

Airworthiness Directive Schedule

Aeroplanes

Embraer EMB-820C, S/N 820127

25 March 2010

- Notes**
1. This AD schedule is currently only applicable to Embraer EMB-820C aircraft, S/N 820127 manufactured under Type Certificate No. CTA EA-7505.
 2. This AD schedule will be revised to include other S/N aircraft of this type when the New Zealand Civil Aviation Authority receives an application to register another aircraft.
 3. The date above indicates the amendment date of this schedule.
 4. New or amended ADs are shown with an asterisk *
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*** DCA/EMB820/1A Airworthiness Directive Compliance at Initial Airworthiness Certificate Issue**

Applicability: Model EMB-820C aircraft, S/N 820127.

Requirement: Compliance with the following Brazilian (ANAC) Airworthiness Directives (as applicable) is required:

ANAC AD No:	Embraer/Neiva Service Information:	Subject:	AD Requirement:
76-08-05 (available in English)	None	Flap Asymmetry	Amend the AFM IAW ANAC AD.
78-03-02 (In Portuguese)	BS 800-25-002R1 (In Portuguese)	Cigar Lighter	Replace cigar lighters per Piper SL 830 (FAA AD 79-20-07 and Piper SB 523 refer)
80-05-02 (In Portuguese)	None	Flap Operation	Introduce Placard, AFM Amendment & Flap Position Indicator Mod per Piper SB 684
81-09-05 (In Portuguese)	BS 800-32-010 (In Portuguese)	MLG Downlock Hook Rivets	Inspect per Piper SB 755B and replace per Piper SL 912
82-07-01 (In Portuguese)	BS 800-77-001R1 (In Portuguese)	Oil and Manifold Pressure Tubes	Inspect and replace per Piper SB 643A.
79-07-01R1 (In Portuguese)	BS 800-27-016R1 (In Portuguese)	Elevator Control Stop Screw	Accomplish Piper SL 916 (Piper SB 649 refers)
85-07-01 (In Portuguese)	BS 800-32-017 (In Portuguese)	Landing Gear Installation	Accomplish Piper SB 779B
86-08-03 (In Portuguese)	BS 800-29-004 (In Portuguese)	Hydraulic Hoses	Accomplish Piper SB 822
86-12-03 (In Portuguese)	BS 800-24-0022 & BS 800-24-021 (Both in Portuguese)	Aluminum Electrical Cables	Accomplish Piper SB 836A
87-11-02 (In Portuguese)	BS 800-32-020 (In Portuguese)	MLG Downlock Cable Anti-rotation Stops	Accomplish Piper SB 860
88-05-01R2 (In Portuguese)	BS 800-081-0001 (In Portuguese)	V-Band Couplings Lock Wire	Accomplish Piper SB 884
90-11-03R2 (In Portuguese)	BS 800-057-0005R2 (In Portuguese)	MLG Actuator Reinforcement Bracket	Accomplish Piper SB 923
2008-09-03 (In Portuguese)	BS 800-028-0017 (In Portuguese)	Fuel Port Restrictor	Accomplish Piper SB 797B

Note: Each part of this AD (each individual ANAC AD) shall be certified in the aircraft log book separately.

Compliance: Before issue of a New Zealand Certificate of Airworthiness, or at the next ARA inspection after the effective date of this AD whichever is the sooner, unless previously accomplished.

Effective Date: DCA/EMB820/1 - 1 June 2006
DCA/EMB820/1A - 25 March 2010

DCA/EMB820/2 Fuel Filler Openings – Modification

Applicability: All model EMB-820C “Navajo” aircraft fitted with 3 inch diameter fuel filler openings.

Requirement: To prevent refueling with Jet A-1 fuel which could result in loss of engine power on takeoff and engine damage, accomplish the following:

Embody fuel port restrictor kits containing a restriction ring and a new fuel cap into the existing 3 inch diameter fuel openings per the instructions in Neiva SB No. 800-028-0017 original issue or later approved revision, or alternatively per Piper Aircraft Corporation Mandatory SB No. 797B dated 1 September 1987.

(ANAC AD 2008-09-03 refers)

Compliance: By 30 April 2010

Effective Date: 30 October 2008

*** DCA/EMB820/3 MLG Inboard Door Hinges – Inspection and replacement**

Applicability: Model EMB-820C aircraft, S/N 820127

Requirement: To prevent hazards associated with failed landing gear door attachments interfering with landing gear operation, inspect door hinges and attachment angles per Piper SB 682. Renew cracked fittings before further flight

Note 1: Piper SB No. 682 or later approved revisions pertains to the subject of this AD.

