TYPE CERTIFICATE DATA SHEET № EA-2022T01

Type Certificate Holder:

Gulfstream Aerospace Corporation

500 Gulfstream Road Savannah, Georgia 31408 **USA** EA-2022T01 Sheet 01

> GVII-G500 GVII-G600

27 September 2022

This data sheet, which is part of Type Certificate No. 2022T01, prescribes conditions and limitations under which the product, for which the Type Certificate was issued, meets the airworthiness requirements of the Brazilian Aeronautical Regulations.

I - Technical Information: <u>Model GVII-G500</u> approved 27 September 2022; <u>Model GVII-G600</u>, approved 27 September 2022;

ENGINE	Model	Engine description	Engine TCDS
	GVII-G500	Two - Pratt & Whitney Canada Turbofan PW814GA	
	GVII-G600	Two - Pratt & Whitney Canada Turbofan PW815GA	EM-2021T01

ENGINE LIMITS	Static Thrust at Sea Level		<u>Speeds</u>		
	Take-off (5	mn)	Maximum continuous	N1	N2
GVII-G500 PW814GA	68.6 kN (15,4	29 lb)	62.9 kN (14,155 lb)	6,315 rpm	24,043 rpm
GVII-G600 PW815GA	71.2 kN (16,0	11 lb)	69.2 kN (15,568 lb)	6,315 rpm	24,043 rpm
APU	Honeywell HG	T400[G]]		
C.G. RANGE	Gulfstream to p				
	GVII-G500	23,632 19,777	<u>Weight (Zero Fuel)</u> 2 kg (52,100 lb) 7 kg (43,600 lb) 4 kg (43,000 lb)	Forward Limit 37.0 % MAC 44.0 % MAC N/A	<u>Aft Limit</u> 44.8 % MAC N/A 48.3 % MAC
	GVII-G600	26,054	4 kg (43,000 lb) 4 kg (57,440 lb) 6 kg (49,000 lb)	36.3 % MAC 43.0 % MAC	48.3 % MAC 44.5 % MAC 48.4 % MAC
DATUM / MAC	For weight and radome.	d balan	ce purposes, the zero c	latum is 100 inches	forward of the tip of the
	GVII-G500: MAC 4,09m (161 in). L.E. of M.A.C. = Fuselage Station 582.5. GVII-G600: MAC 4,55m (179.41 in). L.E. of M.A.C. = Fuselage Station 599.83.				



LEVELING MEANS GVII-G500 and GVII-G600

Longitudinal: Lugs at left nose wheel well door longeron STA 163.0 & 174.0. Lateral: Lugs on rear face of bulkhead STA 148.5 in nose wheel well.

See applicable Aircraft Maintenance Manual for level procedure.

MAXIMUM WEIGHT

Kg (lbs)	Max Ramp	Takeoff (MTOW)	Landing (MLW)	Zero Fuel (MZFW)
GVII-G500 TC Configuration	36 287(80,000)	36 106(79,600)	29 189 (64,350)	23 632 (52,100)
GVII-G500 w/ ASC 005	33 974 (74,900)	33 974 (74,900)	29 189 (64,350)	23 632 (52,100)
GVII-G600 TC Configuration	43 091 (95,000)	42 910 (94,600)	34 836 (76,800)	26 054 (57,440)
GVII-G600 w/ASC 005	33 974 (74,900)	33 974 (74,900)	33 974 (74,900)	26 054 (57,440)
GVII-G600 w/ASC 006 Part 1	43 091 (95,000)	42 910 (94,600)	34 836 (76,800)	25 828 (56,940)
GVII-G600 w/ ASC 006 Part 2	43 091 (95,000)	42 910 (94,600)	34 836 (76,800)	25 601 (56,440)
GVII-G600 w/ ASC 030	40 823 (90,000)	40 823 (90,000)	34 836 (76,800)	26 054 (57,440)

MINIMUM CREW Two (2): Pilot and Co-pilot.

MAXIMUM PASSENGERS

19 With approved cabin interior (See Note 4). Maximum passenger capacity is limited by emergency exit door requirements of 14 CFR §25.807(c).

