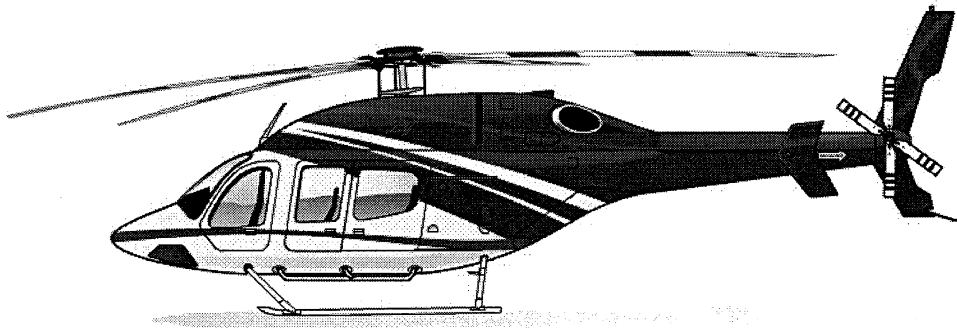


**AIR COMM CORPORATION
3330 AIRPORT ROAD
BOULDER, CO. 80301**

**DOCUMENTS FOR THE INSTALLATION OF THE
BELL MODEL 429 OEM CABIN HEATING SYSTEM**



LIST OF EFFECTIVE PAGES

LIST OF REVISIONS

Revision 0 25 September 2009

LIST OF EFFECTIVE PAGES

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CHAPTER 0 INTRODUCTION

This document contains information, which is required for the installation and operation of the Air Comm Corporation's heating system installed in the bell 429 series helicopter. After completion of the installation of the heating system the Weight & Balance Information, Flight Manual Supplement, and the Supplemental Type Certificate must be removed from this document and placed with the appropriate existing aircraft documents.

1. SCOPE

The scope of this document encompasses the general procedures and reference documentation necessary to install the Air Comm Corporation heating system in the Bell 429 series helicopter.

2. PURPOSE

The purpose of this document is to provide the aircraft mechanic in the field the necessary information and documentation to install the heating system.

3. ARRANGEMENT

This document is arranged by chapters, which are broken down into paragraphs and sub-paragraphs. All of the chapters and paragraphs are listed in the front of this document in the Table of Contents, and are further identified by their individual page number.

4. APPLICABILITY

This document is applicable to Bell Helicopter models 429 that are equipped with the Air Comm Corporation kit number 429H-206 heater system.

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CHAPTER 1
GENERAL INSTALLATION PROCEDURE & REFERENCE DOCUMENT

1. GENERAL INSTALLATION PROCEDURE

This section is intended to supplement the information contained on the installation drawings. All details and notes contained on the drawings should be reviewed carefully. As instructions for installation are provided on the installation drawing where appropriate, and are not repeated in this document.

The system components and associated hardware are packaged separately. Prior to beginning the installation it is recommended that the hardware be inventoried and placed in separate (labeled) boxes to prevent mixing.

2. REFERENCE DOCUMENT

The approval basis of the system covered by this document is Supplemental Type Certificate SR00692DE

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**CHAPTER 2
WEIGHT & BALANCE INFORMATION**

This page must be removed and placed with the appropriate existing aircraft documents.

Weight breakdown – Bell 429 series heating system:
Dwg. 429H-206

Weight & Balance

<u>Item</u>	<u>Wt (lbs)</u>	<u>X-Arm (in)</u>	<u>X-M (in-lb.)</u>
<u>Heater / Defroster System 429H-206</u>			
429H-206 Heater / Defroster	37.70	206.1	7771

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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*

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

FAA Approved Date: *July 31, 2009*

LOG OF PAGES

Rev No.	Pg No.	Date	Description of Change	FAA Approved
0	Cvr i 1-9	31 Jul 2009	Initial Release	<p><i>Hieu Tong</i></p> <hr/> <p>for Mgr, Flight Test Br., ANM-160L FAA, Los Angeles ACO Transportation Directorate</p> <p>DATE: <u>7/31/2009</u></p>
1	2 9	8 July 2010	Revised Figure 1 skid gear and Performance statement to include RFM Revision.	<p><i>S. Lawrence H. Hein</i></p> <hr/> <p>Mgr, Flight Test Br., ANM-160L FAA, Los Angeles ACO Transportation Directorate</p> <p>DATE: <u>July 8, 2010</u></p>

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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.

