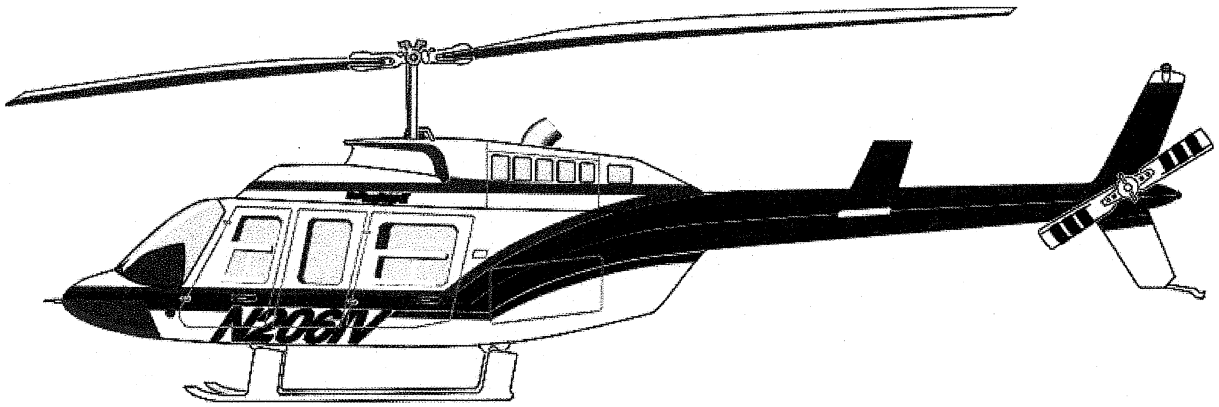
AIR COMM CORPORATION
Boulder Municipal Airport
3300 Airport Road
Boulder, CO. 80301

Report 206H-223M

BELL 206 L3 / L4 CABIN HEATER SYSTEM INSTALLATION INSTRUCTIONS (F/W Shut-off Valve/Temp Sensors)



This Document contains:

Flight Manual Supplement
STC Certificate
Service Instructions

December 16, 1991

Revisions

Rev	Description	Date	Appl
A	Revision Pg 11 to incorporate revised Circuitry. Added wt data on pg V-1	1-31-91	NS
B	Revised document. Deleted outlet flow control aft outlets. Misc minor chgs.	11-19-92	NS
C	Revised Pg II-2 to add contents of notes 15 & 18	4-6-93	NS
D	Revised pgs 11 & 12 to revise wire routing & elect schematic.	06-30-93	NS
E	Revised pg IV-1 to add option wts.	11-28-94	NS
F	Revised Pgs II-2 & 4 of 13 to add installation And testing information for temp sensors & Firewall shutoff valve.	10-24-05	

Table of Contents

Introduction

This document presents a step – by – step procedure for the installation of the ACC 206H-203 Cabin heater system in the Bell 206 L3 / L4 Series Helicopter. The instructions contained herein are intended to supplement the information contained on the installation drawings.

This manual provides additional information which is required for operation and maintenance of the aircraft. This data is contained in sections V, VI, and VII. After completion of the installation, the applicable sections are to be removed from this document, and placed with the appropriate existing aircraft historical documents.

References

1. ACC Drawing 206H-203; Bell 206 L3 / L4 Heater Installation
2. ACC Drawing 206H-512; 206 L3 Bleed Air Plumbing Installation
3. ACC Drawing 206H-514; 206 L4 Bleed Air Plumbing
4. ACC Drawing 206H-802; Installation Temperature Sensors 206 L3
5. ACC Drawing 206H-804; Installation Temperature Sensors 206 L4
6. ACC Drawing 206H-911; Bell 206 L4 Heater Ejector Installation
7. ACC Drawing 206H-986; Windshield Defroster Installation (optional)
8. ACC Drawing 206H-912; Modification Requirements to accommodate SFENA Autopilot
9. ACC Drawing 206H-916; Modification Requirements to accommodate Collins Autopilot
10. AC43.13.1A; Acceptable Practices, Aircraft Alteration and Repair Manual.

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Installation Instructions – Basic Heater System

1. Review the system installation drawings and read completely through the installation instructions. **Be sure to read notes on ALL drawings.**

2. Open up the aircraft.

    a. Remove the upper fairing.
    b. Open engine cowling.
    c. Remove both forward seat panels and the panel under the collective stick.
    d. Remove the cover between the center row of seats.

3. Install fire wall penetration holes as shown in 206H-512.

4. Remove cover plates from Ejector Adapter Mounting holes as shown in 206H-911.

5. Mount heater ejectors per drawing. 206H-911. Be sure to mount the S-9202EC-3 Ejectors in the Aft location.

    NOTE

    Ejectors with flow control valve must be indexed as shown in drawing 206H-911

6. Install "heater control" valve as shown in drawing 206H-203.

7. Install firewall shut-off valve as shown on the Plumbing Installation Drawing.

8. Remove and discard plate and fitting from R/H compressor scroll.

9. Install S-9703EC-1 Fitting and gasket on compressor scroll and safety wire bolts using existing hardware.

10. Install S-9216EC-3 Restrictor with new AS3084-8 O-ring into scroll fitting.

11. Install plumbing in engine compartment and on cabin top as shown by plumbing installation drawing.

12. Install the S-9270EC-21 tube in the broom closet as shown by the plumbing installation drawing. Insert tube from inside the cabin.

13. Drill tube penetration holes in center console and install S-9726EC-1 doublers as shown on the plumbing installation drawings.

Continued

Installation Instructions – Basic Heater System (continued)

14. Connect remaining heater plumbing and review all notes on drawings.

15. If defroster is to be installed, refer to section III.

16. Install S-9701EC-3 Inlet screens and S-9701EC-1 plates per Drawing 206H-911. Inspect all plumbing fittings and hardware for security.

17. Leak test system in accordance with instructions on plumbing installation drawing. Also verify operation of warning light and firewall shut-off valve. **Note: Air pressure (Shop air (60 psig, min.) or engine bleed air) must exist for the firewall shutoff valve to operate properly.**

18. Install "temp sensors," switch, warning light, and wiring as shown in the electrical installation drawing.

19. Verify operation of the warning light and firewall shut-off valve.

    a. Air pressure (Shop or Bleed Air) must exist for firewall shutoff valve to operate.
    b. Turn heater switch from off to on. (heater over temp should be off)
    c. Using a heat gun carefully apply heat to one of the temperature sensors (do not exceed 200° F). Heater over temp light should come on, and firewall shut off valve should close. Remove heat source and allow area to cool.
    d. After the temperature sensor has cooled, cycle heater switch from ON to OFF, and back to ON. The over temp light should again be off, and the heater firewall shutoff valve should again be open.

20. Test run using aircraft engine bleed air, and check for heater operation.

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Installation Instructions – Defroster System

1. Review Drawing 206H-986 (read all notes)
2. Install the Defroster Valve and Hose assembly.
3. Locate and drill necessary holes per the defroster installation drawing in the center console panel between the pilot's seats.
4. Install defroster ejectors in existing aircraft defroster diffusers.
5. Connect defroster bleed air plumbing.
6. Check all fittings and fasteners for security.

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206 L3 / l4; 206H-203-4 & -5 Cabin Heater Weight and Balance Data

Correct the aircraft licensed empty weight and center of gravity data as indicated below:

	Wt. (lbs)	X (in)	Y (in)	Wx (in-lb)	Wy (in-lb)
1. Standard Cabin Heater System 206H-203	21.05	96.0	-1.0	2021	-22
Add on options:					
2. Particle Separator restrictor and hose	.75	152.00	10.0	114	1
3. Chin Bubble Defroster	.50	19.5	0	10	0
4. Forward Outlet Side window defog outlets	.49	56.0	0	27	0
5. Forward & Aft Side window defog outlets	.98	76.6	0	75	0
6. Cabin Exhaust Vent Installation	1.20	166.5	+14.2	200	+17

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FLIGHT MANUAL SUPPLEMENT

AIR COMM CORPORATION
3300 AIRPORT ROAD
BOULDER, COLORADO 80301

BELL HELICOPTERS
MODEL 206L4
250-C30P ENGINE

FLIGHT MANUAL SUPPLEMENT
FOR
CABIN HEATING SYSTEM

206H-204

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 heater system in accordance with Air Comm Corporation STC No. SH3887NM.

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.

MODEL 206L4
FLIGHT MANUAL

CABIN HEATING SYSTEM

Log of Pages

Original 0

Pages	Rev. No.	Pages	Rev. No.
1-32	0		

FAA APPROVAL DATE: JAN 4 1993
APPROVED: Richard Jennings
Richard Jennings, Supervisor
Denver Aircraft Certification
Field Office
Denver, Colorado

Log of Revisions

No.	Rev. Date	Pgs Revised	FAA Appl
0		Original Issue	JAN 4 1993

Note: Revisions are indicated by a black vertical line.

INTRODUCTION

The cabin heating system is a bleed air type which consists of bleed air plumbing, a firewall shut-off valve, a heater control valve, and four heater ejectors.

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. The ejectors are located under the seats. The warm air is ducted forward and aft through swivel outlets which are located in the seat box structure. The outlet flow can be individually adjusted by rotation of the swivel outlet (fwd outlets only).

The firewall-mounted shut-off valve is electrically activated. The ON-OFF switch is mounted in 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 illumination of an amber "heater over-temp" light, 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 the heater over-temp light. The heater control is located on the front of the seat box.

CABIN HEATING SYSTEM

INTRODUCTION (cont'd)

The system features an optional defroster system. This 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.

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 LH engine access door, is automatic (closed by engine pressure).

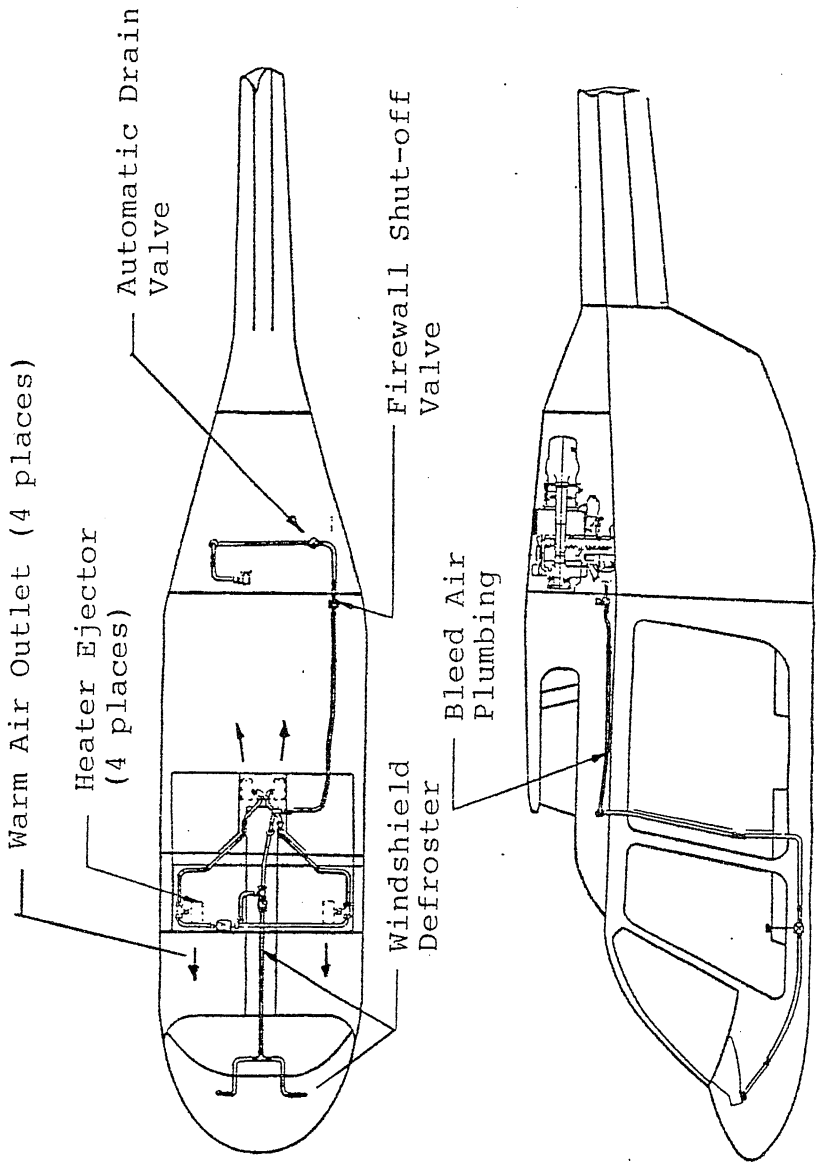
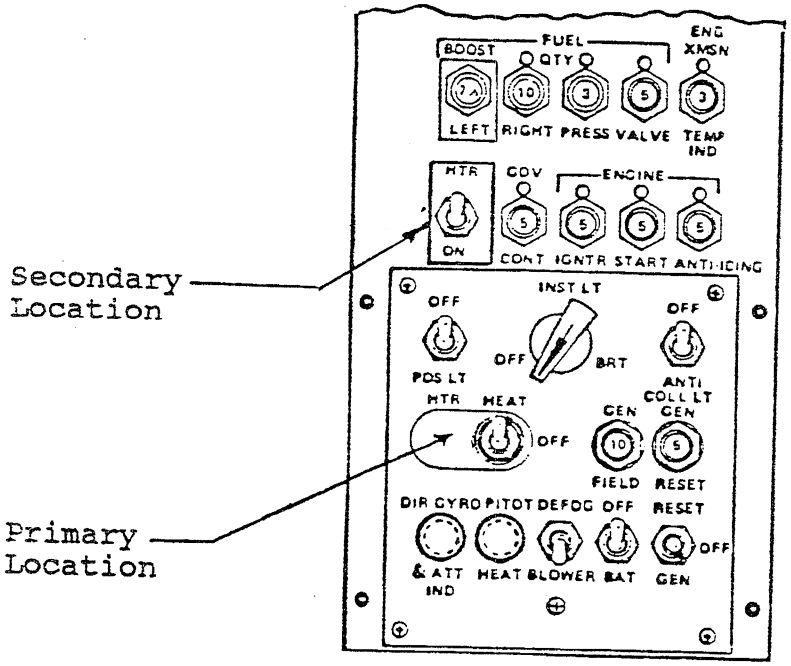


Figure 1. Cabin Heater System General Arrangement

CABIN HEATING SYSTEM

SECTION 1 OPERATING LIMITATIONS

PLACARDS AND MARKINGS

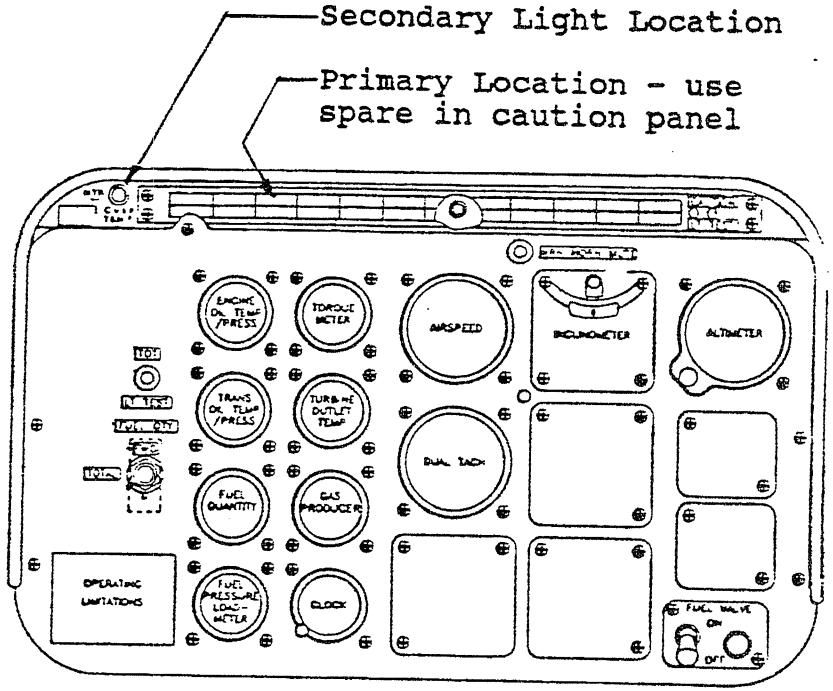


Heater ON-OFF Switch location in overhead console.