0 For aircraft without an approved cabin interior (i.e., "green" aircraft as defined by Gulfstream drawing 72P000000-001, GVII-G500 Aircraft Level Configuration Control Document, revision D or later approved revision for GVII-G500 and Gulfstream drawing 73P0000000-001, GVII-G600 Aircraft Level Configuration Control Document, revision C or later approved revision for GVII-G600).

MAXIMUM OCCUPANTS

22 With approved cabin interior (See Note 4). Total reflects the maximum aircraft capacity of 19 passengers plus 3 crewmembers.

3 For aircraft without an approved cabin interior (i.e., "green" aircraft as defined by Gulfstream drawing 72P0000000-001, GVII-G500 Aircraft Level Configuration Control Document, revision D or later approved revision for GVII-G500 and Gulfstream drawing 73P0000000-001, GVII-G600 Aircraft Level Configuration Control Document, revision C or later approved revision for GVII-G600). Total represents 3 crewmembers and 0 passengers.

MAXIMUM BAGGAGE	Cargo compartme	<u>nt Maximum load (kg)</u>
	GVII-G500	1020 kg (2250 lb)
	GVII-G600	1134 kg (2500 lb)

FUEL CAPACITY	Tank	Usable fuel liters (kg)*	Unusable fuel liters (kg)
	Right Wing Tank Left Wing Tank	8,544 (6,861 kg)	-
GVII-G500		8,544 (6,861 kg)	-
	<u>- Total:</u>	<u>17,091 (13,721 kg)</u>	<u>98.8 liters (79.4 kg)</u>
	Right Wing Tank	11,723 (9,412 kg)	-
GVII-G600	Left Wing Tank	11,723 (9,412 kg)	-
	<u>- Total</u>	<u>23,447 (18,824 kg)</u>	<u>135.5 liters (108.9 kg)</u>

*Quantities above are applicable to Pressure Refueling. When gravity fueling, the total usable fuel capacity for this airplane is approximately 10,206 Kg (22,500 lb).

MAX. OPERATING ALTITUDE 51 000 feet

AIRSPEED LIMITS (CAS)	Maximum operating (V_{Mo}/M_{Mo}) : Design diving (V_D) Design maneuvering (V_A) Minimum control speed (V_{MCL}) L. G. extended (V_{LE}) L. G. operation (V_{LO}) Tire limit (ground speed)	<u>GVII-G500</u> 340 KCAS/0.925 375 KCAS/0.99 206 KCAS 101 KCAS 250 KCAS 225 KCAS 195 KCAS	<u>GVII-G600</u> 340 KCAS/0.925 375 KCAS/0.99 206 KCAS 109 KCAS 250 KCAS 225 KCAS 195 KCAS
	Flaps extended (V _{FE}) Flaps 10° (Take-off) Flaps 20° (Take-off and approach) Full Flaps (Landing)	250 KCAS 220 KCAS 180 KCAS	

MANUALS

- Airplane Flight Manual:

For GVII-G500: The AFM applicable to Brazil is the Gulfstream AFM GAC-AC-GVII-G500-OPS-0001 revision 3 or later approved revisions and the AFM Supplement ANAC-GVII-G500 (Issue 1)-2022-01 initial revision or later approved revisions.

For GVII-G600: The AFM applicable to Brazil is the Gulfstream AFM GAC-AC-GVII-G600-OPS-0001 revision 7 or later approved revisions and the AFM Supplement ANAC-GVII-G600-2022-01 initial revision or later approved revisions.

- Weight and Balance Manual:

A current weight and balance report, including a list of equipment included in certificated empty weight, and loading instructions when necessary, must be provided for each aircraft at the time of delivery.

Airworthiness limitations:

The replacement times, inspection intervals, related inspection procedures, and critical design configuration control limitations required by 14 CFR §§ 25.571, 25.981, 25.1529 and Appendix H.25.4 are contained in the "Airworthiness Limitation Section" (ALS) of the Gulfstream Aircraft Maintenance Manual, Chapter 5, Section 05-10-10. The "Limit of Validity" required by 14 CFR § 25.571(a)(3), Amdt. 25-132, is also included in the ALS. The times and procedures listed in the ALS cannot be altered without approval.

