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SERVICE BULLETIN

#0017

Page 1 of 8

(Sling Aircraft (Pty) Ltd. considers compliance with all Service Bulletins mandatory)

NOTE – THIS SERVICE BULLETIN REPLACES SAFETY ALERT #0012 IN ITS ENTIRETY

SAFETY ALERT #0012 IS ACCORDINGLY CANCELLED WITH EFFECT FROM 2020/07/01

RELEASE DATE: 2020/07/01

EFFECTIVE DATE: 2020/07/01

SUBJECT: Potential risk of shearing of control stop plate rivets

MODELS AFFECTED: Sling 4 and Sling 4 TSi aircraft

COMPLIANCE TIME: At the next MPI (Mandatory Periodic Inspection)

LABOUR TIME: Inspection only: 2 hours
Inspection & Repair: 6 hours

DESCRIPTION AND PURPOSE:

The Service Bulletin provides the instructions for the inspection, and if required repair, of the elevator control torque tube for Sling 4 and Sling 4 TSi aircraft. Internal quality checks have shown that elevator control stop plates in some aircraft may have been installed with aluminium 3.2 x 8 mm domed rivets instead of stainless steel 3.2 x 8 mm domed rivets. These aluminium rivets shear at lower control stick loads compared to the stainless-steel rivets, so it must be ensured that stainless steel rivets are installed.

This Service Bulletin requires that inspections be carried out on all flying aircraft as well as kit-built aircraft still under construction prior to first flight.

PARTS AND CONSUMABLES LIST:

- a) 4 x 3.2 x 8 mm stainless steel domed rivets (Part number HW-RIV-442-X-X-0)
- b) 18 x 3.2 x 10 mm aluminium countersunk rivets (Part number HW-RIV-243-X-X-0)
- c) 2 x 4.0 x 12 mm multigrip aluminium countersunk rivets (Part number HW-RIV-254-X-X-0)
- d) 6 x 4.8 x 15 mm aluminium countersunk rivets (Part number HW-RIV-265-X-X-0)
- e) 20 x 3.2 x 8mm multigrip aluminium domed rivet (Part number HW-RIV-142-X-X-0)
- f) 10 x 300 x 4.5 mm cable tie (Part number HW-CTI-304-X-X-1)

MATERIAL COST AND RESPONSIBILITY:

Sling Aircraft AMO (Johannesburg, South Africa) is available to perform the required work on all aircraft delivered to its premises. Price and availability of the Service Bulletin kit will be provided on request.

Please make use of the following contact details for material cost and responsibility related queries:

Airworthiness@slingaircraft.com or Technical@slingaircraft.com.

TOOLS REQUIRED:

Note: Early year models used M3 dome head cap screws, later models M4 dome cap screws. 2 mm and 2.5 mm Allen keys are used for M3 and M4 dome head cap screws respectively.

- a) 2 mm / 2.5 mm Allen key
- b) 14 mm socket
- c) 14 mm spanner
- d) 3.2 mm drill bit
- e) 4.0 mm drill bit
- f) 4.8 mm drill bit
- g) Angle drill
- h) Side cutter
- i) 7/16" spanners
- j) 1/8" (3.2 mm) clecos
- k) 3/16" (4.8 mm) clecos
- l) Cleco pliers
- m) Hand riveter
- n) Light source e.g. torch

ADDITIONAL TOOLS

- o) M3 and M4 thread tap
- p) Tap wrench

INSTRUCTIONS:

Inspection:

1. The rivets on the torque tube that need to be inspected are shown in Figure 1. The control stop plates (CT-STO-005-X-C-0) and elevator centre control arm channels are also shown in Figure 1.
2. Remove a front seat from the fuselage then use the 2 mm / 2.5 mm Allen key to remove the floor skin (refer to CF-SKN-016-R-C-0) shown in Figure 2.
3. The inspection region when the floor skin is removed is shown in Figure 3. Use the light source to determine if control stop rivets are aluminium or stainless steel. Use Figure 4 as a guide for making the distinction.
4. Alternatively (or in addition to using the light source) use a magnet to identify rivets. The mandrel of the aluminium rivet used is magnetic, so a magnet will attract to the aluminium rivet (see Figure 4).

