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Most good aeroplanes are also pleasing to look at, and the fine lines of the Mirage III are seen in this picture of a tandem-seat 8 version

TANGIBL E MIRAGES...

of the additions is a Marconi Doppler radar carried beneath the
pilot's seat. Superficial differences between the first E version,
which flew last April 5, and the HIC are the bulge beneath the nose,
and the lengthened fuselage, which results in the rear of the canopy
coming forward in line with the intakes.
The latest version to have flown is the IIIR, which is essentially produced by attaching a special nose containing several (apparently seven) reconnaissance cameras. It is not clear whether the Armee de 1'Air is ordering any of this type as new aircraft, but the first (a converted IIIA) has for some time been engaged in operational trials from Istres, and the second R flew from Melun last month. Largest of the export orders won by the Mirage III is that from Switzerland, and according to our contemporary Les Ailes the present requirement for 100 may eventually be increased by a factor of three. The Mirage won after a fierce battle with the Saab-35H Draken. Political ("The Six") and economic factors favoured the French aircraft, but it is worth noting that the Swiss President later announced "The Swiss Government's choice has been dictated exclusively by military considerations.. ." The Federal Chamber ratified this choice last June, and authorized the

Stern view of the Mirage IV 01 bomber prototype. Points of interest include the double-eyelid nozzles (since replaced by more complex assemblies), the tandem clamshell canopies, the simulated nuclear weapon, and the fact that even with high-pressure tyres the aircraft can
be parked on tarmac. Peak "dash" speed exceeds 1,450 m.p.h.

purchase of 100 Mirage IIICs, at a cost of SwFr900m, of which roughly one-third will be paid to Dassault for the licence, for armament and supporting equipment, and for a small batch of complete aircraft. The bulk of the order will be manufactured in Switzerland, and it is unofficially said that a large second order will be placed in 1963 when Swiss delivieries have begun.
Prior to the Swiss order, Dassault achieved a major break-through with the adoption of the II1C by the Royal Australian Air Force. An announcement to this effect was made in December 1960, when it was stated that the first commitment would be for 30 aircraft, some 28 of which are expected to be manufactured in Australia. Further orders for Australian-built aircraft are expected. When the Australian Government announced their choice they deferred a decision on the powerplant and radar fire-control, but during 1961 it was decided to adhere to the standard French specification in both—to the detriment of the United Kingdom.
Several times last month "reliable sources" in South Africa and France announced that the South African Government have decided to order the IIIC, purchasing the aircraft as complete units from Dassault. Most reports speak of a firm order for 16, and an option on a similar quantity. Further Mirage orders are doubtless the subject of secret agreements, as has been intimated i official French publications. Again quoting Les Ailes, Israel is said to have decided to buy 40, "of which 26 have already been signed for"; and India is regarded as another likely customer.
It has long been apparent to Dassault that the next generation following the Mirage will have to have VTOL ability. Already the NATO BMR-3 competition—discussed in several recent issues— is calling for this type of aircraft; and Dassault have taken the logical step of producing what might be termed a VTOL Mirage. In order to explore initial difficulties they are using company money to construct an interim experimental aircraft, named Balzac, powered by a Bristol Siddeley Orpheus and lifted by eight Rolls-Royce RB.108s. This machine should fly about the middle of the year, and will investigate transition and handling up to about 450kt. Greater expenditure will be required to produce the definitive Mirage IIIV, which is said to have Rolls-Royce RB.162 lift engines and a SNECMA TF-106 for propulsion. The latter powerplant is a derivative of the Pratt & Whitney JTF-10 turbofan, fitted with a large SNECMA afterburner and variable nozzle. Static testing of TF-106 development engines is already in hand, and it should be available in parallel with the ultimate IIIV during 1963.
Last November British Aircraft Corporation announced that they had reached an agreement with Marcel Dassault concerning the Mirage IIIV. BAC clearly feel that this aeroplane is the best all-round answer to the NBMR-3 requirement, and that it will be of benefit to all concerned if they attempt to sell it to the RAF and Royal Navy in return for a manufacturing licence and joint de-velopment agreement. Discussions are still at an early stage, but it has been announced that design and development work on the British version will be carried out by the aircraft division of English Electric Aviation at Warton, under the direction of Mr F. W. Page. It may well be that one of the changes which will be made will be the installation of the Rolls-Royce RB.168 (military Spey) as the propulsion engine, provided somebody can pay for a reheat and nozzle system.