

ALERT SERVICE BULLETIN



A Textron Company

NO. 210-09-04

DATE Oct 29, 2009

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DATE
REV

MODEL AFFECTED: 210

SUBJECT: HIGH LANDING GEAR FORWARD CROSSTUBES
P/N 212-321-103

HELICOPTERS AFFECTED: Model 210 helicopters serial number 21001 through 21004.

COMPLIANCE: Part A: Within the next 50 flight hours, but not later than December 31, 2009, create a Historical Record to determine/track P/N 212-321-103 high forward crosstube takeoff/landing events.

Part B: 7500 or greater takeoff/landings
High forward crosstubes with historical information establishing a number of takeoff/landings greater than 7500 must accomplish Part B within 25 flight hours or 200 takeoff/landings, whichever comes first, of the receipt of this bulletin.

Part C: Within 200 takeoff/landings after accomplishment of Part B, and every 200 takeoff/landings thereafter.

Part D: Prior to 10,000 takeoff/landings and every 12 months or 2500 takeoff/landings, whichever comes first, thereafter.

High forward crosstubes with historical information establishing a number of takeoff/landings greater than 10,000 must accomplish Part D within 1 month of the receipt of this bulletin.

Part E: Prior to 12,500 takeoff/landings and every 5000 takeoff/landings thereafter.

High forward crosstubes with historical information establishing a number of takeoff/landings greater than 12,500 must accomplish Part E within 3 month of the receipt of this bulletin.

DESCRIPTION:

Aeronautical Accessories, Inc. has conducted a review of the high forward crosstube in response to two reported field failures. Their analysis indicates additional scheduled inspections must be conducted on P/N 212-321-103 high forward crosstubes.

Part A of this bulletin establishes a takeoff/landing history for P/N 212-321-103 high forward crosstubes. This bulletin provides the information necessary to calculate the number of takeoff/landings.

Part B of this bulletin provides instructions to clean and inspect two areas on the bottom of the high forward crosstube. Means to protect this area with primer and a clear coat are also included. P/N 212-321-103, serial number AA-1250 and subsequent, crosstubes are manufactured with two inspection areas primed and clear-coated.

Part C of this bulletin provides instructions to conduct a recurring visual inspection of the two primed and clear-coated areas of the high forward crosstube after the accomplishment of Part B.

Part D of this bulletin provides instructions to conduct a recurring dimensional inspection of the skid gear to identify permanent deformation of the crosstube.

Part E of this bulletin provides instruction to conduct a recurring fluorescent penetrate inspection of the high forward crosstube.

APPROVAL: The engineering aspects of this bulletin are FAA/ODA approved.

MANPOWER:

- Part A: Approximately 0.5 hours
- Part B: Approximately 3.0 hours
- Part C: Approximately 0.5 hours
- Part D: Approximately 1.0 hours
- Part E: Approximately 24.0 hours

Man hours are based on hands-on time and may vary with personnel or facilities available.

WARRANTY:

There is no warranty provisions for this bulletin.

MATERIAL:

Required Material:

Consumable Material:

The following material is required to accomplish this bulletin, but may not require ordering, depending on the operator's consumable material stock levels. This material may be obtained through your Bell Helicopter Textron Supply Center.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Quantity</u>	<u>Reference</u>
MIL-R-81294, TYPE I or II	Chemical Paint Remover	A/R	C-242
MIL-PRF-85582	Primer (PRC-DeSoto EXDW 072A/B)	A/R	C-245
MIL-PRF-85285, Type 1	Gloss Clear Coat Paint	A/R	
MIL-PRF-87937	Cleaning Compound, Aerospace Equipment	A/R	

NOTE

The MIL-PRF-85582 primer (PRC-DeSoto EWDE 072A/B) [package as a 1-gallon, 1-qt (Parts A&B) kit (P/N EWDE072)] and the MIL-PRF-85285, Type 1 clear coat paint (Deft 03X085) [packaged as a 3-qt kit (P/N MIL-PRF-85285)] may be procured from a Bell Helicopter Supply Center. The primer and paint may also be procured [packaged in 1-qt primer and paint, kits (P/N 1272K)] from Aerospace Products, Inc., 6413 Midway Road, Haltom City, TX 76117 (817-332-1669).

