

# **AEROPRAKT SERVICE BULLETIN**

## **No. SB A22LS-17**

### **REPLACEMENT OF RUDDER CONTROL SYSTEM CABLES AND FAIRLEADS OF A-22, A-22L, A-22L2 AND A-22LS AIRCRAFT**

#### **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: 18.05.2018**

**Effective date: 18.05.2018**

**Completion date:**

**Superseded notice: none**

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

**Serial number(s) affected: All serial numbers of A-22 and A-22L aircraft, A-22L2 s/n 345-576 and A-22LS s/n 001-328, that require replacement of the rudder control cables according to SA A22LS-16 or the cables' fairleads due to wear.**

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

All serial numbers of A-22 and A-22L aircraft, A-22L2 s/n 345-576 and A-22LS s/n 001-328, that require replacement of the rudder control cables according to SA A22LS-16 or the cables' fairleads due to wear.

**1.2) Reason**

Fatigue failure of the rudder control system cables and wear of the cables' fairleads.

**1.3) Subject**

Rudder control system cables and their intermediate fairleads.

**1.4) Compliance**

Compliance with this Service Bulletin is obligatory due to flight safety reasons!

**1.5) Approval**

The technical content of this Service Bulletin has been approved by Aeroprakt.

**1.6) Manpower**

Estimated man-hours: 16 man-hours.

**1.7) Mass data**

Mass change – none.

**1.8) Revision of other documents**

None.

**1.9) Spare parts**

Sets of the rudder control cables and intermediate fairleads are supplied by local dealer.

**2) Spare parts information**

Cost of the spare parts set: please consult your local dealer.

### 3) Accomplishment / Instructions

▲ **WARNING:** Not carrying out the following work may cause breakage of rudder control cables.

3.1) Remove the instrument compartment base.

3.2) Remove safety wire from the turnbuckles and disconnect the cables from the levers of the pedal shafts (Fig.1).



**Fig. 1.**

3.3) Remove the split pins from the pins attaching the cables to the rudder control arms (Fig.2). Hold the cable shackles and remove the pins. Tie the cable shackles with a cord approximately 3 meters long. Remove the rudder.

◆ **NOTE:** The cord tied to the cable shackles will help to pull the cables back from the tail boom.



**Fig. 2.**

3.4) Remove the seats, drill out the rivets attaching the fairleads to the seat beam (Fig. 3).



