

## 6 Avionics

This section describes the following steps for the avionics:

- 6.1 Selecting the instruments and arranging them on the instrument panel
- 6.2 Creating the cut-outs in the instrument panel
- 6.3 Rounding the cut-out edges
- 6.4 Laminating the instrument panel
- 6.5 Installing the instrument panel in the fuselage
- 6.6 Creating the structure behind the instrument panel
- 6.7 Removing the Emergency flap system PFA MOD 329/001
- 6.8 Laying the cables

### 6.1 Selecting and Arranging the Instruments

You can select the instruments according to your specific needs. Do not choose too many instruments and make sure they will fit onto the instrument panel. To facilitate this task, the basic shape of the panel and the mounting dimensions of a wide variety of instrument makes have been supplied as drawings. The instrument panel shown in this section only serves as an example.

Note: When arranging the instruments, keep in mind the structure behind the instrument panel, see section 6.6.

### 6.2 Creating the Cut-Outs in the Instrument Panel

Arrange the instruments and cut out the contours as indicated in the drawing from plywood panel no. 28000038. Create the cut-outs for the round instruments with a keyhole saw or a suitable tool with a fine blade.

Screw a base plate for the switches and fuses to the instrument panel as shown in figure 6.2.1. Mount the switches on the base and create the necessary cut-out in the back of the instrument panel.

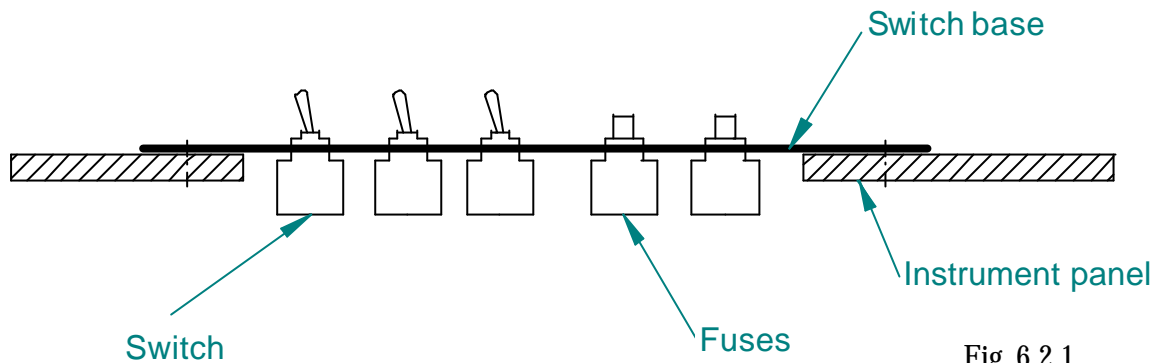
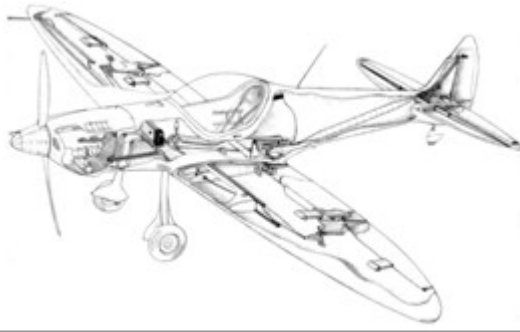


Fig. 6.2.1  
Switch base

### 6.3 Rounding the Cut-Out Edges

There are various instrument designs, see figure 6.3.1. The most pleasing cockpit appearance is achieved when you install the instruments with slightly rounded cut-out edges as shown in variant 1 in figure 6.3.2 (e. g. for UMA or Winter instruments). Create the 5mm (0.20") radius with sandpaper.

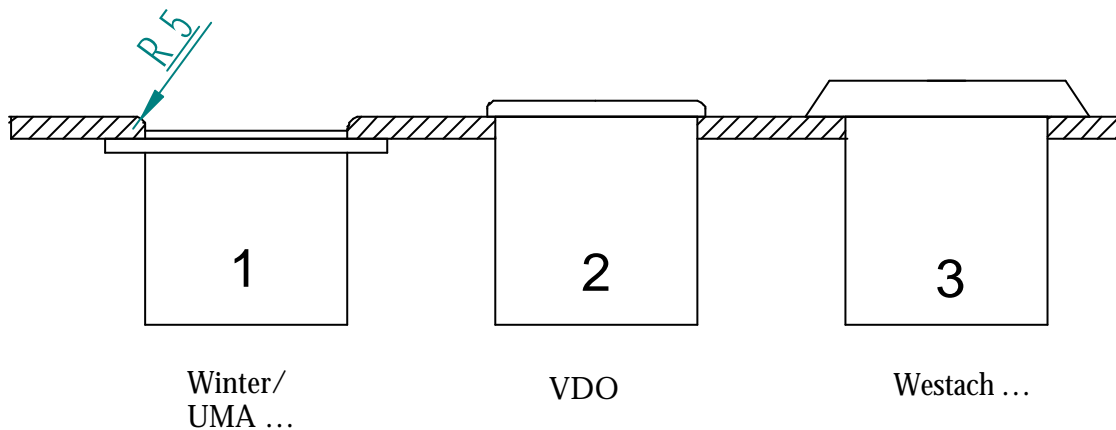


Fig. 6.3.1  
Installation of various  
instrument designs

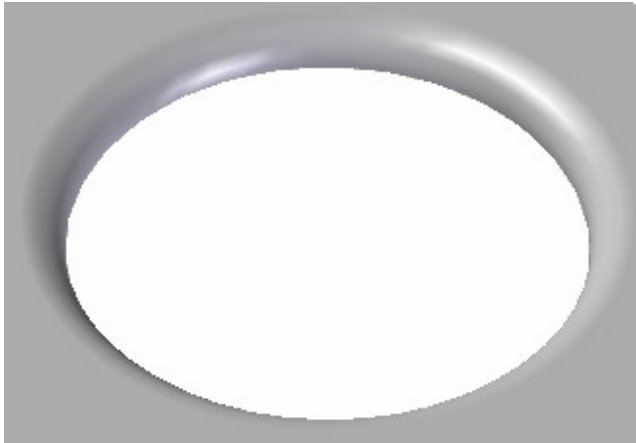
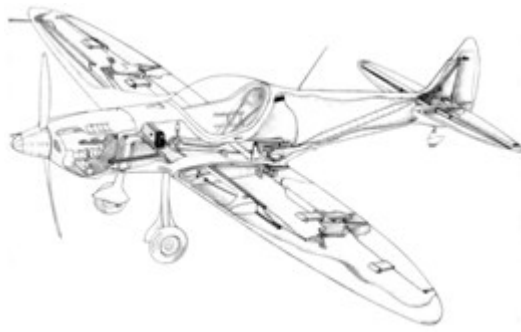


Fig. 6.3.2  
Rounding the cut-out edges for  
instrument design variant 1

#### 6.4 Laminating the Instrument Panel

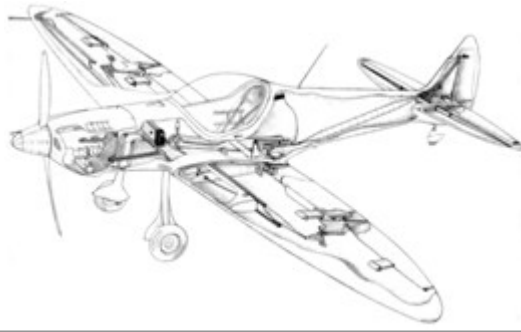
To reinforce the instrument panel, apply fiberglass fabric on both sides. For better appearance you can also use carbon fiber fabric.

