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 Manufacturing Organisation M677

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SERVICE BULLETIN #0021

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

RELEASE DATE: 25-01-2023
EFFECTIVE DATE: 25-01-2023
SUBJECT: Missing Elevator Torque Tube Locking Bushes
MODELS AFFECTED: Sling 4 TSi kit and quick build serial numbers:

- 106sk, 126sk, 137sk, 138sk, 139sk, 142sk, 145sk, 146sk, 148sk,
- 149sk, 151sk, 152sk, 154sk, 155sk, 156sk, 157sk, 158sk, 161sk,
- 162sk, 165sk, 169sk, 171sk, 172sk, 173sk, 175sk, 176sk, 177sk,
- 178sk, 180sk, 181sk, 182sk, 187sk, 188sk, 189sk, 190sk, 191sk,
- 193sk, 194sk, 195sk, 196sk, 197sk, 198sk, 199sk, 201sk, 202sk,
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- 421sk, 422sk, 423sk, 424sk, 425sk, 426sk, 427sk, 428sk, 429sk,
- 431sk, 433sk, 434sk, 435sk, 436sk, 437sk, 445sk, 446sk, 447sk,
- 448sk, 449sk, 450sk, 451sk

COMPLIANCE TIME: Next MPI (Mandatory Periodic Inspection) or annual inspection, whichever comes first. Alternatively, this Service Bulletin may be performed immediately by the pilot / kit builder.

LABOUR TIME: 20 minutes

1. DESCRIPTION AND PURPOSE:

There are two elevator torque tube locking bushes (CT-BSH-008-X-A-1) used on the elevator torque tube (CT-AEL-002-C-C-5). These torque tube locking bushes were erroneously left out of the kit packing lists of the Sling 4 TSi. This document details the inspection and installation instructions for the elevator torque tube locking bushes that may be missing from the assembly.

Note:

- The applicable aircraft Maintenance Manual and Construction Manual must be adhered to at all times.
- Refer to AC 43- Aircraft Inspection and Repair, when inspecting and replacing components.

1.1. MASS DATA:

N/A

1.2. ELECTRICAL LOAD DATA:

N/A

1.3. SOFTWARE MODIFICATIONS:

N/A

1.4. REFERENCES:

- a) DC-KAI-003-X-F – Sling 4 TSi Fuselage Construction Manual
- b) DC-KAI-008-X-F – Sling 4 TSi Finishing Construction Manual
- c) DC-MAM-001-X-F – Sling 4 TSi Maintenance Manual

1.5. PUBLICATIONS AFFECTED:

The Sling 4 TSi Fuselage Construction Manual (DC-KAI-003-X-F) and the Sling 4 TSi Finishing Construction Manual (DC-KAI-008-X-F) have been updated to show the installation of the elevator torque tube locking bushes (CT-BSH-008-X-A-1).

This service bulletin details the inspection and installation instructions for the elevator torque tube locking bushes for aircraft that have been fully assembled. If the aircraft is still under construction, the builder must just refer to the latest KAI documents, which can be found on Dropbox, and follow the installation procedure detailed in these documents as per a standard build. The missing lock bushes and rivets should be ordered for all affected aircraft listed on the first page.

2. MATERIAL INFORMATION:

2.1. PARTS AND CONSUMABLES LIST:

- a) 2 X Elevator locking bush (CT-BSH-008-X-A-1)
- b) 2 X 4mm aluminium rivets (HW-RIV-153-X-X-1)

2.2. TOOLS REQUIRED:

- a) Electric drill or pneumatic drill
- b) M 4.1 drill bit
- c) 2.5 mm allen key
- d) Rivet gun (pneumatic or mechanical), with jaws to pull a 4mm rivet

2.3. MATERIAL RESPONSIBILITY:

Sling Aircraft AMO 1264 (Johannesburg, South Africa) is available to perform the required work on all aircraft delivered to its premises. The aircraft may be flown to an aircraft maintenance

organisation for the work to be carried out. Person(s) implementing the work are required to follow instructions set out below and refer to the supplementary documentation listed in Section 1.4 as needed. Sling Aircraft cannot accept any responsibility for the quality of work performed in implementing this service bulletin, if the work is not performed by Sling Aircraft AMO 1264 (Johannesburg, South Africa).

