

plywood web. No tapered attachment pins were used, all being cylindrical.

The leading edge root structure was unusual. Normally sailplanes having single spars have a pick-up point aft of the spar, but Reihler had a forward pick-up point. In the prototype a short spar grows out of the forward face of the main spar about three feet from the root (Fig. 18) and then runs parallel to the leading edge and just inside it. On its end is the front root fitting. On production machines this diagonal nose spar was omitted and a simple straight nose spar substituted which did not join the main spar.

2. FUSELAGE

The fuselage was of semimonocoque type with wooden frames, stringers and plywood covering. The cockpit cover was originally made of cellulose acetate material, but due to its well-known faults under varying weather conditions it was later replaced by Plexiglas (Perspex or Lucite) which was much more satisfactory. The use of Plexiglas enabled somewhat larger panes to be used which simplified manufacture and improved the pilot's view.

It is notable that the landing gear consisted only of a skid backed by a pneumatic buffer and faired into the fuselage. Unlike all American types and other German types such as Rheinland, Minimoa, FFG Berlin G-6, FFG Hannover AFH-4 and others, no permanent central wheel was used. When taking off, a two-wheeled droppable undercarriage was probably used.

Fig. 17 and 19

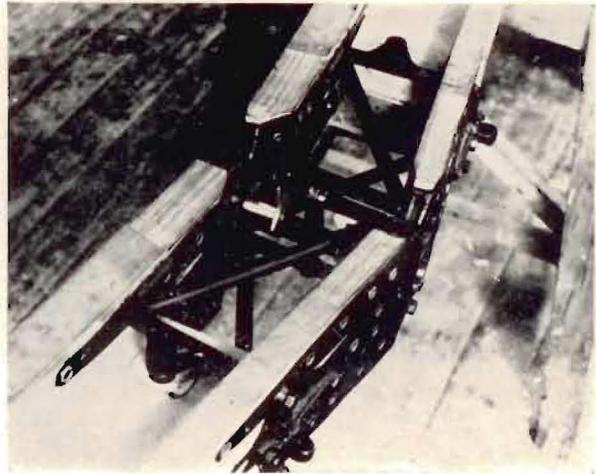
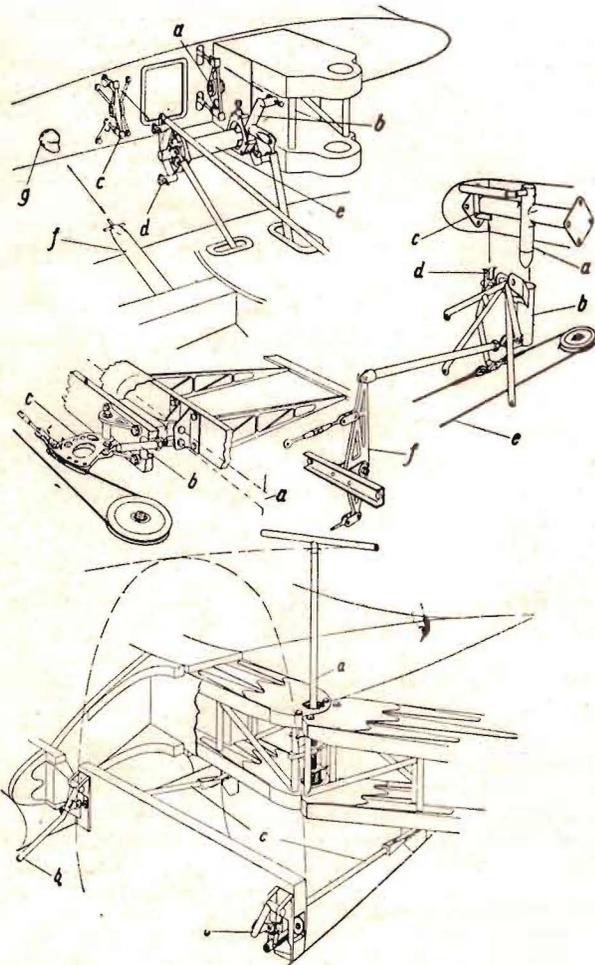


Fig. 16. Root Wing Fittings

3. CONTROLS

In the fuselage center-section the controls were so arranged that aileron, flap and airbrake controls automatically engaged when the wing was attached to the fuselage. Aileron and airbrake engagements were by pads. To enable slack to be taken up, the shaft in the upper part of the fuselage which supported the aileron and brake levers could be adjusted up, down and sideways. The flap control was engaged through a claw coupling.

The tail controls, consisting of elevator and elevator tab, were also engaged automatically when the horizontal tail unit was attached. The scheme is shown on Fig. 19. The rudder was not normally removed from the fuselage for transport. All control levers were internal. The greatest difficulty was met in avoiding external aileron controls because of the small space available within the thin wing. In spite of having space at the aileron for a control lever only one inch long (2.5 cm.) the control mechanism was made satisfactory by careful design which combined hinge and control lever anchorage in one unit, thus avoiding deterioration from relative movement of parts due to climatic variations.

On the first Reihler the flaps were operated by a torsion tube, ailerons and airbrakes by wire and cable. For all controls wire was used as much as possible, cables being used only near pulleys. On the Reihler II the elevator and brake con-

Fig. 18. Wing Root and Nose Spar