If you are familiar with vacuum equipment, press the carbon fiber fabric to the wood panel using a vacuum film bag.

After curing, re-cut the holes and fit in the instruments. Sand and paint the instrument panel (use clear lacquer for the carbon fiber surface).



Fig. 6.4.1  
Instrument panel with  
carbon fiber laminate



### 6.5 Installing the Instrument Panel in the Fuselage

- Drill four 4mm (0.16") bores into the instrument panel as shown in figure 6.6.1.

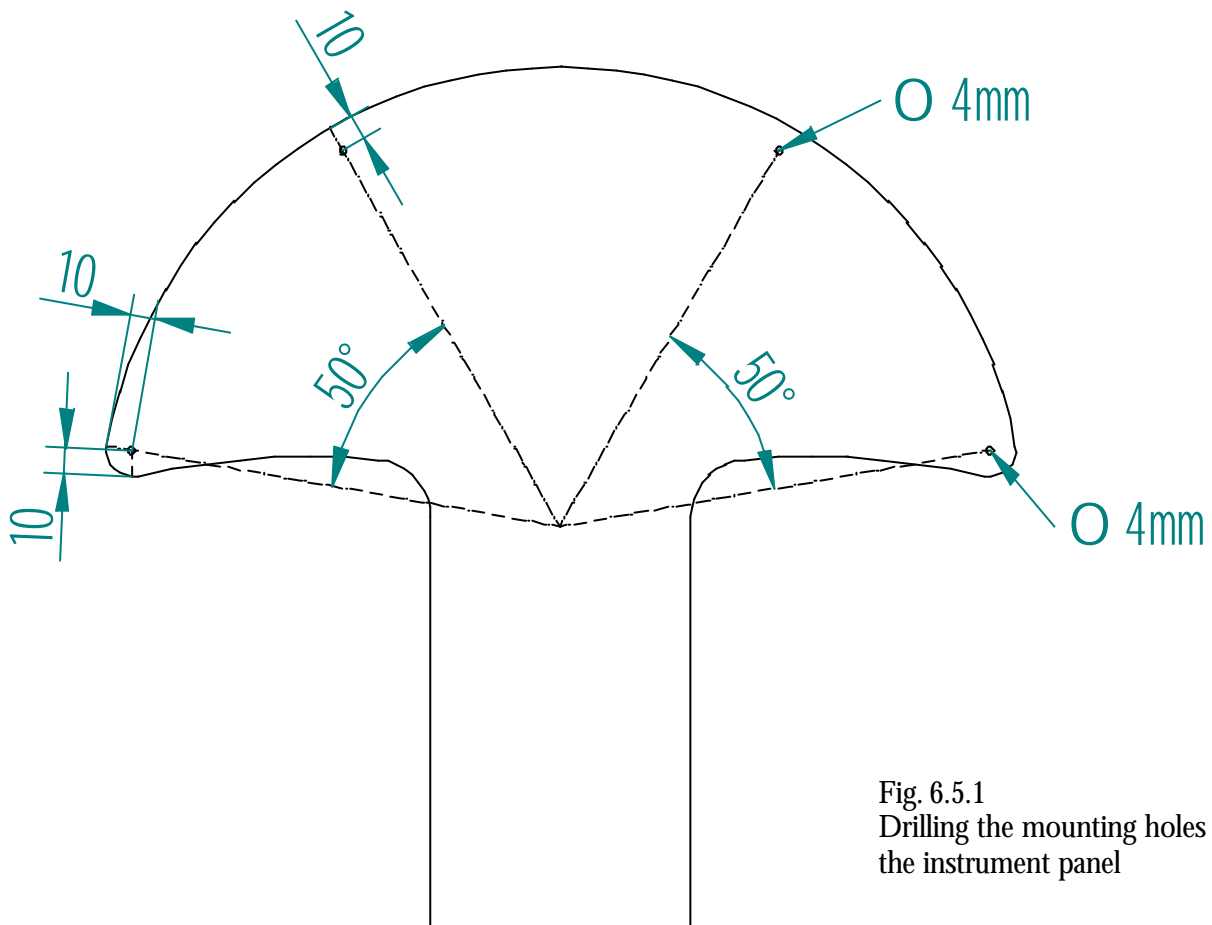
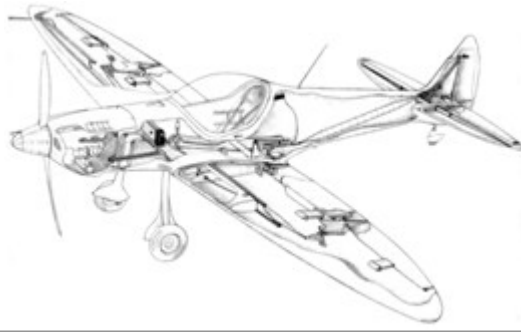


Fig. 6.5.1  
Drilling the mounting holes in  
the instrument panel

Screw four suspension elements onto the back of the instrument panel as shown in figure 6.6.2.

- Thread aluminum bolts into the suspension elements as shown in figure 6.5.2.
- Place the instrument panel with all four bolts installed in the safety cell and scribe the position of the bolts.
- Drill the corresponding bores into the safety cell.
- Coat the aluminum bolts and the holes with CF.
- Insert the instrument panel and place a 5mm (0.20") spacer under the panel to prevent the panel from touching the floor of the safety cell due to vibrations.



- Let the assembly cure.

