

PR-407FL-120M  
Rev. 2, 12/23/05

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**REPORT NO. PR-407FL-120M**

**INSTRUCTIONS FOR CONTINUED AIRWORTHINESS**

**FOR**

**BELL 407 AUXILIARY ANNUNCIATION SYSTEM**

Cover  
PR-407FL-120M  
Rev. 2, 12/23/05

Paravion<sup>®</sup>  
✓Technology Inc.

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**RECORD OF REVISIONS**

<b>REVISION NO.</b>	<b>ISSUE DATE</b>	<b>DATE INSERTED</b>	<b>BY</b>
ORIGINAL	07/12/04	N/A	PTI
1	09/07/04		PTI
2	01/09/06		

**REVISION CONTROL PROCEDURE**

Revisions to this document are mailed to owner of record. Before inserting a change, ensure this manual is correct. Check the existing List of Effective Pages in this manual to ensure that all prior revisions are inserted. **Do not insert this revision if prior revisions are not inserted.**

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**LIST OF EFFECTIVE PAGES**

<b>PAGE NO.</b>	<b>REVISION</b>	<b>DATE</b>
COVER	2	12/23/05
A	2	12/23/05
B	2	12/23/05
i	2	12/23/05
ii	2	12/23/05
1	2	12/23/05
2	2	12/23/05
3	2	12/23/05
4	2	12/23/05
5	2	12/23/05
6	2	12/23/05
7	2	12/23/05
8	2	12/23/05
9	2	12/23/05
10	2	12/23/05
11	2	12/23/05

These Instructions for Continued Airworthiness (ICA) except for the Airworthiness Limitations Section, have been reviewed and found to comply with the applicable requirements of Appendix A to the Federal Aviation Regulations Part 27.

FAA Acceptance \_\_\_\_\_ Date \_\_\_\_\_.

**TABLE OF CONTENTS**

<u>ITEM</u>	<u>PAGE</u>
RECORD OF REVISIONS .....	A
LIST OF EFFECTIVE PAGES .....	i
TABLE OF CONTENTS.....	ii
AIRWORTHINESS LIMITATIONS .....	1
1.0 SYSTEM DESCRIPTION.....	2
2.0 INSPECTION AND MAINTENANCE .....	2
3.0 COMPONENT REMOVAL AND REPLACEMENT .....	3

**LIST OF FIGURES**

<u>FIGURE</u>	
1	WARNING LIGHTS INSTALLATION.....6
2	WIRING DIAGRAM; S/N 53000 -53015.....7
3	WIRING DIAGRAM; S/N 53016 AND SUBSEQUENT.....8

**LIST OF TABLES**

<u>TABLE</u>	
I	TROUBLESHOOTING GUIDE..... 10
II	ANNUAL/300 HOUR INSPECTION CHECKLIST..... 11
III	WEIGHT AND BALANCE DATA..... 12

**AIRWORTHINESS LIMITATIONS**

The Airworthiness Limitations Section is FAA approved and specifies inspections and other maintenance required under §§ 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

**No airworthiness limitation associated with this type design change.**

**This system has no life-limited components.**

REVISION	DATE	APPROVED
0		
1	01/25/05	David T. Grossman
2	01/03/06	David Grossman

## 1.0 SYSTEM DESCRIPTION

The 407FL-100 Auxiliary Annunciation System includes the following major components:

1. Warning Light Box Assembly
2. Wiring

The Warning Light Box Assembly mounts to either the left or right hand side Bell/Aeronautical Accessories Flitestep<sup>®</sup> (LHS: 407-326-002, RHS: 407-326-003, STC SH1322SC) just forward of the front skid leg. The wiring is routed along the skid leg and belly and is usually fed through the same opening the manual cargo hook release cable uses to gain entry into the cabin. The wiring is connected to two terminal blocks behind the instrument panel.

Total System Mass: 1.0 lbs.

