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MANDATORY SERVICE

BULLETIN

PACSB / XL / 097
ISSUE 1

INSPECTION - ELEVATOR BELLCRANK PIVOT

1. PLANNING INFORMATION

A. EFFECTIVITY

PAL 750XL aircraft up to and including S/N 215.

B. REASON

It is possible that the Elevator Bellcrank Pivot joint could be assembled with a bolt that is a gauge size too short leaving threads inside the working section of the joint. This can be determined by measuring the length of the bolt. If it is found on inspection that the shorter bolt has been used to assemble this hinge, the bolt will need to be replaced with the next gauge size up.

C. DESCRIPTION

Measure the length of the bolt in the Elevator Bellcrank Pivot joint from the underside of the head to the tail and confirm which bolt is fitted using Table 1.

If it is determined that the bolt fitted is a P/N AN4-20, inspect the joint and replace with a bolt iaw this Service Bulletin.

D. COMPLIANCE

At the next 150 hr check, inspect the Elevator Bellcrank Pivot joint to confirm whether the correct bolt (P/N AN4-21) has been installed:

- If the correct bolt has been used close up the aft inspection panel. No further action is required.
- If the shorter P/N AN4-20 bolt has been used, an inspection of the cross tube will be necessary to confirm structural integrity of the part and the bolt to be replaced with a bolt with a longer grip length as per this Service Bulletin.

E. TOOLING

- Borescope (or alternative inspection means)
- Hand reamer 17/64” diameter
- Equipment for Eddy Current inspection (or another suitable NDT methodology).

F. WEIGHT AND BALANCE

No change.

G.	REFERENCE	750XL Maintenance Manual.
H.	HOURS REQUIRED	2 hours for inspection only; 8 Hours for full accomplishment
I.	WARRANTY COVER	Normal Warranty conditions apply.

2. INSPECTION INSTRUCTIONS

(Refer to Figures 1 and 2)

1) Remove the Control cable cover (Ref. 750XL MM, Chapter 12-00-00, p. 301, Panel F5) to access area of the Elevator Bellcrank Pivot joint (See Figure 1).

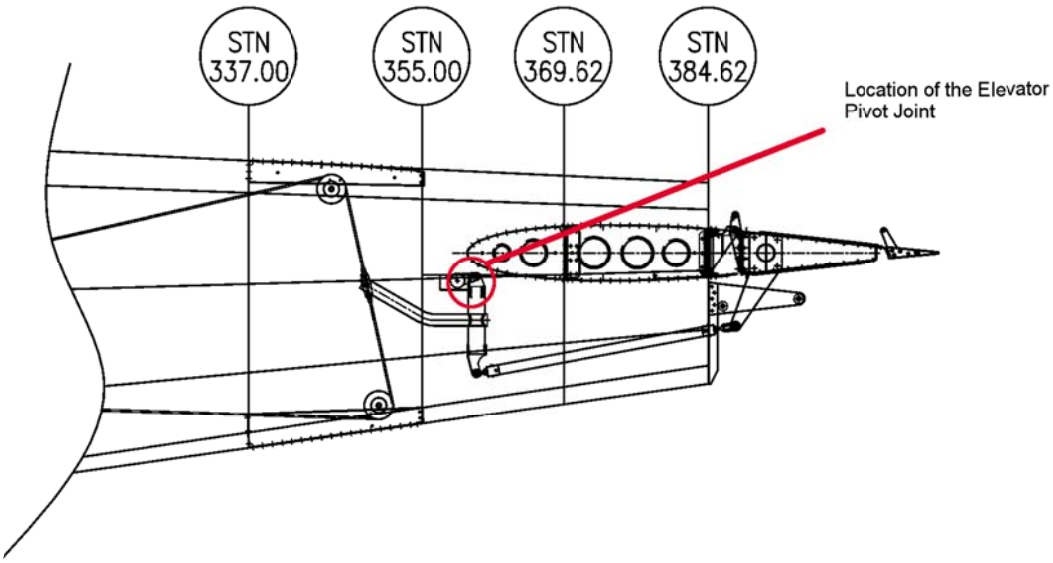


FIGURE 1 LOCATION OF ELEVATOR PIVOT JOINT

2) Measure the length of the bolt from the underside of the bolt head to the tail (See Figure 2).