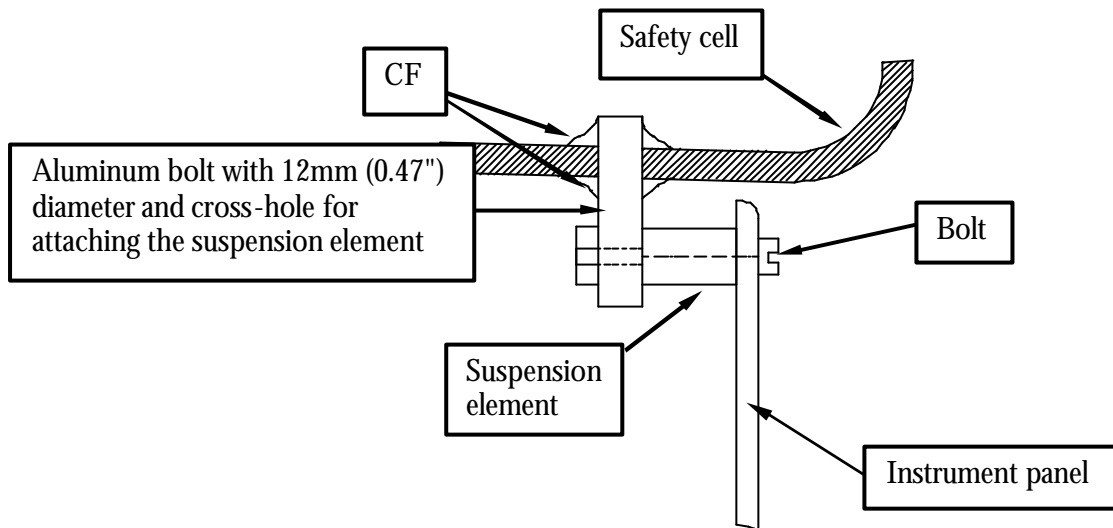
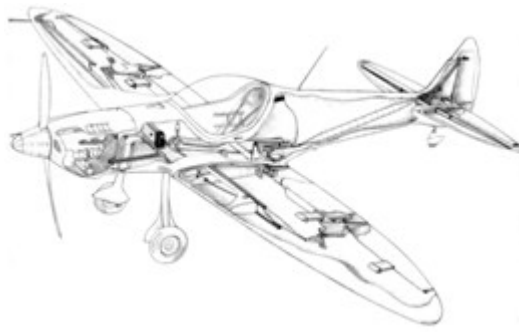


Fig. 6.5.2  
Fixing the instrument panel in  
the safety cell



## 6.6 Creating the Structure behind the Instrument Panel

Bond the three plates for mounting the connectors and cables to the back of the instrument panel as shown in the supplied drawing. Arrange the connectors and cables on the plate as shown in figures 6.6.1 and 6.6.2 and fix them.

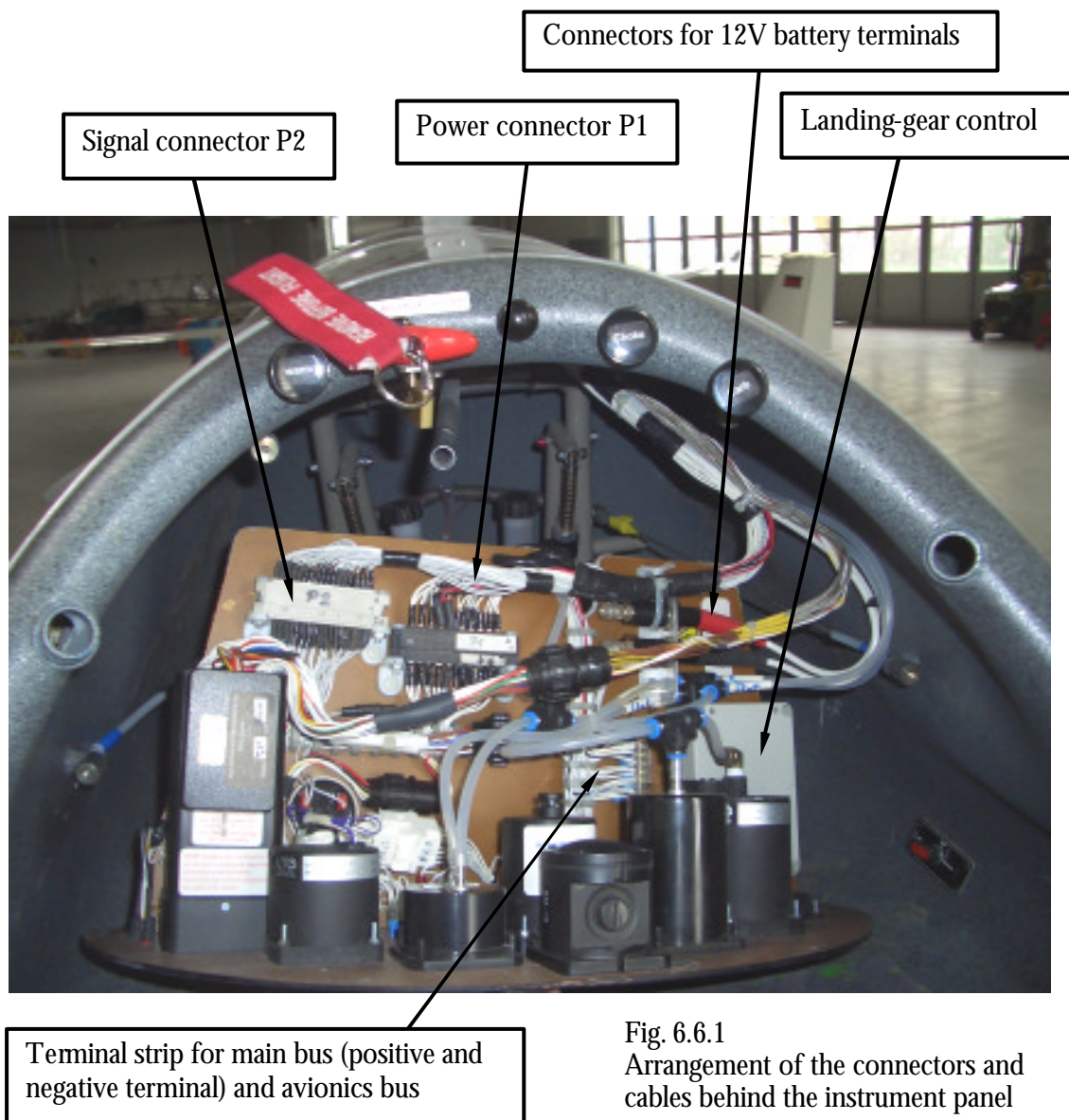
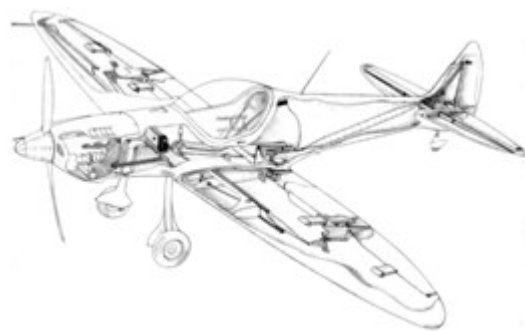


Fig. 6.6.1  
Arrangement of the connectors and cables behind the instrument panel