Total System Current Draw: 0.12 amps max

## 2.0 INSPECTION AND MAINTENANCE

It is the objective of this inspection and maintenance procedure to ensure that component installations are secure and that the electrical system is airworthy. If any part of the installation appears to be functioning improperly, consult the troubleshooting guide in Appendix A. In the event that one or more of the major components listed above is damaged or malfunctions, the component in question should be returned to the manufacturer for replacement. **NO FIELD REPAIRS AUTHORIZED.**

### 2.1 WARNING LIGHT BOX ASSEMBLY

- 2.1.1 Inspect the 2 AN525-10R10 box-mounting screws on the outside of the Flitestep<sup>®</sup> for their presence and tightness. Replace missing screws with equivalent screws and their accompanying NAS1149D0332J washers and MS21042L3 nuts, if necessary. The box bottom and its two AN525-10R8 screws will have to be removed for access to the MS21042L3 nuts. AN525-10R10 screws should be torqued to approximately 20-25 in-lbs.
- 2.1.2 Inspect the 2 AN525-10R8 Box bottom mounting screws for their presence and tightness. Replace missing screws with equivalent. AN525-10R8 screws should be torqued to approximately 20-25 in-lbs.



- 2.1.3 Inspect and verify that the Expando Loom covered wire is securely attached to the skid leg and is not damaged.

## 2.2 WARNING LIGHTS

- 2.2.1 Verify the proper function and illumination of the “CHECK INST” and “FADEC FAIL” lamps, using the proper procedure from the RFMS. Each lamp indication should correspond with its associated warning/caution light on the annunciation panel atop the instrument panel.

## 3.0 COMPONENT REMOVAL AND REPLACEMENT

### 3.1 WIRING

#### 3.1.1 REMOVAL

3.1.1.1 Remove any tie-wraps, tape, and/or clamps that secure the 407FL-100 wiring to the skid leg and fuselage. Remove any necessary access panels and remove the 4 407FL-100 wires labeled FLMZB22, E570FLA22, E94FLB22, and E185FLA22 from the terminal blocks behind the instrument panel. See the wiring schematic on page B-2 for details.

3.1.1.2 To completely remove the 407FL-100 and restore the Bell 407 wiring to its original configuration, first remove the wire between block 4TB2, terminal TE and block 8TB1, terminal KC. Then move the ground wire labeled E570FLA22 for the “CHECK INSTRUMENT LIGHT” from block 8TB1, terminal KB to block 4TB2, terminal TE. This step is not necessary for a temporary removal of the 407FL-200 Warning Light Box installation.

3.1.1.3 Remove the 407FL-100 wiring from the aircraft by feeding it through the cabin access, usually the same location as the manual cargo-hook release cable.

#### 3.1.2 REPLACEMENT

3.1.2.1 Re-route the 407FL-100 wiring through the cabin access, usually the same location as the manual cargo-hook release cable. Secure wiring with tie-wraps and clamps as necessary.

## 3.2 WARNING LIGHT BOX ASSEMBLY

### 3.2.1 REMOVAL

3.2.1.1 Gain access into the box by removing the box bottom. Then remove the two AN525-10R10 screws and their associated NAS1149D0332J washers and MS21042L3 nuts, freeing the box from the Flitestep<sup>®</sup>.

### 3.2.2 REPLACEMENT

3.2.2.1 First, attach the box to the Flitestep<sup>®</sup> with the AN525-10R10 screws, NAS1149D0332J washers, and MS21042L3 nuts. Replace the Warning Light Box bottom using the two AN525-10R8 screws. AN525-10 screws should be torqued to 20-25 in-lbs.

## 3.3 “FADEC FAIL” & “CHECK INST” LAMPS

### 3.3.1 REMOVAL

3.3.1.1 Remove the Warning Light Box bottom in order to gain access to the MS21042L3 nuts. Detach the box from the Flitestep<sup>®</sup> by removing the AN525-10R10 screws and their mating nuts and washers. Simply rotate the jam nut counterclockwise relative to the lamp until the lamp is free.

