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Cover: The museum's SGS 1-23

Museum News

The museum has for a long time wanted an early Wright Brothers glider to display in our museum. Now George Applebay is leading a small group of volunteers that have begun building a replica of the 1902 glider. We will keep you posted on our progress.

Directions to the Museum

Approximately 35 miles east of Albuquerque on Interstate 40, take Exit 197 onto Old Highway 66 in Moriarty, NM. The museum is the big building on your left.

Member News

Are you receiving the newsletter by U.S. mail? Consider receiving it by email. This saves museum resources and you can read the newsletter sooner and in full color. Contact us at kathytaylor1000@msn.com to change your preference. Check the newsletter mailing label for your member number and expiration date.

Schweizer 1-23

This month we feature the **Schweizer SGS 1-23**, a very successful all-metal, single-seat, mid-wing glider built by Schweizer Aircraft Company of Elmira, New York.

The "standard" 1-23 introduced in 1948, and with its later versions, the B, C, D, E, F, G and H, was for years America's most numerous performance sailplane. A total of 93 of all sub-models were built by the time production was completed in 1967. Both Open and Standard Class models were built as the aircraft design evolved through model H.

The 1-23 was a very successful competition sailplane. In the 1950 US National Championships, the 1-23 placed second, third, and fourth. A special version of the aircraft placed sixth in the World Championships of 1952 and fourth in 1954.

1-23Ds were flown by Paul McCready to win the 1953 US Nationals and by Joe Lincoln to set a distance record of 455.5 miles (733 km). Lincoln

was awarded the Barringer Trophy in 1960 for that distance flight.

In 1949 a 1-23 was used by Bill Ivans to set an altitude record of 42,070 ft. On February 25, 1961, Paul Bikle, achieved a world absolute altitude record of 46,267 feet and a world altitude gain of 42,300 feet while flying his Schweizer SGS 1-23E near Lancaster, California. The absolute altitude record stood for 25 years and the altitude gain for even longer.

Design and Construction

After WWII the SAC had decided that there would be a market for a modern design, high-performance sailplane and built two prototypes of a new design, the SGS 1-21. The first prototype, flown by Dick Comey, won the 1947 U.S. National Championships and set a new US record distance. Unfortunately, the 1-21 design was too expensive to produce, so a lower cost model, the 1-23, was produced.

Schweizer Aircraft started construction of the 1-23 prototype in May 1948. The aircraft was completed and first flew on July 5, 1948, only nine weeks after construction had begun.

The prototype had been ordered by Bill Frutchy of Elmira, New York and the aircraft was available for him to fly it in the second half of the US Nationals.

The first production 1-23 was ordered by E.J. Reeves. The success of this aircraft led to more orders and series production was commenced. The 1-23 was initially sold on a "factory direct" basis, which allowed them to be sold at a lower price than through the dealer network.

The 1-23B & C were built for the 1952 World Championships held at Madrid, Spain, flown by Paul MacCready and Paul Schweizer. Both models had the wing spars spliced and stretched to 50 ft, and the C had thicker wing skins, a heavier spar, and weighed an additional 90 lb.

In 1953 the 1-23D was introduced, a production version of the B. One flown by Paul MacCready won the 1953 Nationals, and another was flown 455.5 miles by Joe Lincoln to earn the Barringer Trophy for 1960.

The single increased-span (52.8 ft) 1-23E was built for Paul MacCready to fly in the 1954 World Championships where it finished 4th. It has balanced air brakes and originally did not have a

wheel, using the skid for takeoff and landing. Paul Bikle won two world altitude records with the 1-23E (46,267 ft absolute, 42,303 ft gain)

One 1-23F was built, developed from the E with heavier butted skins on the wing.

The 1-23G was a 1954 production model with the longer wing of the E and F, standard spoilers and a larger vertical tail of slightly different shape.

To the basic 1-23G model Schweizer added balanced airbrakes, removable wingtips and other minor modifications to produce the H model, of which 8 were built.

The more numerous 1-23H-15 version has a wingspan reduced to 15 m qualifying it for the FAI-OSTIV Standard Class. It was also produced with removable tips increasing the span to 52.8 ft. 39 of this model were built. One, which belongs to the National Soaring Museum, was substantially modified by Sterling Starr by the fitting of a new NACA 65(3)-618 section 54 ft wing.

The 1-23 received type certificate 1G1 on November 22, 1949. The type certificate is currently held by K & L Soaring of Cayuta, New York. K & L Soaring now provides all parts and support for the Schweizer line of sailplanes.

SPECIFICATIONS (SGS 1-23H)

We provide here only the numbers for the 1-23H.

