



NTSB Public Forum

Panel 5

Continued Airworthiness

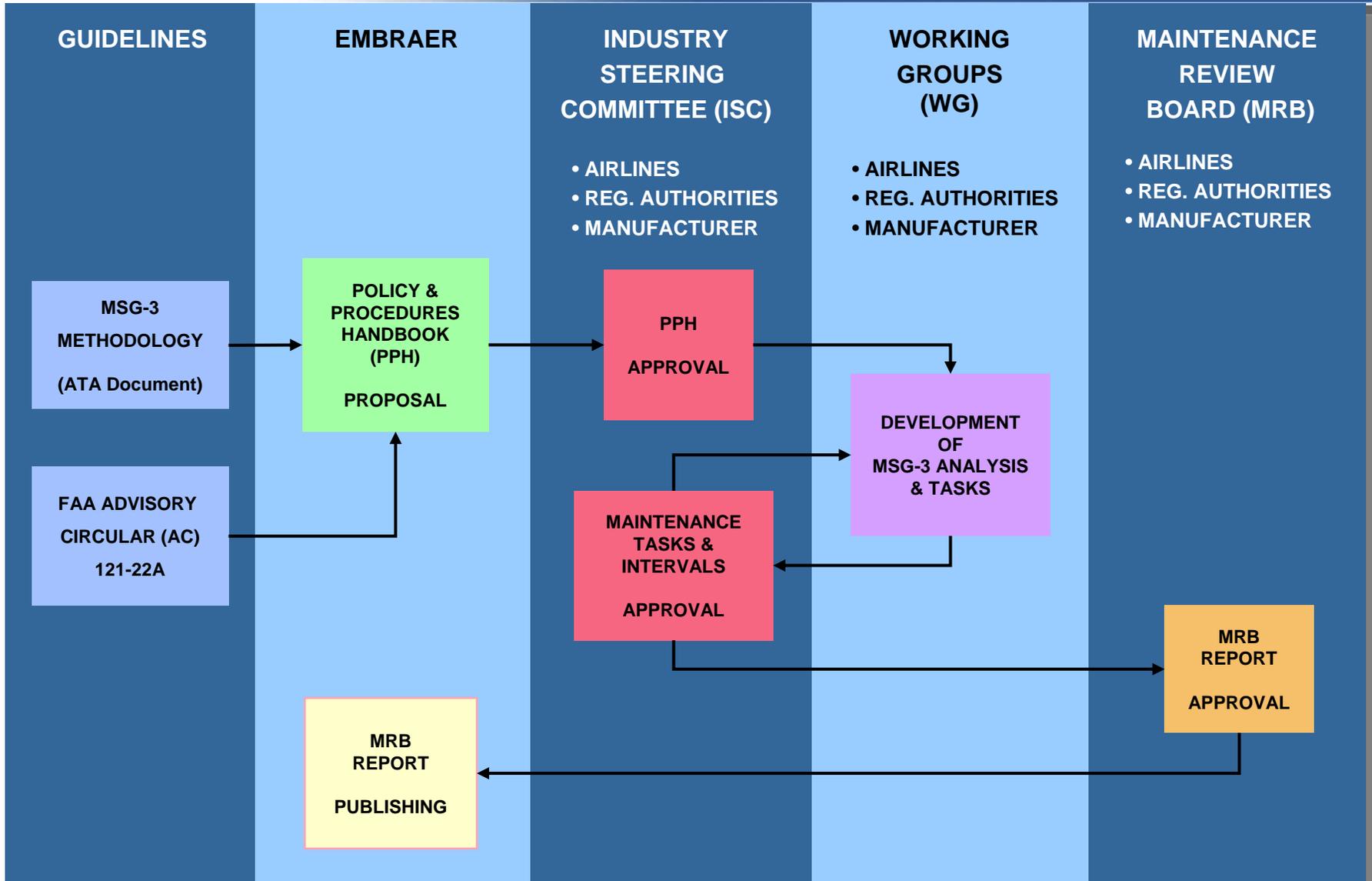
EMBRAER S.A.

