TYPE-CERTIFICATE DATA SHEET

No. EASA.IM.A.070

for

GULFSTREAM GII, GIII, GIV & GV

Type Certificate Holder:

GULFSTREAM AEROSPACE CORPORATION

500 Gulfstream Road,
Savannah, GA, 31408
United States of America

For models:

G-1159 (GII)
G-1159B (GIIB)
G-1159A (GIII)
GIV
GIV-X
GV
GV-SP

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TABLE OF CONTENTS

SECTION I: GENERAL (ALL MODELS)

1. Data Sheet No:	IM.A.070
2. Airworthiness Category:	Large Aeroplanes
3. Performance Category:	A
4. Certifying Authority:	Federal Aviation Administration (USA) Atlanta Aircraft Certification Office 1701 Columbia Avenue College Park Atlanta GA 30337 U.S.A.
5. Type Certificate Holder	GULFSTREAM AEROSPACE CORPORATION P.O. Box 2206 Savannah, Georgia 31402-2206 U.S.A.

SECTION 2: G-1159 (GII)

I. General

1. Aeroplane:	Gulfstream GII

II. Certification Basis

1. FAA Certification Date:	19 October 1967
2. EASA/JAA Validation Application Date:	N/A
3. EASA/JAA Certification Date:	09 February 1971 (UK)
4. FAA Certification Basis:	CAR 4b as per FAA A12EA

III. Technical Characteristics and Operational Limitations

Engines: 2 Rolls Royce Spey RB (163) 511-8 (Type Certificate LBA 6308)

Fuel

	<u>Kerosene</u>
American	ASTM D 1655-75 Jet A
	ASTM D 1655-75 Jet A-1
	ASTM ES 2-74
	MIL-T-83133 Grade JP-8
British	D Eng. R.D. 2482 Issue 3
	D Eng. R.D. 2494 Issue 5
	D Eng. R.D. 2498 Issue 4
	D Eng. R.D. 2453 Issue 3 Am. 1
	D Eng. R.D. 2494 Issue 7 Am. 1
Canadian	3-GP-23f
	<u>JP-4 Wide Cut Type (See NOTE 5)</u>
American	ASTM D 1655-75 Jet B
	MIL-T-5624G Grade JP-4
	MIL-T-5624J Grade JP-4
	MIL-T-5624K Grade JP-4
	ASTM ES 2-74
British	D Eng. R.D. 2486 Issue 6
	D Eng. R.D. 2486 Issue 8 Am. 1
	D Eng. R.D. 2454 Issue 3 Am. 1
Canadian	3-GP-22f
	3-GP-22g
	3-GP-22h

SECTION 2: G-1159 (GII) - continued

Fuel (continued)

	JP-5 High Flash-Point Type
American	MIL-T-5624G Grade JP-5
	MIL-T-5624J Grade JP-5
	MIL-T-5624K Grade JP-5
British	D Eng. R.D. 2498 Issue 4
	D Eng. R.D. 2498 Issue 6
Canadian	3-GP-24e
	3-GP-24f

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

Oil

Castrol 3C and 325
Aeroshell Turbo Oil 390 and 500
Esso/Exxon 2380
Mobil Jet Oil II
Chevron Jet Engine Oil 5
Caltex RPM Jet Engine Oil 5
Texaco S.A.T.O. 7730

NOTE: Mixing of oils is not recommended for APU.
Oil shall conform to the specification as listed or to subsequent revisions found in the latest approved Airplane Flight Manual.

Engine Limits

Static Thrust (std. day) S.L.
Takeoff (5 min.) 11,400 lb.
Maximum continuous 10,940 lb.

Maximum permissible engine rotor operating speeds:
N1 (low compressor) (106.6%) 8,950 rpm
N2 (high compressor) (100.1%) 12,500 rpm

Maximum permissible temperatures:

Turbine outlet gas (Trimmer Resistors, Inc.)	
Takeoff (5 min.)	585°C
Maximum continuous	540°C
Momentary maximum during starts and relights	570°C
Maximum with reverse thrust (30 second limit)	490°C
Maximum over-temperature (20 second limit)	610°C
Engines with S.B. Sp 77-43	
(20 second limit)	615°C
(120 second limit)	595°C
Oil inlet	100°C
Oil inlet (15 min. limit)	120°C
Fuel inlet temperature to engine high pressure pump	90°C
Fuel inlet temperature (15 min. limit)	110°C

SECTION 2: G-1159 (GII) - continued

Engine Limits (continued)

Maximum Air Bleed Extraction
(Percent of no bleed mass flow)

Maximum engine high pressure bleed	2.45%
Maximum engine low pressure bleed	3.65%

Auxiliary Power Unit (APU)

AirResearch GTCP-36-6: S/N 1 thru 248 and 775

Maximum permissible exhaust gas temperature	700°C
Maximum rotor speed - all conditions	110%
APU alternator load rating	20Kva
APU rated output shaft power (with 50 lb. per min. bleed air and ambient temperate of 113°F)	10hp

AirResearch GTCP-36-100G: S/N 250 thru 258, except 252

Maximum permissible exhaust gas temperature -		
- Up to 60% rpm during start	988°C	
60% - 100% during start	821C° to 732°C (linear decrease)	
- Running		732°C
Maximum rotor speed - all conditions		110%
APU alternator load rating		20Kva
(with 46.6 lb. per min. bleed air and ambient temperature of 103°F)		50hp

Airspeed Limits (CAS)

V_{mo}	(Maximum operating) Sea level to 24,100 ft.	423 mph	367 knots
M_{mo} =	.85 @ 24,100 ft and above		
V_a	(Maneuvering)	245 mph	213 knots
V_{sb}	(Speed brake) Sea level to 28,100 ft.	389 mph	338 knots
M_{sb} =	.85 @ 28,100 ft. and above		
V_{fe}	(Flaps down to 39°)	196 mph	170 knots
	(Flaps down to 20°)	253 mph	220 knots
	(Flaps down to 10°)	288 mph	250 knots
V_{lo}	(Landing gear operation)	259 mph	225 knots
V_{le}	(Landing gear extended)	288 mph	250 knots
V_{mca}	(Minimum control air)	117 mph	102 knots
V_{ll}	(Landing light operation)	288 mph	250 knots

SECTION 2: G-1159 (GII) - continued

Maximum Operating Altitude 43,000 feet (airplanes modified by Aircraft Service Change 299 are approved to 45,000 feet.)

Maximum Weight (lb.)

Aircraft S/N	With ASC*	Max. Zero Fuel	Max. Ramp	Max. Take-Off	Max. Landing
1 thru 82 & 775	- -	38,000 17236 Kg	58,000 26308 Kg	57,500 26082 Kg	51,430 23382 Kg
1 thru 82 & 775	10A & 41	39,000 17690 Kg	60,000 27216 Kg	59,500 26989 Kg	55,000 24948 Kg
83 thru 100	- -	39,000 17690 Kg	60,000 27216 Kg	59,500 26989 Kg	55,000 24948 Kg
1 thru 100 & 775	81	42,000 19051 Kg	62,500 28350 Kg	62,000 28123 Kg	58,500 26535 Kg
101 thru 216	- -	42,000 19051 Kg	62,500 28350 Kg	62,000 28123 Kg	58,500 26535 Kg
1 thru 216 and 775	256	42,000 19051 Kg	65,300 29620 Kg	64,800 29393 Kg	58,500 26535 Kg
217 thru 258, except 249, 252 & 775	233	42,000 19051 Kg	65,300 29620 Kg	64,800 29393 Kg	58,500 26535 Kg

*See NOTE 6

Datum

Station 0 is 45 inches forward of the jig point at the centerline of the airplane in the nose wheel well.

M.A.C.

147.28 in. (L.E. of M.A.C. = Fuselage Station 404.13)

Fuel Capacity

S/N 1 thru 82 & 775:
Gravity or Pressure Fueling: Total 22,620 lb.
Usable 22,500 lb.
Arm* +433.0

S/N 1 thru 82 & 775 with ASC 41 & ASC 10A, and S/N 83 thru 216:
Gravity or Pressure Fueling: Total 23,400 lb.
Usable 23,300 lb.
Arm* 435.9

Fuel weights based upon fuel density of 6.75 lb. per gal.
See NOTE 1 for system fuel and unusable fuel.

*Arm based on ground static attitude (-1.5° FRL)

Oil Capacity

Engine Oil 13.7 lb./14.6 U.S. pints-left engine (Arm = +564.0)
14.6 lb./15.6 U.S. pints-right engine (Arm = +564.0)
APU Oil 5.1 lb./5.4 U.S. pints (Arm = +620.0)

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 14 lb. per engine.

SECTION 2: G-1159 (GII) - continued

Serial No. Eligible	S/N 1 thru 216, including 775; & S/N 217 thru 258 with Aircraft Service Change 233, except S/N 249 and 252. Note: GII production ended at s/n 258.

Environmental Standards:

Noise	ICAO Annex 16 Volume I (See EASA TCDSN IM.A.070)
Fuel Venting & Emissions	ICAO Annex 16 Volume II

IV. Operating and Service Instructions

1. Airplane Flight Manual (AFM)
   (reserved)
2. Instructions for Continued Airworthiness and Airworthiness Limitations
   (reserved)
3. Weight and Balance Manual (WBM)
   (reserved)

V. Operational Suitability Data (OSD)

1. Master Minimum Equipment List
   Not applicable.

2. Flight Crew Data
   Not applicable.

3. Cabin Crew Data
   Not applicable.

SECTION 2: G-1159 (GII) - continued

VI. General GII Increased Range (Tip Tanks)

1. Aeroplane: Gulfstream GII

a. Certification Basis

1. FAA Certification Date: 13 May 1977

2. EASA/JAA Validation Application Date: N/A

3. EASA/JAA Certification Date: N/A

4. FAA Certification Basis:

b. Technical Characteristics and Operational Limitations

Engines: 2 Rolls Royce Spey RB (163-25) 511-8 (Type Certificate LBA 6308)

Fuel

	Kerosene
American	ASTM D 1655-75 Jet A
	ASTM D 1655-75 Jet A-1
	ASTM ES 2-74
	MIL-T-83133 Grade JP-8
British	D Eng. R.D. 2482 Issue 3
	D Eng. R.D. 2494 Issue 5
	D Eng. R.D. 2498 Issue 4
	D Eng. R.D. 2453 Issue 3 Am. 1
	D Eng. R.D. 2494 Issue 7 Am. 1
Canadian	3-GP-23f
	JP-4 Wide Cut Type (See NOTE 5)
American	ASTM D 1655-75 Jet B
	MIL-T-5624G Grade JP-4
	MIL-T-5624J Grade JP-4
	MIL-T-5624K Grade JP-4
	ASTM ES 2-74
British	D Eng. R.D. 2486 Issue 6
	D Eng. R.D. 2486 Issue 8 Am. 1
	D Eng. R.D. 2454 Issue 3 Am. 1
Canadian	3-GP-22f
	3-GP-22g
	3-GP-22h

SECTION 2: G-1159 (GII) - continued

	JP-5 High Flash-Point Type	
American	MIL-T-5624G Grade JP-5	
	MIL-T-5624J Grade JP-5	
	MIL-T-5624K Grade JP-5	
British	D Eng. R.D. 2498 Issue 4	
	D Eng. R.D. 2498 Issue 6	
Canadian	3-GP-24e	
	3-GP-24f	

Fuel shall conform to the specifications as listed or to subsequent revisions found in the latest approved Airplane Flight Manual.