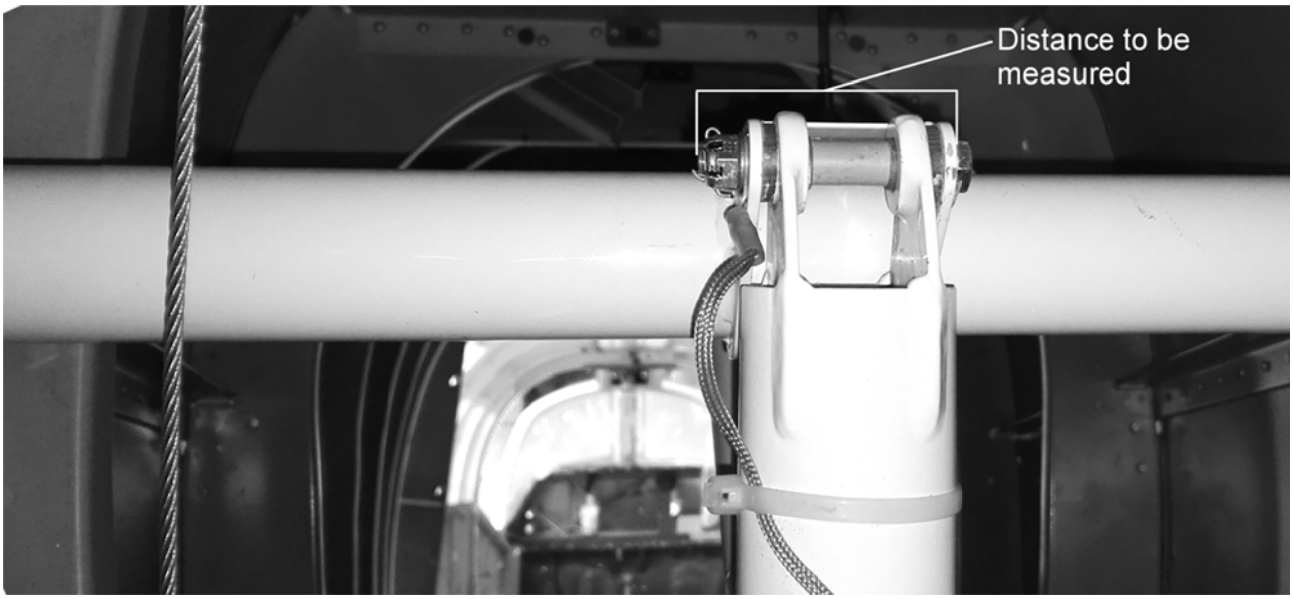


FIGURE 2 ELEVATOR PIVOT JOINT

3) According to the length measured, check which bolt is fitted using Table 1:

Bolt (Part Number)	Grip	Length – Underside of head to Tail
AN4-20	1.562 in.	2.031 in.
AN4-21	1.688 in.	2.156 in.

TABLE 1 BOLT LENGTHS (REFERENCE)

4) If the bolt fitted in this joint is P/N AN4-20, go to Paragraph 3. (Accomplishment Instructions).
5) If the bolt fitted in this joint is P/N AN4-21, no further action is required. Re-install the Control cable cover (Ref. 750XL MM, Chapter 12-00-00, p. 301, Panel F5) and Record Compliance with this Service Bulletin in accordance with Section 4 (Certification).