5. Should it be determined that the control stop rivets are stainless steel, no repair will be required, in which case the floor skin and seat can be re-installed.
6. However, should it be determined that rivets are aluminium, stainless steel rivets will need to be installed. Remove both front seats prior to repair so that the remedy can be applied to both control stop plates.

Repair:

7. Drill the heads off the countersunk rivets shown in Figure 3(b) with the angle drill (using 3.2 and 4.8 mm drill bits) to remove seat rails.
8. Remove and retain all M3 / M4 screws on the aft section of the centre console to separate it from the forward section as shown in Figure 5(a).
9. The aft section of the centre console must be carefully pulled away so as not to damage wiring and pitot static lines running through the console as shown in Figure 5(b). If resistance is felt separating the aft and forward centre console sections, the headset jacks should to be removed with the 14 mm spanner and socket. Be sure to label these cables left and right so that they are refitted in their original positions (see Figure 6).
10. Be sure to take photos of the centre console with its cover off prior to repairs so that wiring and pitot static lines can be returned to their original positions during assembly.
11. Cut the cable ties that guide the centre console wiring and pitot static tubes (using the side cutter) to reduce their tautness, then use the angle drill and 3.2 mm drill bit to drill heads off the rivets on the closing rib as shown in Figure 5(b). The closing rib on the centre console RH side is shown in Figure 3(a).
12. Use the 7/16" spanners to loosen the AN4 lock-nuts (hardware designation AN365-428A) on seat belt shown in Figure 5(b) so that the seat belt bracket can swivel. This will ensure there is sufficient room for the hand riveter to be pressed firmly against elevators' centre control arm channel when installing the 3.2 x 8 mm stainless steel rivets (See Figure 7).
13. On the control stop plate, remove the aluminium rivet and install the 3.2 x 8 mm stainless steel rivet. Apply this remedy one rivet at a time to prevent the control stop plate from detaching from the control tube.
14. Be sure to press the hand riveter firmly against the elevators' centre control arm channel so that the rivet "catches".

After repair:

15. Remove rivet stems and FOD (foreign object debris) from the fuselage floor.
16. Install the 300 x 4.5 mm cable ties around the wiring/pitot static tubes in the centre console such that there is no interference between the moving parts of controls and the wiring. Check for interference by moving the stick forward and aft; and moving flaps up and down. Cable ties should not be installed too tightly as this could constrict the pitot static lines running through the centre console.
17. The AN4 lock-nuts (hardware designation AN365-428A) must be tightened such that the seat belt brackets can still swivel.
18. Install the controls closing ribs (CF-RIB-009-R/L-C-0 shown in Figure 3(a)) using the 3.2 mm clecos to align the holes. Assemble with (20) 3.2 x 8 mm aluminium domed rivets.
19. Return the aft section of the centre console using the 2 mm / 2.5 mm Allen key and install the M3 / M4 screws (see Figure 5(a) which shows disassembly).

20. Return the seat rails, including the plastic plates, using clecos to align the holes before riveting. Use the hand riveter, two 4.0 x 10 mm and six 4.8 x 15 mm countersunk aluminium rivets to assemble the seat rails. In addition, install the (18) 3.2 x 10 countersunk aluminium rivets on the upper rails (see Figure 3(b)).
21. Return the rear centre console cover skin and the floor skin shown in Figure 3(a).
22. Any dome head cap screws experiencing resistance during assembly should be cleaned with an M3 / M4 thread tap (tap size depending on year model).