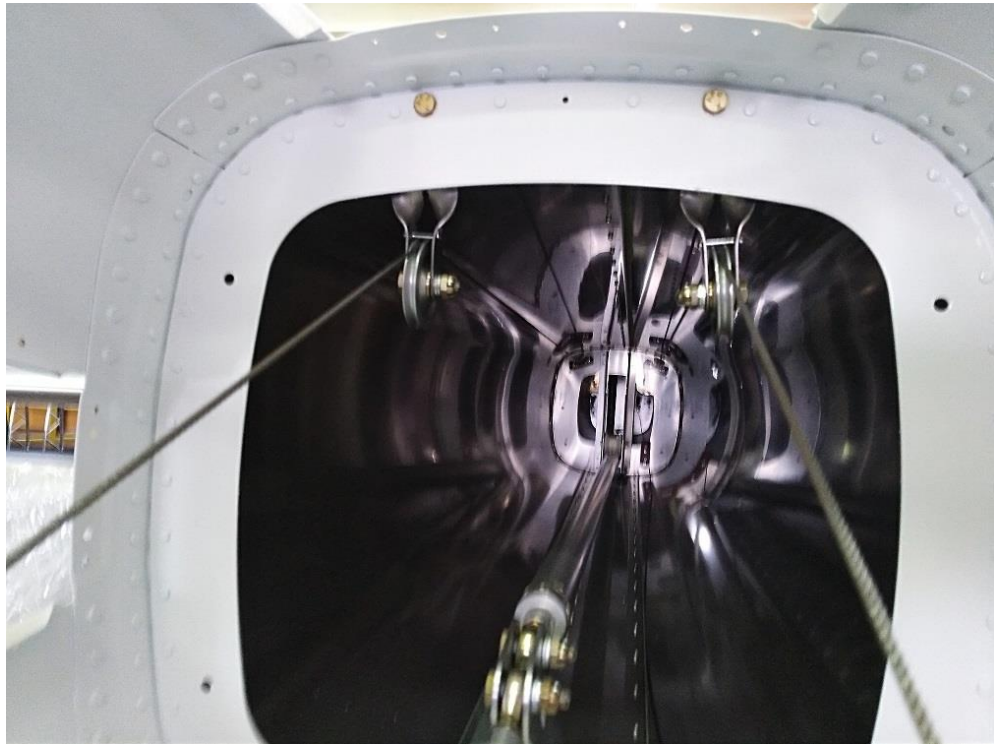
**Fig. 3.**

3.5) Remove the forward pulleys, located on the rear landing gear beam (Fig. 4).



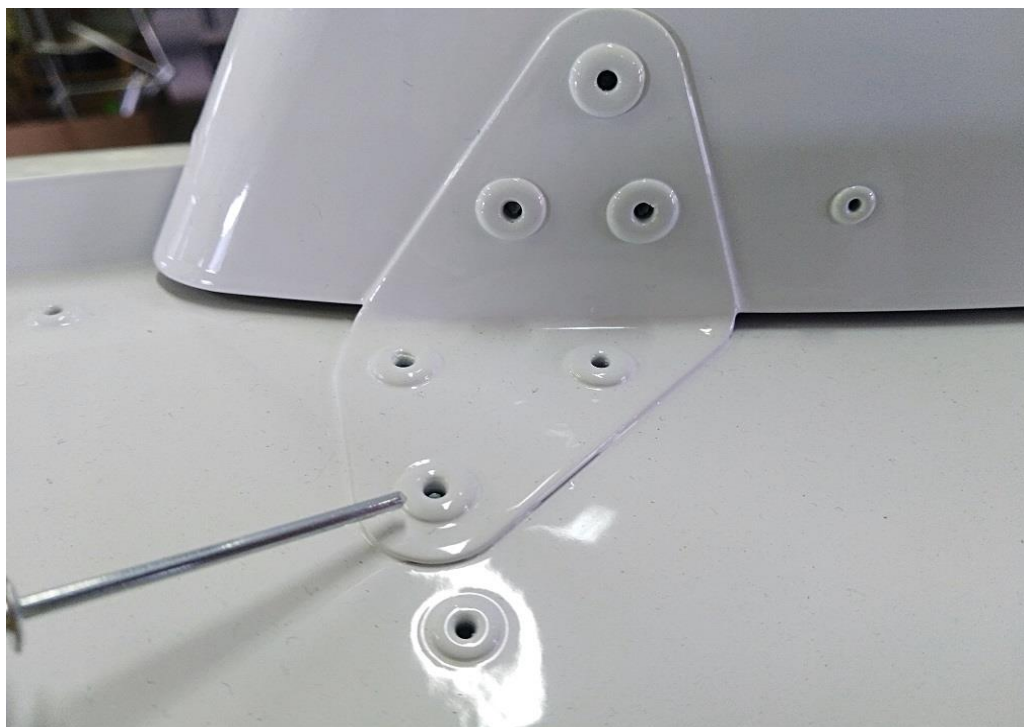
**Fig. 4.**

- 3.6) Remove the rear pulleys from their attachment brackets, put a support under the tail wheel to avoid aircraft tipping over on its tail (Fig. 5).