General characteristics

- **Crew:** one
- **Height:** 1.4m (4 ft 7 in)
- **Wingspan:** 15.0 m (49.2 ft)
- **Wing area:** 14.8 m² (159.4 sq ft)
- **Wing loading:** 23 kg/m² (4.7 lb/ ft²)
- **Aspect ratio:** 15.1
- **Airfoil:** NACA 43012A, 23009
- **Empty weight:** 213 kg (470 lb)
- **Gross weight:** 340 kg (750 lb)
- **Water Ballast:** None
- **No. Built:** 74

Performance

- **L/D Max:** 29 @ 50 mph (43 kt)
- **Min sink:** 2.2 fps @ 37 mph, 6 fps sink @ 85 mph
- **Designer:** Ernest Schweizer

The Company

The **Schweizer Aircraft Corporation** was an American manufacturer of sailplanes, agricultural aircraft and helicopters located in Horseheads, New York. It was incorporated in 1939 by three Schweizer brothers (Paul, William, and Ernest), who built their first glider in 1930.

The company grew out of the Mercury Glider Club which produced the first two Schweizer gliders in the Schweizers' barn. The company was originally called the Schweizer Metal Aircraft Company. Attorney Bob McDowell indicated to the Schweizers that they should move their manufacturing operation out of their father's barn and relocate to the Elmira, New York, area. The Schweizers received the suggestion positively as they needed more space to produce gliders, but they had no money with which to make the move.

McDowell convinced Elmira Industries, Inc., the local business development corporation, to provide space for the Schweizers on the second floor of the Elmira Knitting Mill Building in return for stock in the company. This resulted in the Schweizer Metal Aircraft Company becoming the Schweizer Aircraft Corporation, with a sale of shares to Elmira Industries, local businessmen and soaring pilots.

Schweizer primarily produced light, piston-engined helicopters for use in utility and flight-training roles. The Schweizer 300CBi, originally designed and manufactured by Hughes aircraft as the Hughes 269 for the United States Army, was one of the most widely used training helicopters in the world.

In 1986, Schweizer acquired all rights to the helicopter from McDonnell Douglas, who had purchased Hughes Helicopters in 1984. The helicopter was known for a short time as the Schweizer-Hughes 300C and then simply, the Schweizer 300C. The basic design remained unchanged over the years. Between Hughes and Schweizer, nearly 3,000 copies of the Model 269/300 have been built and flown over the last 50 years.

Sailplanes

Schweizer is perhaps known best for its popular line of gliders, the earliest of which (the model SGP 1-1) was produced in 1930. Although very few of the early gliders were built, later models gained popularity, such as the SGS 2-8 and 2-12, which

were adopted by the U.S. Army Air Corps for training as the TG-2 and TG-3, respectively.

The Schweizer SGS 1-23 was a popular performance sailplane. In the 1950s and 60s the Schweizer Aircraft Corporation designed and manufactured the very popular SGS 1-26 and SGS 2-33 gliders. They are easy to fly, with simple construction, and are quite rugged and forgiving.

The 2-33 was adopted by the United States Air Force Academy for use in introductory airmanship training. The Academy used over a dozen such gliders until 2002 when they were replaced by more modern sailplanes. The Royal Canadian Air Cadets continue to operate a fleet of over seventy 2-33As. Other popular Schweizer gliders include the two or three-seat 2-32, a high-performance glider favored for wave flying and passenger rides.

Ag Cat

Schweizer produced the Grumman G-164 Ag Cat, a single-engine biplane agricultural aircraft originally developed by Grumman in the 1950s. Under the contract with Grumman the airplane was built almost continuously between 1957 and 1981. During this period of time Schweizer built 2,455 of the airplanes. In 1981 Schweizer bought the rights to the design and continued production under the name Schweizer Ag Cat. The basic airframe incorporates many safety innovations, including a pressurized cockpit to keep pesticides out, air conditioning and a fuselage structure that is designed to progressively collapse in the event of a collision.

Reconnaissance aircraft

The development of the Schweizer SGM 2-37 two-place motor glider for the United States Air Force Academy in 1982 led to a new area of expertise for the company. In the mid-1960s Lockheed had used the Schweizer SGS 2-32 sailplane as the basis for its YO-3 quiet reconnaissance aircraft. Schweizer developed the SGM 2-37 into a similar concept aircraft as the YO-3. The result was the SA 2-37A and B, known as the RG-8A in military use.

Company Sold

Previously the oldest privately owned aircraft company in the United States, Schweizer was acquired by Sikorsky Aircraft Corporation of Stratford, Connecticut, in 2004, and became a diversified aerospace company. In 2011 and 2012 Sikorsky Aircraft Corporation laid off all the workers and closed the Schweizer plant.

