With regard to Colonel Sempill's question on foreign seaplane installations on the Continent, very considerable success has been obtained with "Jupiter" installation, notably on the Farman Goliath twin-engined machine, the Caproni twin-engined machine, the Dornier Wal twin-engined machine, and the Hansa-Brandenburg single-engined machine.

I have recently had a report sent me from Morocco giving particulars of two squadrons on active service with "Jupiter" engines; these machines flew from Bizerta to their base, Mellia, a distance of 750 miles. For the last seven months these engines have been in continual service, and have flown an average of 130 hours without any trouble whatsoever. I am informed that the French Marine have never had anything like such remarkable service with this type of machine with a water-cooled engine, and are very satisfied indeed with the "Jupiter" installation.

I quite agree with Colonel Sempill that there is a great future for the air-cooled engine on seaplanes; in fact, the very low power-weight ratio and the ability to get off rapidly are so valuable for this type of machine that I think there is no doubt that air-cooled engines will be used in large numbers on seaplane construction in the future.

I also believe that large multi-engined seaplanes will find air-cooled engines very useful owing to the big saving in weight. There are two very interesting types of such machines nearing completion at the present time—one is a three-engined "Jupiter" seaplane, and one a five-engined "Jupiter" seaplane.

With reference to Colonel Sempill's remarks relating to the oil cooler incorporated in the latest type Bristol triplex carburettor, as I have endeavoured to point out, this should be termed a carburettor heater rather than an oil cooler; the oil will be cooled only a very few degrees by this method, but it is valuable in so much as it keeps the dew point from the diffusers, and consequent freezing.

I do not agree with Colonel Sempill's last remarks regarding the temperature of induction. Obviously greater charging efficiency will be obtained if cold air can be used, but from my experience of aero engine installations, this is impossible, except with supercharged engines. Preheating of the air is absolutely necessary.

CORRESPONDENCE

DEAR GENERAL BRANCKER,

D.H.50 J.

The speed of the D.H.50 J. to compare with the Puma engine version can be calculated by any usual method. The following, however, is a very simple approximate method.

In a machine having the characteristics (loading and weight per horse-power) of the D.H.50, the relation of the speed to the horse-power becomes a simple one as long as we are only considering a speed of over 100 miles per hour. From about this point upwards, if everything else is equal, the speed will vary in proportion to the cube-root of the horse-power of the engine.

The D.H.50 with the Puma engine giving a maximum of 240 h.p. does 114 miles per hour. If we take the Jaguar horse-power at 410, the speed of the Jaguar machine, if it suffers from no extra resistance, will be

$$114 \times (410/240)^{\frac{1}{3}}$$

—this equals 136 miles per hour.

The measured speed of the D.H.50 J. was 135 miles per hour at a height of 2,000 feet. For ground level it would be almost exactly equal to that shown by the above calculation.

This is certainly an interesting result which we did not quite expect, but nevertheless I do not think this invalidates general conclusions as to the high resistance of radial engines, for the following reason.

The D.H.50 may be taken as an almost ideal case perhaps, since the size of its cabin is such that it just comfortably fairs off the engine.

If we tried to make a really fast aeroplane with a radial engine, the first thing to do would be to cut down the size of the fuselage to a minimum. This then would leave the radial engine sticking out as a disc in front of the fuselage —a thoroughly bad streamline shape, which would give us nothing like the same value for the horse-power. If, on the other hand, we went in the other direction and adapted it to a big cabin machine like the D.H.34, we should probably again be in trouble through having a big fuselage behind a small high-reving propeller. This again would probably give an inferior result; but I should not like to speak with any certainty of the magnitude of this latter loss—it might not be so serious as in the other case.

In multi-engined machines there are, of course, both these cases, the wing engine suffering from the fact that there is not a necessarily incurred piece of resistance like a fuselage which could be used to fair off the engine.

I hope this letter is sufficiently clear, but it has been dictated rather hurriedly as I am just off to Martlesham.

Yours sincerely,

C. C. WALKER.

https://doi.org/10.1017/S036839310015833X Published online by Cambridge University Press