Note 2: A copy of the SB is available on the Piper web site at <http://www.newpiper.com/home/pages/Publications.cfm>

(ANAC AD 81-05-01 (In Portuguese) and FAA AD 2000-25-01 refer)

Compliance: Within the next 100 hours TIS or the next scheduled maintenance inspection whichever occurs first unless previously accomplished, and thereafter at intervals not to exceed 100 hours TIS until replacement with new improved door hinge assemblies P/N 47529-32 or later manufacturer approved parts.

Effective Date: 25 March 2010

*** DCA/EMB820/4 Turbocharger Exhaust Couplings - Inspection and Replacement**

Applicability: Model EMB-820C aircraft, S/N 820127

Requirement: Inspect turbocharger exhaust couplings per Piper SB 644D. If couplings P/N 556-962 or 556-053 are fitted replace before further flight. If couplings P/N 555-511 or 555-366 are fitted inspect per SB 644D at intervals not to exceed 100 hours TIS and replace at 1000 hours TTIS.

Note 1: Couplings P/N 556-962 and 556-053 are no longer approved and must not be fitted to any aircraft.

Note 2: The installation of couplings P/N 557-584 or 557-369, or later manufacturer approved parts is a terminating action to the repetitive inspection requirements of this AD.

Note 3: Piper SB No. 644D or later approved revisions pertains to the subject of this AD.

Note 4: A copy of the SB is available on the Piper web site at <http://www.newpiper.com/home/pages/Publications.cfm>

(ANAC AD 82-05-05R3 (In Portuguese) and FAA AD 82-16-05R1 refer)

Compliance: Within the next 100 hours TIS or the next scheduled maintenance inspection whichever occurs first unless previously accomplished, and thereafter at intervals not to exceed 100 hours TIS until replacement with new improved turbocharger exhaust couplings P/N 557-584 and 557-369 or later manufacturer approved parts.

Effective Date: 25 March 2010

* **DCA/EMB820/5 Elevator Control System - Inspection and Replacement**

Applicability: Model EMB-820C aircraft, S/N 820127

Requirement: Inspect the elevator down spring per Piper SB 626C. If any defects are found replace the elevator down spring before further flight.

Note 1: The installation of an improved down spring Piper P/N 71056-03 or later manufacturer approved part and, if required, the installation of an elevator bungee link with P/N 71086-03 or equivalent manufacturer approved part per SB 626C, is a terminating action to the repetitive inspection requirements of this AD.

Note 2: All old and new design springs and links are life limited to 1000 hours TTIS.

Note 3: Piper SB No. 626C or later approved revisions pertains to the subject of this AD.

Note 4: A copy of the SB is available on the Piper web site at <http://www.newpiper.com/home/pages/Publications.cfm>

(ANAC AD 79-09-03R2 (In Portuguese) and FAA AD 98-08-18 refer)

Compliance: Within the next 100 hours TIS or the next scheduled maintenance inspection whichever occurs first unless previously accomplished, and thereafter at intervals not to exceed 100 hours TIS until replacement with an improved down spring Piper P/N 71056-03 or later manufacturer approved part and, if required, the installation of an elevator bungee link with P/N 71086-03 or equivalent manufacturer approved part per SB 626C.

Effective Date: 25 March 2010

* **DCA/EMB820/6 Nose Wheel - Inspection and Replacement**

Applicability: Model EMB-820C aircraft, S/N 820127

Requirement: To prevent failure of the nose wheel, accomplish the following:

Inspect the nose wheel assembly for cracks per Piper SB 700A.

If cracks are found replace with a new Cleveland P/N 40-76B (Piper P/N 451 784) nose wheel assembly, or replace with a Cleveland nose wheel assembly of improved design P/N 40-140 (Piper P/N 551 791) or later manufacturer approved part per Piper SB 700A.

Note 1: The installation of Cleveland P/N 40-140 (Piper P/N 551 791) or later manufacturer approved parts is terminating action to the requirements of this AD.

Note 2: Piper SB No. 700A or later approved revisions pertains to the subject of this AD.

Note 3: A copy of the SB is available on the Piper web site at <http://www.newpiper.com/home/pages/Publications.cfm>

(ANAC AD 81-06-05R2 (In Portuguese) and FAA AD 97-07-03 refer)

Compliance: At 2000 hours TTIS for the nose wheel assembly, or within the next 100 hours TIS whichever occurs later, and thereafter at intervals not to exceed 100 hours TIS or at every tyre change, whichever occurs first.

Effective Date: 25 March 2010

*** DCA/EMB820/7 MLG Side Braces - Inspection and Replacement****Applicability:** Model EMB-820C aircraft, S/N 820127**Requirement:** To prevent the MLG retracting due to a cracked forward side brace, accomplish the following:

1. Inspect MLG side braces (using dye penetrant methods) per part I of Piper SB 845A. If cracks are found replace with side braces of improved design per part II of SB 845A before further flight.
2. Replace both left and right side braces with manufacturer approved parts of improved design per part II of SB 845A.

