The Midwest Utility

by ARTHUR B. SCHULTZ

AFTER an intensive period of flight testing the Midwest Utility has finally passed all requirements for the issuance of a TC. Known as the manufacturer's Model MU-1 the Midwest Utility has undergone several years of development, including use at the Army Glider Training Schools where it was highly regarded. Issuance of a TC on the design and designation of Steinhauser Sailplane Co. as the approved plant for the production of this ship will open the way for sale of this ship to schools, clubs and individuals who are desirous of obtaining a TC utility having many very desirable features.

Ruggedness and stability combined with good performance were the primary design considerations in the development of the Midwest Utility. The use of a steel tube fuselage, tail group and wing struts combined with C.A.A. Class I 80 m.p.h. placard speed make the Midwest as tough a utility as can be found. Proper selection of airfoil, dihedral, location of C.G. and good proportioning of tail group provide excellent stability in flight while correct positioning of the landing wheel eliminates ground looping tendencies during training. Cleanness

The late Lewin Barringer in the Midwest Sailplane at Wright Field. On this day they were the first to be picked up by an airplane in flight. The tug pilot was Cammy Vinet and the unit operator Erwin Talley, both of All American Aviation, Inc.

Left to right: Art Johnson, Al Fritsch, Gordon Ruona the tow plane pilot, Glen Courtwright, Joe Steinhauser, CAA Flight Insp. Don Beardsley, CAA Insp. Pickering, Mac McDonald, and Steinhauser Sr.

consistent with stability requirements and economical construction has resulted in very good utility performance.

One basic safety feature of the Midwest was the selection of a low wing loading; 2.75 pounds per square foot is the TC design loading with a 170 pound pilot and 20 pound parachute. The use of larger wing area and control surfaces results in higher cost but the experience of the designers and builders has indicated that the economies that can be effected by higher wing loadings and small control surfaces is not worth the added risk.

The airfoil used is the NACA 4412 which has not only relatively low drag at high speeds but also has a high lift at low speeds. It has a moderately flat top lift curve at the Reynolds Number corresponding to stalling speed thus providing an added safety factor not inherent in the higher speed airfoils such as the 2412. The wing tips are rounded to improve the efficiency and to increase the range of aileron effectiveness at stall.

The tail group is larger than normally required to improve the effectiveness of elevators and rudder in case of an inadvertant low altitude stall such as so frequently occurs when a rope breaks at the start of a steep climb. This has a slightly detrimental effect on the glider's high speed performance but in the MU-1 safety has been given primary importance. The ailerons are large and have proven very effective in spiralling in thermals.

Standard stick control is used. Both elevator and aileron control are by steel tube push-pull. The rudder is controlled by cables. An elevator tab, adjustable on the ground, is provided to permit hands off flying with both light and heavy pilots. A balanced rudder, nonbalanced elevators and differential ailerons provide well proportioned control forces.

Another feature which will be welcomed by many