



" THAT'S A BREDA 33 THAT WAS " : Lombardi taking his fences in great style.

THE INTERNATIONAL TOURING COMPETITION

By EDWIN P. A. HEINZE

FAVOURED by excellent weather, the technical tests preceding the European air tour and final speed test of the *Challenge de Tourisme International* began at Berlin-Staaken airport on August 12. By noon of the previous day 41 machines had come in for the trials. Two more competitors availed themselves of the right to compete by paying double fees and coming later, the absolutely last minute for arrival being 4 o'clock of the afternoon of August 12. The original number of 67 entries had thus dwindled down to 43.

Of the original 32 German entries, only 16 were left, these consisting of seven new three-seater "Klemms," six two-seater "Heinkels," an American "Monocoupé 110," and one of the only two biplanes in the contest, the machine built by students of the Darmstadt College of Engineering (Akaflieg).

Among the German machines that have been withdrawn from the competition are, unfortunately, some very interesting new designs, to which reference was made last week.

On the French side, two Marcel Bloch, a Caudron "Luciole," and a Mauboussin were withdrawn, while the Italians turned out complete with Miss Spooner, as also did the two Swiss competitors. The Poles scrapped one entry, an RWD-6, and the Czecho-Slovakians three entries.

The demand for greater speed set by this year's regulations has practically ousted the second category of light planes, of which a large number still took part in the last competition, held in 1930. Considerable concessions had been made relative to the permissible weight of the machines, by which they are classified. According to the original regulations, the machines of the first category were to weigh empty not more than 400 kg. (880 lb.) and those of the second category not more than 280 kg.

(616 lb.). But already in 1930 it was found necessary to make an allowance of 15 per cent., and this year it has been raised to 20 per cent., so that in effect the first category machines are allowed to weigh 480 kg. (1,056 lb.) and the second 336 kg. (739 lb.). But even this could not save the small machines, for the minimum speed required on the Circuit of Europe has been raised since 1930 from 60 to 100 km./hr. (62 m.p.h.) on the average. The minimum touring (average) speed of the first category of machines has been raised from 80 to 125 km./hr. (77.7 m.p.h.).

These increased speed requirements have in the first place, of course, to be met by engine designers, and particularly good development work in this direction has been effected by German engineers, who, during the last three years, have succeeded in ousting altogether non-German engines in their country. The Argus and Siemens engines, already conspicuous in the two previous contests, have been improved considerably and a new make, the Hirth, made its debut last year during the German Light Plane Contest. The seven-cylinder Siemens radial engine, which in 1930 developed 110 h.p. with a weight of 1.32 kilogrammes per h.p. output, now delivers 150 h.p. with a compression ratio of 5.3 to 1 and 160 h.p. with one of 6.2 to 1. The h.p. weight has come down to 0.83 and 0.78 kg./h.p. The inverted four-cylinder Argus, once developing 110 to 120 h.p., now gives 150 and 160 h.p. Last year's inverted four-cylinder Hirth engine was brought out in April last with two rows of four cylinders arranged in an inverted Vee, and developing 150 h.p. This engine works particularly smoothly owing to its having eight cylinders.

The very neat six-cylinder Colombo engine of the Italians has likewise benefited by improvements. A large