3. ACCOMPLISHMENT INSTRUCTIONS

(Refer to Figures 3 and 4)

1) Gain access to Elevator Bellcrank P/N 08-45077, between STN 355.0 and STN 369.62.
2) Disconnect the Link Plate P/N 11-45279 from the Elevator Bellcrank (Ref. 750XL MM, Chapter 27-30-00, p. 405, Section 7.(3)) by removing of Split Pin P/N MS24665-132, Nut P/N MS17825-4, Washers P/N AN960-416 and Bolt P/N AN4-25. Discard the Split Pin and Nut, and retain the reusable hardware from the joint.
3) Remove the Aft Stowage Compartment / Bulkhead, IAW the relevant chapter of the MM.
4) Disconnect the Elevator Bellcrank from the Cross Tube P/N 11-11221 by removing the Split Pin P/N MS24665-134, Nut P/N MS17825-4, Bonding Lead P/N BON4-21-21-120, Washer P/N AN960-416, Spacer P/N 08-45087-1 and Bolt P/N AN-4-20. Discard the Split Pin, Nut and Bolt, and retain the reusable hardware from the joint.

NOTE: Before removing the bolt, note its orientation in the joint assembly to highlight which of the Cross Tube hinge plates to inspect.

5) Carry out the following inspections on the Cross Tube hinge plate nearest the tail of the bolt to check for scoring / damage from the threads of the bolt on the internal bore of the Cross Tube hinge plate:
   a) Carry out a detailed inspection of the internal surface of the Cross Tube hinge plate bolt hole using a borescope or alternative suitable means.
   b) Check the ID of the bore hole using a suitable gauge pin of 0.250 in. (Maximum tolerance allowable is ±0.003 in.). Check the hole for elongation. If elongation is found but would be removed as part of the reaming out process in Step 10), continue with Accomplishment Instructions. If the hole elongation is greater than this, contact PAL for further advice.
   c) Using a suitable metallic feeler, check the internal diameter for scoring or marking from the bolt threads.
6) If no damage is determined through these inspections reassemble the joint using an AN4-21 bolt and the existing hardware from the joint, and continue the Accomplishment Instructions from Step 13).

7) If damage is detected, remove the Cross Tube from the aircraft by drilling out the attachment rivets (See Figure 3) in accordance with the manufacturer's rivet removal procedures listed in CA-1015 (Cherry Aerospace Process Manual).

NOTE: Ensure that you remove the attachment rivets in accordance with the Cherry Aerospace Process Manual CA-1015 to prevent damage to the fastener holes (See extracted instructions attached).

