



ATA 32 – Landing gear: shock absorber servicing.

This Special Airworthiness Bulletin (BEA) is intended to alert the civil aviation community about the best practices of Main Landing Gear (MLG) shock absorber servicing tasks.

This bulletin is informative, and the recommendations herein are not mandatory. Up to this time, there is no airworthiness concern that would warrant an Airworthiness Directive (AD) according to Regulamento Brasileiro da Aviação Civil (RBAC) nº 39.

Applicability:

EMBRAER S.A. airplanes model EMB-545 and EMB-550, all serial numbers.

Description:

After a MLG servicing of the airplane it has been reported that the Landing Gear (LG) lever cannot be moved to the up position. In subsequent flights, the operator has reported some cases of LG lever got stuck with some Crew Alerting System (CAS) messages during flight.

The investigation has shown damages on LG doors and seals compressing the shock absorber, which have affected the Weight on Wheels (WoW) sensors and the air control law of the airplane.

Evidence has shown MLG shock absorber ground servicing task performed not according to manufacturer specifications and leading to incorrect amounts of nitrogen and oil. A nitrogen pressure under 10% of the expected, may lead the shock absorber to return to extended position, even with the landing gear retracted, leading to a WoW incorrect indication.

The WoW incorrect indication causes a transition on airplane control laws and may result in a pitch up non commanded movement. In addition, the nitrogen and hydraulic fluid low pressure may affect the shock absorber performance during the airplane taxi, takeoff and landing operations, reducing its ability to absorb impacts and vibrations.

Therefore, EMBRAER has revised the airplane MLG servicing task to allow the servicing only with the airplane on jacks according to the detailed instructions and procedures described in the Airplane Maintenance Manual (AMM) task 12-14-01-610-802-A - Main Landing Gear Shock Absorber with the Aircraft on Jacks – Servicing.

Recommendations:

1. Perform the MLG servicing task according to the detailed instructions and procedures described in the Airplane Maintenance Manual (AMM) task 12-14-

01-610-802-A - Main Landing Gear Shock Absorber with the Aircraft on Jacks – Servicing.

2. If no jacks are available to perform this servicing task, contact the EMBRAER for an alternative disposition.

References:

EMBRAER Service Letter (SL) No. 550-32-0008, revision 01, dated August 13, 2024.

Airplane Maintenance Manual (AMM) task 12-14-01-610-802-A - Main Landing Gear Shock Absorber with the Aircraft on Jacks – Servicing, dated August 16, 2024, or further revisions.

For additional information, please contact:

Agência Nacional de Aviação Civil (ANAC)
Gerência Técnica de Aeronavegabilidade Continuada (GTAC)
Rua Doutor Orlando Feirabend Filho, nº 230
Centro Empresarial Aquárium - Torre B – 14º ao 18º andares
Parque Residencial Aquárium
CEP 12246-190 – São José dos Campos - SP.
Tel.: (12) 3203-6600 - E-mail: pac@anac.gov.br