

GULFSTREAM AEROSPACE
GIV AIRPLANE FLIGHT MANUAL

SECTION 5
SPECIAL
PERFORMANCE

M_T , TRUE MACH NUMBER - Indicated Machmeter reading corrected for static source position error. (The PFD displays M_T directly.)

V_{MCG} , MINIMUM CONTROL SPEED, GROUND (111 knots) - Lowest speed at which airplane can have sudden engine failure and maintain directional control on ground with use of aerodynamic controls only with maximum available takeoff thrust on operative engine.

V_{MCA} , MINIMUM CONTROL SPEED, AIR (104 knots) - Lowest speed at which airplane can have sudden engine failure and maintain directional control in air with maximum available takeoff thrust on operative engine.

V_{EF} , CRITICAL ENGINE FAILURE SPEED - Engine failure speed that corresponds to engine failure recognition at V_1 . Acceleration from V_{EF} to V_1 is based on one second engine failure recognition time.

V_1 , TAKEOFF DECISION SPEED - Speed from which decision to continue takeoff results in takeoff distance that will not exceed available accelerate-go distance, or from which decision to bring airplane to full stop will not exceed accelerate-stop distance available.

V_R , ROTATION SPEED - Speed at which rotation to takeoff attitude is initiated.

V_1 / V_R , TAKEOFF DECISION SPEED RATIO - Ratio of takeoff decision speed, V_1 , to rotation speed, V_R .

V_{1MCG} , MINIMUM V_1 FOR CONTROL ON GROUND - Minimum takeoff decision speed V_1 , corresponding to engine failure at V_{MCG} .

V_2 , TAKEOFF SAFETY SPEED - Target speed to be attained at 35 foot height, assuming recognition of engine failure after V_1 . If engine failure should occur after passing V_2 on takeoff, it is recommended that speed at time of engine failure (up to $V_2 + 10$ knots) be maintained. Speed of $V_2 + 10$ knots in single-engine takeoff configuration will produce maximum climb gradient available.

V_{FS} , FINAL TAKEOFF CLIMB SPEED - Recommended airspeed for single-engine climb in enroute (clean) configuration below 1500 feet AGL. (Performance in this section is based on maintaining V_2 and flaps 10° or 20° to 1500 feet.)

V_{SE} , ENROUTE CLIMB SPEED - Recommended airspeed for single-engine climb in enroute (clean) configuration.

V_{MBE} MAXIMUM V_1 FOR BRAKE ENERGY LIMITS - Maximum takeoff decision speed, V_1 , permitted by brake energy limitations.

V_{BI} REFUSAL SPEED FOR BRAKE INSPECTION - the speed from which an emergency stop will require brake inspection.