All work carried out on the aircraft with respect to this service bulletin (Service Bulletin #0021) may be performed by the kit builder. Refer to the legal requirements of the governing aviation authority of the country where the actions, as detailed by this service bulletin, are to be carried out.

Sling Aircraft (Pty) Ltd. will cover the cost of the required hardware, listed in Section 2.1. Sling Aircraft is not responsible for costs related to labour, shipping, downtime, loss of income, etc.

2.4. COMPANY SUPPORT INFORMATION:

Make use of the following contact details for any related queries:

airworthiness@slingaircraft.com or technical@slingaircraft.com.

3. INSTRUCTIONS:

This section details the inspection and installation instructions for installing the elevator torque tube locking bushes (CT-BSH-008-X-A-1).

3.1. Inspection of elevator locking bush

- Step 1. Open the baggage compartment door and remove the inspection panels in the baggage compartment. Refer to Figure 1.

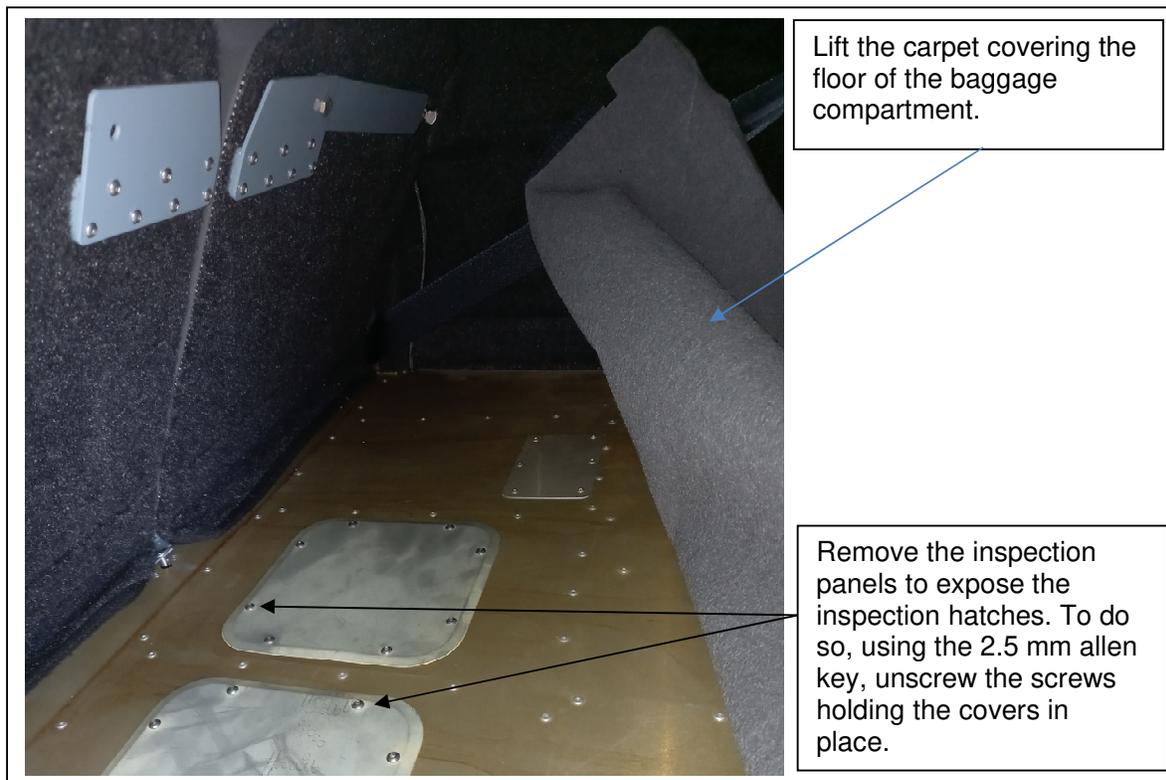
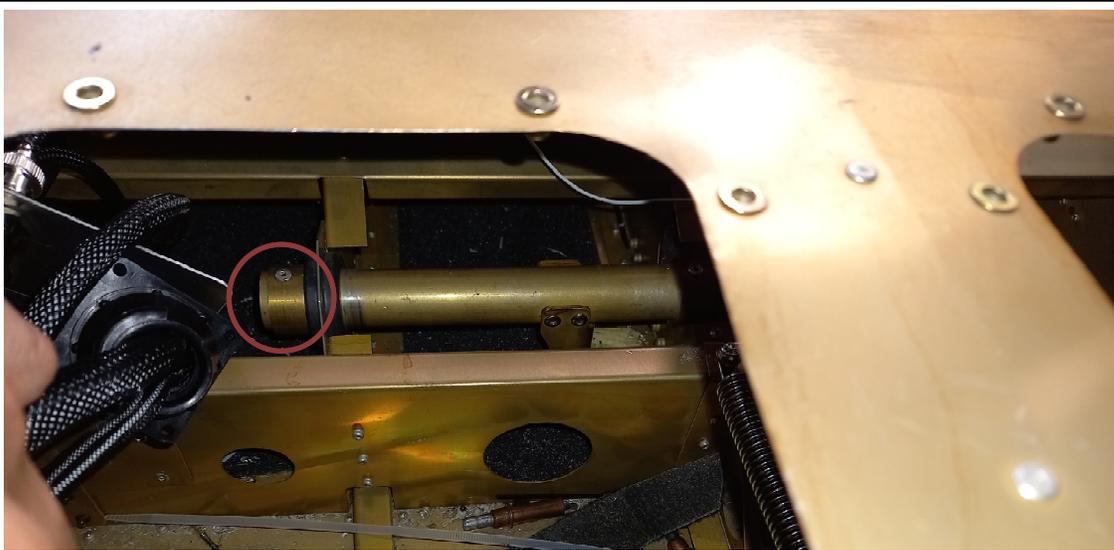
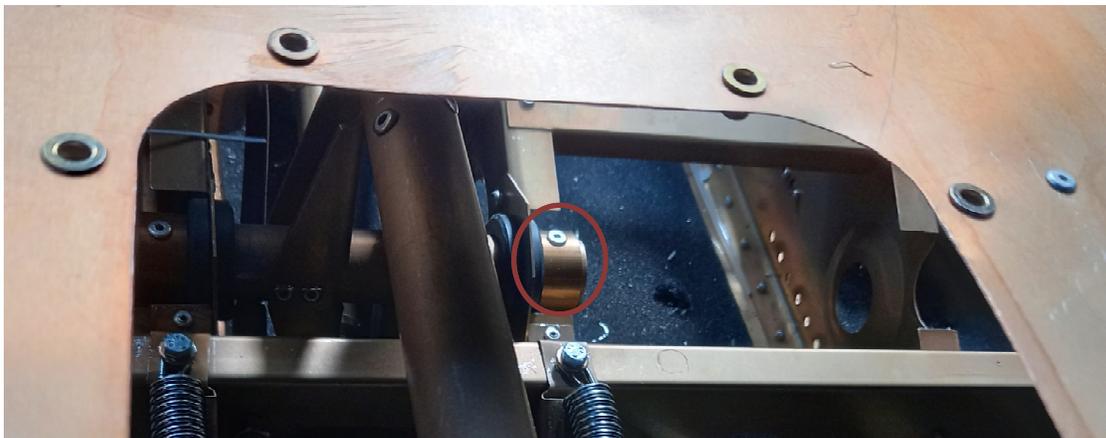