Oil

Castrol 3C and 325
Aeroshell Turbo Oil 390 and 500
Esso/Exxon 2380
Mobil Jet Oil II
Chevron Jet Engine Oil 5
Caltex RPM Jet Engine Oil 5
Texaco SATO 7730

NOTE: Mixing of oils is not recommended for APU.

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

Engine Limits

Static Thrust (std. day) S.L.

Takeoff (5 min.)	11,400 lb.
Maximum continuous	10,940 lb.

Maximum permissible engine rotor operating speeds:

N1 (low compressor) (106.6%)	8,950 rpm
N2 (high compressor) (100.1%)	12,500 rpm

Engine Limits (continued)

Maximum permissible temperatures:

Turbine outlet gas (Trimmer Resistors, Inc.)

Takeoff (5 min.)		585°C
Maximum continuous		540°C
Momentary maximum during starts and relights		570°C
Maximum with reverse thrust (30 second limit)		490°C
Maximum over-temperature (20 second limit)		610°C
Engines with S.B. Sp 77-43	(20 second limit)	615°C
	(120 second limit)	595°C

Oil inlet	100°C
Oil inlet (15 min. limit)	120°C

Fuel inlet temperature to engine high pressure pump	90°C
Fuel inlet temperature (15 min. limit)	110°C

Maximum Air Bleed Extraction
(Percent of no bleed mass flow)

Maximum engine high pressure bleed	2.45%
Maximum engine low pressure bleed	3.65%

SECTION 2: G-1159 (GII) - continued

Auxiliary Power Unit (APU)

AirResearch GTCP-36-6: S/N 1 thru 248 and 775

Maximum permissible exhaust gas temperature	700°C
Maximum rotor speed - all conditions	110%
APU alternator load rating	20Kva
APU rated output shaft power (with 50 lb. per min. bleed air and ambient temperature of 113°F)	10hp

AirResearch GTCP-36-100G: S/N 250 thru 258, except 252

Maximum permissible exhaust gas temperature -	
- Up to 60% rpm during start	988°C
60% - 100% during start	821°C to 732°C (linear decrease)
-Running	732°C
Maximum rotor speed - all conditions	110%
APU alternator load rating	20Kva
APU rated output shaft power (with 46.6 lb. per min. bleed air and ambient temperature of 103°F)	50hp

Airspeed Limits (CAS)

V_{mo}	(Maximum operating) 345 mph (300 knots) at S.L. to 389 mph (338 knots) at 28,100 ft.		
M_{mo} =	.85 @ 28,100 ft and above		
V_a	(Maneuvering)	184 mph	160 knots
V_{sb}	(Speed brake) Sea level to 33,500 ft.	345 mph	300 knots
M_{sb} =	.85 @ 33,500 ft. and above		
V_{fe}	(Flaps down to 39°)	196 mph	170 knots
	(Flaps down to 20°)	253 mph	220 knots
	(Flaps down to 10°)	288 mph	250 knots
V_{lo}	(Landing gear operation)	259 mph	225 knots
V_{le}	(Landing gear extended)	288 mph	250 knots
V_{mca}	(Minimum control air)	117 mph	102 knots
V_{ll}	(Landing light operation)	288 mph	250 knots

SECTION 2: G-1159 (GII) - continued

Maximum Operating Altitude 43,000 feet (airplanes modified by Aircraft Service Change 299 are approved to 45,000 feet.)

Maximum Weight (lb.)

Aircraft S/N	With ASC*	Max. Zero Fuel	Max. Ramp	Max. Take-Off	Max. Landing
1 thru 216 & 775	200	42,000 19051 Kg	66,000 29937 Kg	65,500 29710 Kg	58,500 26535 Kg
217 thru 258, except 249 & 252	- -	42,000 19051 Kg	66,000 29937 Kg	65,500 29710 Kg	58,500 26535 Kg

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

Datum

Station 0 is 45 inches forward of the jig point at the centerline of the airplane in the nose wheel well.

M.A.C.

147.28 in. (L.E. of M.A.C. = Fuselage Station 404.13)

Fuel Capacity

Gravity or Pressure Fueling: Total 26,936 lb.
Usable 26,800 lb.
Arm* +445.2

Fuel weights based upon fuel density of 6.75 lb. per gal.
See NOTE 1 for system fuel and unusable fuel.

*Arm based on ground static attitude (-1.5°FRL)

Oil Capacity

Engine Oil 13.7/14.6 U.S. pints-left engine (Arm = +564.0)
14.6 lb./15.6 U.S. pints-right engine (Arm = +564.0)
APU Oil 5.1 lb./5.4 U.S. pints (Arm = +620.0)

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 14 lb. per engine.

Serial No. Eligible

S/N 1 thru 216 and 775 with Aircraft Service Change 200; and S/N 217 thru 258, except 249 and 252.

Environmental Standards:

Noise ICAO Annex 16 Volume I (See EASA TCDSN IM.A.070)
Fuel Venting & Emissions ICAO Annex 16 Volume II

SECTION 3: G-1159B (GIIB)

I. General

1. Aeroplane: Gulfstream GIIB

II. Certification Basis

1. FAA Certification Date: 17 September 1981

2. EASA/JAA Validation Application Date: N/A

3. EASA/JAA Certification Date: N/A

4. FAA Certification Basis:

III. Technical Characteristics and Operational Limitations

The G-1159B is the same as the G-1159 except for the following differences:

(a) Wing: Span is increased 6 feet, chord increased forward of original front beam, contour changed forward of mid-chord, and 5-foot winglets added.
(b) Fuselage: Addition of optional extended modified contour radome.
(c) Maximum takeoff weight increased to 68,200 lb./69,700 lb.
(d) Various changes to autopilot, flight instruments, and fuel quantity instruments.

NOTE: Model G-1159, all serial numbers, are eligible for identification as Model G-1159B when modified in accordance with GAC Aircraft Service Change (ASC) 300.

Engines: 2 Rolls Royce Spey RB (163-25) 511-8 (Type Certificate LBA 6308)

Fuel

	Kerosene
American	ASTM D 1655-75 Jet A
	ASTM D 1655-75 Jet A-1
	ASTM ES 2-74
	MIL-T-83133 Grade JP-8
British	D Eng. R.D. 2482 Issue 3
	D Eng. R.D. 2494 Issue 5
	D Eng. R.D. 2498 Issue 4
	D Eng. R.D. 2453 Issue 3 Am. 1
	D Eng. R.D. 2494 Issue 7 Am. 1
Canadian	3-GP-23f
	JP-4 Wide Cut Type (See NOTE 5)
American	ASTM D 1655-75 Jet B
	MIL-T-5624G Grade JP-4
	MIL-T-5624J Grade JP-4
	MIL-T-5624K Grade JP-4
	ASTM ES 2-74

SECTION 3: G-1159B (GIIB) - continued

	British	D Eng. R.D. 2486 Issue 6 D Eng. R.D. 2486 Issue 8 Am. 1 D Eng. R.D. 2454 Issue 3 Am. 1
	Canadian	3-GP-22f 3-GP-22g 3-GP-22h
		JP-5 High Flash-Point Type
	American	MIL-T-5624G Grade JP-5 MIL-T-5624J Grade JP-5 MIL-T-5624K Grade JP-5
	British	D Eng. R.D. 2498 Issue 4 D Eng. R.D. 2498 Issue 6
	Canadian	3-GP-24e 3-GP-24f

Fuel shall conform to the specifications as listed or to subsequent revisions found in the latest approved Airplane Flight Manual.

Oil

Castrol 3C and 325
Aeroshell Turbo Oil 390 and 500
Esso/Exxon 2380
Mobil Jet Oil II
Chevron Jet Engine Oil 5
Caltex RPM Jet Engine Oil 5
NOTE: Mixing of oils is not recommended for APU.

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

Engine Limits

Static Thrust (std. day) S.L.

Takeoff (5 min.)	11,400 lb.
Maximum continuous	10,940 lb.

Maximum permissible engine rotor operating speeds:

N1 (low compressor) (106.6%)	8,950 rpm
N2 (high compressor) (100.1%)	12,500 rpm

Maximum permissible temperatures:
Turbine outlet gas (Trimmer Resistors, Inc.)

Takeoff (5 min.)	585°C
Maximum continuous	540°C
Momentary maximum during starts and relights	570°C
Maximum with reverse thrust (30 second limit)	490°C
Maximum over-temperature (20 second limit)	610°C
Engines with S.B. Sp 77-43 (20 second limit)	615°C
(120 second limit)	595°C
Oil inlet	100°C
Oil inlet (15 min. limit)	120°C

SECTION 3: G-1159B (GIIB) - continued

	Fuel inlet temperature to engine high pressure pump	90°C
	Fuel inlet temperature (15 min. limit)	110°C
	Maximum Air Bleed Extraction	
	(Percent of no bleed mass flow)	
	Maximum engine high pressure bleed	2.45%
	Maximum engine low pressure bleed	3.65%
Auxiliary Power Unit (APU)	AirResearch GTCP-36-100G	
	Maximum permissible exhaust gas temperature -	
	- Up to 60% rpm during start	988°C
	60% - 100% during start	821°C to 732°C (linear decrease)
	-Running	732°C
	Maximum rotor speed - all conditions	110%
	APU alternator load rating	20Kva
	APU rated output shaft power (with 46.6 lb. per min. bleed air and ambient temperature of 103°F)	50hp
	AiResearch GTCP-36-6	
	Maximum permissible exhaust gas temperature	700°C
	Maximum rotor speed - all conditions	110%
	APU Alternator load rating	20Kva
	APU rated output shaft power (with 50 lb. per min. bleed air and ambient temperature of 113°F)	10hp

Airspeed Limits (CAS)	V_{mo}	(Maximum operating) Sea level to 28,000 ft.	392 mph	340 knots
	M_{mo} =	.85 @ 28,000 ft and above		
	V_a	(Maneuvering)	237 mph	206 knots
	V_{sb}	(Speed brake) Sea level to 28,000 ft.	392 mph	340 knots
	M_{sb} =	.85 @ 28,000 ft. and above		
	V_{fe}	(Flaps down to 39°)	195 mph	170 knots
		(Flaps down to 20°)	253 mph	220 knots
		(Flaps down to 10°)	288 mph	250 knots
	V_{lo}	(Landing gear operation)	259 mph	225 knots
	V_{le}	(Landing gear extended)	288 mph	250 knots
	V_{mca}	(Minimum control air)	115 mph	100 knots
	V_{mcg}	(Minimum control ground)	103 mph	89 knots

SECTION 3: G-1159B (GIIB) - continued

Maximum Operating Altitude 45,000 feet

Maximum Weight (lb.)