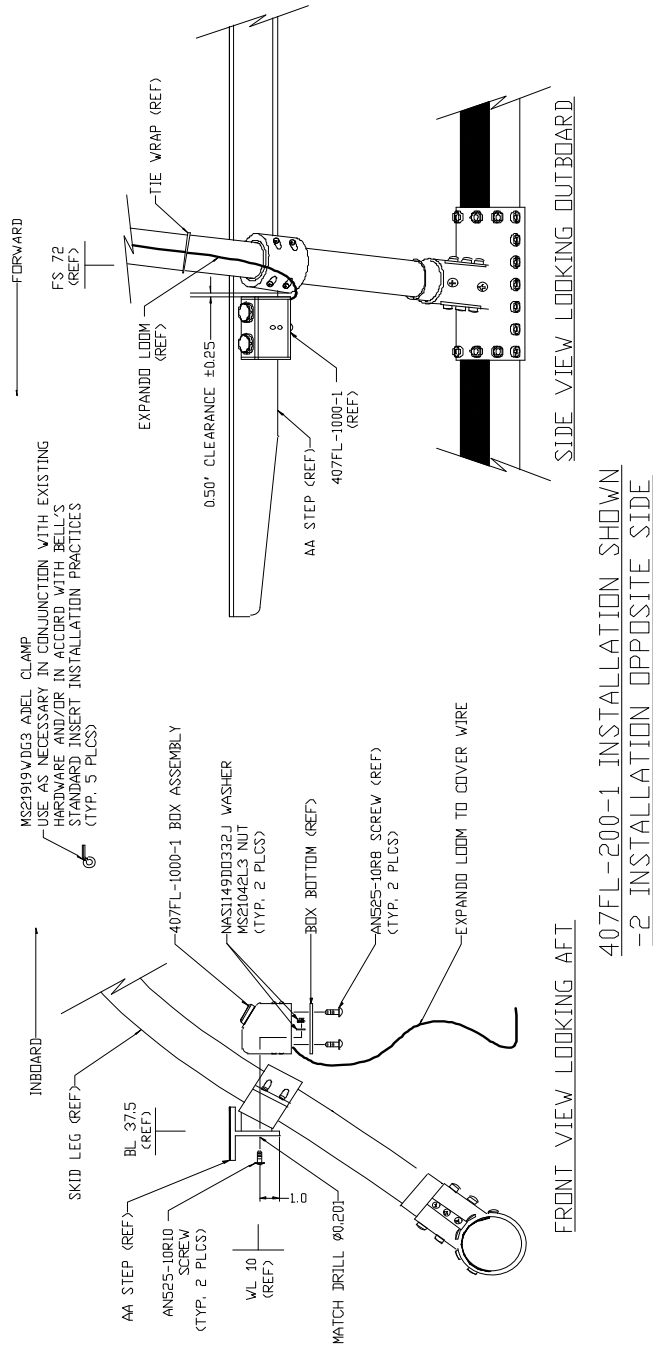
### 3.3.2 REPLACEMENT

3.3.2.1 With the lamp's gasket installed, but the star washer and jam nut removed, place the lamp through the designated clearance hole in the top of the box. From the bottom/inside of the box, install the star washer and jam nut in order to secure and seal the lamp. Replace the box bottom using the AN525-10R8 screws.

