

AEROPRAKT INFORMATION BULLETIN

INSPECTION OF CARDAN RINGS AND AMMENDMENT TO AIRCRAFT MAINTENANCE MANUALS OF A-22LS AND A-22L2 AIRPLANES.

IB A-22LS-10

MANDATORY

Repeating symbols:

Please, pay attention to the following symbols throughout this document marking important information.

- ▲ **WARNING:** Identifies an instruction, which if not followed may cause serious injury or even death.
- **CAUTION:** Denotes an instruction, which if not followed, may cause severe damage.
- ◆ **NOTE:** Information useful for better handling.

1) Planning information

1.1) Aircraft affected

All versions of Aeroprakt-22LS aircraft serial No. 1-237 and Aeroprakt-22L2 aircraft serial No. 345-470.

1.2) Reason

It was found out that an excessive tightening of the nut on the bolt joining the cardan ring to the flaperon shaft results in a significant deformation of the cardan ring and of the flaperon shaft end which causes cracks in the cardan ring. To avoid this excessive deformation of the joint the nut must be tightened with a torque of 2 Nm.

1.3) Subject

Inspection of the cardan rings and ammendment to the AMM of A-22LS and A-22L2 aircraft.

1.4) Compliance

For all aircraft in operation the inspection is to be done immediately. If cracks are detected in the cardan rings, the work described in this bulletin is to be carried out before resuming flights. AMM ammendment must be made for the aircraft mentioned in 1.1.

1.5) Approval

The technical content of this Information Bulletin has been approved by Aeroprakt

1.6) Manpower

Estimated man-hours:

Work per 3.2 is performed within 3 hours.

1.7) Mass data

Mass change – none.

1.8) Revision of other documents

Aircraft Maintenance Manual.

1.9) Spare parts

Cardan rings with detected cracks must be removed from operation and delivered to the local dealer.

2) Spare parts information

2.1) Spare parts cost

Price of new parts: Cardan ring (1 pc.) – 75 Euro, delivery – at the expense of customer.

2.2) Special tools

Calipers, ½ inch wrench, torque wrench, vice.

3) Instructions

3.1) Inspection and measurement of cardan rings

1. Inspect the cardan rings of the right and left flaperon for cracks (see fig. 1). Replace the cardan ring if any crack is detected.
2. If “S” dimension exceeds 55.0 mm check the nut tightening using torque wrench. If there is a gap between the flaperon shaft and cardan ring then the flaperon shaft deformation must be removed.
3. If “S” dimension is less than 55.0 mm then the flaperon shaft deformation must be removed and the cardan ring must be replaced.

◆ **NOTE:** Inspection and measurement of the cardan rings must be done on both right and left sides, although fig. 1 shows only the right side.

3.2) Removal of the flaperon shaft deformation and replacement of the cardan ring

1. Remove the locking pin and undo the nut from the vertical bolt joining the flaperon shaft with the cardan ring. Remove the bolt.
2. Disconnect the vertical control pushrod from the flaperon shaft arm.
3. Remove the locking pin and washer on the other end of the flaperon shaft (where it is joined to the flap extension mechanism – FEM).
4. Move the flaperon shaft towards the flaperon and draw the inner shaft end out of the bearing in the FEM lever while pressing the lever away from the shaft. If necessary change position of the FEM lever.
5. Remove the split pin and undo the nut of the horizontal bolt, joining the cardan ring with the flaperon. Put down the trailing edge of the flaperon and remove the bolt and the cardan ring.
6. Removal of the deformation of the flaperon shaft must be done in vice with protecting pads. To ensure the required dimension of 43 mm between the outer faces of the bushings apply the squeezing force "P" (see fig. 3) to the shaft tube at right angle to the bushing axis.
7. Installation of the cardan ring and flaperon shaft must be performed in order reversed to the one described in steps 1-4. The nuts on bolts of the cardan ring must be done with torque 2 Nm (see 1.2).

3.3) Amendment to the AMM of A-22LS and A-22L2 aircraft

3.3.1) In the AMM with designation A22LS-AMM-01 or A22L2-AMM-01:

In section "**1 General**" on page 6 after words:

WARNING! All bolts, nuts (except for self-locking ones), pins, turnbuckles must be locked reliably.

insert the following note:

NOTE: Torque values specified in the table above are only for static joints and joints with spacing inserts (spacers, spherical bearings, etc.). For the movable joints where bolts serve as hinge axle the nuts tightening must be done only to remove the axial play (gap) while preserving the rotational freedom in the joint.

In section "**11 Airplane control system**":

Amend note 11.2 as follows:

11.2 Check tightness and locking of the nuts and play in hinged joints. Grease the slide bearings if necessary. (See also note 11.13.)

And add note 11.13 after note 11.12 as shown below:

11.13 (addition to note 11.2) Torque for tightening the nuts on bolts joining the cardan rings of the aileron control system – 2 Nm.

3.3.2) In the AMM with designation A22LS-AMM-02:

In section "**1.8 Recommended fastener torque values**" on page 8:

Add note on the right side of the table as shown below:

| Metric fasteners | Inch fasteners | Torque, N·m (lb·ft) |
|------------------|----------------|---------------------|
| M5 | 10-32 | 6 (0.9) |
| M6 | 1/4 | 10 (1.5) |
| M8 | 5/16 | 15 (2.3) |
| M10 | 3/8 | 25 (3.8) |

See note
on page 9

and insert note on page 9 as shown below:

NOTE: Torque values specified in the table on page 8 are only for static joints and joints with spacing inserts (spacers, spherical bearings, etc.). For the movable joints where bolts serve as hinge axle the nuts tightening must be done only to remove the axial play (gap) while preserving the rotational freedom in the joint.

In section "**12 Airplane control system**":

Amend note 12.2 as follows:

12.2 Check tightness and locking of the nuts and play in hinged joints. Grease the slide bearings if necessary. (See also note 12.13.)

And add note 12.13 after note 12.12 as shown below:

12.13 (addition to note 12.2) Torque for tightening the nuts on bolts joining the cardan rings of the aileron control system – 2 Nm.

Appendix:

Pictures below contain additional information.