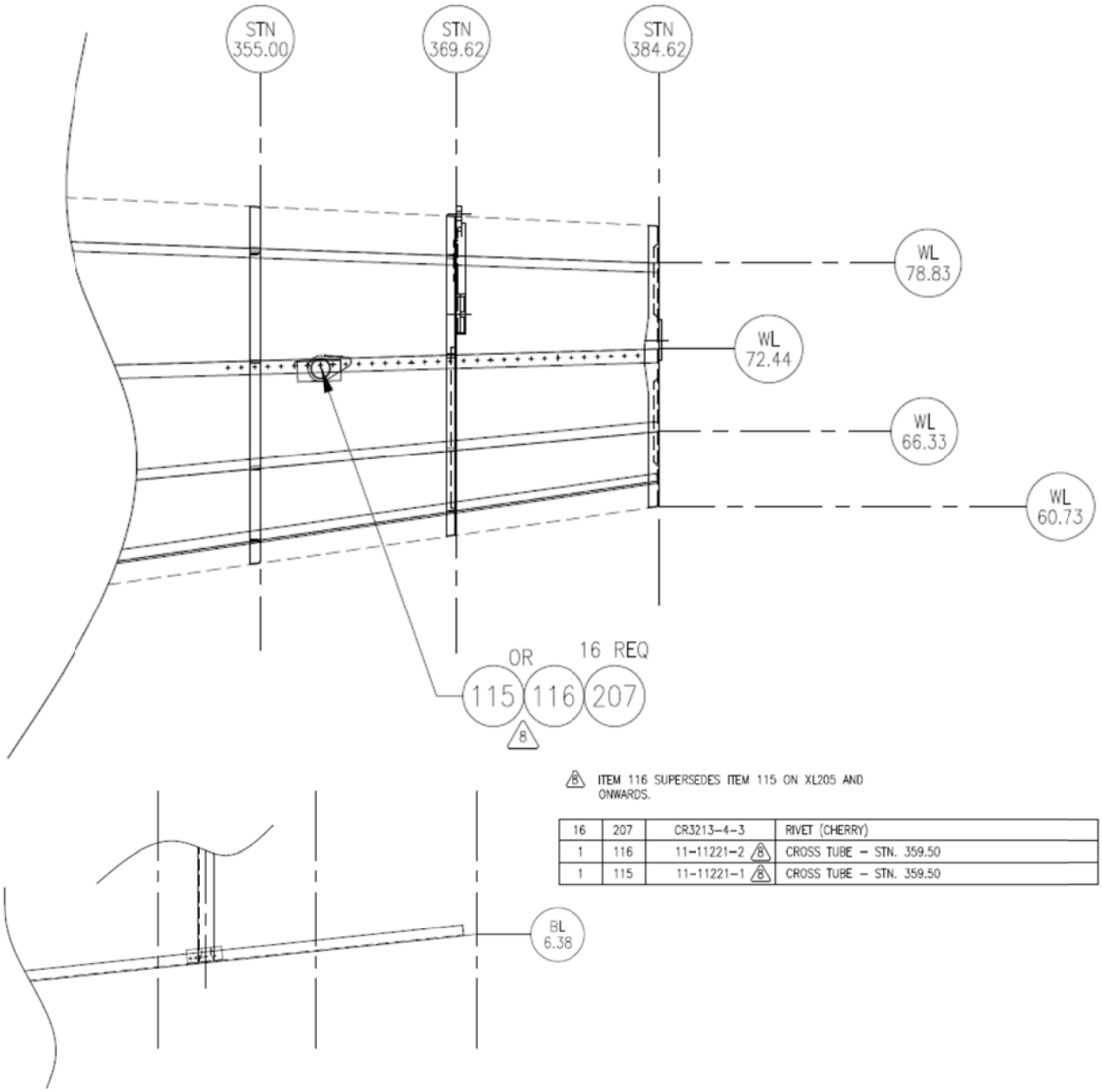


FIGURE 3 RIVET LOCATIONS

8) Carry out a certifiable NDT inspection of the hinge plate lug to check for the presence of cracks. The recommended methodology is an Eddy Current Inspection IAW ASTM E309, or equivalent standard.

NOTE: Eddy current is recommended because the corrosion protection coatings do not need to be removed to perform the inspection, however suitable alternative NDT methodologies for the 4130N steel Cross Tube are acceptable.

NOTE: If there is damage in corrosion protection coatings of the hinge plate, remove and repair them IAW 750XL MM 20-80-00.

9) If cracks are detected, contact PAL for further advice / a replacement Cross Tube.

10) If no cracks are detected ream out the scored cross bolt holes in the Cross Tube hinge plates to a diameter of 0.266 in using a hand reamer Ø 17/64.

CAUTION: Line ream the hinge plates to ensure alignment between the two plates during the reaming procedure.

11) Install the Cross Tube into the aircraft at STN 359.50 using Cherry Rivets P/N CR3213-4-3 (Qty 16, See Figure 3).

NOTE: If the fastener holes were damaged during the removal of the rivets in Step 7) it will be necessary to install oversized rivets, P/N CR3243-4-3.

12) Connect the Elevator Bellcrank with the Cross Tube IAW Figure 4, replacing existing tufnol bushes P/N 242001-2 (Qty 2) with oversized repair tufnol bushes 11-03611 (Qty 2) and using oversize repair bolt NAS6604-27X.

