

Gulfstream Aerospace G650 Model Guide

Gulfstream Aerospace G650 is a twin-engine large-cabin jet, listed in the registry under the GVI family. The family figures go up to 7000 nm range, 488 kt cruise, 51000 ft ceiling and 24 passengers. These are family maxima, not G650-specific figures. The example G650 reviewed (SN 6062) has two Rolls-Royce BR725A1-12 engines.

KEY TAKEAWAYS

- AD 2019-23-11 applies to all GVI (G650) serial numbers and requires an AFM supplement on rudder and yaw damper loss.
- Without ASC 134, the envelope is limited to 250 KCAS / 0.925M, and to 20,000 ft with a failed rudder or yaw damper.
- Check the records for ASC 134, the current AMM revision and the Airworthiness Limitations (ALS) compliance status.
- Family-level figures (up to 7000 nm, 488 kt) are maxima across variants; confirm the figures for the exact airframe.

RUDDER AD AND OPERATING LIMITS

The FAA issued AD 2019-23-11 after an inflight rudder shutdown at flight level 340 caused roll oscillations that lasted eight minutes. The AFM Supplement G650-2019-03 applies to SN 6001 and subsequent without ASC 134. It limits the envelope to 250 KCAS / 0.925M. The limit is 340 KCAS only for emergency descents. The AD is interim, pending a Gulfstream fix.

WHAT TO VERIFY IN THE RECORDS

Confirm the supplement is in the AFM, and whether ASC 134 is incorporated. Ask for the current G650 AMM revision (Rev 25, dated May 15, 2025, per Gulfstream). Check compliance with AMM Section 05-10-10 Airworthiness Limitations, including the safe-life parts and Rear Spar Fitting inspection items discussed in docket FAA-2025-0757.

EXAMPLE AIRFRAME: SN 6062 STATUS

A 25 Apr 2022 status report for SN 6062 shows 3768.2 airframe hours and 1469 cycles at 31 Mar 2022, with Rolls-Royce BR725A1-12 engines and a Honeywell RE220 APU. Its weight and balance was redone at a 48-month interval, giving an empty weight of 53,422.6 lbs. Use this as a records example only.

SPECIFICATIONS

Engines	2 x Rolls-Royce BR725A1-12 (example SN 6062)
Apu	Honeywell RE220 (example SN 6062)
Family Max Passengers	24
Family Max Mtow Kg	45200

PERFORMANCE

Family Max Range Nm	7000
Family Max Cruise Speed Kt	488
Family Max Service Ceiling Ft	51000
Rudder Or Yaw Damper Inoperative Max Altitude Ft	20000

WEIGHT & BALANCE

Example Sn6062 Empty Weight Lbs	53422.6
Example Sn6062 Empty Cg Arm Inches	707.6

SAFETY NOTES

- On a Rudder Fail message: autopilot off, slow below 200 KCAS without speed brakes, and stay below 250 KCAS and 20,000 ft for the rest of the flight.
- For landing with a failed rudder, fly VREF +10 kts, use differential thrust and a long shallow final, and land as soon as practicable.
- The AFM supplement allows 340 KCAS only for emergencies such as a rapid descent after loss of pressurization.