

THE BRITISH WAR OFFICE TRIALS.

SOME MORE MANUFACTURERS' VIEWS OF THE CONDITIONS.

Mr. J. C. Mort (New Engine [Motor] Co., Ltd.) :—

In expressing our opinion on the War Office competition, we do not think we could do better than say that we thoroughly agree with your leader on this subject. It would be somewhat out of our province for us to criticise the competition from the point of view of the aeroplane builder, and we can only await the decision of the constructors as to what engines they require. We trust this information will be forthcoming at an early date so as to give the engine builders a reasonable chance of doing the necessary work.

It strikes us very forcibly that the engine builder is kindly requested to do a very great deal. Not only are there several special conditions which apply to the engines only, such as the silencers and an arrangement so that the pilot can start the engine from the machine, but in practice success on almost every point depends on the engine, and yet there is to be no reward for the engine builder.

There seems to be an assumption, which we think is totally unjustified, that the English engine builder is actually further behind as compared with the foreigner than is the English aeroplane constructor, and yet the engine builder is absolutely ignored so far as the prizes are concerned, though he is by no means ignored so far as the demands of the competition are concerned. It is certainly difficult to understand on what principle the engines have been so entirely ignored. It is beyond all question that the production of a satisfactory aeroplane engine is a matter of great difficulty, involving not only a large amount of work but a very large expenditure of money, and if it is right that there should be a national prize for aeroplane constructors, and if it is considered that this is wise in the interest of the nation, then we should have thought it equally just and equally wise that some provision should have been made for the engine builders. However, it is useless to lament over what has not been done.

In view of the fact that, as we understand the position, all aeroplanes ordered as a result of this competition will have to be built throughout in this country, it will obviously be in the interests of the English constructors to employ English engines if possible, for if they employ foreign engines and then receive an order for fairly quick delivery and have made themselves dependent on foreign engines, they may find themselves in an awkward position, for the manufacture of aeroplane engines cannot be taken up at a day's notice.

So far as providing engines for the competition is concerned, there does not seem to be any insurmountable difficulty facing the English engineers. Certainly, engines of greater power than any hitherto turned out in this country would be required, but this only means that the firms concerned must be prepared to make a still further expenditure of money. So far as the New Engine Co. is concerned, we are prepared to make this expenditure and to produce engines of the necessary power, and we trust that in return we shall meet with the support of the English constructors.

The writer was present at the recent meeting of the Aeronautical Society, when Col. Seely spoke with the greatest possible emphasis. His words were sufficient to conjure up a lurid picture of what was likely to happen to the nation which had failed to provide itself with war aeroplanes. He spoke of the possibility of war within the next two or three years. He declared in no half-hearted way that the Government fully realised the position, and were determined to make the necessary expenditure. If Col. Seely meant all he said, we cannot in the least comprehend how he squares it with the Government's expenditure of a miserable £11,000. If it is vitally important that this country should be ready within the next two or three years, then it is criminal folly to waste nine months twiddling our thumbs while we are waiting for a competition which may or may not produce something better than we can get to-day. When dealing with such a problem as flying, a period of two years seems to slip past as though it were only so many months. It is vital that every moment of this time shall be used to the fullest extent possible, and that means a continuous expenditure of money.

We should like to put the matter into figures as that would bring out better than any mere words the utter inadequacy of the Government's present proposal. It would be by no means excessive if a dozen first-class men were continually at work in this country on aeroplane work. It would not be excessive if those men were each rewarded to the extent of £1,000 a year apiece, that is £12,000. It would not be excessive if each of these men had the expenditure in his works of £10,000 per annum, that is a further total of £120,000. It is only necessary to compare these figures with the idiotic £11,000 provided by the Government to realise that either they do not realise the problem or they are endeavouring to get something for nothing. It is quite obvious that the figures we have given are a long way below the figures that are applicable to France to-day. We should have thought it would have been time enough to have talked about competitions and progress when the Government had actually made some reasonable foundation expenditure.

Mr. W. O. Manning :—

The conditions of the War Office prize are, I think, generally speaking, excellent, and will produce a machine in every way suitable for military requirements. There are, however, a few minor points to which I should like to draw attention.

The first is Rule 1, which specifies that the machine must be packed in a case 32 ft. by 9 ft. by 9 ft.; this restricts the length of the fuselage it is possible to fit to a monoplane or biplane, unless one is prepared to make this important member to divide into two pieces, a method of construction it is desirable to avoid. It seems to me undesirable that aerodynamical considerations may have to be made subservient to the dimensions of the case. I may also point out that large 4-bladed propellers are impossible for the same reason, unless they are constructed by placing two 2-bladed propellers one on top of the other, their blades, of course, being at an angle of 90° to each other.

Rule 3, which requires competing machines to climb at the rate of 200 ft. per minute to a height of 1,000 ft., is much more severe than that imposed in the French trials. The best trial by the winner of these, Weymann, on the Nieuport, climbed at the rate of 45·5 metres per minute, which is equivalent to 149 ft.

Rule 5, requiring a gliding angle of 1—6, is a very stiff requirement, and one which may be difficult to measure. It must not be forgotten that a following wind has the effect of making a gliding angle appear considerably less than it really is. The other requirements are excellent and do not, I think, require comment.

Mr. Handley Page (Handley Page, Ltd.) :—

The one glaring feature in which the competition falls short is in the small amount of prize money allotted to the scheme.

Turning to the actual conditions :—

1. The packing case specified would take practically any machine made.

2 and 4 would be easily carried out, but No. 3, if the desired speed of 300 ft. per minute is to be attained, will be extremely difficult to fulfil. It would seem probable that makers will rest content with the specified minimum of 200 ft. per minute.

5. So far as model tests go the only machine to nearly fulfil this condition is the Paulhan-Tatin, which, according to the latest tests by Eiffel, has a gliding angle of 1 in 5·9. It will also be difficult to measure, on account of the invariable presence of slight currents of air which may easily make or mar the result.

6. Is not difficult to fulfil.

7. Will require the use of some sort of brake such as the Albatross or Aviatc machines use. The machine must be well balanced on the wheels to be easily steered on the ground, so that a heavily loaded tail skid is out of the question.

8 and 9. Easily fulfilled.

10. This condition would put a premium on an engine behind pilot first type of machine, and would favour a Wright aeroplane or a "Canard" type.

11. A most desirable condition from the point of view of the purchaser.

13. This condition read with the latter half of No. 7 and No. 14 (a) entails the use of an engine which can be effectively throttled down.

14. To reduce the strain on the pilot, a simple control and great stability is necessary. Thus 14 (c) and (g) run hand in hand.

There are few machines which have a wide range of speed; let us hope that this will encourage some practical scheme to be evolved for altering the area of the plane. There are many pitfalls for those who start on this line.

14 (c) is ensured by condition No. 5.

The importance of condition No. 14 (f) and (h) cannot be judged until one knows the value set on these "attributes" by the authorities. Certainly, in conjunction with conditions 1 and 8 a scheme of marking might be drawn up, and some idea of this given to constructors, so that the importance of making the machines very "demontable," in preference to securing say a slightly better wing shape, could be estimated. It is, however, distinctly good that attention is paid to this detail.

Condition 14 (g) will be somewhat thrilling for the pilot to carry through. It is well that the 30 ft. is specified only in a "desirable attribute."

Generally the details of the scheme are good and well thought out. It is well that provision for auxiliary apparatus such as wireless, guns, &c., have been left out, as such conditions would only tend to alter the designs of the machines to fit in with artificial conditions instead of letting the design be formulated to suit true aerodynamic requirements. Time enough for these details when aeronautical work has advanced further forward.