

## AN ADDITIONAL USE FOR THE "ARROW" ?

Of the members of the Royal Aeronautical Society who gathered last week to hear the British Commonwealth lecture on the design and development of a supersonic military aircraft, many must have been opposite numbers of Mr. Floyd, of Canada, in the British firms of the Hawker Siddeley Group, who have twice been deprived of the opportunity to fly such a machine. Their interest in the lecture could be taken for granted. But the address must also have been of particular value to those charged with the procurement of equipment for the fighting services in this country. For a pronouncement of harsh realism was included in the preliminary discussion of the Royal Canadian Air Force requirements: "The decision was taken to design, develop and produce in Canada. This decision was not taken on the basis that there happened to be an established aircraft industry in Canada, although this obviously had some influence on the decision. However, the Chief of the Air Staff at that time, Air Marshal Slemon, made it quite clear that Canada was not in a position to undertake the development of a new aircraft if a suitable type was being designed, developed or produced in either the United States or the United Kingdom. . . ." That the Canadians not only saw the situation clearly, but matched their actions to their thoughts, is evidenced by their accomplishment, the Avro "Arrow." Particularly noteworthy is the magnitude of the step forward between the CF-100 all-weather fighter and its planned successor, the CF-105, which will be apparent from the photograph reproduced on page 612. Even in the United States of America the realisation that often aeronautical progress can satisfactorily be made only in large strides is comparatively recent. The story of the development of our own fighter aircraft does not reflect the acquirement of a similar philosophy: a particularly clear, but not misleading, example to the contrary is provided by the succession of "Sea Vampire" by "Sea Venom" by "Sea Vixen," when set against a time scale on which such milestones as the passing over of the "Skylancer" are marked. The essential difference between the discontinuous and the progressive mode of advance is easily discerned; for the "Arrow" is in flight before any other known machine that could play the same part in its weapons system, even though the first few machines have been twice redesigned to suit different engines.

It is no new finding that a really up-to-date military aircraft will, in all probability, prove supreme in roles other than that for which it was originally designed. Yet the state that the development of one single aircraft project can absorb a quite substantial fraction of a nation's military budget has lent a new urgency to exploiting this finding. Canada, however, is in the distinctive position

that her "chosen role in military air power is one defence, and Canada does not maintain any bombing tactical air force," and so it is not yet determined, nor will it be until next March, that production quantities of the "Arrow" will be ordered; for Canada is very near one of the only two nations with operational long-range anti-aircraft missiles, which might make manned fighter aircraft obsolete. But for Britain, whose role is to be offensive as well as defensive, there is already an urgent need for an aircraft to penetrate hostile air space at great speed, for how else than by reconnaissance are we to find targets for our promised missiles, or to know whether we have hit them? Yet there does not appear to be even a design in being for such an aircraft. When it is appreciated that the designers of the "Arrow" have provided for even more tankage than their long range intercept mission demands, and when it is borne in mind that the "buddy" system of flight refuelling (in which the tanker is another aircraft of the same design, adapted to transfer fuel from its tanks to a trailing drogue) can add more than a third to the range of an aircraft, and when it is further observed that the war load of the "Arrow" is concentrated in a removable pack, it seems a sensible suggestion that the Royal Air Force could and should share in the privilege of using what may well prove to be the ultimate in light alloy aeroplanes. Whether the CF-105 will meet the recently prepared operational requirement 339 which presumably is for an aircraft to be delivered long after 1961, it would be profitless to guess, but if operation from short or poor runways is involved it will not. However, there is a contemporary reason why it is in the interests of Great Britain as well as Canada that the utmost use should be made of this challenging aircraft. Up till now this country has attempted to develop and manufacture native aircraft to meet all its military requirements, whether or not these requirements were parallel to those of other nations. That policy has, we believe, benefited the aircraft industry and the nation. However, as the money available to devote to development is limited and as sometimes the development of a single "wrong horse" (or what a Ministry comes to believe to be a "wrong horse") may be pursued to the exclusion of all others, there are likely to occur periods when in certain sectors our defence requirements do not appear capable of being met from home sources within a reasonable period. It then becomes good sense to import a limited number of machines for certain missions not peculiar to the Royal Air Force. It might, therefore, in the present circumstances prove sound economically as well as militarily for the Ministry of Supply to announce the interest of this nation in the Avro "Arrow," a machine which the Hawker Siddeley Group has already designed and developed and the first examples of which have been built on production tooling so that supplies would be almost immediately available were an order placed.