KUNGL.
LUFTFARTSSTYRELSEN
Stockholm 12

ROYAL BOARD OF CIVIL AVIATION
Sweden

Specification No 8B/59
Model Saab 91D, Safir
October 14th, 1959

AIRCRAFT SPECIFICATION

An aircraft of the type specified below and conforming with approved data on file with the Swedish Board of Civil Aviation will upon application receive an airworthiness certificate, when in the opinion of the Inspector General the aircraft is in an airworthy condition.

Aircraft Model	Saab 91D, Safir.
Designer	Svenska Aeroplan AB, Linköping, Sweden.
Design	The type of aircraft conforming with this specification complies with the valid Swedish airworthiness requirements. This type of aircraft is - with the exception stated in Note 4, below - proved to be designed in conformity with the requirements for the normal and aerobatic categories of the U.S. Civil Aeronautics Board's CAR Part 3, Airplane Airworthiness, as amended to May 15, 1956.
Type Certificate	No. A8/58, dated March 6, 1958, with addendum June 9, 1959, Dnr Li 2103:357.
General	Four seat enclosed cabin, single engine monoplane. Tricycle retractable undercarriage. Low single-spar cantilever wing. Stressed-skin Alclad sheet covering except for fabric-covered wing trailing edge and movable control surfaces. Tailplane of monoplane type. All metal split flaps. Dual controls of conventional type. Flexible fuel tanks, one in each wing.
Dimensions	Span 10.6 m (34 ft. 9 in.) Length 7.9 m (25 ft. 11 in.) Height 2.2 m (7 ft. 3 in.) Wing area 13.6 m^2 (146 sq. ft.)
Engine	Lycoming 0-360-A1A Rating, take-off, 180 hp at 2700 rpm Rating, normal, 135 hp at 2450 rpm.
Fuel	Minimum 91/96 octane aviation gasoline.
Propeller Limits	Maximum permissible diameter 2080 mm (6 ft. 10 in.)
Airspeed Limits	Glide or dive 342 km/h (213 mph) IAS Flaps extended 153 km/h (95 mph) IAS Landing gear operation 175 km/h (109 mph) IAS Landing gear extended 220 km/h (137 mph) IAS.

Copies of this specification may be obtained upon application to Kgl luftfartsstyrelsen, Stockholm 12, Sweden.

C.G. Range

Normal category:

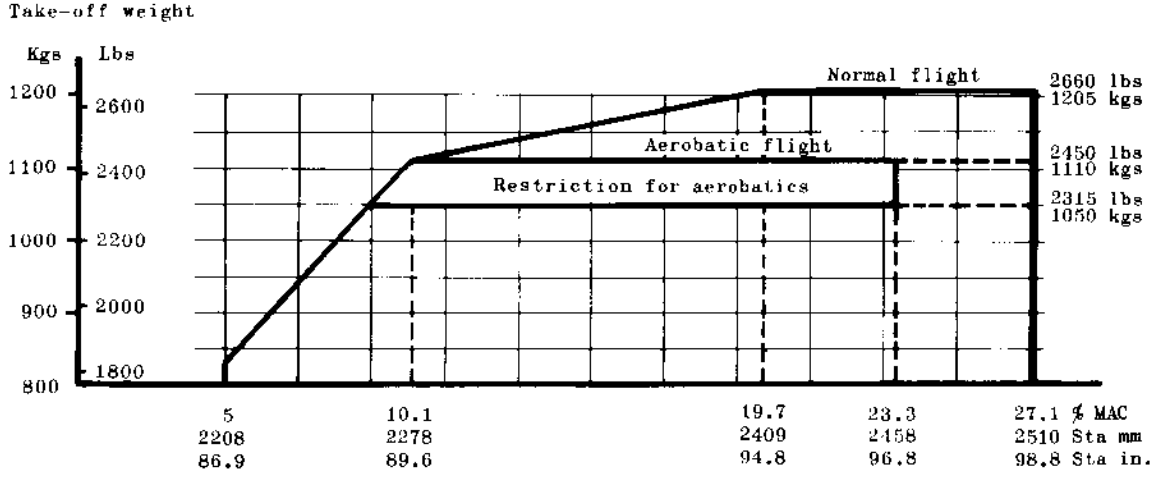
Sta. 2208 (5 % MAC) to 2510 (27.1 % MAC) at 830 kg
Sta. 2278 (10.1 % MAC) to 2510 (27.1 % MAC) at 1110 kg
Sta. 2409 (19.7 % MAC) to 2510 (27.1 % MAC) at 1205 kg

Aerobatic category: (See Note 5)

Sta. 2208 (5 % MAC) to 2510 (27.1 % MAC) at 830 kg
Sta. 2278 (10.1 % MAC) to 2510 (27.1 % MAC) at 1110 kg

Straight line variation between points given.

CENTER OF GRAVITY LIMITS (WITHIN AREA INDICATED):



Retracting of the landing gear does not to any appreciable amount affect the location of the C.G. of the aircraft.

Datum — Fuselage Station 0, located 2670 mm in front of the center of bolt in main spar fitting lower side of wing, or 3800 mm in front of the forward side of the frame behind the rear seats.

