

(Continued from Previous Page)

ready fairly smooth, it might be unnecessary to use the spot putty. After the red oxide primer surface has dried, a gray primer surface sprayed on in fairly heavy coats (sprayed spanwise and chordwise) can be used. In some cases four or five heavy coats may be sufficient. However, in sanding, care should still be taken not to cut through the red oxide primer.

If the metal surface to be contoured is initially painted with an enamel paint, it is suggested that rather than building up on top of this enamel the sections to be contoured be cleaned down to the bare metal.

There is another material that can be used for contouring a wing surface. It is known as EC 1180 aerodynamic smoother, manufactured by the Minnesota Mining and Manufacturing Company. By following the directions furnished with the material, a nice filling job can be accomplished. One main advantage of using EC 1180 is that it has a very low shrinkage. Another is that it is more flexible and would hold up better on a wing having a fairly thin skin. After drying it can be sanded and contoured the same as spot putty; however, if a large amount of filler needs to be cut away, a small block plane can be used for this job. Be sure the blade has a good cutting edge. Water can be used as a cutting lubricant. Do not try to finish the job with the block plane. As soon as the surface is close to the final contour, change over to a sand paper and bring the surface down to the final contour by drying and using the chalked spline. The surface then is ready to receive the usual finish coats of enamel.

Where a great deal of build up is required to cover a large number of round head rivets, skin laps, etc., the EC 1180 would be the better of the two materials to use.

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# INTERESTING GLIDERS

by PETER M. BOWERS

One of the most beautiful sailplanes ever built was the German Goppingen 3 "Minimoo", designed by the famous Wolf Hirth. The gull wings of this all-wood sailplane were closely patterned after the wings of Hirth's earlier "Moazagotl" sailplane. If they were to look any more like seagull wings they would have had to have feathers.

The prototype "Minimoo", produced in 1935, was a high-wing type, and the whole front end of the fuselage above the center line and from wing leading edge to the tip of the nose lifted off to let the pilot get in. Production models dropped the wing to a middle position, a hinged canopy was added in place of the removable nose, and a landing wheel was in-

hour and the speed for maximum L/D was 85 Km/hr. The airfoil varied from a Gottingen 681 at the root to a Gottingen 693 at the mid-span, with a symmetrical section at the tip.

An interesting story is told about Hirth and the use of gull wings on his designs. It seems that he had attended a technical discussion of glider people, and one of the decisions reached was that gull wings didn't actually improve the performance of a sailplane. Hirth was asked why he had gone to the trouble to put the more complex structure on his ship when there was no performance justification for it. "Well," said Hirth, "The Gull wings didn't improve the performance any, but they sure sold a lot of Minimoo's!"



A beautiful specimen of this most photogenic of all sailplanes will be flying in the forthcoming U. S. National Soaring Championships.

stalled. Beyond these changes, there was little difference between the prototype and production models. One of the chief recognition features of the "Minimoo", other than the distinctive gulled wings, was the position of the ailerons, which were installed with their trailing edges considerably behind the trailing edge of the wing itself. This feature was practically a Hirth trademark, having been used on the "Moazagotl" and the Goppingen 1 "Wolf" and the later Goppingen 4 "Goevier".

Performance-wise, the "Minimoo" was the finest production sailplane of its time. The glide ratio was 26 to 1 and the sinking speed was .65 meter per second. Cruising speed for minimum sink was 60 Kilometers per

## 1-26 PROGRESS REPORT

(Continued from Page 8)

Secretary, Donald C. Ryon, 25 Hartsen Street, Rochester 10, New York, or from Schweizer Aircraft Corp.

In general, the first year of the 1-26 project can be considered completely satisfactory. Our main hope now is that the experience of these first fifty kits demonstrates the practicability of the kit; as well as the fun and satisfaction enjoyed in flying a 1-26 sailplane, so that this project can continue to grow. It is felt that as the idea of one-design competition is tried more this year, it will result in much greater interest in this phase, which we think can do soaring in the USA a great deal of good.