



TTP-407-ICA-002

Revision -
December 12, 2012

Bell Helicopter Textron Canada Limited Model 407



INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

BUBBLE WINDOW INSTALLATION

(STC SRXXXXRC)

NOTICE

The instructions set forth in this document, as supplemented or modified by Bell Helicopter Textron Canada Limited Alert Service Bulletins, directives issued by Tech-Tool Plastics, Inc., and Airworthiness Directives issued by the Federal Aviation Administration, must be strictly followed.

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Bubble Window Installation
BHTCL Model 407

LOG OF REVISIONS

If revisions are required to this document, the entire document will be updated and released. As such, all pages will be at the revision level annotated in the table below. As a reference only, a vertical line on the right side of the page indicates the portion of the text affected by the latest revision.

REVISION RECORD			
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1.0 INTRODUCTION

The Crew Bubble Windows (STC SRXXXXRC) developed by Tech-Tool Plastics, Inc. for the Bell Helicopter Textron Canada Limited Model 407 helicopter, are viable replacement alternatives for the standard OEM factory windows installed in the crew doors. Figure 1 shows the location of these doors.

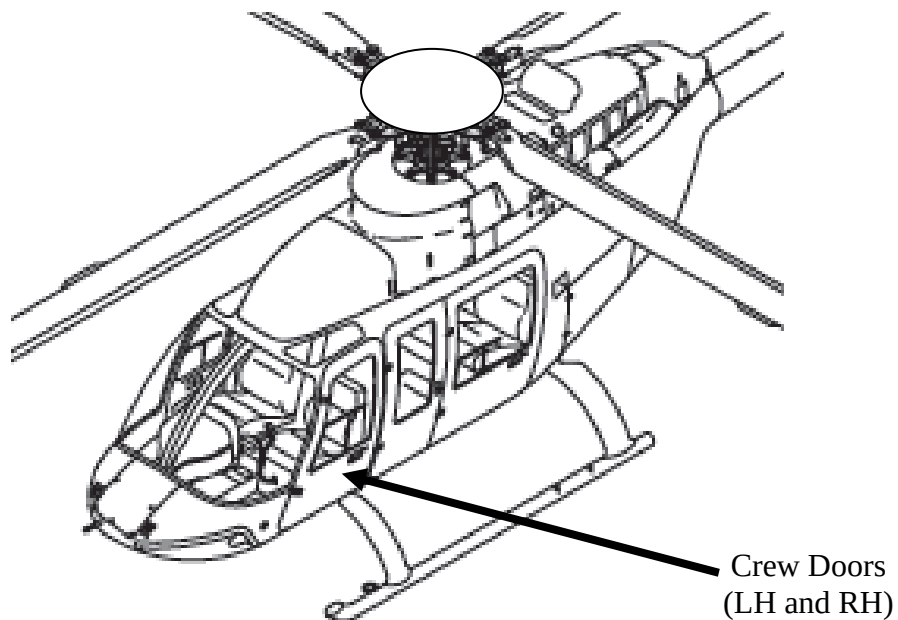


Figure 1 - 407 Bubble Window Installation Location

1.1 Purpose

The purpose of this Instructions for Continued Airworthiness (ICA) document is to provide instructions for removal, installation, inspection, and repair of the Crew Bubble Windows.

1.2 Document Revision

Revisions to this document will be sent to the original STC purchaser. If a revision to this document is returned, Tech-Tool Plastics, Inc.'s Customer Support Department will search available records to attempt to identify the current helicopter owner/location and forward the revision to that owner.

If a maintenance facility or an individual maintainer needs a copy of a revision to this document, they can request a copy from Tech-Tool Plastics, Inc. and it will be provided in the desired available format such as a mailed hard copy or E-Mailed PDF copy.

1.3 Warnings, Cautions, and Notes

CAUTION: The aircraft door flange is a carbon composite.