Silence

### Cockpit Overview

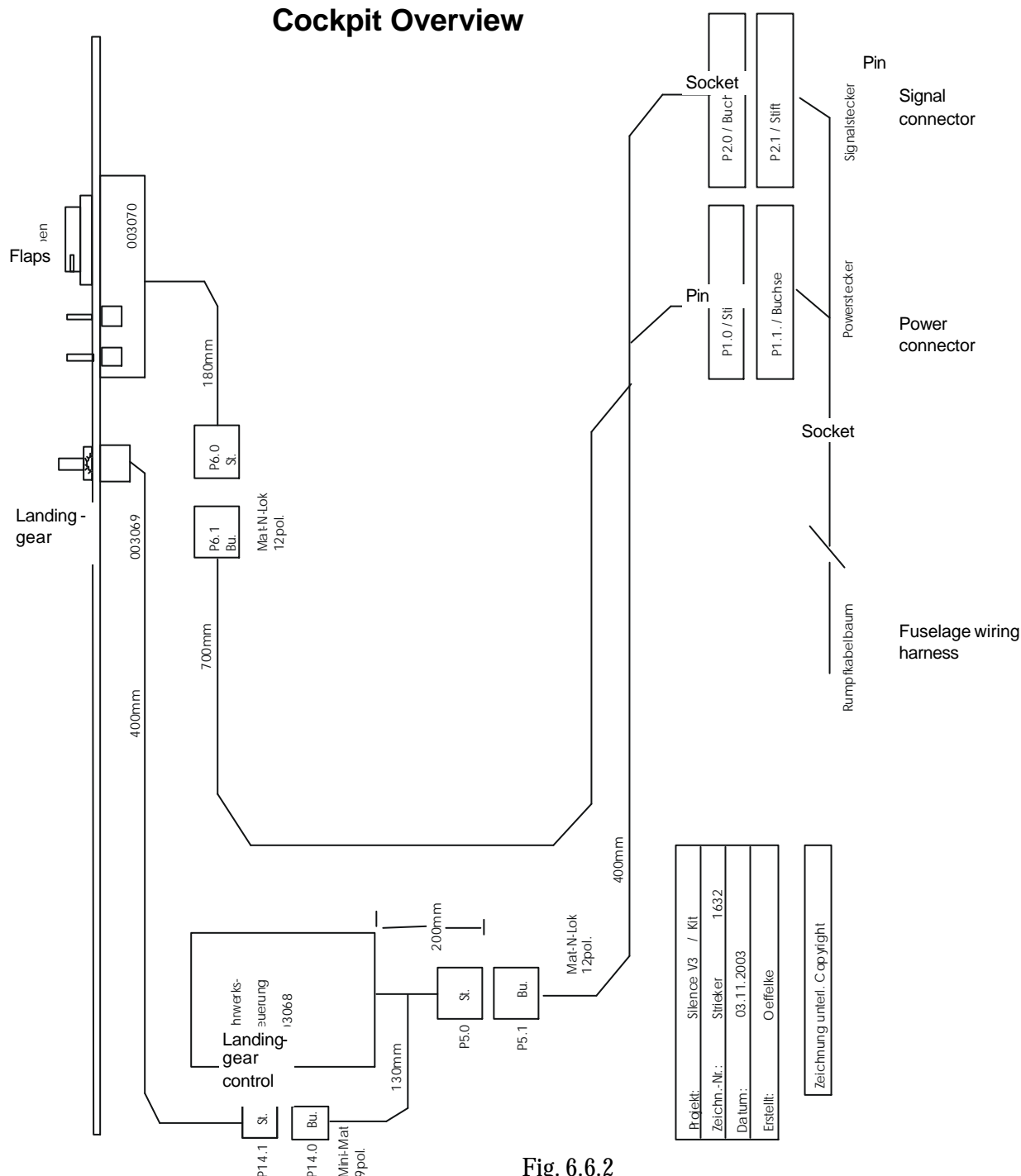
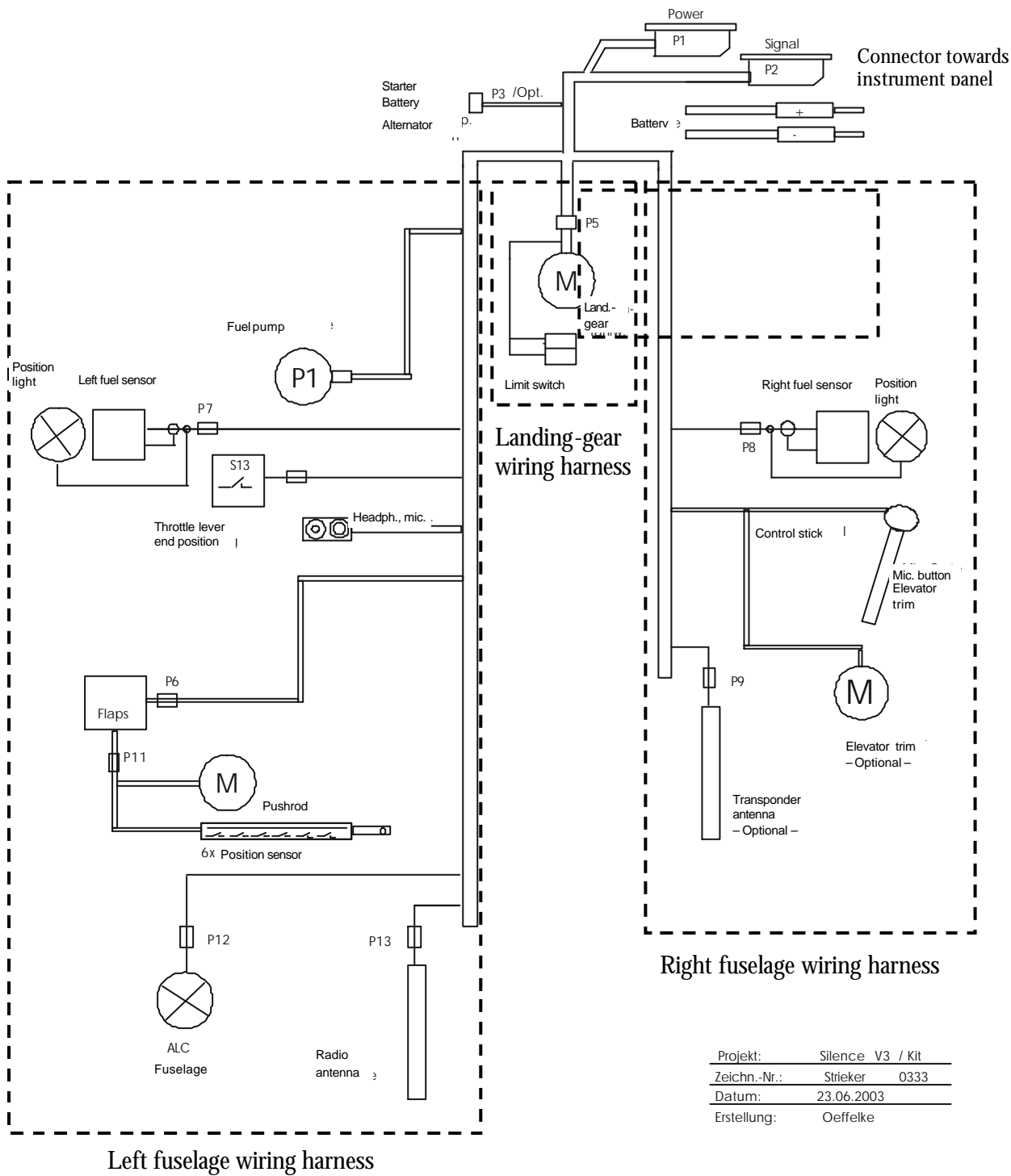
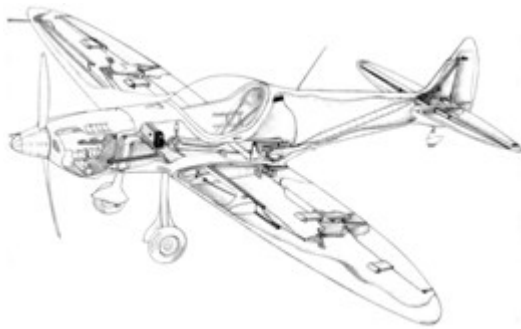