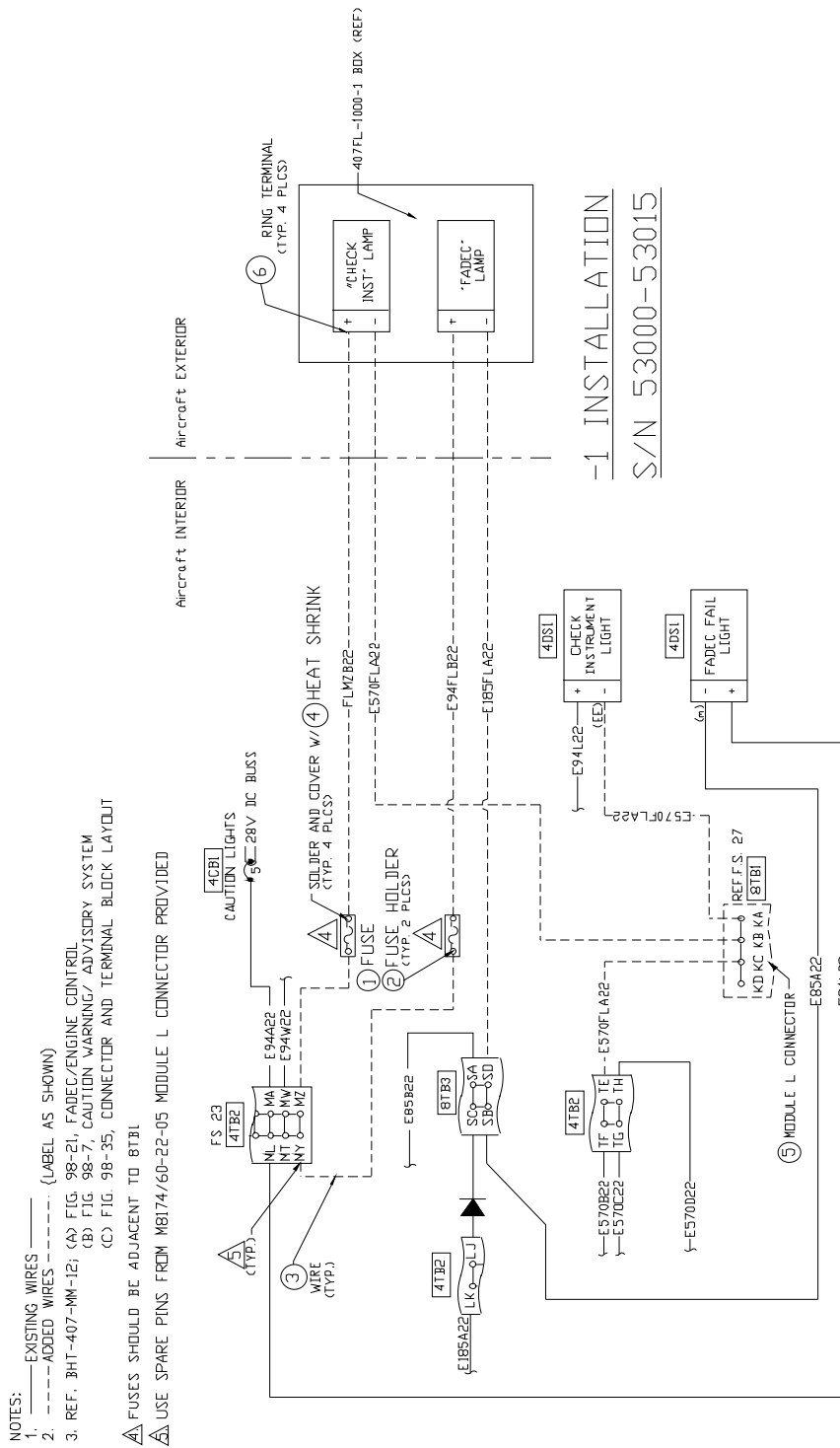
## 3.4 FUSE HOLDER

3.4.1 Each of the lamps in the Warning Light Box is protected by an inline fuse. The location of the two inline fuse holders will depend upon the particulars of each installation, but will most likely be behind the instrument panel. The fuse for the “CHECK INST” lamp will be inline with the wire labeled FLMZB22 connected to block 4TB2, terminal MZ. The fuse for the “FADEC” lamp will be inline with the wire labeled E94FLB22 on block 4TB2, terminal MY. Replace fuses with ACG-1A (1 amp) fuses.