CABIN HEATING SYSTEM

SECTION 1 (cont'd) OPERATING LIMITATIONS

PLACARDS AND MARKINGS (cont'd)

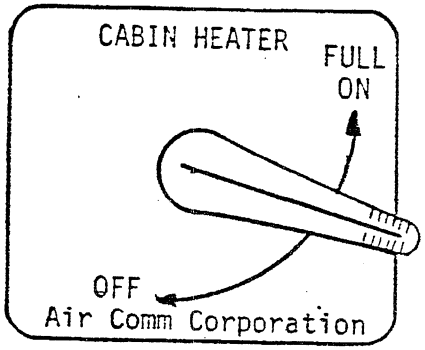


Heater "over-temp" light location on instrument panel.

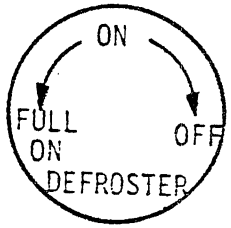
CABIN HEATING SYSTEM

SECTION 1 (cont'd) OPERATING LIMITATIONS

PLACARDS AND MARKINGS (cont'd)



Located on front side of RH seat support box.



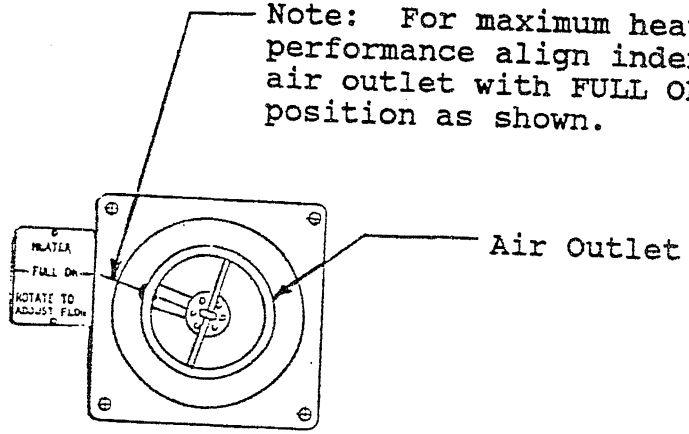
(optional)

Located on the Defroster Control Knob, which is located in the center console.

CABIN HEATING SYSTEM

SECTION 1 (cont'd) OPERATING LIMITATIONS

PLACARDS AND MARKINGS (cont'd)



Locate adjacent to two forward air outlets as shown.

CABIN HEATING SYSTEM

SECTION 2 NORMAL PROCEDURES

ENGINE PRESTART CHECK
Heater ON-OFF switch - OFF
Heater Control - OFF

BEFORE TAKEOFF
Heater and Defroster Control - as desired.

Note
For maximum heater performance all air outlets must be rotated to the full on position.

IN FLIGHT OPERATIONS
Note: TOT increases with bleed air heater operations. Observe turbine outlet temperature limitation. Heater Control - as desired.

DESCENT AND LANDING
Heater and Defroster Control - as desired.

SECTION 3 EMERGENCY PROCEDURES

Operate cabin heater ON-OFF Switch to OFF for any of the following emergencies:
Heater "over-temp" light illuminated
Engine Failure
Engine Over-temperature
Fuel Control and/or Governor Failure
Insufficient Power

CABIN HEATING SYSTEM

SECTION 3 (cont'd) EMERGENCY PROCEDURES

Note
Illumination of the heater "over-temp" warning light may be an indication of an overheat condition. The heater ON-OFF switch should be placed in the OFF position. Do not attempt to use the heater until the cause of the "over-temp" indication has been determined.

SECTION 4 MALFUNCTION PROCEDURES

No change.

SECTION 5 PERFORMANCE DATA

With the heater or defroster on, performance will be reduced as shown in the following charts.

Hover Ceiling

Hover ceiling performance with bleed air heater installed is shown in the following charts. These charts should be used in the same manner and in place of hover ceiling charts in the basic Flight Manual when operations are planned with bleed air heater on.

Hover Ceiling - Particle Separator and Snow Deflector Installed

To determine hover ceiling performance with Particle Sep Prg switch off, use the hover ceiling chart in this section titled With Snow Deflector.

Rate of Climb

Reduction in rate of climb performance is shown in the following rate of climb decrease charts. These charts are to be used in conjunction with the rate of climb charts in the basic Flight Manual or appropriate Flight Manual Supplement when bleed air heater is on.

Rate of Climb - Particle Separator and Snow Deflector Installed

To determine rate of climb performance with Particle Sep Prg switch off, use rate of climb chart in this section and the rate of climb charts in the supplement for snow deflector (BHT-206L3-FMS-7).

To determine rate of climb performance with Particle Sep Prg switch on or not installed, use the performance variation chart in this section in conjunction with rate of climb chart in this section

and the rate of climb charts in the supplement for snow deflector (BHT-206L3-FMS-7).

Performance Variation Chart

To use the performance variation chart, enter at the appropriate pressure altitude and move horizontally; then enter at the appropriate OAT and move vertically until intersecting the pressure altitude line. If the point of intersection is below the appropriate power curve (example A, 4000 feet and -30° on chart), there is no additional performance loss from the charts used. If the point of intersection is above the appropriate power curve (example B, 9000 feet and 20° on chart), hover gross weight will be 90 pounds (40.8 kg) less than the weight determined on the hover ceiling chart being used and rate of climb will be 170 feet/ minute less than that determined with the rate of climb decrease chart and snow deflector rate of climb charts.

Bleed air Cabin Heater

Section 5 Performance Data

Applicable to aircraft with C-30P (206L4 engine:

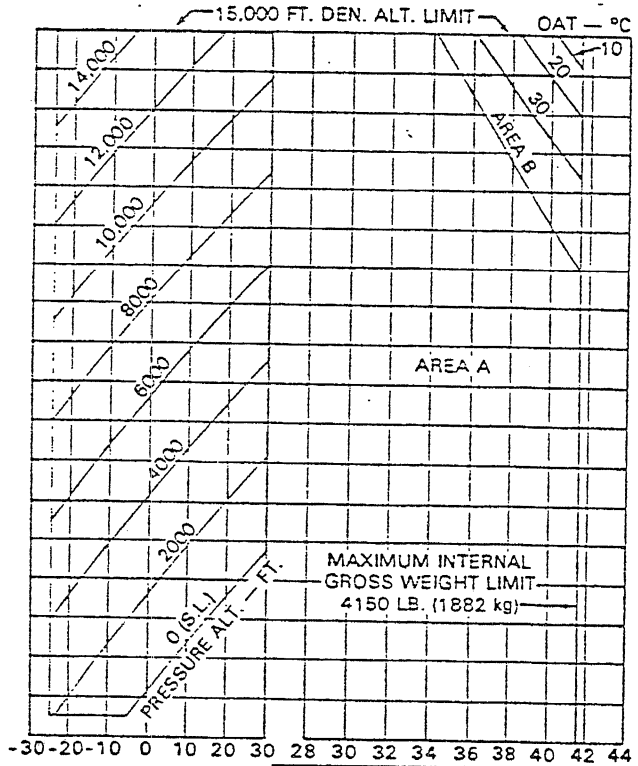
HOVER CEILING
IN GROUND EFFECT

WITH STANDARD INLET
WITH STANDARD SKID LANDING GEAR

TAKEOFF POWER
ENGINE RPM 100%
GENERATOR 17.5%

SKID HEIGHT 2.5 FT. (0.7 METER)
ANTI-ICE OFF
HEATER ON

WITH ANTI-ICE ON ABOVE 12,000 FT. PRESS. ALT., G.W. IS 150 LB (68 kg) LESS
(BELOW 12,000 FT., NO CORRECTION IS NECESSARY)



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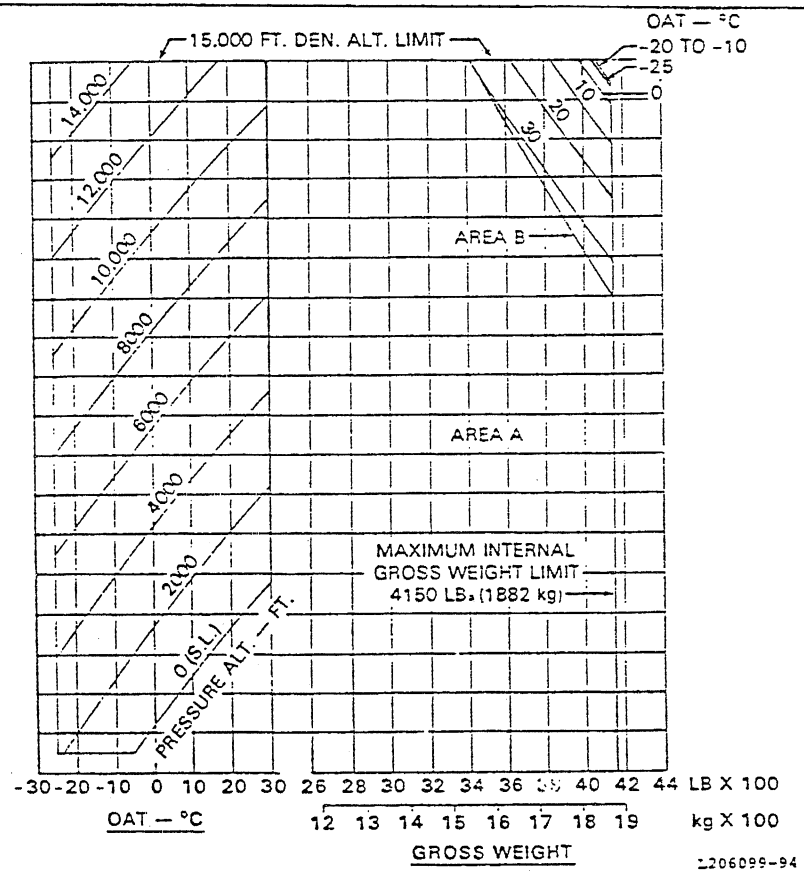
Applicable to aircraft with C-30P (206L4) engine:

HOVER CEILING
IN GROUND EFFECT
WITH STANDARD INLET
WITH HIGH SKID OR EMERGENCY FLOTATION LANDING GEAR

TAKEOFF POWER
ENGINE RPM 100%
GENERATOR 17.5%

SKID HEIGHT 2.5 FT. (0.7 METER)
ANTI-ICE OFF
HEATER ON

WITH ANTI-ICE ON ABOVE 10,000 FT. PRESS. ALT., G.W. IS 150 LB (68 kg) LESS
(BELOW 10,000 FT., NO CORRECTION IS NECESSARY)



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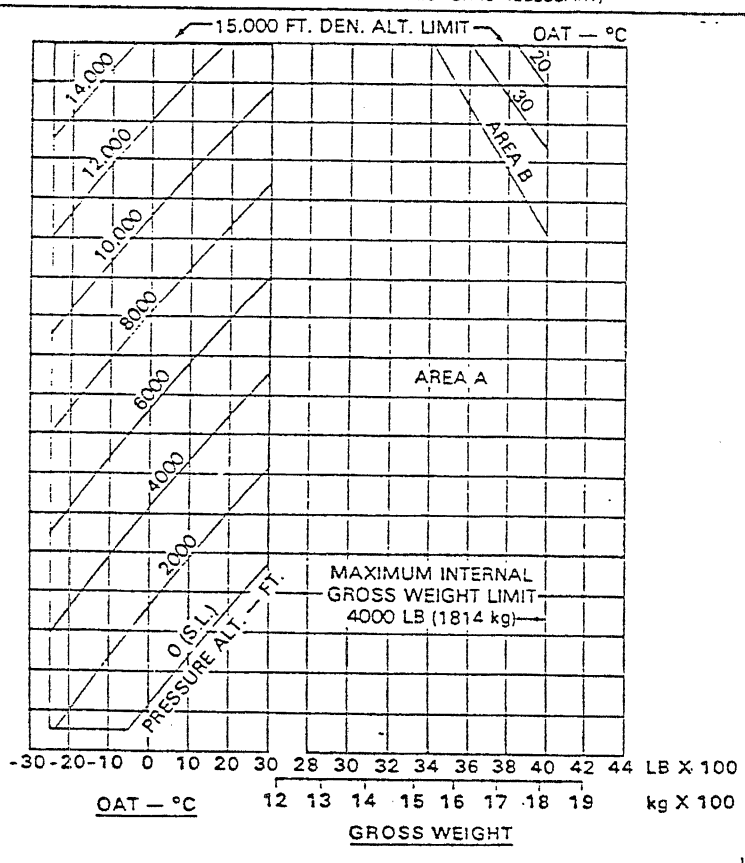
Applicable to aircraft with C-30P (206L4) engine:

HOVER CEILING
IN GROUND EFFECT
WITH STANDARD INLET
WITH STANDARD FLOAT LANDING GEAR

TAKEOFF POWER
ENGINE RPM 100%
GENERATOR 17.5%

FLOAT HEIGHT 3.5 FT. (1.1 METERS)
ANTI-ICE OFF
HEATER ON

WITH ANTI-ICE ON ABOVE 12,000 FT. PRESS. ALT., G.W. IS 150 LB (68 kg) LESS
(BELOW 12,000 FT., NO CORRECTION IS NECESSARY)



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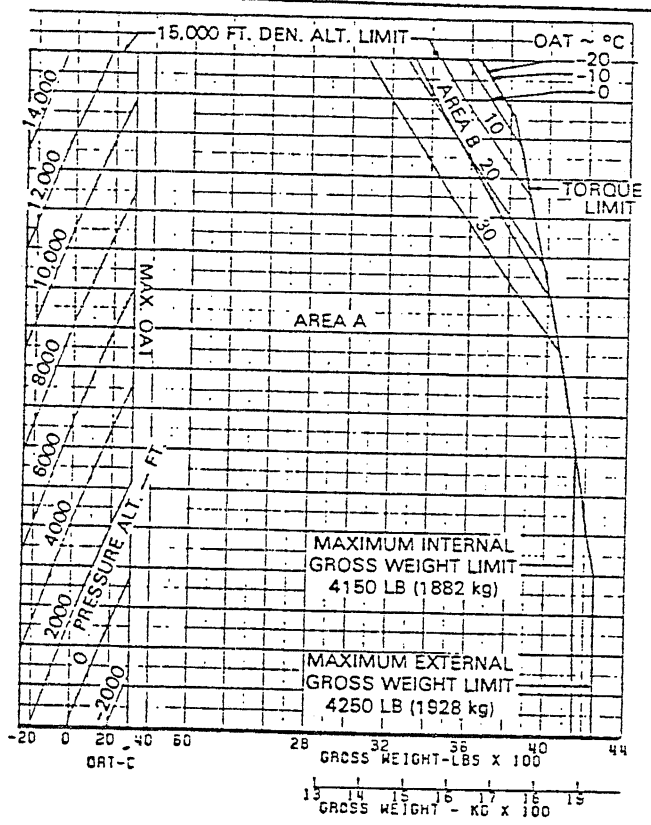
Applicable to aircraft with C-30P (206L4) engine:

HOVER CEILING
OUT OF GROUND EFFECT
WITH STANDARD INLET
WITH ANY SKID OR FLOAT LANDING GEAR

TAKEOFF POWER
ENGINE RPM 100%
GENERATOR 17.5%

SKID HEIGHT 40 FT. (12.2 METERS)
ANTI-ICE OFF
HEATER ON

WITH ANTI-ICE ON ABOVE 10,000 FT. PRESS. ALT., G.W. IS 120 LB (54 kg) LESS
(BELOW 10,000 FT., NO CORRECTION IS NECESSARY)



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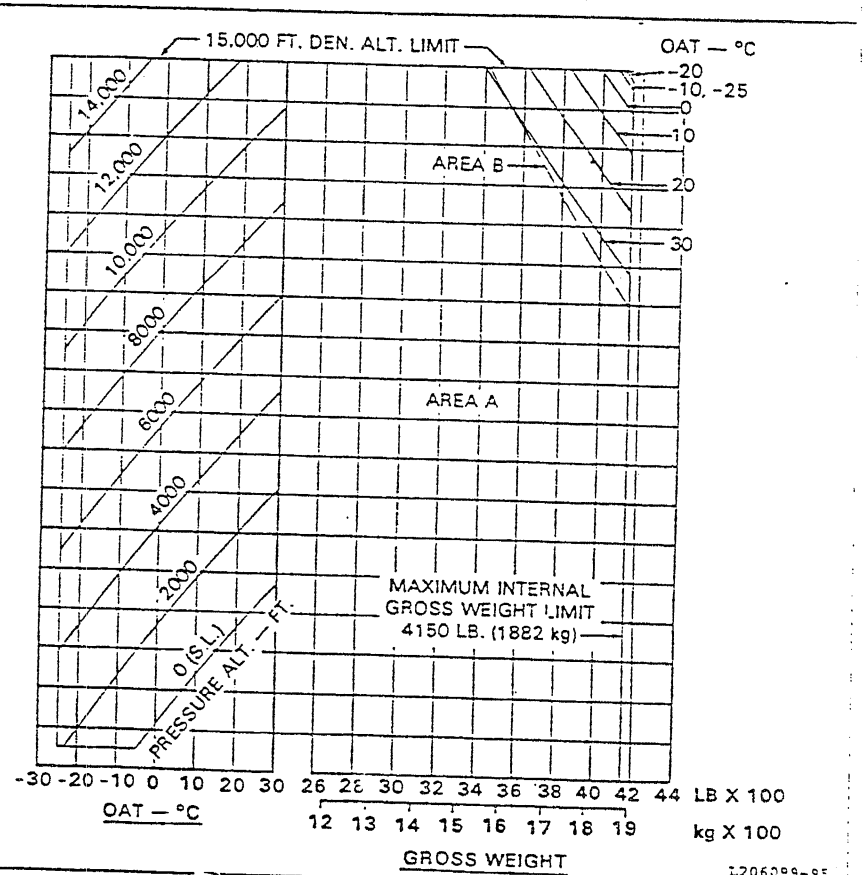
Applicable to aircraft with C-30P (206L4) engine:

HOVER CEILING
IN GROUND EFFECT
WITH SNOW DEFLECTOR
WITH STANDARD SKID LANDING GEAR

TAKEOFF POWER
ENGINE RPM 100%
GENERATOR 17.5%

SKID HEIGHT 2.5 FT. (0.7 METER)
ANTI-ICE OFF
HEATER ON

WITH ANTI-ICE ON ABOVE 12,000 FT. PRESS. ALT., G.W. IS 150 LB (68 kg) LESS
(BELOW 12,000 FT., NO CORRECTION IS NECESSARY)



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Section 5 Performance Data

Applicable to aircraft with C-30P (206L4) engine:

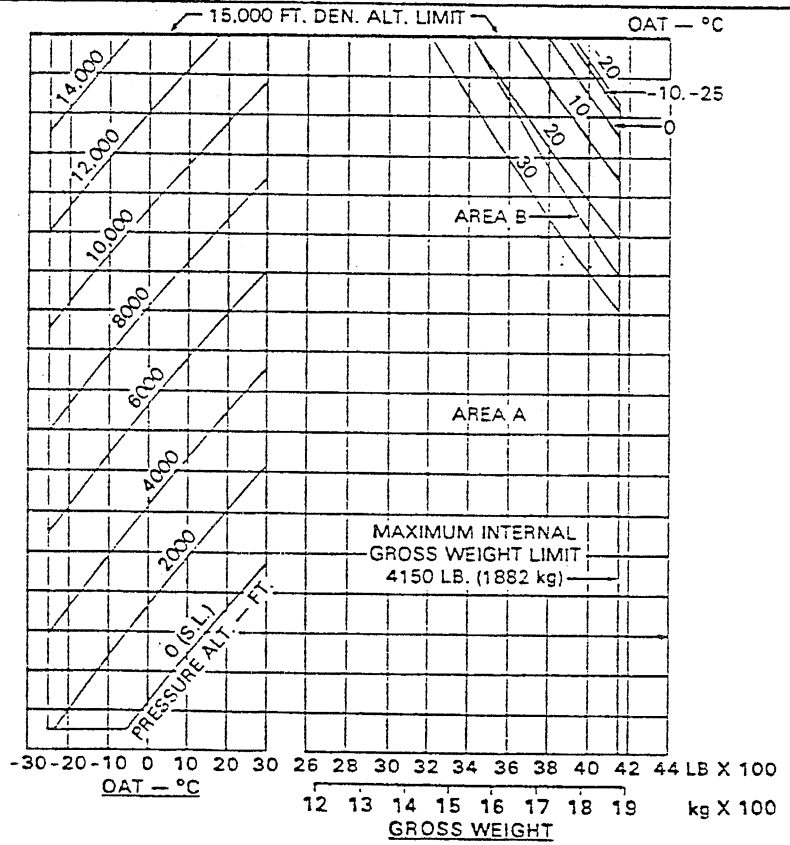
HOVER CEILING
IN GROUND EFFECT

WITH SNOW DEFLECTOR
WITH HIGH SKID OR EMERGENCY FLOTATION LANDING GEAR

TAKEOFF POWER
ENGINE RPM 100%
GENERATOR 17.5%

SKID HEIGHT 2.5 FT. (0.7 METER)
ANTI-ICE OFF
HEATER ON

WITH ANTI-ICE ON ABOVE 10,000 FT. PRESS. ALT., G.W. IS 160 LB (73 kg) LESS
(BELOW 10,000 FT., NO CORRECTION IS NECESSARY)



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FAA APPROVED
SUPPLEMENT

MODEL 206L4
FLIGHT MANUAL

Bleed Air Cabin Heater

Section 5 Performance Data

Applicable to aircraft with C-30P (206L4) engine:

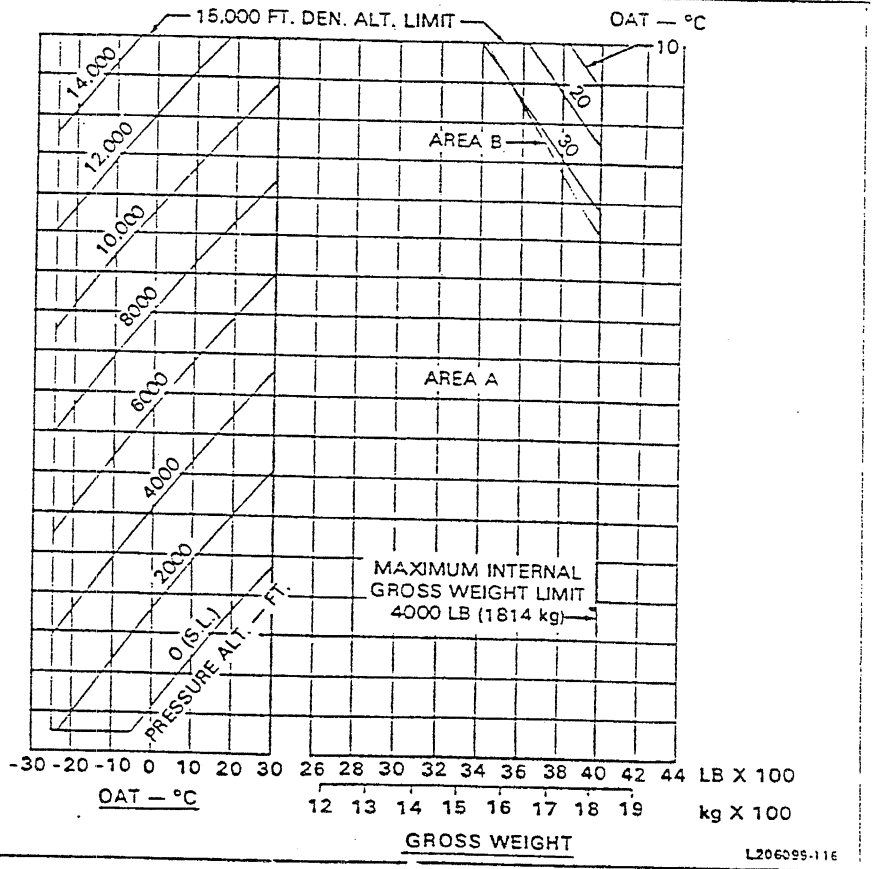
HOVER CEILING
IN GROUND EFFECT

WITH SNOW DEFLECTOR
WITH STANDARD FLOAT LANDING GEAR

TAKEOFF POWER
ENGINE RPM 100%
GENERATOR 17.5%

FLOAT HEIGHT 3.5 FT. (1.1 METERS)
ANTI-ICE OFF
HEATER ON

WITH ANTI-ICE ON ABOVE 12,000 FT. PRESS. ALT., G.W. IS 150 LB (68 kg) LESS
(BELOW 12,000 FT., NO CORRECTION IS NECESSARY)



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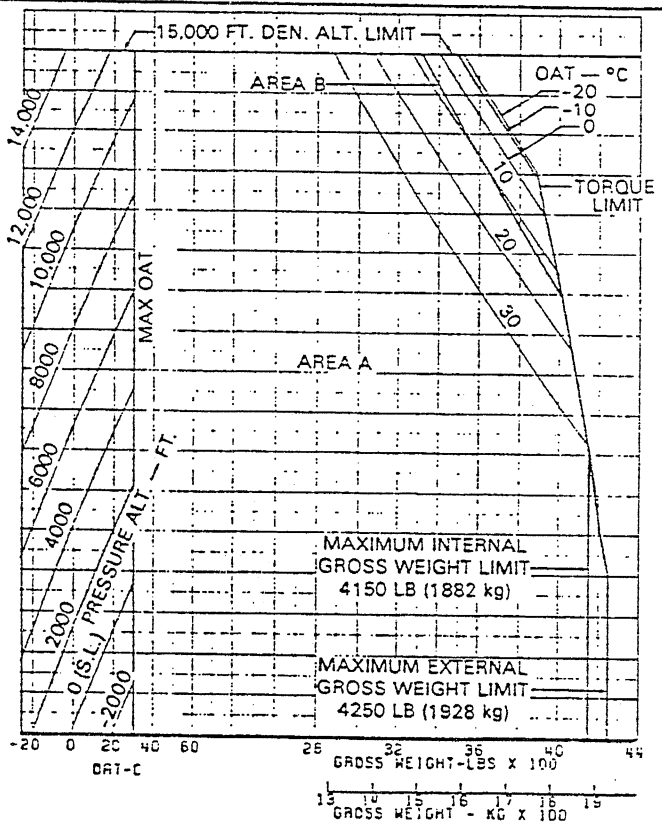
HOVER CEILING
OUT OF GROUND EFFECT

WITH SNOW DEFLECTOR
WITH ANY SKID OR FLOAT LANDING GEAR

TAKEOFF POWER
ENGINE RPM 100%
GENERATOR 17.5%

SKID HEIGHT 40 FT. (12.2 METERS)
ANTI-ICE OFF
HEATER ON

WITH ANTI-ICE ON ABOVE 10,000 FT. PRESS. ALT., G.W. IS 130 LB (59 kg) LESS
(BELOW 10,000 FT., NO CORRECTION IS NECESSARY)



