

## **AEROPRAKT**

# **SAFETY ALERT**

**No. SA A22LS-13**

### **INSPECTION AND REPLACEMENT OF THE THREADED END OF THE ELEVATOR PUSH-ROD**

**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.

**Release date: 30.12.2015**

**Effective date: 30.12.2015**

**Completion date:**

**Superseded notice: none**

**Model: A-22LS, A-22L2**

**Serial number(s) affected: A-22LS: from 174 on (with central stick)**

**A-22L2: from 435 on (with central stick)**

**1) Planning information****1.1) Aircraft affected**

Aeroprakt-22LS airplanes, central stick controls with control locking pin located between the seats, S/N from 174 on and Aeroprakt-22L2 airplanes, central stick controls with control locking pin located between the seats, S/N from 435 on.

**1.2) Reason**

It was found out that the treaded end of the elevator control push-rod attached to the control stick of A-22LS and A-22L2 aircraft with central stick may be subjected to excessive non-design bending. This bending occurs when the aircraft is parked outside and its control stick is fixed with a locking pin passed through a hole in the push-rod and the ailerons are displaced by the wind gusts if they are not fixed by clamps (gust locks) as required in Pilot Operating Handbook, section 9.2 Towing, parking and tie-down instructions. This non-design bending may cause fatigue fracture of the threaded rod end and result in loss of elevator control in flight.

**1.3) Subject**

Inspection and replacement of the threaded rod end of the elevator push-rod of A-22LS aircraft with central stick.

**1.4) Compliance**

Compliance with this Safety Alert is mandatory for all affected aircraft for flight safety reasons!

**1.5) Approval**

The technical content of this Safety Allert has been approved by Aeroprakt.

**1.6) Manpower**

Estimated man-hours: 3 hours.

**1.7) Mass data**

Mass change – none.

**1.8) Revision of other documents**

Amendment of the POH: warning to use gust locks (see instruction 12).

**1.9) Spare parts**

Universal gust locks. If replacement is necessary: rod end GMM-4M-470, locking nut AN316-4R.

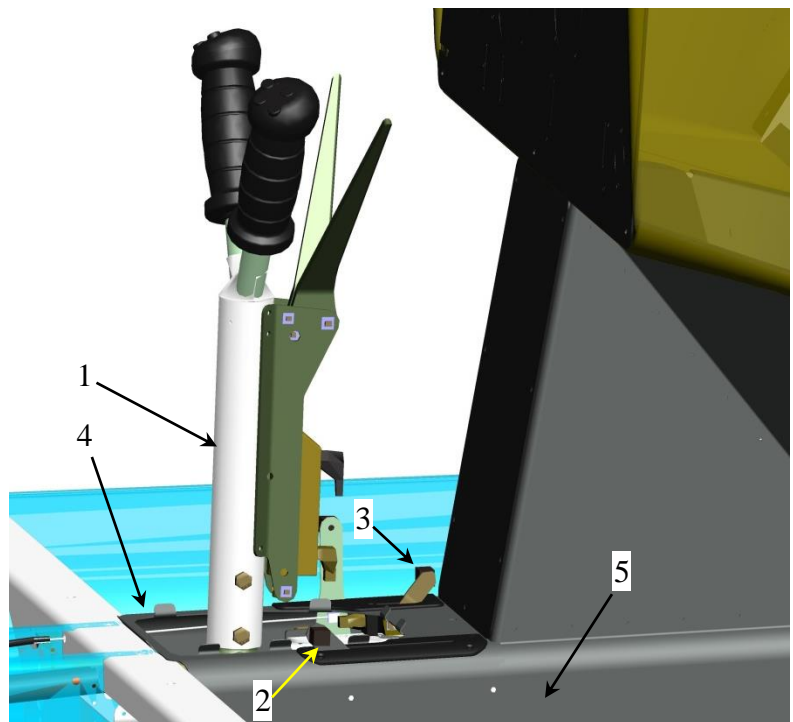
**2) Spare parts information**

Available at <http://www.aircraftspruce.com> or other suppliers' web sites.

### 3) Accomplishment / Instructions

#### ▲ Do not fly the airplane before accomplishing these instructions!

1. Remove the soft protecting cover from the control stick (1) and handles from the control levers of throttle, choke (2) and parking brake (3).
2. Remove (lift up) the horizontal panel of the instrument compartment base (4) after removing 7 screws fixing the panel to the base.
3. Remove the right wall (5) of the instrument compartment base after removing the screws attaching it to the floor beam (4 pcs.), seat beam (1 pc.), instrument compartment housing (2 pcs.), lower instrument panel (3 pcs.).