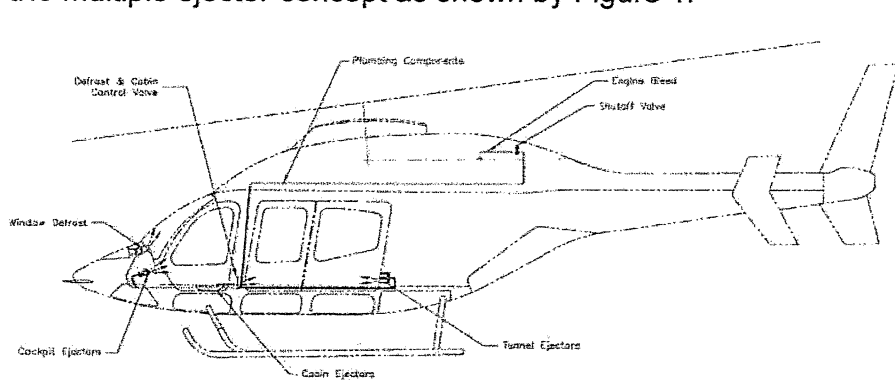


Figure 1. General Arrangement - Cabin Heater System

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.

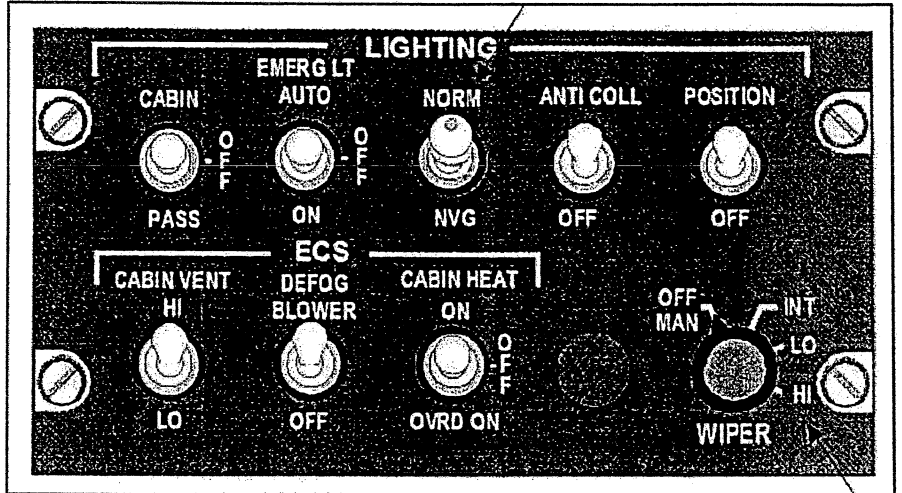


Figure 2. Cabin Heat Control Switch - Center Console Aft

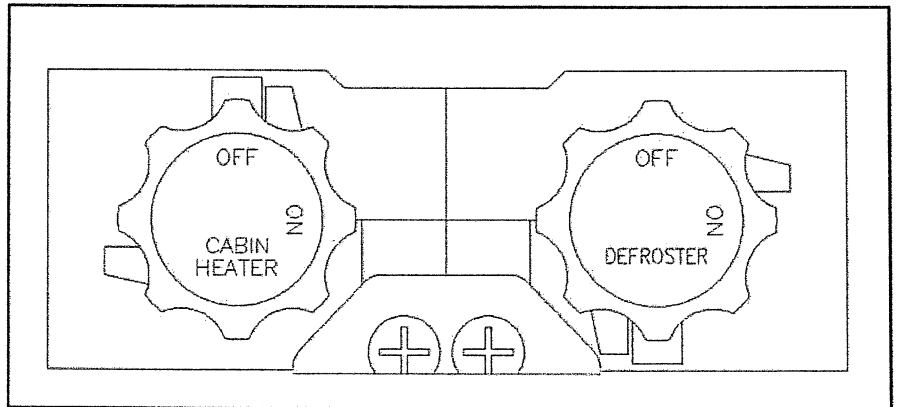


Figure 3. Cabin Heater & Defroster Control Valves Center Console - Aft

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 4. 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 3. 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.

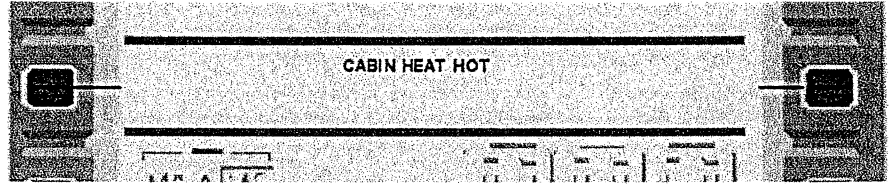


Figure 4. CABIN HEAT HOT caution message displayed on Display Unit (DU).

