

Aerofly FS 2 Aircraft Information

This section will provide you with valuable information pertaining to Aerofly FS 2 aircraft.

Learning Your V Speeds

Vs0 The beginning of the White Arc is the power off Stalling Speed with gear and full flaps extended, also known as Vs0. The Vs0 (Velocity Stall 0) represents the Stalling Speed of the aircraft configured for landing. (i.e. Gear Down and Flaps Down) An easy way to remember this is to think of the Velocity (V) of Stall (s) with everything hanging Out (0) or Vs0.

Vs and Vs1 Now that you are familiar with Vs0, it's easy to remember Vs1. The beginning of the Green Arc is the power off Stalling Speed with the Gear and Flaps retracted. Vs is the Velocity (V) of the Stall (s), or minimum steady flight speed for which the aircraft is still controllable. As a memory aid, Vs1 is the Velocity (V) of the Stall (s) with everything Inside (1 looks like the letter i for inside). This is the Stall speed or minimum steady flight speed for which the aircraft is still controllable in a specific configuration. The lower ends of the Green Arc and the White Arc depict the stalling speed with wing flaps retracted (Vs1), and stalling speed with wing flaps fully extended (Vs0), respectively. These Vs (Velocity of Stall) speeds are the stalling speeds for the aircraft at its maximum weight.

Vfe The Top of the White Arc depicts the Maximum Flap Extended Speed. This is referred to as Vfe for Velocity (V) with Flaps (f) Extended (e). This represents the maximum airspeed at which you may extend the flaps, or fly with them extended. The flaps may not be used above this range (White Arc) or possible structural damage may occur to the aircraft.

Vno As the Green Arc is the Normal Operating Range, the top of the green arc is the Velocity (V) of Normal (n) Operations (o) or Vno. This is the maximum structural cruising speed. Operation of the Aircraft at the Vno speed, and lower, is within the certified range for operations within gusts. The aircraft is certified to withstand substantial wind gusts without experiencing structural damage. Operations above Vno move into the Yellow Arc on the Airspeed Indicator. Do not exceed Vno, except in Smooth Air, and only with caution

Vne The Red Line at the top of the Yellow Arc is the Velocity (V) that you Never (n) Exceed (e). This is the Red Line of the Airspeed Indicator, and the Vne is the Maximum Speed the Aircraft should ever be operated in Smooth Air. Remember, the Yellow Arc is for Smooth Air Only. You should not exceed the Green Arc speed range unless the Air is Smooth and without gusts. Exceeding the Vne Airspeed can cause uncontrollable and destructive flutter, and cause serious or catastrophic failure of structural components on the aircraft. Aircraft designers include a slight safety margin, but do not risk or rely on this slim margin. The Vne is the Velocity (V) you Never (n) Exceed (e).

Va Manoeuvring Speed is found well below Vno. Manoeuvring Speed may be remembered as Velocity (V) of Acceleration (a) or Va. The pilot should not make full or abrupt control movements above this speed. In turbulence, you should always be at, or below, the Manoeuvring Speed (Va). The only way to ensure you will not damage the aircraft with full or abrupt control movement is to fly at or below this speed.

Vlo Vlo is the Maximum Velocity (V) for Landing (l) gear Operation (o). Do not extend or retract the landing gear above this airspeed. When the landing gear is in transition, it is more vulnerable to

damage from the effects of speed. However, once the landing gear is fully extended and locked, it may sustain higher airspeeds.

V_{le} V_{le} is the Maximum Velocity (V) of Landing (l) gear Extended (e). Do not exceed this speed with the landing gear extended.

Best Rate of Climb (V_y) After takeoff, the aircraft should normally be configured for the Best Rate of Climb. This will provide the best climb for the maximum gain in altitude in the shortest time possible. You will get to your selected cruising altitude in the shortest time possible. Altitude is your friend, and particularly after takeoff, you want to gain the maximum height above the ground in the least time possible. V_y provides you with the Best Rate of Climb.

Best Angle of Climb (V_x) Occasionally, it may be necessary to gain the maximum altitude possible over the shortest distance on the ground. To achieve this, the pilot would use the Best Angle of Climb or V_x. This would be applicable if you needed to clear an obstacle or obstruction on the ground shortly after takeoff. The pilot would configure the aircraft for the Best Angle of Climb to gain the maximum altitude possible before reaching the obstacle (i.e. Tree) located beyond the runway.

