

ELPROP	AERO AT Sp. z o.o. ul. COP-u 2 39-300 Mielec; POLAND	EPB.02.B
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Service Bulletin

Mandatory

EPB.02.B

Inspection of the propeller hub

Type: ELPROP 3 series

Variant: ELPROP 3-1-1P

APPLIES:

This bulletin applies to ELPROP 3-1-1P propellers with serial numbers from 3E.089 onwards.

SUBJECT:

Inspection of the propeller hub.

BULLETIN IMPLEMENTATION DATE:

Inspection of the propeller hub according to point 5.1 must be performed immediately after publication of this bulletin..

The next inspections as per point 5.4.

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1. APPLIES

This bulletin applies to ELPROP 3-1-1P propellers with serial numbers from 3E.089 onwards.

2. TERM OF THE BULLETIN IMPLEMENTATION

Perform the first inspection of the propeller according to point 5.1 immediately after the publication of this bulletin, but no later than before next flight. Perform the next inspections according to pt. 5.4 until the manufacturer provides final recommendations. Recommendations will be given in the next issue of this service bulletin.

3. DESCRIPTION

Propeller hub cracks were found on AT-3R100 airplanes.

Cracks occurred at bolts securing the blades, see area A Fig.1 and on blade area, see area B Fig.1. Cracks occurred after several hundred operating hours of the propeller.

Propeller Maintenance Manual type ELPROP contains propeller inspection procedures to detect possible damage within conducting 100 h inspection.

Due to the fact, that the operation of the propeller with a damaged hub is unacceptable, the propeller manufacturer introduces additional inspections of the propeller hub every 50 flight hours.

Following factors contribute to hub crack occurrence:

- exceeding the maximum value of torque applied to bolts that secure the propeller and bolts that secure propeller blades.
- uneven tightening of propeller bolts.
- operation with high level of vibration, unbalanced or damaged propeller, non-linear tracking, etc.

WARNING

Propeller operation with cracking hub is not allowed.

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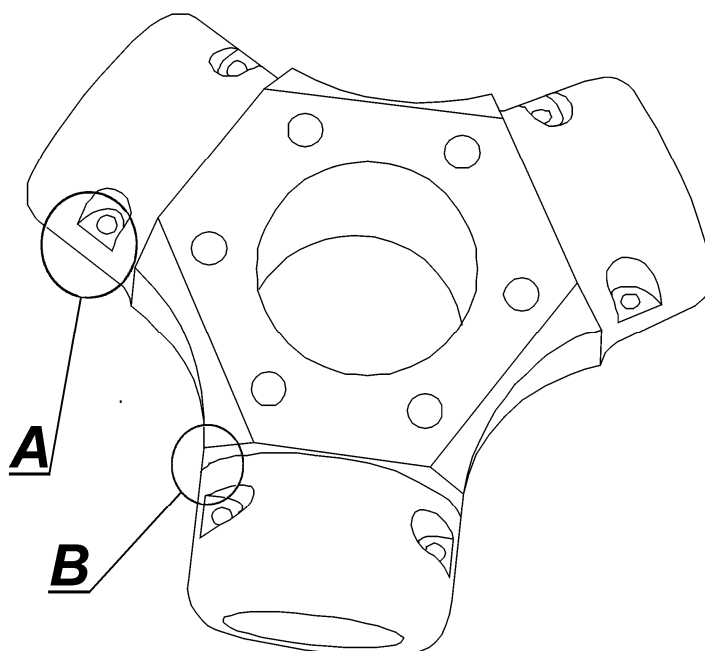


Fig.1. Places where cracks occur.

a. Associated documents

- Elprop Propeller Maintenance Manual, doc. No EPI.02
- Maintenance Manual of the AT-3R100 Aeroplane, doc. No ATT3.03

b. Weight and balance of the aircraft

No effect on weight and balance of the aircraft.

