



OPERATIONAL EVALUATION ABSTRACT REPORT

AIRCRAFT GULFSTREAM G150 (GULFSTREAM, ICAO G150)

DALLAS - TEXAS, UNITED STATES, JUNE 6TH TO 10TH, 2011

REVISION 1 – DECEMBER 28TH, 2011

Gulfstream G150 was operationally evaluated by FAA and EASA and operates in many countries under these authorities' rules.

ANAC established a Brazilian Aircraft Evaluation Group for the Gulfstream G150 (BAEG-G150) to evaluate the operation of this aircraft in Brazil.

1. TYPE RATING

Based on the analysis of available previous Aircraft Evaluation Groups (FAA and EASA considered) and the technical visit performed in June 2011, the Gulfstream G150 is considered as a new type rating in Brazil. BAEG-G150 recommends G150 type rating issuance, requiring specific skills trainings for its flight.

BAEG- G150 recommends update ANAC Brazilian type rating with the following lines:

MANUFACTURER (1)	AIRCRAFT (2)		RMK (3)	TYPE RATING (4)
	MODEL	NAME		ANAC
X – Type Rating (Airplane) – Multi Pilot Operation				
Gulfstream	G150	G150	HPA	G150

2. TRAINING SPECIFICATION

a. Prerequisites for the Type Rating Training

Pilot in Command (PIC)

- Minimum of 1000 hours of flight experience in airplanes as a pilot;
- At least, a private pilot license and a Instrument Rating;
- Multi Engine Land Class or a Multi Engine Type Rating provided that no restriction has traction multi core (aircraft with more than one engine on the same axis);
- The pilot must provide documentation of high altitude training prior to simulator/flight training (applicable ATP knowledge certificate, a High Altitude Jet Type Rating, or approved training course).

Second in Command (SIC)

- At least, a private pilot license and a Instrument Rating;
- Multi Engine Land Class or a Multi Engine Type Rating provided that no restriction has traction multi core (aircraft with more than one engine on the same axis);
- The pilot must provide documentation of high altitude training prior to simulator/flight training (applicable ATP knowledge certificate, a High Altitude Jet Type Rating, or approved training course).

b. Initial Training

The initial training shall follow the described at Operational Training Program approved by FAA to FSI – Flight Safety International (FSI Book 2).

The following subjects are considered critical to aircraft safe operation and shall be included at initial training to pilot type rating:

➤ Systems Integration Training:

- Primary Flight Display (PFD) – Mode Annunciators;
- Multi Function Display (MFD) – Controls;

- Flight Guidance System (FGS);
- Flight Management System – (FMS);
- Cursor Control Device (CCD);
- Elevator Trim Systems (Normal, Override, Emergency).

➤ **Flight Training (Full Flight Simulator – Level C or D and/or Aircraft):**

- Dual Generator Failure procedure;
- Loss of cabin pressure procedures;
- Instrument flying on standby instruments;
- Fuel leaks;
- Smoke procedures, including smoke removal;
- Approach & Landing from left seat with forward windscreen obscured (using left side window for forward view);
- Related and un-related multiple EICAS messages.

Early exposure to the FCP, FMA and FMS is important, especially for pilots with no previous EFIS or FMS experience.

Establishing early confidence in manually flying the aircraft, converting from manual to automatic (FMS controlled) flight mode and back is equally important due to heavy reliance on the Automatic Flight Control System (AFCS). In the event of a flight path deviation due to input error or system malfunction, the flight crew must be able to comfortably transition from automatic to manual mode and back in an orderly fashion.

Other initial training curricula may be approved by the POI responsible for operations, whereas they are supported in a proportional increase of minimum requirements.

Taking into consideration the minimum maneuvers for pilot qualification, BAEG-G150 recommends that the initial training to use, as a training device approved, a flight simulator at least level C qualified in accordance with FAR 060 (or JAR-FSTD A or equivalent requirement) for training maneuvers and critical emergencies of the aircraft.

c. Recurrent Training

Recurrent training shall also follow the requirements described in the Operational Training Program approved by FAA for FSI - Flight Safety International (Book 2).

d. Proficiency check

The proficiency checks should follow the HPA (High Performance Aircraft) check profile ANAC and can use Book 2 of the Flight Safety International as guidance at the discretion of the Check Ride Pilot and whereas they are more conservative regarding operational safety.