Figure 1: Inspection hatches in baggage compartment

- Step 2. Once the inspection hatches are open, the elevator torque tube should be inspected to see if the elevator torque tube locking bushes are installed. Refer to Figure 2 to see what installed elevator torque tube locking bushes lock bushes should look like.



Left inspection hatch



Right inspection hatch

Figure 2: Elevator torque tube locking bushes

- Step 3. If you struggle to see if the elevator torque tube locking bushes are installed through the inspection hatches in the baggage compartment, remove the rear seats. To remove the rear seats, refer to section 4.2.2.2 in the Sling 4 TSi Maintenance Manual (DC-MAM-001-X-F). For convenience, this section can be found in Appendix A of this document. Once the seats have been removed, inspect the elevator torque tube to see if the locking bushes are installed. Refer to Figure 3.

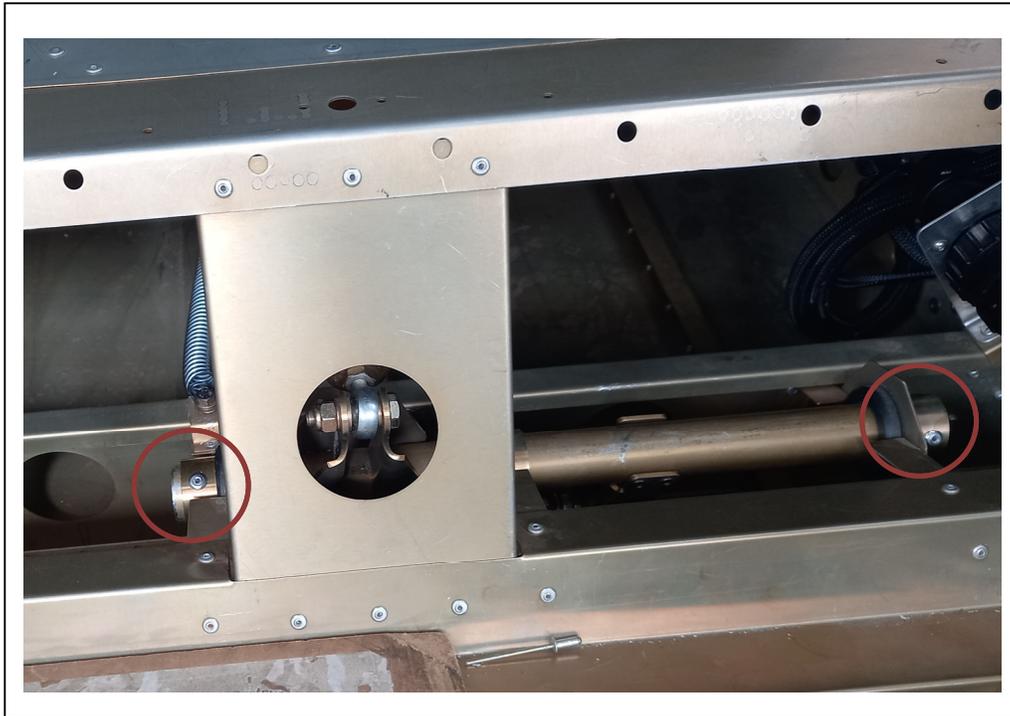


Figure 3: Elevator torque tube with elevator torque tube locking bushes installed

- Step 4. If it is found that the elevator locking bushes are not installed, follow the instructions in Section 3.2 on the following page. If the bushes were installed, the rear seats and inspection hatches can be reinstalled, and the aircraft is seen to be compliant to this service bulletin.

3.2. Installation of elevator locking bush for elevator torque tubes

- Step 5. The elevator torque tube locking bushes can only be installed once the elevator torque tube (CT-AEL-002-C-C-5) has been installed into the fuselage. The installation of the elevator torque tube can be found in the Sling 4 TSi Fuselage Construction Manual (DC-KAI-003-X-F).
- Step 6. Remove the rear seats, refer to section 4.2.2.2 in the Sling 4 TSi Maintenance Manual (DC-MAM-001-X-F).
- Step 7. Ensure that the elevator torque tube (CT-AEL-002-C-C-5) has been centred. To do this ensure that the eyebolt, that can be seen in the hole cut-out, is roughly positioned along the holes centre line, as seen in Figure 4.

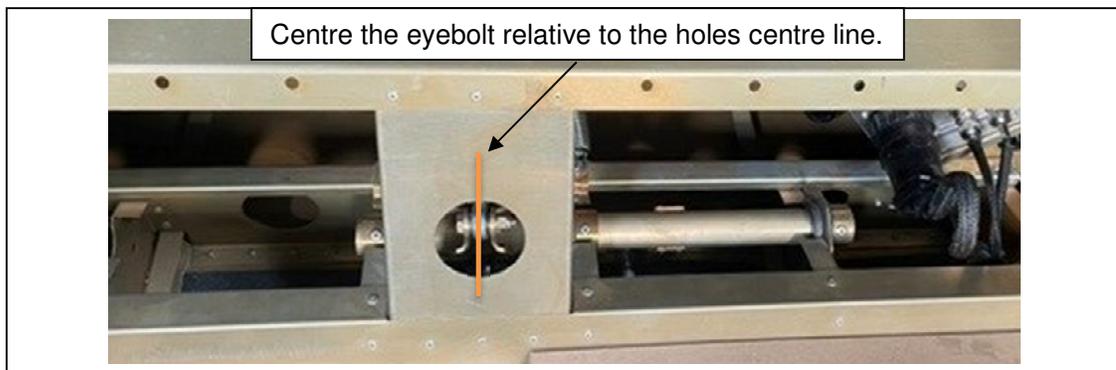


Figure 4: Centering of the elevator torque tube

- Step 8. Place the stopper (CT-BSH-008-X-A-1) over the ends of the tube, as seen in Figure 5. This will need to be done for both sides of the tube.

