LEONARDO

HELICOPTERS DIVISION

TECHNICAL INFORMATION LETTER

TIL N° **T-139-22-001**

DATE: **January 20, 2022**

REV.: **/**

To: Leonardo Helicopters products
Owners / Operators / Service Centres

SUBJECT: **Tail Rotor Drive Line (TRDL) bearing support panel reinforcement**

Helicopters Affected: AW139 helicopters

References:

[1] Bollettino Tecnico n° 139-467 dated December 20, 2016
Tail Rotor Drive Line (TRDL) Bearing Support Bracket

Dear Customer,

With the present letter Leonardo Helicopters (LH) would like to inform Customers about the upcoming release of Service Bulletin SB139-539 relevant to Tail Rotor Drive Line (TRDL) bearing support panel reinforcement.

BACKGROUND

The TRDL bearing support area has been subject to SB139-467 (Reference [1]) that required, on all AW139 helicopters equipped with support assy P/N 3G6510A05232:

- a periodic inspection for cracks of the bearing support bracket and
- a one-off torque check of the bracket installation bolts/nuts.

Monitoring the affected in-service fleet by means of SB139-467, it was recorded that cases of cracks on the support bracket, and on the bearing support panels as well, were limited to helicopters not equipped with Tail Boom Assy having bearing support panels not reinforced with an increased thickness (design improvement introduced with Tail Boom Assy P/N 3G5350A00136).

DESIGN IMPROVEMENT

Based on in-service data and the structural analysis performed on the different tail boom configurations, LH developed two retromod drawings, P/N 3G5350P00311 and P/N 3G5350P00611, to introduce a similar structural reinforcement in the TRDL bearing support area on helicopters equipped with tail boom assy P/N 3G5350A00132, P/N 3G5350A00133, P/N 3G5350A00134 and 3G5350A00135.

- **Tail Rotor Drive Retromod P/N 3G5350P00311**

  This retromod allows the installation of doublers and shims on the upper side of right and left tail panels (Figure 1) and it is composed by:

  ✓ a basic design applicable to structures not already repaired;

  ✓ specific part to adapt the retromod to the existing repairs performed in-service in the affected area, if present.

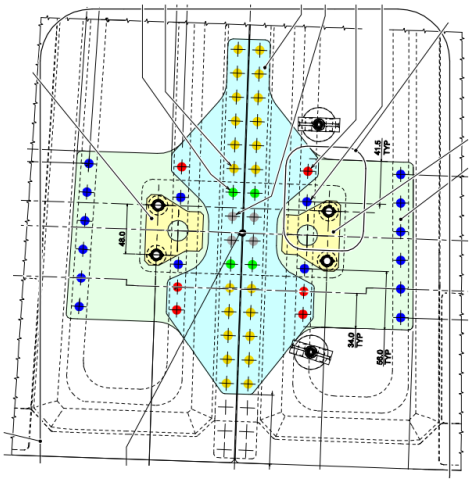

Figure 1

- **Tail Rotor Drive Internal Side Retromod P/N 3G5350P00611**

  This retromod allows the installation of two doublers on the lower side of right and left tail panels (Figure 2) and is equivalent to the existing repairs performed in-service in the affected area.

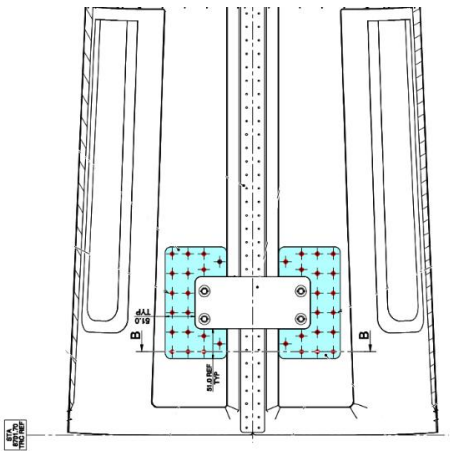

Figure 2

DEPLOYMENT OF THE DESIGN IMPROVEMENT

Such design improvement is going to be released through SB139-539.

Applicability

AW139 helicopters equipped with:

- bearing support assy P/N 3G6510A05232, part of TRDL P/N 4G6500A00212, and
- Tail Boom Assy P/N 3G5350A00132, P/N 3G5350A00133, P/N 3G5350A00134 or P/N 3G5350A00135.

Note 1: helicopters equipped with Tail Boom Assy P/N 3G5350A00136 will not be affected by SB139-539.

Note 2: SB139-539 will supersede SB139-467.

Requirements

The SB is structured in the following three parts:

- Part I: recurrent inspections of the bearing support area to check for cracks or corrosion damages; compared to the requirements of SB139-467, the periodic inspection is extended to the tail panels (on both upper and lower side, visible area).

  Note: until accomplishment of the SB Part III, the requirements of SB Part I will remain applicable.

- Part II: Tail Boom panels damage assessment, if present, to properly plan materials necessary for Part III application;

- Part III: installation of structural reinforcement on the tail panels in the TRDL bearing support area.
  - ✓ All the existing repairs are attached in the SB, in Annex D, to help Customers to identify an existing repair, if present, and to define the relevant part of the retromod to be installed (on the upper side).
  - ✓ Repair limits also are available, to allow the operator to perform one of the existing repair procedure (on both upper and lower side), if applicable, at the same time of retromod installation. In case of findings outside the given limits, Customer shall contact LH Product Support Engineering for the appropriate specific instructions.
  - ✓ After the application of the retromods, the TRDL alignment check shall be performed under the following conditions:
    - For helicopters listed in Table 1 of the SB and if no tail boom replacement has been performed, only a simplified alignment procedure (*TRDL Limited Direct Alignment Check*), shall be applied. This procedure, provided as Annex A to the SB, requires to perform the alignment check with the structural modification in one single position (bearing support) and shall be applied either before and after retromod application.

      Note: tool P/N PEC-139-009-01 has to be requested to perform this procedure.
    - For helicopters not listed in Table 1 or in case tail boom replacement has been performed, the standard complete alignment procedure (*TRDL Final Alignment Check*), shall be applied. This procedure, provided as Annex B to the SB, requires to perform the alignment check in three different positions (bearing support, IGB, MGB) and shall be applied only after retromod application.

      Note: tools P/N 139H6300D002A651D and P/N TALL0000M1A686A have to be requested to perform this procedure.

- Only in case of alignment check failure, the tail alignment described in Annex C will be necessary.

  Note: tools required to comply with this procedure will not be supplied unless a properly filled report (Figure A5 in Annex A or Table B2 in Annex B) is sent to LH Product Support Engineering.

For all of the above conditions, Customer shall contact LH Order Administration at least three (3) months in advance the scheduled Part III application, to request on loan the applicable special tools (1 per fleet, except when differently indicated). As soon as the SB139-539 is implemented, the tools supplied on loan must be promptly returned to LH.

Should you need any additional information, please do not hesitate to refer to the point of contact provided with the Customer Support & Training Worldwide Directory, available on Leonardo Customer Portal at this link.

Yours Sincerely,

Gabriele Bordino
Head of Product Support Engineering