SPECIAL TOOLS:

10X magnifying glass

WEIGHT AND BALANCE:

Not affected

ELECTRICAL LOAD DATA:

Not affected

REFERENCES:

BHT-210-MM Maintenance Manual

BHT-MED-Standard Practices Manual

BHT-210-SI-1 Service Instructions for High Crosstube Landing Gear

PUBLICATIONS AFFECTED:

BHT-210-SI-1 Service Instructions for High Crosstube Landing Gear

ACCOMPLISHMENT INSTRUCTIONS:

Upon receipt of this bulletin, determine by part number if affected high forward crosstube is installed. If affected crosstube is installed, perform the actions contained in this bulletin. Any crosstube failing inspection shall be removed from service and replaced with an airworthy crosstube.

PART A HISTORICAL RECORDS

1. A Historical Record Form is provided (Figure 4) for recording of takeoff/landing operations for high forward crosstubes, P/N 212-321-103, per the compliance section of this bulletin.

NOTE

Helicopters with takeoff/landings that are higher than the average of 10 per hour must substitute the higher value in all estimated calculations.

2. If the actual takeoff/landings information is not available it is permissible to estimate the number. To determine the number of takeoff/landings on the crosstube, multiply the airframe hours by a factor of ten.

3. Place the calculated takeoff/landing information on the Historical Record Form and track the applicable takeoff/landing events as per the compliance section of this bulletin.

PART B INITIAL INSPECTION REQUIREMENT FOR P/N 212-321-103 CROSSTUBES

NOTE

Crosstube visual inspection is conducted with aircraft at rest on skid landing gear; minimum gross weight at inspection is 9,000 pounds.

CAUTION

Chemical removers shall be used only in areas of adequate ventilation. Suitable goggles or face masks, chemical resistant gloves, boots and clothing shall be worn to avoid contact of chemical removers with eyes, skin and clothing. Chemical removers shall be further be handled in accordance with applicable OSHA regulations, state and local safety codes, and company established safety standards and policies.

1. Use MIL-PRF-87937 cleaning compound prepared in accordance with the manufacture's recommendations to clean all residue and dirt from the cross tube surfaces (left and right side) shown in Figure 1.

NOTE

P/N 212-321-103 Crosstubes with serial number AA-1250 and subsequent are manufactured with the two inspection areas primed and cleat-coated. Steps 2 thru 5, 7 and 8 of **PART B** may be skipped unless opaque paint has been applied to inspection area described below in Figure 1.

2. Prepare crosstube inspection areas by chemically removing crosstube paint and primer from an area 2.0 ± 0.25 inches wide extending from BL 40 to BL 2.5 at the center-bottom surface of the crosstube on both the left and right sides of the crosstube (see Figure 1).
3. Apply MIL-R-81294, type I or II chemical paint remover with a brush and allow it to set from 15 to 45 minutes to soften paint.
4. Using a stiff fiber brush and clean water, rinse paint form crosstube. If required, use abrasive pad (Scotch-Brite, Type A) and MIL-R-81294, type I or II chemical paint remover to aid in lifting paint. Brush crosstube with

abrasive pad in the longitudinal direction, using care so as not to abrade crosstube metal surface.

WARNING

DO NOT SAND CROSSTUBE IN A CIRCUMFERENTIAL DIRECTION.

5. Rinse part clean with clear water and dry thoroughly.

NOTE

Reapplication of chemical paint remover may be required to ensure that paint and primer is completely removed so that the metal surface of the crosstube is clearly visible. If required, repeat steps 2 thru 5.

6. Using at least 10X magnification and a strong light source, visibly inspect the stripped or clear coated, areas for indications of cracking. If cracking is suspected, fluorescent pentrant inspect crosstube per ASTM E1417, Type I Method B, C, or D, Level 2 in accordance with Bell Helicopter Standard Practices Manual (BHT-ALL-SPM).

WARNING

IF CRACKING IS DISCOVERED, THE CROSSTUBE IS NO LONGER AIRWORTHY AND MUST BE IMMEDIATELY REPLACED.