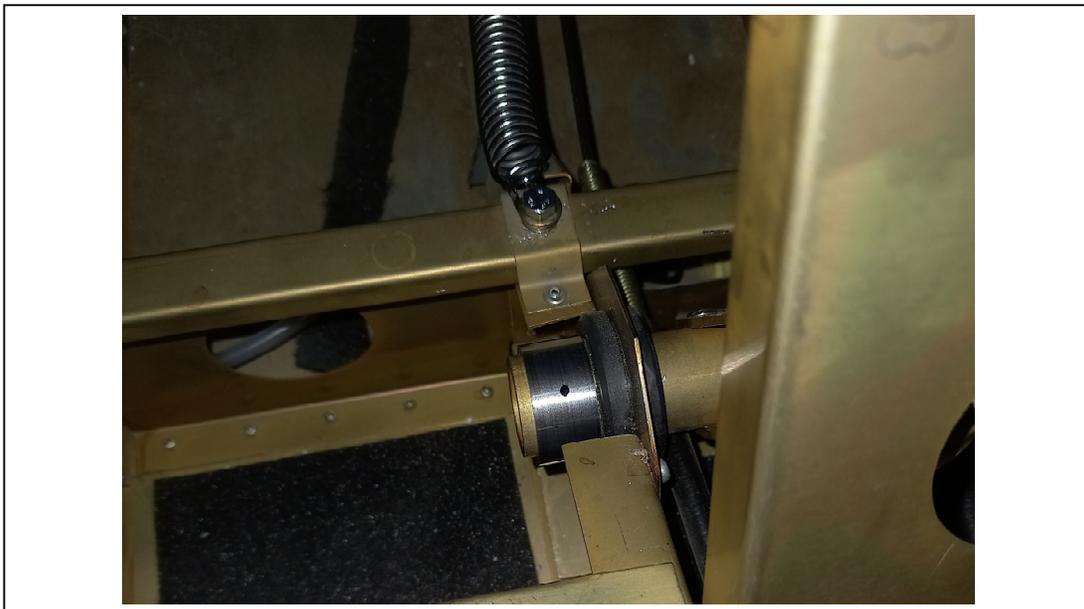


Figure 5: Bush placement

Step 9. As can be seen in Figure 6, the rivet should be installed in the centre of the elevator torque tube locking bush. It is recommended that the rivet also be installed centre to the edge of the bracket holding the bushing in place. This will allow the easiest access when using a drill and rivet gun to install the rivet. Only 1 rivet will get installed into each elevator lock bush.

