

purposes far more demanding than the sailplane. Roof panelling is an instance. The FRP laminates have a strength-to-weight ratio two times better than wood (including plywood) and are not affected by moisture as is wood.

The difficulties in fiberglass structures are the unknown factors which derive from the lack of tradition. There are few tried-and-true solutions to structural problems, few qualified workers (including designers) and only a handful of operational factories. Making a sailplane out of fiberglass today involves too many new processes to be done with the same confidence that we use in the manufacture of wooden or metal gliders. Yet, inherently the fiberglass sailplane has superior overall strength for a given weight, longer life, and lower cost per unit due to the radically decreased working hours. Because of the unknown factors involved, and the subsequent developmental expenses, there is no quick promise of lower costs. In

*"The handling characteristics of the Utu are either good, bad, or quite ordinary—depending on the pilot speaking. Therefore we are able to deliver all kinds of honest flight reports. A rough average of these indicates that the controls are light and sensitive and that, due to the aerodynamic cleanliness of the design, the ship can perhaps be described as slippery. A test-flight program following the O.S.T.I.V. requirements (thus giving opinions in physical units) has been carried out with positive results.*

*"As regards the performance, we have given several points on the drag polar. Exact polar measurements, as we all know, are difficult to obtain more so in the area of 40:1 and with surfaces affected by irregularities caused by colliding insects, dirt and the like. The points given represent values rather lower than those of a ship with surfaces in good condition."*

—AHTO ANTILA



Utu wingtips deflected almost seven feet upward under 14-G load.

time, as these costs are absorbed, there would seem to be an excellent opportunity to produce, in series, an excellent sailplane at a reasonable cost.

#### UTU SPECIFICATIONS

Wing span.....	49.2 ft.
Wing area.....	121 sq.ft.
Aspect ratio.....	20
Airfoil section (root).....	NACA 63,618
Airfoil section (tip).....	NACA 63,612
Overall length.....	21.3 ft.
Empty weight.....	412 lbs.
Maximum flying weight.....	684 lbs.
Maximum wing loading.....	5.65 lbs./sq.ft.
Ultimate load factor.....	8
Maximum L/D.....	35 @ 50 m.p.h.
Minimum sink.....	2 f.p.s. @ 46 m.p.h.

## I LEARNED ABOUT SOARING FROM THAT

— ONE OF A CONTINUING SERIES —

*There was a day, not so long ago, when just about any flight in a glider brought the pilot at least as much new and varied information as he needed—especially if he survived. Nowadays, after we've had our training and made our first few cross-country flights, we rarely encounter situations that provide us with significant new knowledge; our instruction, and ultimately our soaring wisdom, rather tends to be built up from long, accumulated experience. The flight described here presented the pilot with a situation new to him—and one unknown to the majority of soaring pilots—which he analyzed and mastered. For this reason the account is especially valuable, more so than the story of many a 300- or 400-mile flight that presented no challenge beyond simple endurance and the repetition of long-practiced techniques.*

A stagnant frontal system lay across northern Kansas on July 14th. Local humidity was high. Shortly after sunup we had seen false cumulus and by 9:00 a.m. these appeared to be developing into workable clouds. An inquiry to the weather bureau at noon indicated that conditions would be substantially the same on the 15th, however the westerly end of the front was predicated to accelerate and move to a SW/NE line that would be moving through Oklahoma City at noon the following day. A good run along the front to the northeast seemed possible, and with this in mind I asked Bill Bohny to be at the TSA Gliderport at 9:00 a.m. on Friday. That night I trailered the K-6 to the field.

By Friday morning the weather had not materialized as expected. In fact it appeared that a long flight would not be feasible. Nonetheless I went to the airport where I found Bill Bohny, Jesse Womak and Sonny Mitchell—all with sadistic smirks on their faces! The K-6 was assembled and on the line. The towplane was gassed and the engine was running. The short court hearing that I had had to attend that morning put me badly behind schedule. I had no parachute, no food, no canteen and, worst of all, only one cigar. I found a heel of bread in the icebox and an abandoned peanut butter jar in the trash. I scraped the peanut butter out to make a sandwich and washed the jar so that I could use it for water. I