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FAA APPROVED
SUPPLEMENT

MODEL 206L4
FLIGHT MANUAL

Bleed Air Cabin Heater

Section 5 Performance Data
Applicable to aircraft with C-30P (206L4) engine:

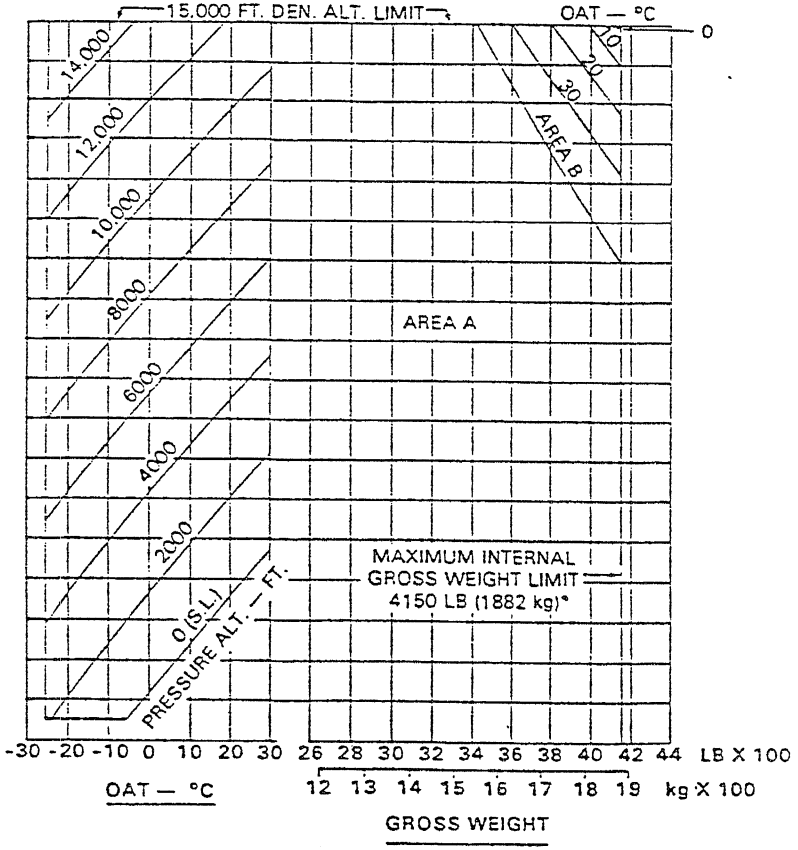
HOVER CEILING
IN GROUND EFFECT

WITH PARTICLE SEPARATOR
WITH STANDARD SKID LANDING GEAR

TAKEOFF POWER
ENGINE RPM 100%
GENERATOR 17.5%

SKID HEIGHT 2.5 FT. (0.7 METER)
ANTI-ICE OFF
HEATER ON
PARTICLE SEP. PURGE OFF

WITH ANTI-ICE ON ABOVE 12,000 FT. PRESS. ALT., G.W. IS 150 LB (68 kg) LESS
(BELOW 12,000 FT., NO CORRECTION IS NECESSARY



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Bleed Air Cabin Heater

Section 5 Performance Data

Applicable to aircraft with C-30P (206L4) engine:

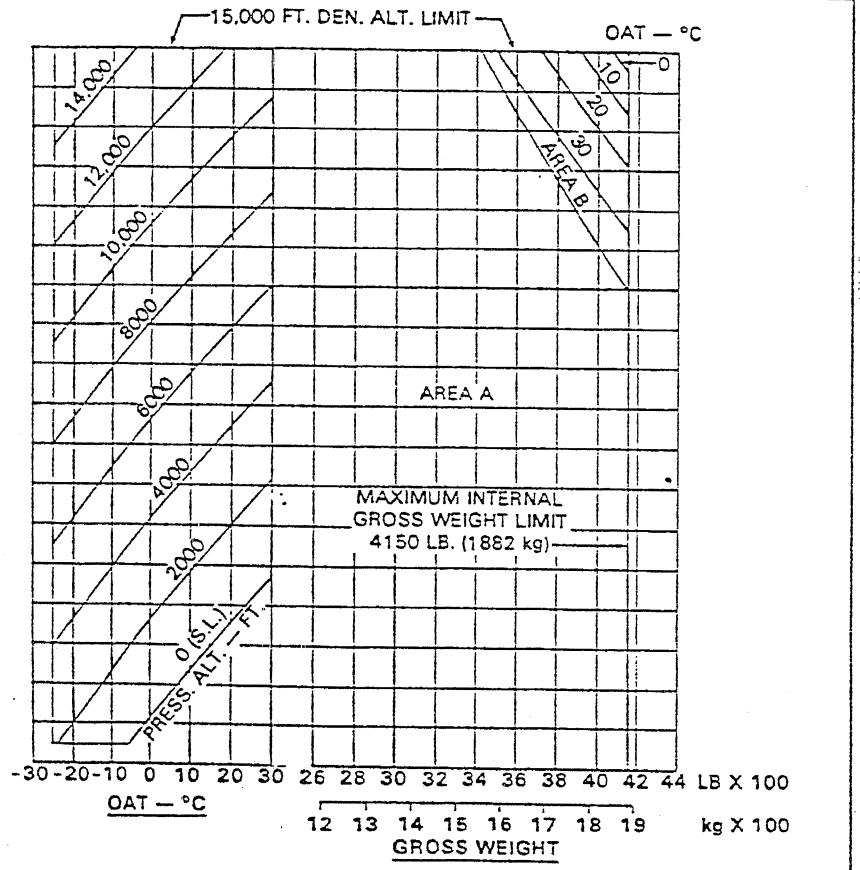
HOVER CEILING
IN GROUND EFFECT

WITH PARTICLE SEPARATOR
WITH STANDARD SKID LANDING GEAR

TAKEOFF POWER
ENGINE RPM 100%
GENERATOR 17.5%

SKID HEIGHT 2.5 FT. (0.7 METER)
ANTI-ICE OFF
HEATER ON
PARTICLE SEP. PURGE ON

WITH ANTI-ICE ON ABOVE 12,000 FT. PRESS. ALT., G.W. IS 150 LB (68 kg) LESS
(BELOW 12,000 FT., NO CORRECTION IS NECESSARY



L-206099-98A

Bleed Air Cabin Heater

Section 5 Performance Data

Applicable to aircraft with C-30P (206L4) engine:

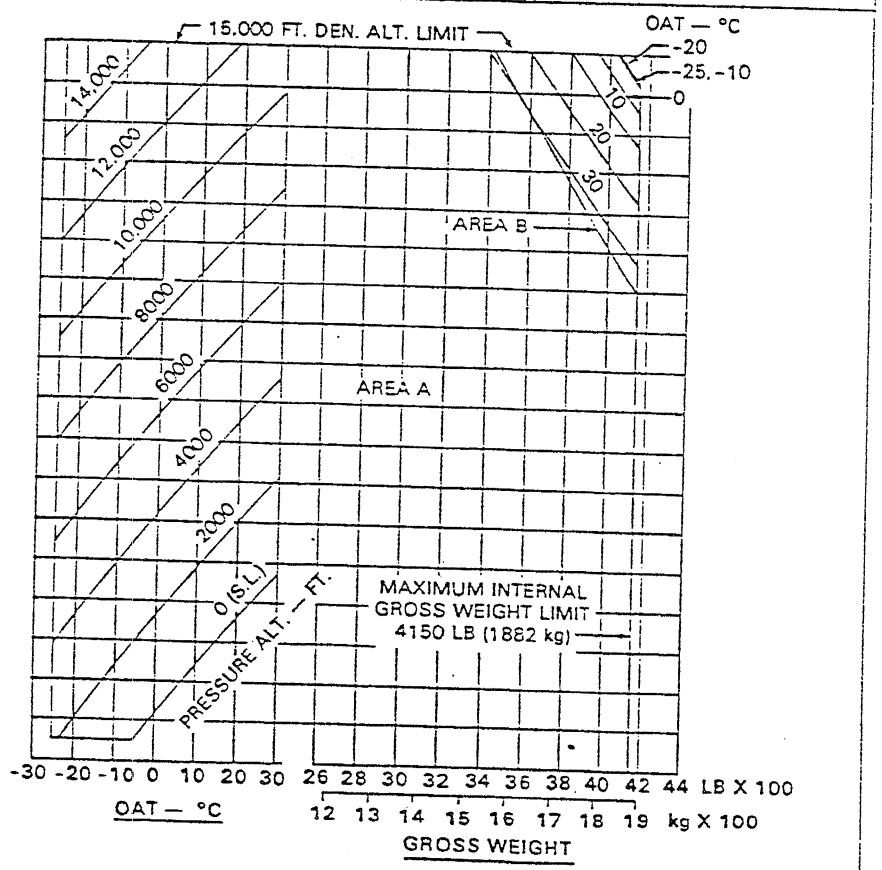
HOVER CEILING
IN GROUND EFFECT

WITH PARTICLE SEPARATOR
WITH HIGH SKID OR EMERGENCY FLOTATION LANDING GEAR

TAKEOFF POWER
ENGINE RPM 100%
GENERATOR 17.5%

SKID HEIGHT 2.5 FT. (0.7 METER)
ANTI-ICE OFF
HEATER ON
PARTICLE SEP. PURGE OFF

WITH ANTI-ICE ON ABOVE 12,000 FT. PRESS. ALT., G.W. IS 150 LB (68 kg) LESS
(BELOW 12,000 FT., NO CORRECTION IS NECESSARY



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L206099-114

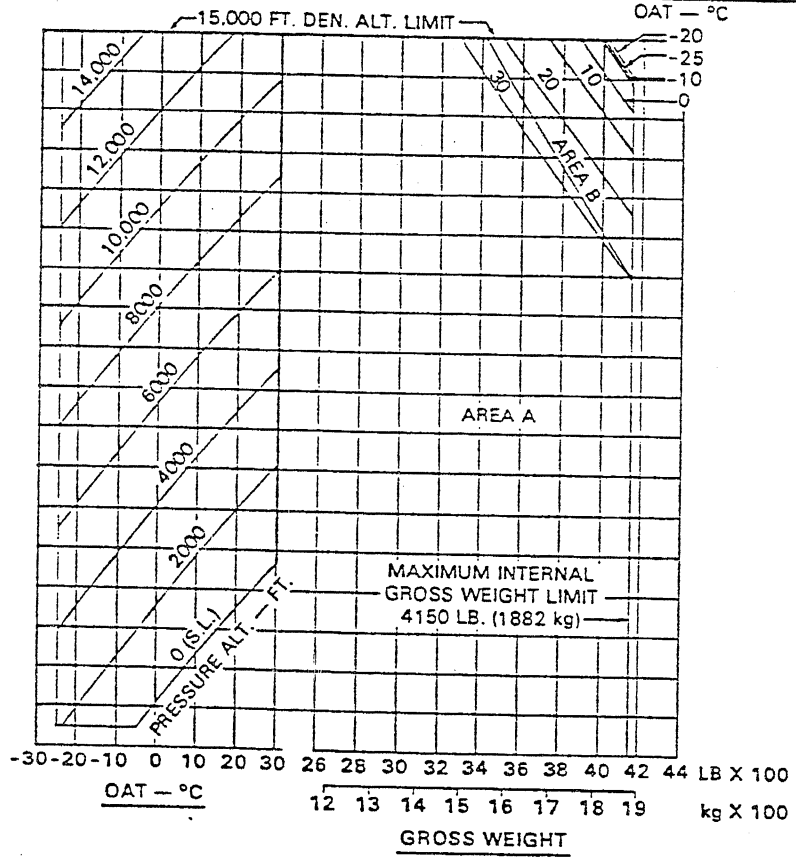
HOVER CEILING
IN GROUND EFFECT

WITH PARTICLE SEPARATOR
WITH HIGH SKID OR EMERGENCY FLOTATION LANDING GEAR

TAKEOFF POWER
ENGINE RPM 100%
GENERATOR 17.5%

SKID HEIGHT 2.5 FT. (0.7 METER)
ANTI-ICE OFF
HEATER ON
PARTICLE SEP. PURGE ON

WITH ANTI-ICE ON ABOVE 10,000 FT. PRESS. ALT., G.W. IS 160 LB (73 kg) LESS
(BELOW 10,000 FT., NO CORRECTION IS NECESSARY)



B

L206099-100A

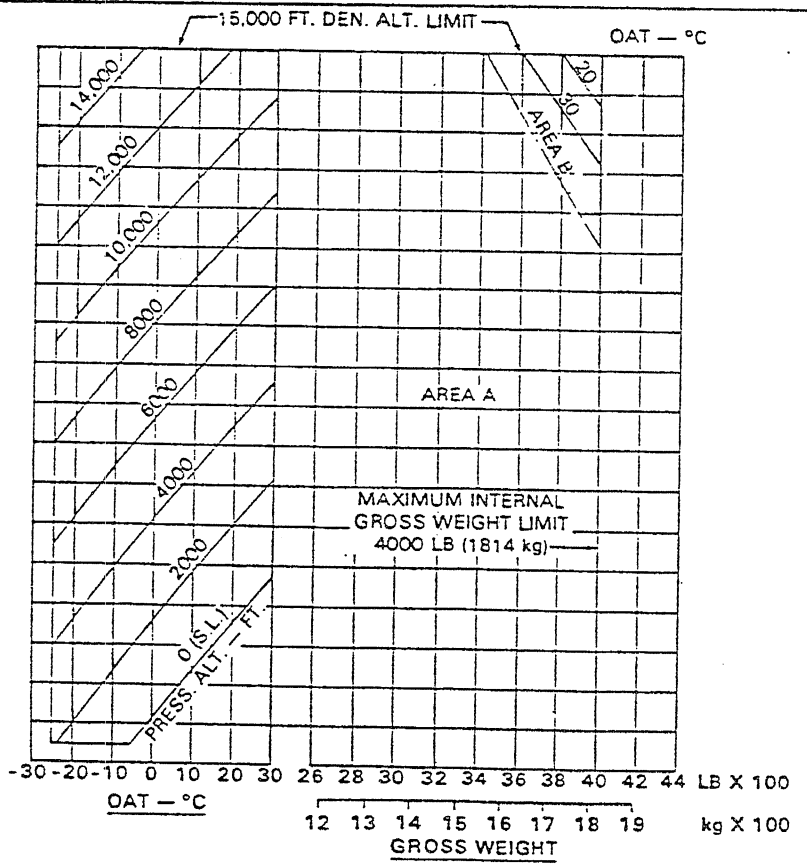
HOVER CEILING
IN GROUND EFFECT

WITH PARTICLE SEPARATOR
WITH STANDARD FLOAT LANDING GEAR

TAKEOFF POWER
ENGINE RPM 100%
GENERATOR 17.5%

FLOAT HEIGHT 3.5 FT (1.1 METERS)
ANTI-ICE OFF
HEATER ON
PARTICLE SEP. PURGE OFF

WITH ANTI-ICE ON ABOVE 12,000 FT. PRESS. ALT., G.W. IS 150 LB (68 kg) LESS
(BELOW 12,000 FT., NO CORRECTION IS NECESSARY



B

LZ06099-113

Bleed Air Cabin Heater

Section 5 Performance Data

Applicable to aircraft with C-30P (206L4) engine:

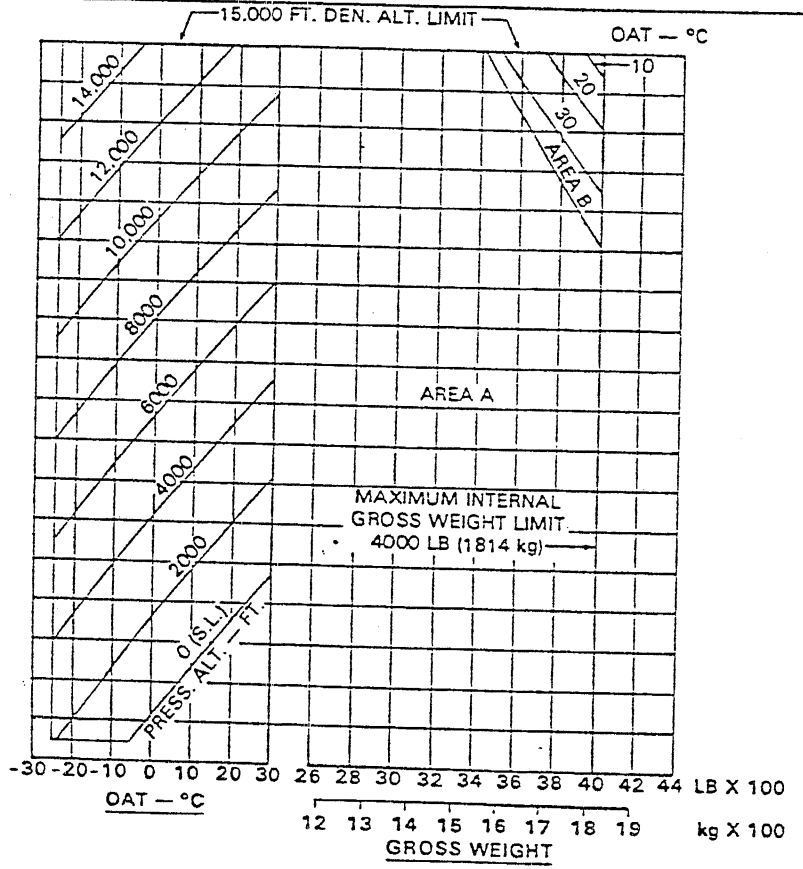
HOVER CEILING
IN GROUND EFFECT

WITH PARTICLE SEPARATOR
WITH STANDARD FLOAT LANDING GEAR

TAKEOFF POWER
ENGINE RPM 100%
GENERATOR 17.5%

FLOAT HEIGHT 3.5 FT (1.1 METERS)
ANTI-ICE OFF
HEATER ON
PARTICLE SEP. PURGE ON

WITH ANTI-ICE ON ABOVE 12,000 FT. PRESS. ALT., G.W. IS 150 LB (68 kg) LESS
(BELOW 12,000 FT., NO CORRECTION IS NECESSARY)



Bleed Air Cabin Heater

Section 5 Performance Data

Applicable to aircraft with C-30P (206L4) engine:

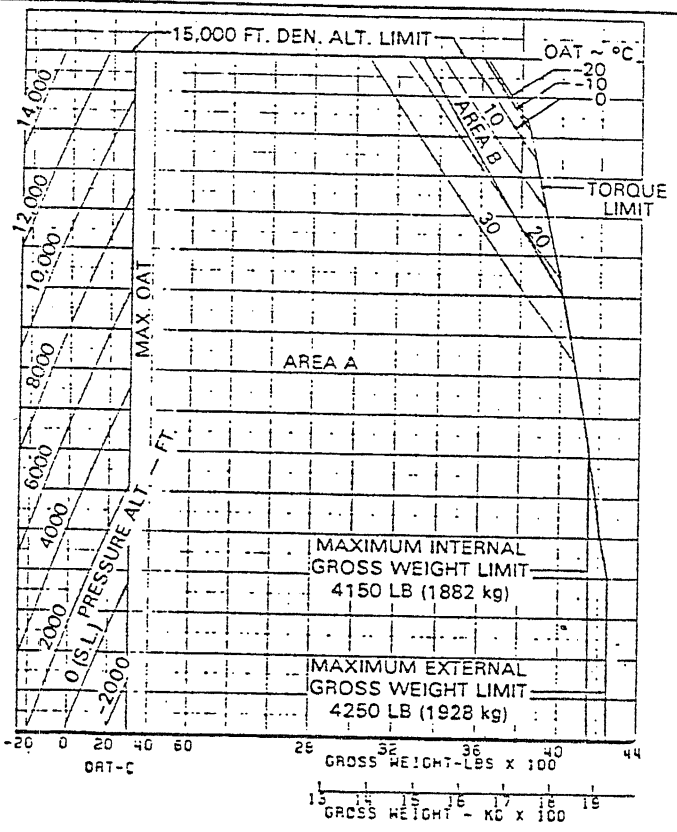
HOVER CEILING
OUT OF GROUND EFFECT

WITH PARTICLE SEPARATOR
WITH ANY SKID OR FLOAT LANDING GEAR

TAKEOFF POWER
ENGINE RPM 100%
GENERATOR 17.5%

SKID HEIGHT 40 FT. (12.2 METERS)
ANTI-ICE OFF
HEATER ON
PARTICLE SEP. PURGE OFF

WITH ANTI-ICE ON ABOVE 10,000 FT. PRESS. ALT., G.W. IS 130 LB (59 kg) LESS
(BELOW 10,000 FT., NO CORRECTION IS NECESSARY)



B

Bleed Air Cabin Heater

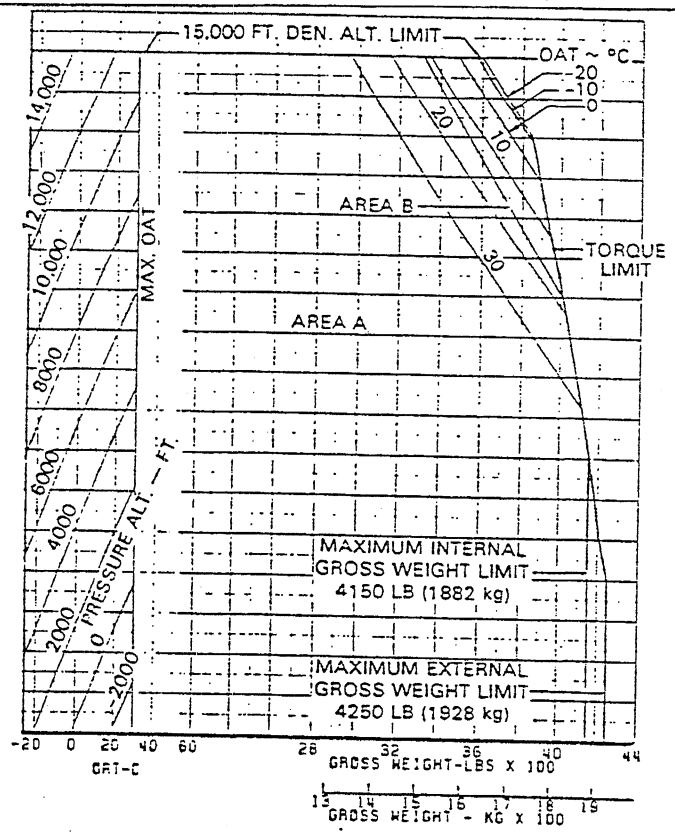
Section 5 Performance Data
Applicable to aircraft with C-30P (206L4) engine:

HOVER CEILING
OUT OF GROUND EFFECT
WITH PARTICLE SEPARATOR
WITH ANY SKID OR FLOAT LANDING GEAR

TAKEOFF POWER
ENGINE RPM 100%
GENERATOR 17.5%

SKID HEIGHT 40 FT. (12.2 METERS)
ANTI-ICE OFF
HEATER ON
PARLTICLE SEP. PURGE ON

WITH ANTI-ICE ON ABOVE 10,000 FT. PRESS. ALT., G.W. IS 130 LB (59 kg) LESS
(BELOW 10,000 FT., NO CORRECTION IS NECESSARY)



L206099-99B

FAA APPROVED
SUPPLEMENT

MODEL 206L4
FLIGHT MANUAL

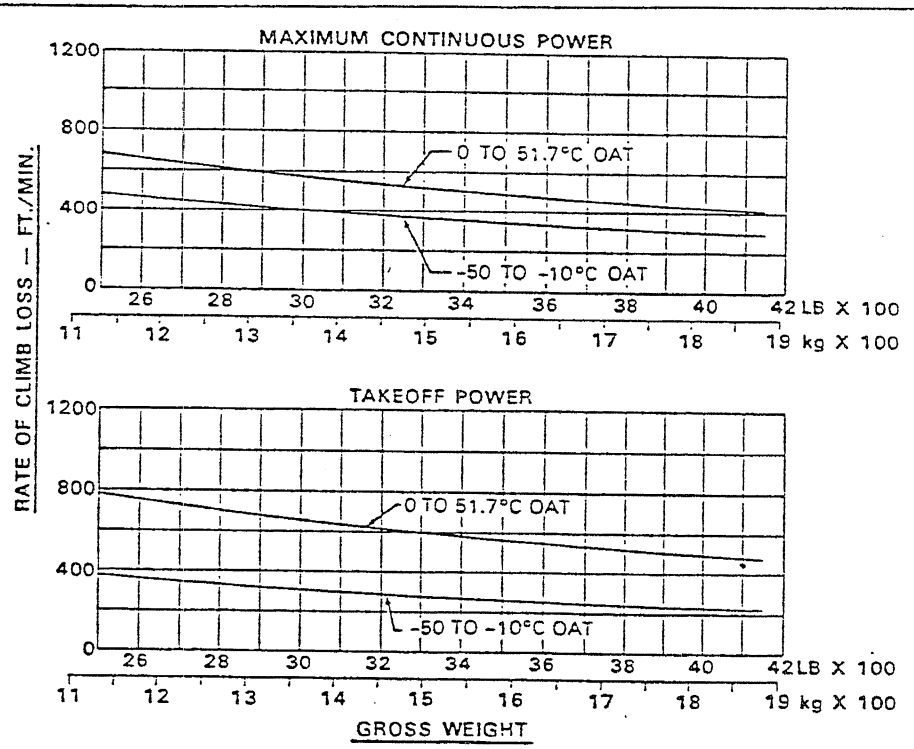
Bleed Air Cabin Heater

Section 5 Performance Data
Applicable to aircraft with C-30P (206L4) engine:

RATE OF CLIMB DECREASE
DUE TO BLEED AIR HEATER OPERATION
WITH ANY INLET
WITH ANY SKID OR FLOAT LANDING GEAR

POWER — SEE BELOW
ENGINE RPM 100%
GENERATOR 17.5%

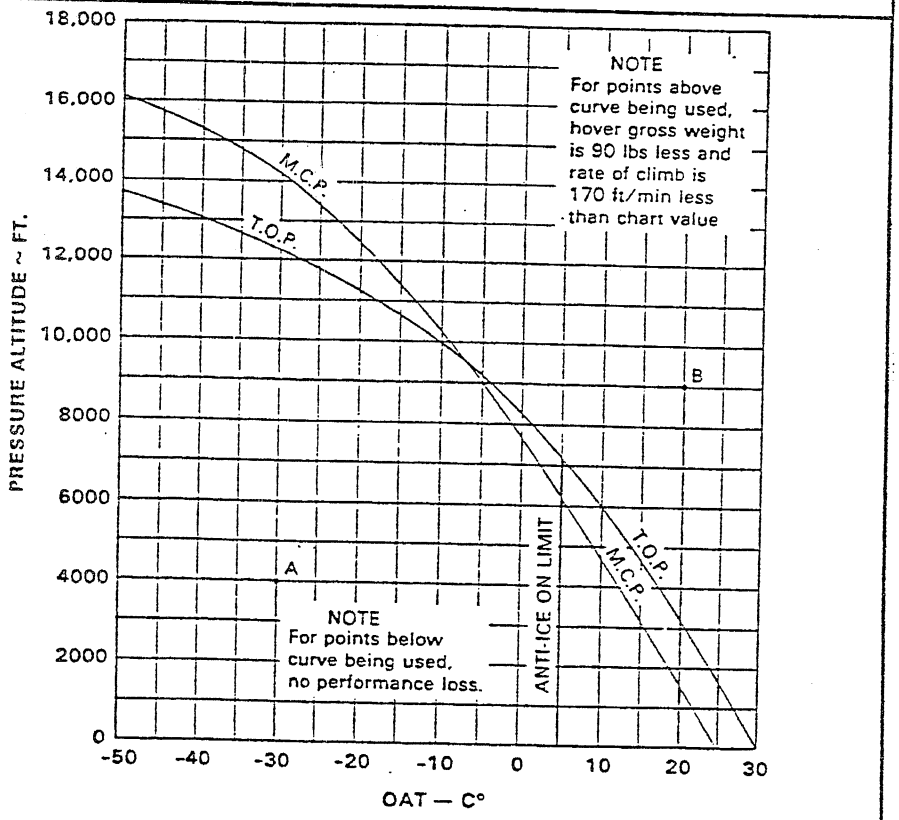
57 KIAS
ANTI-ICE OFF OR ON
HEATER ON



B

L206099-101

PERFORMANCE VARIATION WITH SNOW DEFLECTOR AND PARTICLE SEPARATOR INSTALLED
ANTI-ICE ON OR OFF
HEATER — ON
NO PURGE SWITCH INSTALLED OR PURGE SWITCH ON



L206099-149

STC CERTIFICATE

United States of America

Department of Transportation — Federal Aviation Administration

Supplemental Type Certificate

Number SH3887NM

This certificate, issued to Air Comm Corporation

certifies that the change in the type design for the following product with the limitations and conditions thereof as specified hereon meets the airworthiness requirements of Part 6 of the Civil Air Regulations.