7. Following crosstube inspection, coat the stripped crosstube area with MIL-PRF-855822 primer (.0006-.0009 thick) by spraying in accordance with manufacture's instructions. Allow primer to cure per manufacturer instructions.

NOTE

The MIL-PRF-85582 primer (PRC DeSoto EWDE 072A/B) [packaged as a 1-gallon, 1-qt (Parts A+B) kit (P/N EWDE072)], and the MI-PRF-85285, Type I clear coat paint (Deft 03X085) [packaged as 3-qt kit (P/N MIL-PRF-85285)] may be procured from a Bell Helicopter Supply Center. The primer and paint, kits (P/N 1272K)] from Aerospace Products, Inc., 6413 Midway Road, Haltom City, TX 76117 (817-332-1669).

8. Following primer cure, paint the area with MIL-PRF-85285 polyurethane clear coat paint by spraying in accordance with manufacture's instructions. Allow paint to cure per manufacturer's instructions.

9. Annotate aircraft records that **PART B** of this bulletin has been accomplished.
10. Return aircraft to service.

PART C SCHEDULED VISUAL INSPECTION REQUIREMENTS FOR P/N 212-321-103

NOTE

Crosstube visual inspection is conducted with aircraft at rest on skid landing gear; minimum gross weight at inspection is 9,000 pounds.

1. Use MIL-PRF-87937 cleaning compound prepared in accordance with the manufacturer's recommendation to clean all residue and dirt from the cross tube surfaces as shown in Figure 1.
2. Using at least 10X magnification and a strong light source, visually inspect the clear coated areas for cracking.
3. If cracking is suspected, remove clear coat and primer per steps 2 thru 5 of **Part B**, and fluorescent penetrate inspect crosstube per ASTM E1417, Type I, Method B, C, or D, Level 2, in accordance with Bell Helicopter Standard Practices Manual (BHT-ALL-SPM). If cracking is not confirmed, reapply clear coat and primer per steps 7 and 8 of **PART B**. If cracking is confirmed, remove crosstube from service.

WARNING

IF CRACKING IS DISCOVERED, THE CROSSTUBE IS NO LONGER AIRWORTHY AND MUST BE IMMEDIATELY REPLACED.

4. Annotate aircraft records to indicate that **PART C** of this bulletin has been accomplished; and return aircraft to service.

**PART D SCHEDULED LANDING GEAR DEFLECTION INSPECTION
REQUIREMENTS FO P/N 212-321-103**

NOTE

The following crosstube inspection is to be incorporated into the inspection interval/methods identified in BHT-210-SI-1.

1. Hoist or jack the helicopter until no weight is on the skid gear.
2. Measure the Crosstube horizontal deflection from the centerline of the helicopter, BL 0.00, to the outside of the skid tubes, as shown in figure 2.
3. The crosstube horizontal deflection as measured in step 2 must be within limits as shown in Figure 2. Crosstubes that measure outside of the limits must be replaced.
4. Inspect landing gear assembly in accordance with the BHT-210-MM Maintenance Manual.
5. Repair or replace components that are damaged in excess of repairable limits.
6. Annotate aircraft records to indicate that **PART D** of this bulletin has been accomplished; and return the aircraft to service

PART E COMPONENT OVERHAUL REQUIREMENTS FO P/N 212-321-103

The Component Overhaul Schedule, Table 2, summarizes the overhaul interval for high forward crosstube components.

NOTE

Neither the assignment of a time period overhaul of a component nor failure to assign a time period for overhaul of a component constitutes a warranty of any kind. The only warranty applicable to the component is that warranty included in the Purchase Agreement for the component.

Time between overhauls and inspection periods is based upon experience, testing, and engineering judgment and is subject to change at the sole discretion of Aeronautical Accessories Inc and Bell Helicopter.

WARNING

ALL PARTS REMOVED DUE TO REACHING THEIR LIMITS OR AS A RESULT OF AN ACCIDENT/INCIDENT AND DEEMED UNAIRWORTHY, SHALL BE PERMANENTLY MARKED AS SCRAP OR PHYSICALLY DESTROYED TO THE EXTENT THAT THERE IS NO CHANCE OF REPAIR OR INSTALLATION ON ANY HELICOPTER OR COMPONENT.