Aircraft Mod. No.	With ASC *	Max. Zero Fuel	Max. Ramp	Max. Take-Off	Max. Landing
1 & Sub.	300	42,000 19051 Kg	68,700 31162 Kg	68,200 30935 Kg	58,500 26535 Kg
1 & Sub.	300 & 275	44,000 19958 Kg	70,200 31842 Kg	69,700 31615 Kg	58,500 26535 Kg

* See NOTE 6.

Datum — Station 0 is 45 inches forward of the jig point at the centerline of the airplane in the nose wheel well.

M.A.C. — 165.39 in. (L.E. of M.A.C. = Fuselage Station 387.81)

Fuel Capacity

Modification Nos. 1 thru 8
Gravity or Pressure Fueling: Total 28,014 lb.
Usable 27,900 lb.
Arm* +430.4

Modification Nos. 9 and Subsequent.
Gravity or Pressure Fueling: Total 28,444 lb.
Usable 28,300 lb.
Arm* +423.3

Fuel weights based upon fuel density of 6.75 lb. per gal.

*Arm based on ground static attitude (-1.5° FRL)

Oil Capacity

Engine Oil 13.7 lb./14.6 U.S. pints-left engine (Arm = +564.0)
14.6 lb./15.6 U.S. pints-right engine (Arm = +564.0)
APU Oil 4.75 lb./5.4 U.S. pints (Arm = +620.0)

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 14 lb. per engine.

Serial No. Eligible — G-1159; S/N 1 thru 258, including 775, excluding 249 & 252, when modified by Aircraft Service Change 300.

Environmental Standards:

Noise — ICAO Annex 16 Volume I (See EASA TCDSN IM.A.070)
Fuel Venting & Emissions — ICAO Annex 16 Volume II

SECTION 3: G-1159B (GIIB) - continued

IV. Operating and Service Instructions

1. Airplane Flight Manual (AFM)
(reserved)

2. Instructions for Continued Airworthiness and Airworthiness Limitations
(reserved)

3. Weight and Balance Manual (WBM)
(reserved)

V. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below are approved by the European Aviation Safety Agency under the EASA Type Certificate [original TC number] as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014.

1. Master Minimum Equipment List

a. Master Minimum Equipment List (MMEL reference XXX:) approved at revision dated XXXX as per the defined Operational Suitability Data Certification Basis recorded in CRI A-MMEL, or later approved revisions

b. Required for entry into service by EU operator.

2. Flight Crew Data
Not applicable

3. Cabin Crew Data
Not applicable

SECTION 4: G-1159A (GIII)

I. General

1. Aeroplane: Gulfstream GIII

II. Certification Basis

1. FAA Certification Date: 22 September 1980

2. EASA/JAA Validation Application Date: N/A

3. EASA/JAA Certification Date: 16 November 1982 (UK)

4. FAA Certification Basis: A12EA

III. Technical Characteristics and Operational Limitations

The G-1159A is the same as the G-1159 except for the following differences:

(a) Wing: Span is increased 6 feet, chord increased forward of original front beam, contour changed forward of mid-chord, and 5-foot winglets added.

(b) Fuselage: Addition of a 2-foot section aft of main door, radome extended and contour modified, and new curved windshield and support structure.

(c) Maximum takeoff weight increased to 68,200 lb./69,700 lb.

(d) Various changes to autopilot, flight instruments, and engine instruments.

Engines: 2 Rolls Royce Spey RB (163-25) 511-8 (Type Certificate LBA 6308)

Fuel

	Kerosene
American	ASTM D 1655-75 Jet A
	ASTM D 1655-75 Jet A-1
	ASTM ES 2-74
	MIL-T-83133 Grade JP-8
British	D Eng. R.D. 2482 Issue 3
	D Eng. R.D. 2494 Issue 5
	D Eng. R.D. 2498 Issue 4
	D Eng. R.D. 2453 Issue 3 Am. 1
	D Eng. R.D. 2494 Issue 7 Am. 1
Canadian	3-GP-23f

	JP-4 Wide Cut Type (See NOTE 5)
American	ASTM D 1655-75 Jet B
	MIL-T-5624G Grade JP-4
	MIL-T-5624K Grade JP-4
	ASTM ES 2-74

SECTION 4: G-1159A (GIII) - continued

	British	D Eng. R.D. 2486 Issue 6
		D Eng. R.D. 2486 Issue 8 Am. 1
		D Eng. R.D. 2454 Issue 3 Am. 1
	Canadian	3-GP-22f
		3-GP-22g
		3-GP-22h
		<u>JP-5 High Flash-Point Type</u>
	American	MIL-T-5624G Grade JP-5
		MIL-T-5624J Grade JP-5
		MIL-T-5624K Grade JP-5
	British	D Eng. R.D. 2498 Issue 4
		D Eng. R.D. 2498 Issue 6
	Canadian	3-GP-24e
		3-GP-24f

Fuel shall conform to the specifications as listed or to subsequent revisions found in the latest approved Airplane Flight Manual.

Oil

Castrol 3C and 325
Aeroshell Turbo Oil 390 and 500
Esso/Exxon 2380
Mobil Jet Oil II
Chevron Jet Engine Oil 5
Caltex RPM Jet Engine Oil 5
Texaco SATO 7730

NOTE: Mixing of oils is not recommended for APU.

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

Engine Limits

<u>Static Thrust (std. day) S.L.</u>

Takeoff (5 min.)	11,400 lb.
Maximum continuous	10,940 lb.

<u>Maximum permissible engine rotor operating speeds</u>:

N1 (low compressor) (106.6%)	8,950 rpm
N2 (high compressor) (100.1%) 1	2,500 rpm

<u>Maximum permissible temperatures</u>:

Turbine outlet gas (Trimmer Resistors, Inc.)		
Takeoff (5 min.)		585°C
Maximum continuous		540°C
Momentary maximum during starts and relights		570°C
Maximum with reverse thrust (30 second limit)		490°C
Maximum over-temperature (20 second limit)		610°C
Engines with S.B. Sp 77-43	(20 second limit)	615°C
	(120 second limit)	595°C
Oil inlet		100°C
Oil inlet (15 min. limit)		120°C

SECTION 4: G-1159A (GIII) - continued

	Fuel inlet temperature to engine high pressure pump	90°C
	Fuel inlet temperature (15 min. limit)	110°C
	Maximum Air Bleed Extraction	
	(Percent of no bleed mass flow)	
	Maximum engine high pressure bleed	2.45%
	Maximum engine low pressure bleed	3.65%
Auxiliary Power Unit (APU)	AirResearch GTCP-36-100G	
	Maximum permissible exhaust gas temperature -	
	- Up to 60% rpm during start	988°C
	60% - 100% during start	821°C to 732°C (linear decrease)
	-Running	732°C
	Maximum rotor speed - all conditions	110%
	APU alternator load rating	20Kva
	APU rated output shaft power (with 46.6 lb. per min. bleed air and ambient temperature of 103°F)	50hp

Airspeed Limits (CAS)	V_{mo}	(Maximum operating) Sea level to 28,000 ft.	392 mph	340 knots
	M_{mo} =	.85 @ 28,000 ft and above		
	V_a	(Maneuvering)	237 mph	206 knots
	V_{sb}	(Speed brake) Sea level to 28,000 ft.	392 mph	340 knots
	M_{sb} =	.85 @ 28,000 ft. and above		
	V_{fe}	(Flaps down to 39°)	195 mph	170 knots
		(Flaps down to 20°)	253 mph	220 knots
		(Flaps down to 10°)	288 mph	250 knots
	V_{lo}	(Landing gear operation)	259 mph	225 knots
	V_{le}	(Landing gear extended)	288 mph	250 knots
	V_{mca}	(Minimum control air)	117 mph	102 knots
	V_{mcg}	(Minimum control ground)	103 mph	89 knots

SECTION 4: G-1159A (GIII) - continued

Maximum Operating Altitude 45,000 feet

Maximum Weight (lb.)

Aircraft S/N	With ASC *	Max. Zero Fuel	Max. Ramp	Max. Take-Off	Max. Landing
249, 252, 300 thru 426, and 875	- -	(42,000) 19051 Kg	68,700 31162 Kg	68,200 30935 Kg	58,500 26535 Kg
249, 252, 300 thru 426, and 875	70	(44,000) 19958 Kg	70,200 31842 Kg	69,700 31615 Kg	58,500 26535 Kg
427 thru 495	- -	(44,000) 19958 Kg	70,200 31842 Kg	69,700 31615 Kg	58,500 26535 Kg

* See NOTE 6.

Datum — The zero datum is 21 inches forward of the jig point at the centerline of the airplane in the nose wheel well or 193 inches forward of Fuselage Station 193B.

M.A.C. — 165.4 in. (L.E. of M.A.C. = Fuselage Station 387.8)

Fuel Capacity

S/N 249, 252, 300 thru 371, and 875:

Gravity or Pressure Fueling:		
	Total	28,014 lb.
	Usable	27,900 lb.
	Arm*	430.4

S/N 372 and subsequent and S/N 875, 249, 252, and 300 thru 371 with ASC 30:

Gravity or Pressure Fueling:		
	Total	28,444 lb.
	Usable	28,300 lb.
	Arm*	+423.3

Fuel weights based upon fuel density of 6.75 lb. per gal.

*Arm based on ground static attitude (-1.5° FRL)

Oil Capacity

Engine Oil	13.7 lb./14.6 U.S. pints-left engine (Arm = +564.0)
	14.6 lb./15.6 U.S. pints-right engine (Arm = +564.0)
APU Oil	4.75 lb./5.4 U.S. pints (Arm = +620.0)

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 14 lb. per engine.

Serial No. Eligible — S/N 249, 252, 300 through 495, including S/N 875. Note: GIII production ended at s/n 495.