Cessna 172 SP



v speeds

Symbol	Description	Indicated airspeed (Knots)	Marking on A/S indicator
VSO	Stall speed at landing configuration	40 KIAS	Beginning of white arc.
VS	Stall speed at clean configuration	48 KIAS	Beginning of green arc.
VR	Rotation speed	55 KIAS	Not marked.
VX	Best angle-of-climb speed	62 KIAS at sea level 67 KIAS at 10,000'	Not marked.
VY	Best rate-of-climb speed	74 KIAS at sea level 72 KIAS at 10,000'	Not marked.
VFE	Max. flap extended speed	10° flaps 110 KIAS 10°-30° 85 KIAS	White arc ends at 85 KIAS.
VA	Maneuvering speed. Do not make full or abrupt control maneuvers above this speed.	105 KIAS at max takeoff weight 98 KIAS @ 2200 lb 90 KIAS @ 1900 lb	Not marked.
VNO	Max. structural cruising speed. Do not exceed except in smooth air and than only with caution.	129 KIAS	End of green arc. Beginning of yellow arc.
VNE	Never Exceed speed.	163 KIAS	Red line.

Take Off and Landing

TAKEOFF REVIEW

NORMAL TAKEOFF	
Flaps	0° TO 10°
Rotate	50 KIAS
Liftoff	55 KIAS
Climb	70 TO 80 KIAS

OBSTACLE TAKEOFF (SHORT FIELD)	
Flaps	10°
Rotate	45 KIAS
Liftoff	50 KIAS
Clear Obstacle	57 KIAS
Climb	70 TO 85 KIAS

SOFTFIELD TAKEOFF	
Flaps	10°
Rotate	Minimum Speed
Liftoff	Minimum Speed
Flaps	UP AT 55 KIAS
Climb	75 KIAS

LANDING REVIEW

POSITION IN PATTERN	KIAS AT FLAP SETTING		
	10°	20°	30°
Downwind	80	--	--
Base	80	70	--
Final	80	70	60

Beechcraft Baron 58



v speeds

Symbol	Description	Indicated airspeed (Knots)
Vso	Stall speed at landing configuration	74 KIAS
Vs1	Stall speed at clean configuration	84 KIAS
Vr	Rotation speed (Takeoff)	85 KIAS
Vx	Best angle-of-climb speed	92 KIAS
Vy	Best rate-of-climb speed	105 KIAS
Vfe	Max. flap extended speed	10° flaps 152 KIAS / 10°-30° 122 KIAS
Va	Maneuvering speed. Do not make full or abrupt control maneuvers above this speed.	156 KIAS at max
Vno	Max. structural cruising speed. Do not exceed except in smooth air and than only with caution.	195 KIAS
Vne	Never Exceed speed.	223 KIAS
Approach		100 KIAS
Glide		115 KIAS
Vlo/Vle		152 KIAS

Take Off and Landing

Climb:
 Landing Gear.....Up
 Flaps.....Up
 Climb Power.....Set
 Engine Instruments.....Checked
 Cowl Flaps.....As Required
 Airspeed.....105 – 136 KIAS
 Checklist.....Complete

Cruise:
 Cruise Power.....Set
 Mixtures.....Lean
 External Lights.....As Required
 Fuel Boost Pumps.....As Required
 Cowl Flaps.....As Required
 Ice Protection Equipment.....As Required
 HSI/Compass.....Checked
 Checklist.....Complete

Descent:
 ATIS/AWOS/ASOS.....Obtain
 Seats & Belts.....Checked/Upright
 Mixtures.....Adjust W/Descent
 Throttles.....Set
 Cowl Flaps.....As Required
 Fuel Selectors.....On/Feel For Detent
 External Lights.....As Required
 Ice Protection Equipment.....As Required
 Approach Briefing.....Complete
 Checklist.....Complete

Recommended Descent Speeds (KIAS):
 16,000 – 13,000 FT160
 Below 13,000 FT.....170

Before Landing:
 Landing Gear.....Down/3 Green
 Flaps.....As Required
 Fuel Boost Pumps.....Off/As Required Per OAT
 Mixtures.....Full Forward
 Propellers.....Full Increase
 Checklist.....Complete

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