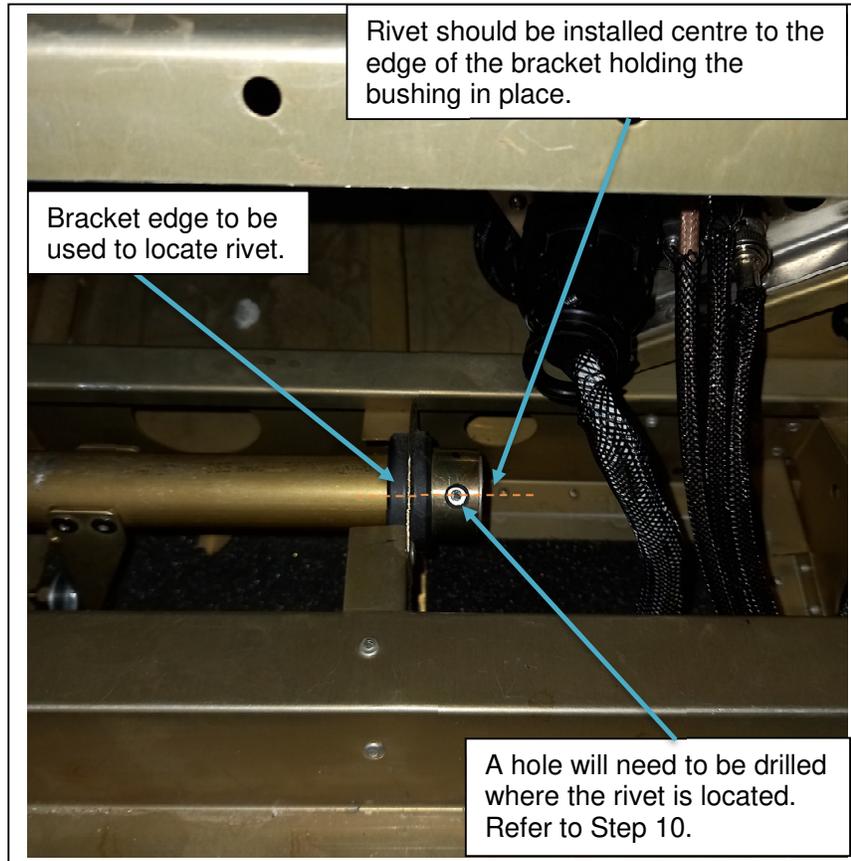
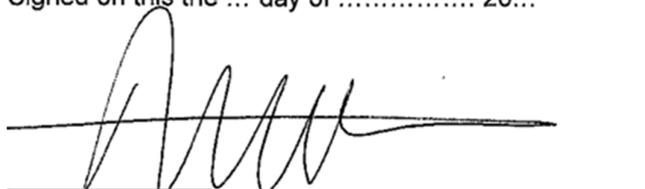


Figure 6: rivet alignment of the elevator torque tube locking bush on the pilot side of the aircraft

- Step 10. Drill a 4.1 mm hole through the elevator torque tube locking bush and the elevator torque tube so that a 4 mm rivet can be inserted into the hole. Refer to Figure 6 for the hole position.
- Step 11. Place the rivet into the hole drilled in Step 10. Ensure the rivet goes all the way into the hole such that the head of the rivet is sitting flush on the elevator lock bush. Use the rivet gun and install the rivet.
- Step 12. Repeat Step 10 and Step 11 for the elevator lock bush on the other side of the aircraft. Both elevator lock bushes should now be installed.
- Step 13. Clean up the area where the drilling took place to ensure no shavings, rivet mandrels or tools are left in the aircraft.
- Step 14. Reinstall the rear seats.
- Step 15. Move the control sticks to check for full and free movement.

Once the actions detailed in this service bulletin have been carried out, the aircraft's compliance to this service bulletin needs to be documented in the aircraft's airframe logbook.

Signed on this the ^{25th} day of JANUARY 2023

A handwritten signature in black ink, appearing to read 'JPITMAN', written over a horizontal line.

ACCOUNTABLE MANAGER
MR JAMES PITMAN

Appendix A

4.2.2.2. REAR SEAT REMOVAL AND INSTALLATION

TOOLS / EQUIPMENT REQUIRED		
ITEM	QUANTITY	NOTES
1 Flat screwdriver.	1	
The above list is not necessarily a complete list of all required tools and equipment needed. A calibrated torque wrench (with adequate range) and the correct size (as implied by the above tool list) accessories (sockets etc.) are implied for torquing bolts / nuts, if applicable. Refer to paragraph 1.5 for torque values.		
AUTHORISED PERSONNEL		
Any person performing maintenance of any kind on the aircraft or any component thereof must do so in accordance with national legislation. This is the responsibility of the aircraft owner and any person who is to perform any maintenance on the aircraft.		

CAUTION
BE PREPARED WITH A HELPER OR SUPPORT STAND TO HANDLE THE WEIGHT AND / OR AWKWARDNESS OF THE OBJECT TO BE REMOVED / INSTALLED.

PROCEDURE (REMOVAL)

1. Unlock the sliding catch (1) (located on the back of the seat upright(s)) retaining the seat upright(s) to the fuselage.



2. Undo the three Dzus fasteners (passing through three eyelets (2)) retaining the seat assembly to the baggage compartment floor. Remove the seat.

PROCEDURE (INSTALLATION)

1. Inspect the Dzus fasteners for damage. Replace if necessary.
2. Reverse the above procedure (removal) for installation.
3. Inspect for security of attachment, before flight.