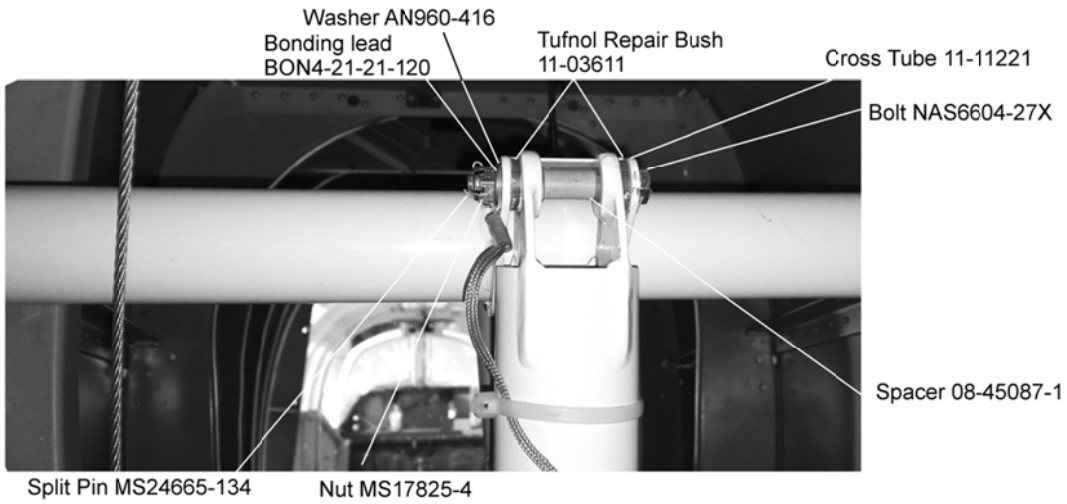


FIGURE 4 ELEVATOR PIVOT JOINT – WITH REPAIR P/N'S

13) Connect the Link Plate P/N 11-45279 to the Elevator Bellcrank (Ref. 750XL MM, Chapter 27-30-00, p. 406, Section 8.(3)).

14) Re-install the Control cable cover (Ref. 750XL MM, Chapter 12-00-00, p. 301, Panel F5).

4. CERTIFICATION

Record compliance with this Service Bulletin in the Aircraft Log Book.

Post Service Bulletin accomplishment a duplicate inspection of the elevator control system is required for correct assembly and function as per CAA rule 43.113 and approved local company procedures.

5. MATERIAL REQUIRED:

Description	Part Number	Qty Required
BOLT	AN4-21 OR NAS6604-27X	1
NUT	MS17825-4	2
SPLIT PIN	MS24665-132	1
SPLIT PIN	MS24665-134	1
REPAIR TUFNOL BUSH (if needed)	11-03611	2
CHERRY RIVETS *	CR3213-4-3	16

* Oversize Cherry Rivets P/N CR3243-4-3 can be used in case of damage in the fastener holes (A/R).

EXTRACT FROM CHERRY AEROSPACE PROCESS MANUAL CA-1015 REV.A DATE: 04-03-07 CR#: 07-0427

RIVET REMOVAL

Should it be necessary to remove an installed CherryMAX® rivet, the following procedures are recommended.

1. Center punch stem.

2. It is recommended that a small center drill be used to provide a guide for a larger drill on top of the rivet stem, and the upper portion of the stem be drilled away to destroy the lock.

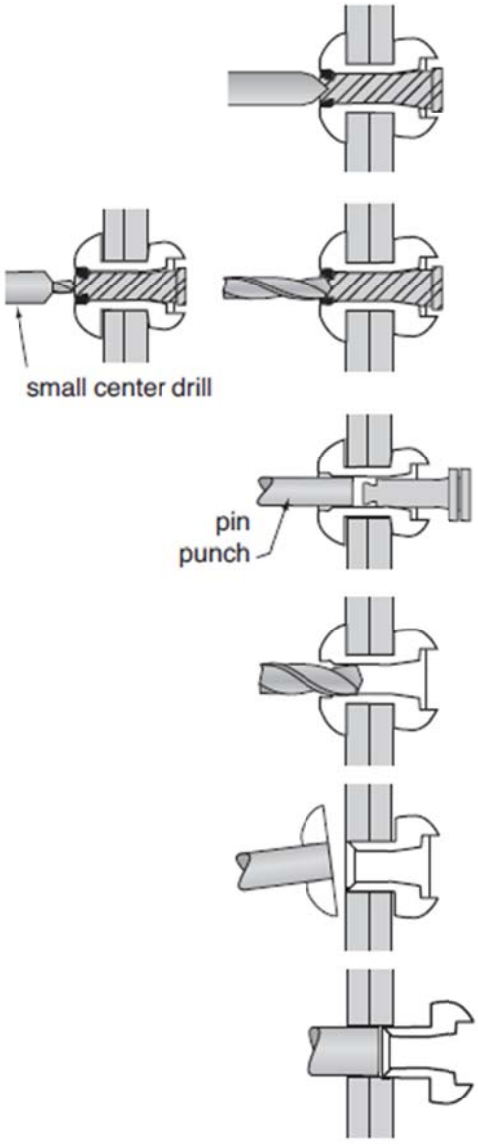
3. Drive out the rivet stem using a steel pin punch.

