

	<b>Standard Modification</b> Issue 1	Mod No. SM12569
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		Compiled : R Garforth
		Approved : F Donaldson

## TITLE : Installation of luggage compartment forward bulkhead restraint

APPLICABILITY : **All Vans RV-10 variants**

Mod Type : **Initial build**

### 1. Introduction

The original design of the luggage compartment forward bulkhead does not adequately secure items in the compartment from forward crash accelerations. This modification secures the rear seats and prevents them from hinging forward in the event of a crash, helping to protect the cabin occupants from items in the baggage compartment.

This modification is mandatory on all UK-approved Vans RV-10 aircraft unless alternative, equivalent modifications are approved by LAA Engineering.

If you wish to deviate from these instructions, you must consult LAA Engineering.

### 2. Parts List

Qty	Part No.	Description	Source
4	MS20001-3	Hinge (2x21" & 2x18"), including hinge pin	LAS Aerospace Ltd
32	LP4-3	Rivet	Vans Aircraft
48	AN470AD4-4	Rivet	Vans Aircraft
20	AN470AD4-5	Rivet	Vans Aircraft
4	AN470AD4-6	Rivet	Vans Aircraft
1		0.063" thick 2024-T3 alloy sheet, 19"x6"	Vans Aircraft

### List of related Drawings / Photo's

Drawing No.	Title / Description	Issue
Picture 1	Port side, rear seat back with hinge riveted in position, view looking aft	-
Picture 2	Port side, rear seat back with hinge riveted in position, view looking forward	-
Picture 3	Finished assembly, view looking aft	-
Picture 4	Finished assembly, view looking forward	-

### 3. Action

- 3.1 The fuselage and rear seat backs should be completed to the Vans drawings and instructions. Note: it is easier to fit this modification before the cabin top or rear cabin windows are installed.
- 3.2 Measure the width of the seat backs and cut two sections of hinge to length.
- 3.3 Set out the centre line and hole pitch along both edges of the hinge material: 16 holes are required on each hinge half. Take care to ensure that each end rivet hole will align with the centre of the seat back side-angle.
- 3.4 Drill 16 off holes in each half of the hinge and de-burr. Reassemble hinge halves with an over-long hinge pin (two inches longer than the hinge length).
- 3.5 With the seat backs in their designed positions, the lower pins installed and seat back resting on the fuselage cross-member, locate the hinges in position using double-sided tape. Accuracy at this stage is essential. The closed angle formed by the seat back and the cross member means that match-drilling is not possible until the hinge pin is

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removed and the seat pivoted forward. Be certain that the hinge halves are flat on their respective surfaces and will remain in that position when they are later riveted. Carefully remove the hinge pin.

- 3.6 Match-drill three or four holes into each of the seat back and cross member. Locate each hole as it is drilled using skin-pins (Clecocs). Remove the hinge and clean off the double-sided tape and reassemble the parts using skin-pins. Check that it is possible to pull the hinge pin through without excessive force. If it's satisfactory, carefully match-drill and skin-pin the remaining holes in the seat back and cross-member.
- 3.7 Remove all parts, de-burr and paint if required. Then rivet the parts in place using 14 off AN470AD4-4 rivets and 2 off A470AD4-6 rivets to fasten the hinge to the seat back (note that the 2 longer rivets are required to accommodate the side-angles), and 16 off LP4-3 rivets to fasten the hinge to the cross-member.
- 3.8 Repeat the above process for the other seat back.
- 3.9 With both seat backs now fixed top and bottom set the seats in the middle of the available side-play of the hinges and measure the gap between the seats.
- 3.10 Cut a panel of .063" 2024-T3 aluminium alloy sheet to fit the space with about 1/8" gap between the seat side-angles.
- 3.11 Cut two lengths of hinge to the length of the panel, along with two hinge pins of a length two inches greater than the hinge length. For each hinge, mark out and drill 10 off rivet holes 0.030" diameter, equi-spaced in each hinge half.
- 3.12 Clamp the hinge parts and panel between the seat backs and check for best fit.
- 3.13 Remove the hinge pins and pivot the seat clear. Match drill and skin-pin several positions to the plate and the seat side-angles. De-burr, reassemble with skin-pins and check for fit. If satisfactory, continue to match-drill the remaining holes. De-burr, paint then rivet the parts together using 20 off AN470AD4-5 (hinge/side flange joint) and 20 off AN470AD4-4 rivets (hinge/panel joint).
- 3.14 Form a 2" x 90 degree bend in the ends of the each hinge pin.
- 3.15 Reassemble all parts with hinge pins.

#### **4. Weight and Balance**

This modification is to be included at initial build and therefore the initial weight and balance report for the aircraft will include the effects of this modification.

#### **5. Special Instructions**

- 5.1 Inspector must check that the correct materials have been used as noted in Section 2.
- 5.2 The hinge pins must extend the full length of each hinge.
- 5.3 The panel between the seat backs must fully cover the gap between the seats.

#### **6. Certification**

The aircraft build book should be annotated in the 'LAA required modifications' section that this modification has been installed.



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Picture 1 Port side, rear seat back with hinge riveted in position, view looking aft



Picture 2 Port side, rear seat back with hinge riveted in position, view looking forward



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Picture 3 Finished assembly, view looking aft