Japan Civil Aviation Bureau
Ministry of Land, Infrastructure, Transport and Tourism

No. 52
Revision 1

Gulfstream Aerospace
G-V
GV-SP

January 22, 2024

Type Certificate Data Sheet
No.52

This data sheet, which is a part of Type Certificate No.52, prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the Japan Civil Aeronautics Law and Regulations.

Type Certificate Holder — Gulfstream Aerospace Corporation
500 Gulfstream Road
Savannah, Georgia 31408, USA

I. - Model GV (Transport Category), Approved January 7, 2005

Engines — 2 BMW - Rolls Royce Deutschland BR700-710A1-10 (Type Approval No.605 or subsequent revisions)

Fuel

	Kerosene
American	ASTM D 1655-92, Jet A
	ASTM D 1655-92, Jet A-1
	MIL-T-83133, Grade JP-8
Canadian	CAN/CGSB-3.23
British	DERD 2453
	DERD 2494
French	AIR 3405
CIS	GOST 10227-86, Am 1, TS-1 & RT
IATA	kerosene type

Fuel shall conform to the specification as listed or to subsequent revisions found in the latest approved Airplane Flight Manual (AFM).
See AFM for information on high flash point fuels.

Oil

The following oils are approved for use in the engine and APU:

3 Centistoke Type Oils:	Aeroshell Turbine Oil 390
5 Centistoke Type Oils:	Aeroshell Turbine Oil 500
	Castrol Aero 5000
	Exxon Turbo Oil 2380
	Mobil Jet Oil II
	Mobil Jet Oil 254

NOTE: Mixing of oils is not recommended for APU.
NOTE: Mixing of oils is not recommended but brands may be mixed if operationally essential. Oils of the above brands, when reclaimed to the approved standard for viscosity and grade, are approved for use.
Oil shall conform to the specification as listed or to subsequent revisions in the latest approved Airplane Flight Manual.

Engine Limits

Static Thrust (std. day) S.L.

Takeoff (5 min.)	14,750 lb.
Maximum continuous	14,450 lb.

Maximum permissible engine rotor operating speeds:

N1 (low pressure compressor)

Maximum Takeoff (see NOTE 14)	(101.1%)	7,513 rpm
Maximum Continuous	(101.0%)	7,505 rpm
Maximum Overspeed (20 seconds)	(101.5%)	7,542 rpm
Reverse Thrust (30 seconds)	(70.0%)	5,201 rpm

Page No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Rev. No.	1	-	1	-	-	1	1	1	1	1	1	-	1	1	1	1	1	1	1

N2 (high pressure compressor)

Maximum Takeoff (see NOTE 14)	(99.6%)	15,834 rpm
Maximum Continuous	(98.9%)	15,723 rpm
Maximum Overspeed (20 seconds)	(99.8%)	15,866 rpm

100% N1 equals 7,431 rpm
100% N2 equals 15,898 rpm

Maximum permissible temperatures (°C):

Turbine gas temperature measured at nozzle guide vanes ahead of first low stage pressure turbine:

Takeoff (see NOTE 14)	900°C
Maximum continuous	860°C
Maximum prior to start	150°C
Maximum overtemperature (20 seconds limit)	905°C
Momentary maximum during ground starts	700°C
Momentary maximum during inflight restarts	850°C
Oil temp (minimum before accelerating for T/O)	+20°C
Oil temp (minimum for starting)	-30°C
Oil temp (maximum)	160°C
Fuel inlet temperature to low pressure pump at S.L.	54°C
Fuel outlet temperature from engine high pressure pump (unrestricted maximum)	158°C
Fuel outlet temperature (15 min. limit)	165°C
Fuel inlet temperature (minimum)	- 40°C

Bleed Extraction

EPR = P50/P2: The amounts of bleed extraction from stages 5 and 8, respectively, are related to the core entry mass flow, W26. The amount of fan bleed extraction is related to the fan entry mass flow, W1A.

Power Range	Normal Flow (%)			Maximum Flow (%)		
	Stage 5	Stage 8	Fan	Stage 5	Stage 8	Fan
Idle to 1.06 EPR		7.8		3.0	12.1	0.6
1.06 to 1.3 EPR	4.4	4.2	0.2	8.3	7.9	1.6
Above 1.3 EPR	4.3		0.4	8.5		1.8

Auxiliary Power Unit (APU)

Allied Signal - Model RE220 {GV}

Rated Output Shaft Power	62 hp (continuous) 70 hp (5 minutes) 101 hp (5 seconds)
Maximum Generator Output Shaft Speed	12,000 rpm
Maximum Exhaust Gas Temp (EGT) at Rated Output	1241°F (T2=140°F)
Maximum Allowable Rotor Speed	48,320rpm (T2<115°F)
Maximum Allowable EGT	Starting: 1922°F(1050°C) [for T2<-20°F(-29°C), P2>6.75psia] Operating: 1350°F(732°C) [for T2=140°F (60 °C)]

Airspeed Limits (CAS)

		(mph)	(KCAS)
Vmo/Mmo	(Maximum operating)		
	See AFM for Altitude/Mach Flight Operating Envelope		
Va	(Maneuvering)	237 mph	206 knots
Vfe	(Flaps down to 39°)	190 mph	165 knots
	(Flaps down to 39° with ASC19A or 73A incorporated)	196 mph	170 knots
	(Flaps down to 20°)	253 mph	220 knots
Vlo	(Landing gear operation)	259 mph	225 knots
Vle	(Landing gear extended)	288 mph	250 knots
Vmcg	(Minimum control ground)	118 mph	103 knots
Vmca	(Minimum control air)	129 mph	112 knots

Maximum Operating Altitude

51,000 feet

Maximum Weight (lb.)

Aircraft S/N 501 & Subs	Max. Zero Fuel	Max. Ramp	Max. Take-Off	Max. Landing
	54,500	90,900	90,500	75,300

Datum	For weight and balance purposes, the zero datum is 45 inches forward of the jig point at the centerline of the airplane in the nose wheel well.
M.A.C.	171.19 in. (L.E. of M.A.C. = Fuselage Station 524.74)
Fuel Capacity	Gravity or Pressure Fueling:

	S/N 501 thru 548 Without ASC 50	S/N 549 and subs, and 501 thru 548 with ASC 50
Total	41,506 lb.	41,489 lb.
Usable	41,026 lb.	41,300 lb.
Arm*	+558.0	+ 558.5

Fuel weights based upon fuel density of 6.75 lb. per gal.
*Arm based on ground static attitude (-1.5° FRL)

Oil Capacity — Total engine oil capacity (each engine):

Lucas-Western Gearbox	16.9 lb./18 U.S. pints
APT Gearbox	22.0 lb./24.4 U.S. pints
(Arm = +785.00)	

Oil weights based upon oil density of 7.5 lb. per gal.
See NOTE 1 for system oil.
Capacities shown are for engine oil tankage only.
Total engine oil is an additional 9.5 lb. per engine.
APU oil 9.00 lb./9.6 U.S. Pints
(Arm = +782.5)

Serial No. Eligible	S/N 501 through 693, plus 699 (s/n 666 changed to 699).
C. G. Envelope	See Figure 1-3 for GV Zero Fuel Gross Weight vs. Center of Gravity (S/N 501 through 569 without ASC 73/73A) See Figure 1-3A for GV Zero Fuel Gross Weight vs. Center of Gravity (S/N 570 and subs, and S/N 501 through 569 with ASC 73/73A)

Figure 1-3: Zero Fuel Gross Weight Center of Gravity Envelope
(For Airplanes Without ASC 73/73A)