1.4 Reference Documents

- a. FAA AC 43.13-1B, Change 1 dated 09/27/2001, entitled "Acceptable Methods, Techniques, and Practices - Aircraft Inspection and Repair"
- b. Bell Helicopter Textron Canada Limited Document No. BHT-407-MM-5 Current Revision, entitled "Maintenance Manual, Volume 5, Airframe"
- c. Bell Helicopter Textron Canada Limited Document No. BHT-407-MM-2 Current Revision, entitled "Maintenance Manual, Volume 2, Chapter 12 – Servicing"

1.5 Torque Values

The fasteners attaching the windows to the airframe should be torqued to a value of 10 to 15 inch-pounds.

Refer to FAA AC 43.13-1B, Acceptable Methods, Techniques, and Practices – Aircraft Inspection and Repair, Table 7-1, for torque values not specified in this ICA.

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1.6 Description

- a. The TTP Bubble Windows replacing the standard 407 crew windows are as follows:

Window, L/H

P/N: 407-1011-11

Window, R/H

P/N: 407-1011-12

Window, L/H (with Snap Vent)

P/N: 407-1011-13

Window, R/H (with Snap Vent)

P/N: 407-1011-14

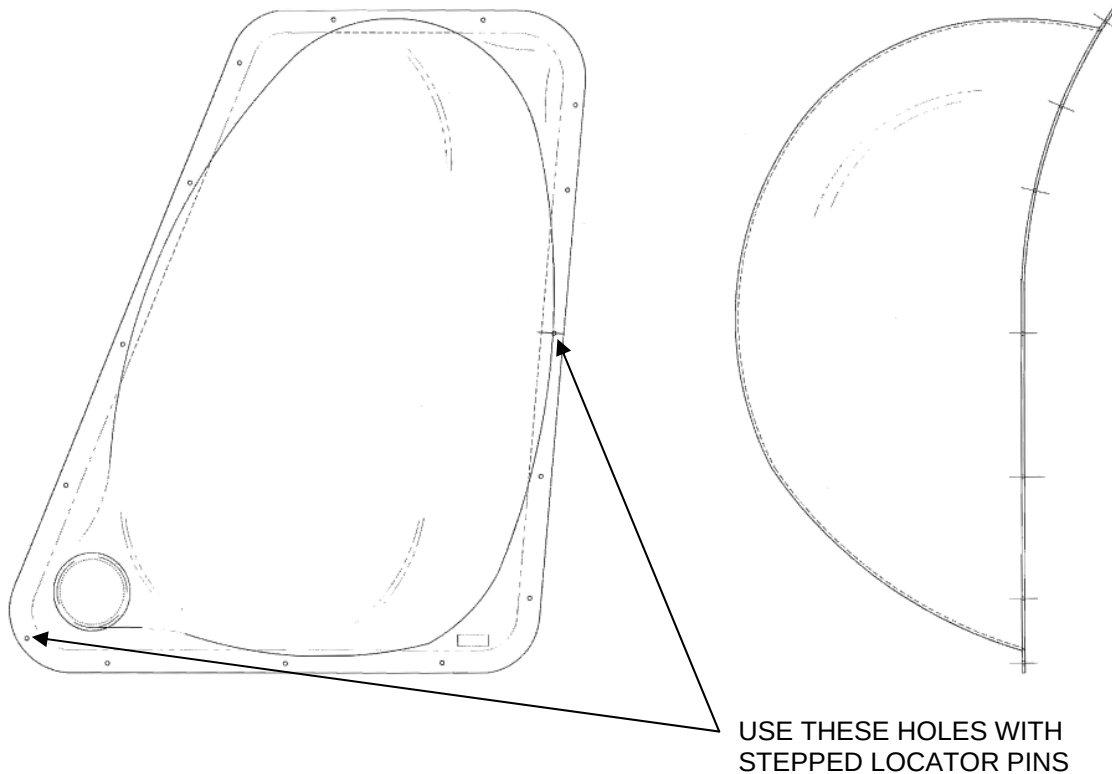


Figure 2 – 407-1011-13 Left-Hand Crew Bubble Window

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2.0 AIRWORTHINESS LIMITATIONS

The Airworthiness Limitations section is FAA approved and specifies inspections and other maintenance required under 14 CFR §§ 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

There are no airworthiness limitations associated with this installation.

