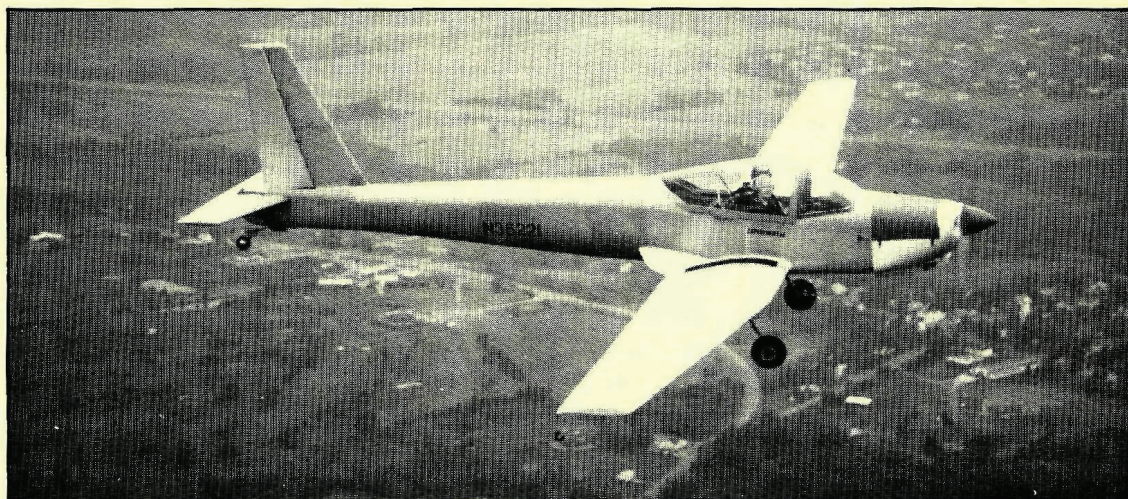


Schweizer motorglider nears certification

Schweizer's 2-37 motorglider is expected to be certificated in the USA by March. It will be the country's first domestically-produced aircraft of this kind to be certificated, and one of the first to be designed to Joint Airworthiness Requirements. The specific regulation will be JAR 22, covering sailplanes and motorgliders, plus relevant parts of the usual FAR 23.

The aircraft, which has been under development for more than two years, was designed specifically to meet USAF Aeronautical Systems proposals for an off-the-shelf motorglider. Other aircraft considered included the Grob G109 and the Ryson ST-100 Cloudster. The Schweizer best fits the Air Force specifications, and a contract for eight 2-37s has been awarded. These should go to the USAF Academy at Colorado Springs by the summer.

Schweizer's motorglider is described as being a "powered aircraft with sailplane capabilities". The USAF Academy has included a soaring stage in its syllabus since the Fifties. Gliding has been found to be very beneficial in pilot training, with records indicating that a pilot with sailplane experience makes better progress. Cadets will initially fly the 2-37, then change to conventional sail-



Schweizer plans high-altitude surveillance developments of the 2-37, following civil applications

planes. The Academy now has some 15 Schweizer sailplanes—one 2-33, one 1-34, seven 2-32s, and 1-26s for the remainder.

The Schweizer SGM 2-37 for the USAF will be powered by a 112 h.p. Lycoming O-235, derated to 105 h.p. and swinging a two-bladed Sensenich metal propeller. The whole engine package, from the firewall forward, comes from the Piper Tomahawk.

Schweizer has also used time-proven and highly efficient components from some of its other sailplanes on the 2-37. The rear tail cone and tail surfaces are from the SGS

2-32; the wing panels, including the air brakes and ailerons, are from the 1-36 Sprite, although strengthened. The structure is all-metal except for the fabric-covered rudder and tubular steel landing gear, and is of conventional construction. The wing employs a built-up aluminium spar in three sections—centre and outboard. Strengthening has been accomplished by using additional reinforcing strips in the wing at the root ends and heavier gauge aluminium in the spar butt plates.

The fuselage is a modified monocoque structure with bulkheads, stringers, and skins. The wing has a Wortmann FX 61-163 laminar flow aerofoil section from the root running outboard to the ailerons, and an FX 60-126 aerofoil at the tips. The stabilator is constructed similarly to the wing; the rudder has a fabric-covered aluminium frame. The 9ft track fixed landing gear is fitted with 5.00 x 5 main wheels for the USAF aircraft, which will be operating from hard surfaces.

