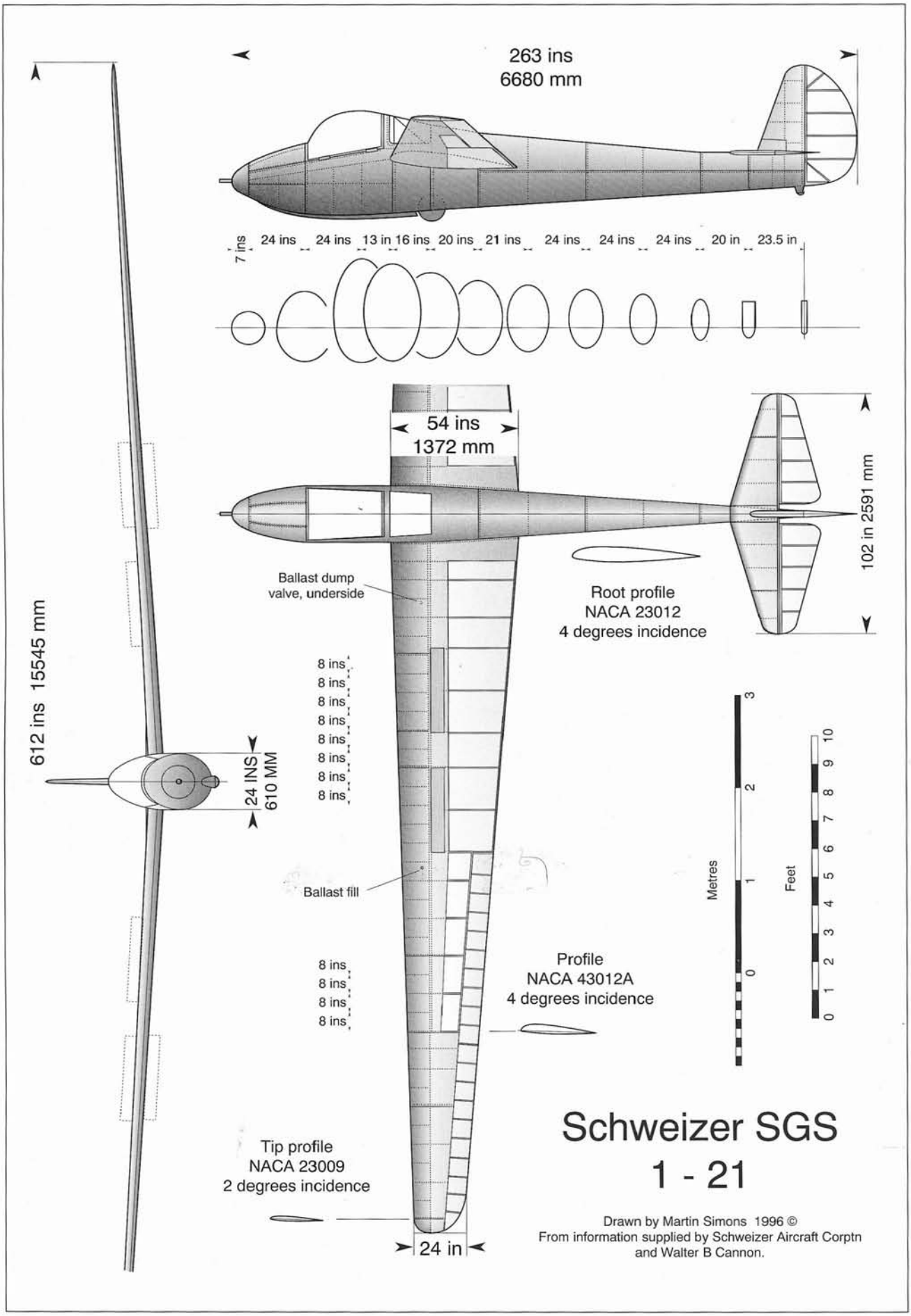
263 ins
6680 mm
7 ins
24 ins
24 ins
13 in
16 ins
20 ins
21 ins
24 ins
24 ins
24 ins
20 in
23.5 in
54 ins
1372 mm
102 in 2591 mm
612 ins 15545 mm
24 INS
610 MM
Ballast dump
valve, underside
Root profile
NACA 23012
4 degrees incidence
8 ins
8 ins
8 ins
8 ins
8 ins
8 ins
8 ins
8 ins
Ballast fill
8 ins
8 ins
8 ins
8 ins
Profile
NACA 43012A
4 degrees incidence
Metres
Feet
Tip profile
NACA 23009
2 degrees incidence
24 in
Schweizer SGS
1 - 21
Drawn by Martin Simons 1996 ©
From information supplied by Schweizer Aircraft Corptn
and Walter B Cannon.

between them, was built up and riveted to the main cross-frame above the wheel. The yoke was set at the correct angle of incidence, 4 degrees. Four bolts attached the spars to the yoke, one on each side for the lower spar flanges and two above for the upper flanges. A single bolt on each side attached the inner end of the wing D nose directly to the fuselage frame just aft of the cockpit.