Original Product — Type Certificate Number: H2SW

Make: Bell Helicopter Textron

Model: 206A, 206B, 206L, 206L-1, 206L-3, 206L-4

Description of Type Design Change:

Installation of bleed air cabin heating system and/or windshield defroster system in accordance with Air Comm Corp. Drawing List DL-206H, Revision N, dated February 9, 1994, or later FAA approved revision.

Limitations and Conditions:

1. FAA approved Flight Manual Supplement for the 206H-200 bleed air cabin heater in Bell Helicopter Models 206A and 206B dated December 24, 1987, or later FAA approved revision is required.
2. FAA approved Flight Manual Supplement for the 206H-202 bleed air cabin heater in Bell Helicopter Models 206L, 206L-1, 206L-3, and 206L-4 dated December 24, 1987, or later FAA approved revision is required.

(See continuation sheet, page 3 of 3)

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 12, 1987

Date of issuance: December 24, 1987

Date reissued:

Date amended: 7/19/89, 11/2/90, 12/3/92 1/4/93; February 15, 1994

By direction of the Administrator

RICHARD E. JENNINGS (Signature) Manager
Denver Aircraft Certification Field Office
Northwest Mountain Region, Denver, Colorado
(Title)

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

FAA Form 8110-2 (10-68)

This certificate may be transferred in accordance with FAR 21.47.

United States of America

Department of Transportation—Federal Aviation Administration

Supplemental Type Certificate

(Continuation Sheet)

Number SH3887NM

3. FAA approved Flight Manual Supplement for the 206H-990 windshield defroster system ("defroster only" system for rotorcraft with a non Air Comm Corp. bleed air cabin heater installation) in Bell Helicopter Models 206A, and 206B dated November 2, 1990, or later FAA approved revision is required.

4. FAA approved Flight Manual Supplement for the 206H-992/-994 windshield defroster system ("defroster only" system for rotorcraft with a non Air Comm Corp. bleed air cabin heater installation) in Bell Helicopter Models 206L, 206L-1 and 206L-3 dated November 2, 1990, or later FAA approved revision is required.

5. FAA approved Flight Manual Supplement for the 206H-201 bleed air cabin heater in Bell Helicopter Model 206B dated January 3, 1992, or later FAA approved revision is required.

6. FAA approved Flight Manual Supplement for the 206H-203 bleed air cabin heater in Bell Helicopter Model 206L-3 dated January 3, 1992, or later FAA approved revision is required.

7. FAA approved Flight Manual Supplement for the 206H-204 bleed air cabin heater in Bell Helicopter Model 206L-4 dated January 4, 1993, or later FAA approved revision is required.

8. FAA Approved Flight Manual Supplement for the 206H-204 Bleed Air Cabin Heater in Bell Helicopter Model 206L-4 with Tridair STC SR00036SE (Twin Engine), dated February 15, 1994 or later FAA approved revision is required.

9. This STC also applies to Bell Model 206L-4 with Twin Engines installed in accordance with STC SR00036SE.

10. This STC also applies to Bell Models 206A/B, and 206L helicopters with Allison 250-C20R/2 engine installed in accordance with STC SH4179NM and SH4169NM, respectively.

11. Approval of this change in type design applies to the above model aircraft only. This approval should not be extended to aircraft of this model on which other previously approved modifications are incorporated unless it is determined that the interrelationship between this change and any of those other previously approved modifications, including changes in type design, will introduce no adverse effect upon the airworthiness of that aircraft. A copy of this Certificate, Continuation Sheet, and FAA Approved Flight Manual Supplement or later FAA approved revision, must be maintained as part of the permanent records for the modified aircraft.

------E N D------

Remove the following section and retain with the aircraft maintenance documents.

Air Comm Corporation
Boulder, CO. 80301

SERVICE INSTRUCTIONS

FOR

BELL 206 L3 / L4 CABIN HEATER

(206H-203)

December 16, 1991

Introduction

This document provides maintenance and service information for the ACC 206H-203 Cabin Heater Installation in the Bell 206 L3 / L4 helicopter.

Reference Documents

1. Basic Bell Service Instructions.
2. AC43.13.1, Acceptable Practices, Aircraft Alteration and Repair.
3. ACC Drawings:

   206H-203; Heater Installation General Arrangement
   206H-512; Bleed Air Plumbing Installation 206 L3
   206H-514; Bleed Air Plumbing Installation 206 L4
   206H-802; Installation – Temperature Sensors 206 L3
   206H-804; Installation – Temperature Sensors 206 L4
   206H-911; Heater Ejector Installation
   206H-986; Windshield Defroster Installation

System Description and Operation

The cabin heating system is a bleed air type which consists of bleed air plumbing, and a firewall shutoff valve, a heater control valve, and multiple heater ejectors.

The bleed air flows from the engine compressor through the bleed plumbing to the ejectors, where it is mixed with cabin air and exhausted to both the front and rear passenger areas. The ejectors are located under the front seat box area. The war air is ducted forward and aft through swivel outlets which are located in the seat box structure. The outlet flow of the pilot / co-pilot outlets can be individually adjusted by rotation of the swivel outlets.

The firewall mounted shutoff valve is electrically activated. The ON – OFF Switch is located in the overhead console. The firewall shutoff valve will automatically close if there is a loss of electrical power to the valve.

Temperature sensors are installed as part of the heater system. In the case of an over temperature condition, the sensors will close, resulting in the illuminations of an amber “heater over temp light, the automatic closure of the firewall shutoff valve. The heater ON – OFF switch must be re-set to the OFF position in order to reset the firewall shutoff valve and the heater over temp light. The heater control knob is located on the R/H front of the pilots seat box.

Continued

System Description and Operation (continued)

This system offers an optional defroster system which provides warm air to the windshield. The system consists of an ON – OFF valve located in the center console and ejectors in each defroster diffuser. The ejectors pump warm air across the windshield. The original defroster blowers are no longer required, but may remain installed at the desecration of the operator. The defroster and heater maybe used simultaneously or independent of one another.

An automatic 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. This valve is located inside the L/H engine access door, and is automatically closed when the engine pressure rises above 10 psig.

Maintenance Instructions

Conduct the following inspection functions annually.

1. Inspect bleed air hose and tube assemblies for evidence of damage or deterioration. Replace as needed.
2. Verify operation of the warning light and firewall shut-off valve.
    a. Air pressure (Shop or Bleed Air) must exist for firewall shutoff valve to operate.
    b. Turn heater switch from off to on. (heater over temp should be off)
    c. Using a heat gun carefully apply heat to one of the temperature sensors (do not exceed 200° F). Heater over temp light should come on, and firewall shut off valve should close. Remove heat source and allow area to cool.
    d. After the temperature sensor has cooled, cycle heater switch from ON to OFF, and back to ON. The over temp light should again be off, and the heater firewall shutoff valve should again be open.
3. Inspect heater control valve for mounting security, and freedom of operation.
4. Inspect bleed air plumbing for insulation and security.
5. Verify security of control knobs and placards.
6. Check the function of the automatic drain valve to insure that the valve is closed when the engine is operating. CAUTION: this line is HOT, do not place hand on valve or line. Note: check valve when heater is in the "FULL ON" position. Slight leakage is permitted.
7. Remove the heater ejectors, inspect nozzles for evidence of deterioration. Check flow control (if equipped) for freedom of operation.
8. Verify operation of the "heater over temp" warning light (Press to test).

Continued

Maintenance Instructions (continued)

Suggested Spares:

Item	Description	P/N	Qty
1	Restrictor	S-9216EC-3	1
2	Restrictor	S-9216EC-4	1
3	Hose Assy.	S-9276EC-1	1
4	Hose Assy. (L3)	S-9223EC-1	1
5	Drain Valve Assy.	S-9230EC-1	1
6	Heater Control Valve	S-9209EC-1	1
7	Defroster Valve Assy.	S-9209EC-3	1
8	Knob	ES39300-1	1
9	Ejector Assy. (Fwd)	S-6450EC-1	2
10	Ejector Assy. (Aft)	S-6424EC-4	2
11	Ejector Assy. Defroster L/H	S-9225EC-1	1
12	Ejector Assy. Defroster R/H	S-9225EC-2	1
13	Placard – Heater	S-9701EC-21	1
14	Placard – Defroster Knob	S-9868-2	1
15	Label – Heater Outlet	S-9722EC-3	2
16	Ejector Adapter	S-9704EC-1	4
17	Switch – Heater ON-OFF	MS24523-24	1
18	Sensor – Temperature	ES52130-1	5
19	Light – Heater Overtemp	MS25041-4	1
20	Lens – Heater Over Temp (1)	S-9278EC-3	1
21	Valve – Firewall Shutoff	ES26185-1	1
22	Placard – Heater Switch ON – OFF	S-9278EC-2	1
23	Circuit Breaker	MS22073-2	1
24	Relay – Heater	WKJ-6D26.5V	1

(1) This item is an acceptable replacement for the factory supplied lens.

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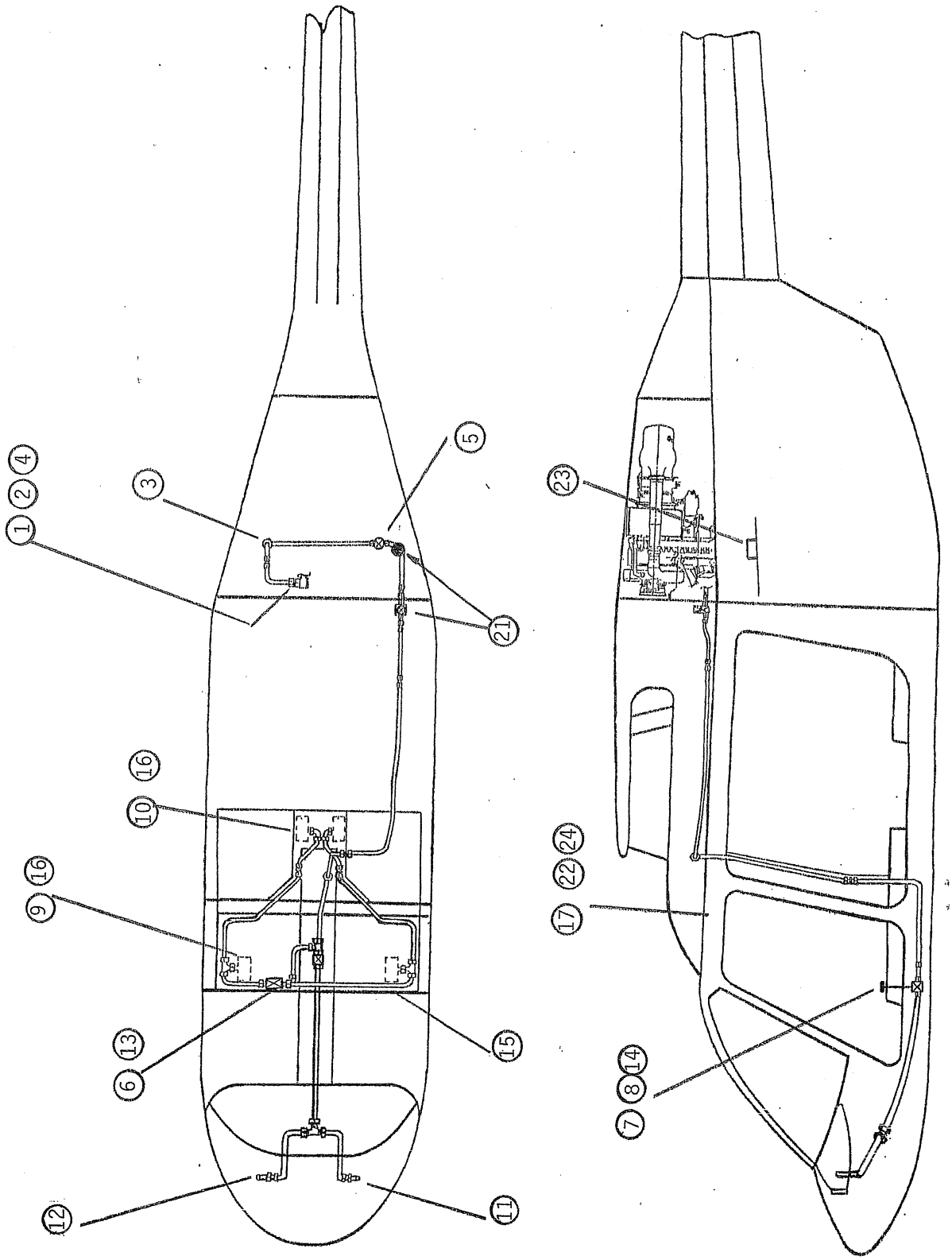


Cabin Heater System Component Location

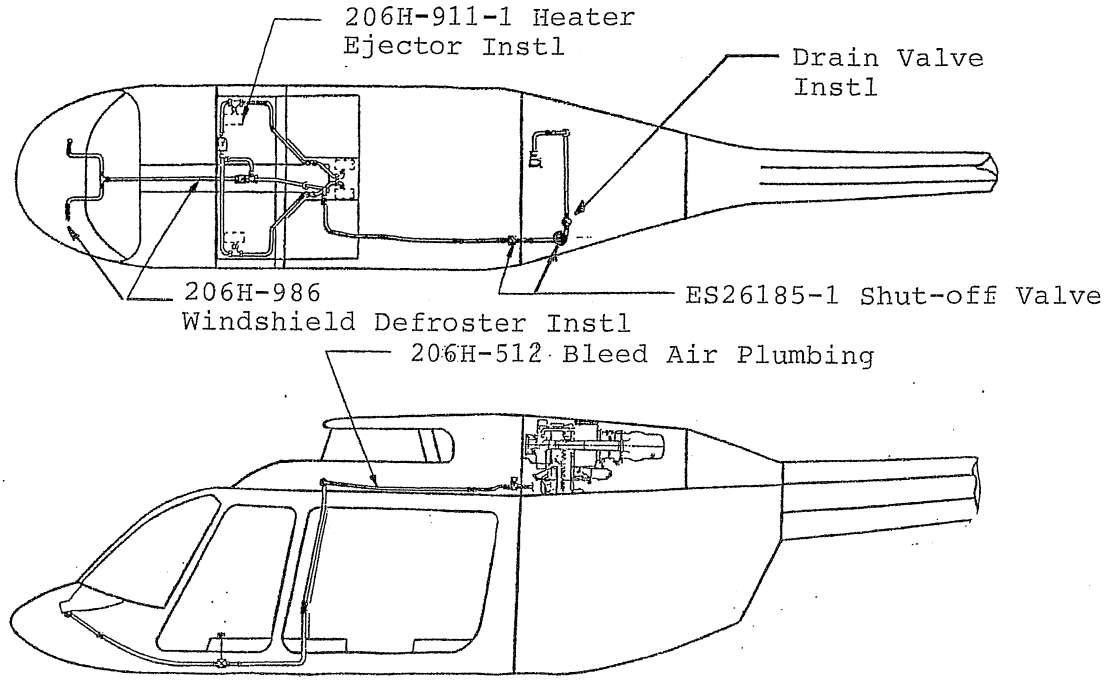
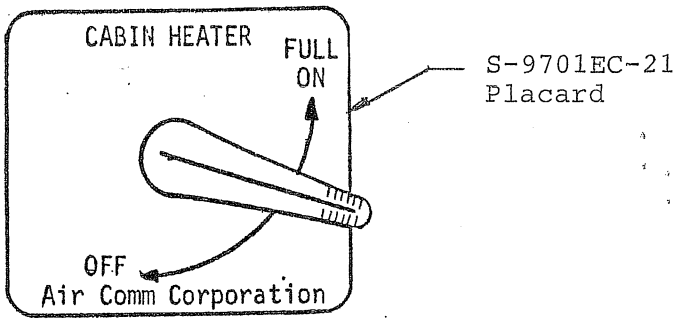