4. TOOLS AND MATERIALS NECESSARY TO IMPLEMENT THIS BULLETIN

- Set of parts supplied by the manufacturer:
 - none
- Consumable materials:
 - safety wires Ø 0,8 mm
- Tools:
 - set of basic hand tools
 - torque wrench
 - magnifier x5
- Special tools:
 - none

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5. EXECUTION OF THE SERVICE BULLETIN

5.1. The first inspection of the propeller.

- Remove the spinner as per Airplane Maintenance Manual.
 - Check the condition of the blades.
 - With the use of 5x magnifying glass visually inspect the condition of the front and the back part of the hub, look for possible cracks. Pay special attention to areas A and B as shown on Fig.1; inspect areas next to each blade.
 - Check the condition of the blade bolts and nuts.
 - Check the position of the washers under the nuts and bolt heads, Fig. 2.
- Correctly positioned washers point with their rounded edge towards the hub. If any of the washers is incorrectly positioned, carry out the activities according to point 5.2 of this bulletin.



a) correct



b) incorrect

Fig.2. Washers positioned under the bolt head and the nut: a) correct, b) incorrect

- In the event of detection of a hub crack, perform the activities according to point 5.3. of this bulletin.

If no cracks, malfunctions or improper installation of the parts are found;

- Check the tightening torque of bolts according to point 3.4 of the Elprop Propeller Maintenance Manual.
- Check the gap between the propeller hub halves over the entire surface, minimum permissible value of 0.05 mm.
- If there is no gap, proceed as described in point 3.4 of the Elprop Propeller Maintenance Manual.
- Install the spinner as per Airplane Maintenance Manual.

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5.2. In the case of incorrect position of any of the washers;

- Dismantle the propeller from the airplane.
- Dismantle the propeller blades according to point 3.6 of the Elprop Propeller Maintenance Manual. Before dismantling, mark the position of the blades in relation to the propeller hub with a thin, indelible marker pen. The marking will allow the blade angle to be maintained when reassembling the propeller.
- Check carefully the propeller hub for cracks.
- Check the condition of the hub surface under improperly mounted washers, damage of the surface is unacceptable. In the event of damage being found, proceed in accordance with point 5.3. of this bulletin.
- If no cracks were found, install the propeller blades in the hub with correctly fitted washers, according to point 3.6. Elprop Propeller Maintenance Manual.
- Set the blades angle according to the marking.
- Tighten the bolts according to point 3.4 Elprop Propeller Maintenance Manual.

5.3. If any cracks or damage are found;

- Take the propeller out of service.
- Immediately inform the propeller manufacturer and provide required information as per point 5.6 of this bulletin.

5.4. Periodic inspection performed after 50 hours of operation from each 100-hour inspection or annual inspection;

- Remove the spinner as per Airplane Maintenance Manual.
- Check the condition of the blades.
- With the use of 5x magnifying glass visually inspect the condition of the front and the back part of the hub, look for possible cracks. Pay special attention to areas A and B as shown on Fig.1; inspect areas next to each blade.
- Check the condition of the blade bolts and nuts.
- Check the position of the washers under the nuts and bolt heads, Fig. 2.
Correctly positioned washers point with their rounded edge towards the hub. If any of the washers is incorrectly positioned, carry out the activities according to point 5.2 of this bulletin.
- In the event of detection of a hub crack, perform the activities according to point 5.3 of this bulletin.
- Check the gap between the propeller hub halves over the entire surface, minimum permissible value of 0.05 mm. If there is no gap, proceed as described in point 3.4 of the Elprop Propeller Maintenance Manual.
- Install the spinner as per Airplane Maintenance Manual.

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5.5. Notification of the manufacturer.

About the first inspection of the propeller according to point 5.1 of this bulletin, the propeller manufacturer must be informed. Contact with the manufacturer is given in point 6 of this bulletin.

The information should include the following:

- serial number of the propeller,
- serial number and type of the airplane on which the propeller is installed,
- total time since new of the propeller (TTSN),
- report results of inspection.

5.6. Make an entry in the propeller / aircraft documentation about the inspection according to the bulletin No. EPB.02.B.

6. CONTACT WITH THE MANUFACTURER

Information on the execution of the first inspection of the propeller hub should be sent to the e-mail Design Office AERO AT Sp. z o.o. : at-3.biuro@gmail.com