S/N'S ELIGIBLE	G500: 72001 and subsequent G600: 73001 and subsequent
PRIMARY AUTHORITY	FAA – Federal Aviation Administration Original TC: T00021AT
IMPORT REQUIREMENTS	A Brazilian Certificate of Airworthiness may be issued on the basis of a FAA Export Certificate on Airworthiness (or a third country Export Certificate on Airworthiness, in case of used aircraft imported from such country), including the following statement: "The aircraft covered by this certificate has been inspected, tested and found to be in conformity with the Brazilian approved type design as defined by the Brazilian Type Certificate no. 2022T01 and in condition of safe operation".
	The aircraft should also comply with the Aircraft Service Change ASC-047 (for GVII-G500) and ASC-036 (for GVII-G600) or later ANAC accepted revisions.
	The markings and placards should be in Portuguese language or bilingual, ir accordance with the applicable incorporated STC documents.
CERTIFICATION BASIS	<u>GVII-G500 (TRANSPORT CATEGORY)</u>
	<u>Airworthiness Requirements</u> Brazilian Type Certificate No. 2022T01 was issued based on RBAC 21.29 including the following requirements valid on the date of application:
	RBAC 25 (Requisitos de Aeronavegabilidade: Aviões categoria normal, utilidade, acrobática e transporte regional) amendment 25-134, which endorses the 14 CFR Part 25 as amended by 25-1 through 25-134.
	Additionally, based on RBAC 21.29(1)(a)(ii) the following requirements are applicable: 14 CFR Part 25, Airworthiness Standards: Transport Category Airplanes including Amendments 25-1 through 25-137, 25-143 for §25.975(a)(7) only, and 25-144 for §25.773(e) only. Amendment 25-118 was not published and therefore has no applicability.
	Special Conditions
	FAA Special Conditions (SC):
	 25-585-SC Limit Pilot Forces for Side Stick Controls 25-592-SC Electronic Flight Control System: Control Surface Position Awareness 25-598-SC Limit Engine Torque Loads for Sudden Engine Stoppage 25-600-SC Automatic Speed Protection for Design Dive Speed 25-601-SC Side-Stick Controllers; Controllability and Maneuverability 25-613-SC Airplane Electronic System Security Protection from Unauthorized External Access 25-614-SC Pilot Compartment View Requirements with an Enhanced Flight Vision System
	25-617-SC Design Roll Maneuver Requirement 25-618-SC Technical Criteria for Approving Side-Facing Seats
	25-619-SC Isolation or Protection of Airplane Electrical-System Security from Unauthorized Internal Access 25-628-SC Interaction of Systems and Structures Through a Three-Axis Fly-by-
	Wire System

25-641-SC Electronic Flight Control System Mode Annunciation 25-662-SC Non-Rechargeable Lithium Battery Installations 25-691-SC Airbag Systems on Multiple-Place and Single-Place Side-Facing Seats 25-715-SC Operation Without Normal Electrical Power

25-732-SC Flight Envelope Protection - High Incidence Protection System 25-754-SC Electro-Hydraulically Actuated Seats Equipped With Backup Power

Supply

Exemptions

FAA Exemptions:

- Exemption No. 13504, § 25.809(a), Overwing Viewing Means
- Exemption No. 11610, § 25.813(e), Forward Vestibule and MED Acoustic Door
- Exemption No. 17045, § 25.813(e), Mid-Cabin Pocket Doors
- Partial Exemption No. 17636A, § 25.981(a)(3), Fuel Tank Ignition Prevention -Requirements for Structural Design Features and Fuel Tank Systems Lightning Protection
- Partial Exemption No. 13582, § 25.1447(c)(1), High Landing Field Elevation
- Exemption No. 17434, § 25.1711(a), EWIS Component Marking (Limited to 4 specific GVII-G500 aircraft)
- Time-Limited Exemption No. 17825, § 25.1309(b), Non-Rechargeable Lithium Battery Installations in Life Raft ELTs, granted through May 8, 2020
- Time-Limited Partial Exemption No. 17907, § 25.1191(b)(1), Inlet and Thrust Reverser Fastener Cap Sealant, granted through July 20, 2019
- Time-Limited Partial Exemption No. 17965, § 25.1309(b), Non-Rechargeable Lithium Battery Installations in Seat Airbag Systems, granted through August 31, 2019
- Exemption No. 18102, § 25.841(a)(2); Cabin Pressure Altitude