PICTURES:

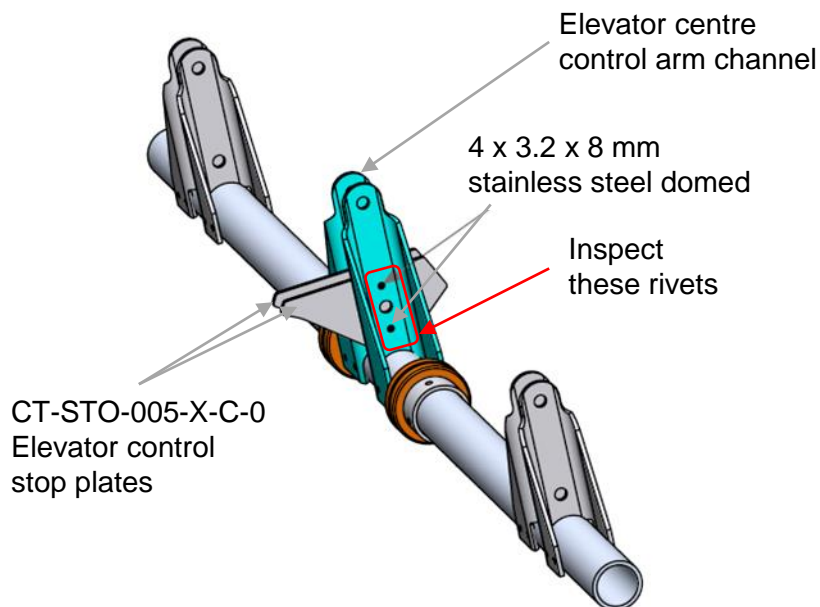


Figure 1 - Elevator control torque tube for Sling 4 and Sling 4 TSi aircraft

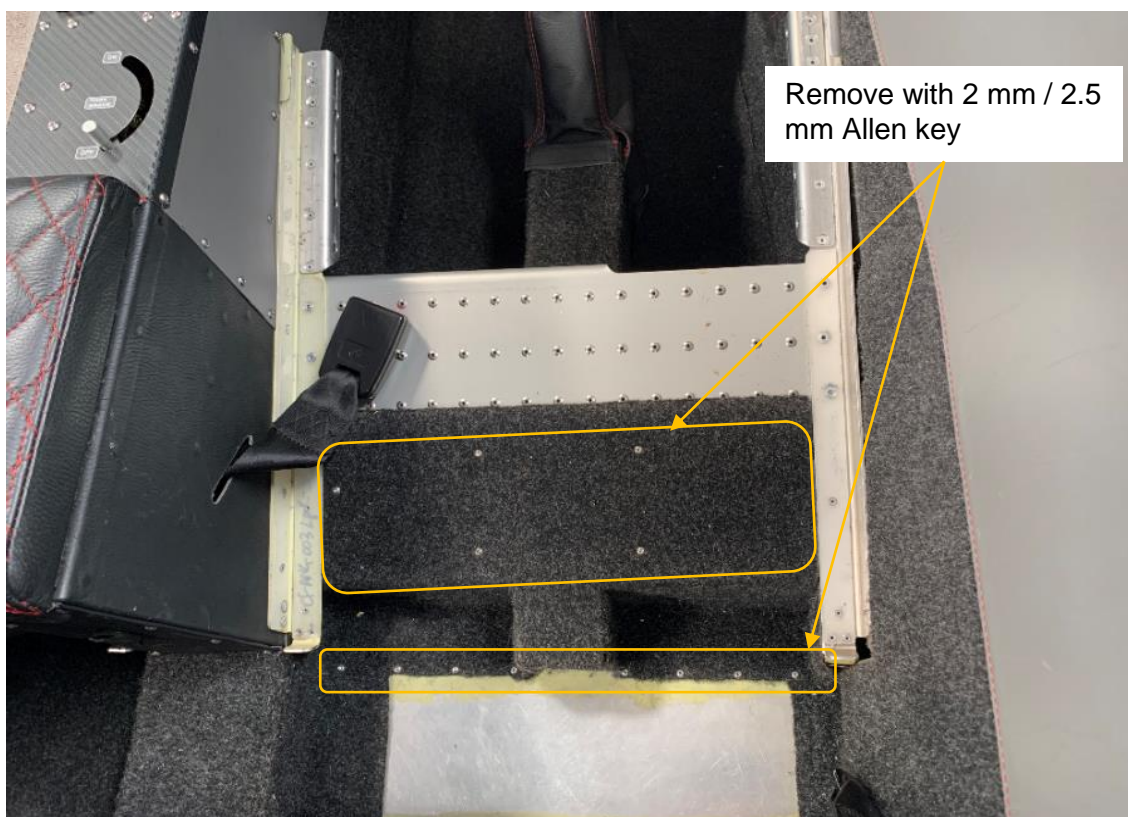


Figure 2 – Removal of floor skin (CF-SKN-016-R-C-0)