Note 1: The installation of parts of improved design per part II of Piper SB 845A is a terminating action to the repetitive inspection requirements of this AD.**Note 2:** Piper SB No. 845A or later approved revisions pertains to the subject of this AD.**Note 3:** A copy of the SB is available on the Piper web site at <http://www.newpiper.com/home/pages/Publications.cfm>

(ANAC AD 87-03-03R2 (In Portuguese) and FAA AD 96-10-14 refer)

Compliance:

1. At 1000 hours TTIS or within the next 100 hours TIS whichever occurs later, and thereafter at intervals not to exceed 100 hours TIS until accomplishment of requirement 2 of this AD.

2. Within the next 1200 hours TIS.

Effective Date: 25 March 2010*** DCA/EMB820/8 Inboard Aileron Hinges - Inspection and Replacement****Applicability:** Model EMB-820C aircraft, S/N 820127**Requirement:** To prevent structural failure of the aileron caused by cracks in the area of the inboard aileron hinge bracket, accomplish the following:

1. Inspect (using dye penetrant methods) the area beneath and in the area of the inboard aileron hinge bracket on the aileron spar for cracks per Piper SB 974.

If any cracks are found on the aileron spar, accomplish the following before further flight:

- (i) Inspect the corresponding aileron rib at the inboard aileron hinge bracket location, and

- (ii) Replace any cracked spar assembly and any cracked aileron rib per the applicable Maintenance Manual, and

- (iii) Replace the inboard aileron hinge brackets with an inboard aileron hinge bracket of improved design P/N 74461-02 (left) and P/N 74461-03 (right) per SB 974.

If no cracks are found, replace the inboard aileron hinge brackets with a part of improved design P/N 74461-02 (left) and P/N 74461-03 (right) per SB 974 before further flight.

2. If the inboard aileron hinge brackets P/N 74461-02 (left) or P/N 74461-03 (right) have been ordered from the manufacturer but are not available, dye penetrant inspect beneath and in the vicinity of the inboard aileron hinge bracket for cracks per SB 974.

If an inboard aileron bracket hinge, aileron spar or aileron rib is found cracked, before further flight, replace any cracked aileron rib and any cracked spar assembly (if applicable), and replace the inboard aileron hinge bracket as specified in this AD.

Note 1: The installation of manufacturer approved aileron hinges of improved design is a terminating action to the repetitive inspection requirements of this AD.

Note 2: Piper SB No. 974 or later approved revisions pertains to the subject of this AD.

Note 3: A copy of the SB is available on the Piper web site at <http://www.newpiper.com/home/pages/Publications.cfm>

(ANAC AD 96-06-02R1 (In Portuguese) and FAA AD 96-21-03 refer)

Compliance:

1. At 3000 hours TIS or within the next 100 hours TIS, whichever is the later unless previously accomplished.
2. At intervals not to exceed 100 hours TIS until either parts become available or 1000 hours TIS have accumulated since the initial inspection required by this AD.

Effective Date: 25 March 2010

* **DCA/EMB820/9 Elevator Spar – Inspection**

Applicability: Model EMB-820C aircraft, S/N 820127

Requirement: To prevent failure of the elevator spar due to possible fatigue cracks which could result in reduced aircraft controllability, accomplish the following actions per the instructions in section of Piper SB 998A:

- Install access holes for the inspection of the elevator spar, and
- Inspect the elevator ice protection boots for looseness, and
- Inspect the elevator spars for cracks.

If the elevator ice protection boots are found loose, reinstall or replace the elevator ice protection boots per the instructions in Piper SB 998A before further flight.

If cracks are found on any elevator spar assembly, replace the elevator or elevator spar assembly with a part of improved design as specified in the "Replacement Elevator P/N" and "Replace Spar P/N" columns of the "Material Required Table" on page 4 of SB 998A before further flight. Accomplish these replacements per the applicable maintenance manual.

If one elevator spar assembly is replaced the other elevator spar assembly must still be repetitively inspected every 100 hours TIS until replacement at 1000 hours TIS after the initial inspection or when cracks are found, whichever occurs first.

Note 1: Replacing both the left and right elevators or elevator spar assemblies with parts of improved design is a terminating action to the repetitive inspection requirements of this AD. This action may be accomplished at any time to terminate the repetitive inspections, but must be accomplished prior to further flight if any elevator spar is found cracked or within 1000 hours TIS after the initial inspection, whichever occurs first.

Note 2: Piper SB No. 998A or later approved revisions pertains to the subject of this AD.

Note 3: A copy of the SB is available on the Piper web site at <http://www.newpiper.com/home/pages/Publications.cfm>

(ANAC AD 97-12-01R1 (In Portuguese) and FAA AD 99-12-05 refer)

Compliance: At 2500 hours TIS on each elevator spar assembly or within the next 100 hours TIS, whichever occurs later.

