



THE TG-3A

by Ernest Schweizer

THE Schweizer SGS2-12 (TG-3A) two-place training glider is not known to many people outside of the U. S. Air Corps glider training program, although recently some photographs and data have been published.

The Army Air Corps in 1941 was in need of training gliders and only a few commercial gliders were available, and the all metal SGS2-8 was the only approved CAA two-place glider in production. The WPB had limited the use of aluminum alloys to combat aircraft and so the Air Corps program was required to use wood and other non-strategic materials for training gliders. However, since no other ships were immediately available, the Army obtained allotments of aluminum to build a number of the metal SGS2-8 gliders so that the program could get under way immediately. Contracts in the meantime were given for experimental wooden training gliders. One of the contracts was given to Schweizer Aircraft for the XTG-3.

A considerable number of the metal SGS2-8's were built during the time that the wood glider was being developed. These are called the TG-2. A number of these TG-2 gliders were also built for the Navy and the Marine Corps. These gliders gave extremely good service in the hands of all kinds of students who subjected them to considerable abuse. Some of the metal gliders logged 4,000 to 5,000 hours of flying time and were still flying when the training programs were completed. In fact, old No. 1, built for the Airhoppers Club in 1938, was still flying at the end of the program despite numerous encounters with the ground, trees and miscellaneous articles.

The static test model of the TG-3 was completed and static-tested in March, 1942. It went through the Wright Field Static Test Laboratory with flying colors—no redesign being necessary. The flight test article was

completed in April and test-flown at Elmira and Wright Field, by Emil Lehecka and Colonel F. R. Dent and other pilots at Wright Field. It was very well received and met the Air Corps requirements for an advanced training glider. Working closely with Wright Field, various detail changes in cowling, Nose, controls, seating arrangements were worked out on the second and third flight test articles. The ship was then released for production by Wright Field as the TG-3A in July, 1942. The production contract was completed by July, 1943, at which time the Army training program was discontinued and no more TG-3A's were produced.

Basically the TG-2 and TG-3 are similar. The TG-3A being derived from the TG-2, modified to such extent as was necessary to meet Army requirements.

It is interesting to note that the TG-3A, as well as the TG-2, was designed from a functional point of view, certain performance requirements, roomy cockpits, good visibility and rugged strength to meet tough service conditions were required. Also, room and load capacity for a large number of instruments, electrical, radio and miscellaneous equipment.

The wings of the TG-3A are similar to the TG-2 except that the taper ratio and washout was reduced to make it better suited to the higher tow speeds. The position of the wing was lowered to give good visibility in the rear cockpit for the instructor. The lower wing position made it necessary to use a cantilever wing. It was necessary to increase the wing section from 4412 to 4416 to give a satisfactory spar design. For the Army training glider where assembly and disassembly are considerably less frequent than in normal service it was considered desirable to sacrifice the lighter weight and convenience of a strut braced wing for a cantilever wing in order to get good visibility. For a tandem two-place glider this wing

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