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"

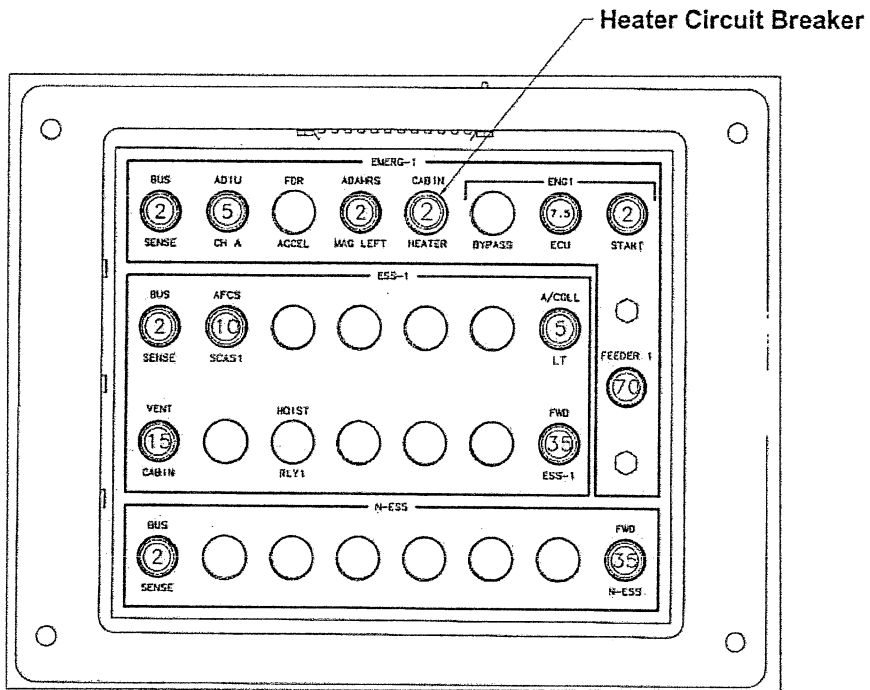


Figure 5. Heater Circuit Breaker – right hand tunnel panel

SECTION 1 – LIMITATIONS

OPERATION

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

PLACARDS & MARKINGS



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

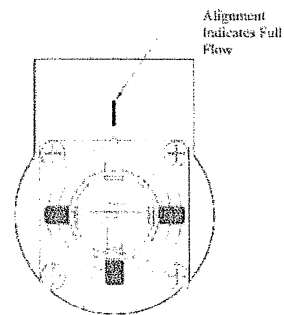


Figure 7. Cockpit Heater Outlet (Ground adjustable only)

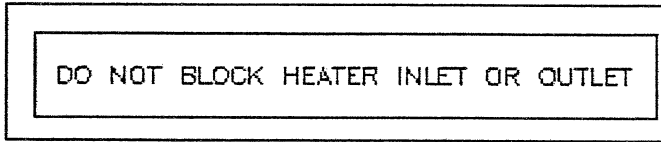


Figure 8. Cabin & Tunnel Heater Outlets

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

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.

CHAPTER 4
SUPPLEMENTAL TYPE CERTIFICATE

1. SUPPLEMENTAL TYPE CERTIFICATE

The following document must be removed and placed with the appropriate existing aircraft documents.

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Supplemental Type Certificate

Number SR00692DE

This certificate, issued to **Air Comm Corporation
3300 Airport Road
Boulder, Colorado 80301**

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part 27 of the Federal Aviation Regulations .**Certification Basis is set forth in Type Certificate Data Sheet R00003RD

Original Product—Type Certificate Number: R00003RD
Make: Bell Helicopter Textron
Model: 429

Description of the Type Design Change:

Installation of a Cabin Heater System in accordance with Air Comm Corporation Master Drawing List Report No DL-429H, Revision F, dated June 23, 2009, FAA approved August 13, 2009, or later FAA approved revision.

Limitations and Conditions:

1. FAA accepted Instructions for Continued Airworthiness, Document No. 429H-201M-1, Revision 0, dated June 04, 2009, FAA accepted June 26, 2009, or later FAA accepted revision is required.
2. FAA Approved Flight Manual Supplement, Document No. 429H-1, Revision 0, dated July 31, 2009, or later FAA approved revision is required for this installation.
3. Compatibility of this design change with previously approved modifications must be determined by the installer.
4. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: October 18, 2006

Date reissued:

Date of issuance: August 14, 2009

Date amended:



By direction of the Administrator

Melissa Sandow

Melissa Sandow (*Signature*), Program Manager
Northwest Mountain Region
Denver Aircraft Certification Office
(Title)

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

This certificate may be transferred in accordance with FAR 21.47.