If no cracks are found in the elevator spars, inspect the elevator spars thereafter at intervals not to exceed 100 hours TIS.

Within 1000 hours TIS after the initial inspection required by this AD replace both the left and right elevators or elevator spar assemblies with manufacturer approved parts of improved design.

Effective Date: 25 March 2010

*** DCA/EMB820/10 Horizontal Stabiliser and Elevator Installation - Inspection**

Applicability: Model EMB-820C aircraft, S/N 820127

Requirement: To prevent failure of the horizontal stabiliser rear spar due to possible cracks at the elevator outboard hinge attachment which could result in loss of control of the aircraft, accomplish the inspections and corrective actions per the instructions in Piper SB 687.

Note 1: Piper SB No. 687 or later approved revisions pertains to the subject of this AD.

Note 2: A copy of the SB is available on the Piper web site at <http://www.newpiper.com/home/pages/Publications.cfm>

(ANAC AD 81-10-02R2 (In Portuguese) and FAA AD 72-22-05 refers)

Compliance: Within the next 100 hours TIS or the next scheduled maintenance inspection whichever occurs first unless previously accomplished, and thereafter at intervals not to exceed 100 hours TIS until embodiment of a manufacturer approved modification.

Effective Date: 25 March 2010

*** DCA/EMB820/11 MLG Door Actuator Hydraulic System – Inspection and Rework**

Applicability: Model EMB-820C aircraft, S/N 820127

Requirement: To prevent failure of the MLG to extend due to the possible loss of the MLG hydraulic system fluid as a result of incorrect routing of the MLG door actuator hydraulic hoses which could be damaged by a closing undercarriage door or a retracting MLG wheel, accomplish the following:

- Raise the aircraft on trestles per the instructions in the aircraft maintenance manual.
- Open the MLG doors and locate the undercarriage door actuator cylinder.
- Inspect the MLG door actuator, the hydraulic hoses and hose connections in both MLG bays for cracks, correct routing, installation and condition, and whether the hydraulic hoses are chafing or can be caught up in a closing undercarriage door or a retracting MLG wheel.
- Check that the hydraulic hose connections on the undercarriage door actuators are fitted at the correct angles relative to the actuator per the aircraft maintenance manual so that there is sufficient clearance between the hoses and any structure. Correct any defects found per the aircraft maintenance manual as required.

Once the above inspections and corrective actions have been done, accomplish the following inspection on both port and starboard MLG doors:

- Disconnect the connecting rod from the undercarriage door actuator. This makes it possible to open and close the undercarriage doors by hand.

- Close and open the MLG doors and determine that there is sufficient clearance between the hydraulic hoses and any structure. Determine that the hydraulic hoses cannot be damaged by a closing door and determine there is sufficient clearance between the hoses and any structure. Accomplish any corrective actions per the aircraft maintenance manual.
- Reconnect the actuator connecting rod and remove the aircraft from the trestles.

(ANAC AD 90-07-02 and Industria Aeronautica Neiva LTDA SB No. 800-032-0028 dated 25 Oct 1989 (Both in Portuguese) refer)

Compliance: Within the next 50 hours TIS, or the next scheduled maintenance inspection, or by 25 April 2010 whichever occurs first, unless previously accomplished.

Effective Date: 25 March 2010

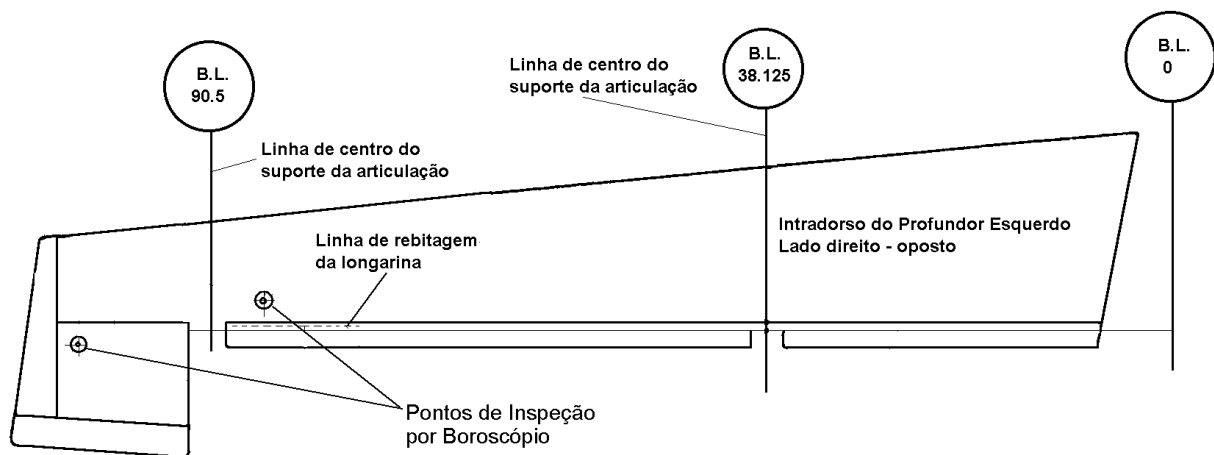
* **DCA/EMB820/12 Elevator Spar – Inspection and Replacement**