4. Drill nearly through the head of the rivet using a drill the same size as the rivet shank.

5. Break off rivet head using a pin punch as a pry.

6. Drive out the remaining rivet shank with a pin punch.

Caution: DO NOT drill completely through the rivet sleeve to remove a rivet as this may enlarge the hole.

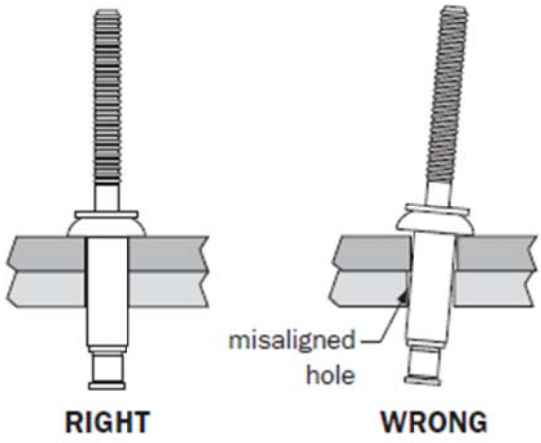


EXTRACT FROM CHERRY AEROSPACE PROCESS MANUAL CA-1015
REV.A DATE: 04-03-07 CR#: 07-0427

CHERRYMAX® INSTALLATION

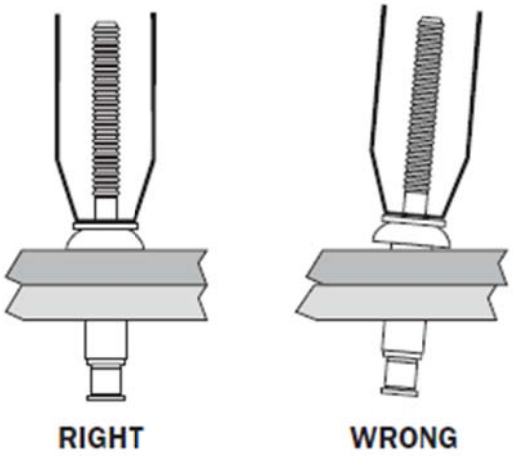
PLACING THE RIVET IN THE HOLE

The holes in the sheets to be fastened must be of correct size and aligned properly. Do not force the rivet into the hole! Tack rivets and/or spring-loaded fasteners are recommended to minimize material creep and sheet gap.



PLACING THE PULLING HEAD ON THE RIVET STEM

Hold the riveter and pulling head in line with the axis of the rivet. Press firmly against head of rivet to minimize head gapping and sheet gap.

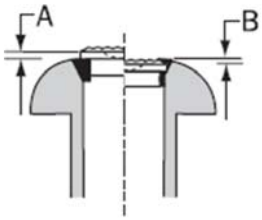


EXTRACT FROM CHERRY AEROSPACE PROCESS MANUAL CA-1015 REV.A DATE: 04-03-07 CR#: 07-0427

CHERRYMAX® INSPECTION

Inspection for the proper installation of CherryMAX® rivets can be made from the visible side of the work.

STEM AND COLLAR FLUSHNESS



Rivet Dia.	A Max.	B Max.
-4 (1/8")	.010"	.015"

Shown is a typical installed fastener flushness acceptance critieria. Locking collar is to be flush with the top surface of the rivet head. Collar flash permissible is .005 max. Stem flushnesss shall be as indicated.