Equivalent Safety Findings

FAA Equivalent levels of safety findings:

TC-01-2010-0024-F-1 - § 25.255 - Electronic Flight Control System: Out-of-Trim Characteristics

TC-01-2010-0024-A-5-GVI - § 25.331 - Checked Pitch Maneuver

TC-01-2010-0024-A-6-GVI - § 25.341(b) - Continuous Gust Design Criteria

TC-01-2010-0024-A-8-GVI - § 25.415 - Ground Gust TC-01-2010-0024-A-5 - §§ 25.561, 25.721, 25.963(d), and 25.994 - Structural Integrity of Fuel Tanks for Emergency Landing Conditions and Landing Gear

ST-05-2014-0004-C-7 - § 25.562, SC 25-618-SC - Side-Facing Seat ATD Placement to Prevent Recline Position

ST-05-2014-0004-C-8 - § 25.562, SC 25-618-SC, Item 2(g) - Side-Facing Seat ATD Submarining

TC-01-2010-0024-A-6 - § 25.629(d)(9) - Failure Criteria Considered Under the Aeroelastic Stability Requirements of § 25.629

TC-01-2010-0024-S-17-GVI - § 25.671 - Flight Control System Failure Criteria

TC-01-2010-0024-A-9 - § 25.683 - Operation Test Compliance for Fly-by-Wire Flight Control Systems

TC-01-2010-0024-S-29 - § 25.783(c) and (c)(1) - Electric Main Entry Door, Pressurization Prevention Means

TC-01-2010-0024-C-1-GVI - § 25.807(a)(3), (g)(1)(2)(3), (i)(1)(2) - Emergency Exits

TC-01-2010-0024-C-1-GIV-X - §§ 25.811(d) and 25.812(b)(1)(i)(ii)(2) - Emergency Exit Marker, Locator and Bulkhead/Divider Signs

TC-01-2010-0024-C-7-GVI Rev 1- § 25.813(c)(2)(ii) - Seat/Furnishing Encroachment into Overwing Emergency Exit Openings

TC-01-2010-0024-S-14 - § 25.831(g) - Acceptable High Temperature Physiological **Environment During Failure Conditions**

TC-01-2010-0024-S-11 - § 25.841(a), (b)(6) - Cabin Pressurization - High Field Elevation Takeoff and Landing Operations

TC-01-2010-0024-S-27 - §§ 25.841(b)(1) and 25.843(b)(1) - Combined Aircraft

Pressurization Outflow and Positive Pressure Differential Relief Valves TC-01-2010-0024-C-10 - §§ 25.853(a) and 25.855(d) - Use of Reduced Vertical Bunsen Burner Flammability Requirements for Interior Materials TC-01-2010-0024-P-09 - § 25.901(c)(d) - APU Certification Requirements TC-01-2010-0024-P-1-GIV-X - § 25.933(a)(1)(ii) - Flight Critical Thrust Reverser TC-01-2010-0024-P-07 - § 25.1145(a) - Ignition Switches TC-01-2010-0024-P-1 - § 25.1155 - Reverse Thrust Control and Indication TC-01-2010-0024-P-15 - § 25.1193(e)(3) - Engine and APU Fire Protection TC-01-2010-0024-P-03 - § 25.1203(a) - Turbine Engine Tailpipe Fire Detection TC-01-2010-0024-S-1 - §§ 25.1301(a)(4) and 25.1309 - Equipment, Systems, and Installation Requirements: Use of ARAC Recommendations TC-01-2010-0024-S-20 - §§ 25.1303(a)(3), 25.1327 and 25.1547 - Use of an Electric-Only Direction Indicator for Standby Instrumentation TC-01-2010-0024-S-38-GVI - § 25.1325(c)(1) - Pitot-Static System Moisture Control TC-01-2010-0024-S-26 - § 25.1459(a)(2) - Use of Inertial Reference System for Flight Data Recorder Vertical Acceleration Sensor Data) TC-01-2010-0024-F-2-GVI - § 25.1517 - Rough Airspeed Criteria TC-01-2010-024-P-12 Rev.1 - § 25.1549(a)(b)(c) - Digital-Only Display of Engine **Parameters**

