



RUSSIAN FEDERATION  
MINISTRY OF TRANSPORT OF THE RUSSIAN FEDERATION  
FEDERAL AIR TRANSPORT AGENCY

**AIRWORTHINESS DIRECTIVE**

December 28, 2016

№ 2016-322-03

**Applicability – RRJ-95 aircraft**

**State of Manufacturer – Russian Federation**

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The corrective actions prescribed by this Airworthiness Directive are mandatory. No persons may operate an aircraft to which this Airworthiness Directive applies, except in accordance with the requirements of this Airworthiness Directive.

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The Federal Autonomous Organization “Aviation register of the Russian Federation” performed the dedicated investigation of the attachment mounts of the horizontal stabilizer hinge brackets T7.92.3100.143.002.73/C and T7.92.3100.144.002.73/C of the A/C RRJ-95B RA-89017 and RRJ-95LR-100 RA-89067 were the cracks in the lugs of the attachment mounts have been detected during the works performed in accordance with Airworthiness Directive No.2016-322-02 dated 23.12.2016.

On the basis of the results of the investigation it was defined that the cracks in the attachment mounts appeared due to rupture along the grains borders of the material (delamination) caused by stress related to non-design level of stresses in the tight insertion of bushes 18-22-20-15-Khim.Pas-OST 1 11125-73 into the brackets lugs, of the bush T7.92.3100.077.000.73 into the bush 18-22-20-15-Khim.Pas-OST 1 11125-73 and bolt T7.92.3100.078.000.73 into the bush T7.92.3100.077.000.73.

Appearance of the cracks in the attachment mounts is related neither to the life time accumulated by the parts, nor to the quality of the material they are made of.

In order to assure the continued operation of the A/C RRJ-95,  
Propose:

1. To revise the para.1 and para.2 of the Airworthiness Directive No.2016-322-02 dated 23.12.2016 by the following requirement – on every “weekly” maintenance (WY-check – every 8 days), to perform the detailed visual inspection according to AMM 55-16-00-220-804 “Detailed Inspection of the Splice Plates and the Horizontal Stabilizer Hinge Bracket Attach Belts” and AMM 55-16-00-220-801 “Detailed Inspection of the Horizontal Stabilizer Hinge Brackets”, and also to perform the instrumental inspection (with the use of eddy current crack detectors) of the lugs of the upper and lower attachment mounts of the horizontal stabilizer hinge brackets as per NDTM 51-60-00 documenting the inspection results, including photos.

If a crack is detected or suspected the operation of the affected A/C shall be suspended.

2. The in-service replacement of the attachment mounts where the cracks have been detected shall be done in accordance with SCAC Decision RRJ0000-OR-470-9633 dated 28.12.2016.

3. To exclude the cracks initiation in the lugs of attachment mounts of the horizontal stabilizer hinge brackets SCAC shall issue a Service Bulletin by 01.02.2017 for replacement of the attachment mounts of the horizontal stabilizer hinge brackets made of 1163T material by the attachment mounts made of B9504T2 including the procedure of RRJ-95 fleet retrofit.

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Deputy Director General

M. Bulanov

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**SUPERSEDED**

«APPROVED»

Chief Designer of SSJ –  
Deputy Vice-President for Development

V. Lavrov

«28» December 2016

**DECISION № RRJ0000-OR-470-9633**

on replacement of the attachment mounts of the horizontal stabilizer hinge brackets

Based on FATA Airworthiness Directive №2016-322-02 dated 23.12.2016 the detailed visual one-time inspection of the attachment mounts of the horizontal stabilizer hinge brackets T7.92.3100.141.001/002.73, T7.92.3100.142.001/002.73, T7.92.3100.143.001/002.73, T7.92.3100.144.001/002.73 was performed on all the RRJ-95 fleet by the Operators with support of SCAC representatives. According to the results of the inspections performed there were detected the cracks in the lugs of upper and lower attachment mounts of the horizontal stabilizer hinge brackets on several A/C. The operation of the affected A/C is suspended.

On the basis of the results of the cracks root cause investigation it was defined that the cracks in the attachment mounts appeared due to rupture along the grains borders of the material (delamination) caused by stress related to non-design level of stresses in the tight insertion of bushes 18-22-20-15-Khim.Pas-OST 1 11125-73 into the brackets lugs, of the bush T7.92.3100.077.000.73 into the bush 18-22-20-15-Khim.Pas-OST 1 11125-73 and bolt T7.92.3100.078.000.73 into the bush T7.92.3100.077.000.73. Appearance of the cracks in the attachment mounts is related neither to the life time accumulated by the parts, nor to the quality of the material they are made of.

In order to perform the replacement of the attachment mounts of the horizontal stabilizer hinge brackets on the A/C where the cracks in the lugs of the attachment mounts were detected the following decision is taken:

**DECISION:**

- 1.1. For the A/C with the cracks detected in the lugs of the attachment mounts T7.92.3100.141.001/002.73, T7.92.3100.142.001/002.73, T7.92.3100.143.001/002.73, T7.92.3100.144.001/002.73 of horizontal stabilizer hinge brackets the actual attachment mounts shall be replaced decreasing the tightness of the forced fit by the installation of the bolts, bolts bushes and lugs bushes assuring the reduced tightness changing the tolerance zones. The bushes into the attachment mounts lugs shall be fitted as H7/n6 (maximum tightness 0,028  $\mu\text{m}$ ), instead of H7/u8 (maximum tightness 0,074  $\mu\text{m}$ ). The installation of the main bolt shall be fitted as H7/h8 (no tightness). The installation of the redundant bolt shall be fitted as  $\text{Ø}_{+0,012}^{+0,030}/\text{k}6$  (no tightness).

**RRJ0000-OR-470-9633**

1.2. The replacement shall be performed by SCAC experts supporting the authorized maintenance organization in accordance with SCAC documentation (technological passport), for this purpose:

- to dismount the attachment mounts T7.92.3100.141.001/002.73, T7.92.3100.142.001/002.73, T7.92.3100.143.001/002.73, T7.92.3100.144.001/002.73, where the cracks had been detected.
- to manufacture the attachment mounts T7.92.3100.141.001/002.73, T7.92.3100.142.001/002.73, T7.92.3100.143.001/002.73, T7.92.3100.144.001/002.73 as per design assuring the reduced tightness of the bushes fit (H7/n6).
- to manufacture the bolt T7.92.3100.177.000.90 as per design assuring the internal diameter tolerance zone  $\varnothing_{+0,012}^{+0,030}$ ,
- to manufacture the new fasteners to join the attachment mounts with the horizontal tail panels,
- to install the attachment mounts using the new fasteners,
- to install the bolt T7.92.3100.177.000.73 assuring no tightness of the fit (H7/h8),
- to install the actual bolt T7.92.3100.078.000.73 assuring no tightness of the fit ( $\varnothing_{+0,012}^{+0,030}/k6$ ).