



VAN'S AIRCRAFT
TOTAL PERFORMANCE

14401 Keil Road NE, Aurora, Oregon, USA 97002
PHONE 503-678-6545 • FAX 503-678-6560
www.vansaircraft.com • info@vansaircraft.com

SAFETY NOTICE 00108

Date Released: May 8, 2025

Date Effective: May 8, 2025

Subject: Aircraft Limitations with Aftermarket Extended Range Fuel Tanks Installed

Affected Models: RV-10, RV-14, RV-14A

Required Action: Observe the limitations stated by this document

Supersedes Notice: N/A

Synopsis:

As previously noted in Service Letter SL-00062:

Builders and owners sometimes make modifications to their RV aircraft, which are not represented in the Van's Aircraft provided and approved design documentation. While some modifications may be relatively minor in nature, others may in some way affect critical systems, aircraft structure, weight and balance, and/or other performance factors, in manners which may or may not be evident to the person making the change and/or the pilot of the modified aircraft. In addition, certain types of changes in combination may have a cumulative negative effect(s). The effects of changes may not be evident without detailed engineering testing and/or analysis.

Every modification carries with it certain unenumerated/unknown/unevaluated risks, and any individual change or combination of changes may result in the introduction of new or additional risks and/or defects in the resulting one-off aircraft design. Van's Aircraft does not evaluate, review, test, approve, or in any other way provide its support for 3rd party deviations from its published and maintained aircraft designs. Any changes, enhancements, or modifications made by the builder, owner, or any other person are made at that person(s) own risk, and the person(s) making the changes, as well as anyone who operates the airplane at any point in the future, bears the responsibility for evaluating, understanding, and accepting any consequences of such deviations from the aircraft plans. Van's Aircraft shall not be liable for changes that represent a departure or deviation from the original aircraft design and/or plans.

Several aftermarket extended-range fuel tanks are now on the market for RV aircraft. Modifications to the design and aircraft structure are required to configure aircraft for these extended-range fuel tanks. Van's Aircraft has not endorsed these modifications in any way. Although Van's Aircraft is not responsible for modifications made to the supplied kit, we would like to share further guidance and awareness of the unintended consequences of extended-range fuel tanks.

The extra weight of fuel will reduce the payload of the aircraft. Exceeding the gross weight of the aircraft will increase stress within the structure and reduce performance. Although these modifications and operations above gross weight may result in no apparent impact on the structure, higher loads will reduce the fatigue life of an aircraft, and could result in other unintended consequences.

The RV-10 and RV-14/14A share a common wing which has undergone ground vibration testing (GVT) using the flutter margins of 14 CFR Part 23. Mass, including fuel centered away from the wing's elastic axis, will decrease the flutter margin. This will lower the speed at which flutter will occur. Thus, a lower Vne must be used on aircraft with extended-range fuel tanks, at least until the excess fuel is depleted.

Although no flutter events have been reported with aircraft incorporating aftermarket extended-range tanks, reducing the flutter margin could be critical and, depending upon the changes made, increased mass, condition of flight, etc, and could result in unexpected flutter at lower airspeeds. The most concerning scenario would be an overspeed above Vne. For example, a pilot may think that a gentle roll with additional fuel on board may be a low-risk, easy maneuver. In reality, the most common gross overspeed events occur from inadequate training resulting in a failed roll maneuver that becomes a split S.

Method of Compliance:

Step 1: For both the RV-10 and RV-14/14A, to maintain tested flutter margins, Vne must be reduced by 2.8kts for each additional gallon of fuel (regardless of the location of the extended range fuel tank within the wing). The reduction in Vne needs be incorporated into the EFIS settings and aircraft's POH limitations based on the size of the extended-range fuel tank(s).

Step 2: For the RV-14/14A, aerobatics must not be performed with greater than 25 gallons of fuel located in each wing. This restriction needs to be added to the aircraft's POH limitations.

Step 3: Make a logbook entry indicating compliance with this service document per the requirements of the controlling authority/agency.

Place a copy of this notification in the back of the maintenance manual for your aircraft. Add the name and date of the service information to the Addendum Documents List at the front of the Maintenance Manual.

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. Please include the new owner's contact information and date the aircraft ownership transferred.

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