Environmental Standards:

Noise	ICAO Annex 16 Volume I (See EASA TCDSN IM.A.070)
Fuel Venting & Emissions	ICAO Annex 16 Volume II

SECTION 4: G-1159A (GIII) - continued

IV. Operating and Service Instructions

1. Airplane Flight Manual (AFM)
(reserved)
2. Instructions for Continued Airworthiness and Airworthiness Limitations
(reserved)
3. Weight and Balance Manual (WBM)
(reserved)

V. Operational Suitability Data (OSD)

1. Master Minimum Equipment List
Not applicable.

2. Flight Crew Data
Not applicable.

3. Cabin Crew Data
Not applicable.

SECTION 5: GIV

I. General

1. Aeroplane: Gulfstream G-IV/GIV-SP

II. Certification Basis

1. Reference Application Date for FAA Certification: 28 February 1983

2. FAA Certification Date: 22 April 1987

3. EASA/JAA Validation Application Date: 14 March 2001

4. EASA/JAA Certification Date: 20 October 2001*

   (*Date of first TC issuance within EU MS, by Austro Control, JAA recommendation 5. October 2001)

FAA Certification Basis:

FAR Part 25, effective February 1, 1965, including Amendments 25-1 through 25-56, except for the following sections which are limited to showing compliance with the amendments indicated:

Section:	Amendment:
25.109	FAR 25, dated 1 February 1965
25.571	25-22 (as applies to fuselage and empennage)
25.671	FAR 25, dated 1 February 1965
25.807(c)(2)	25-15
25.813	FAR 25, dated 1 February 1965

FAR 36, including Amendments 36-1 through 36-12.
SFAR 27, including Amendments 27-1 through 27-5.

Compliance with the following Optional Ditching Requirements has been established: Data covering ditching requirements of 25.801, including 25.563, 25.807(d) 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.

Equivalent Safety Findings:

- FAR 25.201, Stall Demonstration.
- FAR 25.729(e)(2), Landing Gear Warning Horn.
- FAR 25.773(b)(2), Direct Vision Window.
- FAR 25.807(a)(4), effective February 1, 1965, Oval Emergency exit Windows with Horizontal Major Axis.

EASA/JAA Certification Basis:

The same as the FAA Certification Basis (EASA/JAA certification was by means of the "catch-up" procedure).

Environmental Standards:

Noise	ICAO Annex 16 Volume I (See EASA TCDSN IM.A.070)
Fuel Venting & Emissions	ICAO Annex 16 Volume II

III. Technical Characteristics and Operational Limitations

The G-IV is an airplane with two aft mounted turbofan engines, low swept wings with winglets, and a T-tail.

The G-IV is also known as the G400. Aircraft Service Change (ASC) Number 440, "G400 Modification" designates aircraft as Model G-IV (G400) and is applicable to serial numbers 1500 and subsequent.

The G-IV is also known as the G300. Aircraft Service Change (ASC) Number 436, "G300 Modification" designates aircraft as Model G-IV (G300) and is applicable to serial numbers 1500 and subsequent.

1. EASA/JAA Type Design Definition

Report GIV-GER-1301, JAA GIV Baseline Build Standard.
Report GIV-GER-2009, JAA Post Type Certification Modifications.

2. Engines

Two Rolls Royce Tay Mark 611-8 turbofan engines.

2.1 Engine Limits

DATA SHEET: E25NE (FAA) 6327 (LBA/EASA)	
Static thrust at sea level: • takeoff (5 minutes)* • maximum continuous	 61,608 N (13,850 lbs) 55,247 N (12,420 lbs)

***** 10 minutes at take-off thrust allowed only in case of an inoperative engine due to shutdown or failure.

Other engine limitations: See the Engine Type Certificate Data Sheet.

3. Fuel

Kerosene

American	ASTM D 1655-84, Jet A ASTM D 1655-8, Jet A-1 MIL-T-83133A, Grade JP8

SECTION 5: GIV - continued

British D Eng. R.D. 2453, Issue 5
D Eng. R.D. 2494, Issue 9

Canadian CAN 2.3.23-M82

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
Antifriction additives: T1601 and T1602

Russian GOST R52050-2006

JP-4 Wide Cut Type*

American ASTM D 1655-84, Jet B
MIL-T-5624L, Grade JP4

British D Eng. R.D. 2454, Issue 4
D Eng. R.D. 2486, issue 9

Canadian CAN 2.3.22-M81

JP-5 High Flash - Point Type

American MIL-T-5624L, Grade JP5

British D Eng. R.D. 2452, Issue 2
D Eng. R.D. 2498, Issue 7

Canadian CAN 3-GP-24h

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

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

4. Fuel Quantity

	Model G-IV / GIV-SP	Model G400	Model G300
Total	13,429 kg (29,605 lbs)	13,429 kg (29,605 lbs)	12,249 kg (27,005 lbs)
Usable	13,381 kg (29,500 lbs)	13,381 kg (29,500 lbs)	12,202 kg (26,900 lbs)

SECTION 5: GIV - continued

5. Airplane Limit Speeds (KCAS)

Maximum Operating	V_{MO}/M_{MO}	See envelope in JAA G-IV Airplane Flight Manual
Manoeuvring	V_A	170 206*
Flaps Extended	V_{FE}	170 (Flaps 39°) 180* (Flaps 39°) 220 (Flaps 20°) 250 (Flaps 10°)
Landing Gear Operating	V_{LO}	225
Landing Gear Extended	V_{LE}	250
Minimum Control Ground	V_{MCG}	111
Minimum Control Air	V_{MCA}	104

* Aircraft S/N 1000 thru 1213 with 1159SB41190 (ASC 190), S/N 1214 and subsequent.

6. Centre of Gravity Range

   Refer to approved Airplane Flight Manual.

7. Datum

   For the weight and balance purposes the zero datum is 0.4 m (15 inches) aft of the jig point at the centreline of the airplane in the nose wheel well or 5.2 m (206 in) forward of Fuselage Station 206.

8. Mean Aerodynamic Chord (MAC)

   4.2 m (166.22 in)
   (Leading edge of MAC at Fuselage Station 387.7)

9. Maximum Operating Altitude

   13,716 m (45,000 ft)

10. Maximum Certified Weights in kg (lbs)

Aircraft S/N	Max. Zero Fuel	Max. Ramp	Max. Take-Off	Max. Landing
1000 thru 1213	21,092 (46,500)	33,384 (73,600)	33,203 (73,200)	26,535 (58,500)
1000 thru 1213 with ASC 61	22,226 (49,000)	33,384 (73,600)	33,203 (73,200)	26,535 (58,500)
1000 thru 1213 with ASC 261	22,226, (49,000)	33,384 (73,600)	33,203 (73,200)	26,535 (58,500)
1000 thru 1213 with ASC 190 (GIV-SP)	22,226 (49,000)	34,019 (75,000)	33,838 (74,600)	29,937 (66,000)
1214 through 1499 (GIV-SP)	22,226 (49,000)	34,019 (75,000)	33,838 (74,600)	29,937 (66,000)
1500 through 1535 with ASC 440 (G400)	22,226 (49,000)	34,019 (75,000)	33,838 (74,600)	29,937 (66,000)
1500 through 1535 with ASC 436 (G300)	22,226 (49,000)	32,840 (72,400)	32,658 (72,000)	29,937 (66,000)

SECTION 5: GIV - continued

11. Minimum Flight Crew

Two: Pilot and Co-pilot.

12. Maximum Seating Capacity

Nineteen – Limited by emergency exit requirements.

13. Cargo Compartment Loading

- Maximum allowable load: 907 kg (2000 lbs)
- For specific loading limitations, refer to G-IV Weight and Balance Manual.

14. Environmental Flight Envelope

Refer to approved Airplane Flight Manual.

15. Other Limitations

Refer to approved Airplane Flight Manual.

16. Auxiliary Power Unit (APU)

One AirResearch GTCP-36-100G (Part No. 380062-4-1)
Optional Honeywell 36-150 APU installation per ASC 465 (S/N 1000-1535)
Oils: refer to applicable approved manuals.

17. Equipment

An approved equipment listing is provided in the Illustrated Parts Catalog. In addition, the following items of equipment are required:

- When an airplane is outfitted to carry passengers, an approved passenger oxygen system must be installed.
- An approved Airplane Flight Manual.

18. Interior Installations

Cabin interior and seating configurations must be approved.

19. All Weather Capabilities

Category 2 (With Aircraft Service Change 102 installed)

SECTION 5: GIV - continued

20. Wheels and Tyres

Main Landing Gear (MLG)	Each MLG incorporates twin 18 inch rims and 34x9.25 tyres (34x9.25-18).
Nose Landing Gear (NLG)	The NLG incorporates twin 10 inch rims and 21-7.25 tyres (21x7.25-10).

21. Hydraulics

Fluid specification: Phosphate Ester Fire-resistant Type 4 Hydraulic Fluid.

22. Maintenance Instructions

- Component life limitations are provided in Section 05-04-00, Chapter 5 of the G-IV 12/24 Program Aircraft Maintenance Manual (AMM), Section 05-10-10, Chapter 5 of the G-IV MSG-3, G300 and G400 AMMs.
- Maintenance criteria to comply with the certification maintenance requirements are provided in Chapter 5 of the G-IV series Aircraft Maintenance Manuals.

23. Operations

The GIV Type Design has been shown to be operable IAW Appendix 1 to JAR-OPS 1.430(h) when STC ST01411LA is installed in that it has been demonstrated to comply with the appropriate design and reliability requirements defined in CRI F-51. In order for those aircraft with this STC installed to meet the requirements as defined in CRI F-51, the optional EVS Image Repeater must be installed. This however implies no operational approval, this must be sought from the Authority or Agency that is legally responsible for Operational Approvals in the country of registry of individual aircraft.

IV. Operating and Service Instructions

1. Airplane Flight Manual (AFM)
(reserved)

2. Instructions for Continued Airworthiness and Airworthiness Limitations
(reserved)

3. Weight and Balance Manual (WBM)
(reserved)

SECTION 5: GIV - continued

V. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below are approved by the European Aviation Safety Agency under the EASA Type Certificate [original TC number] as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014.

1. Master Minimum Equipment List

a. Master Minimum Equipment List (MMEL reference EASA-MMEL-AC-GIV-OPS-0004) approved at revision dated 22 October 2013 as per the defined Operational Suitability Data Certification Basis recorded in CRI A-MMEL, or later approved revisions

b. Required for entry into service by EU operator.

2. Flight Crew Data

a. The Flight Crew data EASA-OSD-FC-GIV-GAC-001, Original Issue, dated 19 May 2015 as per the defined Operational Suitability Data Certification Basis recorded in document EASA-OSD-FC-GIV-GAC-001, or later recorded CRI A-FCD.

b. Required for entry into service by EU operator.

c. Pilot Type Rating: “GIV”.

Note: These data cover the GIV models GIV and GIV SP (G300/G400). Differences are addressed in EASA-OSD-FC-GIV-GAC-001.

3. Cabin Crew Data

Not applicable.

