

**NOTIFICAÇÃO DE PROPOSTA DE REGRA
DIRETRIZ DE AERONAVEGABILIDADE**

REPÚBLICA FEDERATIVA DO BRASIL
AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL – ANAC
Gerência-Geral de Certificação de Produto Aeronáutico

Referência: NPR/DA 2015-120-01

Data: 23 jul. 2015

De acordo com as provisões do RBAC 11, a Gerência-Geral de Certificação de Produto Aeronáutico (GGCP) está propondo a emissão de uma Diretriz de Aeronavegabilidade aplicável ao produto aeronáutico abaixo referido.

*Todas as pessoas interessadas poderão enviar seus comentários até a data indicada no item 2, fazendo menção à **Referência** acima citada, para o seguinte endereço, fac-símile ou e-mail:*

Agência Nacional de Aviação Civil (ANAC) - Gerência-Geral de Certificação de Produto Aeronáutico (GGCP)
Rua Laurent Martins, 209 – Jardim Esplanada II
12.242-431 – São José dos Campos – SP
E-mail: pac@anac.gov.br

1. Proponente: Grupo de Aeronavegabilidade Continuada (PAC) da Gerência-Geral de Certificação de Produto Aeronáutico.

2. Comentários: Deverão ser recebidos até o dia 23 ago. 2015.

APLICABILIDADE:

Esta Diretriz de Aeronavegabilidade (DA) é aplicável aos aviões Embraer S.A. modelo EMB-120, EMB-120RT, EMB-120ER, EMB-120FC e EMB-120QC; todos os de série.

Nota: Esta DA requer a revisão de certos documentos de manutenção para incluir novas inspeções. O cumprimento destas inspeções é requerido pelo Regulamento Brasileiro da Aviação Civil (RBAC) 91.403(c). Para os aviões que tenham sido previamente modificados, alterados ou reparados nas áreas abordadas por esta DA, o operador pode não ser capaz de realizar as inspeções descritas nas revisões. Nesta situação, para cumprir com o RBAC 91,403 (c), o operador deve solicitar a aprovação de um método alternativo de cumprimento (MAC), de acordo com o parágrafo (e) desta DA. O pedido deve incluir uma descrição das alterações do procedimento de inspeção que irá garantir a segurança operacional (a tolerância danos continuada da estrutura afetada) do avião.

MOTIVO:

Esta DA foi motivada por uma avaliação estrutural, conduzida pelo fabricante, dos impactos da atividade dos aviões Embraer S.A. modelo EMB-120 além da meta operacional inicialmente prevista no projeto. Estamos emitindo esta DA para evitar a redução da integridade estrutural destes aviões devido a trincas por fadiga

CUMPRIMENTO:

Execute as ações requeridas por esta DA nos prazos estabelecidos, a menos que tais ações já tenham sido executadas.

(a) Revisão do Programa de Manutenção ou Inspeção

(1) Dentro de 90 dias após a data de efetividade desta DA, revise o programa de manutenção ou de inspeção, conforme aplicável, para incorporar as tarefas de inspeção com os intervalos iniciais e repetitivos especificados na tabela 1 desta DA.

(2) Os tempos de cumprimento iniciais para as tarefas especificadas na tabela 1 desta DA iniciam dentro dos limites iniciais (“thresholds”) especificados na tabela 1 desta DA, conforme aplicável, ou dentro de 600 ciclos de voo após a data de efetividade desta DA, o que ocorrer depois.

Tabela 1: Tarefas de inspeção de limitação de aeronavegabilidade e tempos de cumprimento