Considering the airplane characteristics, the FFS was considered as primary training and checking device. Therefore, the proficiency check must be performed in FFS qualified or validated by ANAC.

Check rides on airplanes for **RBHA 91** operators can only be performed if there is audio panel installed on the 3rd crew seat.

For **RBAC 135** operators, the audio panel installed on the 3rd crew seat is **mandatory**.

e. Training Center

The BAEG-G150 recommends that only training courses run by FSI Dallas Fort Worth - Texas - United States of America be considered for licensing pilots in the Gulfstream G150, for a period of at least 24 months after the clearance of the first crew in Brazil. After half of this period, this recommendation will be reevaluated.

After this period, the POI and licensors shall consider that operators with more experience might be able to train its pilots, whereas considering that its Operational Training Programs were approved using the minimum curriculum set forth in this report.

3. COMPLIANCE TO RBHA 91 AND RBAC 135

A compliance checklist according to **RBHA 91** and **RBAC 135** (May 24th, 2011) was presented and considered **satisfactory**.

When operating the aircraft in some specific area in Brazil a HF Communication System installation can be required in accordance with RBHA 91.511 or RBHA 135.165.

4. SPECIAL OPERATIONS

Each special operation shall be specifically approved to the first interested Brazilian Operator, when it applies, and this report shall be updated with the resultant evaluation.

The airplane is approved for CAT II operations.

Although the airplane can be equipped with a class 3 EFB, no operational evaluation was conducted.

The ETOPS and RVSM operation has not been evaluated.

Maximum number of passengers

It is recommended to allow configuration of operation in Brazil with a maximum of nine (9) passengers.

5. OPERATIONAL DOCUMENTS

a. MMEL

The MMEL from FAA Rev. 1 from November 12th, 2008 has been accepted from the operational point of view, with no recommendations for change

This doesn't exclude the necessity of an analysis from the airworthiness superintendence which may require changes.

The BAEG-G150 recommends the use of this MMEL approved by FAA, considering the modifications which shall be the basis for making the operator's MEL.

b. Aircraft Operations Manual

The use of POM as a base for operation in Brazil can be beneficial, but shall be examined in detail by the sector responsible for approving of the operation before the first flight.

6. FLIGHT SIMULATORS

The use of available Flight Simulators as Training Device approved in a Training Program or Training pilots shall only be approved after issuance of the respective validation of foreign qualification by GAAS/GGTA/SSO.

Until the issuance of this report, there was one flight simulator of this model with qualification already validated by ANAC as level D in Flight Safety International in Dallas, Texas.

7. OPERATIONAL ISSUES

Taking into account the Brazilian restrictions for checking, the audio panel for 3rd crew member shall be installed for RBAC 135 operations. For RBHA 91 operations this is only a desirable requirement, because, if not installed, check rides can not be performed in aircraft.

8. ANAC INSPECTOR

Two ANAC Check Pilots (one crew) should attend a complete type rating course.

These type ratings will enable ANAC check pilots to perform pilot evaluations and pilot check rides and will complete the determination of the minimum training required for qualification of type G150.

ANAC Check Pilots shall be qualified until the first Brazilian operator's training for a G150 type rating (July 11th to 29th, 2011).

Proficiency check exams shall be conducted by the ANAC inspector or Examiners Accredited by the Agency.

9. OPERATIONS IN BRAZIL

This aircraft shall only be allowed to operate in Brazil after confirmation from the manufacturer or the first operator which will be offered full courses of qualification in G150 for a crew INSPAC OPS ANAC and a full maintenance course for one ANAC technician.

Only training courses run by FSI Dallas - Texas - United States of America shall be considered for licensing pilots in the Gulfstream G150, for a period of at least 24 months after the clearance of the first crew in Brazil. After half of this period, this recommendation will be reevaluated.

ANAC, Rio de Janeiro, December 28th, 2011.

BAEG-G150

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