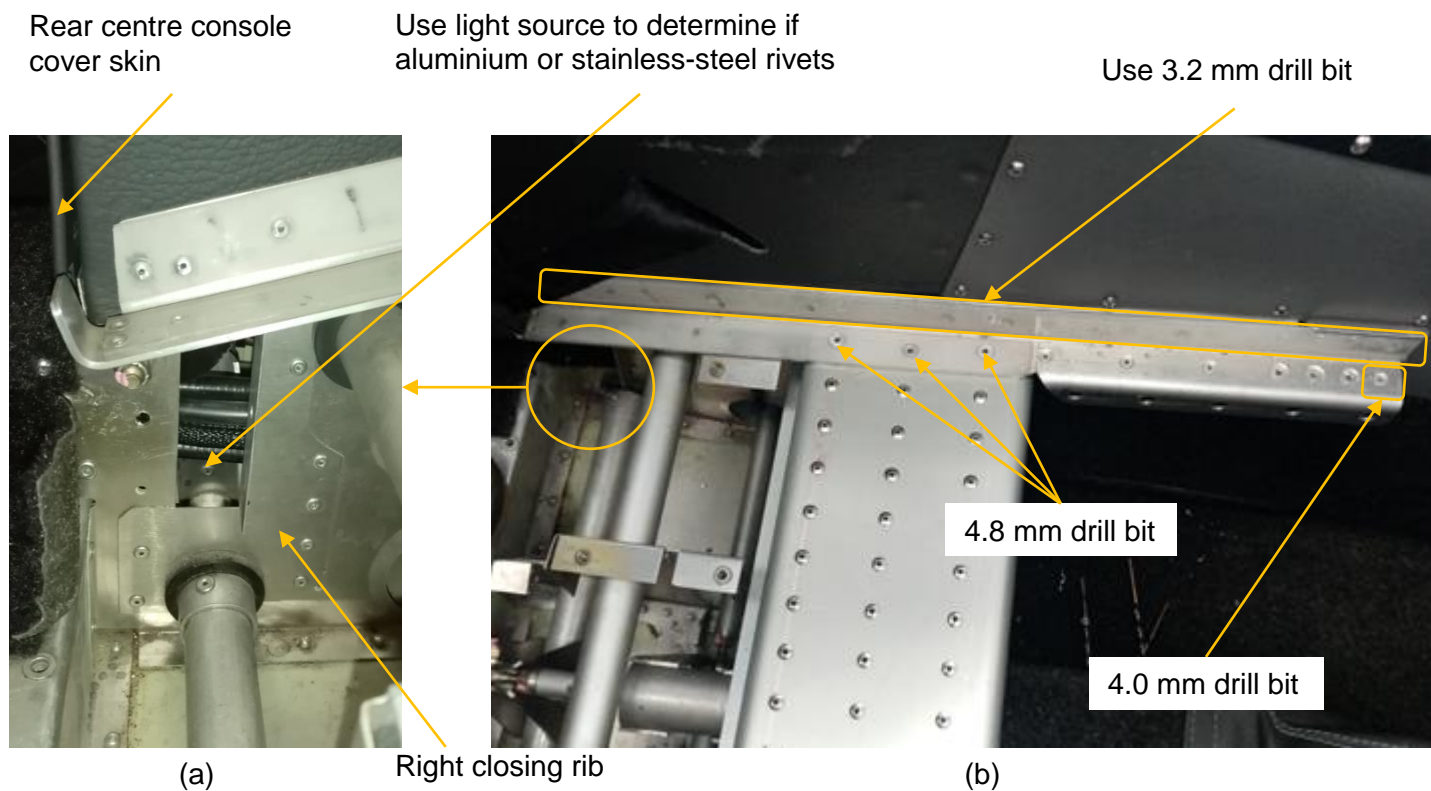


Figure 3 - Region of inspection area and seat rail

Stainless steel
(non-magnetic
attraction)



Aluminium
(magnetic
attraction)

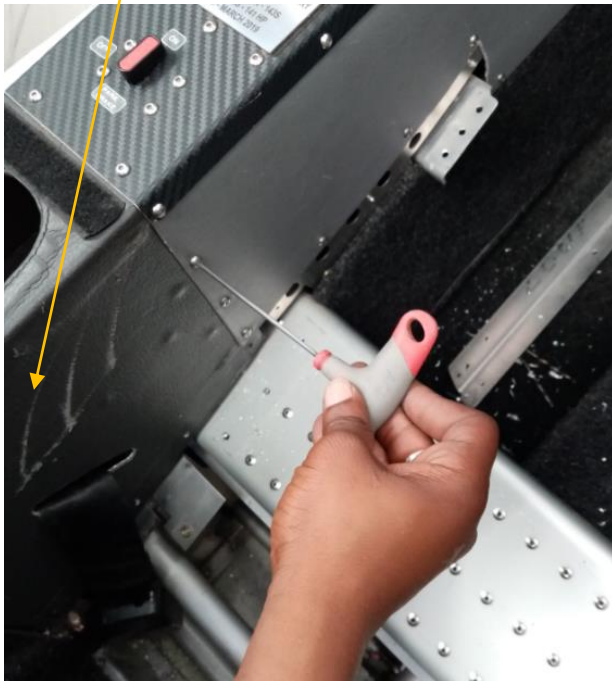