**Fig. 5.**

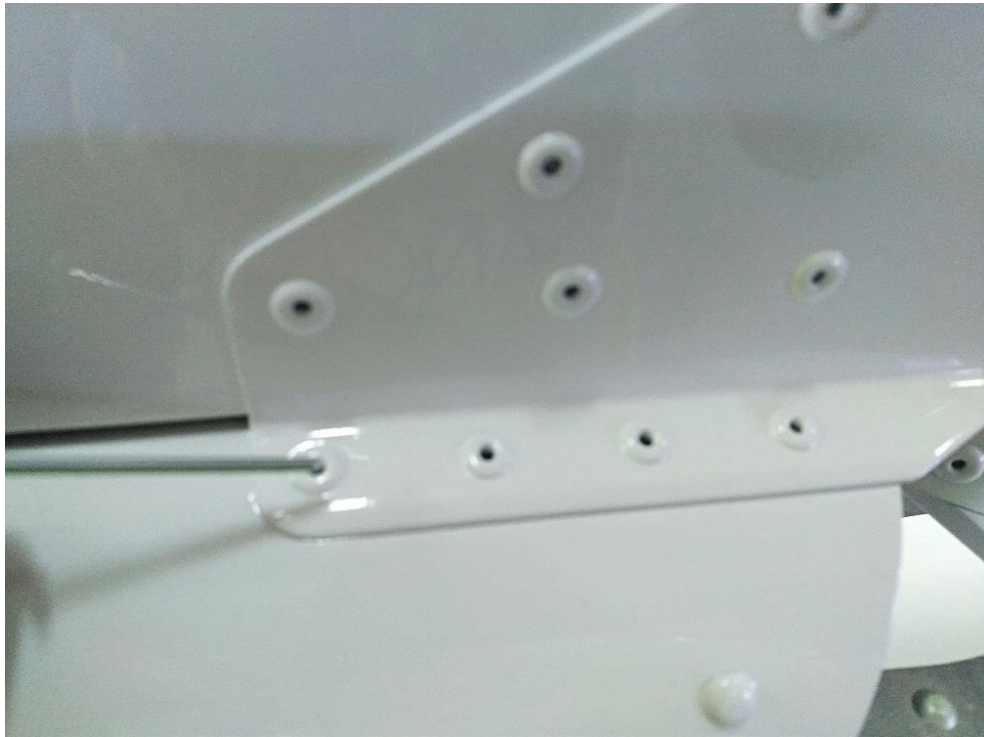
- 3.7) Drill out 3 rivets (shown on Fig.6) on the left side and 3 rivets on the right side of the front fin attachment fitting.



**Fig. 6.**



- 3.8) Drill out 4 rivets on the left side and 4 rivets on the right side of the rear fin attachment fitting (Fig.7).



**Fig. 7.**

- 3.9) Drill out all rivets attaching the fin skin to the fin spar (Fig. 8).



**Fig. 8.**

3.10) Drill out all rivets attaching the fin ribs to the fin spar (Fig. 9).



**Fig. 9.**

3.11) Remove the fin skin with ribs (Fig. 10).



**Fig. 10.**



3.12) Drill out the rivets in the upper joint of the tail boom (Fig. 11).