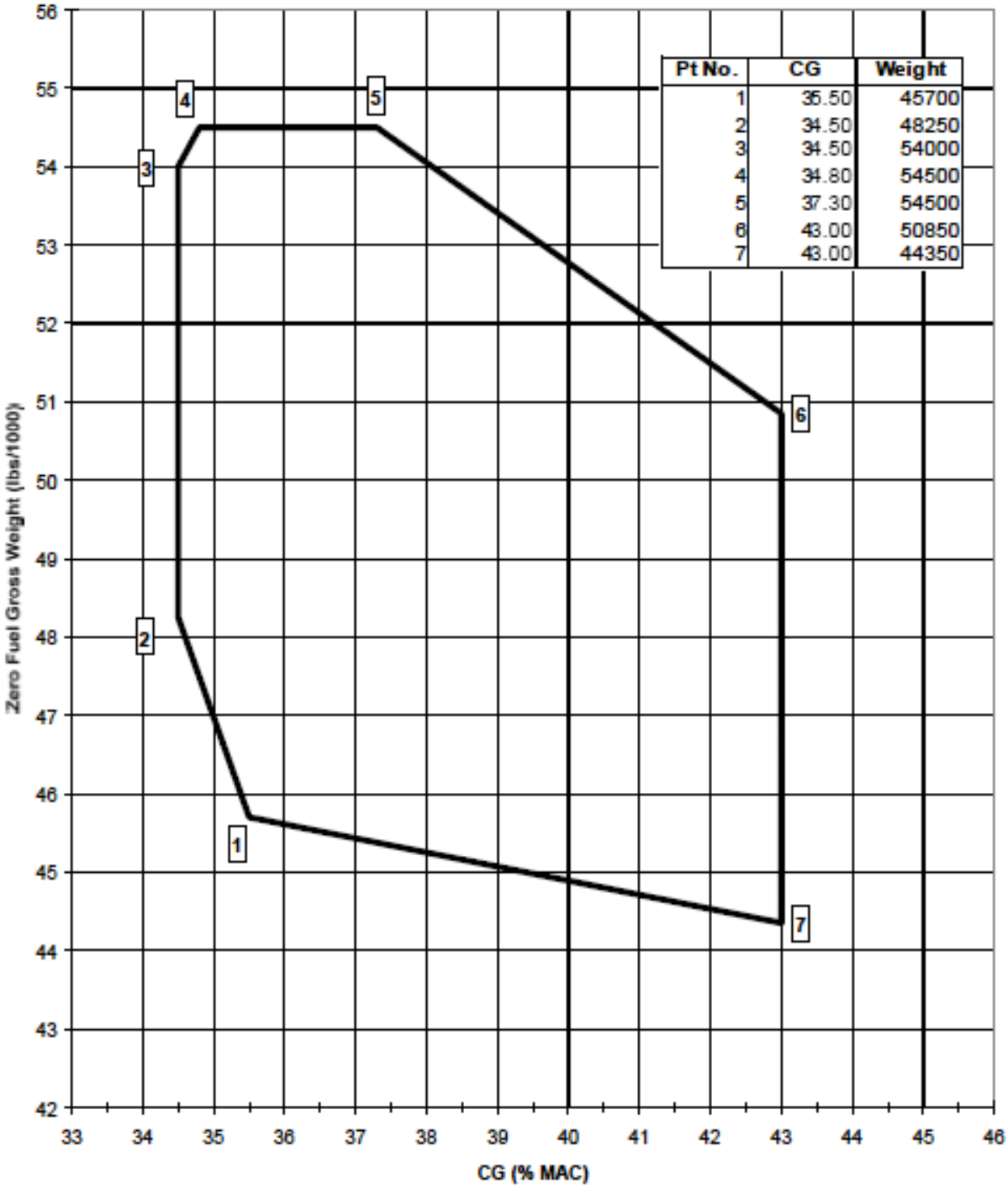
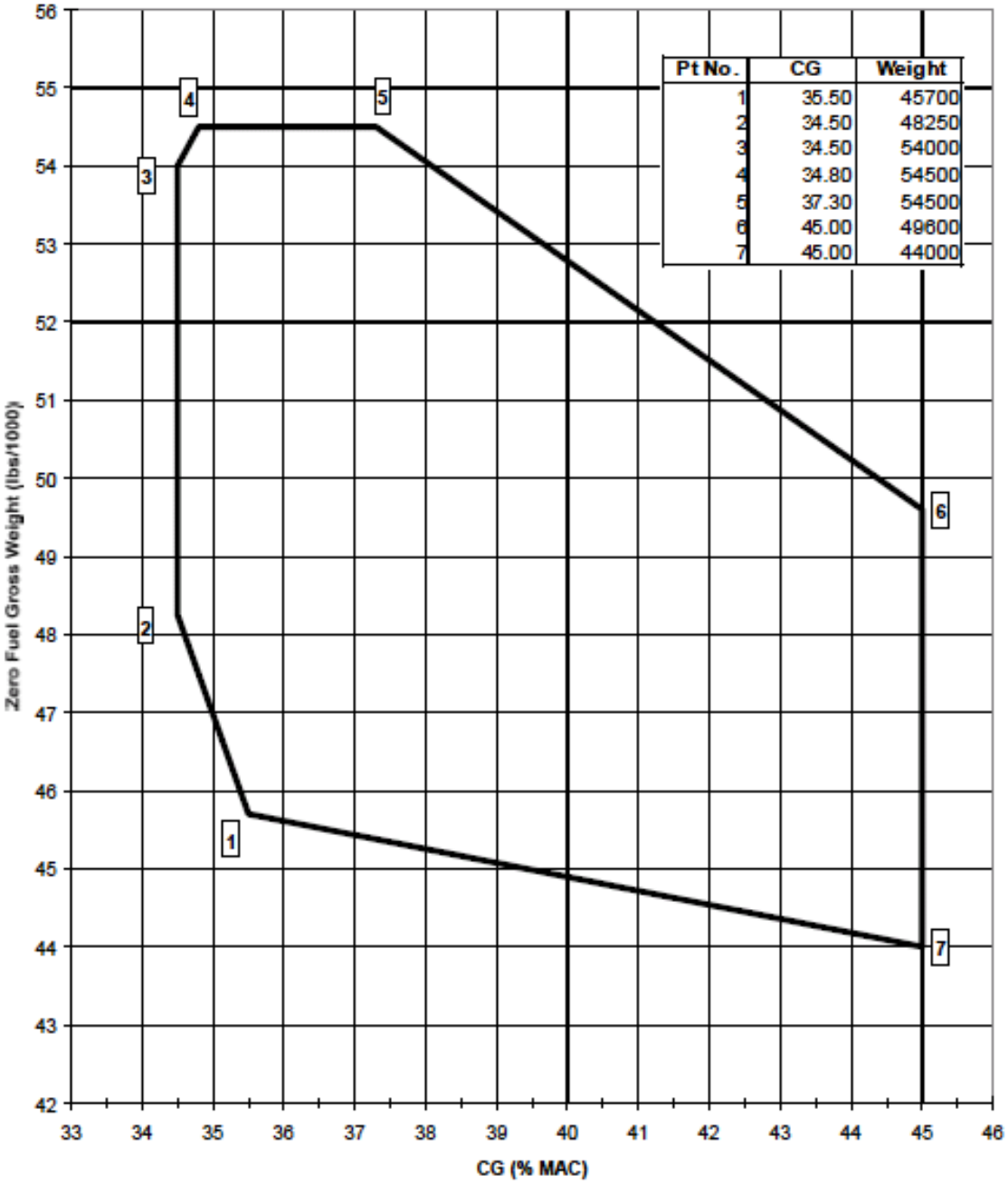


Figure 1-3A: Zero Fuel Gross Weight Center of Gravity Envelope
(For Airplanes With ASC 73/73A)



II. - Model GV-SP (Transport Category), Approved January 22, 2024

The Gulfstream GV-SP is the same as the Gulfstream GV except for the following differences:

- A Honeywell Advanced Flight Deck Display Suite to improve flight crew situational awareness and operational capabilities.
- Airframe aerodynamic improvements, engine improvements, and operational changes for increased performance, range and economics.
- Cabin main entry door relocated forward and seventh cabin window pair added.
- Cabin improvements for increased baggage space, external visibility and comfort.
- Minor system changes for reliability and space utilization.