Applicability: Model EMB-820C aircraft, S/N 820127

Requirement: To prevent failure of the elevator spar due to possible insufficient rivet edge margins, accomplish the following:

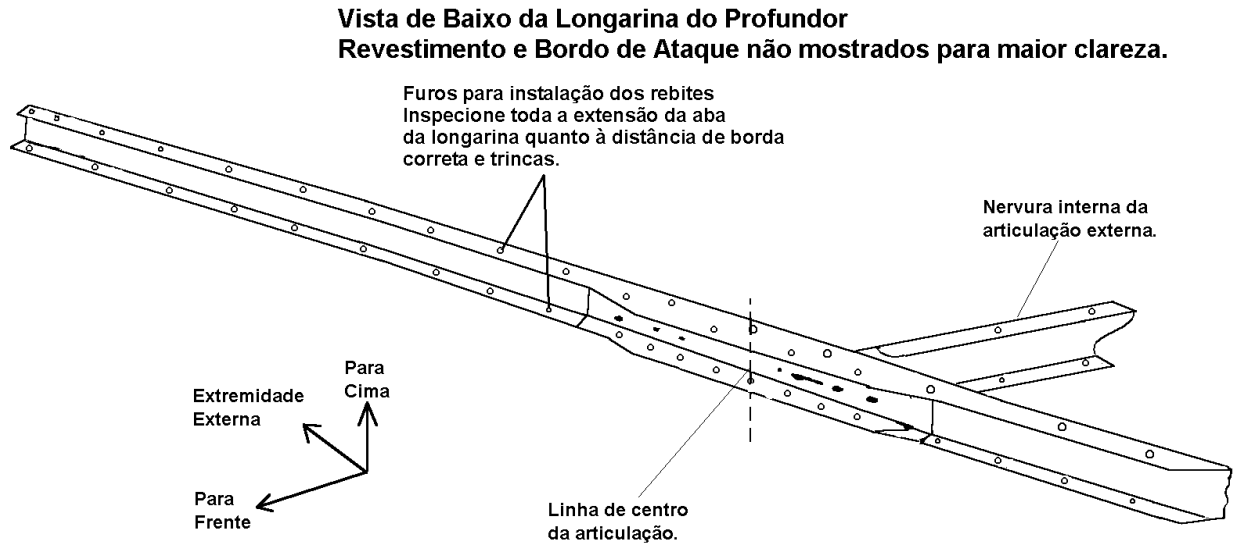
With the aid of a boroscope inspect the elevator spar for defects and rivet spacing through the access points per figure 1.

Figure 1: Borecope Probe Access Points



Inspect the elevator spar per figure 2 for any defects and determine that the rivet edge margins are within the limits specified by the aircraft manufacturer.

Figure 2: Inspection Area



If no defects are found and the rivet edge distances are found to be within the limits specified by the aircraft manufacturer, no further AD action is required.

If any cracks or defects are found contact the aircraft manufacturer for further advice and accomplish a manufacturer approved repair, or replace the elevators before further flight.

If the rivet edge margins are not within the limits specified by the aircraft manufacturer, inspect thereafter per the requirements of this AD at intervals not to exceed 100 hours TIS.

Note: The edge distance of a rivet is defined as the distance from the center of a rivet to the edge of the plate, panel or border (2 times the rivet diameter). Rivet spacing between two adjacent rivets is defined as the distance between the center of two adjacent rivets (3 times the rivet diameter). The distance between a rivet and a folded side of a bracket is defined as the distance between the center of the rivet and the perpendicular line of the bend of the bracket (2 times the diameter of the rivet).

(ANAC AD 2004-03-03R1 and Industria Aeronautica Neiva LTDA SB No. 800-055-0012 dated 14 August 2003 (Both in Portuguese) refer)

Compliance: Before further flight unless previously accomplished and for elevator spars with insufficient rivet edge margins inspect thereafter at intervals not to exceed 100 hours TIS until the elevators are replaced.

