



ALL-WEATHER MYSTÈRE

French Transonic Two-seater Powered by an Afterburning Avon

IT is now just six years since Avions Marcel Dassault began to develop a jet fighter. The first prototype carried the company type-number MD-450, and was named Ouragan (Hurricane). It was powered by a Hispano/Rolls-Royce Nene, and had a wing with slight sweep, rather like that of the Venom. The armament was four 20mm guns, and the limiting Mach number 0.83. During 1952 and 1953 a total of 350 Ouragans entered service with the French *Armée de l'Air*, and a further 71 were bought by India, with the name Toofani.

Logical development of the Ouragan involved increasing the sweep of the wing and increasing the power. These improvements led to the Mystère, versions of which have been powered with the Hispano Tay, Hispano Verdon, SNECMA Atar, Pratt and Whitney J48 and Rolls-Royce Avon. A very great number of different types of Mystère have already appeared, the two most important being the Mystère II C (Atar 101D) of which 150 are being bought by the French Government for the *Armée de l'Air*, and the Mystère IV A (Hispano Verdon) of which 225 are being paid for by an off-shore order by the U.S.A.F.

Production examples of both types of Mystère are now being delivered. It is to be noted that the report by U.S. Senators Stuart Symington and Harry Bridges describes the detail workmanship of the Mystère as being "far above the average" and "well up to the best American standards"—which becomes the more outstanding as one reads the Senators' comments on other manufacturers. Dassault have about 3,000 employees at plants dispersed widely throughout France. In addition, about 25,000 other personnel are employed on Mystère work among many sub-contractors. The only fly in the ointment from the production point of view seems to be that the Mystère (unlike, say, the Hunter) is by no means designed for mass-production.

The Dassault company have now produced an Avon-powered all-weather Mystère, designated Mystère IV N, which is illustrated here. The original Ouragans and Mystères were all day

interceptors, but a number of prototypes were built with lateral intakes—and one with two seats—with a view to the eventual development of an effective all-weather machine. The IV N does not, in fact, have lateral intakes but employs a single straight-through duct passing under the cockpit, and first introduced on the similarly powered Mystère IV B.

The airframe of the IV N is essentially similar to that of the IV B, but about 4ft 7in has been added to the fuselage length to accommodate the navigator, seated behind the pilot. Both crewmembers have a S.N.C.A.S.O. automatic ejection seat and the two cockpits are covered by a single sliding canopy. A very impressive fuel capacity is provided, there being virtually continuous tankage throughout each wing between the spars and

further large tanks surrounding the centre-fuselage air duct and beneath the engine. The engine is at present a Rolls-Royce Avon RA.7R, but a variant of the Avon is to be licence-built by Hispano Suiza, and it is the latter engine (with a five-figure thrust) which will probably go into whatever IV Ns are ordered into production.

The front end of the new prototype bears a close resemblance to that of the F-86D Sabre, and it is reasonable to assume that it incorporates the American "two-dish" radar fire-control system carried by that aircraft. The armament itself is of unusual interest. A single 30mm cannon is carried on each flank of the forward fuselage, fed from a tank containing 100 rounds. These two guns fire out along blast channels formed by the re-entrant channel between the intake and the mould line of the nose. Directly behind the two ammunition tanks is a retractable container housing 52 unguided air-to-air rockets, which are ripped away automatically by the radar-ranging circuit. Four further rocket containers, each holding 19 missiles, may be carried under the wings.

All the primary control surfaces are governed by servo assisters, the overall response being of a very high order. The gaps between moving and fixed surfaces are extremely narrow and all balancing is internal. All Mystères are fitted with an automatic stabilizer and yaw-damper,

