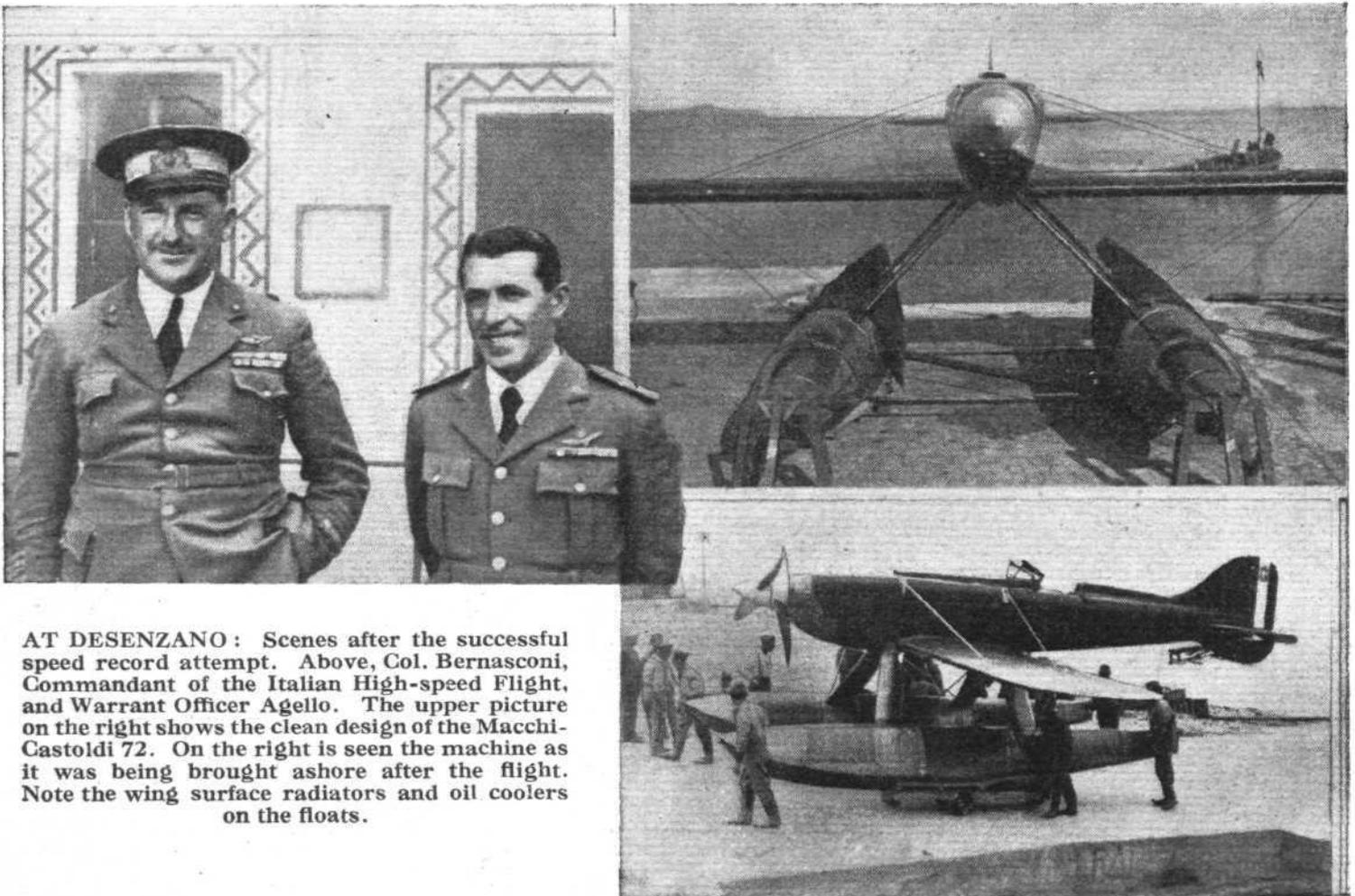


## THE SPEED RECORD RAISED

*Warrant-Officer Agello Achieves a Mean Speed of over 440 m.p.h. with the Fiat-engined Macchi-Castoldi 72 at Lake Garda*



AT DESENZANO: Scenes after the successful speed record attempt. Above, Col. Bernasconi, Commandant of the Italian High-speed Flight, and Warrant Officer Agello. The upper picture on the right shows the clean design of the Macchi-Castoldi 72. On the right is seen the machine as it was being brought ashore after the flight. Note the wing surface radiators and oil coolers on the floats.

**F**LYING the Macchi-Castoldi 72 seaplane (3,000 h.p. special 24-cyl. Fiat) at Lake Garda on Tuesday of last week, Warrant-Officer Francesco Agello, of the Italian Royal Air Force, raised his own world's air speed record by putting up a mean speed (subject to homologation) of 709,202 km./hr. (440.677 m.p.h.) for the usual four flights. His previous record stood at 682,403 km./hr. (423.76 m.p.h.).

The weather conditions under which the attempts were made were ideal, there being just sufficient breeze to take the glassiness off the water, so assisting the take-off. Temperature was suitable, and the air was free from bumps.

Just before 3 p.m. Agello took off and made four runs over the three-kilometre course, clocking as follows:—

	Secs.	km./hr.	m.p.h.
North-South ... ..	15 $\frac{29}{100}$	705.882	438.614
South-North ... ..	15 $\frac{19.2}{100}$	710.433	441.423
North-South ... ..	15 $\frac{18.1}{100}$	711.462	442.081
South-North ... ..	15 $\frac{23.4}{100}$	709.034	440.738

After the successful attempt a banquet was held in the Officers' Mess at Desenzano in Agello's honour. The speeds were announced, and Col. Bernasconi, who is in command of the High-speed Flight, stated that Signor Mussolini had honoured Warrant-Officer Agello by promoting him to a full lieutenant.

Only a few modifications had been made to the Macchi-Castoldi since the previous attempt, chief among them being the substitution of wooden floats for the metal ones previously used.

As is well known, the most interesting feature of the machine is the extremely unconventional power-unit, the Fiat A.S.6. The problem of frontal area for such a powerful unit as was specified was solved by placing the twenty-four cylinders (totalling in capacity over fifty litres) in two rows, forming a 60 deg. "vee," and, further, arranging them in two mechanically independent groups.

Each group has its own crank shaft, but a single crank case is used for both. The crank shafts, which rotate in opposite directions, are coupled in the centre by spur-gear reduction units, which drive two airscrew shafts. One of these shafts is hollow, and the other operates within it. The two shafts run forward through the "vee" of the front engine unit, and each carries an airscrew; so that there are two of the latter, close together, but revolving in opposite directions.

Each engine unit has independent camshafts (two per engine), water pump and dual Marelli magnetos, but a common induction system is used, an eight-jet carburettor being mounted behind the rear unit and mixture being drawn from it and passed to the cylinders by a supercharger geared up to 20,000 r.p.m. An interesting point is that this supercharger absorbs 200 h.p., and, since it is driven by the rear engine, the blades of the front airscrew (which the rear engine drives) are given a different inclination to correct the slight difference in power.

The power units develop 3,000 h.p. at 3,200 r.p.m., and weighs 2,045lb., giving a weight per h.p. of 0.706lb. The all-up weight of the machine, with pilot and full tanks, is 6,670lb.

British equipment figured in the success, for Castrol oil and K.L.G. plugs were used.