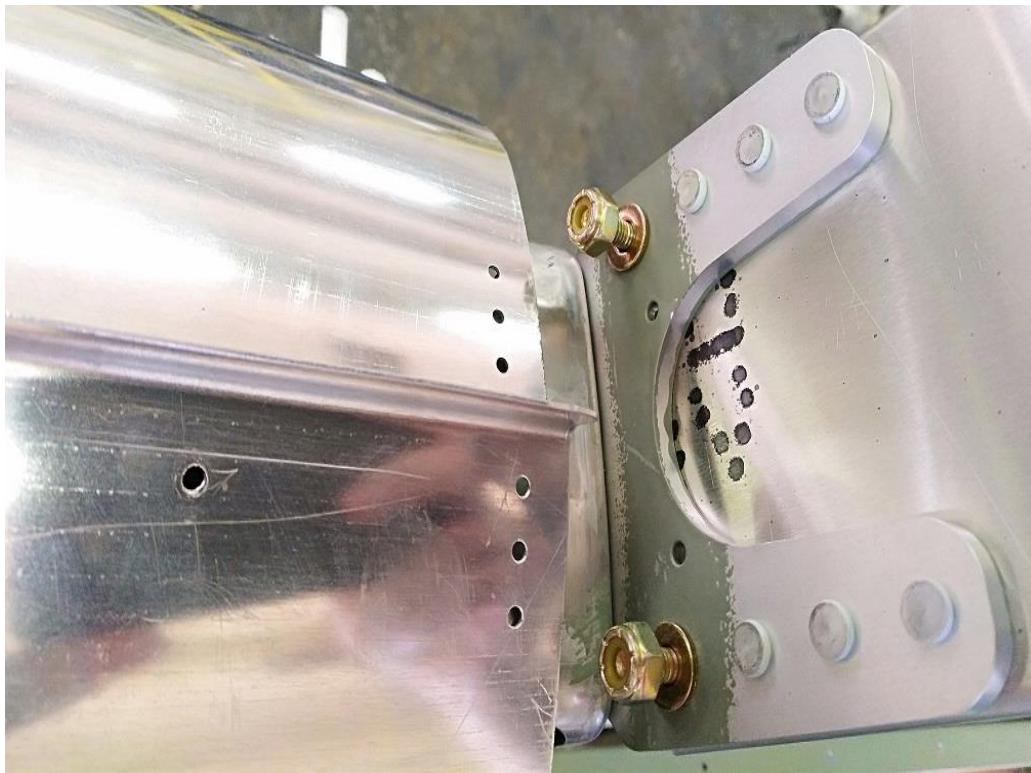
**Fig. 11.**

3.13) Drill out the rivets (except the lower ones) of the frame in the middle of the tail boom (Fig. 12).



**Fig. 12.**

3.14) Remove two bolts attaching the spar (Fig. 13).



**Fig. 13.**

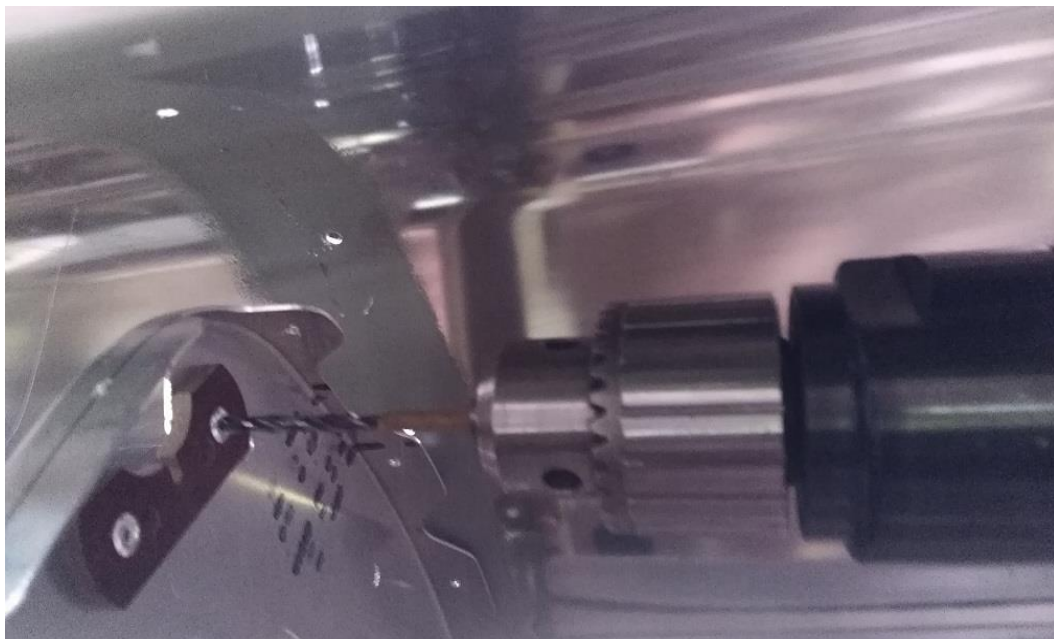


3.15) Separate the tail boom skins by inserting some suitable object to fix the tail boom skin in "open" position (Fig. 14).



**Fig. 14.**

3.16) Drill out the rivets attaching the rudder control cable fairleads (Fig. 15).



