



of completing the mapping of Canada on this system will necessarily be a very long one.

9. **Canadian Air Force.**—The question of the constitution of a Canadian Air Force was an early subject of consideration by the Air Board, and on December 22 there was adopted, for submission to Privy Council, a memorandum covering the general lines of the organisation proposed. A final decision on this subject was, however, postponed until the general policy with regard to Canada's future sea, land and air forces was determined, and it has consequently not been possible to take any further steps in this direction. The very large number of ex-officers and airmen of the Royal Air Force in Canada are expected enthusiastically to support the proposals if it is found possible to adopt them.

10. **Aeronautic Intelligence.**—The Air Board Act imposes upon the Board a duty "to study the development of aeronautics in Canada and other countries." In the execution of this duty the Air Board has had the advantage of the work done before its constitution by the Intelligence Branch of the Canadian Air Force under the Ministry of Overseas

Military Forces of Canada. This branch, during the two years of its existence in London, had collected material of very great interest and value, and its papers were, in the course of demobilisation of the Canadian Expeditionary Force, transferred to the Air Board, which also secured the services of one of the officers chiefly responsible for its administration. The Air Board, consequently, has available fairly complete sets of drawings of almost all standard British machines, engines and equipment, with specifications for the construction of many of them, and has also an adequate collection of technical publications, reports and documents. The Intelligence Branch of the Canadian Air Force, O.M.F.C., established communication with the chief aircraft manufacturing companies, and this communication has been maintained, with the result that the Air Board secures early information of developments in design and of inventions having an importance from an aeronautical point of view. With this material it is able to deal with the problems which present themselves to commercial and other companies, and which require solution in connection with operations undertaken on behalf of the Government.

CORRESPONDENCE

[The Editor does not hold himself responsible for opinions expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters intended for insertion in these columns.]

THICK GERMAN WING SECTIONS

[2021] In your issue of April 15 you publish a few extracts from the German Technical Reports, as supplied by the Air Ministry. The data given in these extracts are somewhat misleading, as they refer only to wing sections of the "bird's-wing" type. In addition to those, a number of other thick sections were tested, more corresponding to actual practice. To show the difference I enclose the results of tests on a few of these as given in the "Technische Berichte." I will make no comments upon the figures, as they speak for themselves.

In the report on the Junkers monoplane mention was made of the word "Edul," stamped on the propeller (p. 420, April 15). As the meaning of this word may not be generally known the explanation may not be without interest. The word "Edul" is composed of the initial letters of "Entgegengesetz dem Uhrzeiger laufend" (anti-clockwise rotation). Sometimes the word "Mul" may be found on German props. This means: "Mit dem Uhrzeiger laufend" (clockwise rotation). The word "Zug" means traction, indicating that the screw is a tractor.

The following are the tables of data of thick wing sections:—

Section No. 298, corresponding to wings of Fokker triplane I.

Angle of Incidence. Degrees.	CA.	Cw.	Moment of c.p.	CA/Cw.
— 9	14.2	8.8	— 2.2	— 1.6
— 6	6.1	5.6	10.2	1.2
— 4.5	18.5	3.9	14.2	4.7
— 3	30.5	3.6	17.4	8.7
— 1.5	41.0	3.5	19.9	11.6
0	52.3	3.9	22.7	13.4
1.5	63.2	4.4	25.0	14.5
3	75.0	5.2	28.0	14.4
4.5	85.6	6.2	31.0	13.8
6	79.5	7.5	33.0	12.9
9	117.0	10.3	37.8	11.4
12	133.0	13.6	42.2	9.8
15	101.0	25.9	43.0	3.9

Figures in italics show max. CA and max. CA/Cw. Maximum thickness (percentage of chord), 12.6.

Section No 256, corresponding to Junkers monoplane.

Angle of Incidence. Degrees.	CA.	Cw.	Moment of c.p.	CA/Cw.
— 9	8.7	5.7	7.6	— 1.5
— 6	7.8	3.2	11.9	2.5
— 4.5	17.0	3.0	13.9	5.7
— 3	26.9	2.9	16.2	9.2
— 1.5	36.5	3.1	18.6	11.8
0	51.1	3.9	22.7	13.2
1.5	63.4	4.8	26.5	13.0
3	73.2	5.8	28.9	12.5
4.5	81.3	7.0	30.8	11.7
6	91.2	8.3	32.6	10.9
9	106.7	11.0	35.6	9.7
12	120.0	14.0	38.0	8.6
15	121.8	19.5	37.8	6.8

Maximum thickness (percentage of chord), 16.3.

Section No. 322, corresponding to Hansa-Brandenburg IV 2.

Angle of Incidence.	CA.	Cw.	Moment of c.p.	CA/Cw.
— 9	— 13.3	9.8	— 3.2	— 1.4
— 6	— 5.0	6.7	3.9	— 0.7
— 4.5	8.1	5.2	9.5	1.6
— 3	20.3	4.2	13.2	4.9
— 1.5	31.9	3.7	15.4	8.6
0	43.6	3.8	18.2	11.2
1.5	54.6	4.0	20.7	13.4
3	66.2	4.6	23.6	14.3
4.5	77.5	5.6	26.0	14.0
6	90.1	6.7	29.1	13.5
9	111.5	9.3	34.2	12.0
12	131.7	12.7	38.7	10.4
15	144.1	16.9	41.8	8.6

Maximum thickness (percentage of chord), 13.3.

Section No. 332, corresponding to Pfalz 61.

Angle of Incidence.	CA.	Cw.	Moment of c.p.	CA/Cw.
— 9	— 9.3	10.2	0.4	— 0.9
— 6	4.6	7.13	9.6	0.6
— 4.5	16.6	5.71	15.5	2.9
— 3.0	27.4	4.64	19.7	6.4
— 1.5	41.7	4.23	22.8	9.9
0	53.6	4.40	25.5	12.2
1.5	64.0	4.71	28.1	13.6
3	75.9	5.34	30.6	14.2
4.5	86.7	6.00	33.0	14.4
6	98.4	7.73	35.5	12.7
9	118.5	10.4	40.3	11.4
12	137.6	13.7	44.2	10.0
15	151.0	17.6	47.7	8.6

Maximum thickness (percentage of chord), 11.7.

CA = Lift coefficient. Cw = Drag coefficient, and CA/Cw = L/D. Rotterdam.

F. H. R.

VISIBILITY AT HEIGHTS

[2022] In your issue of April 22 on page 453, you quote statements concerning the distance to the horizon from different heights and the time occupied by parachutes in descending.

May I point out that "Aeronaut," whom you quote, and also Major Orde Lees, in a later issue, are incorrect. The distance of the horizon is found by the following formula:—

$$\text{Distance (miles)} = 1.42 \sqrt{\text{Height (feet)}}$$

"About 100 miles at 5,000 ft.," allowing for refraction, is not far out. Major Orde Lees' statement that at a height of 12 miles an object 250 miles away is the farthest that can be seen is wrong; it is about 310 miles.

As regards parachute descents, whilst it is probable that the Frau Poitevin record is incorrect, there are many cases of reported longer descents than according to the supposed rule. Moedebeck ascribes them to the influence of upward currents. The late A. E. Gaudron claimed to have taken 20 minutes to come down from 10,000 ft. on one occasion.

By the way, Major Orde Lees' estimate of horizon distance is accounted for by the fact that he gives the wrong formula. He puts it at:—Distance = $\sqrt{\text{Height (ft.)}}$.

P. H.