## **FIGURES**

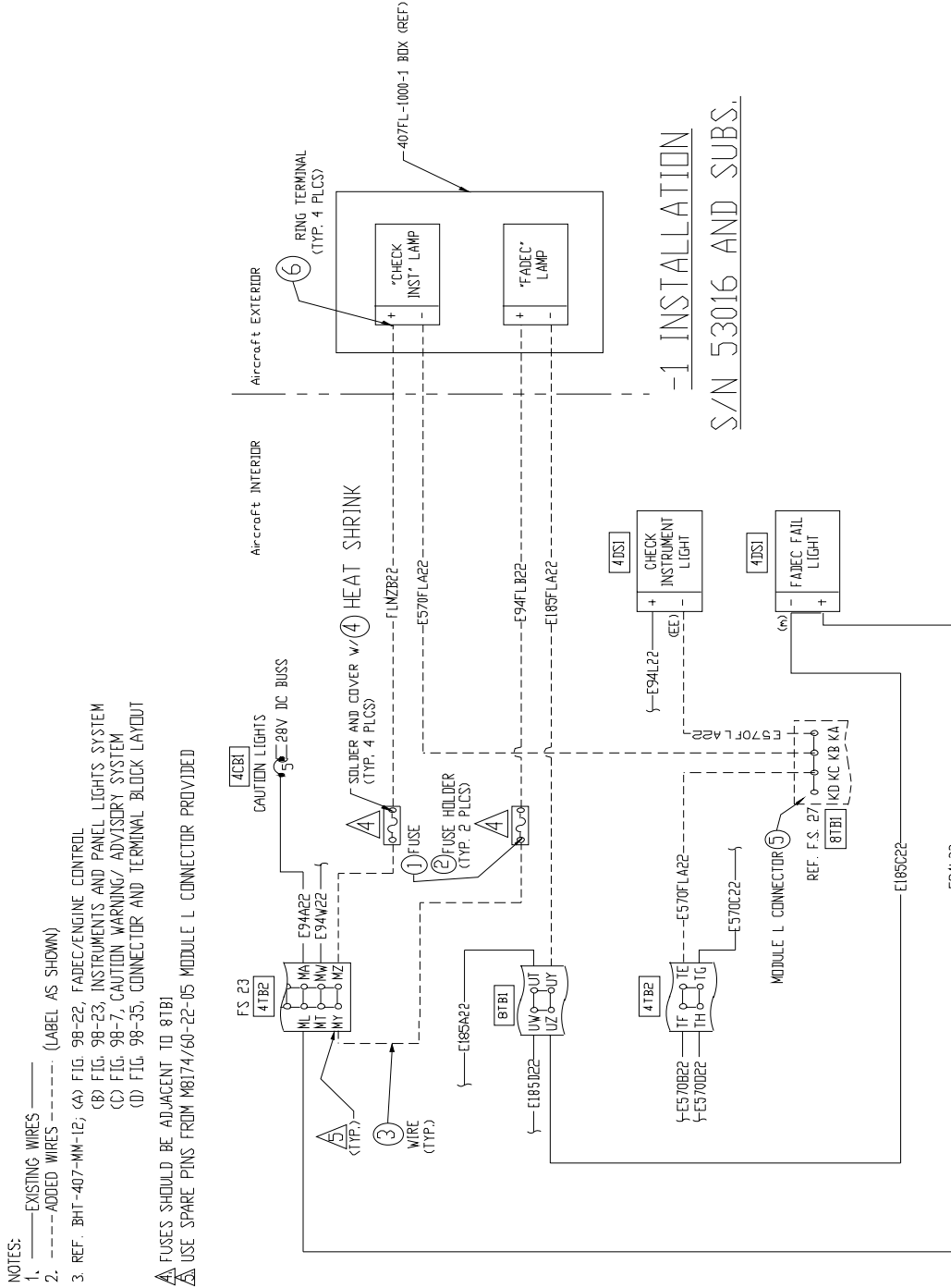


**FIGURE 1:**  
**WARNING LIGHT BOX ASSEMBLY INSTALLATION**



- NOTES:
1. ——— EXISTING WIRES (LABEL AS SHOWN)
  2. - - - - - ADDED WIRES
  3. REF. BHT-407-MM-12; (A) FIG. 98-21, FADEC/ENGINE CONTROL  
(B) FIG. 98-7, CAUTION WARNING/ ADVISORY SYSTEM  
(C) FIG. 98-35, CONNECTOR AND TERMINAL BLOCK LAYOUT
- ▲ FUSES SHOULD BE ADJACENT TO 8TB1
- ▲ USE SPARE PINS FROM M8174/60-22-05 MODULE L CONNECTOR PROVIDED

**FIGURE 2:**  
**WIRING DIAGRAM, S/N 53000 – 53015**



-1 INSTALLATION  
 S/N 53016 AND SUBS.