SECTION 6: GIV-X

I. General

1. Aeroplane: Gulfstream GIV-X

II. Certification Basis

1. Reference Application Date for FAA Certification: 9 January 2001

2. FAA Certification Date: 12 August 2004

3. EASA/JAA Validation Application Date: 18 January 2001

4. EASA/JAA Certification Date: 19 November 2004

5. FAA Certification Basis:

14 CFR Part 25, effective February 1, 1965, including Amendments 25-1 through 25-101 with the exceptions listed below:

Section:	Title:	Amendment:
25.21(e)	Proof of compliance	25-7
25.305	Strength and deformation	25-54, 25-86**
25.321	Flight loads – General	25-23, 25-86**
25.333	Flight maneuvering envelope	25-0, 25-86**
25.335(b)	Design airspeeds (speed margin)	25-23
25.341	Gust and turbulence loads	25-0, 25-86**
25.343	Design fuel and oil loads	25-18, 25-86**
25.365	Pressurized compartment loads	25-54, 25-87**
25.373	Speed control devices	25-0, 25-86**
25.391	Control surface loads – General	25-0, 25-86**
25.427	Unsymmetrical loads	25-0, 25-86**
25.445	Auxiliary aerodynamic surfaces	25-0, 25-86**
25.459	Special devices	25-0*
25.491	Takeoff run	25-0, 25-91**
25.561	Emergency landing conditions	25-23, 25-64 (seats), 25-91 (new structure)**
25.571	Damage tolerance and fatigue evaluation of structure	25-54 (wing and empennage), 25-96 (fuselage changes)**
25.671	Control systems-General	25-0
25.677(c)	Trim systems	25-0
25.693	Joints	25-0*
25.695	Power-boost and power-operated control system	25-0
25.807	Emergency exits	25-55*
25.807(c),(2),(d)(4)	Emergency exits	25-15*
25.813(a),(b),(c),(d),(f)	Emergency exit access	25-46*
25.841	Pressurized cabins	25-38, 25-87**
25.857	Cargo compartment classification	25-32*
25.858	Cargo or baggage compartment smoke or fire detection systems	25-54*
25.963	Fuel Tanks	25-40*

SECTION 6: GIV-X - continued

25.973	Fuel tank filler connection	25-40*
25.1013	Oil tanks	25-36*
25.1447	Equipment standards for oxygen dispensing units	25-41, 25-87**
25.1517	Rough air speed, VRA	5-86 (new para. - NA)*****
25.1557	Miscellaneous markings and placards	25-38*

* *These systems have no changes from the basic GIV model; therefore the paragraphs remain at the original GIV certification basis and the later amendment was not adopted. Amendment 25-0 is the original published version of Part 25, February 1, 1965.*

** Unmodified structure remains in compliance with the earlier amendment listed. New or modified structure is in compliance with the later amendment level listed.

Part 34, Amendment 34-3.
Part 36, Amendment 36-24.

Shoulder harness on all seats will be in lieu of demonstrated compliance to the test requirements of §25.562(c)(5) and (c)(6) per Amendment 25-64. Compliance to the test requirements of §25.785 in reference to §25.562(c)(5) and (c)(6) need not be demonstrated due to this concession. These provisions are acceptable for single or multiple occupant seating systems which are forward, aft, or side facing.
Compliance with the Optional Ditching Requirements has been established as follows: Data covering the ditching requirements of 14 CFR Part 25.801, including 25.563, 25.807 and 25.1585(a), but excluding 25.1411, are approved. When the operating rules require emergency ditching equipment, compliance with Parts 25.1411 and 25.1415 must be demonstrated. Gulfstream Report No. 1159-GER-7, entitled “Outfitting Requirements for FAA Certification for Ditching”, provides an acceptable means for showing compliance with Parts 25.1411 and 25.1415.
FAR 25.813(e) at Amendment 25-46 is not included in the certification basis.

Special Conditions:

- No. 25-262-SC, HIRF (High Intensity Radiated Fields).
- No. 25-180-SC, Enhanced Vision System (EVS).
- No. 25-258-SC Interaction of Systems and Structure.

Exemptions:

- No. 8142 [FAR 25.901(c)], Uncontrolled High Thrust Failure Condition.

Equivalent Safety Findings:

- FAR 25.807, Elliptical Overwing Emergency Exits with a Horizontal Major Axis, TAD ELOS Memo No. AT5080AT-T-A-2.
- FAR 25.841(b)(6), Cabin Pressurization – High Altitude Takeoff and Landing Field Elevations, TAD ELOS Memo No. AT5177AT-T-S-29.
- FAR 25.811(d) & 25.812(b), Locator, Marker, and Bulkhead/Divider Signs, TAD ELOS Memo. No. AT5177AT-T-C-1.
- FAR 25.853, 25.869, Flammability Substantiation for Electrical Equipment, TAD ELOS Memo No. AT5177AT-T-A-9.
- FAR 25.933, Flight Critical Thrust Reverser, TAD ELOS Memo No. AT5080AT-T-P-1.

SECTION 6: GIV-X - continued

6. EASA/JAA Certification Basis:

JAR Requirement Basis:

- For the changes comprising the GIV-X:
  JAR-25 Change 15 (Effective 1 October 2000), and JAR AWO Change 2 (Effective 1 August 1996).
- For unchanged areas refer to GIV Certification Basis.

Reversions: †

- Partition Doors in PAX Compartments; JAR 25.813(e)
  Reference CRI D-10
- Stall and Stall Warning Speeds, Various JARs
  Reference CRI B-3

Special Conditions: †

Novel Design Features:

EASA/GIV/01	Enhanced Vision System Reference CRI F-10
EASA/GIV/02	Human Factors Aspects of Flight Deck Design (INT/POL/25/14 Iss. 2) Reference CRI F-11
EASA/GIV/03	Cursor Control Device – Airworthiness Approval Reference CRI F-12
EASA/GIV/04	Integrated Standby Flight Display System Reference CRI F-02
EASA/GIV/05	Interaction of Systems & Structure Reference CRI C-03

Unconventional Use:

EASA/GIV/10	High Altitude Operation Reference CRI D-11

General Experience:

EASA/GIV/06	Landing Gear Warning Reference CRI D-06
EASA/GIV/07	Protection from Effects of HIRF Reference CRI F-03
EASA/GIV/08	Lightning Protection – Direct Effects Reference CRI F-18
EASA/GIV/09	Lightning Protection – Indirect Effects Reference CRI F-19

Exemptions: †
None

Equivalent Safety Findings (ESFs): †

- JAR 25.1357(e), 25.1309(e); MAUs – Certification.
  Reference CRI F-21

SECTION 6: GIV-X - continued

Environmental Standards:

Noise	ICAO Annex 16 Volume I (See EASA TCDSN IM.A.070)
Fuel Venting & Emissions	ICAO Annex 16 Volume II

Elect to Comply Requirements: †

- Hydraulic System Proof Pressure Testing
  Reference CRI F-14

Additional National Requirements for Type Certification:

- As defined in GIV CRI A-01 Addendum 1.

Means of Compliance (MOC) or Interpretative Material: †

- Electronic Flight Displays (JAA AMJ 25.11 & SAE ARP 4256)
  Reference CRI F-06
- Complex Electronic Hardware (JAA Draft Guidance leaflet 'Recognition of EUROCAE document ED-80: Design assurance guidance for airborne electronic hardware')
  Reference CRI F-07
- Software Design Assurance (JAA AGM Section 1, Part 3, Leaflet 4 'Recognition of EUROCAE ED-12B/RTCA DO-178B')
  Reference CRI F-08
- Systems for Specified Operational Use (Various, see CRIs)
  Reference CRI F-01
- Equipment, Systems & Installation (JAA NPA 25F-281)
  Reference CRI F-09
- Flight in Icing Conditions (JAA/TGM/25/02)
  Reference CRI F-15
- Aeroplane System Wiring
  Reference CRI F-17
- Head Up Display System
  Reference CRI F-04
- Oxygen Requirements (JAR OPS 1.770, 1.780)
  Reference CRI F-16
- Installation of IFE Systems (JAA TGL No.17)
  Reference CRI F-20
- In Seat Power Supply Systems (JAA/TGM/25/10)
  Reference CRI F-23
- Category 2 Go-Around Performance (JAR AWO 243, NPA AWO-5)
  Reference CRI K-01
- Landing Distance using Head-Up Guidance System (JAR AWO 342)
  Reference CRI K-02
- Floor Path Emergency Escape Path Marking System (JAR 25.812)
  Reference CRI D-15
- All Weather Operation for Category 2 (JAR AWO Change 2) – Post TC
  Reference CRI F-05
- Wheels and tyres Failure Analysis
  Reference CRI D-14
- Engine Rotor Non-containment and Critical Flight Control Systems
  Reference CRI E-04

SECTION 6: GIV-X - continued

† New EASA items raised specifically for the GIV-X project (i.e. over and above those applied by FAA and applicable to the basic FAA build standard, which are not mentioned here but can be found in the FAA's G-1 Issue Paper or the FAA TCDS). Any items generated for the GIV/GIV-SP by the JAA Team will remain applicable to the GIV-X unless otherwise incorporated by the adoption of later JAR amendments.

III. Technical Characteristics and Operational Limitations

The GIV-X is an airplane with two aft mounted turbofan engines, low swept wings with winglets, and a T-tail. The GIV-X differs from the G-IV in the following respects:

- Honeywell advanced avionics and flight deck display
- Airframe nose common with the GV-SP airplane.
- Cabin main entry door rel;ocated and fuselage 12 inch extension
- Aerodynamic changes for increased performance, range and economics
- Derivative Tay 611-8C engines with new thrust reversers and new FADEC
- System changes for reliability and and operational improvements
- New APU installed

The GIV-X is also known as the G450. Aircraft Service Change (ASC) Number 005, "G450 Modification" designates aircraft as Model GIV-X (G450) and is applicable to serial numbers 4001 and subsequent.

The GIV-X is also known as the G350. Aircraft Service Change (ASC) Number 004, "G350 Modification" designates aircraft as Model GIV-X (G350) and is applicable to serial numbers 4001 and subsequent.

1. EASA/JAA Type Design Definition

Report GIVX-GER-9943, Gulfstream Model GIV-X JAA/EASA Baseline Build Standard.
Report GIVX-GER-9961, JAA Post Type Certification Modifications.

2. Engines

Two Rolls Royce Tay Mark 611-8C turbofan engines.

2.1 Engine Limits

DATA SHEET: E25NE (FAA) 6327 (EASA)	
Static thrust at sea level: • takeoff (5 minutes)* • maximum continuous	 61,608 N (13,850 lbs) 55,247 N (12,420 lbs)

***** 10 minutes at take-off thrust is allowed only in case of an inoperative engine due to shutdown or failure.

Other engine limitations: See the Engine Type Certificate Data Sheet.

