



## **OPERATIONAL EVALUATION REPORT**

### **AIRCRAFT EA500 (ECLIPSE AEROSPACE INC., ICAO EA50)**

RIO DE JANEIRO, BRAZIL

ORIGINAL – OCTOBER, 2012

## ECLIPSE EA500

### GRUPO DE AVALIAÇÃO DE AERONAVES (GAA)

#### *Aircraft Evaluation Group*

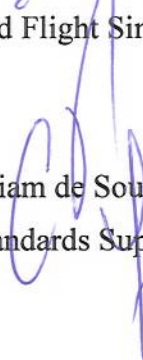
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## **1. INTRODUCTION**

This report presents ANAC results of the operational evaluation of the aircraft Eclipse EA500.

The evaluation followed a catch-up process. ANAC used as guides the following documents: FAA AC 120-53A, EASA Common Procedures Document and ANAC IAC 121-1009.

### **1.1. Purpose**

This report:

- Defines the Pilot Type Rating assigned for the Eclipse EA500;
- Defines the requirements for training, checking and currency applicable to flight crew;
- Provides the Master Differences Requirements (MDR) for crews requiring differences qualification for mixed-fleet-flying;
- Describes the required Flight Simulation Training Device (FSTD) for crew training and checking.

### **1.2. Applicability**

This report is applicable to:

- Brazilian Operators of Eclipse EA500 under RBHA 91 and RBAC 135 rules;
- RBAC 142 Training Centers;
- Civil Aviation Inspectors ( INSPAC) related to safety oversight of EA500;
- ANAC Principal Operations Inspector (POI) of EA500 operators.

### **1.3. ANAC Responsibility/Authority.**

Determinations made in this report are based on the evaluations of specific Eclipse EA500 aircraft type and model equipped in a given configuration and in accordance with current regulations and guidance. Modifications and upgrades made to the model evaluated, or introduction of new aircraft variants, may require amendment of the findings in this report. ANAC has responsibility and authority to re-evaluate and modify sections of this report based on new advisory material or regulations, aircraft operating experience, or testing of new or modified aircraft.

## 2. SUMMARY AIRCRAFT DESCRIPTION

### 2.1. Eclipse EA500

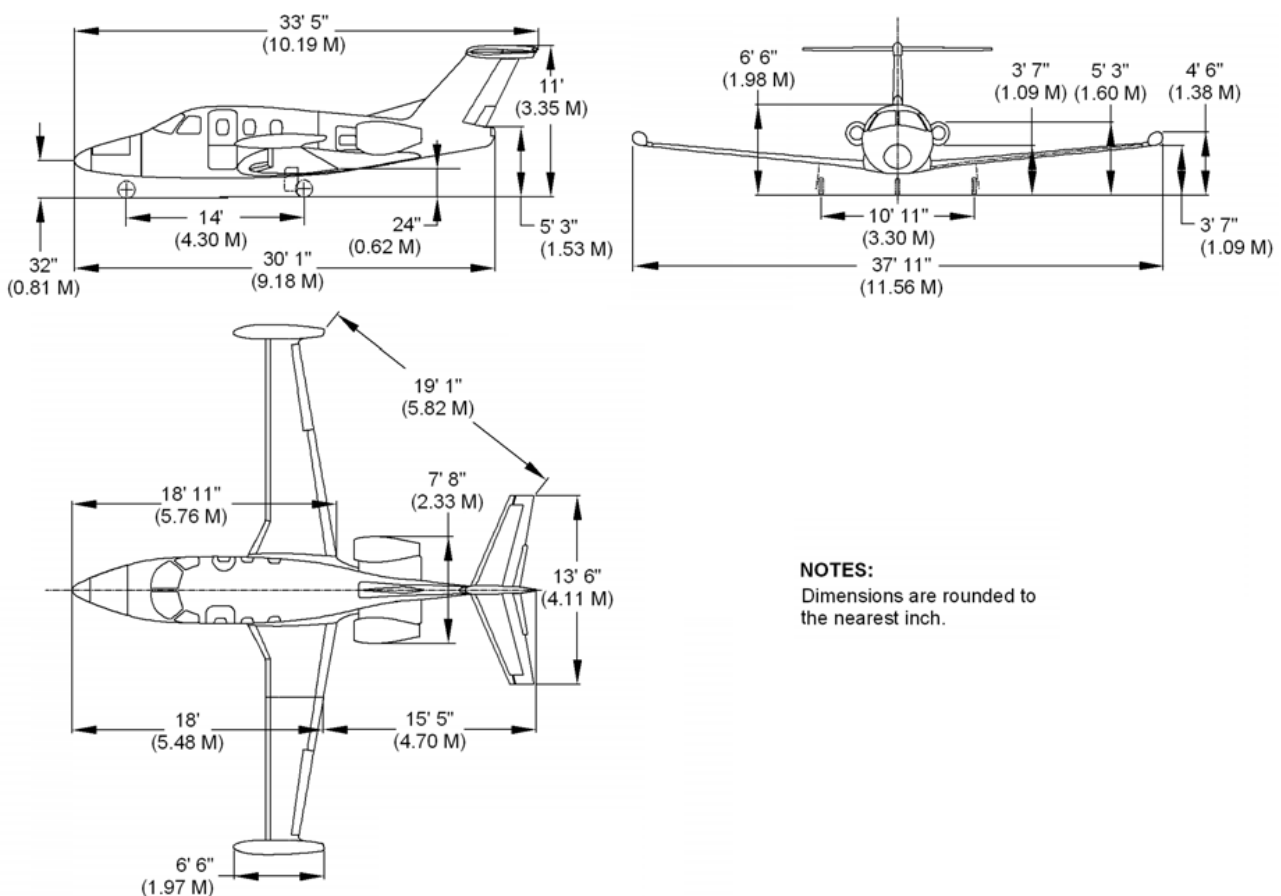
The Eclipse EA500 is a twin-engine turbofan airplane certified in accordance with RBAC 23. The EA500 is classified as a center line thrust airplane since the aircraft stalls prior to velocity minimum controllable (VMC) airspeed. Therefore, no VMC speed is published.