3.0 INSPECTION REQUIREMENTS

3.1 Inspection Intervals

- a. The inspection actions described in Paragraph 5.1 must be accomplished at each 12 calendar-month interval.
- b. The inspection actions described in Paragraph 5.2 must be accomplished at anytime an adverse operation or event has occurred.
- c. Any increase in inspection intervals must be approved by Tech-Tool Plastics, Inc.

4.0 TROUBLESHOOTING

There are no troubleshooting procedures applicable for this installation.

5.0 INSPECTION

5.1 12 Month Inspection

- a. Visually inspect accessible areas of the following items for cleanliness, security of attachment, excessive wear, smooth operation of vents, gouges, dents, pitting, cracks or crazing, sealing capability, obvious damage, and general overall condition:
 1. Window Assembly
 2. Snap Vent (-13 and -14 only)
- b. If damage is evident, replace Snap Vent or Window Assembly including Snap Vent as appropriate.

5.2 Conditional Inspections

- a. In the event of an adverse operation such as hard landing, rotor strike, lightening strike, etc, inspect components installed by this STC for breaks, tears, cracks, bowing, delaminating, discoloration, burns, etc.
- b. If damage is evident, replace Snap Vent or Window Assembly including Snap Vent as appropriate.

6.0 SCHEDULED MAINTENANCE

There are no scheduled maintenance actions associated with this installation.

7.0 REMOVAL

7.1 The following instructions apply to all configurations of windows:

CAUTION: The aircraft door flange is a carbon composite.

- a. Remove screws, spacers, washers and nuts that attach the window to the aircraft.
- b. Lubricate a piece of 0.025 inch diameter safety wire that is approximately 36 inches long with a soap/detergent and water solution.
- c. Carefully push the wire in between the window and the frame.
- d. Wrap and secure each end of the safety wire around a short piece of wooden dowel (or equivalent) that will serve as a handle.
- e. Grasp the handles and use a sawing motion to separate the window from the window frame.

8.0 INSTALLATION

8.1 The following instructions describe installation of the Bubble Window:

- a. Clean the sealant and adhesive tape from the surface of the door window frame with a plastic scraper and/or abrasive pad (Scotchbrite L-P-0050, Type I, Class 1, Size 1 Type 27713 or 76381).
- b. Place the window into position on the door window frame using the two stepped locator pins (two stepped locator pins are provided with each new window). Verify fit of window and alignment of mounting holes. Set window aside.
- c. Moisten a soft cloth with isopropyl alcohol 99% for electronic applications (per TT-I-735) and thoroughly clean the door window frame.
- d. Clean the outer edge area of the window (that will make contact with the door frame) using a soft cloth moistened with aliphatic naphtha (per TT-N-95, Type II).
- e. Wash the outer edge area of the window with cool water and mild detergent. Rinse the mild detergent from the window with cool fresh water.
- f. Lightly sand the outer edge area with fine abrasive cloth or sandpaper (Silicon Carbide Abrasive Paper).
- g. Rinse the sanded area with clean cool water.

- h. Absorb the water with a clean paper towel or clean dry cloth.
- i. Allow the window to air dry completely.
- j. Apply the double-sided adhesive tape all around the interior side of the window periphery leaving the outer covering on the tape.
- k. Press on tape all around the window to ensure good contact between tape and window.
- l. Using a sharp, small-bladed Exacto knife (or equivalent), cut holes in the adhesive tape to match the mounting holes in the window.
- m. Remove outer covering from the double-sided adhesive tape.
- n. (Enlist the help of one or more assistants for this step) Carefully position the window near its installed location – do not allow the tape to touch the door frame at this time. Insert the two stepped locator pins through the holes in the window (as specified in Figure 2) and through the corresponding holes in the door flange.
- o. Holding the two stepped locator pins perpendicular to the door frame, slide the window to the door frame, contacting the lower part of the window first, then working the contact between the window and door frame up to the top of the window. Remove the two stepped locator pins.
- p. Wet install (using sealant) attaching hardware: FN100-1133-63 washer under AN525-10R10 screw head (outboard side of window), NAS1057W3A-015 spacer (outboard side of door flange), and NAS1149C0363R washer and 90-003-3 nut (inboard side of door flange). Refer to Paragraph 14.0, Table 1 - Parts List for part numbers of attaching hardware.
- q. Apply sealant around the edges of the window.
- r. Remove unwanted sealant with a plastic scraper.