Identif. No.	Task	Task Description	Freq.	SSI No.	Access
5320-141-05I 142	NDT SFT	Special detailed inspection, Eddy current, high frequency, on the fuselage central section I skin panels splices between the frames 22 and 23 and between the stringers 16 and 17, LH /RH. Require the seats, the fuselage floor panels and thermo-acoustic isolation removals; NOTE: Threshold inspection at 60,000 FC and subsequent inspections every 4,000 FC.	Note	53-20-06	244 AF/ BF/CF/DF 243 AF/ BF/CF/DF
5320-253-04I 254	NDT SFT	Special detailed inspection, eddy current high frequency, on the fuselage central section II skin panels splices between the frames 37 and 38 and between the stringers 2 and 3, LH/RH. Require the fuselage interior lining panels and thermo-acoustic isolation removals; NOTE: Threshold inspection at 60,000 FC and subsequent inspections every 4,000 FC.	NOTE	53-20-18	251AW/B W/CW/E W/FW/G W 252BW/C W/DW/E W/FW
5310-131-05I 132	DET SFT	Internal visual detailed inspection on the fuselage forward section III skin panels splices between the stringers 18 and 19 LH and stringers 15 and 16 RH. Require the seats, the fuselage floor panels and thermo-acoustic isolation removals; NOTE: Threshold inspection at 60,000 FC and subsequent inspections every 4,000 FC.	NOTE	53-10-21	231AF/BF CF/DF/EF 232AF/BF CF/DF
5310-232-05I	DET SFT	Internal visual detailed inspection on the fuselage forward section III skin panels splices between the stringers 1 and 2 RH. Require the fuselage interior lining panels and thermo-acoustic isolation removals; NOTE: Threshold inspection at 60,000 FC and subsequent inspections every 4,000 FC.	NOTE	53-10-21	232 CW/ DW/EW
5320-141-06I 142	DET SFT	Internal visual detailed inspection on the fuselage central section I skin panels splices between the stringers 16 and 17, LH/RH. Require the seats, the fuselage floor panels and thermo-acoustic isolation removals; NOTE: Threshold inspection at 60,000 FC and subsequent inspections every 4,000 FC.	NOTE	53-20-06	244 AF/ BF/CF/DF 243 AF/ BF/CF/DF

Identif. No.	Task	Task Description	Freq.	SSI No.	Access
5320-147-04I 148	DET SFT	Internal visual detailed inspection on the fuselage central section I skin panels splices between the stringers 16 and 17, LH/RH. Require the seats, the fuselage floor panels and thermo-acoustic isolation removals; NOTE: Threshold inspection at 60,000 FC and subsequent inspections every 4,000 FC.	NOTE	53-20-06	243 AF/ BF/CF/DF 244 AF/ BF/CF/DF
5320-241-02I 242	DET SFT	Internal visual detailed inspection on the fuselage central section I skin panels splices between the stringers 12 and 13, LH/RH. Require the seats, the fuselage interior linings and thermo-acoustic isolation removals; NOTE: Threshold inspection at 60,000 FC and subsequent inspections every 4,000 FC.	NOTE	53-20-06	241BW/C W/ DW/EW 242BW/C W/ EW
5320-245-06I 246	DET SFT	Internal visual detailed inspection on the fuselage central section I skin panels splices between the stringers 4 and 5, LH/RH. Require the fuselage interior linings and thermo-acoustic isolation removals; NOTE: Threshold inspection at 60,000 FC and subsequent inspections every 4,000 FC.	NOTE	53-20-06	241BW/C W/DW/E W242BW/ CW/EW 243AW/B W/ 244AW 252AW
5320-151-02I	DET SFT	Internal visual detailed inspection on the fuselage central section II skin panels splice between the stringers 16 and 17 LH. Require the seats, the fuselage floor panels and thermo-acoustic isolation removals; NOTE: Threshold inspection at 60,000 FC and subsequent inspections every 4,000 FC	NOTE	53-20-18	251AF/ BF/CF/DF/ EF/FF
5320-152-03I	DET SFT	Internal visual detailed inspection on the fuselage central section II skin panels splice between the stringers 17 and 18 RH. Require the seats, the fuselage floor panels and thermo-acoustic isolation removals; NOTE: Threshold inspection at 60,000 FC and subsequent inspections every 4,000 FC.	NOTE	53-20-18	252CF/DF/ EF/FF/
5320-251-03I 252	DET SFT	Internal visual detailed inspection on the fuselage central section II skin panels splices between the stringers 10 and 11, LH/RH. Require the seats, the fuselage interior linings and thermo-acoustic isolation removals; NOTE: Threshold inspection at 60,000 FC and subsequent inspections every 4,000 FC.	NOTE	53-20-18	251AW/ BW/ CW/EW/ FW/GW 252BW/ CW/ DW/EW/F W