NOTE: There are two variants of the GV-SP (See Note 8): (1) The G550, which is identical to the GV-SP, and (2) the G500 (sometimes referred to as G500- 5000, G500-5000, G500 (5000 Series) or G500-5000 Series), which has a reduced fuel capacity. The G550 is included in JCAB Type Certificate, but the G500 is not.

Engines	2 BMW - Rolls Royce Deutschland BR700-710C4-11 (Type Approval No.605-3 or subsequent revisions)	
Fuel		<u>Kerosene</u>
	American	ASTM D 1655-92, Jet A ASTM D 1655-92, Jet A-1 MIL-DTL-83133, Grade JP-8 GSTU 320.00149943.007-97 (RT Type) GSTU 320.00149943.011-99 (TS-1 Type)
	British	DEF. STAN. 91-87 DEF. STAN. 91-91
	Canadian	CAN/CGSB-3.23
	Chinese	GB 6537-2006 including the following fuel additives limited to the concentrations stated in Annex A of GB 6537-2006: 1. Static Dissipater additive: Stadis 450 2. Antioxidant: 2,6-ditertiary-butyl-4-methyl-phenol 3. Icing Inhibitor: Ethylene Glycol Monomethyl Ether or Diethylene Glycol Monomethyl Ether 4. Metal Deactivator: N,N'-disalicylidene 1,2-propanediamine The following Chinese fuel additives are not approved for use on this Gulfstream aircraft model: Static Dissipater additive T1502 and antifriction additives T1601 and T1602
	CIS	GOST 10227-86, TS-1 & RT
	French	DCSEA 134/A
		<u>JP-4 Wide Cut Type (See NOTE 5)</u>
	American	ASTMD6615 MIL-DTL-5624 (JP4 Grade)
	British	Def. Stan. 91-88
	Canadian	CAN/CGSB-3.22-2001
	CIS	GOST 10277-86 (Grade T-2)
		<u>JP-5 High Flash-Point Type</u>
	American	MIL-DTL-5624 (JP5 Grade)
	British	Def. Stan. 91-88
	Canadian	3-GP-3
	French	DCSEA 144/A
	Fuel shall conform to the specification as listed or to subsequent revisions found in the latest approved Airplane Flight Manual (AFM).	
	See AFM for information on high flash point fuels.	
Oil	The following oils are approved for use in the engine and APU:	
	5 Centistoke Type Oils:	Aeroshell Turbine Oil 500 Aeroshell Turbine Oil 560 BP Turbo Oil 2197 Castrol Aero 5000 Exxon Turbo Oil 2197 Exxon Turbo Oil 2380 Mobil Jet Oil II Mobil Jet Oil 254 Mobil Jet Oil 291

TurboNycoil 600
Royco 500
Royco 560

NOTE: Mixing of oils is not recommended for APU.

NOTE: Mixing of oils is not recommended but brands may be mixed if operationally essential. Oils of the above brands, when reclaimed to the approved standard for viscosity and grade, are approved for use.

Oil shall conform to the specification as listed or to subsequent revisions in the latest approved Airplane Flight Manual.

Engine Limits

Static Thrust (std. day) S.L.

Takeoff (5 minutes)	15,385 lb.
Maximum continuous	14,450 lb.

Maximum permissible engine rotor operating speeds:

N1 (low pressure compressor)		
Maximum Takeoff (see NOTE 14)	(101.1%)	7,513 rpm
Maximum Continuous	(101.0%)	7,505 rpm
Maximum Overspeed (20 seconds)	(101.5%)	7,542 rpm
Reverse Thrust (30 seconds)	(70.0%)	5,201 rpm
N2 (high pressure compressor)		
Maximum Takeoff (see NOTE 14)	(99.6%)	15,834 rpm
Maximum Continuous	(98.9%)	15,723 rpm
Maximum Overspeed (20 seconds)	(99.8%)	15,866 rpm

100% N1 equals 7,431 rpm
100% N2 equals 15,898 rpm

Maximum permissible temperatures (°C):

Turbine gas temperature measured at nozzle guide vanes ahead of first low stage pressure turbine:

Takeoff (see NOTE 14)	900°
Maximum continuous	860°
Maximum prior to start	150°
Maximum overtemperature (20 seconds limit)	905°
Momentary maximum during ground starts	700°
Momentary maximum during inflight restarts	850°
Oil temp (minimum before accelerating for T/O)	+20°
Oil temp (minimum for starting)	-30°
Oil temp (maximum)	160°
Fuel inlet temperature to low pressure pump at S.L.	54°
Fuel outlet temperature from engine high pressure pump (unrestricted maximum)	158°
Fuel outlet temperature, HP pump maximum (15 min. limit)	165°
Fuel inlet temperature (minimum)	- 40°

Bleed Extraction

EPR = P50/P2: The amounts of bleed extraction from stages 5 and 8, respectively, are related to the core entry mass flow, W26. The amount of fan bleed extraction is related to the fan entry mass flow, W1A.

Power Range	Normal Flow (%)			Maximum Flow (%)		
	Stage 5	Stage 8	Fan	Stage 5	Stage 8	Fan
Idle to 1.06 EPR		7.7		3.0	12.0	0.6
1.06 to 1.3 EPR	4.3	4.1	0.2	8.2	7.8	1.6
Above 1.3 EPR	4.2		0.4	8.3		1.8

Auxiliary Power Unit (APU)

Allied Signal - Model RE220 {GV}

Rated Output Shaft Power	62 hp (continuous) 70 hp (5 minutes) 101 hp (5 seconds)
Maximum Generator Output Shaft Speed	12,000 rpm
Maximum Exhaust Gas Temp (EGT) at Rated Output	1241 °F (T_2=140 °F)
Maximum Allowable Rotor Speed	48,320 rpm (T_2<115 °F)

Maximum Allowable EGT

Starting: 1922 °F (1050 °C)
[for T_2<-20 °F (-29 °C), P_2>6.75 psia]
Operating: 1350 °F (732 °C)
[for T_2=140 °F (60 °C)]

Airspeed Limits (CAS)

		(mph)	(KCAS)
Vmo/Mmo	(Maximum operating)		
	See AFM for Altitude/Mach Flight Operating Envelope		
Va	(Maneuvering)	237 mph	206 knots
Vfe	(Flaps down to 39°)	196 mph	170 knots
	(Flaps down to 20°)	253 mph	220 knots
	(Flaps down to 10°)	288 mph	250 knots
Vlo	(Landing gear operation)	259 mph	225 knots
Vle	(Landing gear extended)	288 mph	250 knots
Vmcg	(Minimum control ground)	123 mph	107 knots
Vmca	(Minimum control air)	129 mph	112 knots

Maximum Operating Altitude

51,000 feet

Maximum Weight (lb.)