São José dos Campos – Brazil

Presented by: Rafael Fassina Marques

- ✓ Scheduled Maintenance
 - Maintenance Plan Development
- ✓ Unscheduled Maintenance
 - In Service Items – Continued Airworthiness Process
 - Airworthiness Directives
- ✓ Communication with operators

Maintenance Plan Development



Structural Maintenance Program

MRB Process

AC 121-22A

MSG-3 Analysis

ATA MSG-3 - Scheduled Maintenance Development

Damage Tolerance Analysis

25.571

Accidental
Damage

MRB Structures
Section

Environmental
Damage

MRB CPCP
Section

Fatigue
Damage

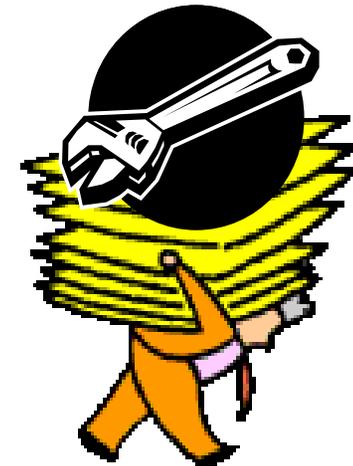
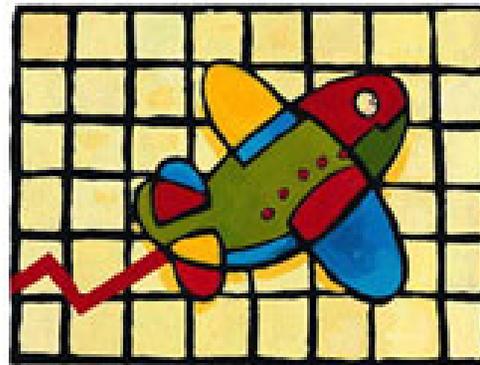
MRB Appendix
Airworthiness
Limitation Items