ANAC ELOS:

PR-02-GVII entitled "Fuel Shut-off Valve Position" – RBAC 25.1141(f)(2) according to Ordinance nº 9090 dated 6 September 2022

PR-03-GVII entitled "Components Located in Designated Fire Zones" – RBAC 25.1195, 25.1197, 25.1199, 25.1201 and 25.1203 – according to Ordinance n^o 9093 dated 6 September 2022

Environmental requirements for noise, fuel venting and emissions:

- Noise Standards are in accordance with 14 CFR part 36, Amendment 36-31. Gulfstream has elected to comply with Amendment 36-31 (Stage 5 Noise).
- Fuel Venting and Exhaust Emission Standards are in accordance with 14 CFR part 34 as amended by Amendments 34-1 through 34-5A.

Continued Airworthiness and Safety Improvements Compliance to 14 CFR Part 26 is not applicable to GVII-G500.

CO2 Emissions Requirements

Compliance to CO2 Emissions Requirements is applicable only to type certificates submitted on or after 1 January 2023 per ICAO Annex 16 Volume III Section 2.1. Therefore, compliance is not applicable to GVII-G500.

Optional Design Requirements

Ditching - The Model GVII-G500 has been shown to comply with the requirements for ditching: §§ 25.801, 25.563, 25.807(e), and 25.1585(a). When the operating rules require emergency ditching equipment, compliance with §§ 25.1411 and 25.1415 must be shown. Gulfstream Report GVII-GER-0187, entitled "Ditching Equipment System Requirements Document" provides an acceptable means for showing compliance with §§ 25.1411 and 25.1415.

Ice Protection - 14 CFR § 25.1419

Additional Information:

Gulfstream applied for the Brazilian Type Certificate Validation of GVII-G500 on 13 October 2020.

For Gulfstream GVII-500, the application for the FAA type certificate was first dated 28 October 2010, followed by reapplication on June 30, 2013 and an extension made on April 25, 2018 changing the effective application date to September 30, 2013.

As per item 3.5.11 from the Implementation Procedures for Airworthiness and Environmental Certification, Revision 2, Amendment 2, dated July 13, 2021 between Brazil and United States, the validation authority shall develop its proposed type certification basis using the date corresponding to the date of application to the certification authority which is 30-SEP-2013 for GVII-G500

GVII-G600 (TRANSPORT CATEGORY)

Airworthiness Requirements

Brazilian Type Certificate No. 2022T01 was issued based on RBAC 21.29, including the following requirements valid on the date of application:

RBAC 25 (Requisitos de Aeronavegabilidade: Aviões categoria normal, utilidade, acrobática e transporte regional) amendment 25-136, which endorses the 14 CFR Part 25 as amended by 25-1 through 25-136.

Additionally, based on RBAC 21.29(1)(a)(ii) the following requirements are applicable: 14 CFR Part 25, Airworthiness Standards: Transport Category Airplanes including Amendments 25-1 through 25-138, 14 CFR 25.975(a)(7) at Amendment 25-143, and 14 CFR 25.773(e) at Amendment 25-144. Amendment 25-118 was not published and therefore has no applicability.

Special Conditions

FAA Special Conditions (SC):

All special conditions listed above for the GVII-G500 apply to the GVII-G600. There were no new special conditions developed uniquely for the GVII-G600.

Exemptions

FAA Exemptions:

With the exception of the items listed below, all exemptions listed above for the GVII-G500 apply to the GVII-G600. There were no new exemptions developed uniquely for the GVII-G600.