Aircraft S/N	ASC No.*	Max. Zero Fuel	Max. Ramp	Max. Take-Off	Max. Landing
5001 & Subs	--	54,500	91,400	91,000	75,300
5001 & Subs	035A	52,000	91,400	91,000	75,300

*See NOTE 6 and "Serial No. Eligible."

Datum

For weight and balance purposes, the zero datum is 45 inches forward of the jig point at the centerline of the airplane in the nose wheel well.

M.A.C.

171.19 in. (L.E. of M.A.C. = Fuselage Station 524.74)

Fuel Capacity

Gravity or Pressure Fueling:

	GV-SP (G550)
Total	41,489 lb.
Usable	41,300 lb.
Arm*	+558.5

Fuel weights based upon fuel density of 6.75 lb. per gal.
*Arm based on ground static attitude (-1.5° FRL)

Oil Capacity

Total engine oil capacity (each engine):

Hispano-Suiza Gearbox	25.7 lb./27.4 U.S. pints
Usable Oil	10.4 lb./11.0 U.S. pints
(Arm = +785.00)	

Oil weights based upon oil density of 7.5 lb. per gal.
See NOTE 1 for system oil.

Capacities shown are for engine oil tankage only.
Total engine oil is an additional 9.5 lb. per engine.

APU oil 9.00 lb./9.6 U.S. Pints
(Arm = +782.5)

Serial No. Eligible

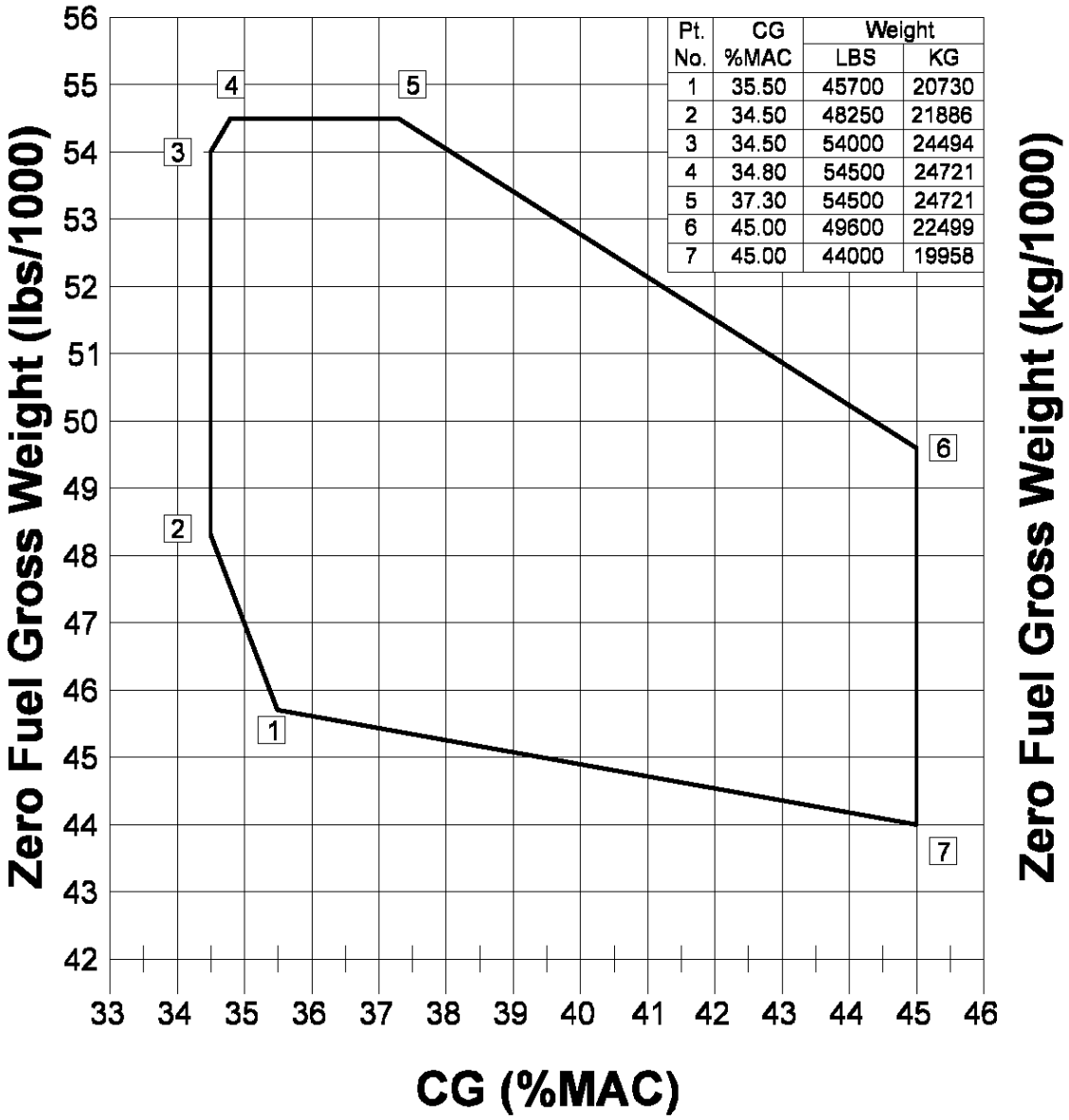
S/N 5001 and subsequent.

C. G. Envelope

See figure 2 for GV-SP Zero Fuel Gross Weight vs. Center of Gravity (S/N 5001 and subsequent without ASC 035).

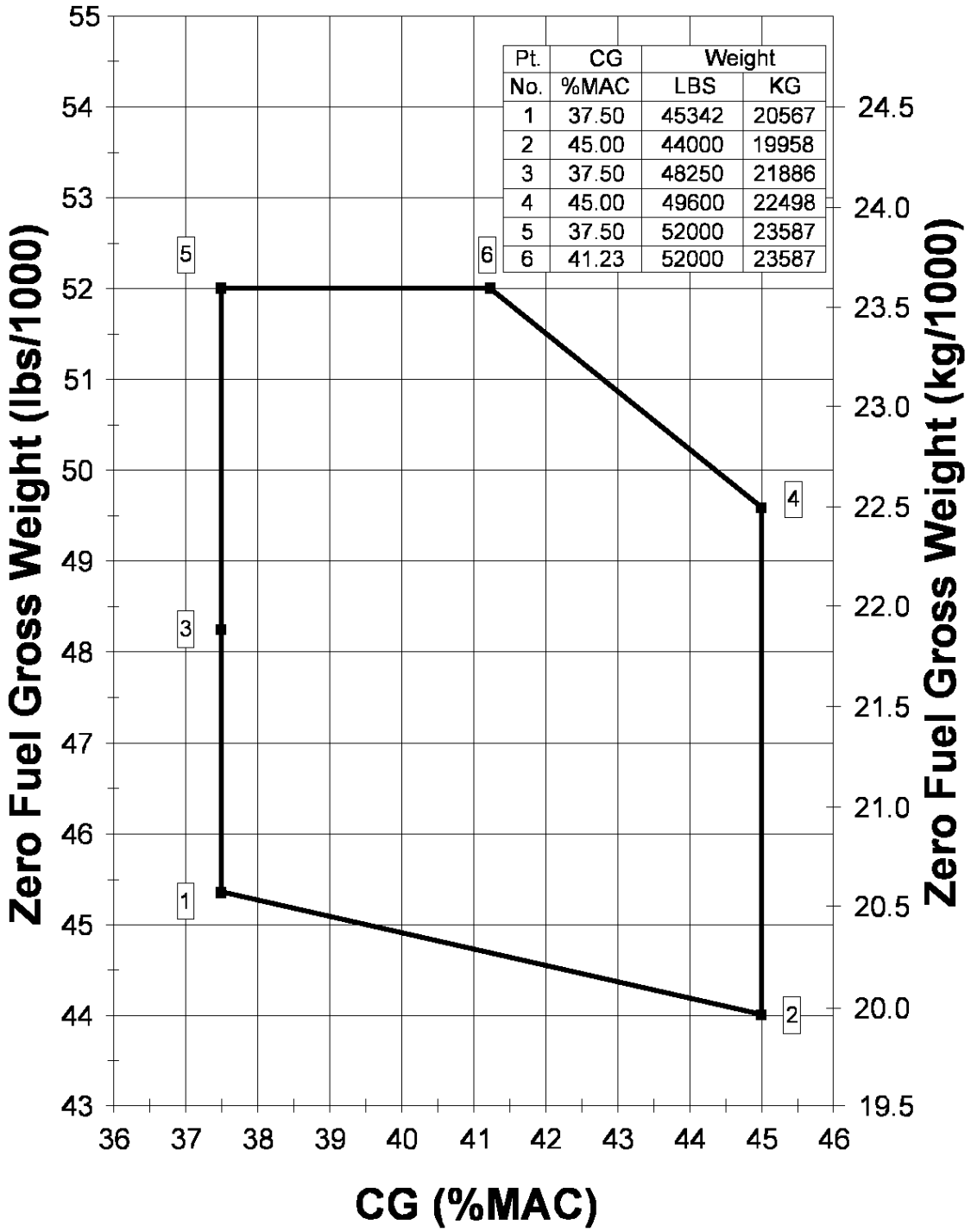
See figure 3 for GV-SP Zero Fuel Gross Weight vs. Center of Gravity (S/N 5001 and subsequent with ASC 035).

