

AIRCRAFT CIRCULARS  
NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

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No. 63

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"AVIMETA" THREE-ENGINE COMMERCIAL MONOPLANE,  
TYPE A.V.M. 132

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Washington  
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NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS.

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"AVIMETA" THREE-ENGINE COMMERCIAL MONOPLANE, TYPE A.V.M. 132.\*

This airplane is all metal, including even the wing covering. Both the framework and the sheet-metal coverings are "alferium," a high-resistance light alloy made by the Schneider Company (Fig. 1).

The cantilever wing is trapezoidal with rounded corners and is composed of two main spars braced by members which support the parts to which the covering is attached. A pair of oblique struts, on each side of the fuselage, relieves the spars directly over the engine supports. The covering consists of thin sheets of alferium, corrugated and embossed to fit the profile. The wing is made in two sections, which are attached to the fuselage by means of four quickly removable iron fittings. It is provided with hinged ailerons, which extend the whole length of each wing section. This type of aileron, which is used on all Avimeta airplanes, has the advantage of not introducing supplementary stresses in the controls when a flexure of the wing is produced during flight. Since the ailerons are made in relatively short sections, the latter can be quickly and easily exchanged.

The fuselage has a rectangular cross section and consists of three parts:

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\*From a circular issued by the Avimeta Company.

1. The front part, containing the cabin, pilot compartment of the "interior type" and the baggage room, has a framework whose struts and brace wires are so arranged as to leave a large free inside space for the cabin, with large windows and door. The cabin is 3.9 m (12.8 ft.) long, 1.6 m (5.25 ft.) wide, and 1.8 m (5.9 ft.) high and can be divided into several compartments as desired (a single cabin for ten passengers, Pullman or restaurant type, or two cabins with couches and toilet room).

2. The middle section serves merely to connect the front and rear sections. It consists of four tubular longerons braced by light members, to which is attached the covering which assures the rigidity of the whole.

3. The rear part carries the tail planes, which consist of:

- a) A fixed horizontal stabilizer, adjustable during flight;
- b) A balanced elevator;
- c) A vertical fin, adjustable on the ground and interchangeable with half of the stabilizer;
- d) A balanced rudder, interchangeable with half of the elevator.

All the controls are rigid, of aluminum tubes, with intermediate levers to prevent buckling. The joints are all mounted

on roller bearings.

The landing gear consists of two half-axles hinged to the lower fuselage longerons and wind-braced horizontally by struts. The shock-absorbing mechanism consists of a series of rubber washers of a special type and is readily accessible for adjustment. The stresses are transmitted by streamlined struts to the wing spars, on the one hand, and to the bottom of the fuselage, on the other hand. The landing gear has two wheels of 125 x 25 cm (49.2 x 9.8 in.), with a track gauge of 4.1 m (13.45 ft.).

The commercial airplane A.V.M. 132 has three 230 HP. air-cooled Salmson 9 Ab engines. One engine is installed in the bow and the others are mounted laterally on steel-tube frames which can be quickly removed. Each frame supports all the accessories required for the operation of the engine.

The fuel tanks, which can be quickly emptied during flight, are located in the wings, so that the fuel is delivered by gravity. The oil tanks are likewise located in the wings above the engines.

The pilot compartment is equipped with dual control and is provided with all the most modern instruments, including radio sending and receiving apparatus.

## General Characteristics of A.V.M. 132

	Day airplane	Night airplane with couches
Span	21.90 m (71.85 ft.)	21.90 m (71.85 ft.)
Length	14.30 (46.92 ft.)	14.30 (46.92 ft.)
Height	3.75 m (12.30 ft.)	3.75 m (12.30 ft.)
Maximum chord	4.00 m (13.12 ft.)	
Track gauge	4.20 m (13.78 ft.)	
Span of stabilizer	5.00 m (16.40 ft.)	
Width of fuselage	1.80 m ( 5.91 ft.)	
Height of fuselage	1.90 m ( 6.23 ft.)	
Distance between axis of central engine & wing chord	0.95 m ( 3.12 ft.)	
Distance between axis of lateral engines & wing chord	0.70 m ( 2.30 ft.)	
Wing area	70.00 m <sup>2</sup> (753. 5 sq.ft.)	70.00 m <sup>2</sup> (753.5 sq.ft.)
Area of vertical em- pennage	3.5 m <sup>2</sup> (37.67 sq.ft.)	
Area of horizontal em- pennage	7.0 m <sup>2</sup> (75.35 sq.ft.)	
Total power (230 HP.×3)	690	HP.

