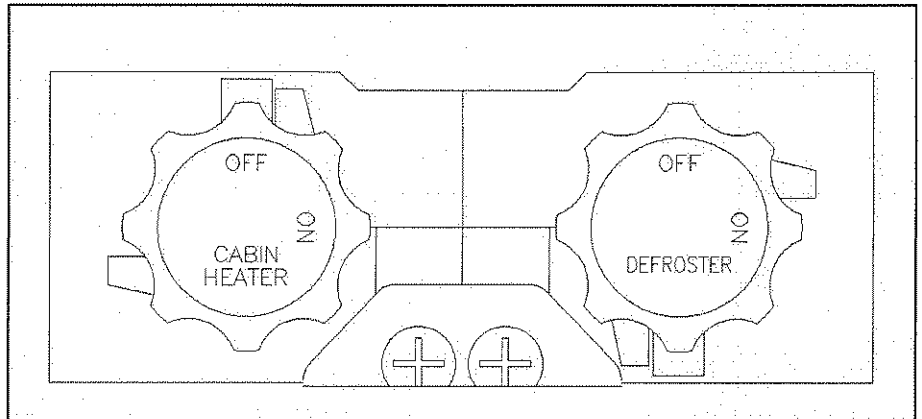


Figure 3. Cabin Heater & Defroster Control Valves Center Console - Aft

The system features a typically closed, electrically operated firewall shutoff valve which is energized by the CABIN HEAT "ON" switch, see Figure 2.

The cockpit, cabin, and tunnel ejectors air flow can be adjusted manually by the CABIN HEATER control valve, see Figure 3.

The air flow of the two cockpit ejectors can be adjusted independently by adjusting the nozzle on the face of the outlet as shown in Figure 7. This adjustment must be accomplished on the ground (i.e. not accessible during flight).

To operate the defroster, the DEFOG PULL knob must be pulled, see Figure 6. The fresh air should be closed. However, the fresh air booster blowers may be used. The defroster is adjusted manually by the DEFROSTER control valves, see Figure 3. When the DEFOG PULL knob is pushed the air is routed to the cockpit fresh air outlets.

This system incorporates check valves which are designed to prevent bleed air backflow in the event of loss of one engine.

The heater system is equipped with a series of temperature sensors. An over-temperature condition will result in CABIN HEAT HOT (Figure 4) illumination on the DU (Display Unit), and automatic closure of the system shutoff valve.

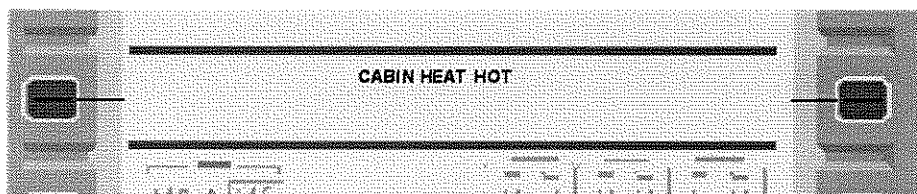


Figure 4. CABIN HEAT HOT caution message displayed on Display Unit (DU).

The message will remain, even if area has cooled down, until CABIN HEAT switch is switched to "OFF". The heater operation can be restored, after the area which experienced the increased temperature has cooled, and by switching the heater CABIN HEAT switch from "HTR" to "OFF" to "HTR." However, use of the heater is not recommended until the cause of the occurrence has been determined.

The heater electrical system provides for automatic heater cutoff (closure of the firewall shut-off valve) in the event of an OEI occurrence. Heat can be restored during OEI by switching the CABIN HEAT switch to "OVRD ON." When AEO is restored the heater will once again cutoff. Heat can then be restored by switching the CABIN HEAT switch to "ON"