Figure 4 – Identification of stainless steel and aluminium rivets

Separate aft
section of
centre console

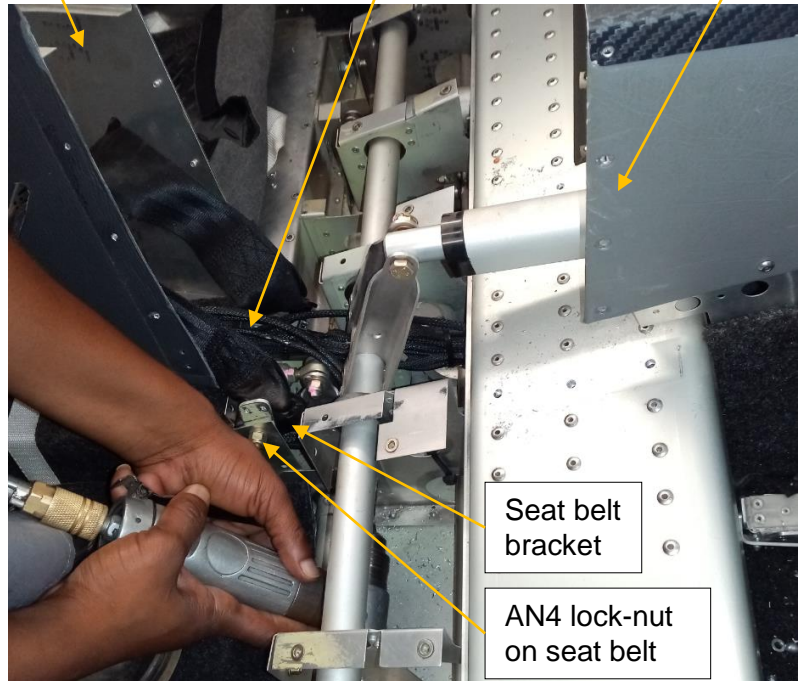
Aft section of centre
console pulled away

