

Type: Fittings for the pilot's compartment.

Subject: Installation of the turnpoint camera (S).

Accomplishment: Optional.

Affected gliders: All AW 19, ASW 20, and ASW 20 L.

Reason: We have seen some downright peculiar camera installations in competitions, which only partially fulfill their purpose and which could be dangerous in the event of an accident. As there is a large variety of cameras used for turnpoint photos, we can only give general notes on installation and setting up of the camera.

Action:

1. In ASW 19 aircraft, up to about serial no. 19230, and in ASW 20, up to serial no. 20100, the canopy window is so close to the canopy frame that a camera cannot be fixed below the canopy window. On these aircraft the camera bracket should be built into the rear lower corner of the canopy frame. To this end two M 4 threaded inserts are moulded into all ASW 20 and most ASW 19, to which a camera bracket can be screwed.
2. On more recent ASW 19 (after serial no. 19230) and more recent ASW 20 (after serial no. 20100) each pilot should check whether the space under the slider rail for the canopy window might not be a preferable location for the attachment of the camera than in the rear corner of the canopy.
3. The following points apply to all arrangements:
 - a. All camera brackets should be easy to remove from the canopy frame, as without a camera they present a considerable hazard in the case of an accident.
 - b. The canopy frame may be drilled \emptyset 4 mm (0,16 in) for the bracket retaining screws (see sketch 1).

- c. The camera is fixed to the holder with a tripod screw, with a sheet metal flange to prevent it rotating.
- d. The distance from the camera lens to the canopy glazing should not exceed 25 mm (1 in); flies, dust and other debris will not then register clearly on the film, thus eliminating any risk that the target (the turning point) will be obscured by accident.
- e. The image area is set up on the ground as in sketch 2. On the ground the wing should run roughly through the center of the frame. In flight it will then be in the upper third of the picture. If you cannot find a small person who can set up the camera by looking through the viewfinder with the cockpit closed, the only recourse is to take test pictures.

Materials:

Aluminium sheet (soft or half-hard), approx. 2 mm (0,08 in) thick, or 1 mm (0,04 in) thick steel sheet, for the camera bracket.

Notes:

1. With a fixed installation, even very simple cartridge cameras have given good results.
2. On complicated cameras we recommend that the settings be fixed with tape (e.g. distance on ∞ , small aperture $\hat{=}$ high aperture number etc.).
3. The focal length of the camera lens should not be greater than 40 mm (1,57 in).

