

THE NEW DORNIER "SUPER-WAL"

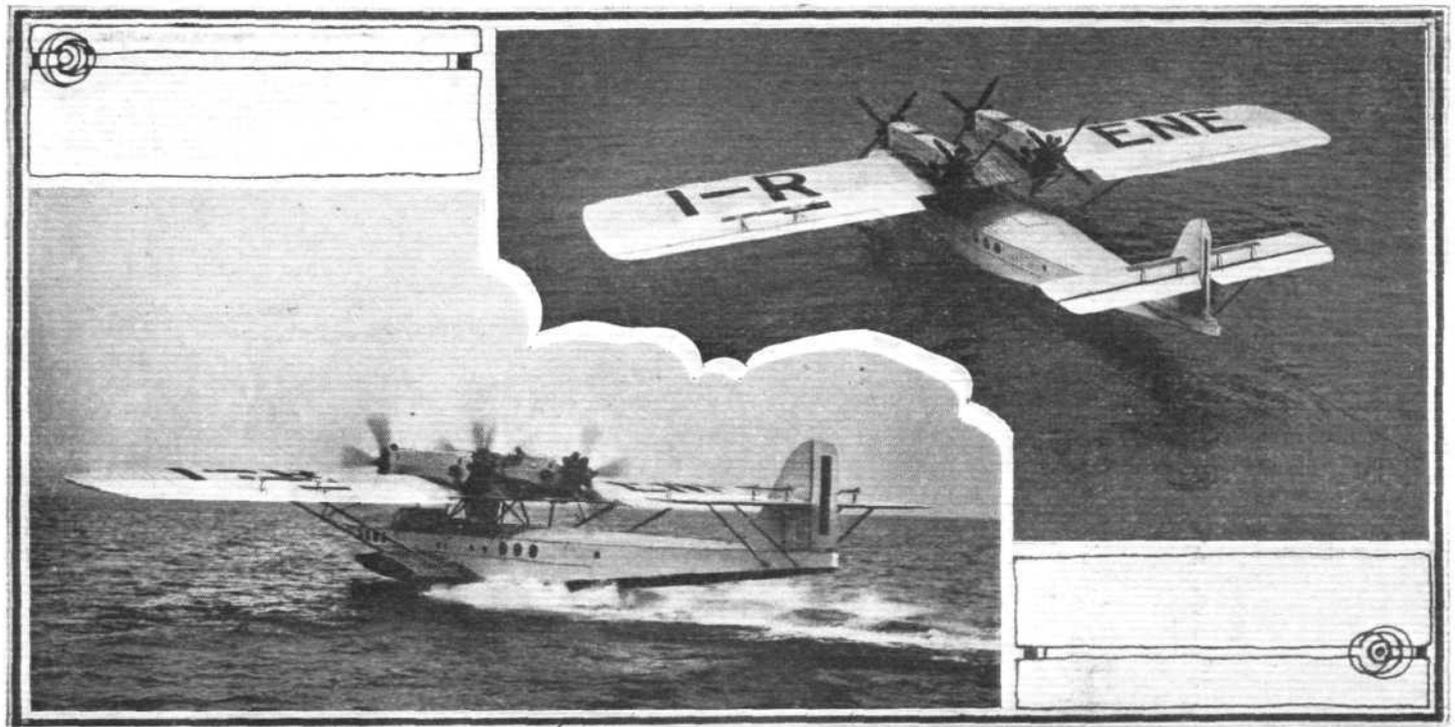
Four Gnome-Rhone "Jupiter" Geared Engines

SEVERAL weeks ago we recorded in FLIGHT the completion at Friedrichshafen of a new Dornier "Super-Wal" intended for passenger-carrying. The machine has now passed its preliminary flight tests, and although maintaining a seemingly reticence concerning weights and performance, the Dornier Metallbauten Gesellschaft of Friedrichshafen have sent us two photographs of this machine, and a certain amount of information. The new "Super-Wal" is claimed to have attained a top speed of 220 km/hr. (136.5 m.p.h.), while the photograph of the machine on the water is stated to represent the "Super-Wal" taking off with a total loaded weight of 15 tons (metric, presumably). It is not clear whether the top speed claimed was attained with the full total loaded weight of 15 tons (33,000 lbs.) or at some lower total weight, but assuming the former to be the case, the Everling "High-speed Figure" is 14.2,

Constructionally the new "Super-Wal" is of normal Dornier type, with a boat hull of Duralumin and a monoplane wing with steel spars and Duralumin ribs and covering. Lateral stability on the water is obtained as in previous Dornier boats by wing stumps growing out of the hull.

The boat hull is divided into a series of compartments, in the following order, starting from the bows: space for navigating gear; cabin for 12 passengers; pilots' cockpit on the port side (dual controls), wireless compartment on starboard side; fuel and luggage space; and finally aft cabin with room for 8 passengers.

The fuel compartment contains 8 petrol tanks, 4 of 300 litres (66 gallons) each, and 4 of 600 litres (132 gallons) each, giving a total petrol capacity of 3,600 litres (792 gallons). With the petrol in the hull and the engines on top of the wing, pressure feed must necessarily be employed, a system not



A MERE BAGATELLE: Two views of the new Dornier "Super-Wal" flying-boat, which is fitted with four "Jupiter" engines. It has a wing span of 93 ft. 10 in., and a wing area of 1,539 sq. ft. Note the tandem arrangement of the wings.

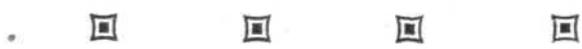
which does not appear unduly high for a "Wing Power" of 13.4 h.p./sq.m. (1.25 h.p./sq. ft.). On the other hand, if we examine the Everling "Distance Figure" (which is, of course, the propeller efficiency multiplied by L/D at top speed), this is found to be 6.4, which is an unusually high value. Thus if it is assumed that the propeller efficiency, with the geared engines used, is 0.75, the L/D corresponding to top speed is 8.53. It would appear somewhat doubtful whether this is likely to be attained. Even if we increase the propeller efficiency to 0.80, the L/D is still as high as 8. The machine is probably very "clean" in the aerodynamic sense, what with the small amount of wing bracing and the engines placed in tandem, but even so, the "Distance Figure" is so high as to make one a little suspicious. If the above value of the "Distance Figure" is indeed correct, the "Super-Wal" would seem to be an excellent machine for long-distance flights, provided the structure weight is not unduly high.

now in favour in this country, and with four engines to feed from eight different tanks, it may be assumed that the petrol system is far from being simple.

The photographs show quite clearly the arrangement of the four 480 h.p. Gnome-Rhone "Jupiter" engines, which are placed in two tandem pairs some distance out on the wing. The engines are fitted with the Farman type of reduction gear, so that the wooden propellers are running at one-half engine speed. The efficiency should, therefore be good, especially for taking off, but no data are available concerning the length of run required.

No information is available concerning the weight empty etc., of the "Super-Wal" but following are the main dimensions:—

Length of machine overall	..	24.6 m. (80 ft. 8 in.)
Height	5.9 m. (19 ft. 4 in.)
Wing span	28.6 m. (93 ft. 9 in.)
Wing area	143 sq. m. (1,540 sq. ft.)



Mr. Bert Hinkler's Plans

THE long contemplated flight of Mr. Bert Hinkler's from London to Australia is to commence shortly. He was forced to postpone his plans last year owing to other demands made upon his services which included, for instance, testing the

"Crusader" racing seaplane, etc. He will use his own Avro "Avian," which has had the fuel capacity increased to allow for a series of 1,000-mile stages. At this rate of travel Mr. Hinkler should reach Australia in a fortnight.