PARAVION® TECHNOLOGY, INC.
2001 AIRWAY AVENUE
FORT COLLINS, COLORADO 80524

REPORT NO. PR-206H-906M

CABIN HEATER SYSTEM

INSTALLATION INSTRUCTIONS

BELL 206L HELICOPTERS

REVISIONS

REV.	DATE	DESCRIPTION	BY
N/C	03/17/86		NS
A	06/04/86	Revised pgs Cover, I, 1 and A-2. Company name Chg. Was Helicraft Corp.	NS
B	06/26/86	Added note on page I-2	NS
C	11/13/86	Pg I-1 S-9504EC-1 was S-9002EC-10, .50 was .56, Clarified steps 13, 14, & 15	NS
D	05/13/88	Revised pgs I-1 and A-4 to incorporate S-5030-1 valve assy.	BR
E	07/19/88	Revised Pg I-2. Added Instl of –11 placard.	BR
F	07/21/88	Revised Pg I-2 to add optional defrost kit.	BR
G	02/17/89	Revised Pg 2, 4, 6, and I-2 to change ES39300-1 to -2 and eliminate –10 placard.	BR
H	07/16/90	S-9002EC-2 Valve Assy was S-9002EC-1	BR
I REB	10/29/92	Added L-4 Applicability	
J	05/22/00	Updated to current format	MR
K	03/12/09	Added Reference document BHT-ALL-SPM, pp ii, A-1	REB
L	04/06/09	Added NOTE ref. 1st operation, page 3 para. 2.25	REB

REFERENCES

1. Paravion® Drawing 206EC-906; Heater Installation. (Enclosed)
2. Paravion® Drawing 206EC-916; Heater Ejector/Ducting Installation. (Enclosed)
3. Paravion® Drawing 206EC-520; Bleed Air Plumbing Installation. (Enclosed)
4. AC43.13.1A; Acceptable Practices, Aircraft Alterations and Repair.
5. BHT-ALL-SPM, Current publication

TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

1.0 INTRODUCTION

This document presents a step-by-step procedure for installation of the Paravion® Technology, Inc. 206EC-906 Cabin Heater System in the Bell 206L series helicopter. The instructions contained herein are intended to supplement the information contained on the installation drawings.

This manual provides additional information that is required for operation and maintenance of the aircraft. This data is contained in sections 2.0, 3.0, and Appendix A. After completion of this installation, the applicable sections are to be removed from this document, and placed with the appropriate existing drawings.

2.0 INSTALLATION INSTRUCTIONS

NOTE: Apply anti-seize compound (Go-Jo No Lok or equivalent) to all tube fitting threads before installation.

2.1. Remove upper forward fairing and open engine cowling. Remove covers from back side of broom closet, both forward seat panels, and the panel under the center collective stick.

2.2 Engine Cowling for 206L1, L3, and L4

2.2.1 Remove and discard plate or fitting from right hand compressor scroll.

2.2.2 Install the indicated fitting and gasket on the compressor scroll with the indicated hardware and safety wire the bolts.

2.2.3 Layout and drill the indicated hole in the forward firewall. See the appropriate view for the proper aircraft. The hole position for the 206L3, depends on if a particle separator is installed on the aircraft.

2.2.4 Install the indicated valve, nut and washers into the previously drilled hole in the forward firewall.

2.2.5 Install the indicated hose(s), restrictor(s), and packing. See the appropriate view for the proper aircraft.

2.3 Engine Cowling for 206L

2.3.1 Remove and plug from right hand compressor scroll and plug on particle separator line and fitting form left hand scroll, if installed.

2.3.2 Install the indicated restrictor, packing and fitting in the right hand compressor scroll.

2.3.3 Install the indicated restrictor, packing, particle separator fitting, union and nut in

the left hand compressor scroll.

2.3.4 Install the indicated valve, nut and washers into the hole in the forward firewall.

2.3.5 Install the indicated hose between the valve in the firewall and the fitting. See the appropriate view for the proper aircraft.

2.3.6 Position and/or clamp hose as required to prevent chafing.

2.4 Locate the doubler plate on the cabin roof as specified. Match-drill rivet holes, bolt holes, and the hole in the headliner. Deburr holes and install plate using indicated hardware.

2.5 Remove the screws that secure the left hand forward headliner. Pull the headliner down far enough to install screws, nuts and washers to secure the plate and the valve assembly.

2.6 Install indicated bearing and grommet in the headliner, then reinstall the headliner.

2.7 Install knob on the valve assembly stem.

NOTE: The valve shaft can be cut to length, as necessary to facilitate control knob installation adjacent to headliner.