Fig. 6.6.2  
Diagram for laying the connectors and cables,  
top view



Projekt:	Silence V3 / Kit
Zeichn.-Nr.:	Strieker 0333
Datum:	23.06.2003
Erstellung:	Oeffelke



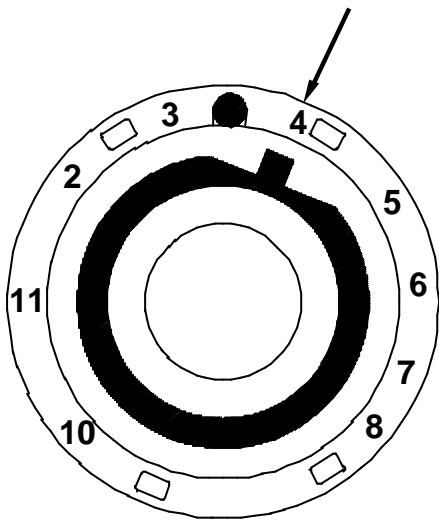
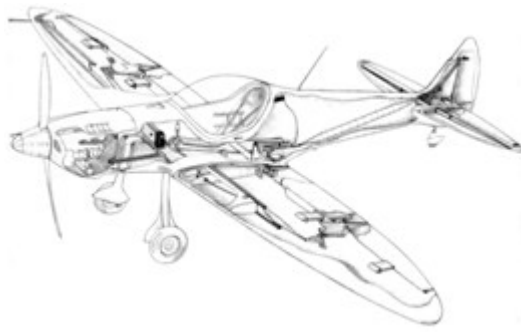


Fig. 6.6.3  
Flap switch with code  
ring correctly placed

**Important:** When mounting the flap switch, make sure that the inserted metal ring (code ring) is placed in such a way that the pin is engaged at position 14. It is recommended to demount the switch carefully while keeping the inserted ring in the correct position.

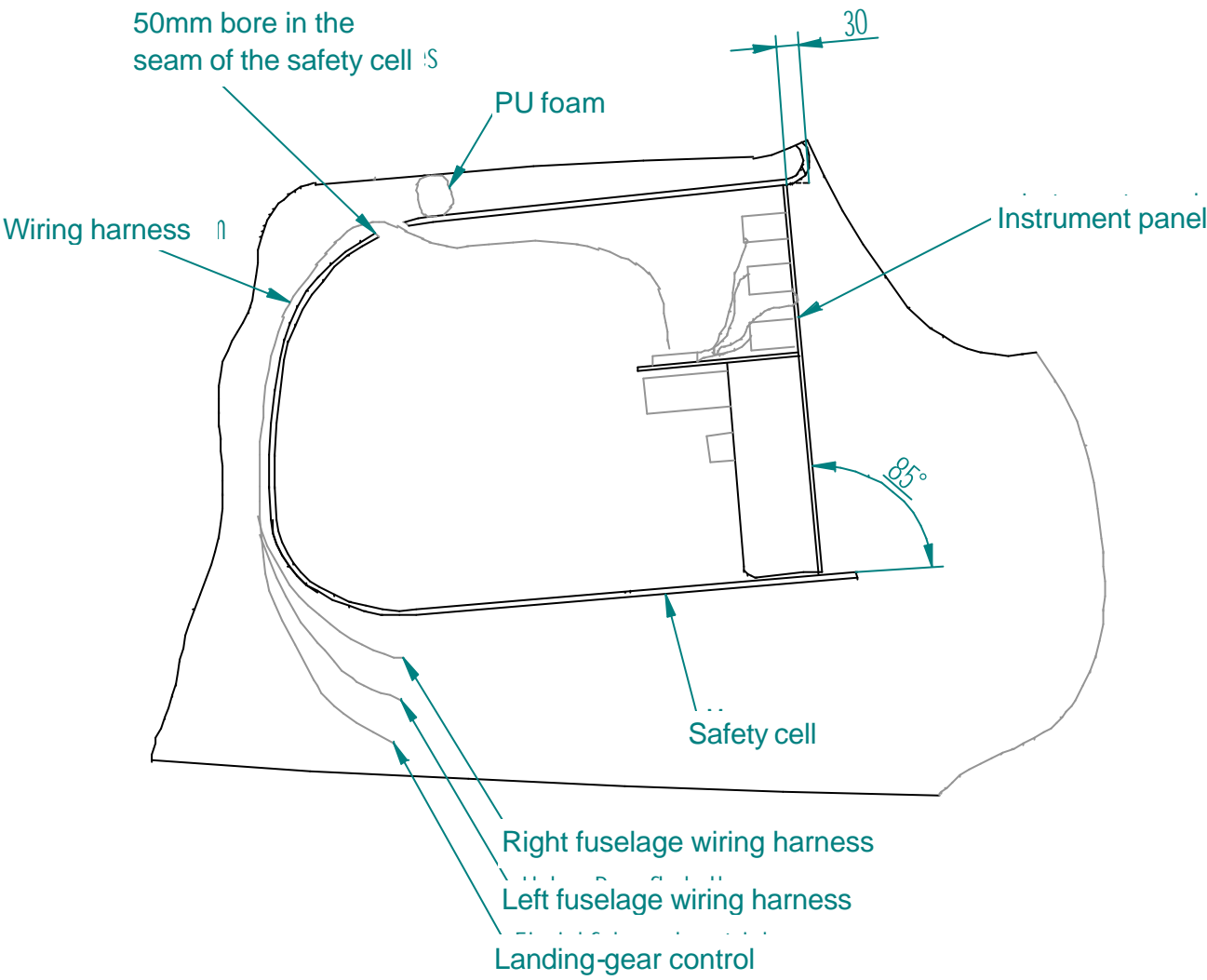
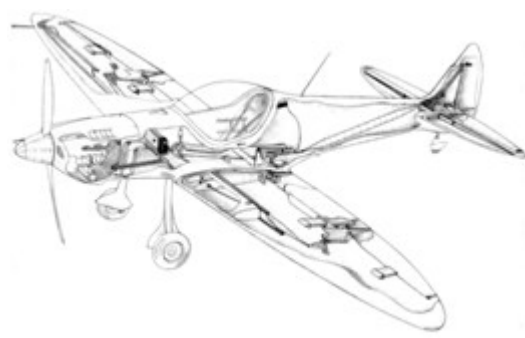


