HOW THE RECORD WAS MADE

which, while tolerable at 400-450 m.p.h., would have been absolutely intolerable and even dangerous at the speeds at which the record runs would be made.

It was not only over the straight, high-speed section of the distorted figure-of-eight course that the air had to be smooth. Though the speed could be reduced to about 550 m.p.h. and height increased to about a thousand feet on the turns, these turns were each over land where the bumps would be at their worst, and even a slight reduction of speed and increase of height would not appreciably reduce the personal and mechanical discomforts experienced. On the timed run itself bumpless conditions were even more vital since at 600 m.p.h. the effects of rough air are shattering—not only making it impossible for the pilot, but overstressing the structure and even liable to produce premature compressibility effects.

Reduced Thrust

The figures obtained were, perhaps, a shade disappointing to the two pilots, who knew that in absolutely perfect conditions an average figure nearer to 610 m.p.h. might have been obtainable even with the limited thrust used. For structural and control reasons this thrust had been reduced, on the jet-units themselves, to 3,600 lb., which, it was estimated, would give the Meteor a maximum of 610 m.p.h.—beyond which speed Mr. Carter and his associates were not prepared to "guarantee" either the aircraft structure or the handling qualities. As it was, a technically interesting deformation of the fairings in the air intake was found in at least one of the aircraft. One of the reasons for the final decision to "call it a day" and not to attempt to improve on the figures was the natural desire of the technicians to make a thorough examination of each aircraft. When this examination has been completed, and further tests have been made, it is just possible, though not likely, that more trials will be made. At least another 400 lb. of thrust from each unit is still in reserve if such an attempt is made, but there does not seem much object in repeating the performance unless the speed can be put up very considerably.

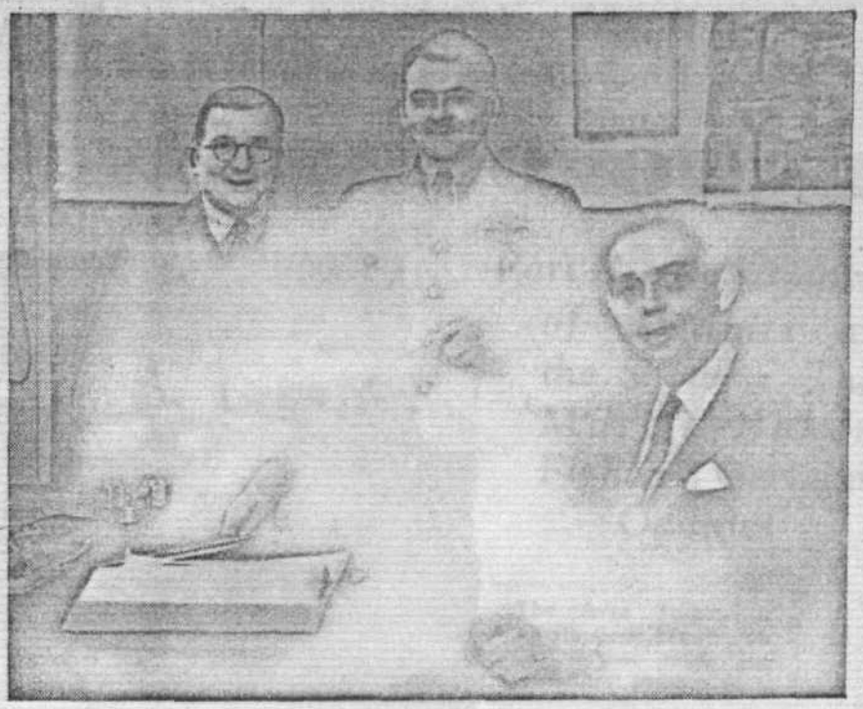
In fact, the two Meteors appear to have handled surprisingly well at the speeds obtained. In very much earlier trials a nose-up compressibility effect had been noticed at somewhat lower speeds, but this had been cured by a very slight change of tailplane incidence. Presumably this tendency might reappear in due course if the speed was raised still further. The majority of aircraft develop a nose-down tendency at their maximum Mach number speeds, and the Meteor's characteristic is both unusual and "safe." It is a very great credit to the design that, at the average maximum speeds obtained (which give a Mach number of about 0.8), the aircraft should still be safely handleable at the low levels demanded by the F.A.I. rules. On all the runs each of the Meteors was absolutely steady.

The very slightly disappointing figures were primarily the result of the prevailing North-Westerly wind. The complete course forms a figure-of-eight, lying more or less East and West with the loops round North Foreland in the East and over the Isle of Sheppey in the West. To obtain the longest reasonable "straights" the pilots turned approximately 40 degrees off the timed track to the right after each run before making quiet left-hand 180-degree turns to bring the aircraft on to the speed line some eight miles or so from the actual timing points. With an 8-12 m.p.h. wind from the North-West each turn had to be "distorted" in order to return accurately to the straight. That over North Foreland could be slightly eased while that over Sheppey had to be proportionately tightened.

Drift Effects

The result was that both pilots had some slight difficulty in getting "lined up" comfortably when arriving from the west. More than once the fine smoke trail—all that could be seen of the aircraft in the distance—developed a momentary "kink" as the pilot found it necessary to make a slight S-turn to get on to course. And at that speed, with sealed tabs, turns cannot be made quickly. The rate of turn had to be kept below an absolute maximum of 3 G. if speed was not to be lost and the turns were being made "visually," so, with the reduced visibility at the Western end of the course and the necessary tightening of the turn to allow for drift, it must have been quite difficult for the pilots when entering the West-East run. In fact, we believe, Group Capt. Wilson very nearly decided to abandon one of his runs.

The average drift of 8 m.p.h. or so also made the "straight" flying something of a problem, and each pilot tended to put on bank as soon as he had left the measured part of the course while flying westwards in order to avoid



PERSONALITIES BEHIND THE POWER: Air Commodore F. Whittle, the pioneer of Turbine Jet development, Dr. S. G. Hooker (left), chief engineer of the Rolls-Royce turbine engine section, and Mr. J. P. Herriot, his assistant.

WORLD'S AIR SPEED RECORDS

Year.	Pilot and Country.	Km./hr.	Aircraft.
1906	Santos-Dumont (France)	41.3	Santos-Dumont.
1909	Tissandier (France)	54.81	Wright.
1910	Leon Morane (France)	106.51	Bleriot.
1911	Ed. Nieuport (France)	130.06	Nieuport.
1912	Jules Vedrines (U.S.A.)	174.10	Deperdussin.
1913	Maurice Prevost (France)	203.85	Deperdussin.
1920	Sadi-Lecointe (France)	313.04	Nieuport-Delage.
1921	Sadi-Lecointe (France)	330.28	Nieuport-Delage.
1922	B. G. Mitchell (U.S.A.)	358.84	Curtiss.
1923	Lt. Williams (U.S.A.)	429.03	Curtiss-Racer.
1924	Adj. Bonnet (France)	448.17	S.I.M.B.
1927	De Bernardi (Italy)	479.29	Macchi M.52.
1928	De Bernardi (Italy)	512.78	Macchi M.52.
1929	Orlebar (Gt. Britain)	575.70	Supermarine S6.
1931	Stainforth (Gt. Britain)	655.00	Supermarine S6B.
1933	Agello (Italy)	682.078	Macchi C.72.
1934	Agello (Italy)	709.2	Macchi-Castoldi M.72.
1939	Dieterle (German)	746.41	Heinkel He 112.
1939	Fritz Wendel (German)	755.138	Messerschmitt Me 109.
1945	**Group Capt. Wilson (Gt. Britain)**	**976.03**	**Meteor IV.**