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DOCUMENT NO. PR-206IR-900M

INSTALLATION INSTRUCTIONS

BELL 206A/B/L/L1/L3/L4 HELICOPTER MODELS

REVISIONS

<u>REV.</u>	<u>DATE</u>	<u>DESCRIPTION</u>	<u>BY</u>
N/C	12/09/92	Original	R.E.B.
A	08/27/93	Added 206IR-100-3, -4 Installations Revised to Allow Removable Electronics Unit	R.E.B.
B	03/17/95	Added 206IR-100-5, -6 Installations	R.E.B.
C	03/14/96	Added 206IR-100-6 Installation	R.E.B.
D	05/17/99	Added MKII and MKIII Infrared Camera Systems	P.R.
E	07/13/00	Added detailed installation instructions from drawings to this document. Updated report to current format.	MR
F	06/05/01	Added reference to U7000.	MH
G	09/12/02	Added reference to U7500	GP
H	02/06/06	Removed Appendix 1 (Weight & Balance data) Refer to Component Installation Drawings for Detail Weight & Balance data	REB

REFERENCES

1. AC43.13-1B Acceptable Methods, Techniques, and Practices/Aircraft Inspection and Repair.
2. AC43.13-2A Acceptable Methods, Techniques, and Practices/Aircraft Alterations.
3. Drawing 206IR-100; 206IR Camera System Configuration
4. BHT-SPM-ALL Standard Practices Manual
5. BHT-206-SRM-1 Structural Repair Manual

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1.0 **INTRODUCTION**

This document describes installation of the 206IR-100 Infrared Imaging System, on Bell 206 series helicopters. Eighteen alternative installation configurations have been approved. Only one installation option may be incorporated on an aircraft, at any given time. For installation options refer to drawing 206IR-100 (Ref 3).

2.0 **206IR-100 INSTALLATION DRAWINGS**

Subassembly installation for all configurations are shown on drawing 206IR-100 (Ref 3).

NOTE: FOR ALL CONFIGURATIONS

1. Verify that cables/control installation routing and location will not interfere with aircraft controls or other moving parts.
2. The video monitor and the monitor mount must be FAA approved.
3. [Reference Weight and Balance data is found on component installation drawings. Actual aircraft Weight and Balance should be verified by weighing after installation completion]
- 4.

3.0 **206IR-100 INSTALLATION INSTRUCTIONS**

NOTE: Installation of Bell Helicopter/Textron Inc. P/N 206-706-031-010, -031, -064 or equivalent FAA approved high skid gear installation is required for all Infrared Camera System Installations.

3.1 **Mount Bracket Installation (206IR-101)**

- 3.1.1 Locate and remove screws from center panel aft of landing light window.
- 3.1.2 Temporarily install the Mount Bracket Assembly
- 3.1.3 Match drill indicated hole through fuselage longeron and cover if necessary. This should only be necessary in the most forward and most outboard holes in the Mount Bracket Assembly (2 places).
- 3.1.4 Remove cover and install clip nuts on the longeron. Re-install cover.
- 3.1.5 Permanently install Mount Bracket Assembly using indicated hardware.

3.2 **Mount Bracket Installation (206IR-102-1 and 206IR-104-1)**

- 3.2.1 Remove left side Hard Point.
- 3.2.2 Install Mount Bracket Assembly using indicated hardware

3.3 Mount Bracket Installation (206IR-102-2 and 206IR-104-2)

- 3.3.1 Locate the Mount Bracket Assembly; mark the bolt pattern on the aircraft belly centered at F.S. 45.06 and B.L. 1.00.
- 3.3.2 Install indicated inserts per drawing requirements and BHT-206-SRM-1, Section 3-2-12. (Ref. 5)

NOTE: Existing aircraft modification may prevent installation at specified location. Moderate relocation is acceptable, however, mounting provisions must remain forward of the forward cross tube. Weight and balance data must be verified.

- 3.3.3 Allow minimum of 24 hours for adhesive to cure at room temperature (above 65 degrees).
- 3.3.4 Install Mount Bracket Assembly using indicated hardware.

