THE ARGENTINE SUPER ALBATROSS

by Ricardo Olmedo *and* Gale Abels

A new high-performance sailplane was on display in Argentina in February when the World Championships were held there. The project, which began in 1956 under the guidance of Engineers Teo Altinger, George Bertoni and Captain Ricardo Almedo at the Albatross Club, Merlo, Buenos Aires Province, Argentina, is now nearly finished. Considerable flight testing is necessary before all the statistics can be compiled and the sailplane was not ready to be flown in the World Championships. However, the description which follows suggests a very promising future for this design.

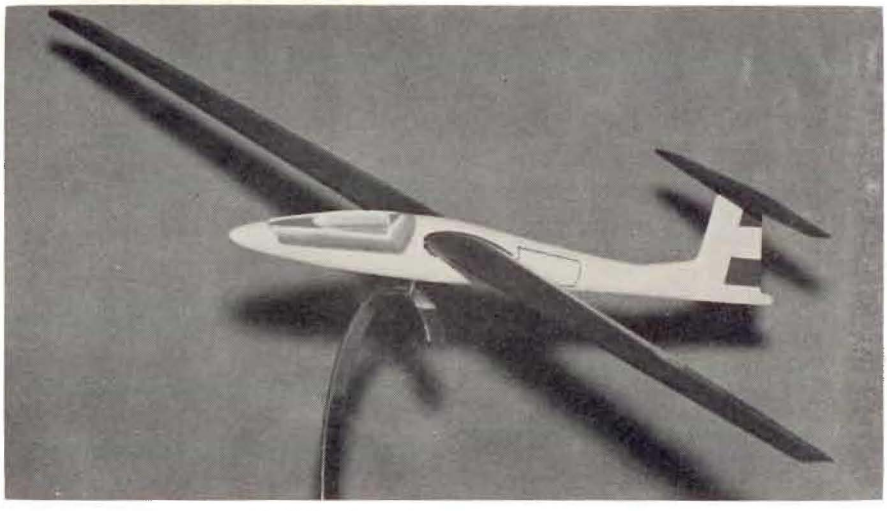
The conception of this sailplane, both aerodynamically and structurally speaking, presses along the frontiers of modern sailplane design. An unused sailplane airfold (Wortman FX 1057-816) was tested in Argentina before incorporating it into this swept-wing design and held laminar flow to 54% chord at CL = 0.5. The T tail, seen before in the United States and abroad, still holds much appeal for sailplane designers due to its lofty perch (free from ground hazards).

The most striking feature about the design is the fuselage silhouette. Had not this tiny envelope been proportioned to a rather sizeable pilot (Hossinger — then World Champion), one would doubt its capacity to perform its required purpose. Yet by the pilot's reclining, it is quite possible for him to be comfortable and also present the smallest cross section ever designed into a sailplane fuselage. The construction of the fuselage is a variety of sandwich. A plaster mold over a hollow tube formed the base over which balsa wood laminations were glued (see photo). The finishing exterior surface is fiber glass. After the center mold was removed, the fuselage was cut longitudinally and fiber glass surfaced on the inner face of the balsa.

Master craftsmen Señors Riselli and Poulin devised an ingenious router for milling the wings to accurate contour. The wings are filled solid with a variety of Styrofoam, the rib spacing being about 30". The design further calls for bonding of plywood wing skin to this cellular material after it has been milled to contour (see photo).

Technical Data

Wing area...12.5 sq. meters (134.5 sq. ft.)
Span...15 meters (49.2 ft.). Wing tip extensions wilel increase span to 18 meters (59 ft.)
Aspect ratio 18
Sweep forward .....6 degrees
Airfoil.....Wortman FX - 1057-816
Length.....7.15 meters (23.4 ft.)
Maximum fuselage cross sectional area..0.33 sq. meters (3.55 sq. ft.)
Horizontal tail area..1.6 sq. meters (17.2 sq. ft.)
Vertical tail area....1.0 sq. meters (10.76 sq. ft.)
Empty wt. .....200 kg. (440 lbs.)
Gross wt. .....300 kg. (660 lbs.)
Wing loading.....24 kg./sq. meter (4.92 lb./sq. ft.)
Minimum sink...0.60 m/sec. (1.97 ft./sec.) at 70 kmph (43.4 mph)
Best gliding ratio.....35 to 1 at 90 kmph (55.8 mph)



A model of the Argentine Super Albatross sailplane.

Future constructor Miguelito Altinger displays the fuselage of the Super Albatross prior to application of the outer layer of fibreglas. Laminations showing are of balsa wood over a fibreglas inner skin. The sandwich structure that results will be light and strong.

Senor Riselli working on the wings of the Super Albatross. White areas are styrofoam milled to correct contour which will be covered with plywood as the leading edges have been.