SECTION 6: GIV-X - continued

3. Fuel

Kerosene

American	ASTM D 1655, Jet A ASTM D 1655, Jet A-1 MIL-T-83133A, Grade JP8*
British	DERD 2453, DEF STAN 91-87 DERD 2494, 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
Antifriction additives: T1601 and T1602

Russian	GOST R52050-2006

JP-4 Wide Cut Type

American	ASTM D 1655, Jet B MIL-T-5624, Grade JP4*
British	(DERD 2452), DEF STAN 91-86
Canadian	CAN/CGSB-3.22

JP-5 High Flash - Point Type

American	MIL-T-5624, Grade JP5
Canadian	CAN 3-GP-2AC

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

*With fuel system icing inhibitor (FSII). Maximum concentration 0.15% by volume. DERD 2451 Issue 2 and 3 MIL-I-27686E. or any exact equivalent

4. Fuel Quantity

	Model G450	Model G350
Total	13,429 kg (29,605 lbs)	11,793 kg (26,000 lbs)
Usable	13,381 kg (29,500 lbs)	11,746 kg (25,895 lbs)

SECTION 6: GIV-X - continued

5. Airplane Limit Speeds

Maximum Operating	V_{MO}/M_{MO}	See envelope in JAA GIV-X Airplane Flight Manual
Manoeuvring	V_A	206
Flaps Extended	V_{FE}	180 (Flaps 39°) 220 (Flaps 20°) 250 (Flaps 10°)
Landing Gear Operating	V_{LO}	225
Landing Gear Extended	V_{LE}	250
Minimum Control Ground	V_{MCG}	109
Minimum Control Air	V_{MCA}	106
Minimum Control Landing	V_{MCL}	99

6. Centre of Gravity Range

   Refer to approved Airplane Flight Manual.

7. Datum

   For weight and balance purposes the zero datum is 0.7 m (27 in) aft of the jig point at the centreline of the airplane in the nose wheel well or 5.2 m (206 in) forward of Fuselage Station 206.

8. Mean Aerodynamic Chord (MAC)

   4.2 m (166.22 in)
   (Leading edge of MAC at Fuselage Station 387.7)

9. Maximum Operating Altitude

   13,716 m (45,000 ft)

SECTION 6: GIV-X - continued

10. Maximum Certified Weights in kg (lbs)

G350				
Aircraft S/N	Max Zero Fuel Weight in kg (lbs)	Max Ramp Weight in kg (lbs)	Max Take Off Weight in kg (lbs)	Max Landing Weight in kg (lbs)
4001 and subsequent (ASC 004)	22,226 (49,000)	32,340 (71,300)	32,159 (70,900)	29,937 (66,000)
4001 to 4200 (ASC 007D or later approved revision and without ASC-064A) **AFMS EASA-G350-2014-02**	22,226 (49,000)	32,340 (71,300)	32,159 (70,900)	26,535 (58,500)
4001 and 4200 (ASC 007D or later approved revision and with ASC-064A or later approved revision) **AFMS EASA-G350-2014-03**	22,226 (49,000)	32,340 (71,300)	32,159 (70,900)	26,535 (58,500)
4201 and subsequent (ASC 007D or later approved revision) **AFMS EASA-G350-2014-03**	22,226 (49,000)	33,702 (74,300)	35,520 (73,900)	26,535 (58,500)

G450				
Aircraft S/N	Max Zero Fuel Weight in kg (lbs)	Max Ramp Weight in kg (lbs)	Max Take Off Weight in kg (lbs)	Max Landing Weight in kg (lbs)
4001 to 4239 (ASC 005)	22,226 (49,000)	33,702 (74,300)	33,520 (73,900)	29,937 (66,000)
4001 to 4200 (ASC 005 and with ASC 016 or later approved revision without 064A or later approved revision) **AFMS JAA G450-2006-01**	22,226 (49,000)	34,020 (75,000)	33,838 (74,600)	29,937 (66,000)
4001 to 4200 (ASC 005 and with ASC 016 or later approved revision and ASC 064A or later approved revision) **AFMS EASA-G450-2010-05**	22,226 (49,000)	34,020 (75,000)	33,838 (74,600)	29,937 (66,000)

SECTION 6: GIV-X - continued

G450				
Aircraft S/N	Max Zero Fuel Weight in kg (lbs)	Max Ramp Weight in kg (lbs)	Max Take Off Weight in kg (lbs)	Max Landing Weight in kg (lbs)
4201-4239 (ASC 005 and with ASC 016 or later approved revision) **AFMS EASA-G450-2010-05**	22,226 (49,000)	34,020 (75,000)	33,838 (74,600)	29,937 (66,000)
4240 and subsequent (ASC 005)	22,226 (49,000)	34,020 (75,000)	33,838 (74,600)	29,937 (66,000)
4001 to 4200 (ASC 007D or later approved revision and without ASC-064A and without ASC-016 or later approved revision) **AFMS EASA-G450-2014-03**	22,226 (49,000)	33,702 (74,300)	35,520 (73,900)	26,535 (58,500)
4001 to 4200 (ASC 007D or later approved revision and with ASC-064A or later approved revision and without ASC-016 or later approved revision) **AFMS EASA-G450-2014-04**	22,226 (49,000)	33,702 (74,300)	35,520 (73,900)	26,535 (58,500)
4201 to 4239 (ASC 007D or later approved revision and without ASC-016 or later approved revision) **AFMS EASA-G450-2014-04**	22,226 (49,000)	33,702 (74,300)	35,520 (73,900)	26,535 (58,500)
4001 to 4200 (ASC 007D or later approved revision and without ASC 064A or later approved revision and with ASC 016 or later approved revision). **AFMS EASA-G450-2014-06**	22,226 (49,000)	34,020 (75,000)	33,838 (74,600)	26,535 (58,500)
4001 to 4200 (ASC 007D or later approved revision and with ASC-064A or later approved revision and with ASC 016 or later approved revision). **AFMS EASA-G450-2014-07**	22,226 (49,000)	34,020 (75,000)	33,838 (74,600)	26,535 (58,500)

SECTION 6: GIV-X - continued

G450				
Aircraft S/N	Max Zero Fuel Weight in kg (lbs)	Max Ramp Weight in kg (lbs)	Max Take Off Weight in kg (lbs)	Max Landing Weight in kg (lbs)
4201 to 4239 (ASC 007D or later approved revision and with ASC-016 or later approved revision) **AFMS EASA-G450-2014-07**	22,226 (49,000)	34,020 (75,000)	33,838 (74,600)	26,535 (58,500)
4240 and subsequent (ASC 007D or later approved revision) **AFMS EASA-G450-2014-07**	22,226 (49,000)	34,020 (75,000)	33,838 (74,600)	26,535 (58,500)

11. Minimum Flight Crew

    Two: Pilot and Co-pilot.

12. Maximum Seating Capacity

    Nineteen – Limited by emergency exit requirements.

13. Cargo Compartment Loading

    - Maximum allowable load: 907 kg (2000 lbs)
    - For specific loading limitations, refer to GIV-X Weight and Balance Manual .

14. Environmental Flight Envelope
    Refer to approved Airplane Flight Manual.

15. Other Limitations
    Refer to approved Airplane Flight Manual.

16. Auxiliary Power Unit (APU)
    One Honeywell 36-150 (Part No. 3800794-1)
    Oils: refer to applicable approved Manuals

17. Equipment
    An approved equipment listing is provided in the Illustrated Parts Catalog. In addition, the following items of equipment are required:
    - When an airplane is outfitted to carry passengers, an approved passenger oxygen system must be installed.
    - An approved Airplane Flight Manual.

SECTION 6: GIV-X - continued

18. Interior Installations

Cabin interior and seating configurations must be approved. G-IV cabin interior installations must be in accordance with report GIVX-GER-1619, GIV-X Interior Certification Requirements Document.

19. All Weather Capabilities

Category II

20. Wheels and Tyres

Main Landing Gear (MLG)	Each MLG incorporates twin 18 inch rims and 34x9.25 tyres (34x9.25-18)
Nose Landing Gear (NLG)	The NLG incorporates twin 10 inch rims and 21-7.25 tyres (21x7.25-10)

21. Hydraulics

Fluid specification: Phosphate Ester Fire-resistant Type 4 Hydraulic Fluid.

22. Maintenance Instructions

- Component life limitations are provided in Section 05-10-10, Chapter 5 of the GIV-X (G350 / G450) Aircraft Maintenance Manual.
- Maintenance criteria to comply with the certification maintenance requirements are provided in Chapter 5 of the GIV-X (G350 / G450) Aircraft Maintenance Manual.

23. Emergency Exits

- The flight crew must receive egress training as part of their type rating.
- A pre-flight safety briefing must be conducted prior to each flight (may be completed with a video).
- Passenger emergency briefing cards must be provided.
- Reference CRI D-13.

24. Operations

The GIV-X Type Design is ETOPS acceptable in that it has been demonstrated to comply with the design and reliability requirements for 180 minute ETOPS flights, however this implies no operational approval, this must be sought from the Aviation Authority of the country of registry of individual aircraft.

The GIV-X Type Design has been shown to be operable IAW Appendix 1 to JAR-OPS 1.430(h) when drawings 1159F47000 Aircraft Level Equipment & Furnishings, 1159F57010 Advanced Flight Deck Cockpit Furnishings Installation, 1159F47011 Forward Fuselage Equipment Installation and 1159F47012 Forward Mid Equipment Installation are installed in that it has been demonstrated to comply with the appropriate design and reliability requirements defined in CRI F-51. This however implies no operational approval, this must be sought from the Authority or Agency that is legally responsible for Operational Approvals in the country of registry of individual aircraft.

SECTION 6: GIV-X - continued

The Model designation of G450 is a production standard installation for both the HUD & EVS installations as defined above. The G350 HUD/EVS installation is optional and installed via ASC 009 - 159ASC47009 Top Level Drawing, EVS Installation

IV. Operating and Service Instructions

1. Airplane Flight Manual (AFM)
(reserved)

2. Instructions for Continued Airworthiness and Airworthiness Limitations
(reserved)

3. Weight and Balance Manual (WBM)
(reserved)

V. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below are approved by the European Aviation Safety Agency under the EASA Type Certificate [original TC number] as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014.

1. Master Minimum Equipment List
a. Master Minimum Equipment List (MMEL reference EASA-MMEL-AC-GV-OPS-0004 approved at revision dated 28 January 2011 as per the defined Operational Suitability Data Certification Basis recorded in CRI A-MMEL, or later approved revisions
b. Required for entry into service by EU operator.

2. Flight Crew Data
a. The Flight Crew data EASA-OSD-FC-GV Series-GAC-001, Original Issue, dated 21 May 2015 as per the defined Operational Suitability Data Certification Basis recorded in document EASA-OSD-FC-GV Series-GAC-001, or later recorded CRI A-FCD.
b. Required for entry into service by EU operator.
c. Pilot Type Rating: “G-V”.

Note: These data cover the Gulfstream models GV, GV-SP (G500/G550) and GIV-X (G450/G350). Differences are addressed in EASA-OSD-FC-GV Series-GAC-001.

