The Defence Decisions

A REVIEW OF THE IMPLICATIONS

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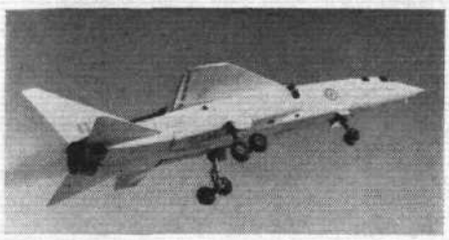
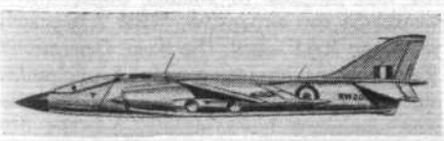
WHATEVER decisions had been taken, there would have been angry protests by managements and men, and redundancies, and disorder in Parliament, and shock headlines in the newspapers. But now the decisions have been taken, except in the case of TSR.2, it is possible to attempt a sober assessment of their implications for the nation. Hard facts are very hard to come by, for it is still the policy of the British Government that the publication of accurate details about costs, quantities and schedules will give comfort to the Queen's enemies.



TSR.2

Hawker P.1154 For many years the RAF has had an operational requirement for a successor to the Hunter ground-attack aircraft. The VTOL P.1154, and its Bristol Siddeley BS.100 vectored-thrust engine, were initiated in 1961. A supersonic development of the P.1127, it would have been a battle-zone attack aircraft, but also capable of interception—hence its supersonic capability. The RAF needed to have it in service by 1968 or 1969, and no later. A firm order was due to be placed by December 1961 but three years went by without a decision. The reasons were two-fold: 1, a battle over the choice of engine, and 2, an inter-Service fight between the RAF and the Royal Navy, the latter wanting a Sea Vixen replacement having interception as its primary role



P.1154

Ideally, of course, a Hunter successor should have been in RAF squadron service today, but the Sandys "no-more-manned-aircraft" defence policy of 1957 scotched this. Six months ago *Flight* was rebuked for suggesting that the Hunter could not remain in front-line service for the next seven years; but the hard fact is that the Hunter, excellent aircraft though it is, can today be seen off by the air forces of "3rd XI" countries with Russian or American supersonic strike fighters. The Hunters, of which there are some 150 in RAF service, are said to have a fatigue life of 3,000hr, with every prospect that they will be good for up to 6,000hr. From the fatigue point of view the Hunters are no more than half way through their life, and will be good for three or four more years yet. But it is the *operational* gap between the Hunter and the P.1154 which has to be filled, and in default of good policy-making seven years ago it is now to be filled by the McDonnell Phantom —and by the Hawker P.1127.

McDonnell Phantom II The key question about this aircraft is simply this: Can the Spey-powered aircraft for the RAF and Royal Navy be in squadron service substantially before the P.1154, and how much cheaper will it be?

Facts about time-scale and cost are hard to come by, and there is actually reason to believe that no hard estimates have been laid before the decision-makers. The best information available is that the first Spey-powered Phantom cannot begin flight trials in much less than two years from now, and that it cannot be in RAF squadron service much before 1968 or 1969. Before the question of cost is examined let us dwell for a few moments on the question of Phantom time-scale.

Rolls-Royce have already been given an order by the Ministry of Aviation for a batch of Speys to be supplied to McDonnell for installation in two prototypes. At least a year can be set aside for negotiations on the extent to which the aircraft will be

Phantom II

anglicized (other than having British engines) and at least another year for a development of the new modified aircraft and its acceptance by the Services. Furthermore, no decision has yet been taken on whether the Phantom will be built by McDonnell or under licence in Britain. Clearly, the latter would add to both the time-scale—perhaps by as much as two years—and also to the cost.

The question of the Phantom's cost is obviously crucial. It might have been thought that, before publicly announcing Britain's intention to purchase these aircraft, a hard price would have been obtained from the Americans, and that some pretty tough contractual conditions would have been laid down, particularly as regards the cost of "anglicization." Even detail differences, such as British IFF and even crew harness, can cost a lot of money, while big changes—for example to the navigation and attack system—can run away with a good deal of money. There are at least two recent examples of British aircraft costing double their basic price by the time the RAF has finished with its list of change orders. It is also a fact of life that change orders for which no price quotations have first been obtained tend to be even more expensive, and this is especially so when there is no bargaining with alternative sources of supply. The RAF might also have to pay through the nose for spares.