A summary of the airplane specification is presented in table 1 below. For more information, please consult the Brazilian Type Certificate Data Sheet (TCDS) issued by ANAC, and the approved Aircraft Flight Manual (AFM). In case of information disagreement between table 1 and the TCDS, this last source shall prevail:

**Table 1 – Eclipse EA500 information**

<b>EA500</b>	
Certification Basis	RBAC 23
Engine	PW610F-A
Minimum Crew	One pilot on the left seat
Maximum Passengers	5 (Five)
Maximum Takeoff Weight (MTOW)	2722 kg
Speeds	Maximum Operating Airspeed ( $V_{MO}$ ): 285 KEAS Maximum Operating Mach ( $M_{MO}$ ): 0.64

### 2.2. Three Views



### 3. PILOT TYPE RATING

The Aircraft Evaluation Group (GAA-EA50) recommends updating ANAC type rating list as indicated in table 2 below.

**Table 2 – ANAC Type Rating List Revision**

IX – Habilitação de Tipo (Avião) – Terrestre – Operação Single Pilot, Multi Engine (Motor a Reação)				
FABRICANTE (1)	AERONAVE (2)		OBS (3)	DESIGNATIVO (4)
	MODELO	NOME		ANAC
Eclipse Aerospace	EA500	Eclipse 500	HPA	EA50/S, EA50/D

### 4. MASTER DIFFERENCE REQUIREMENT (MDR)

Not applicable.

### 5. OPERATOR DIFFERENCES REQUIREMENT (ODR)

Not applicable.

## 6. SPECIFICATIONS FOR PILOT TRAINING

### 6.1. Prerequisites for the Type Rating Training

- Private Pilot License;
- Multiengine land rating or a multiengine aircraft type rating;
- Instrument airplane rating;
- At least 200 hours total experience; and
- 70 hours Pilot in Command (PIC).

Also, the pilot must complete other elements of the Eclipse Aviation pilot qualification program before the beginning of the flight training:

- Aircraft upset;
- Physiological/hypoxia training; and
- Jet basics.

### 6.2. Initial Training

According to AFM Limitations section, crew members must be trained in accordance with Eclipse Aerospace training program or an equivalent training program approved by ANAC.

