

RV-14 V-Speed Chart

Below is a preliminary list of the V-speeds for the RV-14/14A. This will be incorporated in a future PAP (production acceptance procedure) for the RV-14/14A. For those familiar with RV kits, this will replace the information usually found in Chapter 15 (Final Assembly & Flight Test).

Airspeed Type	Indicated or True	Description	Airspeed (kts)	Airspeed (mph)
V _{SO}	Indicated	Stall speed flaps down	51	59
V _{S1}	Indicated	Stall speed flaps up (-3 deg reflexed)	62	72
V _X	Indicated	Best angle of climb	70	81
V _{BG}	Indicated	Best power-off glide speed for max range	84	97
V _Y	Indicated	Best rate of climb	95	109
V _{FE}	Indicated	Maximum flap extended speed	100	115
V _A (Aerobatic Weight 1900 lb)	Indicated	Design maneuvering speed at aerobatic gross weight.	147	169
V _A (Utility Weight 2050 lb)	Indicated	Design maneuvering speed at utility gross weight	130	150
V _{NO}	Indicated	Maximum structural cruising speed	156	180
V _{NE}	True & Indicated	Never exceed speed	200	230

NOTE:

- 1) Stall speeds V_{SO} and V_{S1} are at utility gross weight 2050 lb
- 2) V_{FE}, V_{NO} and V_{NE} are airspeed limitations for all RV-14/14A aircraft. All other speeds stated above are calculated from Van's prototype flight test data and should be used for reference only. New values for these speeds should be determined through initial flight testing for each individual aircraft.
- 3) V_A is the maximum speed above which full application of any single flight control will generate loads greater than the aircraft structural limitations.
- 4) V_A changes with the stall speed of the aircraft according to the formula:

$$V_A = (\text{Stall Speed}) \times \sqrt{\text{Load Factor}}$$

The load factor for Aerobatic category is 6.0 and 4.4 for utility category.

For example, from the chart above $V_A = 130kts = 62kts\sqrt{4.4}$

The values for V_A stated in the table above are given at aerobatic or utility gross weight. As the weight decreases so will the stall speed and consequently the maneuvering speed. It is common for EFIS systems to have only one input for value for V_A. If this number is set to a value determined at gross weight the pilot should keep in mind at lower weights the maneuvering speed will be lower than the indicated value.



- 5) V_{NO} is the speed above which the aircraft may only be flown in calm or light turbulence.
- 6) V_{BG} is the speed that provides the maximum lift-to-drag ratio and thus the greatest gliding distance. The speed listed was derived from test data used on the prototype RV-14A using a Hartzell metal blended airfoil propeller. This speed is for reference only and will vary (possibly significantly) with changes in drag such as different gear configuration or propeller type than used during the test.
- 7) V_{NE} speed on modern EFIS systems may (and should) be entered as both indicated and true airspeeds. The indicated never exceed speed limits the dynamic pressure loads on the airframe structure such as are developed in a high g turn. The true never exceed speed prevents the aircraft from entering a speed range susceptible to flutter. If your EFIS system only has one V_{NE} speed available enter the speed as a true airspeed.
- 8) Airspeed indicator ranges

Color Marking/Range	Airspeed Minimum - Maximum
White	$V_{SO} - V_{FE}$
Green	$V_{S1} - V_{NO}$
Blue	V_A (See note 4)
Yellow	$V_{NO} - V_{NE}$
Red	V_{NE} and above