Although the Prime Minister spoke of "other British equipment" in the Phantom, British suppliers should not raise their hopes too high. According to the best available information at the present time, both the RAF and the Royal Navy will take the Phantom "as-is," to USN standards, with the exception of the engines. Thus RAF Phantoms will have folding wings, hook, etc—and it is indeed more than likely that in the years to come Her Majesty's carriers will be used operationally by RAF Phantoms.

The Phantom is an exceptionally fine aeroplane, capable of both interception and ground attack work. Its primary role will be attack, but it will have interception capability. With Speys it will be even better than the J79-powered versions which have been in American service for the past three years. But it is not by any stretch of the technical imagination a forward support aircraft. It is this role for which the Hawker Kestrel is to be ordered. P.1154 is thus replaced jointly by Phantom and P.1127.

Hawker Siddeley P.1127 Kestrel If it had been ordered by the Government four years ago the Kestrel would have been in squadron service today. It has gone forward, however, as a tripartite programme with German and American participation, and according to all reports it is working like a charm, though without any weapon capability at this stage. A considerable quantity is now likely to be ordered for the RAF to give the Army the close support that it needs—and which it is today getting from the Hunter. The Phantom, in the heavier attack role, has the range to operate from further behind the lines. The Kestrel's ferry range with fuel pods should be over 2,000 miles.

Kestrel

The RAF is delighted at the prospect of the new tactical dimension which the VTOL (or STOL with heavier load) capability that the Kestrel will provide. If the programme is properly pursued, and the 20,000lb-thrust Pegasus 5 urgently developed, the

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first squadrons could be formed by 1967.

But with what transport does the RAF support this aircraft, which if it is used to its full potential will be operating out of battlefields that only helicopters could get into today?

Lockheed C-130 This, clearly, is not the Kestrel's transport partner, as the 681 was to be. The C-130 which the RAF is to buy —about 50 is one unofficial quantity mentioned—is not an STOL transport. This is where the Andover comes in. This remarkable medium transport, which can almost wear the STOL badge, can operate from 1,500ft strips close to the front line, with helicopters and Twin Pioneers landing ammunition etc close in to the Kestrels.

What, then, is the RAF's need for the C-130, this "obsolescent American transport" as it has been described by angry Hawker Siddeley workers? It is quite simply a Beverley and Hastings replacement

C-130

with greater capacity, longer range, and of course higher speed. But why, it might well be asked, has the RAF not been more specific and insistent in the past about a Hastings and Beverley replacement? The pinpointing of blame is difficult, and in any case fruitless. Many factors have played their part. Notable among these are the Belfast, and the technical and industrial worth to the nation of Shorts; and there was the sound policy decision to do the Hawker Siddeley 681, a transport married to the 1154 technically, strategically and tactically. The C-130 now also takes the place of the 681, and the RAF will have to accept a significant but not hopeless increase in required field length.

There have always been strong feelings in the RAF that the Belfast, which began as a civil project, was foisted into military service, but it is quite wrong to say that the RAF do not really want or need it at all. There is no other aircraft in service or coming into RAF service—Britannias, Comet 4s or Super VC10s—which can air-lift the loads that the Belfast can carry. It is no good saying now that it ought to have been a jet transport, even though in December 1960 (when the go-ahead decision was taken) it was clear that the Americans were thinking in terms of jet strategic freighters for both military and civil use. The fact of the matter is that the Belfast will provide the RAF with unrivalled strategic transport capability for many years to come. Its only limitation, and this is where the 681 came into the military planning and policy-making, is its field performance, even though this is remarkable for an aircraft of its class. It is not yet a short-field aeroplane. In "stractical" form (below) it would neither be sensible nor prudent to take 150 troops into a 2,000ft forward strip, even in view of the very small probability of tail parachute failure. Sheer size is also against the tactical Belfast in terms of load handling, ground manœuvring and contact pressure on the poor surfaces of a forward supply base.