Schweizer plans to build a ninth 2-37 to be used for research and commercial development. It will be powered by a 150 h.p. Lycoming O-320 with a feathering propeller, plus 6.00 x 6 wheels for grass field and rougher terrain operations. At a later point it could also be fitted with a Limbach/Hoffmann engine/propeller, as

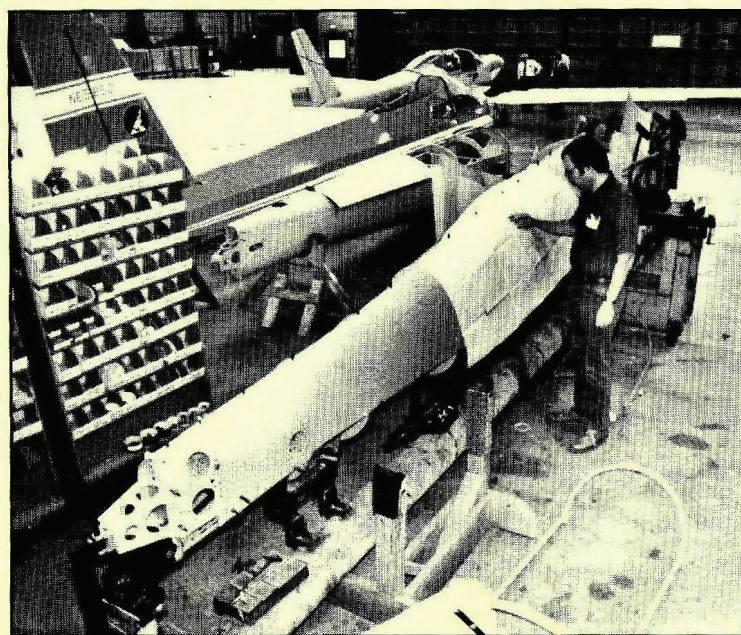
Schweizer is looking towards a wide range of derivations from the basic 2-37.

An Air Force 2-37 will not employ a stop/start in-flight procedure as with most other motorgliders, because of the fixed pitch propeller. Instead, it will be flown as a glider, with the engine idling. Schweizer will probably have the follow-on commercial and derivative craft with stop/start capability. Retractable gear is also being considered.

The cockpit has a large aft-sliding canopy which provides excellent visibility. Width of the cockpit is 43in at the widest point, and the control arrangement allows student and instructor to fly with their right hands on the control stick, and their left on the airbrake lever. The two-surface brakes cover an area of 5.88ft², but they will probably be lengthened to increase the area by about 30 per cent. A glide ratio of 27:1 is claimed at gross weight, and at 64 m.p.h. (engine idle). Schweizer expects a similar glide ratio with a feathered propeller. With extended dive brakes the glide ratio is said to be approximately 10:1. A single throttle is in the panel centre.

A 15 US gal fuel tank is in the leading edge of the left wing inboard section on the first aircraft, but another 15 gal tank will probably be added to the starboard wing, and will be standard in the other seven Air Force machines. The SGM 2-37 is

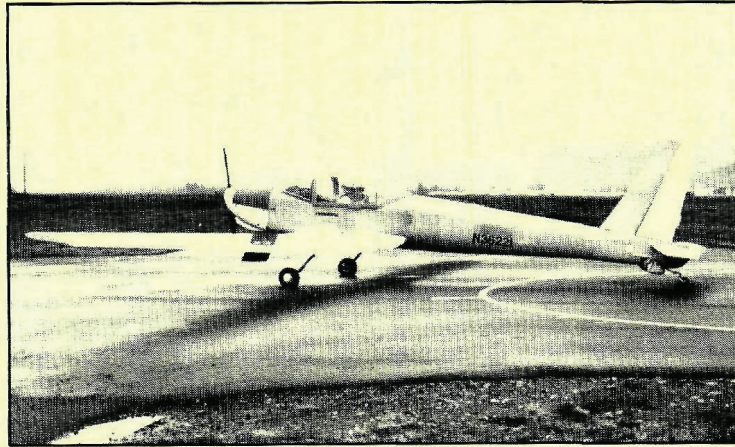
Aft fuselage section in jig, with completed unit alongside



claimed to have a 4-5 gal/hour consumption at economical cruise, a range of 281 miles, and a climb performance superior to that of a 150 h.p. Piper Super Cub. Schweizer believes that the aircraft could have a big future in many applications, and is studying the marketplace.

Vice-president Paul Hardy Schweizer puts the SGM 2-37 in the same category as the Grob G109, but the 2-37 is larger, arguably more durable because of its metal structure, and more expensive. Schweizer hopes to be able to make the 2-37 commercially available by Spring 1983 for \$69,700.

Advanced developments are being studied, the first of which is a high-altitude, stand-off surveillance aircraft based on the SGM. It could be a manned or unmanned aircraft of 50,000ft capability, basically to complement the role of the TR-1 currently being used by the USAF. Schweizer points out that, whereas each TR-1 costs \$22 million each and operational costs are high, the Schweizer craft would cost between \$1-1½ million and be capable of



Tail surfaces and cone come from the 2-32 sailplane

handling a large number of day-to-day surveillance jobs at low cost. Powerplant would be the P&W PT6 or Garrett TPE331.