Figure 2: GV-SP Zero Fuel Gross Weight Center of Gravity Envelope
(S/N 5001 and subsequent without ASC 035)



Pt. No.	CG %MAC	Weight LBS	Weight KG
1	35.50	45700	20730
2	34.50	48250	21886
3	34.50	54000	24494
4	34.80	54500	24721
5	37.30	54500	24721
6	45.00	49600	22499
7	45.00	44000	19958

Figure 3: GV-SP Zero Fuel Gross Weight Center of Gravity Envelope
(S/N 5001 and subsequent with ASC 035)



Data Pertinent to All Models Except as Indicated

Leveling Means

Longitudinal: Lugs at right nose well door longeron STA 61.5 & 72.5
Lateral: Lugs on rear face of bulkhead STA 44.5 in nose wheel well.

Minimum Crew

2 (Pilot and Co-Pilot)

Maximum Passengers

19 - limited by emergency exit requirements

Baggage or Cargo Limitations

Main cabin floor loading limitations, GV S/N 501 and subsequent:
Main cabin floor fuselage station 229 to 426:
Dead weight cargo loading maximum uniform load over entire width of floor shall be 49 lb/ft^2.
Maximum uniform load with a 20 inch clear aisle down the middle shall be 98 lb/ft^2.
Maximum dead weight cargo load on one isolated square foot, at least 30 inches from another load, shall be 200 lb., except in the middle aisle where it shall be 187 lb.
Main cabin floor fuselage station 426 to 632:
Dead weight cargo loading maximum uniform loading shall be 100 lb/ft^2.
Main cabin floor fuselage station 632 to 684:
Max uniform loading shall be 65 lb/ft^2.

Maximum Baggage, GV S/N 501 and subsequent:
Compartment aft of fuselage station 684.00 to pressure bulkhead:
Capacity - 2500 lb. less any weight added in equipment bay
Maximum floor loading - 65 lb/ft^2
Approved smoke detection system required.

Main cabin floor loading limitations, GV-SP S/N 5001 and subsequent:
Main cabin floor fuselage station 205 to 426:
Dead weight cargo loading maximum uniform load over entire width of floor shall be 49 lb/ft^2.
Maximum uniform load with a 20 inch clear aisle down the middle shall be 98 lb/ft^2.
Maximum dead weight cargo load on one isolated square foot, at least 30 inches from another load, shall be 200 lb., except in the middle aisle where it shall be 187 lb.
Main cabin floor fuselage station 426 to 632:
Dead weight cargo loading maximum uniform loading shall be 100 lb/ft^2.
Main cabin floor fuselage station 632 to 684:
Maximum uniform loading shall be 65 lb/ft^2.

Maximum baggage, GV-SP S/N 5001 and subsequent:
Compartment aft of fuselage station 684.00 to pressure bulkhead:
Capacity - 2500 lb. less any weight added in equipment bay
Maximum floor loading - 65 lb/ft^2
Approved smoke detection system required.

Other Operating Limitations

The aircraft must be operated in accordance with the latest JCAB approved revision to the Airplane Flight Manual.

Control Surface Movements

Models GV and GV-SP:

Elevators	Up	24° (+1/2°, -1/2°)	Down	13° (+0°, -1°)
Elevator trim tab	Up	8° (+1°, -1°)	Down	22° (+1°, -1°)
Rudder	Right	22° to 25°	Left	22° to 25°
Rudder trim	Right	7.5° (+1°, -1°)	Left	7.5° (+1°, -1°)

NOTE: Rudder trim may be offset (+3°, -3°) maximum as required for directional trim with the cockpit trim knob and rudder pedals re-referenced to zero. See FCS Rigging Procedures Report GV-MS-51.

Ailerons	Up	11° (+1°, -2°)	Down	11° (+1°, -2°)
Aileron trim	Up	15° (+4°, -4°)	Down	15° (+4°, -4°)
Flaps			Down	39° (+1°, -1°)
Speed brakes (Right & Left)				
4 Outb'd Panels (Flight Spoilers)			Up	30° (+2°, -8°)
2 Inb'd Panels (Ground Spoilers)			Up	30° (+2°, -5°)
Ground spoilers (all)			Up	55° (+4°, -5°)

Horizontal stabilizer travel range - Leading Edge Travel:

Normal Operation	-1.5° (+1/4°, -1/4°) to -4.6° (+1/4°, -1/4°)
Emerg. Stab. Mode	-1.25° (+1/4°, -1/4°) to -4.6° (+1/4°, -1/4°)

Certification Basis

Model GV: S/N 501 and subsequent:

Civil Aeronautics Regulations Annex 1
Part III of the TAIKUSEI-SHINSA-YORYO (JCAB Airworthiness Standards) dated April 7, 1983(equivalent to FAR Part 25 including amendment 25-1 through 25-54).
FAR Part 25, effective February 1, 1965, including Amendments 25-55 through 25-81, except for the following sections which are limited to showing compliance with the amendments indicated:

Section	Amendment
25.109	FAR 25, dated February 1, 1965
25.807(c)(2)	25-15
25.813	FAR 25, dated February 1, 1965

Civil Aeronautics Regulations Annex 2 adapted on March 6, 2002 (equivalent to ICAO Annex 16 Volume I, up to Amendment 5).

Civil Aeronautics Regulations Annex 3 adapted on November 29, 2000(equivalent to ICAO Annex 16 Volume II, up to Amendment 3).

Shoulder harness on all seats will be in lieu of demonstrated compliance to the test requirements of FAR 25.562(c)(5) and (c)(6) per Amendment 25-64. Compliance with the requirements of FAR 25.785 in reference to FAR 25.562 (c)(5) and (c)(6) need not be demonstrated due to this concession.