3.4 Step Mount Installation (206IR-103 and 206IR-105)

- 3.4.1 Remove existing screws in side of fuselage below appropriate compartment door.
- 3.4.2 Insert installation may be required on 206A/B, 206L, or 206L1 per SI-206-22, SI-206-2013, (and Ref. 4).
- 3.4.3 Install Fitting Assembly using indicated hardware. Orient Fitting Assembly such that the bottom surface is parallel to the bottom of the skid gear.
- 3.4.4 Seal fitting/aircraft faying surfaces as indicated on the drawing.
- 3.4.5 Install Mount Assembly using indicated hardware.

3.5 Electronic Control Unit Installation (206IR-201)

- 3.5.1 Match drill both Beam Assemblies to the Shelf Panel per drawing requirements.
- 3.5.2 Install both Beam Assemblies to the Shelf Panel using the indicated hardware.
- 3.5.3 Install the Shelf Panel per the 206ET-100 drawing.
- 3.5.4 Fasten Buttons to the Electronic Control Unit using the indicated hardware.
- 3.5.5 To install the Electronic Control Unit (ECU) under the Shelf Panel, remove the hairpin clip, loosen knob and move locking slider aft. Fit buttons on the ECU into the keyways in the beams and slide the ECU forward. Move the slider forward and tighten knob. Reinstall the hairpin clip.

3.6 Electronic Control Unit Installation (206IR-202)

- 3.6.1 Fasten Buttons to the Electronic Control Unit (ECU) using the indicated hardware.
- 3.6.2 Install the ECU to both Beam Assemblies. To install the ECU to the beams; remove the hairpin clip, loosen knob and move locking slider away for the keyways. Fit buttons on the ECU into the keyways in the beams and slide the ECU forward. Move the slider forward and tighten knob. Reinstall the hairpin clip.

- 3.6.3 Temporarily position the ECU and beams on the baggage compartment floor per drawing requirements.
- 3.6.4 Match drill both Beam Assemblies to the baggage compartment floor per drawing requirements.

CAUTION: Penetrate only the upper skin of the honeycomb floor.

- 3.6.5 Remove ECU from beam assemblies, complete beam installation.
- 3.6.6 Seal Beam Assemblies at the fastener locations per drawing requirements.
- 3.6.7 Install both Beam Assemblies to the baggage compartment floor using the indicated hardware.
- 3.6.8 Cut indicated cable passage holes through the floor of the baggage compartment.
- 3.6.9 If indicated, cut cable passage holes through the outer skin of the aircraft.

NOTE: The outer skin of the aircraft has the indicated holes cut only when the 206IR-103-3/-4/-5/-6 Step Mount Installation is used. The left side of the aircraft is cut for the 206IR-103-3/-5 Installation and the right side of the aircraft is cut for the 206IR-103-4/-6 Installation.

- 3.6.10 Clean-cut panels in accordance with Bell Standard Practices. Fill exposed honeycomb per drawing requirements.
- 3.6.11 Install ECU to Beam Assemblies.
- 3.6.12 In appropriate logbook, add weight and balance data.

3.7 Inframetrics Power Supply Installation (206IR-311, 206IR-312, 206IR-321, 206IR-322, 206IR-331, 206IR-341)

- 3.7.1 Determine which installation is desired, the 206IR-311-1 or -2. If periodical removal of the system is necessary, then the -2 configuration should be used, if the aircraft has an existing auxiliary power circuit rated to 10 amps or greater. If the periodical removal of the system is not necessary, then the -1 configuration should be used.
- 3.7.2 Remove the left side instrument console access panel
- 3.7.3 Route cable pair (10349-551) from electronics control unit through instrument console into open area below forward seats center section.

NOTE: On the Bell 206L series helicopter, cables must penetrate fuselage panel below center console forward of seat box. Locate the hole in the fuselage, where the cable penetrates, between tail rotor control tube and instrument lines. Ensure adequate clearance from installed equipment.

CAUTION: Removal of control tubes and/or instrument lines may be necessary to complete cable installation. Refer to applicable Manufacturer's Maintenance Manual and Ref. 4 & 5.

