



## M-1 STATUS REPORT

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The News Notes column in the October, 1966 issue of *Soaring* contained mention of "another German dream ship," namely, the Michael-Lorenz Meier M-1. The writer of the account added that the proposed design and estimated performance of this new glider were so extraordinary that "once again we are left with large chunks of skepticism clogging our credibility." The skepticism certainly seemed justified in light of the claims. What was proposed was a sailplane of simplified all-metal construction, low projected cost and very high performance. All that in a small, somewhat heavily loaded package.

It all seemed too good to be true, but it also seemed to warrant investigation. As a glider pilot, and one employed in the Aero-Space Industry, my curiosity was aroused and I decided to find out more about the project. I subsequently contacted the designer and what follows is the result of correspondence with him and of translations from original German sources.

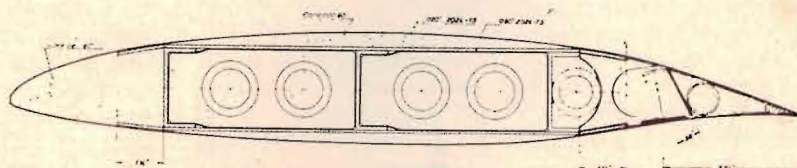
The M-1 is the result of approximately 6,000 hours of developmental and construction work by Michael-Lorenz Meier of Hamburg, Germany, a designer, aeronautical engineer and experienced pilot. His initial objective was a small, safe, strong all-metal sailplane capable of high performance, yet one of

simplified construction that could be produced inexpensively. In the M-1 these objectives have been realized to a remarkable degree.

The designer made the first successful test flight of the new glider on June 8th of this year and subsequently demonstrated it at the conclusion of the German Nationals with a two-hour thermal flight. The early flights of the ship seem to indicate that the projected maximum L/D of 40 has been achieved. Performance tests have just begun, but even in a dirty condition (a gaping hole in the bottom of the fuselage for the retractable wheel, and several other yet-to-be-cleaned-up items) a measurement of 36 was obtained.

uncomplicated. A rectangular box beam of constant section over its entire length occupies about 55 percent of the wing chord. This beam consists of three spanwise U-channels, laid on edge, and connected by rectangular ribs. (See photo.) The ribs are identical and fairly widely spaced. This entire structure, which also has top and bottom plates, is riveted and bonded and sealed with epoxy. Stress calculations, made on the basis of the riveting alone, give a maximum value of nine.

To achieve the airfoil contour hard foam is bonded to the upper and lower areas of the beam and to the leading edge. (The trailing edge is taken up with a 2/3-span,



Airfoil cross-section of M-1 showing wing construction.

### WING

The wing is of constant chord with a span of 42.6 ft., a chord of 19.7 in. and an area of 70 sq.ft. The aspect ratio is a very high figure, 26. The construction of the wing is certainly unique and quite

18-percent flap, and with ailerons.) By means of a simple sanding jig this foam exterior is next milled to .020" less than the final dimension of the airfoil contour. A layer of epoxy cement is then applied to the wing and a single sheet of .020"