Compliance with the Optional Ditching Requirements has been established as follows: Data covering the ditching requirements of FAR 25.801, including 25.563, 25.807(e), and 25.1585(a), but excluding 25.1411, are approved. When the operating rules require emergency ditching equipment, compliance with 25.1411 and 25.1415 must be demonstrated. Gulfstream Report 1159-GER-7, entitled “Outfitting Requirements for FAA Certification for Ditching” provides an acceptable means for showing compliance with 25.1411 and 25.1415.

Special Conditions:
HIRF (High Intensity Radiated Fields) No. 25-NM-105, effective September 28, 1995. High Altitude Operations No. 25-ANM-108, effective November 16, 1995.

NOTE: The high altitude special condition includes pressurization system requirements, as well as damage tolerance requirements on the pressure vessel. Therefore, any changes to the pressurization system or modifications or repairs to the pressure vessel must be approved in accordance with the requirements defined in the special condition.
The damage tolerance requirements in the special condition are specified in terms of cabin altitude time history, which is a function of the cabin leak rate. The specified cabin altitude time history requirement can be met with a pressure vessel opening of 7.2 square inches effective area (which considers the appropriate discharge coefficient assuming an emergency descent). The determination of an equivalent crack length will depend upon the particular location of the crack, the pressure vessel configuration in that location, the direction of the crack, etc. The approval of modifications and/or repairs must take into account the requirements of the special condition and how they apply to the particular location and configuration being modified or required. The resulting inspection program must also consider other applicable structural criteria.

JCAB additional requirement
(1) Placards must be indicated in Japanese language.
(2) Airplane Flight Manual shall contain the information, which is prescribed in Civil Aviation Regulations of Japan, Article 5-4.

Exemptions:
FAR 25.571(e)(1) Bird Impact Speed

Equivalent Safety Findings:
FAR 25.341, JAR Discrete Tuned Gust in lieu of Static Gust
FAR 25.807(a)(4), effective February 1, 1965, Oval Emergency Windows with Horizontal Major Axis
FAR 25.933, Prevention of Inadvertent Inflight Thrust Reverser Deployment
FAR 25.103, Stall Speeds defined by Vs1g in lieu of Vmin

Model GV-SP: S/N 5001 and subsequent

Japanese Civil Aeronautics Regulations Annex 1
Part III of the TAIKUSEI-SHINSA-YORYO [JCAB Airworthiness Inspection Manual] established October 20, 1966 by KU-KEN-381, including Amendments of KU-KEN-186 dated February 26, 1991 (equivalent to Title 14, Code of Federal Regulations (14 CFR) Part 25 (effective February 1, 1965), as amended by Amendments 25-1, dated June 7, 1965 through 25-71, dated May 10, 1990.) and 14 CFR Part 25 including Amendments 25-72, dated August 20, 1990 through 25-98, dated March 10, 1999 and 25-144, dated March 21, 2017, with the following exceptions:

- Shoulder harnesses on all seats will be provided in lieu of demonstrated compliance to the test requirements of FAR 25.562(c)(5) and (c)(6) of Amendment 25-64. Compliance with the requirements of FAR 25.785 in reference to FAR 25.562(c)(5) and (c)(6) are not demonstrated due to this concession.

  NOTE: The certification basis of the GV-SP regarding 25.562 was established based on FAA understanding that this model will not operate in part 121 service. Therefore, installation of shoulder harnesses in lieu of demonstrated compliance to 25.562(c)(5) and (c)(6) applies only to aircraft not engaged in part 121 passenger carrying service. If the aircraft is operated as an "air transport services" defined in Article 2 of the Civil Aeronautics Act of Japan, except for those to which Chapter 4 of UNKOUKITEI-SHINSA-YORYO-SAISOKU is applicable, full compliance to the requirements of 25.562 (including paragraphs (c)(5) and (c)(6)) and 25.785 must be shown.
  Chapter 4 of UNKOUKITEI-SHINSA-YORYO-SAISOKU is applicable to “air transport services”, using airplanes equipped with turbofan engines or turbojet engines, having a passenger-seat configuration of 30 seats or less and a maximum payload capacity of 3,400 kg or less, except for those using aircraft operated on a scheduled date and time on specified routes or operated repeatedly and continuously* between specific two points as planned, and those advertised for customers through public communication means such as newspapers and television, or handouts to the general public.
  *“repeatedly and continuously” means repeating at a frequency of more than 15 round trips in 30 days and continuing for more than 30 days.

- The requirements of FAR 25.571 at Amdt 25-96 are limited to the fuselage and fuselage changes only. The remainder of the aircraft structure is certified to the requirements of 25.571 at Amdt 25-72.

- Amendment 25-144 only applies to 14 CFR 25.773(e) compliance for the EFVS to Land function and associated subsystems. Only applicable to GV-SP (serial numbers 5276 and subsequent).

Japanese Civil Aeronautics Regulations Annex 2 Chapter 2 (equivalent to ICAO Annex 16, Volume I Chapter 3) for Noise Requirements, S/N 5001 - S/N 5288.

Japanese Civil Aeronautics Regulations Annex 2 Chapter 2-2 (equivalent to ICAO Annex 16, Volume I Chapter 4) for Noise Requirements, S/N 5289 and subsequent.

Japanese Civil Aeronautics Regulations Annex 3 Chapter 1 for Fuel Venting and Chapter 2 for Exhaust Emission Requirements (equivalent to ICAO Annex 16, Volume II, Amendment 10).

Japanese Civil Aeronautics Regulations Annex 4 for CO_2 Emission Requirements (equivalent to ICAO Annex 16, Volume III) is not applicable.

Compliance with the Optional Ditching Requirements has been established as follows: Data covering the ditching requirements of FAR 25.801, including 25.563, 25.807(e), and 25.1585(a), but excluding 25.1411, are approved. When the operating rules require emergency ditching equipment, compliance with 25.1411 and 25.1415 must be demonstrated. Gulfstream Report 1159-GER-7, entitled “Outfitting Requirements for FAA Certification for Ditching” provides an acceptable means for showing compliance with 25.1411 and 25.1415.

Compliance with the Optional Public Address System Requirements (§25.1423) has been established as follows: Data covering the PA System requirements of 25.1423 are approved. A PA system is not required by operating rules on Gulfstream aircraft with a maximum certified seating capacity of 19 passengers and Gulfstream has the option to not install a PA system on its aircraft. Gulfstream has elected to comply with this regulation for the installed PA system in order to align with industry standards and expectations.

Special Conditions:
No. 25-180-SC, Enhanced Vision Systems.
No. 25-262-SC, HIRF (High Intensity Radiated Fields).
No. 25-342-SC, Windshield Coating in Lieu of Wipers
No. 25-450-SC, Isolation or Aircraft Electronic System Security Protection from Unauthorized Internal Access
No. 25-451-SC, Aircraft Electronic System Security Protection from Unauthorized External Access
No. 25-665-SC, Non-Rechargeable Lithium Batteries, effective to design changes applied for after May 8, 2017. See the applicability section of this special condition for more information on which design changes must meet it.