TABLE 2 – COMPONENT OVERHAUL SCHEDULE

PART NUMBER	NOMENCLATURE	OVERHAUL INTERVAL
212-321-103	Forward Crosstube, High Skid Gear	Prior to 12,500 Takeoff/Landings and every 5000 Takeoff/Landings thereafter

E.1 Disassembly Instructions

1. Remove fairings from forward crosstube Assembly, if installed.
2. Hoist of jack the helicopter until no weight is on the skid tubes.
3. Remove forward straps and associated hardware from forward fuselage fittings.
4. Remove aft straps and associated hardware from aft fuselage fittings.
5. Raise helicopter until it is clear of skid landing gear, and remove landing gear.

6. Remove crosstube supports from Forward Crosstube Assembly:
 - a. Remove support U-bolts securing each crosstube support to forward Crosstube assembly.
 - b. Remove the supports from the Crosstube Assembly. Use of a heat gun to soften the sealant may facilitate removal.

NOTE

Inspect the Supports inner surface coating material for deterioration. Replace supports if required.

E.2 Cleaning and Preparation

1. Remove aged sealant by scraping with a sharp piece of plastic. Finish by lightly sanding with 400 grit abrasive cloth or paper in the longitudinal direction of the crosstube.

WARNING

DO NOT SAND CROSSTUBE IN A CIRCUMFERENTIAL DIRECTION.

2. Prepare crosstube by chemically removing crosstube paint and primer to top of saddles. See figure 3.
 - a. Apply MIL-R-81294, Type I or II chemical paint remover with a brush and allow it to set from 15 to 45 minutes to soften paint.
 - b. Using a stiff fiber brush and clean water, rinse paint from crosstube. If required, use abrasive pad (Scotch-Brite, Type a) and MIL-R- 81294, Type I or II chemical paint remover to aid in lifting paint. Brush crosstube with abrasive pad n the longitudinal direction, using care as not to abrade crosstube metal surface.

WARNING

DO NOT SAND CROSSTUBE IN A CIRCUMFERENTIAL DIRECTION.

- c. Rinse part clean with clean water and dry thoroughly. Reapplication of chemical paint remover may be required to ensure that paint and primer is completely removed so that the (bare) metal surface of the cross tube is clearly visible.
3. When parts are not to be processed immediately after cleaning, apply corrosion preventive oil, to all parts to protect against corrosion. Wrap parts in barrier material and secure with tape.

E.3 Inspection

1. Inspect crosstube using fluorescent penetrate method per ASTM E1417, Type 1, Method B, C, or D, Level 2, in accordance with Bell Helicopter Standard Practices Manual (BHT-ALL-SPM). Refer to BHT-ALL-SPM for fluorescent penetrate inspection procedures.
2. Damage limits are specified in the BHT 210 Maintenance Manual??.

E.4 Repair

1. Repair damage within repairable limits in accordance with BHT-210-MM.
2. Refinish crosstube by applying MIL-PRF-85582 primer and MIL-PRF-85285 paint (or Equivalent) per manufacture instructions to the stripped areas. The areas to be inspected per **Part B** should be masked to omit MIL-PRF-85285 paint as shown in Figure 1. Paint inspection areas with MIL-PRF-85285 Type 1 Gloss Clear coast as described in **Part B** of this bulletin.

E.5 Assembly Instructions

1. Assemble both Crosstube Clamp Assemblies in accordance with BHT-210-SI-1.
2. Install Crosstube Assembly to aircraft in accordance with BHT-210-SI-1.
3. Annotate aircraft records to indicate the **Part E** of this bulletin has been accomplished; and return aircraft to service.

PART F TOWING AIRCRAFT

Helicopter towing operations must be conducted in accordance with BHT-210-MM. Towing requirements are applicable to any aircraft being towed with weight on gear. This includes towing aircraft with ground handling wheels installed and aircraft resting on moveable platforms.