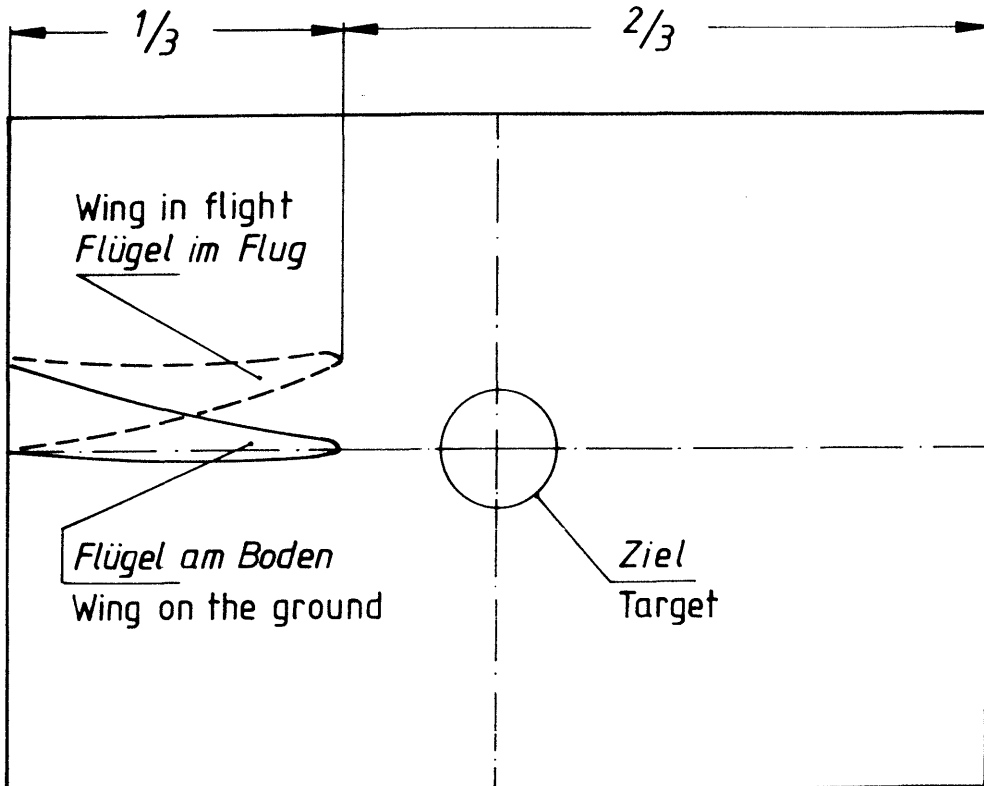
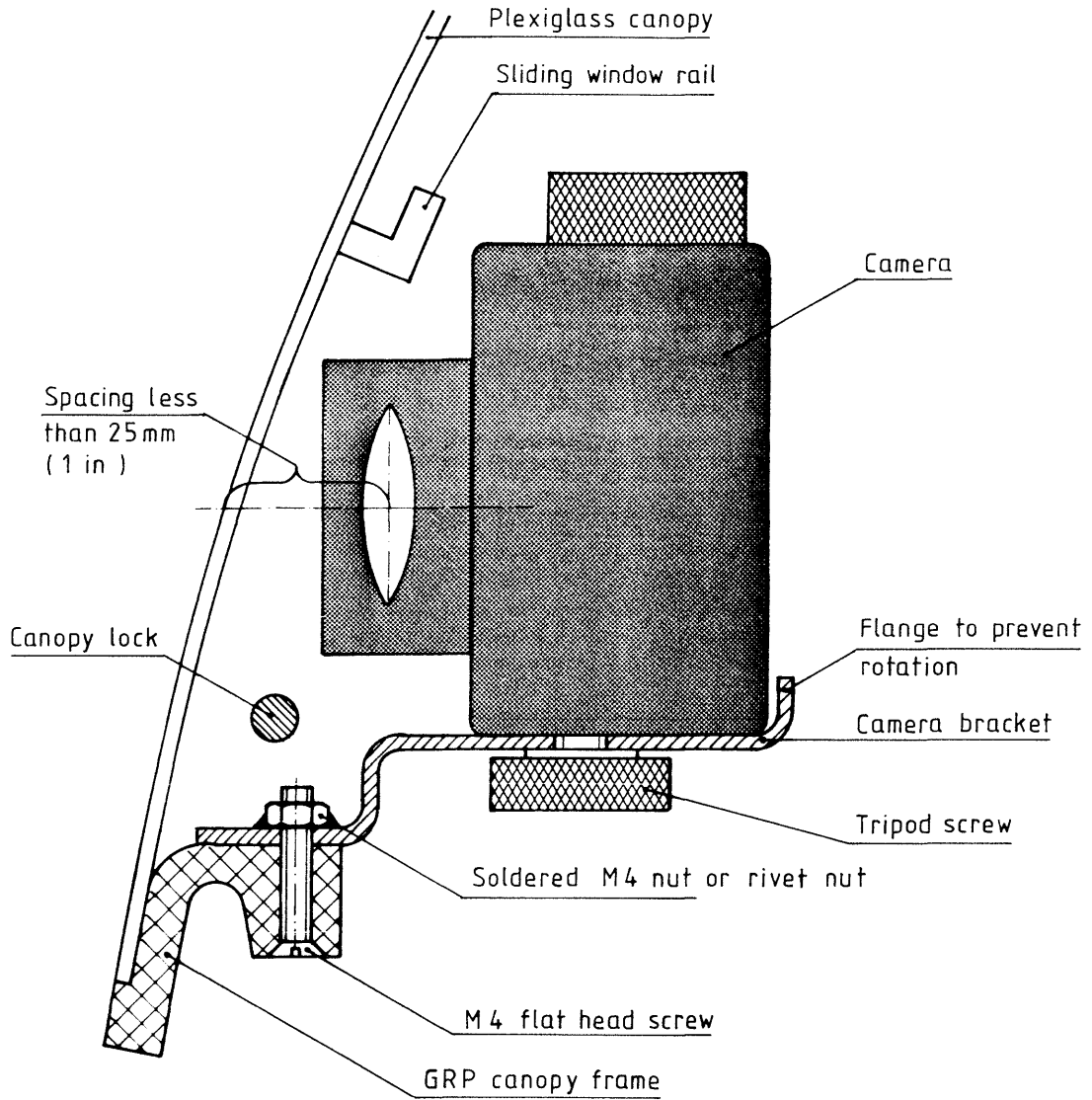
Drawings:

Sketches 1 and 2 are part of this Maintenance Instruction.

Poppenhausen, January 13, 1981

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