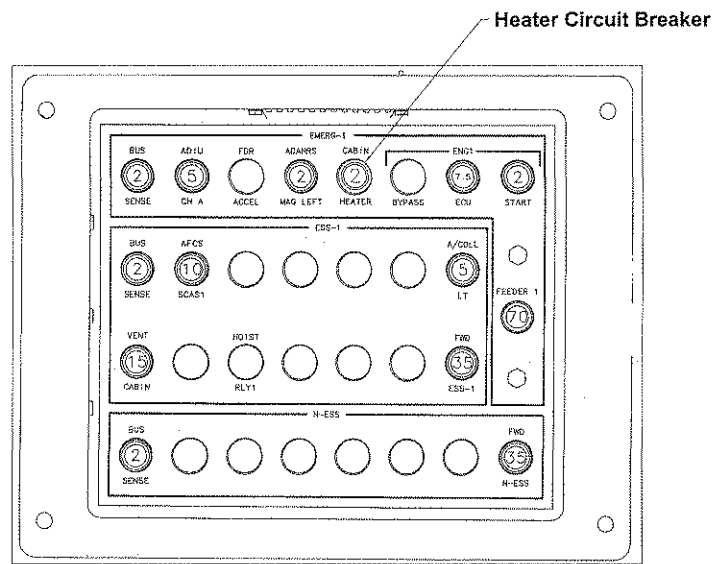


Figure 5. Heater Circuit Breaker – right hand tunnel panel

SECTION 1 – LIMITATIONS

OPERATION

- CABIN HEAT Switch shall be OFF during engine start and shut down.

PLACARDS & MARKINGS

DEFOG PULL

Figure 6. Defog push-pull cable: located pilot side adjacent to inboard air outlets

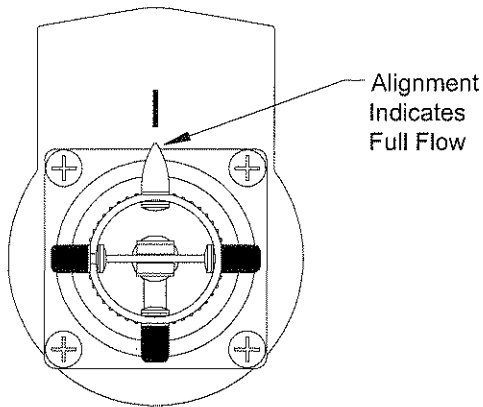


Figure 7. Cockpit Heater Outlet (Ground adjustable only)

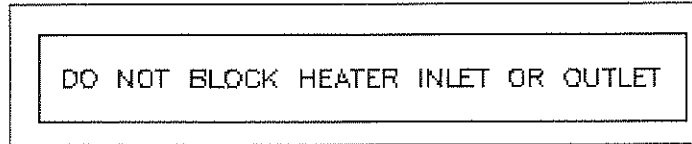


Figure 8. Cabin & Tunnel Heater Outlets: Located under crew seats and in the aft side panels

SECTION 2 – NORMAL PROCEDURES

ENGINE PRESTART CHECK

- CABIN HEAT switch – OFF.
- CABIN HEATER valve – As desired.
- DEFROSTER valve – As desired

BEFORE TAKEOFF or INFLIGHT

- CABIN HEATER valve – As desired
- DEFROSTER valve – As desired
- DEFOG PULL knob – Pull for ON (Pilot and/or co-pilot) for defroster with fresh air vents closed.

NOTE

If aircraft was started with the CABIN HEAT switch in the ON position, move CABIN HEAT switch to OFF then ON.

NOTE

Operation of the cabin heater above 70° F (21°C) ambient may result in excessive outlet temperature.

SECTION 3 – EMERGENCY PROCEDURES

CABIN HEAT HOT Caution –

- Move CABIN HEAT switch to OFF
- Verify heater has shut off by sensing lack of warm air from outlets.
- Land as soon as possible if heater has not shut-off.

NOTE

Heater operation can be restored after CABIN HEAT HOT following cool-down by operating the CABIN HEAT switch to OFF and back to ON

NOTE

Heater operation can be restored during OEI flight by moving the CABIN HEAT switch to OVRD ON. Monitor MGT and N_G.

SECTION 4 - PERFORMANCE

For changes from the basic Rotorcraft Flight Manual refer to Rotorcraft Flight Manual Revision TR-1 Dated 11 June 2010 or subsequent FAA approved revisions for HEATER ON Aircraft Performance Data.