The exemptions from 14 CFR part 25 requirements noted below were effective for the GVII-G500, but do not apply to the GVII-G600:

- Exemption No. 17434, § 25.1711(a), EWIS Component Marking (Limited to 4 specific GVII-G500 aircraft)
- Time-Limited Exemption No. 17825, § 25.1309(b), Non-Rechargeable Lithium Battery Installations in Life Raft ELTs, granted through May 8, 2020
- Time-Limited Partial Exemption No. 17907, § 25.1191(b)(1), Inlet and Thrust Reverser Fasener Cap Sealant, granted through July 20, 2019
- Time-Limited Partial Exemption No. 17965, § 25.1309(b), Non-Rechargeable Lithium Battery Installations in Seat Airbag Systems, granted through August 31, 2019

Equivalent Safety Findings

FAA Equivalent levels of safety findings:

- All equivalent safety findings listed above for the GVII-G500 apply to the GVII-G600. There were no new equivalent safety findings developed uniquely for the GVII-G600.

ANAC ELOS:

- The ANAC ELOS listed above for the GVII-G500 apply to the GVII-G600. There

were no new ANAC ELOS developed uniquely for the GVII-G600.

Environmental requirements for noise, fuel venting and emissions:

- Noise Standards are in accordance with 14 CFR part 36, Amendment 36-31. Gulfstream has elected to comply with Amendment 36-31 (Stage 5 Noise).
- Fuel Venting and Exhaust Emission Standards are in accordance with 14 CFR part 34 as amended by Amendments 34-1 through 34-5A.

<u>Continued Airworthiness and Safety Improvements</u> Compliance to 14 CFR Part 26 is not applicable to GVII-G600.

CO2 Emissions Requirements

Compliance to CO2 Emissions Requirements is applicable only to type certificates submitted on or after 1 January 2023 per ICAO Annex 16 Volume III Section 2.1. Therefore, compliance is not applicable to GVII-G600.

Optional Design Requirements

Ditching - The Model GVII-G600 has been shown to comply with the requirements for ditching: §§ 25.801, 25.563, 25.807(e), and 25.1585(a). When the operating rules require emergency ditching equipment, compliance with §§ 25.1411 and 25.1415 must be shown. Gulfstream Report GVII-GER-0187, entitled "Ditching Equipment System Requirements Document" provides an acceptable means for showing compliance with §§ 25.1411 and 25.1415.

Ice Protection - 14 CFR § 25.1419

Additional Information:

Gulfstream applied for the Brazilian Type Certificate Validation on 21 August 2020.

For the Gulfstream GVII-600, the application for the FAA type certificate was first dated 28 October 2010. Gulfstream re-applied for the GVII-G600 on May 20, 2014, requesting an effective application date of December 18, 2013. A final extension was made on December 14, 2018, changing the effective application date to 20 July 2014.

As per item 3.5.11 from the Implementation Procedures for Airworthiness and Environmental Certification, Revision 2, Amendment 2, dated July 13, 2021 between Brazil and United States, the validation authority shall develop its proposed type certification basis using the date corresponding to the date of application to the certification authority (for G500 30-SEP-2013 and for G600 20-JUL-2014).

PRODUCTION CERTIFICATION FAA Production Certificate No. 7SO

REQUIRED EQUIPMENT

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

(a) FAA Approved Airplane Flight Manual.

NOTES:

NOTE 1 Aircraft interior configurations:

> The Type certificate issued by ANAC is for a "green" aircraft configuration only, as defined by Gulfstream drawing 72P000000-001, GVII-G500 aircraft level configuration control document, revision D, and 73P0000000-001, GVII-G600 aircraft level configuration control document, revision C, or later approved revision(s). Cabin interior installations (including passenger seating configurations) must receive separate approval and are required prior to any operation with passengers.

> Information to modifiers on limitations which impact original certification requirements on the Gulfstream GVII-G500 and GVII-G600 are contained in Gulfstream report GVII-GER-0149, GVII-G500 and GVII-G600 interior certification requirements document. Any changes to, or deviations from GVII-GER-0149 must be coordinated with ANAC. GVII-GER-0149 provides guidance on design limitations and regulatory requirements for a GVII-G500 or GVII-G600 aircraft interior installation, but does not authorize any such installation. A separate ANAC approval such as a Supplemental Type Certificate (STC or CST) is required to approve the design and installation of a GVII-G500 or GVII-G600 interior.

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This TCDS is available at ANAC website: https://sistemas.anac.gov.br/certificacao/Produtos/EspecificacaoOrgE.asp

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