Fig. 6.6.4  
Laying the fuselage wiring harnesses

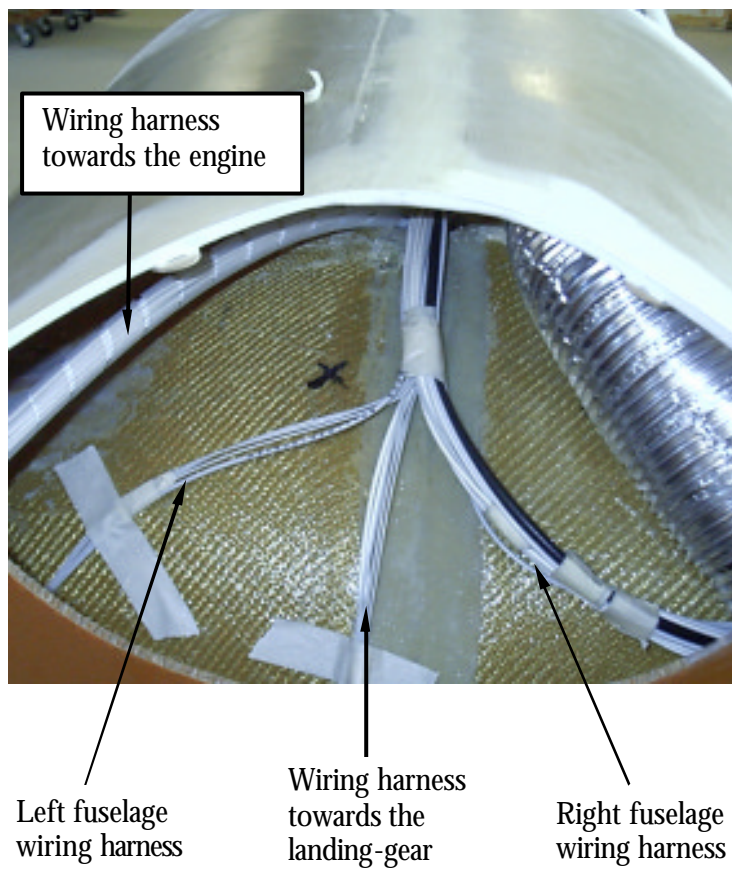
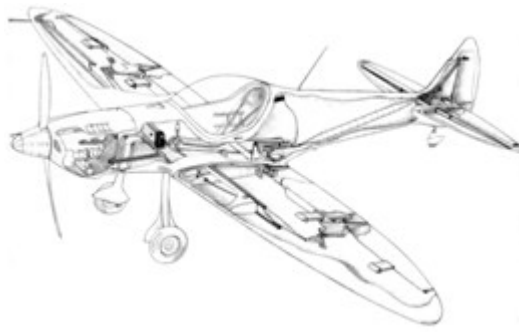
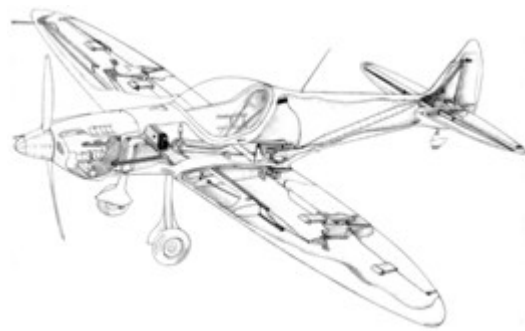


Fig. 6.6.5  
Fixing the wiring harnesses  
with adhesive tape



Installation diagram, right fuselage harness

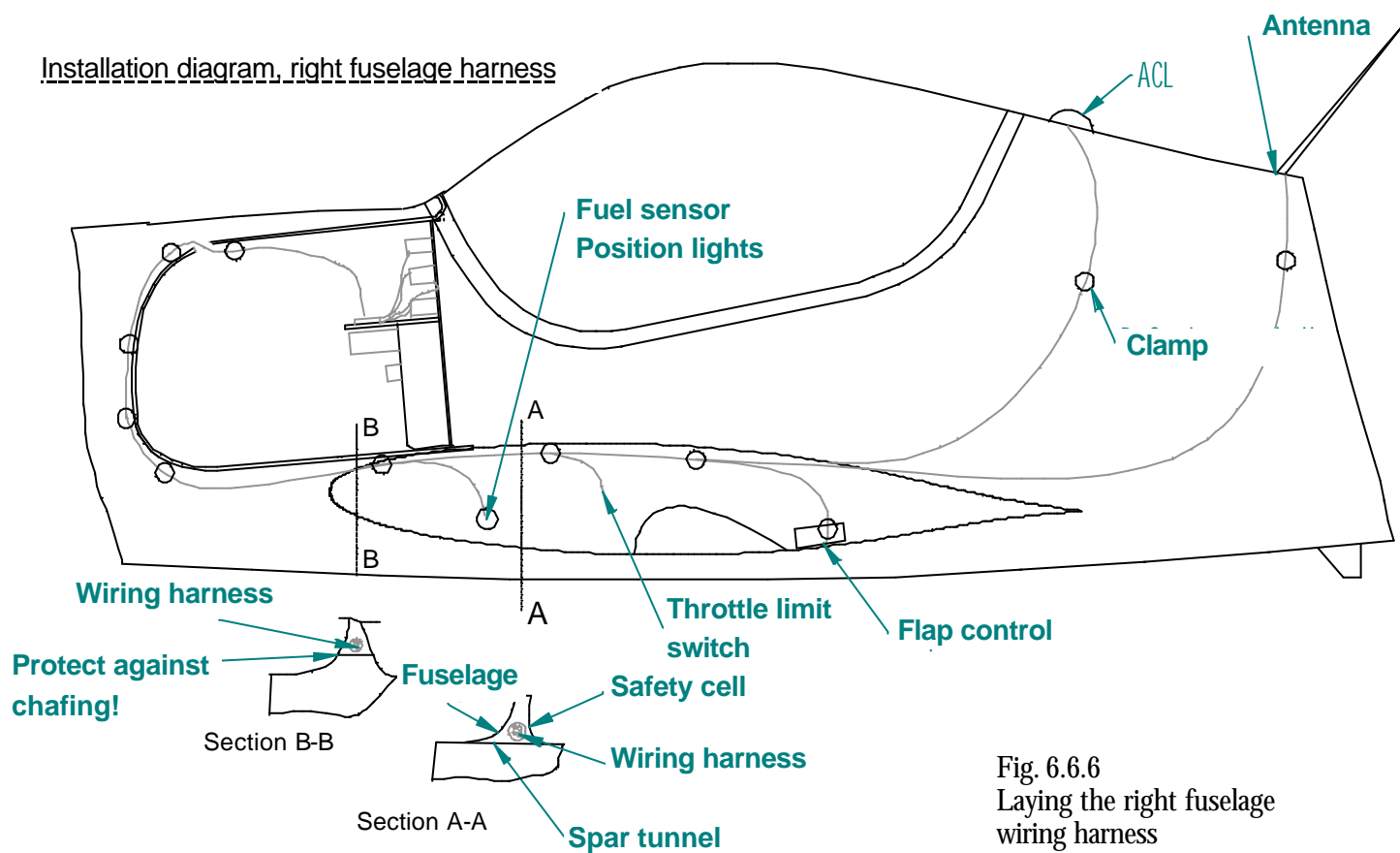
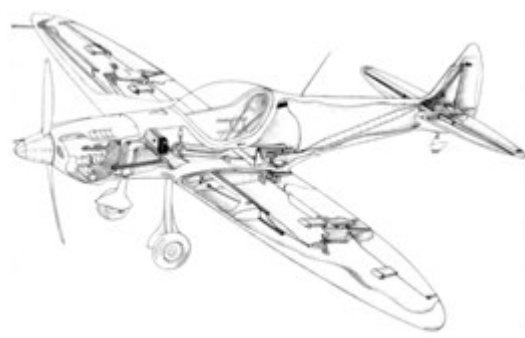