CAUTION

Failure to follow towing instructions may result in crosstube damage and/or failure.

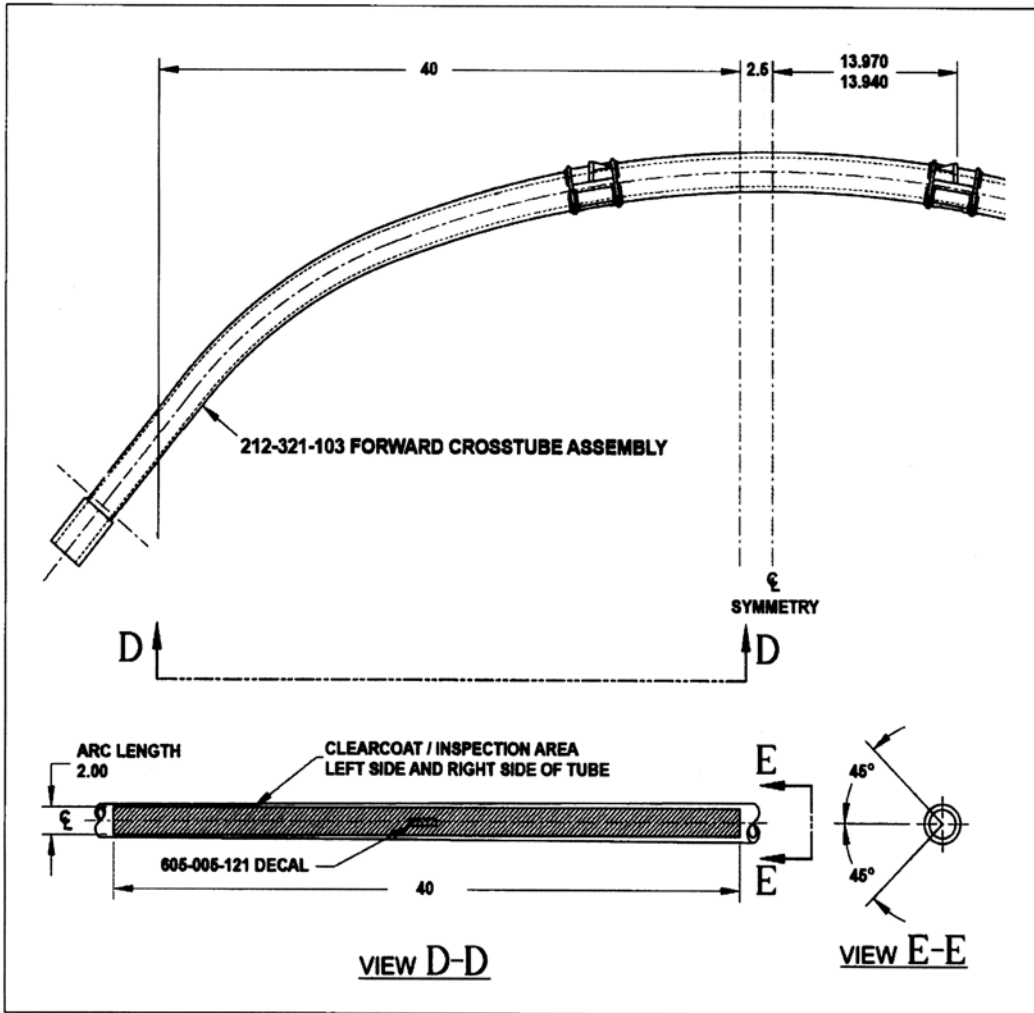
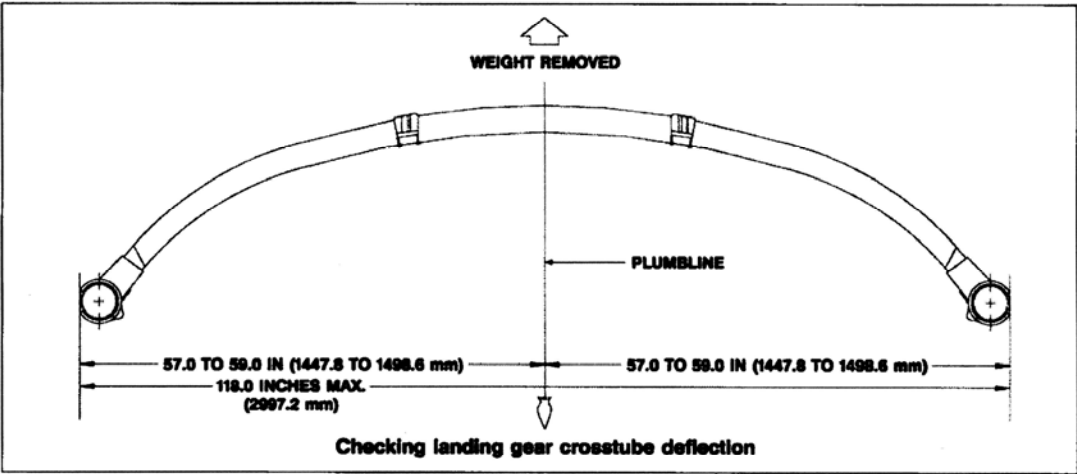