Hawker Siddeley 681 This aircraft was to be the Beverley/Hasting replacement, but with the ability to go virtually wherever the 1154 was operating, replacing in due course even the Andover, if not Twin Pioneers. When the contract for the 681 was placed in 1963 it was expected that the aircraft would be in service by 1968. About 18 months ago Shorts proposed their "stractical" version of the Belfast instead. This has been pushed well to the fore, as may be imagined, in recent weeks.

The short-field Belfast development proposed is the SC5/15B, powered by a new Tyne—the RTy.34—giving 6,600 h.p. with w./m. injection and driving 18ft propellers. It has a new controllable tail-paracnute to permit high engine power on the approach, thus generating nigh slipstream wing lift and making possible 2,000ft landings on new "squat profile" tyres. C_L max is increased by 10 per cent by the addition of a third slotted flap. No estimates of cost or time-scale have been released.

Cost and time-scale were against both the Belfast and 681. The latter, according to some of the wilder estimates, may eventually cost up to £5m each. The C-130E has been in full production for ten years, costs about £0.8m, and is a well tested, known quantity and available within perhaps a year. Deliveries could possibly be made by Lockheed by the end of the year, provided that few modifications are specified, and a quantity of about 50 aircraft would probably meet the RAF requirement. Though some items of British army equipment cannot be accommodated, the 681 would have had the same hold cross-section, and the C-130's payload-range performance (35,000lb loads over 2,500 miles) is about the same. The whole advantage of the 681, apart from its speed, would have been its STOL battlefield performance.

In the last days of January the Hawker Siddeley design team at Coventry proposed a new cut-price jet transport project based on the 681, reportedly designated 802. The project made use of the 681 fuselage—which is exactly what the RAF want—with Comet wings and Spey engines. But this last-ditch bid failed, and the decision was taken and announced to order C-130Es.

Spey Comet Included in the overall Government decision last week was a replacement for RAF Coastal Command's ageing Shackleton 2s. These aircraft could, if necessary, be extended up to 1980, but developments in search and detection equipment have overtaken it. Some years ago the RAF had the opportunity to buy the Breguet Atlantic to replace the Shackleton, and of course hindsight suggests that it would have been a sensible move politically, as a gesture of the British aircraft industry's desire not to stand apart from Europe. But there was a technical problem too: RAF equipment was developing rapidly, and it would have been wrong—this is a case of foresight, not hindsight—to be committed to a particular type at that stage. For the last two years both big

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airframe groups have been drafting projects for a 500kt, long-endurance Shackleton replacement, including developments of the Trident (Avro 776) and the VC10. But because the need was of lower priority than the combat and transport programmes a decision was delayed. Now it has been taken in a way which will soften the blow to Hawker Siddeley, though reworking a ten-year old production transport will not compensate for that company's loss of its long-term design capability. Fitted with Speys the RAF's new MR Comet (incidentally first proposed five years ago) will halve unproductive transit time (6hr patrol on-station at a 1,000-mile range); will provide more room for systems; and will offer much higher alternative trooping productivity.

V Bombers and TSR.2 RAF Bomber Command's Victors and Vulcans will be followed by the TSR.2 if the early promise of flying trials is fulfilled and if satisfactory arrangements on price and delivery date can be settled. The tanking role of the Valiants, now grounded through fatigue, will be taken over by modified Victors. The use for this purpose of further Super VC10s would be too expensive. TSR.2 is exactly what the RAF want, the basic Operational Requirement having remained unchanged since 1959. In fact, as the recent cancellation decisions have highlighted, the Services' OR policy-making has been generally sound.

SIR ALWYN CROW

The death occurred in Washington on February 5 of Sir Alwyn Crow, a pioneer in anti-aircraft rocket development. He was 70 years of age, and had lived in the United States for the past five years.

The research which he and other inventors conducted during the late 1930s resulted in the cordite-filled rockets which were used in large quantities against German night bombers in 1941, and later as armament on Beaufighters and other aircraft. For two years after the war Sir Alwyn was Director of Guided Projectiles at the MoS.