Fig. 6.6.6  
Laying the right fuselage  
wiring harness



Installation diagram, left fuselage harness

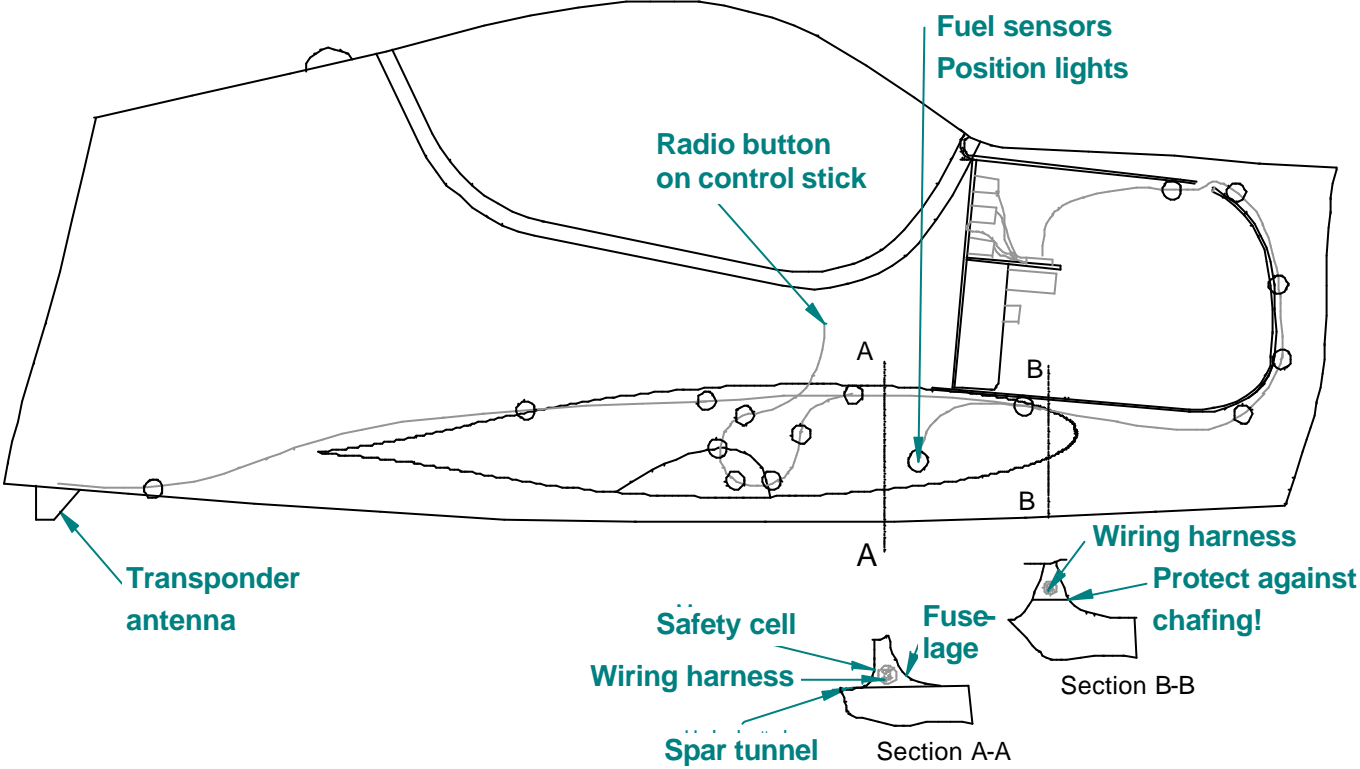
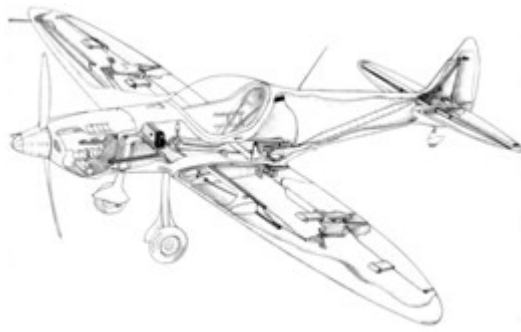


Fig. 6.6.7  
Laying the left fuselage  
wiring harness



Note: If cables need to be guided through the control stick, drill a 5mm (0.20") bore into the side of the control stick (see fig. 6.6.8). Carefully round the bore. Protect the cables in this area additionally with a rubber sleeve.

