



## SERVICE BULLETIN 00036 - REV 1

<b>Date Released:</b>	February 2, 2023 (Revision 1) January 23, 2023 (Initial release)
<b>Date Effective:</b>	January 23, 2023
<b>Subject:</b>	Inspect outboard elevator hinge on the horizontal stabilizer rear spar, replace if cracks found
<b>Affected Models:</b>	RV-3, RV-4, RV-6/6A, RV-9/9A, RV-10, RV-14/14A  RV-7/7A and RV-8/8A Empennage Kits shipped prior to November 2022
<b>Required Action:</b>	Inspect outboard elevator hinge bracket area on the rear spar of the horizontal stabilizer for cracks
<b>Time of Compliance:</b>	For the initial inspection, within 25 hours or at the next annual inspection, whichever is earlier  After the initial inspection, inspect every 12 months; continue this schedule until replacement of the outer hinge brackets is completed
<b>Supersedes Notice:</b>	N/A
<b>Labor Required / SLSA Warranty Allowance:</b>	N/A
<b>Level of Certification:</b>	Check the rules of the local controlling agency and the operating limitations for your aircraft

***NOTE: Van's Aircraft has identified an issue related to replacement elevator hinge brackets that were recently shipped to a number of customers as part of SB-00036-KIT in conjunction with the initial release of this Service Bulletin. These parts were also included in RV-4, RV-7 and RV-8 empennage kits shipped between approximately November 2022 and January 2023.***

*Van's Engineering is in the process of producing revised hinge bracket parts, which will be released as soon as possible and shipped automatically to all customers who already received the problematic hinge brackets as part of the service bulletin kit or an RV-7 or RV-8 empennage kit.*

*Customers who have received either the SB-00036 kits or an RV-4/6/7/8 empennage kit with the following part numbers included should wait for the new parts before proceeding*

*with installation or replacement of the hinge brackets. If a customer has already installed the brackets which are being revised, the revised parts will need to be installed when they are available. You may operate your aircraft until the new parts are released. Van's will automatically ship the revised parts to all customers who received the below parts, as soon as they are available.*

- *HS-00715C (RV-4/6)*
- *HS-00715D (RV-4/6)*
- *HS-00715E (RV-7/8)*
- *HS-00715F (RV-7/8)*

*In addition, Van's has placed all not-yet-shipped SB-00036 kit orders (see kit part numbers listed below) on hold, pending conclusion of the engineering team's review and production of revised parts. As soon as the revised parts are available, Van's will ship updated kits that include the new parts to all customers who already have a SB-00036 kit on order.*

- *SB-00036-KIT4/6 (will be replaced by SB-00036-KIT4/6-1)*
- *SB-00036-PP (will be replaced by SB-00036-PP-1)*

*For owners who have not yet ordered kits related to this service bulletin, note that the revised service bulletin kit part numbers shown above (with the -1 suffix) are available to pre-order now from the Van's Aircraft online store. The revised kits will ship when they become available. Van's engineering and factory teams are prioritizing these parts for delivery to affected customers.*

*Van's will release updated service information when the updated SB kits are released, to include steps for compliance using the revised parts. We have removed the portion of the original version of this service bulleting which described the installation of the problematic parts. Update service documentation will be published in conjunction with the availability of the revised parts.*

*Parts for RV-9, RV-10 and RV-14 will also be released in the future. Nothing has changed regarding the inspection process described in this document for those models.*

### **Synopsis:**

Van's Aircraft has received a small number of reports of similar cracks forming in the outboard elevator hinge bracket areas of the rear horizontal stabilizer spar web. See Figures 1 through 4 below for visual examples of cracks.

Formation of these cracks may be caused by loads from the elevator hinge pushing and pulling on the web of the rear spar. This was observed on aircraft where aerobatics were performed and the airframe total times were near 2,000 hours. Additional potential causes may include misalignment of the elevator hinge brackets and/or the interaction of airframe vibrations and the elevator, which can result from failure to dynamically balance the propeller.



**FIGURE 1 – EXAMPLE 1 - CRACK LOCATIONS – AFT SIDE OF SPAR**



**FIGURE 2 - EXAMPLE 1 - CRACK LOCATIONS - FWD SIDE OF SPAR**



**FIGURE 3 - EXAMPLE 2 - CRACK LOCATIONS - FWD SIDE OF SPAR**



**FIGURE 4 - EXAMPLE 2 - CRACK LOCATIONS - FWD SIDE OF SPAR**

**Materials Required:**

The following materials are required in order to complete the steps necessary to achieve compliance with this Service Bulletin, if cracks are found in RV-4, RV-6, RV-7, and RV-8 airframes:

**RV-4 , RV-6, RV-6A:** Order SB-00036-KIT4/6-1

**RV-7, RV-7A, RV-8, RV-8A:** Order SB-00036-PP-1

**NOTE: If an inspection of an RV-3, RV-9, RV-10, or RV-14 airframe reveals cracks, contact Van's Technical Support to obtain information needed to comply with this service bulletin.**

**Method of Compliance:**

Step 1: Inspect the outboard elevator hinge bracket area on the rear horizontal stabilizer spar for cracks.

Cracks may be present, but not visible from the aft side of the spar. It is imperative that the forward side of the spar be inspected in the same location. This can be done by using a borescope through the aft tooling hole in the outboard horizontal stabilizer rib.

Tooling holes can be enlarged to 7/16" to accommodate a borescope.

**NOTE: Typically, a crack in aluminum aircraft structure extends beyond the point where it is visible with the naked eye. Stop-drilling at the apparent endpoint could miss the end of the crack allowing it to continue to propagate. Therefore, when stop-drilling a crack, the center point of the stop-drill hole should be positioned slightly beyond the apparent end of the crack. This way, if the crack continues to propagate, it will do so toward the hole and then stop.**

Step 2: If no cracks are observed, observe and follow the reinspection requirements in the Time of Compliance section, above.

If cracks are found, it is important to determine the severity of the cracks. To do so you will need to remove the outer hinge brackets to fully inspect the cracks.

Cracks that have propagated into the bend of the spar or span across holes will require the spar to be replaced. Otherwise, cracks can be stop drilled using a 3/32" hole at the extreme end of the crack.

These cracks must be monitored for further propagation that would require spar replacement.

**Van's will release updated service information and revised parts as soon as the revised parts are available, to include steps for compliance.**

If you are no longer in possession of this aircraft, please forward this information to the present owner/operator and immediately notify Van's Aircraft, Inc. via email at [registrations@vansaircraft.com](mailto:registrations@vansaircraft.com).

Information regarding establishing/transferring aircraft ownership, registration and licensing is available at: <https://www.vansaircraft.com/qr/transfer-of-ownership/>.