Paul Schweizer says that he is already talking to several "overseas" countries regarding use of an advanced SGM in Mini-AWACS roles. Schweizer 2-32s have already been used in developing special purpose aircraft, including the LTV and Martin Marietta affordable stand-off aircraft programmes. The

Lockheed YO-3A Quiet aeroplanes were also developed from the 2-32, as was the Bede BD-1 long range, record-making aircraft.

Paul Hardy Schweizer was an engineer at Boeing, in charge of the Compass Cope programme. He is therefore well-acquainted with high altitude-operating aircraft. He foresees the SGM being capable of development into special derivatives, such as the 2-32 was employed in the past.

Briefings...

The first ethanol-powered flight in a light aircraft across the USA has been completed by Max Schauck, a University Professor from Baylor University, Waco, Texas. He flew a Bellanca Decathlon 3,000 miles from Los Angeles to Washington D.C. via Texas, New Mexico, Arizona, Missouri, Georgia, North and South Carolina, and Virginia.

The fuel was locally-produced en route from a variety of sources, and this flight brings Schauck's total ethanol-powered flying hours to 250. Only problem to date has been quality control after production of the fuel. He is currently working on a long-term plan to gain FAA approval for ethanol use in Bellancas and other comparable two-seaters.

As well as insuring against loss of licence, you can now insure in the USA against the legal costs of contesting medical denials. Cover is obtainable via the Airman's Certification and Defence Plan, PO Box 225, Greenvale, NY 11548, and premiums are around \$150 per annum.

The Aeronca C3 of the Thirties could have beaten many of today's "minimum" aeroplanes, lifting two people on 37 h.p. in its squat side-by-side fuselage that earned it the nickname of "The Flying Bathtub". It became a favourite during the US depression and was later built under licence at Hanworth in England. They can still be seen flying on both sides of the Atlantic today, and an owners association is now active in the USA. Contact the Aeronca Aviators Club, 511 Terrace Lake Road, Columbus, Indiana 47201.

Sussex University economics graduate Philip Berent is planning a record long-distance flight by microlight from Salisbury, Wilts, to Harare (formerly Salisbury) in Zimbabwe.

He expects to take three months, flying in stages and accompanied on the ground by support crew. Starting date is expected to be February 27.

Glider and Ag-Cat production continues

The name Schweizer has been synonymous with gliders since 1929, when teenage brothers Ernie, Paul, and William constructed a single-seat utility glider. After all three brothers had graduated from Aeronautical Engineering School, they formed Schweizer Metal Aircraft and produced the world's first all-metal sailplane, the SGU 1-6, followed by a second metal design, the SGU 1-7.

In 1939 the Schweizer Aircraft Corp was established at Elmira, NY, where it began production of training gliders for the military Glider Training Programme. A total of 200 SGU 2-8 (military designation TG-2) and SGS 2-12 (TG-3) was built for the US Army Air Force. Post-war models started with the SGU 1-19 and SGU 1-20, followed by the SGS 1-21 high-performance aircraft which won the National Championship in 1947 and again in 1957. Other designs followed

during the ensuing years, and Schweizer now holds 11 FAA Type Certificates and has produced some 2,150 sailplanes. To date, the 1-26A has been the most popular, accounting for 448 aircraft.

Schweizer has also been greatly involved with production of the Grumman-designed Ag-Cat. It has produced 2,520 of them, initially under licence for Grumman, and then for Gulfstream. Schweizer purchased the full Ag-Cat rights from Gulfstream in 1980. Although the Ag-Cat is the highest priced ag aircraft on the market in the USA, it is still the most popular, and Schweizer manages to corner about 25 per cent of ag aircraft sales, even in a depressed economy. It now has a complete range of Ag-Cats, all from the same production line and using the same basic components.

In 1976, Schweizer produced 286 Ag-Cats (85 A models and 170 B models); last year this total

was barely 50, indicating a very depressed economy. Present production sailplanes are the 2-33A trainer (\$24,750) and the newer 1-36 Sprite, of which approximately 50 have been built since production was commenced in 1980. The Sprite is priced at \$21,750. Sailplane production at the Elmira factory should soon be up to three/four per month, to include the 2-37.

Schweizer has also been a major subcontractor for a number of other aircraft manufacturers for years, and this work accounts for 50 per cent of its business. The company is Bell Helicopter's oldest subcontractor, and also produces gunner windows for the Sikorsky Black Hawk, wing tips for the Boeing 757, and is a Grumman Aerospace subcontractor, as well as a parts supplier for Gulfstream's GIII. The company also produces satellite items, Emro and Sperry simulators components, and A-10 parts.