Figure 2. 206H-203 Cabin Heater General Arrangement



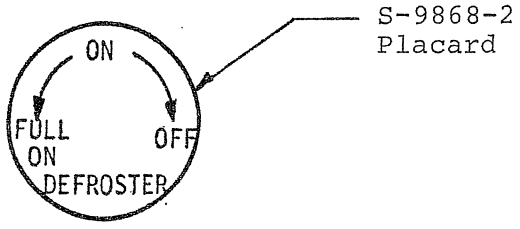


Figure 3. Heater and Defroster Control Valve Placards

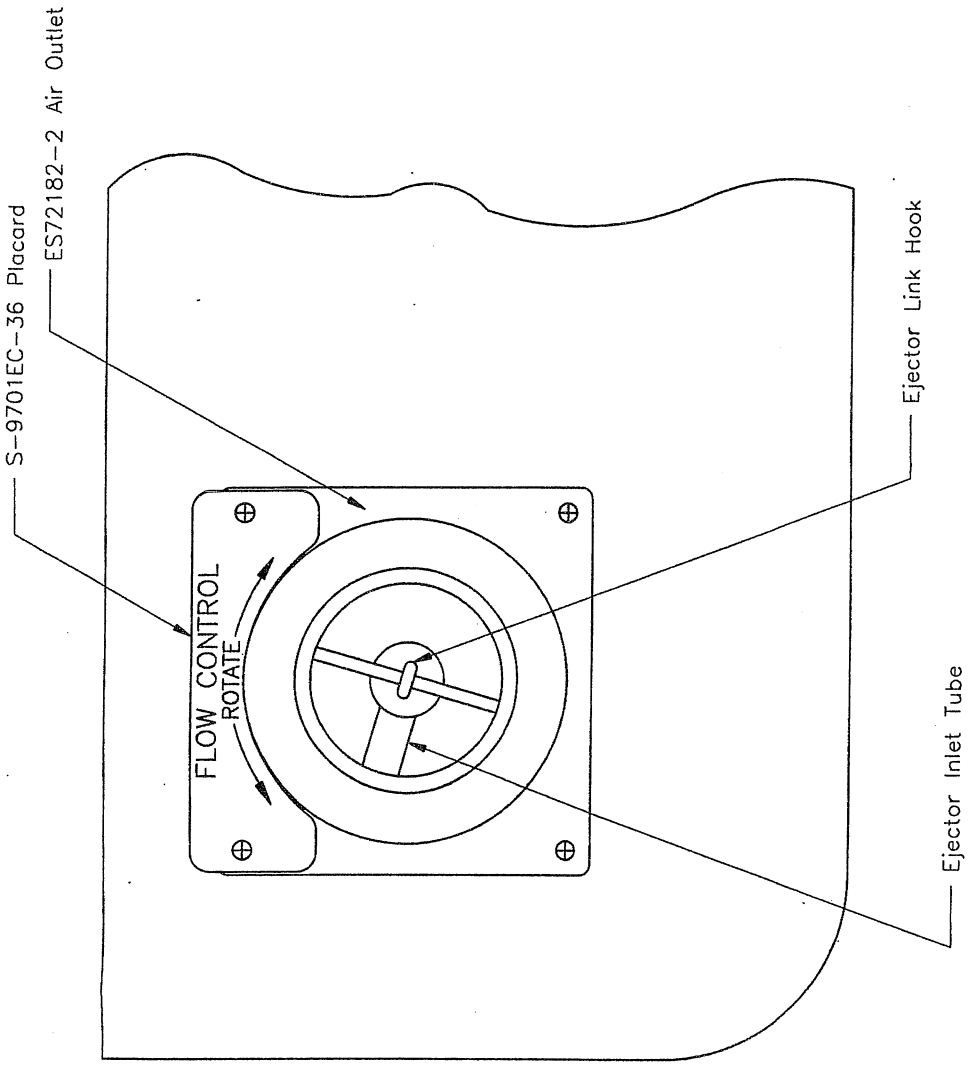
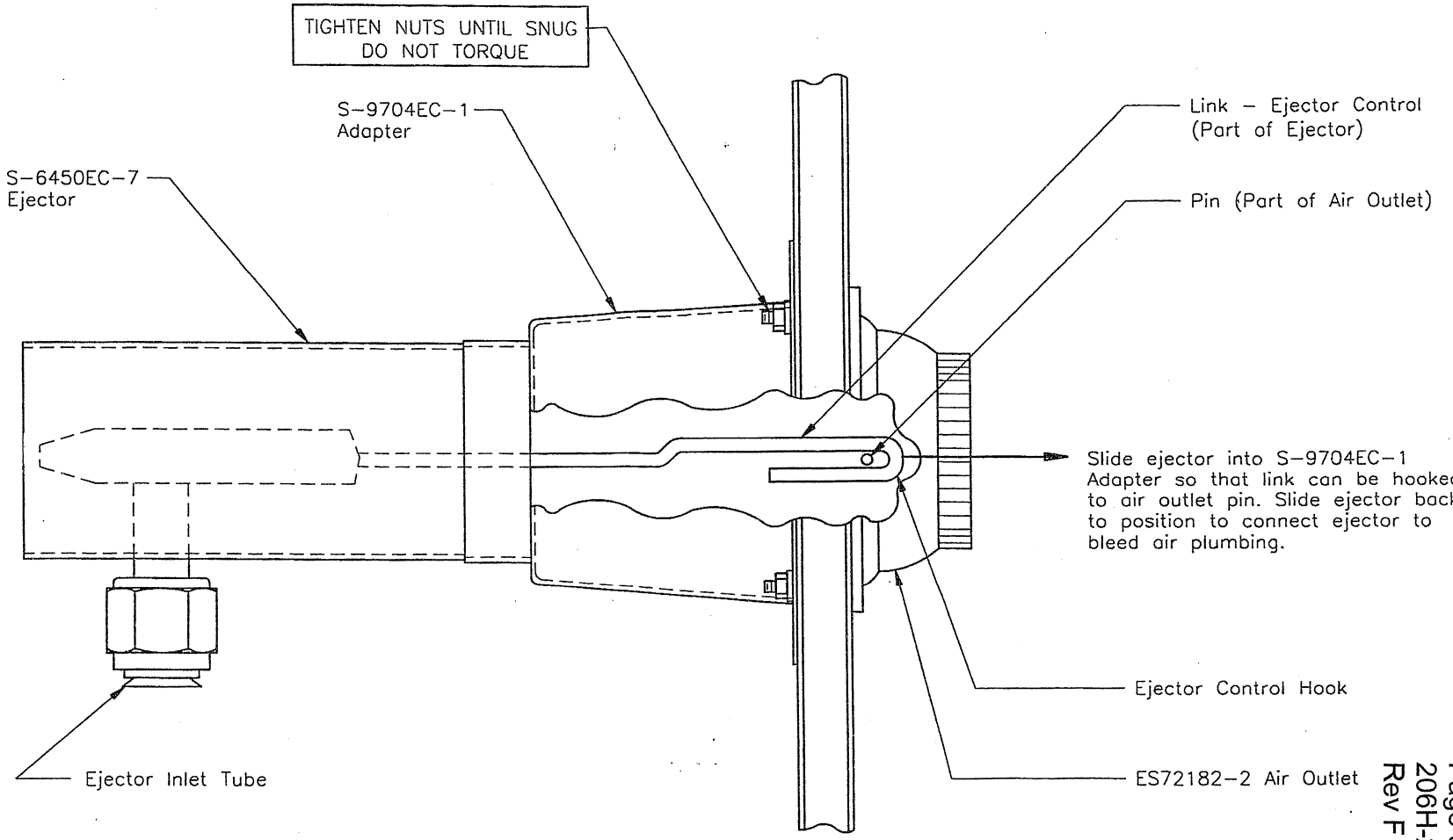


Figure 3. Heater Outlet Configuration

(forward outlets)