Identif. No.	Task	Task Description	Freq.	SSI No.	Access
5320-253-05I 254	DET SFT	Internal visual detailed inspection on the fuselage central section II skin panels splices between the stringers 2 and 3, LH/RH. Require the fuselage interior linings and thermo-acoustic isolation removals; NOTE: Threshold inspection at 60,000 FC and subsequent inspections every 4,000 FC.	NOTE	53-20-18	251AW/B W/CW/E W/FW/G W 252BW/C W/DW/E W/FW
5720-521-03E 621 522 622	NDT SFT	Special detailed for front spar lower cap hidden details, using eddy current, low frequency on wing lower skin, between ribs 8 to 10(zone 521 / 621/ 522 / 622). NOTE: Threshold inspection at 40,000 FC and subsequent inspections every 4,000 FC. The skin fasteners under the L profile at the ribs 10 and 14, between the Front and auxiliary spars, will be inspected through Special detailed for skin hidden details. Inspection Method: Ultrasonic NDI Ref.: 57-20-00, Part 2, pages1 to 8.	NOTE	57-20-21	
5720-541-03E 641 551 651	NDT SFT	Special detailed for front spar lower cap hidden details, using eddy current, low frequency on wing lower skin, between ribs 14 to 15(zone 541 / 641 / 551/651). NOTE: Threshold inspection at 40,000 FC and subsequent inspections every 4,000 FC. The skin fasteners under the L profile at the ribs 10 and 14, between the Front and auxiliary spars, will be inspected through Special detailed for skin hidden details. Inspection Method: Ultrasonic NDI Ref.: 57-20-00, Part 2, pages1 to 8.	NOTE	57-20-21	
5720-531-05I 631	SDI SFT	Special detailed for front spar lower cap, using borescope between ribs 10 to 14. NOTE: Threshold inspection at 40,000 FC and subsequent inspections every 4,000 FC.	NOTE	57-20-21	531AB 631AB
5710-143-2I 144	DET SFT	Detailed inspection with magnifying glass at wing-to fuselage fitting. NOTE: For aircraft operating beyond 60,000 FC, inspect at every 8,000 FC - The first inspection after aircraft reaches 60,000 FC must be performed following the 32,000 FC interval or at aircraft 68,000 FC, whichever occurs first.	32,000 FC NOTE	57-10-10 57-10-16 57-10-17 57-10-24	191/193/ 195/1911 /1912 243AF/BF CF/DF/A W 251BW

5710-144-01E	DET SFT	Wing center section lower skin panel and access openings from CL rib 3. Requires lower CL 197 fairing removal.	1,100 FC	57-10-01 57-10-02 57-10-11 55-10-18	197
5710-144-01I	ISU SFT	Wing center section skin panel under fairings 197, 193, and 194: - Access openings. - Wing-to-fuselage fittings at front and rear spars. -Upper skin panels. Requires fairing removal and access door opening. NOTE: For aircraft operating beyond 60,000 FC, inspect at every 4,000 FC. The first inspection after aircraft reaches 60,000 FC must be performed following the 8,000 FC interval or at aircraft 64,000 FC, whichever occurs first.	8,000 FC NOTE	57-10-06 57-10-10 57-10-13 57-10-15 57-10-17 57-10-20	193/194 197/1911 1912/
5710-144-03I	ISU SFT	Wing center section internal elements: -Upper and lower skin panels and stringers. - CL rib. - CL rib-to-front spar web attachment. -Upper skin holes. -Fuselage bulkhead 28 to rear spar attachment. - Fuselage stringer-to-ribs attachment at rear spar. -Fuselage stringer 18 attach. - Ribs 2 and 3. - Shear clips. Requires access panel removal. NOTE: For aircraft operating beyond 60,000 FC, inspect at every 4,000 FC. The first inspection after aircraft reaches 60,000 FC must be performed following the 8,000 FC interval or at aircraft 64,000 FC, whichever occurs first.	8,000 FC NOTE	57-10-01 to 57-10-09 57-10-11 to 57-10-16 57-10-18 to 57-10-21 57-10-29 to 57-10-32	191/192/ 197
5710-144-04I	ISU SFT	Wing center section internal elements: - Access opening frame. - Front and rear spars. Requires access panel removal. NOTE: Threshold inspection at 4000 FC and subsequent inspections every 800 FC.	NOTE	57-10-02 57-10-09 57-10-11 57-10-13 57-10-15 57-10-18	197
5720-521-01I 621	ISU SFT	Wing box beam internal elements: - Auxiliary and front spars. - Upper and lower skins, stringers, and access openings. - Ribs. - Shear clips. Requires access panel removal. NOTE: For aircraft operating beyond 60,000 FC, inspect at every 4,000 FC. The first inspection after aircraft reaches 60,000 FC must be performed following the 8,000 FC interval or at aircraft 64,000 FC, whichever occurs first.	8,000 FC NOTE	57-20-02 57-20-09 57-20-13 57-20-14 57-20-16 57-20-18 /19/23/ 24/26/43	521AB/BB 521CB 621AB/BB 621CB

