

SMALL FOUR-STROKE AERO ENGINES.

By C. F. Caunter. Published by Sir Isaac Pitman and Sons, Ltd.
Price 6/-.

This is a book belonging to a type in which Mr. Caunter specialises. It is not highly technical, but it contains a quantity of useful information on its subject written in a manner which is easy to read. It seems probable that he has contrived to obtain some information about every small aero engine in existence, and he certainly mentions several whose details are not to be found elsewhere.

The book starts with a general account of some small aeroplanes in which the engines he talks about could be used, and in discussing their practical uses, he compares their speeds with those of motor cars, frankly admitting that in doing so he has disregarded head winds. But in doing so, he has disregarded a factor of great importance in this connection for, adding a normal and usual head wind, there are several small aeroplanes which are not much faster than a fast car. Again, on page 9 he refers to miniature aeroplane running costs as approximately 1½d. per mile inclusive. It is extremely doubtful whether this figure could include such important items as insurance, depreciation, housing costs, etc., and in any case, unless it really includes all costs, those which are left out should be mentioned.

Apart from this subject and the descriptions of the engines themselves, there is also a general account of methods of maintenance and of types of engine accessories and of the way they are usually driven. The whole forms a useful book of reference.

CORRESPONDENCE.

To the Editor of the JOURNAL OF THE ROYAL AERONAUTICAL SOCIETY.

Dear Sir,—The article in the November number of the JOURNAL on "Mixture Strength in Petrol Engines," by G. D. Boerlage and L. A. Peletier, quotes from Landolt and Börnstein Tables that the thermal conductivity of oxygen is equal to that of nitrogen. Later the authors calculate a value of 99.3 for nitrogen compared with 100 for air. The International Critical Tables give nitrogen as 104 on the same basis. For calculations in connection with electrical exhaust gas analysers the relative thermal conductivities of dilute mixtures are of much more importance than the thermal conductivities of the pure gases. The following table showing the relative effects of 1 per cent. by volume of the gas in atmospheric nitrogen may therefore be of interest. The ratios were taken with a Shakespear katharometer and are substantially correct over the range of concentrations found in exhaust gases:—

Carbon dioxide, CO ₂	...	...	10.4
Carbon monoxide, CO	...	...	1.2
Oxygen, O ₂	...	...	-1.8
Methane, CH ₄	...	...	-10
Water vapour, H ₂ O	...	...	-12
Hydrogen, H ₂	...	...	-100

These figures give the thermal conductivity of atmospheric nitrogen as about 98.7 and oxygen about 105 compared with air 100.

Yours faithfully,

G. JESSOP, *Chemist*,
Cambridge Instrument Company, Ltd.

18th Dec., 1936.