3. Cabin Crew Data
Not applicable

SECTION 7: GV

I. General

1. Aeroplane: Gulfstream GV

II. Certification Basis

1. Reference Application Date for FAA Certification: 26 February 1992

2. FAA Certification Date: 11 April 1997

3. EASA/JAA Validation Application Date: 21 December 1994

4. EASA/JAA Certification Date: 31 October 2002

5. FAA Certification Basis:

   FAR Part 25, effective 1 February 1965, including Amendments 25-1 through 25-81, except for the following sections which are limited to showing compliance with the amendments indicated:

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

   FAR 34, including Amendment 34-1.
   FAR 36, including Amendments 36-1 through 36-21.

   Shoulder harness on all seats will be in lieu of demonstrated compliance to the test requirements of FAR 25.562(c) (1), (c) (5) and (c) (6) per Amendment 25-64.

   Special Conditions:
   HIRF (High Intensity Radiated Fields) and High Altitude Operations.

   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 1 February 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.

6. EASA/JAA Certification Basis:

JAR-25 Change 13	(Effective 5 October 1989)
Orange Paper 90/1	(Effective 11 May 1990)
Orange Paper 91/1	(Effective 12 April 1991)
Orange Paper 96/1	
JAR 25.519(b)(1)(2) only	(Effective 19 April 1996)
NPA 25BCD-236	(24 December 1996 Issue 1)
P-NPA 25D-275	(16 Feb 1998 Issue 1 Revision 1)

SECTION 7: GV - continued

Except for the following reversions:

- JAR 25.807(c)(1) and (d)(2), Type IV Exits in lieu of Type III Exits. Reversion to FAR 25.807(c)(2) at Amendment 15
- JAR 25.813(e), Partition Doors in Passenger Compartments. Reversion to FAR 25.813(d) at Amendment 0
- JAR 25.562, Emergency Landing Dynamic Conditions. Reversion to JAR-25 pre Change 13

JAR-AWO Change 2	(Effective 1 August 1986)
NPA AWO-5	(July 1994)

Special Conditions:

Novel Design Features:

JAA/GV/09	Interaction of Systems and Structure
JAA/GV/10	Head Up Display System

Unconventional Use:

JAA/GV/01	High Altitude Operation

General Experience:

JAA/GV/02	Landing Gear Warning
JAA/GV/03	Protection from the effects of HIRF
JAA/GV/04	Lightning Protection - Direct Effects
JAA/GV/05	Lightning Protection - Indirect Effects
JAA/GV/06	Worn Brakes
JAA/GV/07	Rapid Decompression
JAA/GV/08	Yawing Manoeuvring Conditions

Exemptions:
None

Equivalent Safety Findings:

- JAR 25.807(a)(4), Passenger Emergency Exits (Type IV).
- Accelerate-stop Distances and Related Performance. (JAA Interim Policy INT/POL/25/5 Issue 1)
- JAR 25.783(e), Emergency Exit Open Indication.
- JAR 25.811, Emergency Exit Marking and JAR25.812(b)(1) and (b)(2), Emergency Lighting.
- JAR 25A1549(b), APU Exhaust Gas Temperature Instrument Colour Markings.
- JAR 25.103, Stall Speed.

Environmental Standards:

Noise	ICAO Annex 16 Volume I (See EASA TCDSN IM.A.070)
Fuel Venting & Emissions	ICAO Annex 16 Volume II

SECTION 7: GV - continued

III. Technical Characteristics and Operational Limitations

The GV is an airplane with two aft mounted turbofan engines, low swept wings with winglets, and a T-tail.

1. EASA/JAA Type Design Definition

Report GV-GER-1357, JAA GV Baseline Build Standard.
Report GV-GER-6602, JAA Post Type Certification Modifications.

EASA/JAA GV Certification is restricted to Aircraft Serial Number 541 and Subsequent.
[Reference; JAA Certification Review Item (CRI) C-5 Issue 4, 25 September 2002]

2. Engines

Two Rolls Royce Deutschland BR700-710A turbofan engines.

2.1 Engine Limits

DATA SHEET: E00057EN (FAA) 6305 (LBA) E.018 (EASA)	
Static thrust at sea level:	
• takeoff (5 minutes)*	65,611 N (14,750 lbs)
• maximum continuous	64,277 N (14,450 lbs)

***** 10 minutes at take-off thrust allowed only in case of an inoperative engine due to shutdown or failure.

Other engine limitations: See the Engine Type Certification Data Sheet.

3. 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

SECTION 7: GV - continued

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
Antifriction additives: T1601 and T1602

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

4. Fuel Quantity

	Model GV
Total	18,827 kg (41,506 lbs)
Usable	18,610 kg (41,026 lbs)

5. Airplane Limit Speeds (KCAS)

Maximum Operating	V_{MO}/M_{MO}	See envelope in JAA GV Airplane Flight Manual
Manoeuvring	V_A	206
Flaps Extended	V_{FE}	165 (Flaps 39°) 206 (Flaps 20°) 250 (Flaps 10°)
Landing Gear Operating	V_{LO}	225
Landing Gear Extended	V_{LE}	250
Minimum Control Ground	V_{MCG}	103
Minimum Control Air	V_{MCA}	112

6. Centre of Gravity Range

Refer to approved Airplane Flight Manual.

7. Datum

For weight and balance purposes the zero datum is 1.1 m (45 in) forward of the jig point in the nose wheel well.

SECTION 7: GV - continued

8. Mean Aerodynamic Chord (MAC)

   4.3 m (171.19 in)
   (Leading edge of MAC at Fuselage Station 524.74)

9. Maximum Operating Altitude

   15,545 m (51,000 ft)

10. Maximum Certified Weights in kg (lbs)

Aircraft S/N	Max. Zero Fuel	Max. Ramp	Max. Take-Off	Max. Landing
541* & Subs *see para 1 above.	23,587 (52,000)	41,231 (90,900)	41,050 (90,500)	34,155 (75,300)

11. Minimum Flight Crew

    Two: Pilot and Co-pilot.

12. Maximum Seating Capacity

    Nineteen

13. Cargo Compartment Loading

    - Maximum allowable load: 1134 kg (2500 lbs)
    - For specific loading limitations, refer to GV Weight and Balance Manual.

14. Environmental Flight Envelope

    Refer to approved Airplane Flight Manual.

15. Other Limitations

    Refer to approved Airplane Flight Manual.

16. Auxiliary Power Unit (APU)

    Allied Signal RE220 (Part No. 3800700-1)
    Oils: Refer to applicable approved manuals.

17. Equipment

    An approved equipment listing is provided in the Illustrated Parts Catalog. In addition, the following items of equipment are required:
    - When an airplane is outfitted to carry passengers, an approved passenger oxygen system must be installed.
    - An approved Airplane Flight Manual.

    Equipment related weight & balance changes, including those resulting from aircraft outfitting, are noted in the aircraft specific entries in the Weight and Balance Manual.

SECTION 7: GV - continued

18. Interior Installations

Cabin interior and seating configurations must be approved.

GV cabin interior installations must be in accordance with Report GV-GER-1242 'GV Interior Certification Requirements Document'.

19. All Weather Capabilities

Category 2 (With Aircraft Service Change 35 installed)

20. Wheels and Tyres

Main Landing Gear (MLG)	Each MLG incorporates twin 18 inch rims and 35X11 tyres (35X11-18).
Nose Landing Gear (NLG)	The NLG incorporates twin 10 inch rims and 21X7.25 tyres (21X7.25-10).

21. Hydraulics

Refer to approved Airplane Flight Manual.

22. Maintenance Instructions

- Component life limitations are provided in Section 05-10-10, Chapter 5 of the GV Aircraft Maintenance Manual.
- Maintenance criteria to comply with the certification maintenance requirements are provided in Chapter 5 of the GV Aircraft Maintenance Manual.

23. Operations

The GV Type Design has been shown to be operable IAW Appendix 1 to JAR-OPS 1.430(h) when STC ST01201LA is installed in that it has been demonstrated to comply with the appropriate design and reliability requirements defined in CRI F-51. In order for those aircraft with this STC installed to meet the requirements as defined in CRI F-51, the optional EVS Image Repeater must be installed. This however implies no operational approval, this must be sought from the Authority or Agency that is legally responsible for Operational Approvals in the country of registry of individual aircraft.

IV. Operating and Service Instructions

1. Airplane Flight Manual (AFM)
(reserved)

2. Instructions for Continued Airworthiness and Airworthiness Limitations
(reserved)

3. Weight and Balance Manual (WBM)
(reserved)

SECTION 7: GV - continued

V. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below are approved by the European Aviation Safety Agency under the EASA Type Certificate [original TC number] as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014.

1. Master Minimum Equipment List
a. (see GIV-X data)
b. Required for entry into service by EU operator.

2. Flight Crew Data
a. (see GIV-X data
b. Required for entry into service by EU operator.
c. Pilot Type Rating: “G-V”.

3. Cabin Crew Data
Not applicable

SECTION 8: GV-SP

I. General

1. Aeroplane: Gulfstream GV-SP

II. Certification Basis

1. Reference Application Date for FAA Certification: 24 October 2000
2. FAA Certification Date: 14 August 2003
3. EASA/JAA Validation Application Date: 13 October 2000
4. EASA/JAA Certification Date: 9 March 2004
5. FAA Certification Basis:

FAR Part 25, effective February 1, 1965, including Amendments 25-1 through 25-98, 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.
- Methods of compliance with Amendment 25-92 are specified in Issue Paper F-1, Stage 4, "Performance Substantiation".
- The Fatigue and Damage Tolerance requirements of FAR 25.571 are limited to the fuselage and fuselage changes only.

FAR Part 34, including Amendments 34-1 through 34-3.
FAR Part 36, including Amendments 36-1 through 36-23.

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:

- No. 25-NM-105, HIRF (High Intensity Radiated Fields).
- No. 25-180-SC, Enhanced Vision Systems.

Exemptions:

- No. 7946 [FAR 25.813(e)], Mid-Cabin Doors Between Passenger Compartments.
- No. 8004 [FAR 25.901(c)], Uncontrollable High Thrust Failure Conditions.

Equivalent Safety Findings:

- FAR 25.807(g)(2), Gulfstream Overwing Emergency Exit Windows.
- FAR 25.841(b)(6), Cabin Pressurization - High Altitude Takeoff and Landing Operations.
- FAR 25.811(d), 25.812(b)(1), Emergency Exit Marker, Locator and Bulkhead/Divider Signs.
- FAR 25.853, 25.869, Flammability Substantiation of Electronic Equipment.

SECTION 8: GV-SP - continued

6. EASA Certification Basis

JAR Requirement Basis:

- For the changes comprising the GV-SP:
  JAR-25 Change 15 (Effective 1 October 2000), and JAR AWO Change 2 (Effective 1 August 1996).
- For unchanged areas see GV data above.

Reversions:
Reversions applicable to the GV remain applicable to GV-SP.