Effective Date: 25 March 2010

*** DCA/EMB820/13 Elevator Trim Tab Brackets – Inspection and Replacement**

Applicability: Model EMB-820C aircraft, S/N 820127 not fitted with elevator trim tab brackets P/N 40042-16, 40042-17 and 40042-18, and P/N 40012-25, 40012-26 and 40012-27 and P/N 43221-1 or later manufacturer approved parts.

Requirement: To prevent failure of the elevator trim tab brackets, accomplish the following:
 Remove the elevator trim tab per the instructions in the aircraft maintenance manual and take care not to lose the trim tab pivot bushes. Remove the existing brackets P/N 40042-08, 40042-09 and 40042-10 and discard them. Install new steel brackets P/N 40042-16, 40042-17 and 40042-18 using the existing screws. Refer to figure 1 for the positions of the hinge brackets of the elevator trim tab.

Figure 1: Aileron Balance Cable End Fitting and Bellcrank Inspection.

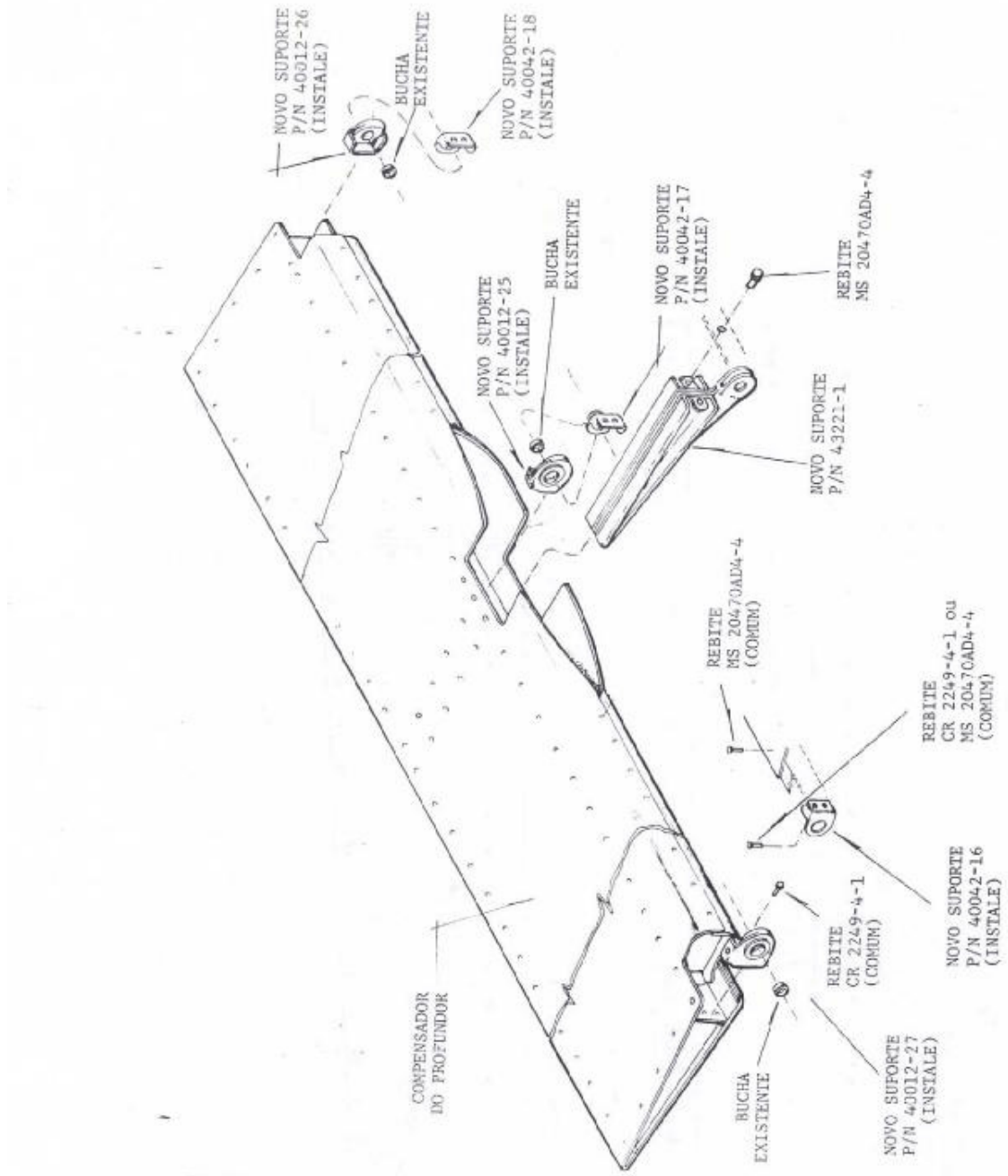
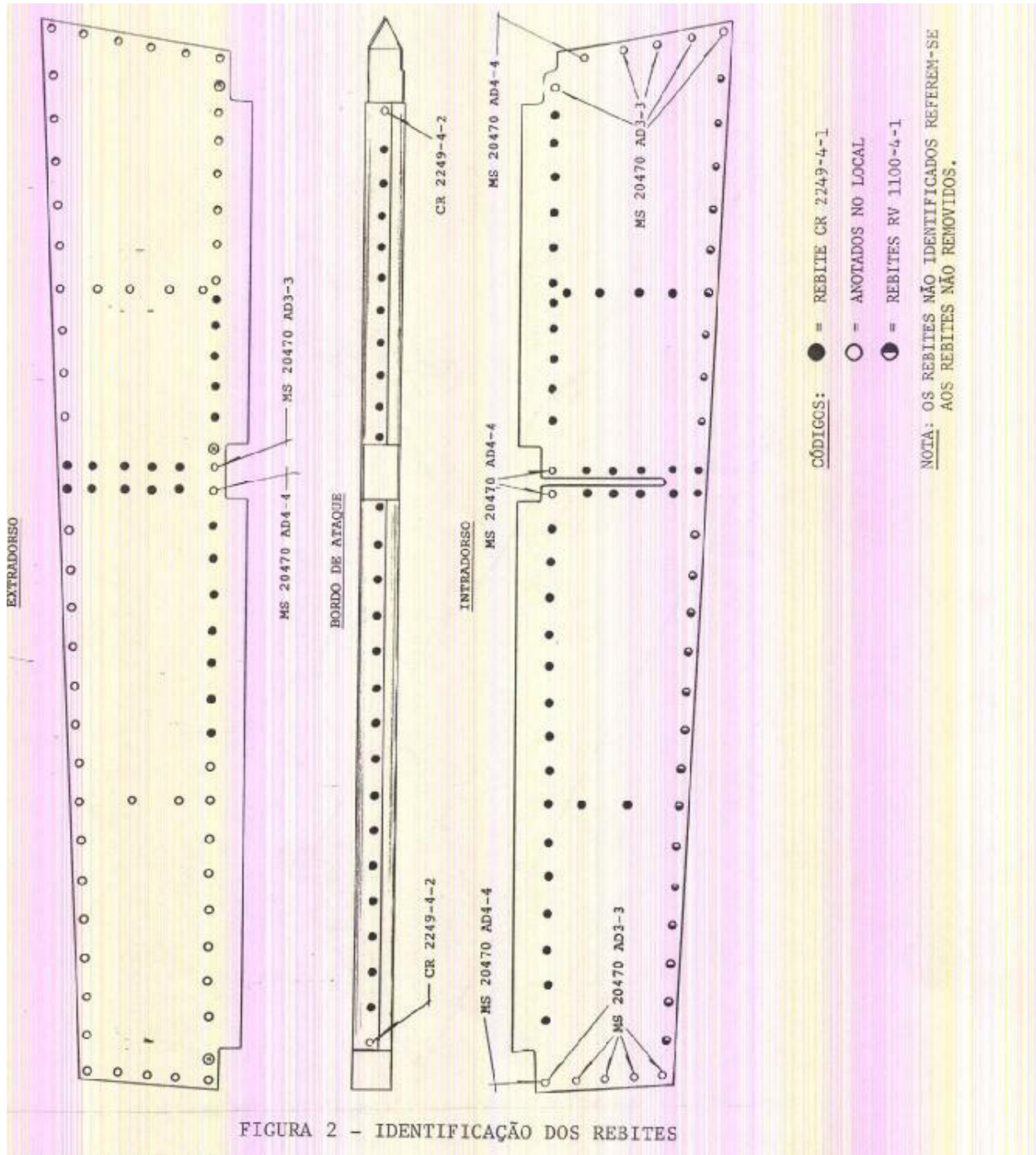