9.0 REPAIR

Refer to Bell Helicopter Textron Canada Limited Document No. BHT-407-MM-5 Current Revision, entitled "Maintenance Manual, Volume 5, Airframe" Chapter 52 – Doors and Windows for allowable repairs to the transparencies. Other repair actions for the installation are limited to replacement of broken or missing parts.

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10.0 DAMAGE LIMITS

Refer to Bell Helicopter Textron Canada Limited Document No. BHT-407-MM-5 Current Revision, entitled "Maintenance Manual, Volume 5, Airframe" Chapter 52 – Doors and Windows for transparency damage limits.

11.0 SPECIAL TOOLS

Two stepped locator pins are provided with each new replacement window to assist in positioning the window during installation.

12.0 CLEANING

Refer to Bell Helicopter Textron Canada Limited Document No. BHT-407-MM-2 Current Revision, entitled "Maintenance Manual, Volume 2, Chapter 12 – Servicing" for transparency cleaning instructions.

13.0 WEIGHT AND BALANCE DATA

There are no weight and balance changes resulting from any maintenance actions contained in this ICA.

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14.0 PARTS LIST

TABLE 1 - PARTS LIST

Item Number	Nomenclature	Part Number	Qty
1	Bubble Window (LH)	407-1011-11	
1a	Screw	AN525-10R10	15
1b	Washer	FN100-1133-63	15
1c	Spacer	NAS1057W3A-015	15
1d	Washer	NAS1149C0363R	15
1e	Nut	90-003-3	15
1f	Tape, Adhesive, Double-Sided	4949.75 (3M)	As Required
1g	Sealant, Corrosion Inhibitor	Per MIL-PRF- 81733, Type II	As Required
2	Bubble Window (RH)	407-1011-12	
2a	Screw	AN525-10R10	15
2b	Washer	FN100-1133-63	15
2c	Spacer	NAS1057W3A-015	15
2d	Washer	NAS1149C0363R	15
2e	Nut	90-003-3	15
2f	Tape, Adhesive, Double-Sided	4949.75 (3M)	As Required
2g	Sealant, Corrosion Inhibitor	Per MIL-PRF- 81733, Type II	As Required
3	Bubble Window (LH)	407-1011-13	
3a	Snap Vent	C3521	1
3b	Screw	AN525-10R10	15
3c	Washer	FN100-1133-63	15
3d	Spacer	NAS1057W3A-015	15
3e	Washer	NAS1149C0363R	15
3f	Nut	90-003-3	15

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TABLE 1 - PARTS LIST

Item Number	Nomenclature	Part Number	Qty
3g	Tape, Adhesive, Double-Sided	4949.75 (3M)	As Required
3h	Sealant, Corrosion Inhibitor	Per MIL-PRF- 81733, Type II	As Required
4	Bubble Window (RH)	407-1011-14	
4a	Snap Vent	C3521	1
4b	Screw	AN525-10R10	15
4c	Washer	FN100-1133-63	15
4d	Spacer	NAS1057W3A-015	15
4e	Washer	NAS1149C0363R	15
4f	Nut	90-003-3	15
4g	Tape, Adhesive, Double-Sided	4949.75 (3M)	As Required
4h	Sealant, Corrosion Inhibitor	Per MIL-PRF- 81733, Type II	As Required
5	Consumables		
5a	Safety Wire	0.032 inch diameter	As Required
5b	Short piece of wooden dowel (or equivalent) that will serve as a handle	Miscellaneous	2
5c	Aliphatic Naphtha	Per TT-N-95, Type II	As Required
5d	Abrasive Cloth or Abrasive Paper	Silicon Carbide Abrasive Paper	As Required
5e	Isopropyl Alcohol, 99% for Electronic Applications	Per TT-I-735	As Required
5f	Abrasive Pad	Scotchbrite L-P-0050, Type I, Class 1, Size 1 Type 27713 or 76381	As Required
5g	Paper Towels	Household Item	As Required