MAC — 1365 mm. Leading edge of MAC is at Sta. 2140.

Levelling means — The fuselage rail shall be horizontal.

Max. weight — 1205 kg (2660 lbs) for normal category.
1110 kg (2450 lbs) for aerobatic category (See Note 5).
The rear seats may not be occupied during aerobatic flight.

Empty weight — Approx. 720-780 kg (1590-1720 lbs) according to equipment (See Note 2).

Number of seats — Four (two at 2445 mm and two at 3500 mm) (See Note 1).

Fuel capacity — 160 lit. (35.2 Imp. gals.) (2450 mm).

Oil sump capacity — 7.6 lit. (1.7 Imp. gals.) (760 mm).

Baggage compartment — 3950 mm.

EQUIPMENT

	Item	Weight	Location (See Note 1)
1.	**Wing**		
	Saab dwg No. SA 1078456 (left) and SA 1078458 (right)		
2.	**Engine**		
2.1	Lycoming O-360-A1A with starter and generator but without propeller	136 kg (301 lbs)	(610 mm)
3.	**Propeller**		
3.1	Hartzell HC-92ZK8D with metal blades 8447-12A	27.2 kg (60.0 lbs)	(200 mm)
3.2	McCauley 2D36C14 with metal blades 78KM4	24.8 kg (54.5 lbs)	(150 mm)
3.3	Spinner	1.5 kg (3.0 lbs)	Hart.(210 mm) McC.(160 mm)
4.	**Landing gear**		
4.1	Nose wheel installation (380 x 150 mm tire model 527586) Saab dwg No. 1075016-1	17.2 kg (37.9 lbs)	(1425 mm)
4.2	Main wheels installation, total weight 600 x 6, model 6101307	35.5 kg (78.3 lbs)	(2935 mm)
	or 700 x 6, model 6101309	37.7 kg (83.2 lbs)	
	Saab dwg No. 1075015-5 (left) and 1075015-6 (right)		
5.	**Electrical and Radio Equipment**		
5.1	Starter, Delco-Remy	8.2 kg (18.0 lbs)	(420 mm)
5.2	Generator, Delco-Remy No. 1101905	9.4 kg (20.75 lbs)	(430 mm)
	or generator, Bendix 30E22-1B	6.5 kg (14.3 lbs)	(400 mm)
5.3	Battery, Reading R 24	21.0 kg (46.3 lbs)	(1220 mm)
5.4	Radio, see Note 3		
6.	**Other Equipment**		
6.1	Pilot seat left, incl seat back	4.2 kg (9.3 lbs)	(2445 mm)
6.2	Pilot seat right, incl seat back	4.2 kg (9.3 lbs)	(2445 mm)
6.3	Rear seats	11.0 kg (24.3 lbs)	(3500 mm)
6.4	Tool kit	4.7 kg (10.4 lbs)	(3100 mm)
6.5	Safety Belts, front seats, left and right Saab dwg No. 1038020-1, each	0.5 kg (1.0 lb)	(2445 mm)
	rear seats, left and right Saab dwg No 1038020, each	0.5 kg (1.0 lb)	(3500 mm)
	Safety Harness front seats only, safety belt as above with the addition of shoulder strap, Saab dwg No. 1077965, complete each	1.1 kg (2.5 lbs)	(2445 mm)
6.6	**Pre-stall warning indicator**		
	a) Type "Safe Flight", Saab dwg No. 1102939	0.6 kg (1.3 lb)	(2000 mm)
	b) Type "Youngman", Saab dwg No. 1078488	1.5 kg (3.3 lbs)	(2245 mm)

Note 1 Values in mm shown in parentheses after equipment represent the horizontal arms from the Datum to the C.G. of the item measured.

Note 2 Aeroplane Flight Manual including list of basic equipment and weight data will be submitted for each aircraft with the certificate of airworthiness.

Note 3 Aircraft radio may be installed. The radioinstallation shall be inspected and certificated.

Note 4 According to Civil Air Regulations Amendment 3-4 § 3.85 a, (a), the steady rate of climb at sea level shall not be less than 10 V_{sl} or 300 feet per minute (=1.5 m/s.), whichever is the greater.
V_{sl} (in the take-off configuration at max. take-off weight 1205 kg) is 107 km/h. The rate of climb required is 665 feet per minute (3.4 m/s.).
According to test flight reports the actual rate of climb in the take-off configuration is 590 feet per minute (3.0 m/s.).
The Board considers this value acceptable.

Note 5 For restrictions when loading the airplane for aerobatic manoeuvres between 1050 kg (2315 lbs) and 1110 kg (2450 lbs) see the Aeroplane Flight Manual.

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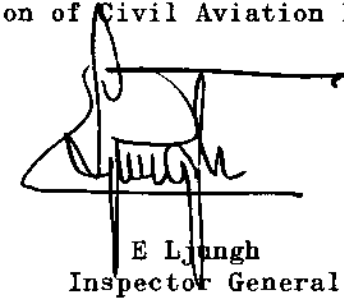
Division of Civil Aviation Inspection



E Ljungh
Inspector General