

3—HELICOPTERS: THE IMPLICATIONS

In an article in *Flight* for December 1, 1966 ("Helicopter Decision Time") the requirements for the four types of helicopters needed by Britain's three Services were set out in detail. The predictions concerning Anglo-French collaboration which were made in that article were closely verified by last week's decisions.

The tactical or medium-support helicopter is to be the Sud SA.330, of which 130 are already on order for ALAT (Aviation Léger de l'Armée de Terre). The British requirement is for about 50.

The SA.330 flew for the first time on April 15, 1965, and the flight trials programme is now in full swing. Service introduction with the French armed forces is not expected for another 12-18 months, while deliveries to Great Britain will probably begin in 1969 or 1970. The aircraft for the RAF will probably be bought off the shelf, although it is possible that a British autopilot and communications system may be fitted.

The existing powerplant, two Turbomeca Turmo 111C4s rated at 1,300 s.h.p. each, will almost certainly be retained. The RAF would have preferred the Bristol Siddeley Gnome 1400 to the relatively untried Turmo, and it is generally believed that the Gnome would have cost less and given better performance. Fitting the Gnome would also have led to increased exports of this engine.

The light observation helicopter (LOH) will be the Sud 340, which has existed as a paper aircraft for some time, the proposed power unit being a single Turbomeca Astazou II. Although nominally doing the same job as the American LOH (the Hughes OH-6A) the 340 is somewhat larger, approaching a Wasp in size. Apart from the difference in production

costs between Europe and the United States, the larger size must inevitably increase this divergence. The cost of the Sud 340 is expected to be about £45,000.

The French requirement is for about 100 of the light observation machines, while Britain requires about 600. In view of this disparity in numbers it appears rather extraordinary that the leadership of the project—on the airframe side, at least—should be in French hands, although there will of course be the closest co-operation during all stages of design and the 340 will probably be built at Yeovil.

The Astazou II is now obsolescent, and it is to be hoped that a new engine—the Bristol Siddeley free-turbine BS.360 of about 800 s.h.p.—will be accepted for the LOH. The Astazou has a fixed turbine, an anachronism for a new helicopter which will be in service for some 15-20 years. Other features of the present SA.340 design are a high-speed main rotor and a tail rotor built into a vertical fin, which probably has the effect of a duct allowing a smaller rotor to be used.

Finally, the utility helicopter will be the Westland WG.13. The requirements are 350 for Great Britain and 250 for France. The British need is for a tri-Service aircraft, with the Army taking a greater share than the other two Services. The helicopter will weigh about 8,000lb gross, and the success of the design will hinge to a large extent on the development of a really modern, state-of-the-art powerplant. Two free-turbine engines are indicated, and twin Bristol Siddeley BS.360s would appear to suit the requirement adequately.

The design leader will be Great Britain, and the aircraft is not expected to exhibit any radically new features (such as rigid rotor or compound configuration) in keeping with its role. (*Leading article in this issue.*)

4—COMMENTS ON THE DECISIONS

The SBAC Sir Richard Smeeton, director of the Society of British Aerospace Companies, said on January 17: "The very welcome decision to proceed with the Anglo-French variable geometry aircraft and the new agreements on helicopter programmes announced from Paris yesterday should provide a substantial work load for the British aerospace industry well into the seventies. With firm progress on other such projects as the Concorde supersonic airliner and the Jaguar strike trainer, they are reassuring and much-needed pointers to the industry's long-term stability.

"The successful outcome of these inevitably difficult negotiations is a tribute to the perseverance and skill of Her Majesty's Ministers involved.

"These decisions will renew the sense of purpose in our airframe and engine factories and be a challenge to our technical ability while providing a major incentive to halt the disturbing drift of skilled craftsmen overseas."

Sir George Edwards, managing director of British Aircraft Corporation, presenting the Rex Pierson Memorial Lecture before the Weybridge Branch of the Royal Aeronautical Society on January 18, welcomed the decision that BAC and Dassault were to build the new AFVG combat aircraft. Joint orders to be placed by Britain and France for both the Jaguar and the AFVG aircraft gave initial production totals large enough for unit costs to be competitive throughout the world, he said; this was impossible to achieve on a go-it-alone basis in either country. Sir George continued:—

"The consolidation of joint products like Concorde, Jaguar and the AFVG has restored a poise and purpose to the British aircraft industry which has been lacking since the round of major cancellations. We must not, however, lose our nerve. We must not be frightened of winning. We seem to get scared when we find ourselves out on our own with a technically

advanced product. The old Viscount very nearly got cancelled for just that reason. The Americans don't seem to know if they're going to build a supersonic transport or not—and they haven't yet built a successful VTOL fighter like the P.1127. My message is 'If we can keep our nerve on the aircraft we are developing now, then we've got it made.'

Mr Denis Healey, Secretary of State for Defence, on January 16: "This has been a very important day and the news from Paris will be a tonic for our aircraft industry. The agreement we have reached provides an assured future to the industries of both our countries on the basis of a co-operation which will extend into the mid-seventies and will create the foundation for an advanced technology that can meet the American challenge."

BAC Preston Division spokesman, January 17: "It gives us the most advanced project in Europe and ensures stability of employment into the 1970s. It is a challenging project which will enable the management to keep a continuing balance of production."

Mr Eric Lubbock MP, Liberal aviation spokesman, January 17: "This is a milestone in Anglo-French co-operation. Agreements for sharing in the development and production of advanced technological projects provide a sound basis for Britain's entry into the Common Market, and the willingness of France to go ahead with the swing-wing aircraft raises the chance of success in the exploratory talks now being conducted between Britain and the members of the Six. It is tragic, however, that although the variable-geometry aircraft was invented by Dr Barnes Wallis of Britain, Europe is now several years behind the United States in its development. For this, the inertia and lack of imagination of previous British governments is to blame."