Southwest Soaring
Quarterly Newsletter of the U.S. Southwest Soaring Museum

August 2013

The Rhönlerche II
News from the President
George Applebay

Schweizer 1-26A, serial #194, at National Museum of Nuclear Science:
The museum’s 1-26A is the featured attraction at the ‘Dynamics of Flight’ exhibit at the National Museum of Nuclear Science in Albuquerque. It will be on display for 6 months. Below is General Finan, Commander of Air Force Nuclear Weapons at Kirtland Air Force Base, giving the keynote address on exhibit opening night.

Save these dates: August 31-September 2, 2013. We cordially invite you to Moriarty for a Vintage Sailplane Meet. Bring your vintage or classic glider to fly in some of the country’s best soaring conditions. The registration form is in this issue and you can find it at www.swsoaringmuseum.org.
In this issue we feature the Rhönlerche II, serial #93/58, also known as the Schleicher Ka-4 or K 4.

**Design and Construction**
The Rhönlerche II (Rhön Lark) is a high-wing, strut-braced, two-seat glider that was designed by Rudolf Kaiser and manufactured by Alexander Schleicher Flugzeugbau in Poppenhausen, West Germany. [The Rhönlerche I was a primary glider designed by Alexander Schleicher that first flew in 1952.]

The Rhönlerche II was first flown in July 12, 1953. Its design goals were to produce a simple, inexpensive and robust two-seat trainer for school and club use. The design became a popular basic trainer and several hundred were constructed.

It features a steel-tube, fabric-covered fuselage, a wooden fabric-covered wing with top-surface spoilers, a fixed wheel and nose skid, and tandem seating.

The 13.0 m (42.7 ft) span wing is supported by single lift struts and employs a Goettingen 533 airfoil. The aircraft's landing gear is a single fixed wheel with a nose skid.

The aircraft was issued a US type certificate on September 28, 1960.

Rudolf Kaiser was one of the most successful sailplane designers of all time.

He was born in Coburn, Germany, and received a civil engineering diploma in 1952. In the same year he completed his first glider, the small single seat Ka 1, with V tail and skid landing gear. He was self taught, having never been formally trained in aeronautical engineering, but he received some advice from sailplane designer Walter Stender. Kaiser sometimes worked for Alexander Schleicher GmbH & Co., and his designs for Schleicher can be recognized by the K in the ASK designation or just K. The designs that he did when not employed by others have the designation Ka.

He used the Ka 1 to earn his Silver C badge. After a short construction run by Erwin Kohler of kits for amateur builders, Kaiser converted the Ka 1 wooden fuselage to steel tube for easier construction. This version became known as the Ka 3, Rhönlaus (Rhön Louse), and was manufactured by Alexander Schleicher. It is a small glider, just 10 m (33 ft) in span.

The museum has a modified Ka 3 that was built and donated by Don Santee. He elongated the nose to accommodate a taller pilot and added a main wheel for easy ground handling. He called this aircraft the Santee S-3.
Kaiser’s next glider, the 15-m, two-seat K 2, was commissioned by Alexander Schleicher and first flew in 1953. The wing was swept forward for improved rear-seat visibility. The glider was easy to fly and had a main wheel for easy ground handling. Other changes led to the K 2B. The wing was stretched to 16 m and the dihedral increased to 4° for better stability in turns; 75 of these were sold by 1957.

The Ka 4 design returned to the steel-tube fuselage and unswept wing for easier constructability.

Rudolf Kaiser also worked for Egon Scheibe, designing the Ka 5, "Zugvogel," which was the best performing production sailplane in the world at the time.

Next came the Ka 6, designed by Kaiser on his own so that he could fly Gold C. It won the OSTIV prize for the best new design in 1958. After Schleicher put it into production, it became the most popular Standard Class sailplane, winning two World Gliding Championships (1960 and 1963). 1368 Ka 6’s were built and many are still flying.

The list of Rudolf Kaiser’s successful designs is long and includes the K 1, K 2, K 3, K 5, K 6, K 7, K 8, K 10, K 13, K 14, K 16, K 18, K 21, and K 23. Kaiser retired in 1983 upon completion of the certification process for the K 23.

**Glider History**

The museum’s glider was amateur-built by the Luftsportgemeinschaft Oberallgau e.V., 8976 Hofer Post Blaublich, West Germany. Alexander Schleicher issued a license for construction of the glider on December 3, 1958. The Airworthiness Certificate was issued under Type Certificate 7G6 on October 21, 1969, and it had registration certificate D-1676. The year of manufacture is shown as 1960.

The Ka 4 was sold in 1969 with 450 hours flight time by the Sonthofen (West Germany) Amateur Flying Club to Horst Blome of Fairview, NJ. It was shipped from Bremen to New York on September 10, 1969, aboard the C.V. Stag Hound, and sold to Martin Voelk of Fairfield, PA, on February 13, 1970.

Jan Scott tells an interesting story about this glider: Well-known glider pilot Shelly Charles & wife Anita bought a few hundred acres near Fairfield, Pennsylvania, to build a golf and skiing resort, called Charnita. They hired a former Luftwaffe Ju-88 bomber pilot named Martin Voelk to fly them between properties in a Twin Otter. Having a little time on his hands, Martin started a glider school at the Charnita Field. He found two Germans who were willing to provide funds to buy a glider to be imported from Germany in return for glider lessons. The Ka 4 arrived in early 1970 and Jan Scott was induced to fly his Supercub up from Lovettsville, VA, to tow. His logbook shows April 25, 1970, as the first tow. Later, Martin towed while Jan gave instruction.