Exemptions:
No. 7946 [FAR 25.813(e)], Mid-Cabin Doors Between Passenger Compartments.
No. 8004, 8142 [FAR 25.901(c)], Uncontrollable High Thrust Failure Conditions.
NOTE: JCAB has concluded that the occurrence of any uncontrollable high thrust failure condition, or any of the associated causal failures listed in Section 05-50-00 of the applicable airplane Maintenance Manual “may endanger the safe operation of an airplane” and hence are reportable under JCAB Circular No.6-001.
No. 10044 [FAR 25.1447(c)(1)], Passenger Oxygen Equipment Deployed at 15,000 feet
NOTE: Exemption permits passenger oxygen mask deployment at cabin pressure altitudes of 15,750 ± 250 feet when operating into and out of airports with landing-field elevations between 14,000 and 15,000 feet
No. 11035, §§ 25.562 & 25.785(b) Medical-Stretcher Installations

Equivalent Safety Findings:
(1) FAR 25.807(g)(2), Gulfstream Overwing Emergency Exit Windows, TAD ELOS Memo No. AT5177AT-T-A-2
A crewmember trained in evacuation is an additional required crewmember on all flights of 10 to 19 passengers. The required pilot and co-pilot cannot serve this function. The additional crewmember must be trained in the optimum method for evacuating through the Gulfstream elliptical exits and in procedures for directing passenger flow to prevent someone who does not fit through an elliptical exit from blocking it so that others cannot use it. Each operator must establish and maintain a training program for this additional crewmember (to include an initial and recurrent curriculum) in accordance with Gulfstream Document G550-OMS-1, latest revision, and must keep a record of that training.
A pre-flight briefing on the configuration specific egress procedures and exits of the airplane must be provided to all passengers before each flight. This briefing must include a detailed explanation of the optimum method for evacuating through the overwing Gulfstream elliptical exits, which is dependant upon the interior configuration inboard of the exit.
(2) FAR 25.811(d) and 25.812(b), Emergency Exit Marker, Locator and Bulkhead/Divider Signs, TAD ELOS Memo No. AT5177AT-T-C-1
(3) FAR 25.841(b)(6), Cabin Pressurization - High Altitude Takeoff and Landing Operations, TAD ELOS Memo No. AT5177AT-T-S-29
(4) FAR 25.853, 25.869, Flammability Substantiation of Electronic Equipment, TAD ELOS Memo No. AT5177AT-T-A-9
(5) FAR 25.813(c)(2)(ii), "Emergency Exit Access," TAD ELOS Memo DAS3567Al-C-3
(6) FAR 25.562(c)(8) and FAR 25.807(g)(2),“Seat Deformation into Emergency Exits,” (documented in TAD ELOS Memo ST8906AT-T-A-10)
(7) FAR 25.773(a)(2), “Pilot Compartment View” (documented in TSB ELOS Memorandum SA00767MC-T-S-1)

JCAB additional requirement:
(1) Placards and Markings as shown in JCAB Circular No.1-008.
(2) Airplane Flight Manual shall contain the information, which is prescribed in JCAB circular No.1-001.

Production Basis

Models GV-SP:

Production Certificate No. 7SO, issued September 1,1978; reissued September 22, 1980; November 19, 1982; August 31, 1987; June 11, 1997, and August 14, 2003, and November 16, 2004.
See NOTE 7 and NOTE 8.

Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification. Approved equipment is shown in the Illustrated Parts Catalog (IPC) for an approved equipment listing. In addition, the following items of equipment are required:

(a) When an airplane is outfitted to carry passengers, a JCAB approved passenger oxygen system must be installed.
(b) JCAB Approved Airplane Flight Manual.

NOTE 1.

Weight and Balance:

(a) Current weight and balance report, including list of equipment included in certificated empty weight, and loading instructions when necessary, must be provided for each airplane at the time of original certification. The weight and balance report shall include as part of the empty weight, system fuel, total oil and hydraulic fluid.

(b) System fuel: The weight of all fuel required to fill all lines and tanks up to zero/readable fuel point on the fuel gages in the most critical flight attitude.

1. GV airplanes (FAR 25.959):
   (i) S/N 501 through 549 without ASC 50:
   Unusable fuel* - 480 lb.
   Fuel lines - 30 lb.
   System fuel - 510 lb.
   (ii) S/N 550 & subs, and S/N 501 through 549 with ASC 50:
   Unusable fuel* - 189 lb.
   Fuel lines - 30 lb.
   System fuel - 219 lb.
   *Includes 32 lb. undrainable
2. GV-SP airplanes (FAR 25.959):
   (i) S/N 5001 and subsequent
   Unusable fuel* - 189 lb.
   Fuel lines - 30 lb.
   System fuel - 219 lb.
   *Includes 32 lb. undrainable

(c) System oil: The weight of oil remaining in the engine lines and tanks after subtracting the oil in the tanks which is above the "zero gage" levels.

(d) The above "unusable" fuel is that amount of fuel in the tanks, including tank trapped fuel as defined in CAR 4b.416 or FAR 25.959, which is unavailable to the engines under critical flight conditions. The usable fuel capacity is given under section entitled "Fuel Capacity" for each airplane model. The "unusable" fuel is included in the system fuel as indicated in (a) above and need not be accounted for separately. See JCAB approved Airplane Flight Manual for information concerning the following:

(1) Maximum fuel unbalance between left and right tanks for take-off and in-flight operations.
(2) Recommended airplane ground attitude to obtain equal fuel quantities during servicing.
(3) Fuel additives.

NOTE 2.

Placards:

The required placards for Model GV are listed in Chapter 11 of the appropriate Airplane Maintenance Manual and Gulfstream Drawing No. CE528200010.
The required placards for Model GV-SP are listed in Chapter 11 of the appropriate Airplane Maintenance Manual and Gulfstream Drawing No. GDM820004124-501.

NOTE 3. Retirement Times:

The retirement times for the GV and GV-SP are listed in Section 05-10-10 of the applicable Airplane Maintenance Manual. The retirement times of these life limited components cannot be altered without JCAB Engineering approval.

For airplanes having time (landings) in more than one configuration, contact Gulfstream Aerospace Engineering for remaining life limitations.

NOTE 4. Use of CASC Regulators:

In the event the CASC 146 regulators are used, the aircraft is limited to 18,000 ft. altitude, unless Gulfstream American G-1159 Aircraft Service Change 17 or Drawing No. 1159RDF163D is incorporated. When the CASC 174 fuel flow regulator is installed, Aircraft Service Change 52 must also be incorporated.

NOTE 5. Use of JP-4 Fuel:

The use of JP-4 fuel (wide cut) as agreed to by the operator, Rolls-Royce, and the appropriate airworthiness authority may result in a reduction of HP fuel pump life.

NOTE 6. Aircraft Service Changes:

The following are the more significant Aircraft Service Changes (ASC's) for the respective model aircraft, dealing primarily with weight limit changes, fuel system changes, and service difficulty corrections. This is not the complete list of ASC's for any of these models.

NOTE: Gulfstream model aircraft GV-SP having installed certain Aircraft Service Changes (ASCs) are compliant to 14 CFR Part 36, through amendment 36-28, Stage 4 (equivalent to ICAO Annex 16, Volume I Chapter 4) Noise requirements. Substantiating data is documented in Gulfstream reports GVSP-GER-5866, the model specific ASC is identified below in the model section.

Model GV:

Aircraft Service Change (ASC) 50, "Aft Fuel Pickups-Location, GV".
Applicable to S/N 501 through 548.

Aircraft Service Change (ASC) 73A, "Honeywell Enhancement-Winter Certification, (includes 56021 IAC, 45% CG Expansion, and Revised Stall Barrier Activation Schedule), GV".
Applicable to S/N 501 through 569.

Model GV-SP:

Aircraft Service Change (ASC) 11, "G550 Modification" will designate those aircraft as Model GV-SP (G550). Those aircraft shall be operated under Airplane Fight Manual GAC-AC-G550-OPS-0001.
Applicable to S/N 5001 and subsequent.