The following syllabus shall be considered as the recommended for the initial training program:

<b>GROUND TRAINING SYLLABUS</b>	<b>HOURS</b>
Aircraft General	2.0
Engines	2.0
Fuel System	2.0
Flight Control Systems	2.0
Electrical and Lighting Systems	3.0
Landing Gear and Brake Systems	2.0
Ice and Rain Protection	1.0
Environmental Systems	2.0
Flight Instrumentation/Avionics Systems	8.0
SRM and Risk Management	4.0
Systems Integration Training	4.0
Weight and Balance	1.0
Adverse Weather	0.5
Flight Planning	0.5
Aircraft Manuals	0.5
ANAC-Approved Flight Manual	0.5
Aircraft Performance	1.0
Systems Integration Training	4.0
Preflight Inspection	1.0
Review and Examination	3.0
Systems Integration Training	4.0

<b>FLIGHT TRAINING SESSIONS</b>	<b>HOURS</b>
Normal Procedures	4.0
Instrument Procedures	4.0
Engine Inoperative Procedures	4.0
Abnormal & Emergency Procedures	4.0
Line Oriented Flight Training – L.O.F.T.	4.0
Procedure Review or Additional L.O.F.T.	4.0
Proficiency and Recommendation	4.0
Simulator Segment of Practical Test	4.0

### 6.3. Special Training Considerations

The following items should receive special emphasis during the training:

- The AVIO NG 1.5 avionics suite;
- The use of the Garmin400 and its integration with Autopilot/Flight Director;
- The use of the standby Artificial Horizon and Garmin 400 with failure of the Primary Flight;
- Electronic Flight Bag – EFB;
- Performance-Based Navigation;
- Sidestick pusher system; and
- Display/Multi Function Display.

### 6.4. Mentoring Program

Unless the applicant holds a type rating in a turbojet airplane with at least 1,000 hours of flight time, it will be necessary to perform a minimum of 25 hours of flight time under the direct observation of a EA500 instructor.

The mentoring program is applicable to EA50/S (Single Pilot) and EA50/D PIC (Dual / Pilot in Command). It is not applicable to a Second in Command rating (EA50/D SIC). However, before the EA50/D SIC can apply for a EA50/S or EA50/D PIC, it will be necessary to log at least 50 hours of flight time in the EA500 and a minimum of 300 hours of total flight time as PIC.

### 6.5. Recurrent Training

The following syllabus shall be considered as the recommended for the recurrent training program:

<b>GROUND TRAINING SYLLABUS</b>	<b>HOURS</b>
Aircraft General/Preflight Inspection	1.0
Engines	1.5
Electrical and Lighting Systems	2.0
Flight Instrumentation/Avionics	2.0
Environmental Systems	1.5
Fuel System	1.0
Flight Control Systems	1.0
Landing Gear/Brakes	1.0
Ice and Rain Protection Systems	1.0
Weight and Balance	1.0
Aircraft Performance	1.0
Review and Examination	2.0



<b>FLIGHT TRAINING SESSIONS</b>	<b>HOURS</b>
Proficiency & Recommendation	4.0
Abnormal/Emergency	4.0
Proficiency Check PIC	4.0
Aircraft, Normal Procedures	4.0
Proficiency Demonstration SIC	4.0

## **7. SPECIFICATIONS FOR CHECKING**

The proficiency checks should follow the HPA (High Performance Aircraft) check profile ANAC as guidance at the discretion of the Check Ride Pilot.

## **8. FLIGHT SIMULATION TRAINING DEVICES (FSTD)**

Full Flight Simulators used as described in section 6 must be qualified by ANAC.

## **9. COMPLIANCE TO RBHA 91 AND RBAC 135**

A compliance checklist according to RBHA 91 and RBAC 135 was presented and considered satisfactory.

## **10. MANUALS**

### **10.1. Master Minimum Equipment List - MMEL**

The ANAC EA500 MMEL shall be used by Brazilian operators as a basis for developing their Operator Minimum Equipment List (MEL).

### **10.2. Airplane Flight Manual - AFM**

Brazilian AFM of EA500, approved by ANAC, shall be used by Brazilian operators as a basis for developing their own Airplane Operation Manual (AOM), if required.