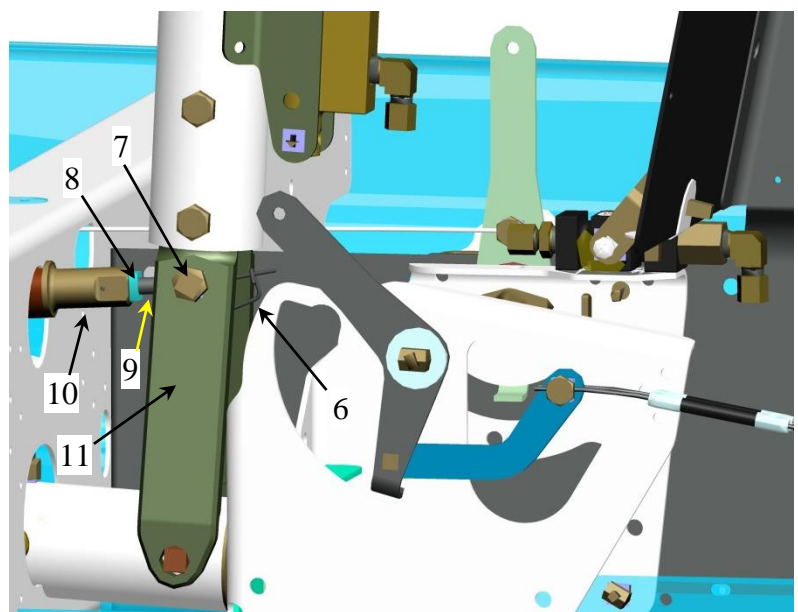
4. Unfasten and remove the locking pin (6) from the bolt (7) attaching the control push-rod to the control stick. Undo the nut (16) and take out the bolt (7), the washers (12, 15) and spacers (13, 14). (See next page.)

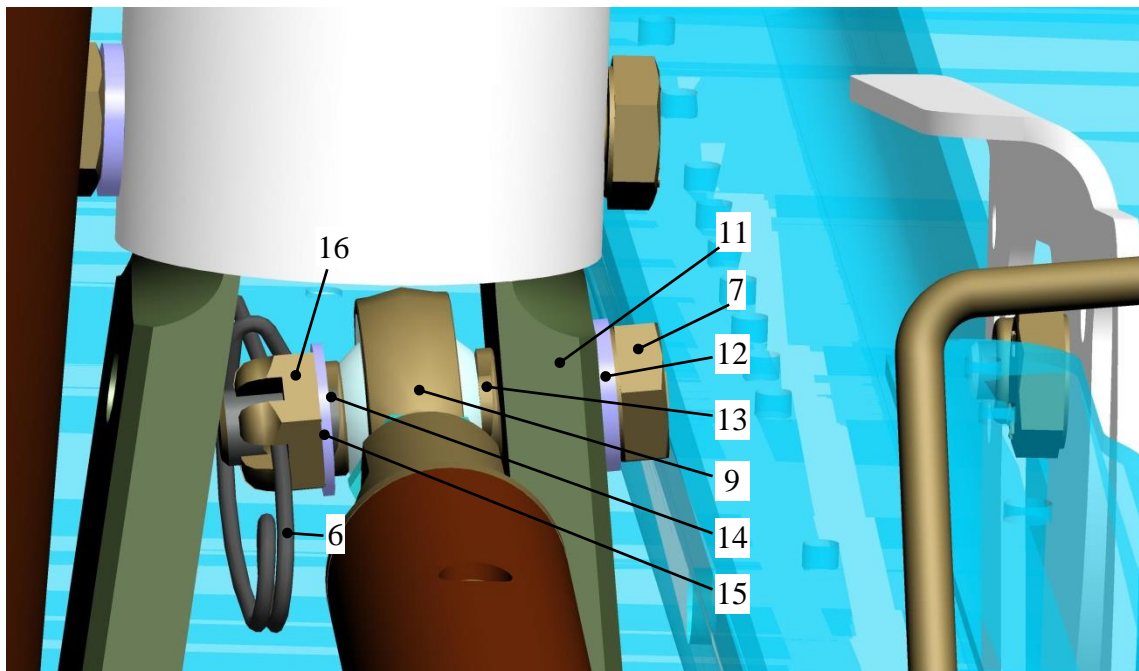
- ◆ Take care or some preventive measures not to loose the fasteners or drop them into the areas with restricted access.

5. Loosen the locking nut (8) and screw out the forward end (9) of the elevator control push-rod (10).

- ◆ To re-install the end (9) later exactly to its initial position, count turns while unscrewing it or measure some of its characteristic dimensions.

6. Inspect the end for deformation or cracks in its thread. If it is damaged replace for a new one.
7. Re-install the undamaged (or new) end with a locking nut exactly to its original position (see note to step 5).





8. Install the bolt (7) with a 1.6 mm thick washer (12) under its head to the hole in the right semi-fork (11) of the control stick so that its thread is extended by 3-5 mm. Gradually pushing the bolt insert it one by one into a spacer (13), rod end (9), spacer (14), washer (15) and nut (16). Tighten the nut (16) with 10 Nm torque until one of its grooves aligns with the locking hole in the bolt (7). Insert back and fasten the locking pin (6).
- ◆ To help aligning the nut grooves with the locking hole in the bolt, mark a line parallel to the hole centerline on the bolt head.
9. Make sure that the elevator control push-rod is adjusted exactly to its initial length. When the control stick is pulled back the clearance between it and the seat beam must be 2-4 mm.
10. Align the rod end (9) eye plane parallel to the right semi-fork (11) of the control stick when the rear end of the push-rod is oriented vertically. Tighten the locking nut (8). When oriented correctly, the rod end allows unrestricted movement of the elevator control push-rod with the control stick in any position.
11. Re-install the right wall (5) and horizontal panel of the instrument compartment base. Install back the soft protecting cover of the control stick and the handles of the throttle, choke and parking brake control levers.
12. Add a warning to the Pilot Operating Handbook, section 9.2 Towing, parking and tie-down instructions: **Never use the locking pin alone without the universal gust locks securing the ailerons when airplane is parked outside!**