Aircraft Service Change (ASC) 035A, "European Aviation Safety Agency (EASA)/Joint Aviation Authorities (JAA) Certification Basic Requirements" converts aircraft to the configuration required by the EASA Type Certificate for the GV-SP (No. EASA.IM.A.070). Data supporting ASC 035A are FAA approved for GV-SP aircraft under Gulfstream control specifically being prepared for and prior to export to an EASA member country, or to a country that requires the EASA Type Design configuration. Following transfer to the foreign registry, if the aircraft is returned to U.S. registration and an application for Standard Airworthiness is submitted, then this ASC must be removed and the aircraft returned to its U.S. Type Design configuration. Aircraft fitted with ASC 035A shall be operated under the latest approved version of Airplane Fight Manual, GAC-AC-G550-OPS-0001 (for aircraft with ASC 11), plus Airplane Flight Manual Supplement No. EASA-G550-2010-01.
Applicable to S/N 5001 and subsequent.

Aircraft Service Change (ASC) 089 "GVSP Stage 4" Applicable to S/N 5001-5288

NOTE: The following Aircraft Service Changes (ASC's) are not applied to JCAB Type Certificate.

ASC 10	G500 Modification
ASC 63	Wing Fuel transfer System Mid-Wing Ejector Modification
ASC 090A	GVSP Auxiliary Power Unit (APU) Enclosure –Thermal Barrier Installation
ASC 125	Maximum Zero Fuel Weight 56,000

NOTE 7. Production Basis:

Airplanes produced at Savannah, Georgia:

(a) Model GV (GV): Production Certificate No. 7SO (issued September 1, 1978 and reissued June 11, 1997), S/N 501 and subsequent.

(b) Model GV-SP (GV-SP): Production Certificate No. 7SO (issued September 1, 1978 and reissued August 14, 2003), S/N 5001 and subsequent.

NOTE 8. Alternate Aircraft Identifications:

The following provides approved alternate aircraft identification information assuming incorporation of the associated (listed) ASC:

Model GV-SP, serial number 5001 and subsequent are eligible for identification as Model GV-SP (G550) when modified in accordance with GAC Aircraft Service Change (ASC) 11.

Model GV-SP, serial number 5001 and subsequent are eligible for identification as Model GV-SP (G500) when modified in accordance with GAC Aircraft Service Change (ASC) 10. [The G500 is sometimes referred to as G500 5000, G500-5000, G500 (5000 Series) or G500-5000 Series]. However, JCAB has not certified the G500.

NOTE 9. Cockpit Field of View:

The cockpit front windshield dimensions for the Models G-V and GV-SP airplanes are critical for forward field of view certification requirements; therefore, no equipment should be installed on top of the glare shield without prior coordination with JCAB.

NOTE 10. Intentionally blank

NOTE 11. Systems Modifications:

The GV and GV-SP models incorporate integrated avionics systems using software-based line replaceable units (LRU's) which share a digital signal transmission bus. The avionics configuration of the GV and GV-SP as delivered from production, is critical to the proper operation of the cockpit instrumentation system. Modification to the LRU software supplied with the GV or GV-SP, replacement of an LRU with a different LRU, addition of new LRU, or alteration of an LRU interface could adversely affect the airworthiness of the certified product. Accordingly, no changes to the integrated avionics system should be made without coordination with JCAB.

NOTE 12. Cockpit Modifications:

Any modification or changes in cockpit configuration which may affect aircrew workload, cockpit noise level or day/night lighting must be evaluated by JCAB.

NOTE 13. Intentionally blank

NOTE 14. Use of Takeoff Thrust:

For Models GV and GV-SP, use of takeoff thrust for more than five (5) minutes [not to exceed ten (10) minutes] is approved for use only in the event of an inoperative engine due to shutdown or failure.

NOTE 15. Information to Modifiers:

Information to modifiers on limitations which impact original certification requirements of the Gulfstream GV are contained in Gulfstream Report GV-GER-1242, Gulfstream V Interior Certification Requirements Document. Information to modifiers on limitations which impact original certification requirements of the Gulfstream GV-SP are contained in Gulfstream Report GVSP-GER-6044, Gulfstream GV-SP Interior Certification Requirements Document.

NOTE 16. Intentionally blank

NOTE 17. Intentionally blank

NOTE 18. Intentionally blank

NOTE 19. RVSM:

Each operator must obtain RVSM operating approval directly from JCAB.

NOTE 20. Cockpit Video Display:

The avionics architecture of the GV-SP model includes a capability to display multiple, assorted video inputs on the cockpit display units positioned directly in front of the pilots. Because these displays affect crew workload, changes to the approved video input sources (including the addition of new video sources or capabilities) will require a specific JCAB approval, including specific acknowledgement and concurrence from JCAB.

NOTE 21. Direction Indicator Requirements:

Gulfstream Model GV-SP meets 14 CFR part 25.1303(a)(3) requirements for a direction indicator (non-stabilized magnetic compass) by installation of Standby Digital Reading Magnetic Indictor Systems through the following means:

GV-SP Integrated Standby Instrument System (ISIS) and Electronic Bearing Distance Indicator (EBDI) system driven by magnetometer

NOTE 22. Forward Observer's Seat (Jump Seat):

The Forward Observer's Seat (Jump Seat) is approved for taxi, takeoff, and landing on the GV-SP model as part of Type Design. In flight use of the jump seat in any Gulfstream model also requires that related articles, specifically JCAB approved shoulder harness and Oxygen system, are installed.

NOTE 23. Intentionally blank

NOTE 24. Stage 4 Noise:

Gulfstream model aircraft GV-SP having installed the following Aircraft Service Change (ASC) is compliant to 14 CFR Part 36, through amendment 36-28, Stage 4 (equivalent to ICAO Annex 16, Volume I Chapter 4) Noise requirements. Substantiating data is documented in Gulfstream report GVSP-GER-5866

GV-SP ASC 089 "Stage 4" Serial Number Effectivity 5001-5288

Gulfstream model aircraft GV-SP at production cut-in is compliant to 14 CFR Part 36, through amendment 36-28, Stage 4 (equivalent to ICAO Annex 16, Volume I Chapter 4) Noise requirements. Substantiating data is documented in Gulfstream report GVSP-GER-5866.

GV-SP, "Stage 4" Serial Number Effectivity 5289 and subsequent.

NOTE J1. Model G-V:

This Type Certificate Data Sheet (TCDS) is based on FAA TCDS No. A12EA Revision 28, dated August 12, 2004.

Model GV-SP:

This Type Certificate Data Sheet (TCDS) is based on FAA TCDS No. A12EA Revision 53, dated November 2, 2022.

NOTE J2. Import Requirements

To be considered eligible for operation in Japan, each aircraft manufactured under this type certificate must be accompanied by a Certificate of Airworthiness for Export or certifying statement endorsed by the exporting foreign civil airworthiness authority which states the following (in the English language)

"This aircraft has been examined, tested and found to conform to the type design approved under JCAB Type Certificate No. 52-1 and to be in a condition for safe operation."

NOTE J3. Date of application for FAA and JCAB Type Certificate are as follows.

	FAA TC No. A12EA	JCAB TC No. 52
Model G-V	February 26, 1992	May 1, 2003
Model GV-SP (G550)	October 24, 2000	March 2, 2021

NOTE J4. The Models G-V and GV-SP must not be operated for "air transport services except for those to which Chapter 4 of UNKOUKITEI-SHINSA-YORYO-SAISOKU is applicable" (equivalent to 14 CFR Part 121), because there are some requirements for which compliance has not been shown. See Certification Basis above for details, respectively.

NOTE J5. When mid-cabin door is installed between passenger compartments, the Model GV-SP must not be operated for "air transport services" defined in Article 2 of the Civil Aeronautics Act of Japan. See Exemption No. 7946 [FAR 25.813(e)], Mid-Cabin Doors Between Passenger Compartments for details.

…END…