The flying test-bed for the Bristol Hercules engine is a Northrop monoplane. Note the long-chord cowling with controllable cooling gills. The position of the air intake above the cowling is interesting.

**SOMETHING UP ITS SLEEVE**

**The Bristol Hercules Engine Starts Its Flight Tests**

Quite a sensation was caused at the Paris Aero Show last November by the first appearance of the Bristol Aeroplane Co.'s brand new fourteen-cylinder sleeve-valve air-cooled radial. The Hercules, as this engine is called, was granted the British Air Ministry's type approval some time ago, and is the most powerful British engine to have this approval. Already a series of flight trials has begun at the Bristol Company's aerodrome at Filton. It will be recalled that, as previously recorded in *Flight*, the Hercules is a double-row radial with a bore of 146 mm. (5.75in.) and a stroke of 165 mm. (6.5in.), giving a total capacity of 38.7 litres, or 2,360 cu. in. The first version, which is the one that has just begun its flight tests, is medium supercharged and delivers 1,290 b.h.p. for take-off at 2,650 r.p.m. The maximum permissible power for a period not exceeding 5 min. is 1,375 b.h.p. at 2,750 r.p.m. and 4,000 ft. (1,220 metres). The maximum specific output of the medium-supercharged version is thus 35.5 h.p. per litre. Allowing for the usual process of development, this figure will doubtless be further improved as and when experience has accumulated as a result of the present flight trials.

The Hercules, it is known, is destined for certain types of Service aircraft, but as it was desired to get flight trials completed as soon as possible, and as the new prototype aircraft for which the engine is intended are not yet ready for flight, the Bristol company decided to obtain from stock, as it were, a type capable of serving as a flying test-bed for the engine. The choice fell on a Northrop monoplane, which has the necessary strength factors to take the great power developed by the single engine unit.

In addition to maximum speed and climbing trials, the machine will be used for the investigation of cooling characteristics, for which tests a very complete set of apparatus has been installed to measure temperatures and air flow.

Closely connected with the question of cooling is the problem of fuel consumption. It will be recollected that, as previously recorded in *Flight*, the Hercules is a double-row radial with a bore of 146 mm. (5.75in.) and a stroke of 165 mm. (6.5in.), giving a total capacity of 38.7 litres, or 2,360 cu. in. The first version, which is the one that has just begun its flight tests, is medium supercharged and delivers 1,290 b.h.p. for take-off at 2,650 r.p.m. The maximum permissible power for a period not exceeding 5 min. is 1,375 b.h.p. at 2,750 r.p.m. and 4,000 ft. (1,220 metres). The maximum specific output of the medium-