

140 H.P.-710 H.P. : The Warner "Super Scarab" and the Wright "Cyclone" Series F.

cylinder geared and supercharged two-row radial of extremely compact appearance giving 700 h.p. at 2,500 r.p.m. at 8,500ft. The displacement is 1,535 cubic inches, blower ratio 11:1, gear ratio 3:1, and bare weight 994lb. Fuel consumption is 0.48lb. per b.h.p./hr. at full throttle, and oil consumption 0.035lb. per b.h.p./hr. Great interest is being displayed in this engine by the U.S. Navy, which standardises on air-cooled types.

### Warner Aircraft Corporation

"Scarab" and "Super Scarab" engines manufactured by the Warner Company are highly popular in the United States for installation in light aircraft. Both types are represented in the race, a "Scarab" being fitted in a Cessna monoplane and Mr. John H. Wright's "clipped wing" Monocoupe racer having a "Super Scarab." The "Scarab" is a seven-cylinder air-cooled radial giving a maximum power of 132 h.p. at 2,150 r.p.m. at a dry weight of 270lb. Fuel consumption is from 6 to 8 gallons per hour. The "Super Scarab," which in Mr. Wright's monocoupe is equipped with a special long cord cowling, is similar to the "Scarab" except for an increase in bore, and gives 145 h.p.

### The Wright Aeronautical Corporation

Famous for its "Whirlwind" and "Cyclone" engines, both of which types are represented in the England-Australia race, this company, which is a division of the Curtiss-Wright Corporation, produces also the famous Curtiss "Conqueror" and "Super Conqueror" types, which may be cooled either by water or Prestone. The Wright "Cyclone" series F is a highly popular engine at the moment, being installed in a very wide variety of extremely fast civil and military types, both in America and abroad. "Cyclone" F's are fitted in machines Nos. 4, 8, 44, 50, 57, and 64. These engines are either of the Series F.2 or F.3. The

F.2 "Cyclone" gives 710 h.p. at 1,900 r.p.m. to 3,000ft., weighs 937lb., and has a compression ratio of 6.4:1 and a supercharger drive ratio of 7:1. Fuel consumption is 6-9½ gallons per hour at 1,950 r.p.m. The F.3 type is supercharged to 7,000ft. and gives approximately the same power as the F.2.

Three Wright "Whirlwinds" of the series R-975-E power the Pander S.4 "Postjager." This engine gives 365 h.p. at 2,100 r.p.m. and weighs 595lb. Fuel consumption is 0.55lb. per b.h.p./hr.

Miss Jacqueline Cochrane's "hush-hush" Northrop monoplane is equipped with a Curtiss "Super Conqueror" which may be regarded as a supercharged version of the 12-cylinder "Conqueror" liquid cooled engine widely employed in military aircraft in the U.S.A. The power is 750 h.p. at 12,000ft. With this engine the Northrop is reputed to have a phenomenal performance.

The Curtiss D.12, the forerunner of the "Conqueror," is used in the Hosler-B. monoplane. This type has been already dealt with as the Fairey "Felix."

### FRANCE

#### Hispano Suiza

A very powerful Hispano Suiza water-cooled engine, the 12 Ybrs., is fitted in the Wibault 366. This engine, a 12-cylinder "V" type, has caused considerable discussion in aeronautical circles during the past few months, mainly owing to the fact that it delivers a very high power for an extraordinarily low weight. It is fitted in numerous French "prototype" military types and in a few new commercial aircraft. Bore and stroke are 5.9in. and 6.69in. respectively, and the compression ratio is 5.8:1. The weight dry is 946lb. At ground level the power is 800 h.p., but at 13,120ft. this is raised to 850 h.p. Fuel consumption is given as 0.49lb. per b.h.p./hr. and oil consumption as 0.017lb. per b.h.p./hr. A Hispano-built Wright "Cyclone" was to have been installed in Michel

Detroyat's Lockheed "Orion," which has been withdrawn from the race.

### Gnome-Rhône

A wide range of air-cooled engines known as the "K" series has been developed by this company in recent years. Most powerful of these engines is the 14 Krs. two-row 14-cylinder radial as installed in the Bleriot III monoplane. This type is proving very popular in France and other European countries for use in machines ranging from single-seater fighters to "gros porteurs." The capacity of the engine is 3,260 cubic inches, and the power 810 h.p.

### GERMANY

#### Hirth

Produced by the Hirth Motoren Gesellschaft of Stuttgart for the International Touring Competition, the Hirth H.M.8 U. is an eight-cylinder inverted air-cooled engine of 8,000 c.c. capacity, with a bore of 105 mm. and a stroke of 115 mm. The compression ratio is 6.5:1, and at a speed of 3,000 r.p.m. the engine develops 225 b.h.p. A reduction gear brings the airscrew speed down to 1,960 r.p.m.

In the England-Australia Race this engine will be fitted in the B.F.W.-Messerschmitt 108 monoplane. Provision has been made for mounting a three-bladed airscrew. In its general construction the H.M.8 U follows standard Hirth practice, except, of course, for the V arrangement of the cylinders.

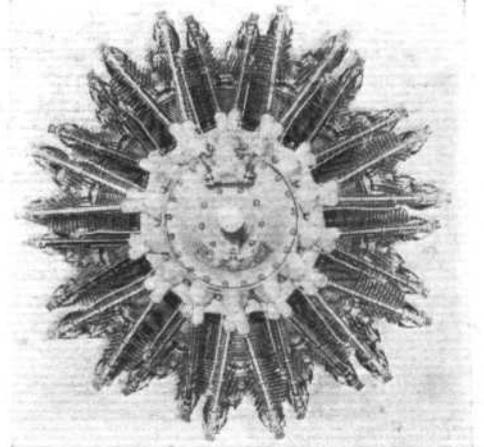
### ITALY

#### Fiat

A Fiat A.59, which is a Pratt & Whitney "Hornet" built under licence by the Fiat Co., is fitted in the Bergamaschi P.L.3. The main dimensions are similar to those given for the Pratt & Whitney "Hornet," and the power is 675 h.p. at 6,000 ft.

#### Piaggio

Three Piaggio "Stella" IX air-cooled radials giving 560 h.p. at 13,000ft. are installed in the big Savoia-Marchetti S.79 monoplane. This engine has but recently been developed, and few data are at present available. It is believed, however, that the bore is 5.75in. and the stroke 6.5in.



"TWO ROW" : The big Gnome-Rhône 14 Krs. radial.