**Fig. 15.**

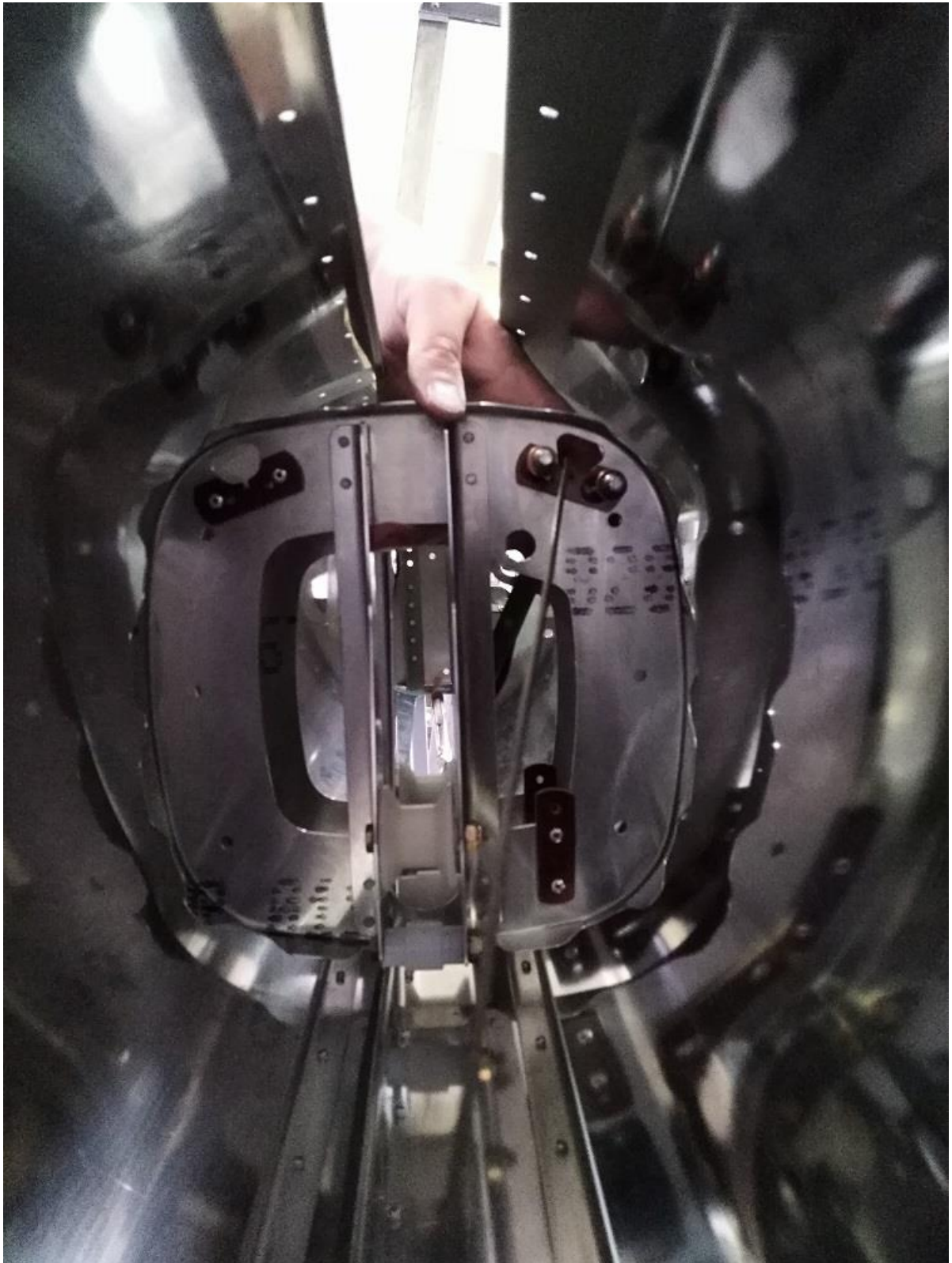
- 3.17) Take the cables that require replacement out of the airplane.
- 3.18) Install the new cables: insert the forward ends of the cables into the openings in the seat beam, and pass the rear ends of the cables through the openings in the landing gear beam (Fig. 16).