FIGURE 1 - CLEAR COAT AND INSPECTION AREA
(NOT TO SCALE)



Part Number	Forward Crosstube (High) Model Effectivity	MIN		MAX	
		in.	mm	in.	mm
212-321-103	210	57.00	1448	59.00	1499

FIGURE 2 – HIGH LANDING GEAR DEFLECTION LIMITS

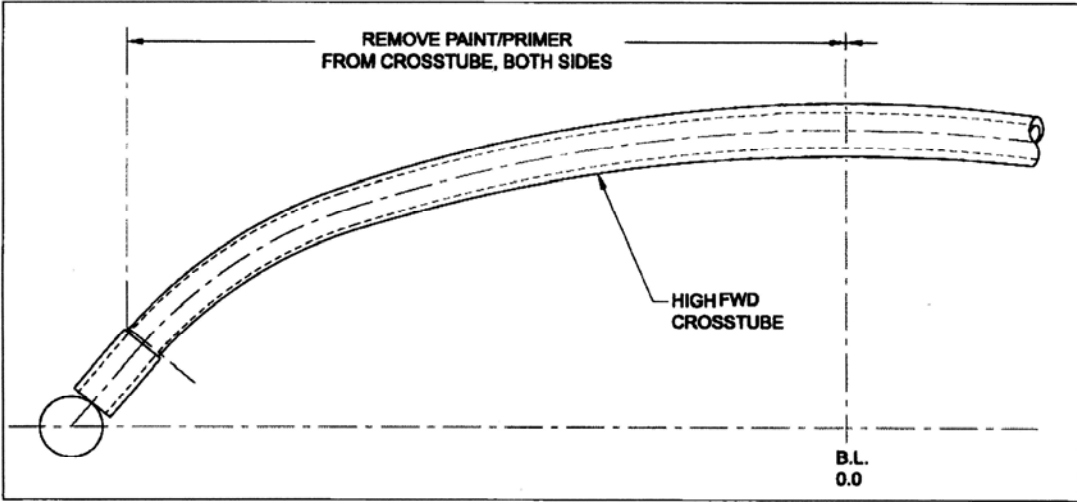


FIGURE 3 – PAINT REMOVAL AREA

**HISTORICAL SERVICE RECORD
FWD CROSS-TUBE ASSEMBLY
SERVICE LIFE (TAKE-OFF/LANDINGS)**

Component Name: _____
Part Number: _____
Serial Number: _____

DATE	INSTALLATION DATA			REMOVAL DATA		
	INSTALLED ON A/C NUMBER	INSTALLED AT A/C HOURS	COMPONENT CYCLES SINCE NEW	REMOVED AT A/C HOURS	COMPONENT CYCLES SINCE NEW	REASON FOR REMOVAL

TIME/DATE	ACCUMULATED TAKE-OFF / LANDINGS	REMAINING TO RETIREMENT	TIME/DATE	ACCUMULATED TAKE-OFF / LANDINGS	REMAINING TO RETIREMENT

FIGURE 4 - HISTORICAL SERVICE RECORD