Maintenance Plan Evolution Cycle

Design Phase



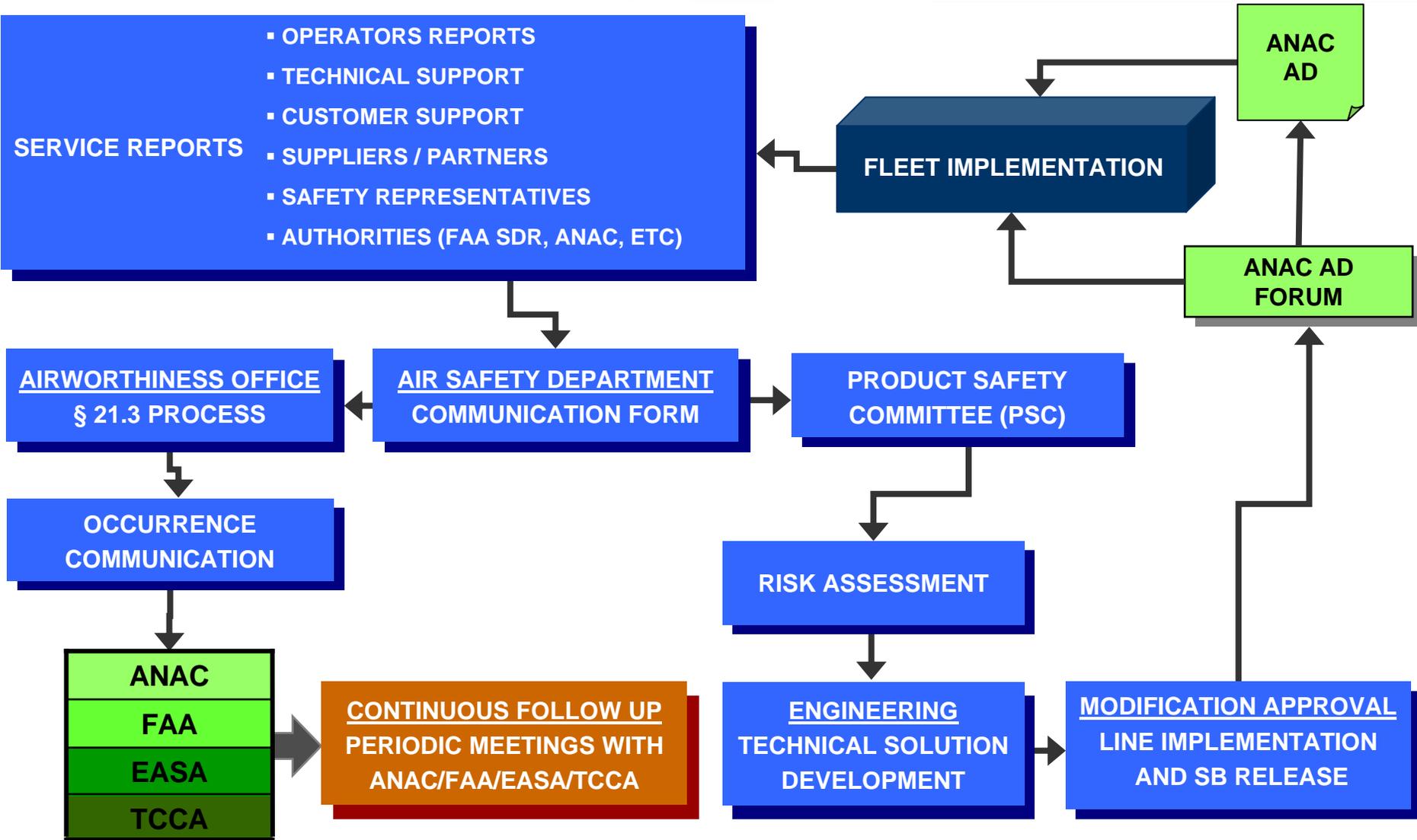
Operation Phase



Field feedback



Continued Airworthiness



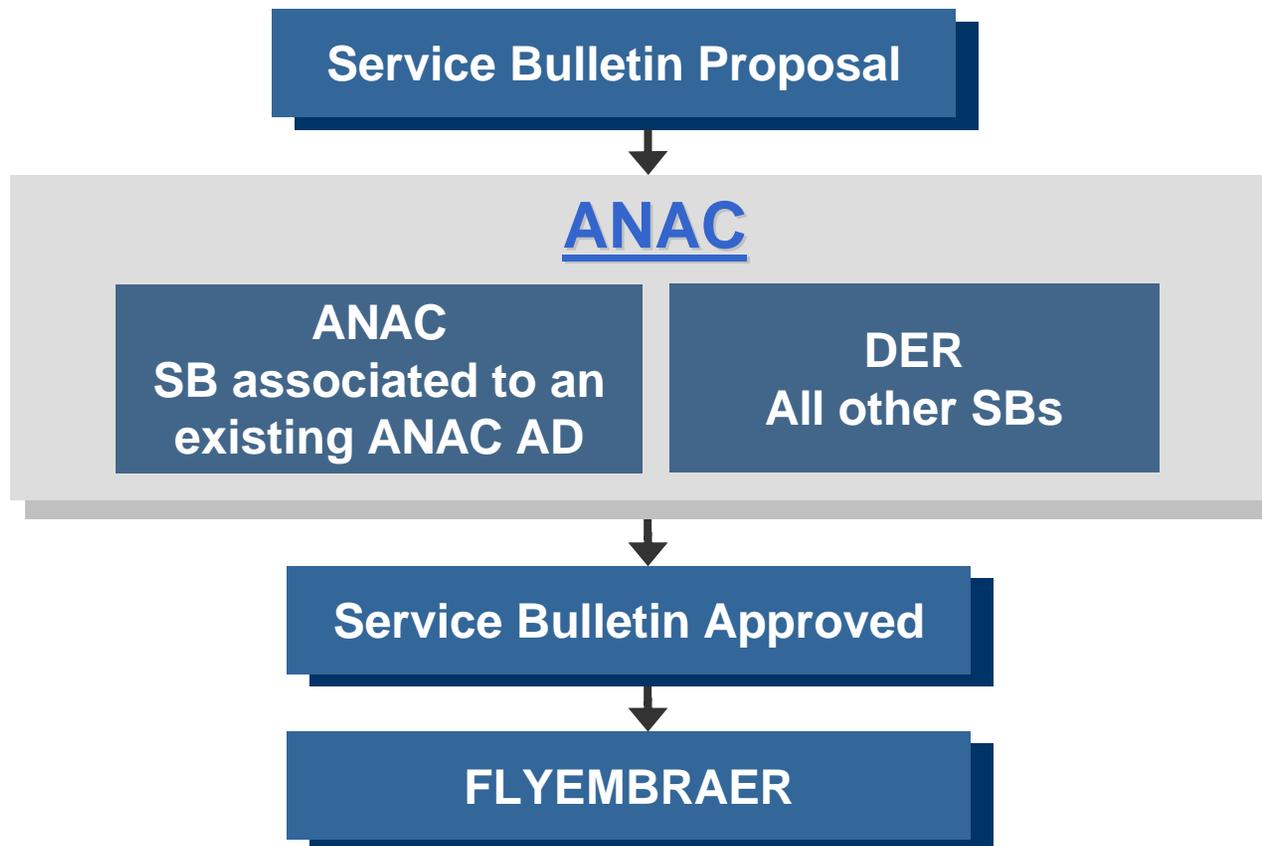
✓ Service Difficulty Meeting

- 28 Service Difficulty Meetings for EMB-120/EMB-145 since 2001;
- 18 Service Difficulty Meetings for ERJ 170/ERJ 190 since 2004;
- ANAC, FAA, EASA and TCCA attendance;
- Next meeting scheduled to middle October, 2011.
- Discussion and follow up of all relevant items.



✓ Service Bulletins Approval Process

- All Embraer Service Bulletins are approved by ANAC;



✓ ANAC AD Process and Interface with FAA

- Upon ANAC request or Embraer recommendation, Service Bulletins are discussed on the ANAC AD Forum to define if an AD is required;
- ANAC Airworthiness Directives are available on the following website:

<http://www2.anac.gov.br/certificacao/DA/DAE.asp>

- Issued by ANAC as per RBAC 39, similar to 14 CFR Part 39;
- ANAC, as a courtesy, sends via e-mail copy of the specific fleet ADs to aviation authorities and Embraer operators as soon as they are issued;
- FAA AD process in coordination with ANAC.

✓ ANAC AD Process and Interface with Foreign Authorities

ANAC ADs



AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL – BRAZIL
BRAZILIAN AIRWORTHINESS DIRECTIVE

AD No.: 2010-10-01 Effective Date: 27 Oct. 2010

The following Brazilian Airworthiness Directive (AD), issued by the Agência Nacional de Aviação Civil (ANAC) in accordance with provisions of Chapter 39, Title III of Código Brasileiro de Aeronáutica – Law No. 7.545 dated 19 December 1986 – and Regulamento Brasileiro de Homologação Aeronáutica (RBHA) 39, applies to all aircraft registered in the Registro Aeronáutico Brasileiro. No person may operate an aircraft to which this AD applies, unless it has previously complied with the requirements established herein.