5720-521-02I 621	NDT SFT	Special detailed for skin hidden details, using ultrasonic inspection method. NOTE: For aircraft operating beyond 60,000 FC, inspect at every 8,000 FC. The first inspection after aircraft reaches 60,000 FC must be performed following the 20,000 FC interval or at aircraft 68,000 FC, whichever occurs first.	20,000 FC NOTE	57-20-04	
5720-522-02I 622	NDT SFT	Special detailed for skin hidden details, using ultrasonic inspection method. NOTE: For aircraft operating beyond 60,000 FC, inspect at every 8,000 FC. The first inspection after aircraft reaches 60,000 FC must be performed following the 20,000 FC interval or at aircraft 68,000 FC, whichever occurs first.	20,000 FC NOTE	57-20-04 57-20-44	
5720-531-01E 631	DET SFT	Wing box beam external elements through LG bay: - Detailed on door cutout. - Detailed on front and rear spars.	2,015 FC	57-20-02 20/22/30 31	723/724/ 725/726/ 733/734/ 735/736
5720-531-01I 631	ISU SFT	Wing box beam external elements (dry bay): - Upper and lower skin, stringers, and access opening. - Fuel duct. - Front and rear spars. - Main landing gear vertical fitting attachment at front spar. - Main landing gear vertical fitting attachment at rear spar. - Ribs. - Main landing gear support ribs. - Fire protection element attachment. NOTE: For aircraft operating beyond 60,000 FC, inspect at every 2,000 FC. The first inspection after aircraft reaches 60,000 FC must be performed following the 4,000 FC interval or at aircraft 62,000 FC, whichever occurs first.	4,000 FC NOTE	57-20-01 57-20-02 57-20-05 09/13/21 to 57-20-25 28/30/31 32/34/35 42/43	531AB 631AB 723/724/ 725/726/ 733/734/ 735/736
5720-531-02I 631	NDT SFT	Special detailed for skin hidden details, using ultrasonic method. NOTE: For aircraft operating beyond 60,000 FC, inspect at every 8,000 FC. The first inspection after aircraft reaches 60,000 FC must be performed following the 20,000 FC interval or at aircraft 68,000 FC, whichever occurs first.	20,000 FC NOTE	57-20-44	531AB 631AB 723/724 725/726 733/734 735/736
5720-531-03I 631	NDT SFT	Wing front spar lower cap, hidden by main landing gear support rib and wing ribs 11 and 13, using ultrasonic/"Eddy Current" inspection methods according to chapter 57 of the nondestructive inspection manual P/N NDI - 120/985. NOTE: For aircraft operating beyond 60,000 FC, inspect at every 8,000 FC.	20,000 FC NOTE	57-20-45	723/724/ 725/726/ 733/734/ 735/736

		The first inspection after aircraft reaches 60,000 FC must be performed following the 20,000 FC interval or at aircraft 68,000 FC, whichever occurs first.			
5720-531-04I 631	NDT SFT	Wing rear spar lower cap, hidden by main landing gear support rib and wing ribs 11 and 13, using ultrasonic/"Eddy Current", inspection methods according to chapter 57 of the nondestructive inspection manual P/N NDI -120/985. NOTE: For aircraft operating beyond 60,000 FC, inspect at every 8,000 FC. The first inspection after aircraft reaches 60,000 FC must be performed following the 20,000 FC interval or at aircraft 68,000 FC, whichever occurs first.	20,000 FC NOTE	57-20-46	723/724/ 725/726/ 733/734/ 735/736
5720-541-02I 641	NDT SFT	Special detailed for skin hidden details, using ultrasonic method. NOTE: For aircraft operating beyond 60,000 FC, inspect at every 8,000 FC. The first inspection after aircraft reaches 60,000 FC must be performed following the 20,000 FC interval or at aircraft 68,000 FC, whichever occurs first.	20,000 FC NOTE	57-20-04	
5720-551-02I 651	NDT SFT	Special detailed for skin hidden details, using ultrasonic inspection method. NOTE: For aircraft operating beyond 60,000 FC, inspect at every 8,000 FC. The first inspection after aircraft reaches 60,000 FC must be performed following the 20,000 FC interval or at aircraft 68,000 FC, whichever occurs first.	20,000 FC NOTE	57-20-04	
5750-572-02I 672	NDT SFT	Special detailed for upper flap spar cap between ribs 5A and 7A using "Eddy Current". NOTE: - Applicable to metallic flap, only; - For aircraft operating beyond 60,000 FC, inspect at every 8,000 FC. The first inspection after aircraft reaches 60,000 FC must be performed following the 32,000 FC interval or at aircraft 68,000 FC, whichever occurs first.	32,000 FC NOTE	57-50-17	
5750-572-03I 672	ISU SFT	Inboard flap internal elements: - Spar caps. NOTE: For aircraft operating beyond 60,000 FC, inspect at every 4,000 FC. - The first inspection after aircraft reaches 60,000 FC must be performed following the 8,000 FC interval or at aircraft 64,000 FC, whichever occurs first.	8,000 FC NOTE	57-50-02 57-50-25	572AT/BT / CT /DT/ET/ FT/GT/NT / 672AT/BT / CT/DT/ET / FT/GT/NT / For composite flaps:

					572JB/KB/ LB 672JB/KB/ LB
5750-582-02I 682	NDT SFT	Special detailed for upper flap spar cap between ribs 16A/17A, using "Eddy Current". Note: For aircraft operating beyond 60,000 FC, inspect at every 8,000 FC. The first inspection after aircraft reaches 60,000 FC must be performed following the 32,000 FC interval or at aircraft 68,000 FC, whichever occurs first.	32,000 FC	57-50-18	582AT/BT CT/DT/ET /FT GT 682AT/BT CT/DT/ET FT/GT
5750-582-03I 682	ISU SFT	Outboard flap internal elements: - Spar caps. NOTES: - For aircraft operating beyond 60,000 FC, inspect at every 4,000 FC - The first inspection after aircraft reaches 60,000 FC must be performed following the 8,000 FC interval or at aircraft 64,000 FC, whichever occurs first.	8,000 FC	57-50-09 57-50-35	582AT/BT CT/DT/ET /FT GT 682AT/BT CT/DT/ET FT/GT

(b) Boletins de serviço

Antes do acúmulo de 60000 ciclos totais de voo ou dentro de 600 ciclos de voo após a data de efetividade desta DA, o que ocorrer depois, execute as modificações e inspeções de acordo com as instruções de cumprimento dos boletins de serviço Embraer S.A. especificados na tabela 2 desta DA, conforme aplicável ao número de série do avião. Execute qualquer reparo aplicável antes do próximo voo.

Tabela 2: Boletins de serviço Embraer S.A.

SB Nº	Date	SB Title
120-51-0005	I: 11/Oct/01	Inspection for detection of corrosion on the wing to fuselage attaching bolts
120-51-0006-R01	I: 29/Oct/02 R1: 30/May/03	Inspection on, and protection against corrosion of, the vertical stabilizer to frame 46 attaching bolts
120-53-0034-R02	I: 02/May/88 R2:24/Sep/90	Removal of rivets attaching windshield lower horizontal brace.
120-53-0041-R01	I: 13/Mar/89 R1: 10/Feb/03	Installation of outer gusset to lateral/upper portion of fuselage forward section
120-53-0070	I: 06//Jul/99	Reinforcement of the windshield lower horizontal beam
120-53-0071-R01	I: 04/May/99 R1: 27/Jun/00	Inspection/replacement of windshield center post support fittings and replacement of attachment bolts
120-53-0071-R01	I: 04/May/99 R1: 27/Jun/00	Inspection/replacement of windshield center post support fittings and replacement of attachment bolts

120-53-0072	I: 21/Feb/00	Installation of a doubler and replacement of rivets in the windshield post skin
120-53-0073	I: 21/Jul/99	Rework to frame 9
120-53-0074-R01	I: 02/Sep/99 R1: 16/Jul/02	Replacement and modification to vertical stabilizer /fuselage junction "L" profile attachment
120-55-0006	I: 13/Jan/88	Rework of an access panel located on the elevator underside
120-55-0011	I: 20/Jun/96	Introduction of Drain Holes in Dorsal Fin
120-55-0016-R01	I: 24/Jan/06 R1: 30/Oct/06	Inspection and protection against corrosion in the elevator mass balance tube
120-57-0036-R02	I: 21/Sep/01 R: 17/Jul/03	Inspection and Reinforcement of the Main Wing Spar Lower Cap between Ribs 17 & 18.
120-57-0039	I: 29/Oct/03	Inspection and, on, rework against corrosion of interconnecting rods of the flap track
120-57-0040-R01	I:18/May/2015	Wings – Replacement of the Wing Lower Skin Fasteners

(c) Limitação de Aeronavegabilidade do avião

Após a data de efetividade desta DA, não opere qualquer avião além de 66.000 ciclos totais de voo ou 50.000 horas totais de voo, o que ocorrer primeiro.

(d) Inspeções ou intervalos de inspeção alternativos não são permitidos

Após realizar a revisão requerida pelo parágrafo (a) desta DA, nenhuma inspeção ou intervalo de inspeção alternativo poderá ser usado, a menos que a inspeção ou o intervalo de inspeção seja aprovado como método alternativo de cumprimento (MAC) de acordo com o parágrafo (e) desta DA.

(e) Método alternativo de cumprimento (MAC)

Um método ou tempo de cumprimento diferente do requerido por esta DA poderá ser usado se aprovado pelo Gerente-Geral da Gerência-Geral de Certificação de Produtos Aeronáuticos – GGCP