	Day airplane	Night airplane with couches
Weight, empty	2700 kg (5952 lb.)	2820 kg (6217 lb.)
Weight of crew	160 kg (353 lb.)	160 kg (353 lb.)
Weight of fuel & oil	820 kg (1808 lb.)	500 kg (1102 lb.)
Weight of wing	750 kg (1653 lb.)	750 kg (1653 lb.)
Pay load	1200 kg (2646 lb.)	900 kg (1984 lb.)
Full load	4880 kg (10759 lb.)	4830 kg (10649 lb.)
Wing loading	68.5 kg/m <sup>2</sup> (13.93 lb./sq.ft.)	61.5 kg/m <sup>2</sup> (12.49 lb./sq.ft.)
Power loading	6.9 kg/HP (14.79 lb./HP.)	5.8 kg/HP (12.61 lb./HP.)
Max. horizontal speed	182.0 km/h (113.0 mi./hr.)	183.5 km/h (114.0 mi./hr.)
Cruising speed	170.0 km/h (105.6 mi./hr.)	170.0 km/h (105.6 mi./hr.)
Climbing time to 2000 m (6562 ft.)	19 min.	13 min.
Ceiling, theoretical	3750 m (12303 ft.)	4700 m (15420 ft.)
Radius of action at cruising speed	900 km (559 mi.)	600 km (373 mi.)
Static-test coefficient	7.5	8



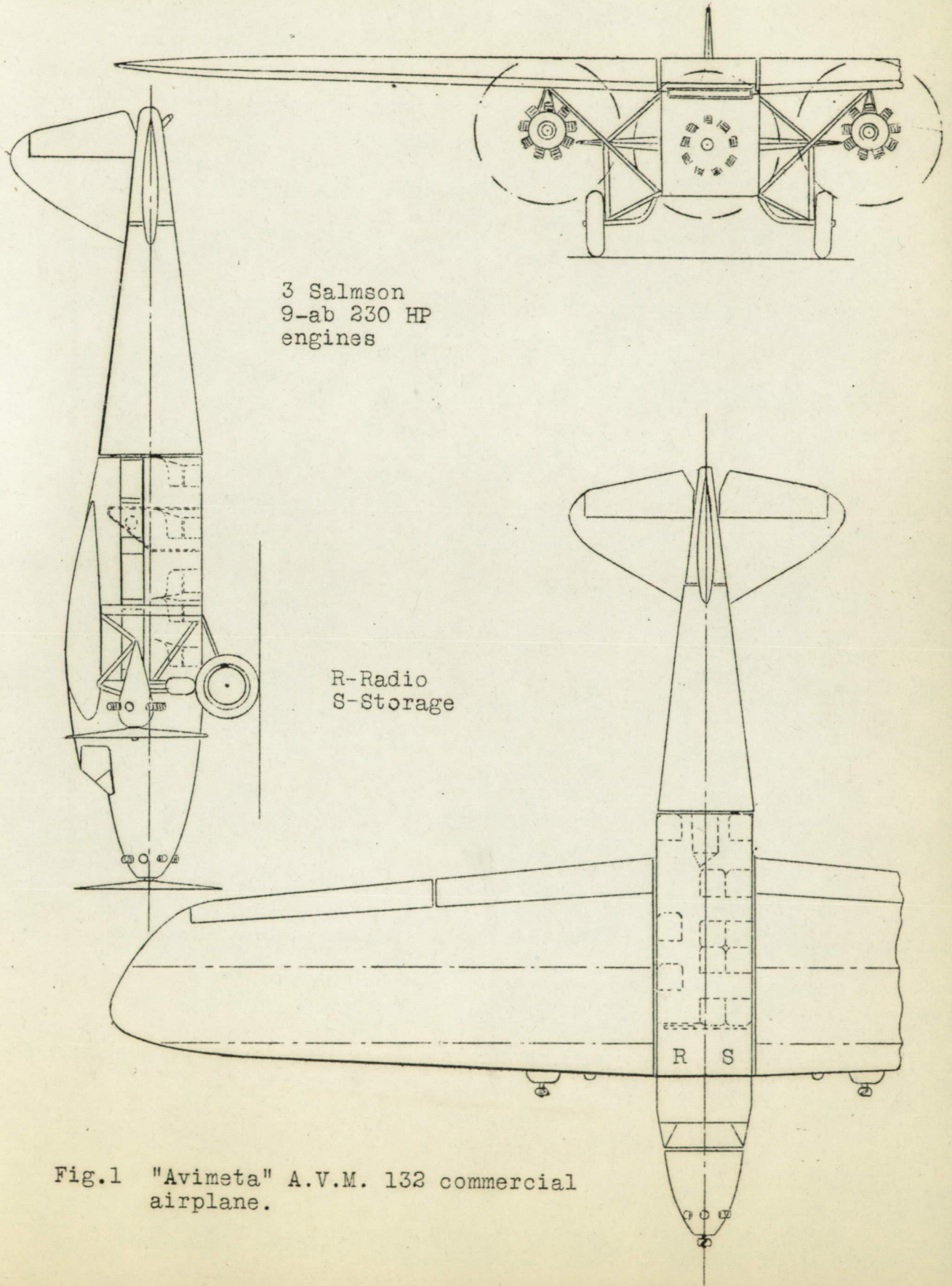


Fig.1 "Avimeta" A.V.M. 132 commercial airplane.



Fig. 2



Fig. 3



Fig. 4

Views of the Avimeta A.V.M.133 commercial airplane 7460 A.S.