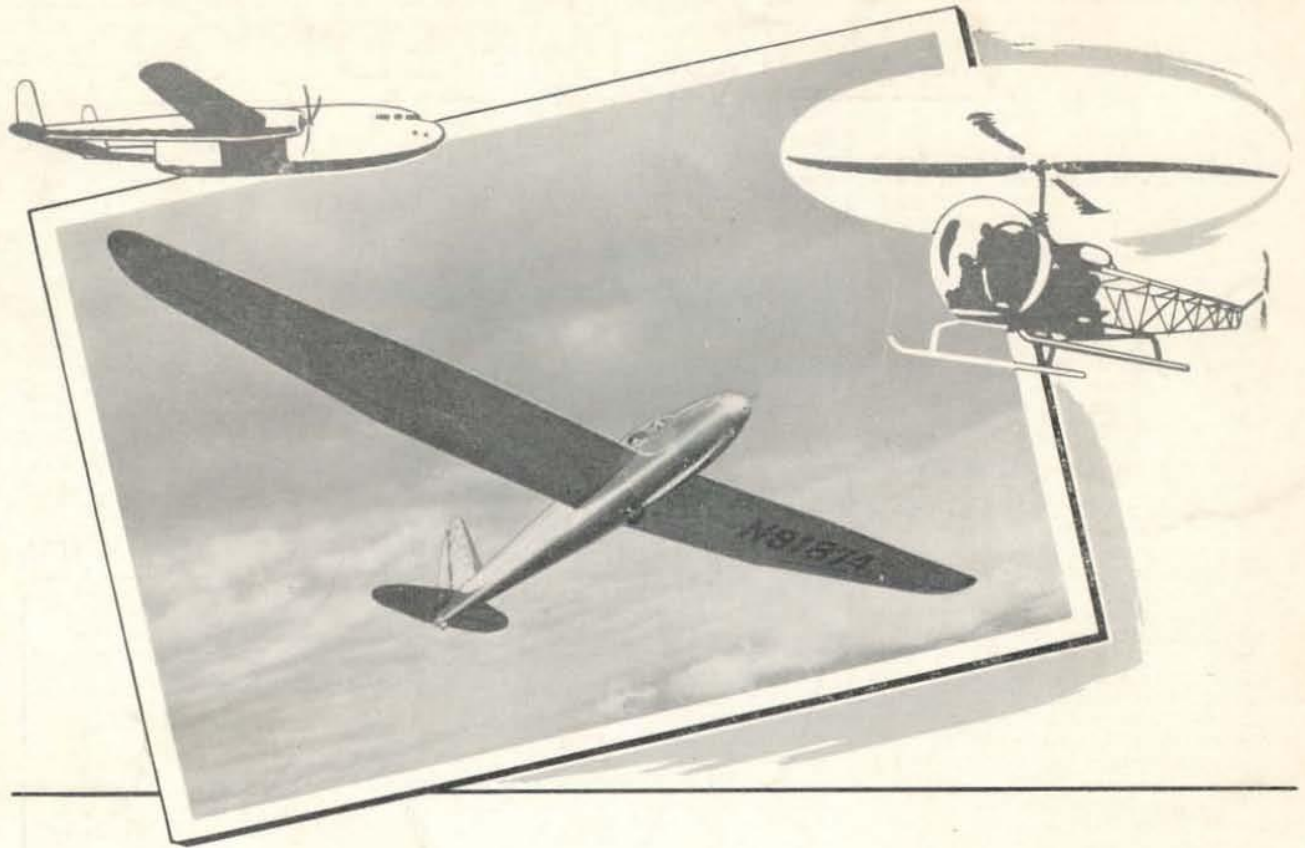
History of the Museum's Glider

The museum's 1-23, N91874, serial #9, is the original 'standard' 15-m span all metal sailplane. The logbook shows the first flight on October 1, 1949, by Louis R. Gonzales at El Cajon, CA. Other flights are at Elsinore and Torrey Pines. The ship was sold in 1995 to Christopher Manley of Mojave, CA, who donated the glider to the museum in 2005 with a total of 437 hours in the logbook.



The photograph on the next page shows N91874 on the back cover of the July-August 1952 issue of *Soaring* magazine.

Acknowledgements: The preceding account includes information from the museum's file of documents and logbooks for this glider. We also synthesize information from the Soaring Society of America's "Sailplane Directory 1997," Martin Simon's "Sailplanes 1945-1965," the online Wikipedia, and various issues of *Soaring* magazine.



"Back In The Picture"

The 1-23 is back in the production picture and takes its place in our plant along-side major assemblies for the Bell Helicopter, Fairchild C119 Packet and other famous aircraft for the Air Force and Navy.

Production is now possible as a result of permission granted us by the National Production Authority to procure controlled material for sailplane production. This, together with steadily increasing orders assures us a steady production of the 1-23 sailplane.

Many new improvements are being made on the 1-23 and the same high quality standards of material and workmanship required for defense production goes into this modern sailplane.

Get your order in now to hold a delivery position on the rapidly filling schedule. Write for detail brochure and price list.



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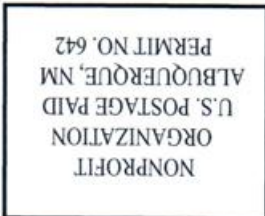
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