

**SUBSCRIPTION RATES**

(including postage)

Inland - - - 10s. 6d. per annum.

Abroad - - - 10s. per annum.

Canada - - - 10s. per annum.

Editorial and Advertisement Office: "Practical Mechanics," George Newnes, Ltd.

Tower House, Southampton Street, Strand, W.C.2

'Phone: Temple Bar 4363

Telegrams: Newnes, Rand, London.

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# PRACTICAL MECHANICS

Owing to the paper shortage "The Cyclist," "Practical Motorist," and "Home Movies" are temporarily incorporated.

Editor: F. J. CAMM

VOL. XI. MARCH, 1944 No. 126

## SPACE ROCKETS

SIR,—I note in the January issue that a reader has been asking about space rockets, and feel that I may be able to help a little. Some time ago, whilst studying special fuels, I read a book by the British Interplanetary Society, and whilst I cannot now remember the name of the book, the following facts may be of interest to your correspondent. They are quoted from memory, but are, I think, reasonably accurate:

(1) In the German "Mirak" rockets, using first petrol and liquid oxygen, and later alcohol and liquid oxygen, the combustion chamber was of copper, but burnt out, then given a ceramic lining, but still burnt out, and, finally, water was added to the alcohol to reduce the temperature in the chamber until the fuel amounted to a light beer for alcohol content. The fuel was fed by carbon dioxide pressure behind it, and the oxygen by evaporation. (The oxygen container had to be fitted with a safety valve.)

(2) To leave the earth's gravitational field a speed of 600 miles per second was calculated to be necessary.

(3) Nothing was stated as to method of ignition, but it will obviously be necessary to apply considerable heat to such a fuel as the above to ignite it.

(4) Solid fuel rockets were stigmatised as being very much more dangerous than liquid, being responsible for most of the deaths, so far, Oberth, Opel, etc.

(5) Stress was laid in the book on the great cost of experimenting, together with the, up to then, relatively small results obtained.

J. SCANLON (Leeds).

SIR,—I was extremely interested in Mr. Boggio's query on rockets, in the January issue of PRACTICAL MECHANICS, and in your answers.

With regard to the British Interplanetary Society, this is in hibernation for the duration of the war, but the furthering of the science of astronautics is being carried on by the Manchester Astronautical Association and the Astronautical Development Society. These two societies are working in close co-operation, and if any of your readers are interested, further information may be obtained from either Mr. K. W. Gatland, 17, Southcote Avenue, Tolworth, Surbiton, Surrey (A.D.S.), or Mr. E. Burgess, 2, Hillview Road, Denton, Manchester (M.A.A.).

The only two books in English on the subject that are likely to be obtainable at the present are *Rockets Through Space*, by P. E. Cleator, published in 1936 by G. Allen and Unwin, Ltd., at 7s. 6d., and *Stratosphere and Rocket Flight*, by C. G. Philp, published by Sir Isaac Pitman and Sons in 1935 at 3s. 6d.

J. HUMPHRIES (Farnborough).