FIGURA 1 - SUBSTITUIÇÃO DOS SUPORTES DE ARTICULAÇÃO DO COMPENSADOR DO PROFUNDOR

Remove supports P/N 40012-12, 40012-13 and 40012-22 and install new steel supports P/N 40012-25, 40012-26 and 40012-27 on the elevator trim tab.

Remove trim control rod bracket P/N 43221 and replace with bracket P/N 43221-1. Touch up any exposed metal parts with paint as required. Accomplish these corrective actions per manufacturer approved procedures. Refer to figure 2 for the position of the rivets which hold the new elevator trim brackets and trim control rod bracket P/N 43221-1 in position.

Figure 2: Position of the rivets.



(ANAC AD 90-11-05R2 and Industria Aeronautica Neiva LTDA SB No. 821-055-0002 revision 1 dated 12 November 1993 (Both in Portuguese) refer)

Compliance: Within the next 25 hours TIS unless previously accomplished.

Effective Date: 25 March 2010

*** DCA/EMB820/14 Aileron Control System – Inspection and Rework**

Applicability: Model EMB-820C aircraft, S/N 820127.

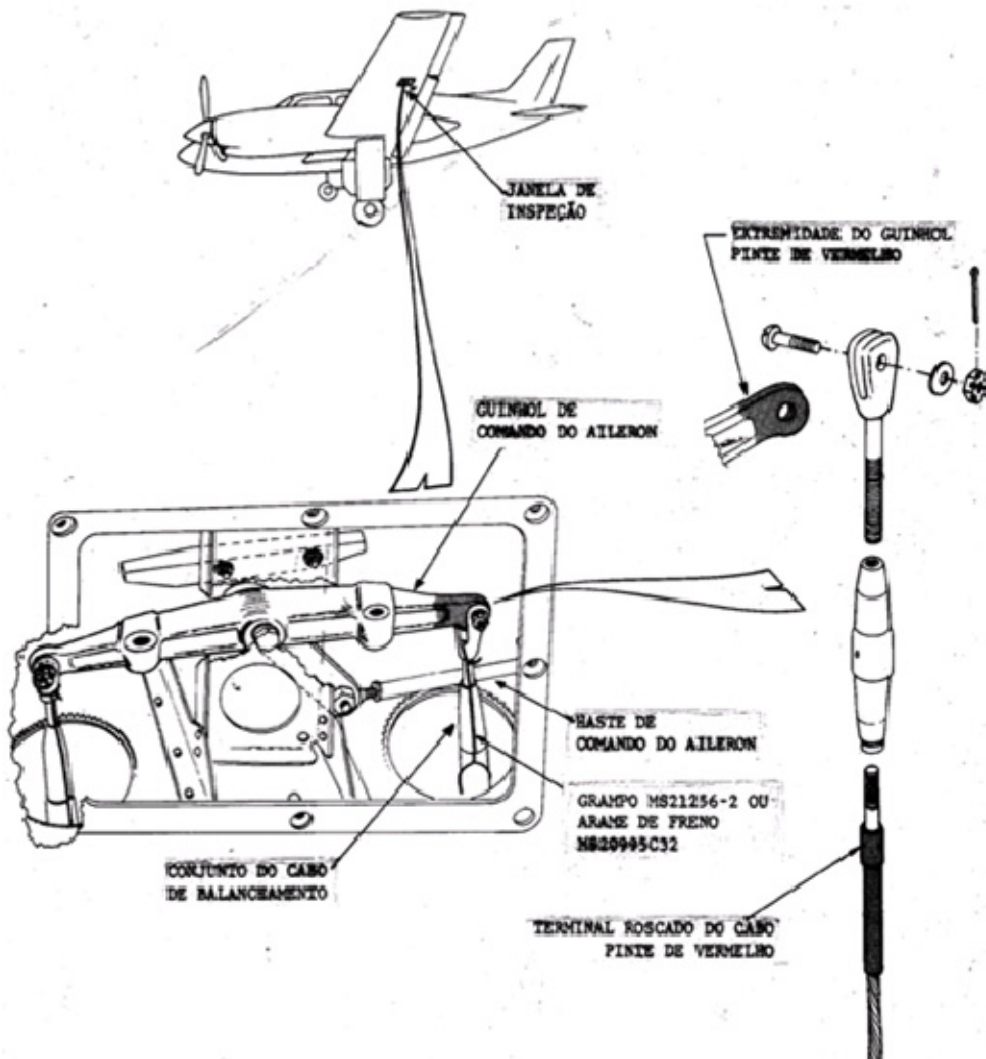
Requirement: To prevent failure of the aileron control system bellcrank and/or balance cable, accomplish the following:

Remove the inspection panels for the aileron bellcrank on the lower side of the wings.

Clean the aileron balance cable end fitting and the attach end of the bellcrank in both wings of the aircraft and determine if both are marked with red paint per figure 1 of this AD. No further action is required if both fittings are marked with red paint in both wings.

If no red paint markings are found on the aileron balance cable end fitting or the bellcrank end, move the aileron control system through the full travel and inspect for any defects. Determine whether the bellcranks are fitted in the correct orientation and determine that the aileron balance cable end fittings are fitted to the bellcrank in the correct orientation. Replace any defective parts as required before further flight. Ensure the aileron bellcranks and the aileron balance cable end fittings are marked with red paint and fitted correctly per the manufacturer instructions.

Figure 1: Aileron Balance Cable End Fitting and Bellcrank Inspection.



(ANAC AD 92-08-025R1 and Industria Aeronautica Neiva LTDA SB No. 800-027-0027 dated 18 July 1990 (Both in Portuguese) refer)

Compliance: Within the next 100 hours TIS or next maintenance inspection whichever occurs sooner, unless previously accomplished.

Effective Date: 25 March 2010