AD No. 2010-10-01 - EMBRAER - Amendment 39-1322

APPLICABILITY:

This Airworthiness Directive (AD) applies to Embraer Model ERJ 170-100 LR, ERJ 170-100SE, ERJ 170-100 STD, ERJ 170-100 SU, ERJ 170-200 LR, ERJ 170-200 STD and ERJ 170-200 SU airplanes, all serial numbers.

NOTE 1: This AD requires revisions to certain operator maintenance documents to include new inspection tasks or modification of existing ones and its respective thresholds and intervals. Compliance with these inspections is required by Regulamento Brasileiro de Homologação Aeronáutica – RBHA 91.403(c). For airplanes that have been previously modified, altered, or repaired in the areas addressed by these inspections, the operator may not be able to accomplish the described inspections. In this situation, to comply with RBHA 91.403(c), the operator must request approval for an alternative method of compliance. The request should include a description of changes to the required inspections that will ensure the continued operational safety of the airplane. An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Product Certification Branch (GGCF).

CANCELLATION / REVISION:

Not applicable.

REASON:

During the airplane full scale fatigue test, cracks were found in some structural components of the airplane. Analysis of these cracks resulted in modifications to the Airworthiness Limitation Section (ALS) of Embraer ERJ 170 Maintenance Review Board Report (MRBR), to include new inspection tasks or modification of the current ones and its respective thresholds and intervals.

Failure to inspect these structural components, according to the new or revised tasks, thresholds and intervals, could prevent a timely detection of fatigue cracking. These cracks, if not properly addressed, could adversely affect the structural integrity of the airplane.

