

many weeks, but methods had been developed to a sufficient point to enable crankshafts to be designed safely very close to the minimum possible weight.

Petrol and Oil Systems

The lecturer pointed out that in the lubricating systems of aero engines there was very little variation, the dry sump and separate oil tank, with scavenger pump returning the oil from bottom of crank-case, being universally used, with pressure pumps drawing oil from the tank and supplying it to the bearings under pressure. The features requiring most care were the filters and the pipe lines. By careful design the straggly type of pipe of the nut and nipple variety could be practically eliminated. More provision than was usually made for cooling the oil and regulating its temperature was desirable. The faster the oil could be passed through the bearings the better, provided an excessive supply did not get to the pistons. The usual speed of circulation was about 6 to 8 pints per 100 h.p. per minute.

The petrol system should be as simple as possible, and the lecturer stated that gravity feed was greatly to be preferred where possible. There was, however, no great problem connected with the design of a petrol pump, except as regards the glands. The pump should be driven direct from the engine, and not by a windmill.

Engine Suspension

This called for close co-operation between the engine designer and the aeroplane designer. The main requirements were stiffness, provision for easily removing and replacing the engine, and accessibility to all parts requiring attention. The torque reaction should be taken as near to the airscrew end as possible. On the whole, the lecturer thought it seemed desirable to make the crank-case stiff enough to act as a tie between the engine bearers. A slide was shown of the Rolls-Royce "Condor III," in which the usual idea of bearer bars has been discarded.

Ignition and Carburation

Mr. Rowledge did not add any new information on the questions of ignition and carburation. He pointed out the advantage of dual ignition, and stated that in seaplane work there was a difficulty in keeping the sparking plugs and insulation dry, the trouble being increased by the metal screening necessary to prevent the wireless instruments from

being interfered with by the waves from the ignition system. The range of control necessary on aircraft was so small that it was usual to connect the ignition control to the throttle control.

In some respects the problem of the aero engine carburettor was much simpler than for motor-car work, but was greatly complicated by the need to work in varying air densities.

Airscrews and Gearing

After a brief reference to the ordinary wood airscrew, and a mention of the Leitner-Watts metal propeller, the lecturer turned to the question of reduction gearing. He stated that there were two successful types: the epicyclic and the straight spur. The former had the advantage of putting less strain on the crankcase, but by modification in the design of the system of carrying the engine in the frame the simple spur type could be arranged so that the maximum load on the framework was only that due to the torque reaction of the airscrew, as in the case of the epicyclic gear. Slides were shown of the epicyclic gear of the Rolls-Royce "Eagle" and the plain spur of the "Condor III." The lecturer, in referring to machines with central engines, expressed the opinion that the weight of the necessary clutches and gearing was too great a handicap to make the scheme likely to be of much permanent use, and that the use of a number of engines suitably placed and each complete in itself was more likely to give freedom from engine breakdown.

The fuel question was referred to next, and the lecturer thought that improvement in fuels opened up great possibilities, and that it would be along this path that the greatest steps to economy would be made in the near future.

Superchargers

This subject was referred to briefly, the lecturer expressing the opinion that we should expend some of our energies in developing a mechanically-driven blower. For multi-engined machines he preferred a separately driven blower, on the lines developed in Germany during the War. Probably, the lecturer stated, the mechanically-driven blower reached its maximum development in Germany in 1918, since when it appeared to have been badly neglected.

In conclusion, Mr. Rowledge showed slides of the Rolls-Royce "Condor III," and an average curve of brake horsepower, as well as a typical indicator diagram.



LONDON TERMINAL AERODROME

Monday Evening, January 7, 1924

FLYING has taken place spasmodically in between spells of bad weather this week. There has been snow in Holland and Germany, which has interfered with the regular running of the services to these parts, and on one occasion, after a sudden thaw, the aerodrome at Rotterdam was covered to a depth of several inches with half-melted snow, and it was like landing in water. Several machines have landed during snowstorms, the pilots reporting that the engines have fallen off in "revs." to an alarming extent whilst going through the storms. On the ground the engines have shown full "revs.," and it is thought that snow getting into the intake pipes has caused this drop.



CORRESPONDENCE

THE SELFRIDGE PRIZE

[2083] It appears, judging from your correspondence columns, that quite a number of enthusiastic readers are building machines or experimenting with a view to competing for Mr. Gordon Selfridge's 1,000-guinea prize for a glider flight of 50 miles.

On the face of it, it would seem a thousand pities, subject, of course, to Mr. Selfridge keeping this offer open for 1924, to transfer this incentive to the light 'plane class, as the latter will have, I believe, prizes offered for competition by the Air Ministry.

The transference of this offer will, undoubtedly, cause much disappointment, and inflict perhaps some little hardship on those who have been unable to complete their machines.

Might I suggest, therefore, that, in order to get some tangible results, the offer be kept open for another year for individual attempts, but to hold a week's or a fortnight's flying meeting, at a place to be decided on by the Royal Aero Club, during the summer months—say, July or August—at which this particular prize could be competed for. I suggest July or August as the majority of these enthusiasts, including

The new strontion beacon is proving very successful. Several pilots arriving late in the evening, when this light has been working, have stated that it is the most easily distinguishable light on the aerodrome, not only because of its colour, but also owing to the fan shape of its beam, which catches the eye of the pilot when several miles away from the aerodrome.

Mrs. Atkey, a woman pilot, has been making several flights during the week on a D.H.9, and is now proving quite a proficient pilot. I understand that she has purchased this D.H.9, and intends to use it for flying about the country and on the Continent.

myself, have our vacation at this period, and it would enable us to complete our plans for this event. Perhaps it could be arranged that the light 'plane competitions could be held at the same time?

However, all of this, of course, is purely a matter of arrangement, and subject, of course, to Mr. Selfridge still keeping the offer open, and also that the prize is not individually won in the meantime.

GEORGE W. CAIN

Hornsey, N. 4.



"Dixmude's" Commander

THE body of the late Commander of the ill-fated "Dixmude," Lieut. Plessis de Grenadan, has now been examined by doctors at Toulon, and their report states that the Commander was not drowned, but met his death while still in the air. His heart, it is stated, had burst with the pressure of air due to a rapid fall. It is understood that a splinter from the airship was found embedded in the flesh, which fact is taken to indicate that the airship was struck by lightning and that an explosion rent the ship asunder, the pieces of wreckage dropping rapidly into the sea.