Cables/wiring/pitot
static lines running
through centre
console

Forward
section of
centre console



(a)



(b)

Figure 5 – Disassembly of centre console and removal of CF-RIB-009-R/L-C-0

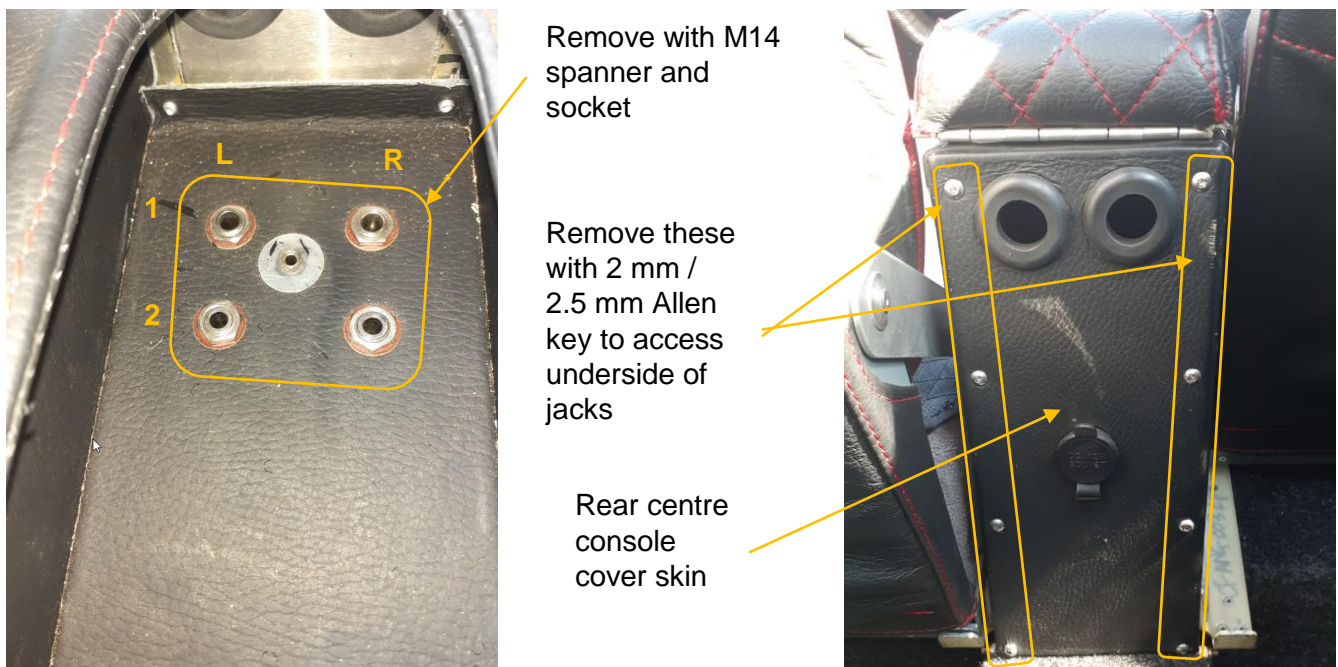


Figure 6 - Remove headset jack nuts



Figure 7 – Installation of stainless steel rivets

Signed on this the 01 day of July 2020



ACCOUNTABLE MANAGER
MR ANDREW PITMAN