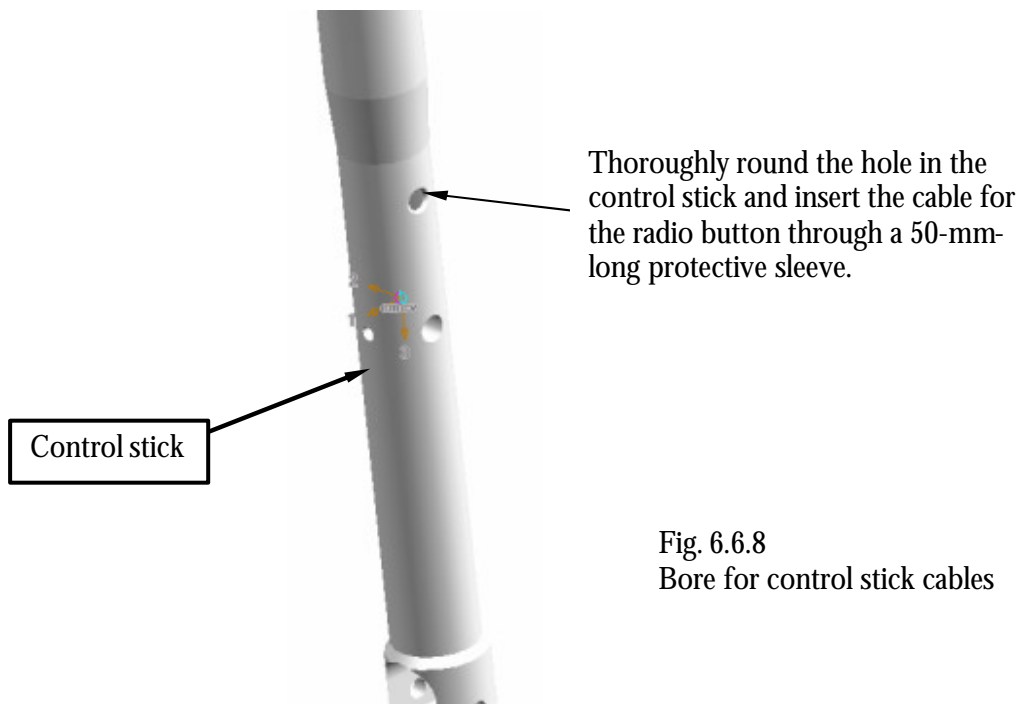
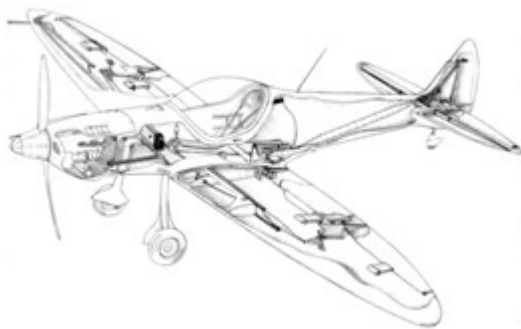


Fig. 6.6.8  
Bore for control stick cables

Note: Install the static pressure sensors for the airspeed indicator in the rear fuselage on both sides 1m (3.28ft) in front of the elevator nose. Connect the lines with a T-piece and fix the T-piece at the top of the fuselage.



Fix T-piece at the top of the fuselage so that water can drain away.

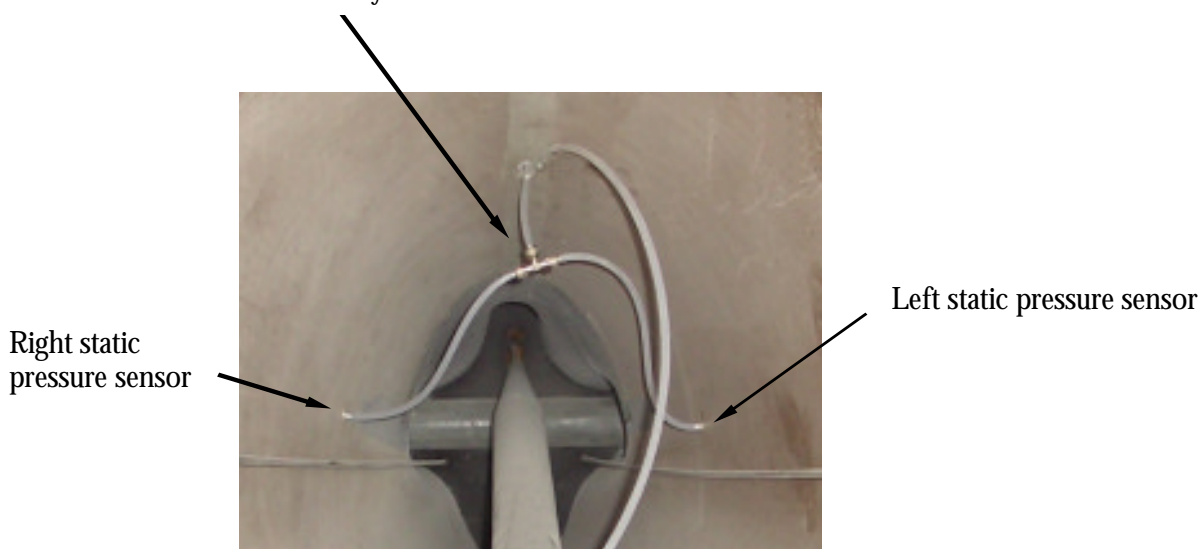


Fig. 6.6.9  
Lines of the static pressure sensors in the rear fuselage

### 6.8 Removing and disabling the Emergency Flap switch PFA MOD329/001

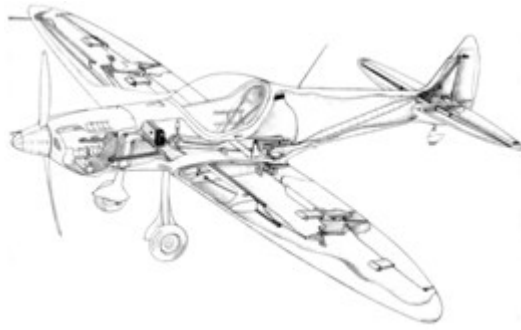
Due to German LBA requirements the German Ultralight version Silence Twister is fitted with an Emergency Flap lowering switch system. This system consists of two switches which are fitted to the Instrument Panel see Fig 6.8.1



Emergency Flap system  
on/off Switch

Flaps UP/DOWN  
Switch

Fig 6.8.1 Factory Supplied Emergency Flap switch



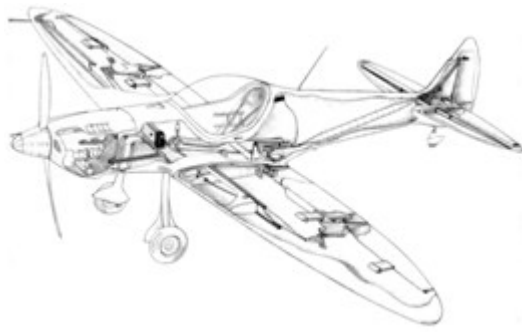
The Emergency flap extension switch system provides no protection for the wing structure upon full lowering of the flaps and it has been agreed with the PFA engineering department that the system is not required on the PFA Twister and will not be fitted.

Upon fitment of the supplied wiring loom and flap selector DO NOT install the two Emergency flap switches instead secure them behind the instrument panel ensuring that the lockable on/off switch is in the off position.



Fig 6.8.2 PFA MOD 329/001 Flap Switch





## Option carbon antenna for radio



Radio Antenna

Elevator push rod

Fuselage Bottom seam