

2024 T3 Dural is wrapped around the structure from top-flap line to bottom-flap line. Bonding of this cover sheet is done by a vacuum process. In addition to the great simplicity of this method of construction there results a degree of smoothness and contour accuracy which is extremely difficult to achieve with normal metal-working methods. And, of course, a complete absence of rivets in the most critical airflow of the wing!

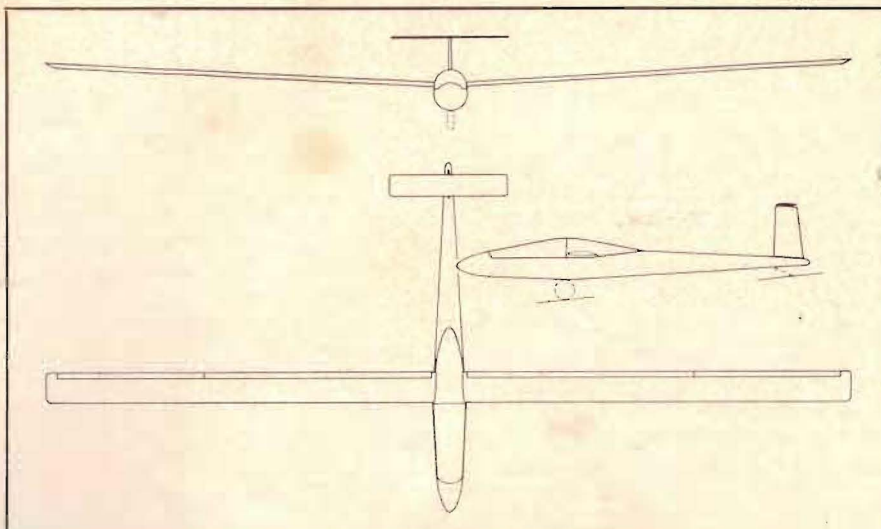
FUSELAGE

The full-monocoque fuselage has a basically circular cross section. In the cockpit area the fuselage is 21.5 in. wide and, with the capoy bulge, 27 in. deep. To maintain the maximum area possible for the pilot, who has a reclining position, the controls are routed along the sides of the cockpit. The stick, as in the Diamant, is on the right side of the pit. The aft fuselage is a cone of .020" Dural stiffened with wide, hard-foam bulkheads. The extreme rear of the cone is beefed up to support the empennage and the tail chute. This chute, which has an area of 5.8 sq.ft. is an added safety factor to be used in spin tests with aft C.G. locations only; the flaps of the M-1 are extremely effective as dive brakes. The canopy covers a wide area and the forward section, which is without compound curves, provides excellent visibility.

EMPENNAGE

The tail surfaces of the M-1 are no less unique than the rest of the ship. In keeping with the modern trend the T-tail configuration is used, but what is unusual is that both the vertical and horizontal surfaces are all-moving. So far as is known this is a first on any aircraft. (The Yugoslavian Libis has all-moving tail surfaces, vertical as well as horizontal, but not in the T configuration. — Ed.) With this arrangement only very small control deflections are needed and the drag penalty is kept to a minimum.

The main structural member of the tail unit is a length of carbon-steel tubing located at the 25 percent chord line of the vertical member. This tube serves both as a support for the horizontal tail and as a pivot for the vertical. The surfaces consist of a Dural structure filled and contoured with hard foam. As in the case of the wing, wrapped skins cover the entire surface. Laminar flow back to the 70-percent chord line is claimed.



Three-view of M-1.

It is felt that the M-1 will be available sometime next year, probably at a price (in Germany) of between \$3,250 and \$4,000. (Import duty of 11½ percent and shipping cost of approximately \$550 should be added.) Type certification is currently in progress. If there are any questions that I can answer regarding the M-1, I will be happy to do so. Please address Kurt Reupke, 2426 Willow Street, Wantagh, Long Island, New York 11793. Telephone (516) 221-2447.

SPECIFICATIONS

Wing span	42.65 ft.
Wing area	10 sq.ft.
Aspect ratio	26
Airfoil section	Eppler 303
Overall length	19.03 ft.
Empty weight	287 lbs.
Max. flying weight	552 lbs.
Max. wing load.	7.85 lbs./sq.ft.
Ultimate load factor	9
Maximum L/D	40 @ 64 m.p.h.
Minimum sink	2.1 f.p.s.

The method of joining upright U-channels with rectangular ribs to form the basic structure of the M-1 wing is evident in these two photos. Later foam and a wrap-around of T-3 Dural completes the main wing structure.