The tail unit was as simple as we could make it: a metal-skinned aluminium frame for the fixed tailplane and fin, and light steel tubing for the elevator and rudder, fabric covered.

After considerable promotional effort we received only two orders, one from Dick Comey, a Second World War military pilot, and the other from Dave Stacey, who had flown a Baby Albatross before the war. The price of the 1-21 was considered high when compared with the average cost of surplus sailplanes that were still available, and too few were prepared to pay so much for a sailplane at that time.

We decided to go ahead nevertheless, and built two 1-21s on the basis that once the sailplane was flying and showing what it could do, more orders would follow. We completed the one for Comey in time for him to enter the 1947 Nationals at Wichita Falls, Texas. The soaring conditions there were very good, and almost every day a 'free distance' task was set. Pilots were required to make the longest possible distance flight, to a remote landing, each day. The pilot and crew had a hard time because after each flight they had to retrieve the sailplane by road and get it back to the airfield in time to take off again in the next day's contest. The more successful the flight, the further the crew had to drive. Dick Comey, even with his limited contest experience, scored on every day and won the Nationals with the 1-21. The performance was exceptionally good. Comey set a national distance record of 300.25 miles on one day, but before the end of the meeting this was broken, first by Eric Nessler, a French visiting pilot, and then by John Robinson, who flew his Zanonia to a landing 332 miles away.[14]

We completed the second 1-21 for Dave Stacey later in the year, but to our chagrin no further orders were forthcoming. In spite of the glider's proven performance, the soaring movement at that time was so small that there were not enough pilots willing to pay $3,000 for a sailplane. In fact, with labour and material costs in 1947, $3,750 would have been a more realistic price from our viewpoint.

It was all very disappointing. The 1-21 was ahead of its time, and had it been more marketable it would probably have dominated the soaring scene in North America for many years. As it was, since we had not tooled up for production or gone ahead with all the work required for F.A.A. type approval, we decided not to go any further with the 1-21. Any new single-seat high-performance sailplanes that we might design would have to be much simpler and cheaper.

Dick Comey let Ginny Mayer Bennis fly his 1-21 in the 1950 Nationals, and she set a women's record of 146 miles. It was then sold to Stanley W. Smith, who flew it in the 1952 World Championships in Spain. In 1957 he won the U.S. Nationals in it, ten years after its debut. It is now owned by Alan McNicol and his son, who fly it in New England. David Stacey eventually gave his 1-21 to the S.S.A., who were in need of funds. It was auctioned off and purchased by Bob Moore of Washington State, who flew it for years and turned in many good performances at regional and national meets. It was then sold to Dr Walter Cannon, who restored it to its original condition. It won the 'Best Schweizer' award at the 1995 International Vintage Sailplane Meet, at Harris Hill.

[13] In recent times, it is normal for competition sailplanes to carry large amounts of water, often weighing as much as two or three additional pilots. Wing loadings may reach 10 lb/ft^2 (48 kg/m^2) and cruising speeds between thermals may be 100 mph or higher.

[14] Robinson was thus the first American to achieve the distance diamond award for a flight over 500 km. Comey's flight was 17 km short of this. In 1950 Robinson became the first pilot in the world to achieve all three diamonds. Nessler was a famous French pilot, who had flown a solo duration record of 38 hours in 1942, only to have it disallowed. See footnote 5.

Schweizer SGS 1-21

Total number built: 2

Specification		
Span	51 ft	15.54 m
Length	21.9 ft	6.68 m
Wing area	165 ft^2	15.3 m^2
Aspect ratio	15.75	
Aerofoil sections	NACA 23012A (root), 43012A at 72% span, tip 23009	
Empty weight	470 lb	214 kg
Pilot	260 lb	118 kg
Flying weight	732 lb	332 kg (unballasted)
Ballast	260 lb	118 kg
Maximum flying weight	992 lb	450 kg
Wing loading	4.4 lb/ft^2	21.7 kg/m^2 (unballasted)
Maximum wing loading	6.0 lb/ft^2	29.4 kg/m^2 (ballasted)
Estimated best L/D	27:1 at 45 mph	72 km/h
Minimum rate of sink	2.2 ft/sec at 38 mph	0.66 m/sec at 61 km/h

Opposite Top: *The second 1-21, restored perfectly by Walter Cannon, participated in the 1995 International Vintage Soaring Meet at Harris Hill. It was painted all silver with dark blue trim and registration.*

Opposite Right: *The cockpit and canopy of Cannon's restored SGS 1-21. Note the steel tubular crash pylon behind the pilot's seat, and the total-energy probe mounted on the nose.*