- 3.7.4 Mark optimum location for bulkhead terminal installation. Cable routing must not interfere with control linkages (check extreme control travel) and must allow cable pair installation.
 - 3.7.5 Bore indicated holes through honeycomb panel. Bulkhead may be used as a template.
 - 3.7.6 Install cables through panel and install bulkhead to cables. Match-mark the fastener locations on the honeycomb panel on the outside of the ship.
 - 3.7.7 Remove bulkhead and drill indicated holes.
 - 3.7.8 Install indicated inserts and seal honeycomb per Bell Standard Practices (Ref. 4 & 5) and drawing requirements. Allow 24 hours for adhesive to cure.
 - 3.7.9 Install cable pair (10349-551) and bulkhead using indicated hardware. Tie cables to aircraft structure to ensure clearance from moving parts (Ref. AC43.13-1B).
 - 3.7.10 Install cable (10368-500) to electronics control unit. Route cable into console, cut to appropriate length. Use indicated hardware to complete power supply wiring.
 - 3.7.11 Cut indicated holes as close to lower edge of access panel as possible for cable penetration. Panel must be cut from edge to holes to allow cable installation.
 - 3.7.12 Split indicated grommets for installation over cables. Install cables and grommets. Reinstall panel, this will require temporary removal of the electronics control unit and shelf installation. Re-install all panels and equipment removed for access per manufacturing instructions.
 - 3.7.13 Position exterior cable and install indicated hardware per Bell Standard Practices. (Ref. 4) Install all other cables as shown.
- 3.8 Inframetrics Power Supply Installation (206IR-332, 206IR-333)
- 3.8.1 Attach cables to Electronics Control Unit (ECU). Route sensor cable (10349-500, H configuration split at both ends) through the hole in cargo compartment's floor and hole in exterior fairing.

NOTE: For Bell Model 206A/B, the sensor cable passes through the hole in the cargo compartment's floor into the cross-tube housing and out of the existing hole in the bulkhead. It is not necessary to cut an extra hole through the rotorcraft's exterior fairing.
 - 3.8.2 Install indicated inserts per Bell Standard Practices and drawing requirements.
 - 3.8.3 Remove right side interior baggage compartment panel and cut the indicated slot.
 - 3.8.4 Cut the indicate hole in the in the baggage compartment's roof.
 - 3.8.5 Run cables (10368-500, 10367-500, and 10366-500) next to forward edge of baggage compartment's wall, along the floor, to right side of baggage compartment. Install indicated grommets on cables, and route the cables into the fuselage.
 - 3.8.6 Remove cabin overhead panels. Install indicated breaker in overhead breaker panel. Route power wire to the breaker.
 - 3.8.7 Cut the power cable (10368-500) to convenient length. Route black wire to aircraft ground. Splice the red wire on the power cable to reach the overhead breaker panel per drawing.
 - 3.8.8 Route hand controller and monitor cables above overhead panels as shown.

APPENDIX A

WEIGHT AND BALANCE DATA

**REFER TO COMPONENTS INSTALLATION DRAWINGS
FOR REFERENCE WEIGHT AND BALANCE DATA**

APPENDIX B

FLIGHT MANUAL SUPPLEMENT

APPENDIX C

SUPPLEMENTAL TYPE CERTIFICATE

APPENDIX D
MAINTENANCE INSTRUCTIONS

MAINTENANCE INSTRUCTIONS

This section provides maintenance guidelines for the IR Mount Installation. Conduct the following inspection functions at each 100 hour inspection interval.

INSPECTIONS	
Inspection Item	Inspection Requirement
Mounting Fixture	Check for security of attachment. Inspect mounting fixture and aircraft structure around mounting fixture for cracks.
IR System	Reference Manufacturer's Maintenance Instructions.
Electric Power Wiring	Check wiring harness for security, clearance from A/C control mechanisms, chafing. Check breaker switch function.
Elect. Unit Inst'n	Check installation, fasteners for integrity, cracks.
Report structural discrepancies to Paravion Technology, Inc. Replacement parts are available.	

TROUBLE SHOOTING CHART		
PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
POWER SUPPLY BREAKER INTERRUPT	Circuit Fault	Check for Bare-Wire or Broken Insulation in Power Supply Wires.
		Contact Manufacturer's Service Department.