The glider was sold in 1977 to Peter E. Riedel and Jack Williams of Ardmore, Oklahoma, and their flights are the first shown in the Museum’s only logbook which begins with 500 hours.

John Boyce and Bob Sause purchased the aircraft in 1980 and flew it out of Waterbury and Canaan, CT, airports. Nan (Anne R.) Jackson bought into the partnership in 1984 and they took the glider to the 1985 International Vintage Sailplane Meet at Harris Hill, NY, but it did not fly. Wayne Robinson purchased the glider in 1995 and flew it out of Manning, SC, and Scott Airpark, VA.

William B. Cloughly of Severna Park, MD, purchased the glider in 1996 along with two partners (Bruce Barrett and Scott Sellard) and they took it to the IVSM in 2000, where it flew 12 hours. The last owner was Keith Brodhagen of Phoenix, AZ, who donated it to the museum in 2006 with 628 hours on the airframe.

In July 2011 there were still five Ka 4s on the US FAA aircraft registry, although the FAA currently shows no Ka 4’s registered in the US. The online SSA Sailplane Directory currently lists two Ka 4’s in the US. One recently came on the market for sale by Ronald Martin of Bakersfield, CA. The museum has a second Ka 4, donated by Dieter Bibbig in 1996, that requires refurbishing.

The Ka 4 was widely used by clubs and schools in West Germany and also by Canadian military gliding clubs stationed in West Germany.
Ka 4 Empennage

Ka 4 Tail Skid

Ka 4 Canopy
SPECIFICATIONS (Rhönlerche II, Ka 4)

General characteristics

- **Crew**: two
- **Length**: 7.3 m (23 ft 11 in)
- **Wingspan**: 13 m (42 ft 8 in)
- **Wing area**: 16.34 m² (175.9 sq ft)
- **Wing loading**: 24.5 kg/m² (5.0 lb/sq ft)
- **Aspect ratio**: 10.3
- **Airfoil**: root: Göttingen 533 15.7%, mid: Göttingen 533 15.7%, tip: Göttingen 533 12.5%
- **Empty weight**: 107.5 kg (237 lb)
- **Max takeoff weight**: 400 kg (882 lb)

Performance

- **Stall speed**: 56 km/h (35 mph)
- **Never exceed speed**: 170 km/h (106 mph)
- **Rough air speed max**: 120 km/h (74.6 mph)
- **Aerotow speed**: 120 km/h (74.6 mph)
- **Winch launch speed**: 90 km/h (55.9 mph)
- **g limits**: +4.7 -2.3 at 170 km/h (106 mph)
- **Maximum glide ratio**: 17.5:1 at 78 km/h (48 mph)
- **Rate of sink**: 1.1 m/s (220 ft/min) at 62 km/h (39 mph)
Museum's Santee S-3 (modified Rhönlaus Ka 3)

Conventional Schleicher Ka 3
SPECIFICATIONS (Ka 3)

General characteristics

- **Crew:** one
- **Length:** 7.3 m (23 ft 11 in)
- **Wingspan:** 10 m (32.8 ft)
- **Wing area:** 9.9 m² (106.6 sq ft)
- **Wing loading:** 19.7 kg/m² (4.03 lb/sq ft)
- **Aspect ratio:** 10.1
- **Airfoil:** root: Göttlingen 549 Mod.
- **Empty weight:** 95 kg (210 lb)
- **Max takeoff weight:** 195 kg (430 lb)
- **Structure:** wood and fabric wing, steel tube and fabric fuselage

Performance

- **L/D max:** 18 at 75 kph / 40 kt / 47 mph
- **Min. sink:** 0.95 m/s / 3.12 fps / 1.85 kt at 65 kph / 35 kt / 40 mph

Acknowledgements: The preceding account includes information from the museum’s extensive file of manufacturer reports, FAA documents, personal letters, and logbook for this glider. We also synthesize information from the Soaring Society of America’s Sailplane Directories, Martin Simon’s “Sailplanes 1945-1965”, Bungee Cord, Peter Seliger’s “Rhön Adler: 75 Years of Alexander Schleicher Sailplanes,” and Wikipedia. Some specifications and drawings came from the Alexander Schleicher website.

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 snail mail? Consider receiving it by email. This saves museum resources and you can read the newsletter 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.
Ka 4 Rhönlerche II

Alexander Schleicher GmbH & Co.
Segelflugzeugbau
36163 Poppenhausen

28.08.02
M. Münch
Registration for
Vintage Sailplane Meet
Moriarty Municipal Airport, NM
August 31 – September 2, 2013

Name ____________________________________________________________
Address __________________________________________________________
Telephone __________________________________________________________
Email ______________________________________________________________

Will you bring a vintage or classic glider? _______
If so, what glider?__________________________________________________

Please register as early as possible so that we can plan this event.
Contact Bob Hudson, 505-507-6332, bhudson964@aol.com, or George Applebay, 505-328-2019, gapplebay@aol.com, for information on operations, tiedowns, camping, etc.

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