Since this condition may occur in other airplanes of the same type and affects flight safety, a corrective action is required. Thus, sufficient reason exists to request compliance with this AD in the indicated time limit.

REQUIRED ACTION:

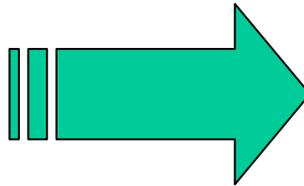
Revision of the Airworthiness Limitations Section (ALS) of the Instructions for Continued Airworthiness (ICA) to incorporate new and/or modified structural inspections.

COMPLIANCE:

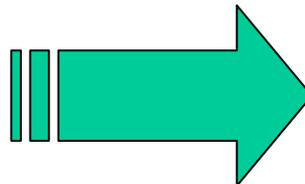
Required as indicated below, unless already accomplished.

Within 60 days after the effective date of this AD, revise the ALS of the ICA to incorporate the new or revised tasks specified in Appendix A, Part 2, Airworthiness Limitations

Form F-420-04E



ANAC AD accepted or endorsed by other validation authorities.



Once an ANAC AD is issued, FAA starts the NPRM process.

[Federal Register Volume 76, Number 45 (Tuesday, March 8, 2011)]
[Rules and Regulations]
[Pages 12556-12558]
From the Federal Register Online via the Government Printing Office [www.gpo.gov]
[FR Doc No: 2011-5292]



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2011-0157; Directorate Identifier 2010-NM-261-AD; Amendment 39-16630; AD 2011-04-09]

RIN 2120-AA64

Airworthiness Directives; Various Transport Category Airplanes Equipped With Chemical Oxygen Generators Installed in a Lavatory

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule, request for comments.

- ✓ **Service Bulletins (SB)**
 - Instructions to accomplish product modification on delivered airplanes;
- ✓ **Service Newsletter (SNL)**
 - Informative document that provides the customers with additional general information related to product improvement, economics, maintenance, operational practices, etc;
- ✓ **Embraer Technical Disposition (ETD)**
 - General technical dispositions, including unpublished repairs, SB and SRM deviations, airplane troubleshooting;
- ✓ **Fleet Performance Communication**
 - Urgent / relevant field issue updates to operators worldwide;
- ✓ **E-Forum**
 - Customer Support open forum hosted on the Flyembraer Portal for operators and MRO discuss any relevant issues.

✓ FLYEMBRAER

The screenshot shows the FlyEmbraer website interface. At the top, there is a navigation bar with the FlyEmbraer logo, a search bar, and links for Home, Help, and Contact Us. Below the navigation bar, the main content area is divided into several sections. On the left, there is a 'Subscribe to Flyembraer!' section with two bullet points: 'As a company entity' and 'As a user of a registered company'. Below this is an 'Aircraft Information' section with a sub-header 'Product information, including Airport Planning Manual'. Underneath, there are three categories: 'Commercial Jets' (listing EMB 120, ERJ 135, ERJ 140, ERJ 145, ERJ 145 XR, EMBRAER 170, EMBRAER 175, EMBRAER 190, EMBRAER 195), 'Defense Systems' (listing Super Tucano, EMB 145 AEW&C, EMB 145 RS/AGS, P-99, Legacy 600), and 'Executive Jets' (listing Lineage 1000, Legacy 600, Phenom 300, Phenom 100). The central 'Press Room' section features two news items: 'LEGACY 500'S MOCK-UP STOPS AT CAIHES AIRSHOW 2011' and 'EMBRAER WELCOMES BULGARIA AIR AS NEW E-JET OPERATOR'. Below the news items is a search bar for the News Archive, with dropdown menus for '2011' and 'February'. To the right of the Press Room, there are three promotional boxes: 'Conheça a história de 40 anos de sucesso da Embraer', 'Agricultural Aviation' (with a NEIVA logo), and 'Investor Relations'. At the bottom of the main content area, there are three more sections: 'Embraer in Numbers', 'Image Gallery', and 'The Company'. The footer of the website includes the Embraer logo, a link to 'General Terms of Use and Privacy Policy', and a copyright notice: 'Copyright © 2007 Embraer S.A. All Rights Reserved.'

Thank You



 **EMBRAER**
Commercial Jets