**Fig. 16.**

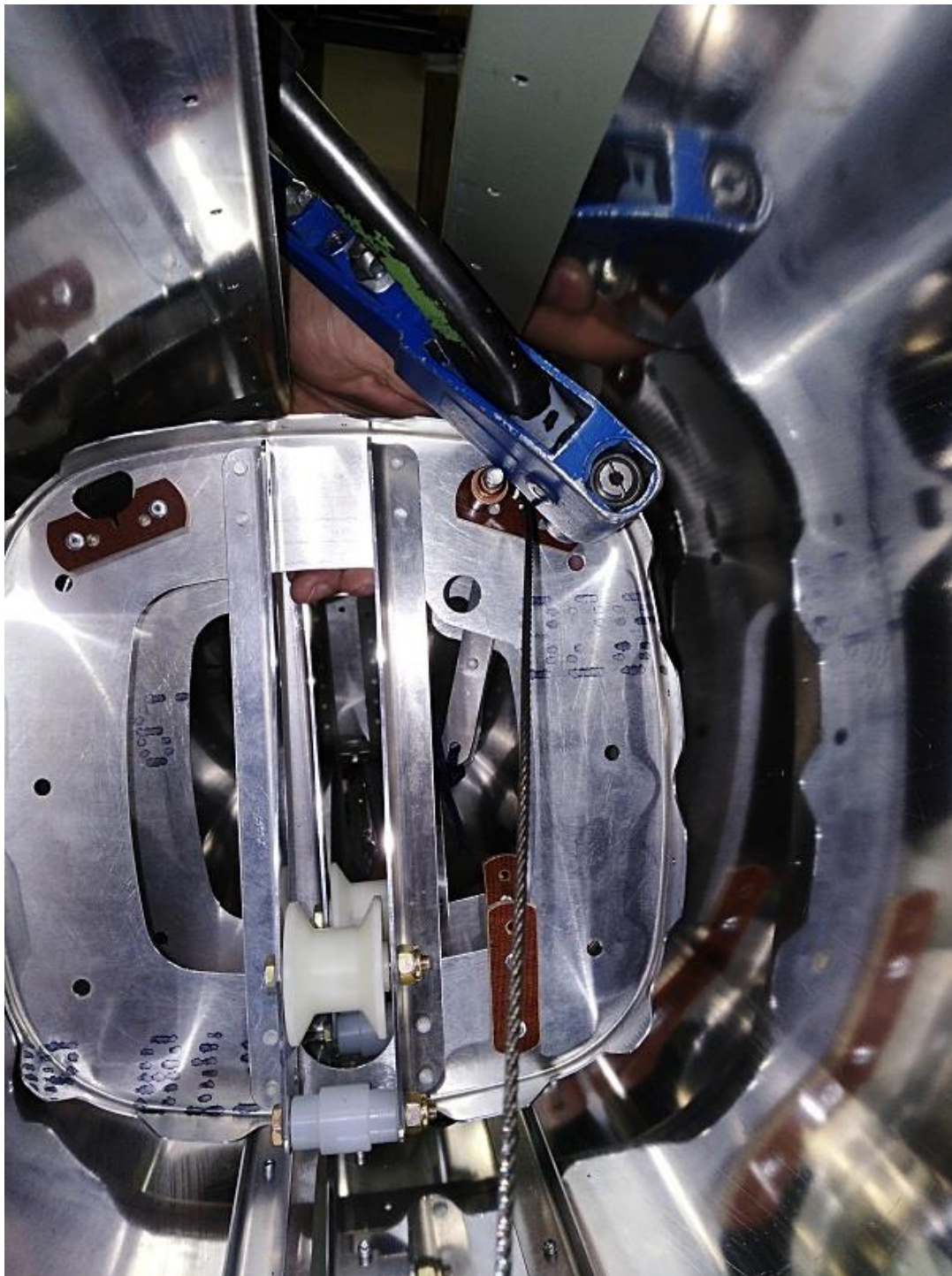


3.19) Pass the rear ends of the cables through the tail boom and install on CLECOs the intermediate fairleads (Fig. 17)



**Fig. 17.**

3.20) Rivet the intermediate fairleads (Fig. 17).



**Fig. 17.**

3.21) Assemble the tail boom and fin, install the pulleys and cables in the reversed order.

◆ **NOTE:** Prior to adjusting the cable tension make sure that the pulleys rotate freely.

3.22) Adjust the rudder control system with rudder pedals fixed in their neutral position. The rudder must be deflected to the right at an angle of  $2.2^{\circ} \pm 0.3^{\circ}$  (rudder trailing edge at  $15 \pm 2$  mm from the aircraft symmetry plane). The cable tension – in accordance with the AMM.