**FIGURE 3:  
 WIRING DIAGRAM, S/N 53016 AND SUBSEQUENT**

## **TABLES**

**TABLE I**

<b>TROUBLESHOOTING GUIDE</b>		
<b>PROBLEM</b>	<b>POSSIBLE CAUSE</b>	<b>CORRECTIVE ACTION</b>
Auxiliary warning/caution lamps do not illuminate	Blown fuse	Inspect wire in fuse circuit for indication of blown fuse cause. If none found, replace fuse, and verify system functionality. If fuse blows again, wiring should be inspected by properly trained technician
	Incorrect lamp polarity (LED)	Reverse lamp polarity
	Primary annunciation system has malfunctioned	Verify primary annunciation system is operational. Repair if necessary
	Loose Connection	Inspect wiring and connections
	Lamp failure	Return lamp to Paravion Technology, Inc. and receive a replacement part
Auxiliary FADEC FAIL lamp illuminates when CHECK INST lamp should illuminate, or vise-versa	Primary annunciation system has malfunctioned	Verify primary annunciation system is functional. Repair if necessary
	Wires crossed	Inspect wiring and connections. Correct wiring to match wiring schematic on pg. B-2
Auxiliary warning/caution lamps illuminate at random	Primary annunciation system has malfunctioned	Verify primary annunciation system is functional. Repair if necessary
Auxiliary AND primary FADEC FAIL and/or CHECK INST lamps illuminate in error, giving false annunciation	Wire(s) E185FLA22 and/or E570FLA22 have shorted to aircraft ground	Inspect wires. If damaged, contact Paravion Technology, Inc. and receive replacement wire(s), if necessary.



**TABLE II**

**ANNUAL/300HR INSPECTION CHECKLIST**

<b>TABLE II; INSPECTION CHECKLIST</b>			
	<b>INSPECTION</b>	<b>COMMENTS</b>	<b>INITIALS</b>
1.	Ensure Warning Light Box mounting screws and bottom plate screws are present and tight.		
2.	Inspect warning/caution lamps for functionality.		
3.	Inspect wiring & wiring mounts for insulation damage, chafing, & fastness.		

**TABLE III**

**WEIGHT AND BALANCE INFORMATION**

<b>Weight and Balance Data; 407FL-100 Auxiliary Annunciation System (Left Side Install)</b>					
<b>ITEM</b>		<b>Longitudinal</b>		<b>Lateral</b>	
	<b>Weight</b>	<b>F.S.</b>	<b>Moment</b>	<b>B.L.</b>	<b>Moment</b>
	<b>(lb)</b>	<b>(in)</b>	<b>(in-lbs)</b>	<b>(in)</b>	<b>(in-lbs)</b>
407FL-200 Box Installation	0.8	69.0	55.2	-36.0	-28.8
407FL-300 Electrical Installation	0.2	50.0	10.0	-18.0	-3.6
<b>Total</b>	<b>1.0</b>	<b>65.20</b>	<b>65.2</b>	<b>-32.40</b>	<b>-32.4</b>

<b>Weight and Balance Data; 407FL-100 Auxiliary Annunciation System (Right Side Install)</b>					
<b>ITEM</b>		<b>Longitudinal</b>		<b>Lateral</b>	
	<b>Weight</b>	<b>F.S.</b>	<b>Moment</b>	<b>B.L.</b>	<b>Moment</b>
	<b>(lb)</b>	<b>(in)</b>	<b>(in-lbs)</b>	<b>(in)</b>	<b>(in-lbs)</b>
407FL-200 Box Installation	0.8	69.0	55.2	36.0	28.8
407FL-300 Electrical Installation	0.2	50.0	10.0	18.0	3.6
<b>Total</b>	<b>1.0</b>	<b>65.20</b>	<b>65.2</b>	<b>32.40</b>	<b>32.4</b>