Special Conditions:
JAA Special Conditions applicable to the GV remain applicable to the GV-SP unless otherwise incorporated by the adoption of later JAR amendments. New Special Conditions raised specifically for the GV-SP project are as follows:

Novel Design Features:

JAA/GV/11	Enhanced Vision System. Reference CRI F-21
JAA/GV/12	Human Factors Aspects of Flight Deck Design Reference CRI F-22
JAA/GV/13	Cursor Control Device – Airworthiness Approval Reference CRI F-23
JAA/GV/14	Integrated Standby Flight Display System. Reference CRI F-25

Unconventional Use:
None for the GV-SP changed areas.

General Experience:
None for the GV-SP changed areas.

Exemptions:
None

Equivalent Safety Findings:
JAA ESFs applicable to the GV remain applicable to the GV-SP unless otherwise incorporated by the adoption of later JAR amendments. New ESFs raised specifically for the GV-SP project are as follows:

- JAR 25.1357(e) & 25.1309(e); Circuit Protective Devices.

Environmental Standards:

Noise	ICAO Annex 16 Volume I (See EASA TCDSN IM.A.070)
Fuel Venting & Emissions	ICAO Annex 16 Volume II

SECTION 8: GV-SP - continued

III. Technical Characteristics and Operational Limitations

The GV-SP is an airplane with two aft mounted turbofan engines, low swept wings with winglets, and a T-tail. The GV-SP differs from the GV in the following respects:

- 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 and seventh cabin window pair added.
- Cabin improvements for increased baggage space, external visibility and comfort.
- Minor system changes for increased reliability and space utilization.

The GV-SP is also known as the G550. Aircraft Service Change (ASC) Number 11, "G550 Modification" designates aircraft as Model GV-SP (G550) and is applicable to serial numbers 5001 and subsequent.

Aircraft Service Change (ASC) Number 063, "Mid-Wing Ejector" designates aircraft applicability for this modification. This modification is for GVSP aircraft that have had ASC 11 (G550 modification) only. Reference EASA Approval # EASA.IM.A.C.01197

The GV-SP is also known as the G500. Aircraft Service Change (ASC) Number 10, "G500 Modification" designates aircraft as Model GV-SP (G500) and is applicable to serial numbers 5001 and subsequent.

1. EASA/JAA Type Design Definition

Report GVSP-GER-6139, Gulfstream Model GV-SP JAA/EASA Baseline Build Standard.
Report GVSP-GER-7656, EASA/JAA Post Type Certification Modifications.

2. Engines

Two Rolls Royce Deutschland BR700-710C4-11 turbofan engines.

2.1 Engine Limits

DATA SHEET: E00057EN (FAA) 6305 (LBA) E.018 (EASA)	
Static thrust at sea level: • takeoff (5 minutes)* • maximum continuous	 68,436 N (15,385 lbs) 64,277 N (14,450 lbs)

***** 10 minutes at take-off thrust is allowed only in case of an inoperative engine due to shutdown or failure.

Other engine limitations: See the Engine Type Certificate Data Sheet.

3. Fuel

Kerosene

American ASTM D 1655-92, Jet A
ASTM D 1655-92, Jet A-1
MIL-T-83133, Grade JP-8

SECTION 8: GV-SP - continued

British	DERD 2453 (DEF STAN 91-97) DERD 2494 (DEF STAN 91-91)
Canadian	CAN/CGSB-3.23
French	AIR 3405
CIS	GOST 10227-86, Am 1, TS-1 & RT
IATA	kerosene type

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
Antifriction additives: T1601 and T1602

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

4. Fuel Quantity

	Model G550	Model G500
Total	18,820 kg (41,489 lbs)	16,052 kg (35,389 lbs)
Usable	18,734 kg (41,300 lbs)	15,966 kg (35,200 lbs)

5. Airplane Limit Speeds (KCAS)

Maximum Operating	V_{MO}/M_{MO}	See envelope in JAA GV-SP Airplane Flight Manual
Manoeuvring	V_A	206
Flaps Extended	V_{FE}	170 (Flaps 39°) 220 (Flaps 20°) 250 (Flaps 10°)
Landing Gear Operating	V_{LO}	225
Landing Gear Extended	V_{LE}	250
Minimum Control Ground	V_{MCG}	107
Minimum Control Air	V_{MCA}	112

6. Center of Gravity Range

Refer to approved Airplane Flight Manual.

SECTION 8: GV-SP - continued

7. Datum

   For weight and balance purposes the zero datum is 1.1 m (45 in) forward of the jig point in the nose wheel well.

8. Mean Aerodynamic Chord (MAC)

   4.3 m (171.19 in)
   (Leading edge of MAC at Fuselage Station 524.74)

9. Maximum Operating Altitude

   15,545 m (51,000 ft)

10. Maximum Certified Weights in kg (lbs)

Aircraft S/N	Max. Zero Fuel	Max. Ramp	Max. Takeoff	Max. Landing
G550 serials 5001 and subsequent (ASC 11)	23,587 (52,000)	41,458 (91,400)	41,277 (91,000)	34,155 (75,300)
G500 serials 5001 and subsequent (ASC 10)	23,587 (52,000)	38,782 (85,500)	38,601 (85,100)	34,155 (75,300)
G550 with ASC 063 Installed	24,040 (53,000)	41,458 (91,400)	41,277 (91,000)	34,155 (75,300)

11. Minimum Flight Crew

    Two: Pilot and Co-pilot.

12. Maximum Seating Capacity

    Nineteen

13. Cargo Compartment Loading
    - Maximum allowable load: 1134 kg (2500 lbs)
    - For specific loading limitations, refer to GV-SP Weight and Balance Manual.

14. Environmental Flight Envelope

    Refer to approved Airplane Flight Manual.

15. Other Limitations

    Refer to approved Airplane Flight Manual.

16. Auxiliary Power Unit (APU)

    Allied Signal RE220 (Part No. 3800700-1)
    Oils: refer to applicable approved Manuals

17. Equipment

    An approved equipment listing is provided in the Illustrated Parts Catalog. In addition, the following items of equipment are required:
    - When an airplane is outfitted to carry passengers, an approved passenger oxygen system must be installed.
    - An approved Airplane Flight Manual.

SECTION 8: GV-SP - continued

Equipment related weight & balance changes, including those resulting from aircraft outfitting, are noted in the aircraft specific entries in the Weight and Balance Manual.

18. Interior Installations

Cabin interior and seating configurations must be approved.

GV-SP cabin interior installations must be in accordance with Report GVSP-GER-6044 'Gulfstream GV-SP Interior Certification Requirements Document'.

19. All Weather Capability

Category II

20. Wheels and Tyres

Main Landing Gear (MLG)	Each MLG incorporates twin 18 inch rims and 35X11 tyres (35X11-18).
Nose Landing Gear (NLG)	The NLG incorporates twin 10 inch rims and 21X7.25 tyres (21X7.25-10).

21. Hydraulics

Refer to approved Airplane Flight Manual.

22. Maintenance Instructions

- Component life limitations are provided in Section 05-10-10, Chapter 5 of the GV-SP (G500 / G550) Aircraft Maintenance Manual.
- Maintenance criteria to comply with the certification maintenance requirements are provided in Chapter 5 of the GV-SP (G500 / G550) Aircraft Maintenance Manual.

23. Operations

The GV-SP Type Design is ETOPS acceptable in that it has been demonstrated to comply with the design and reliability requirements for 180 minute ETOPS flights, however this implies no operational approval, this must be sought from the Aviation Authority of the country of registry of individual aircraft.

The GV-SP Type Design has been shown to be operable IAW Appendix 1 to JAR-OPS 1.430(h) when drawings 1159F57000 Aircraft Level Equipment & Furnishings, 159F57010 Advanced Flight Deck Cockpit Furnishings Installation, 1159F57011 AFD Forward Fuselage Equipment Installation and1159F57012 AFD Forward Mid Equipment Installation are installed in that it has been demonstrated to comply with the appropriate design and reliability requirements defined in CRI F-51. This however implies no operational approval, this must be sought from the Authority or Agency that is legally responsible for Operational Approvals in the country of registry of individual aircraft.

The Model designation of G550 is a production standard installation for both the HUD & EVS installations as defined above. The G500 HUD/EVS installation is optional and installed via ASC 013 - 159ASC57013 Top Level Drawing, HUD/EVS Installation.

SECTION 8: GV-SP - continued

IV. Operating and Service Instructions

1. Airplane Flight Manual (AFM)
(reserved)

2. Instructions for Continued Airworthiness and Airworthiness Limitations
(reserved)

3. Weight and Balance Manual (WBM)
(reserved)

V. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below are approved by the European Aviation Safety Agency under the EASA Type Certificate [original TC number] as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014.

1. Master Minimum Equipment List
a. (see GIV-X data)
b. Required for entry into service by EU operator.

2. Flight Crew Data
a. (see GIV-X data).
b. Required for entry into service by EU operator.
c. Pilot Type Rating: “G-V”.

3. Cabin Crew Data
Not applicable

SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

APU:	Auxiliary Power Unit
ASC:	Aircraft Service Change
AWO:	All Weather Operation
CRI:	Certificaton Review Item
EASA:	European Aviation Safety Agency
ESF:	Equivalent Safety Finding
FAA:	Federal Aviation Administration
JAR:	Joint Aviation Requirement
NPA:	Notice of Proposed Amendment
INT/POL:	JAA Interim Policy
RVSM:	Reduced Vertical Separation Minima
SB:	Service Bulletin
SC:	Special Condition
S/N:	Serial Number

II. Type Certificate Holder Record

GULFSTREAM AEROSPACE CORPORATION
500 Gulfstream Road,
Savannah, GA, 31408
U.S.A.

III. Change Record

Starting with Issue 4.0

Issue	Date	Changes	TC issue
Issue 4.0	16/12/2010	Minor typographical errors corrected and reference to EASA Noise TCDSN added.	Initial Issue, 06/06/2006
Issue 5.0	12/06/2013	Revision to reflect the incorporation of Aircraft Service Change (ASC) 016 into production starting with aircraft serial number 4240 and subsequent. EASA Noise TCDS reflects this current update.	
Issue 6.0	10/03/2014	Correction of the maximum flap speeds for GIV-X (change from 170 to 180) to be consistent with relevant AFM	
Issue 7.0	08/10/2014	-table of contents with active links, minor editorial changes -certified weights changed for models G350 and G450 (Major change project 0010030967) -list of approved fuels extended to Russian Kerosene for RR TAY 611-8 and 611-8C engines (GIV and GIV-X) (Major change project 0010032587) -list of approved fuels extended to Chinese Kerosene for RR TAY 611-8 and 611-8C and BR700-710A and BR700-710C4-11 engines (GIV and GIV-X and GV and GV-SP) (Major change project 0010032587)	
Issue 8.0	29/06/2015	GV/GV-SP Noise levels administrative correction: part 36 amdt. corrected according to existing compliance documentation.	
Issue 9.0	09/12/2015	-Editorial changes on page one -Sections IV placeholders -OSD implementation in Sections V -GII increased range chapters renumbered	

- END -