2.8 For the 206L aircraft equipped with a C-20 or C-20R/2 engine, install placard on instrument panel in full view of pilot.

2.9 Install lines on transmission deck between the forward firewall and the ON/OFF valve.

2.10 Position indicated tube that attaches to the ON/OFF valve and extends into the vertical control tube tunnel.

2.11 Install the indicated hardware that supports the previously installed tube.

2.12 Install tube assembly forward through control tunnel and connect to seatbox tube assembly with indicated union.

2.13 Locate and drill indicated holes in outer wall of seat boxes and install outboard ejectors.

2.14 Locate and drill indicated holes on top of both control tunnel stringers.

2.15 Install tee on tube and tee (2) on ejectors. Substitute optional defrost kit tee if necessary.

2.16 If installed, remove and discard forward heater outlets and all ducting from seat boxes.

2.17 Layout and drill indicated vent holes and vent installation holes in center seat box area between the 2 aft facing seats. Deburr holes and seal edges of all holes, including screw holes, as indicated.

2.18 Install indicated outlets and inlets.

2.19 Install remaining plumbing in seat boxes and clamp per drawing requirements.

2.20 Install ducting and clamp in place using tyraps except on inlet side of both inboard ejectors.

2.21 Clamp inboard ejectors to tubes per drawing requirements.

2.22 Inspect plumbing installation for loose connections and hardware. Correct as necessary.

2.23 Have assistant move cyclic stick to full travel in every direction with collective stick in both full up and full down position while observing for control system interference. Pay particular attention to area near bottom of vertical control tube tunnel in both fwd seat boxes and RH servo support. Reposition plumbing as necessary to provide a minimum of .50 inch clearance from control system.

2.24 Reinstall fairings, seat panels, vertical control tube tunnel cover, interior trim and seats.

2.25 Test run engine and check for heater operation.
NOTE: First-time operation of the heater system may produce a slight smoky odor caused by installation residue within the system. This will clear itself within minutes.

3.0 WEIGHT AND BALANCE DATA

TABLE I

Weight and Balance Data for Bell Model 206L

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

	Weight (lbs)	STA. (in)	Moment (in-lbs)	B.L. (in)	Moment (in-lbs)
Cabin Heater 206-906	11.39	97.0	1105	5.5	63

APPENDIX A

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

1.0 INTRODUCTION

This document provides maintenance and service information for the Paravion® Technology, Inc. 206EC-906 cabin heater installation in the Bell 206L series aircraft.

2.0 REFERENCE DOCUMENTS

1. BHT-ALL-SPM, Current publication.

2. AC43.13.1A Acceptable Practices, Aircraft Alteration and Repair.

3. Paravion® Drawings:

   206EC-906; Heater Installation
   206EC-916; Heater Ejectors/Ducting Installation
   206EC-520; Heater Plumbing Installation

3.0 SYSTEM DESCRIPTION AND OPERATION

The Paravion® 206EC-906 cabin heater is shown as a side view projection in figure 1.

This is a bleed-air type heater which consists of bleed air plumbing, a manually operated ON-OFF valve, and four miniature heater-ejectors, which are located under the front seats.

The ON-OFF valve is mounted on top of the cabin and is enclosed by the transmission deck cowling. The valve stem extends through the cabin top. The heater control knob and operation placard are located on the lower side of the cabin headliner, on the RH side of the aircraft.

The two outboard ejectors pump air from the forward cabin and exhaust heated air to the aft cabin. The two inboard ejectors pump heated air to the forward cabin. The air inlets and outlets are located in the front and rear seat box panels.

The bleed air plumbing is connected to the compressor scroll, at the bleed port(s). Bleed air restrictor is located at the bleed port(s) as a flow limiter (s).

4.0 MAINTENANCE INSTRUCTIONS

Conduct the following inspection at each 100 HR inspection interval.

1. Inspect valve for mounting security.

2. Inspect valve for freedom of operation. Disassemble and clean if excessive operating friction exists.

3. Inspect bleed plumbing for insulation, security, and clearance with flight controls (.50" min).

4. Verify security of control knob and placard.

5. The inlet end of the heater circuit contains an acoustical dampener/cabin air filter. This filter should be changed annually (prior to start of the heating season), or more often if it becomes blocked. The filter (P/N S-9501EC-7) can be ordered through the customer service department of Paravion® Technology, Inc.

6. The flexible ducting which connects the ejectors, and air inlet/outlet adapters contains an acoustical liner. This liner should be inspected annually to insure free air passage of the ducts.

7. For compressor wash, turn heater valve off. The S-5030-2 valve assy will drain any water in the bleed air lines.