

V-Speeds

Take-Off

VEF (engine failure)

V1 (take-off decision, stop/go)

VR (rotation)

V2 (take-off safety, over screen)

VMU (minimum unstick)

VLOF (lift off)

VMBE (max. brake energy)

Cruise

VA (maneuver)

VB (gust)

VC (cruise)

VMO (maximum operating)

VD (dive)

Performance

VX (best angle)

VY (best rate)

VBG (best glide)

VBE (best endurance)

VBR (best range)

Aerodynamics

VS (stall)

VS1g (stall at 1g)

Vmd (minimum drag)

Vmp (minimum power)

Control

VMC (minimum control)

VMCA (minimum control, air)

VMCG (minimum control, ground)

Structure

VFE (max. for flaps extended)

VLE (max. for landing gear extending)

VLO (max. for landing gear operating)

VNE (never exceed)

Landing

Vref (landing reference)

VAPP (approach)

Note: V-speeds are IAS

https://en.wikipedia.org/wiki/V_speeds

Speed	Jet	Prop
VX (best angle)	Vmd	equation
VY (best rate)	equation	Vmp
VBGT (best glide time)	$Vmp = 1/1.3161 Vmd$	
VBGA (best glide angle) = VBG	Vmd	
VBE (best endurance)	Vmd	$1/1.3161 Vmd = Vmp$
VBR (best range)	$1.3161 Vmd$	Vmd