Heater Ejector Flow Control Indexing Procedures

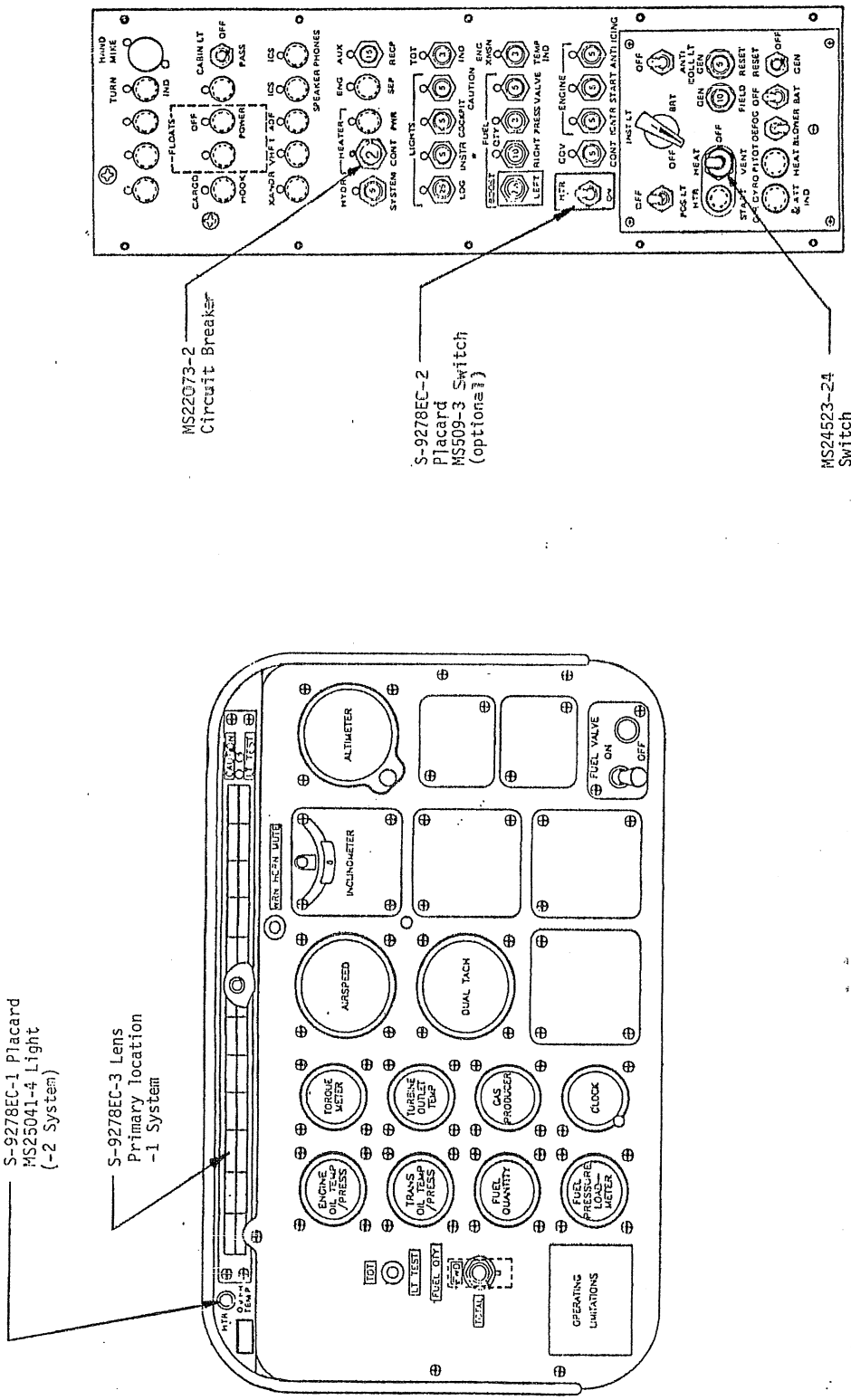


Figure 6. Overhead Console and Instrument Panel Heater Hardware

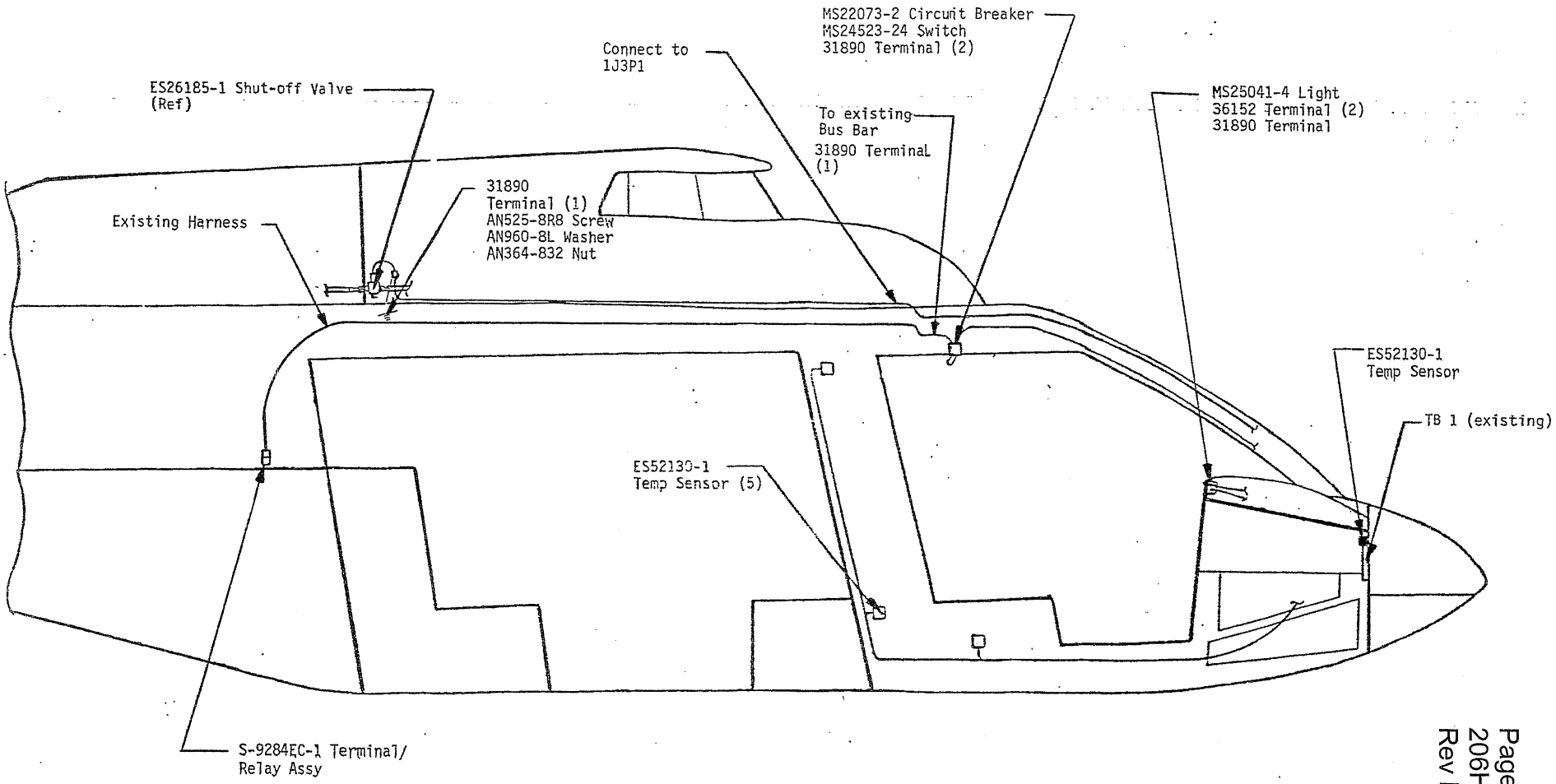


Figure 7. Cabin Heater Electrical System Installation - Firewall Shut-off Valve/Temp Sensors; 206L3

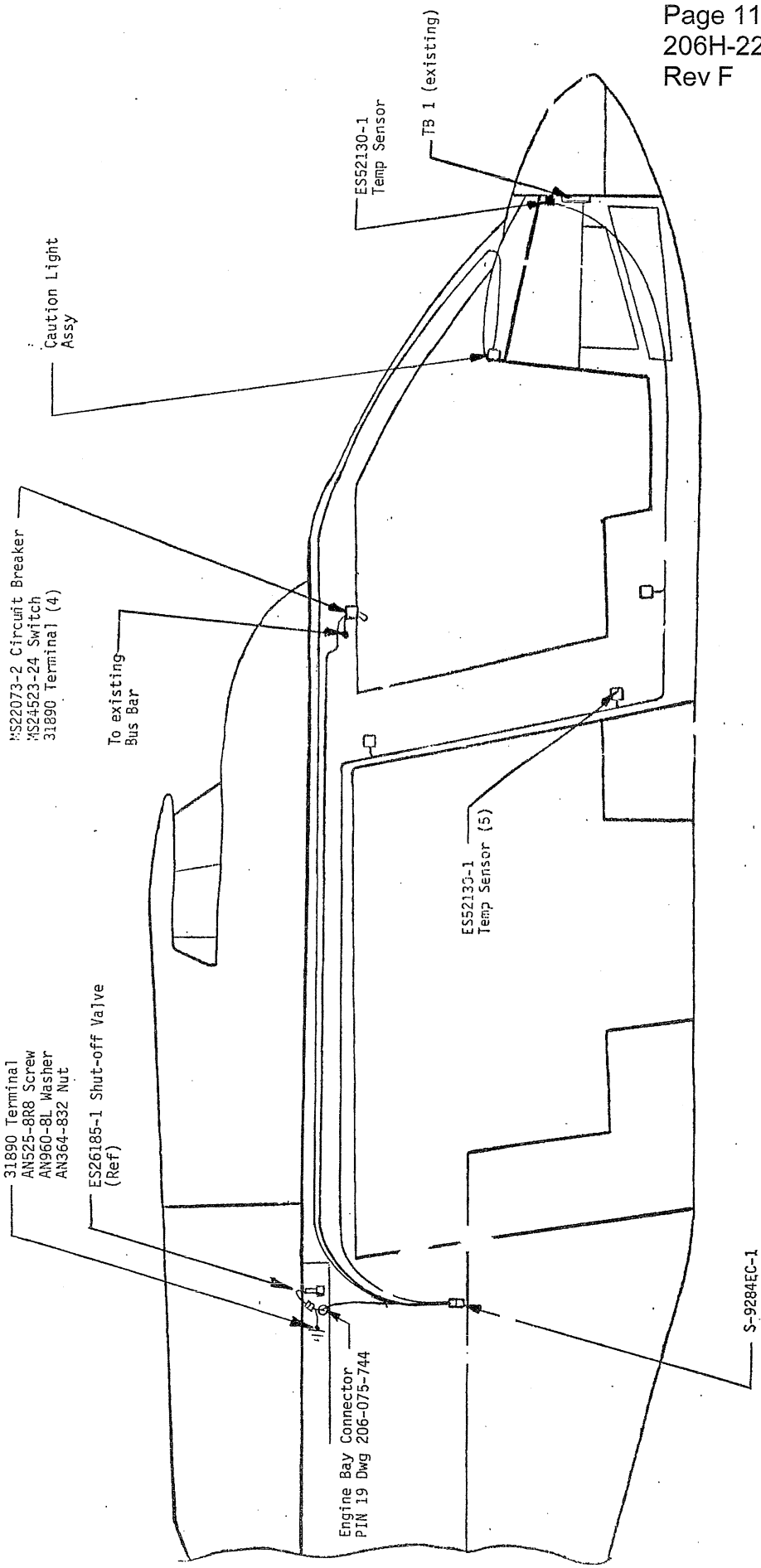


Figure 8. Cabin Heater Electrical System Installation - Firewall Shutoff Valve/Temp Sensors; 206L4

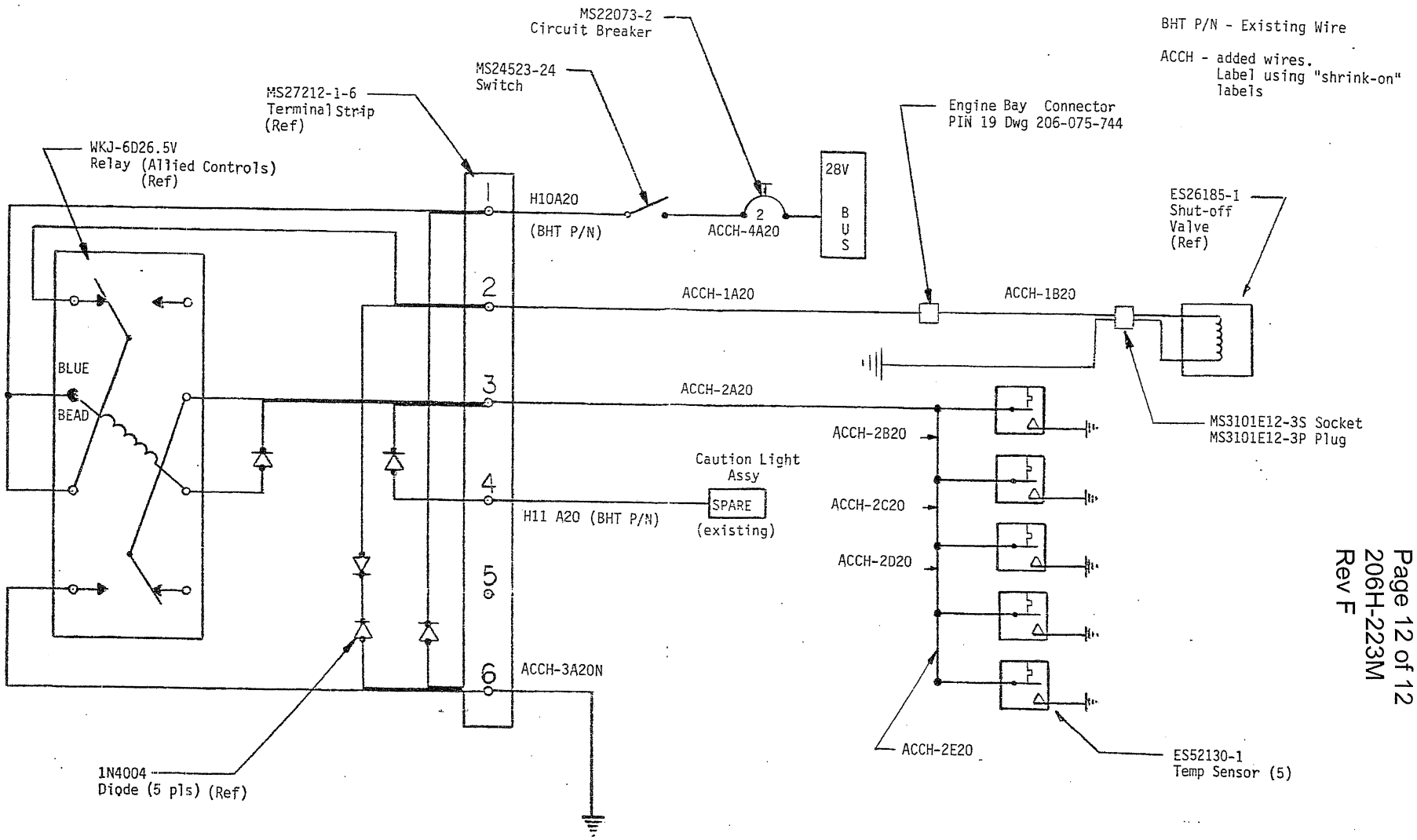


Figure 8. Cabin Heater System Electrical Schematic;

Shut-off Valve/Temp Sensor Installation

WARRANTY

AIR COMM CORPORATION

Cabin Heating & Air Conditioning Systems

Warranty Terms

Air Comm Corporation (hereafter referred to by ACC) warrants that products manufactured by ACC shall be free of defects in materials and workmanship for a period of one year from the date of installation and / or 1000 hours of flying time, which ever occurs first.

Limitations and Exclusions

Installation, maintenance and operation of the product must be in accordance with the specifications and instructions provided by ACC. The warranty registration must be returned to ACC within ten days of the date of installation.

This warranty shall not apply to any product repaired or altered by parties other than ACC unless express prior authorization is granted; nor shall this warranty apply to any product subjected to misuse or accident unless proof is submitted to the satisfaction of ACC that such misuse or accident was not a cause for the claimed defect.

The sole responsibility and liability of ACC and your exclusive remedy under any claim arising out of, connected with, or resulting from, this sale or the performance of breach of any condition of warranty thereunder, or form the manufacture, delivery, or use of the product shall be the repair or replacement of defective parts. Labor costs shall not be covered under any circumstances.

In no event, whether as a result of a breach of contract, warranty, tort (including negligence) or otherwise, shall ACC be liable for any special, consequential, incidental or penal damages or expenses including but not limited to loss of profit, goodwill, or revenues, loss of use of the equipment or any associated equipment, damage to associated equipment, cost of capital, cost of substitute products, facilities or services, down time, or cost or claims of third parties for such damages or expenses.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES OR REMEDIES WHETHER WRITTEN, ORAL, IMPLIED OR STATUTORY. ANY AND ALL IMPLIED WARRANTIES OR MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, COURSE OF DEALING OR USAGE OF TRADE ARE HEREBY EXPRESSLY DISCLAIMED AND EXCLUDED.

Acceptance of the product by you shall constitute your acknowledgment and acceptance of the terms, provisions, limitations and exclusions set forth herein. Such terms, provisions, limitations and exclusions shall not be modified, deleted or supplemented except by an express written acknowledgment of ACC.

WARRANTEE PERFORMANCE: All claims under this warranty shall be made to ACC. All returned parts must be shipped prepaid for evaluation. Full details of the symptoms of the malfunction should be included to assist in the evaluation. Warranty credit or replacement will be extended only after ACC has determined that all conditions of this warranty have been met.

Air Comm Corporation
3300 Airport Road
Boulder, CO. 80301
Phone 303-440-4075
Fax 303-440-6355

Air Comm Corporation
Malfunction Report

Submitted To:
Air Comm Corporation
3300 Airport Road
Boulder, CO. 80301
Attn: Service Manager
Phone No. 303-440-4075
Fax No. 303-440-6355

Date Reported or Claim Filled _____/_____/_____
Date Discrepancy Occurred _____/_____/_____

Submitted By: (Company Name, Address, Phone No.)

_____

_____

_____

_____

Phone Number_____

Fax Number_____

Person to contact_____

Submitted For: (Company Name, Address, Phone No.)

_____

_____

_____

_____

Phone Number_____

Fax Number_____

Person to contact_____

All warranty parts claims must be accompanied by the following information, failure to do so may delay the ability of ACC to determine the validity of the claim.

Aircraft Data: (Please complete all sections)

Model No.	Registration No.	Serial No.	Delivery Date	Total Hrs. at Delivery	Hrs. at Occurrence

Part Data: (Please complete all sections)

Quantity	Part Number	Part Name	Serial No. (if available)	Hrs. at Occurrence

Is this original equipment Yes No (if no, please complete these two blocks ▶)	Date Installed	Total A/C Hrs. when installed

Describe (in detail) of how the part failed, or reason for its return, (Please give any information that may be helpful in the evaluation of this part). _____

_____

_____

_____

_____

Warranty:	
Approved	**Disapproved**

WARRANTY REGISTRATION

AIRCRAFT MODEL # S/N

AIRCRAFT REGISTRATION NUMBER

PRODUCT P/N

DESCRIPTION

DELIVERY DATE

INSTALLATION DATE

TOTAL AIRCRAFT TIME

INSTALLER'S NAME

STREET

CITY ST ZIP

OWNER'S NAME

STREET

CITY ST ZIP

OWNER'S SIGNATURE

TITLE (IF APPLICABLE)

DATE