

and has been under development for far longer." He did not think it was by any means certain that military and civil requirements would be the same—"although the principle may be there, the types may not be interchangeable."

Rotorplanes were also the subject of a series of questions in the House of Commons on Monday last. Mr. Norman Dodds (Lab., Dartford) asked the Minister of Supply if, in view of the necessity of giving greater impetus to the production of helicopters in this country, he would consider the setting up of an inter-departmental committee on which all the service and civil departments concerned would be represented. The Minister of Supply, Mr. Duncan Sandys, replied that if helicopter development was not progressing quite as fast as Mr. Dodds and he himself would like, he could assure him that it was not due to any shortage of committees. He did not think the progress in America was due to the multiplicity of committees.

In a further reply to Mr. Dodds, the Minister said it was still too early to give any reliable estimates as to when the 27-seat Bristol helicopter or the 40-seat Fairey helicopter would be available for passenger services. Mr. Dodds pointed out that the Sikorsky S-56 would be available in two years from now, but the Minister refused to be drawn on the subject of a possible order for this or any other type of American helicopter; but he did express the view that estimates of progress with the American aircraft were perhaps "a little over-optimistic."

B.E.A. TO BIARRITZ

KNOwn to private pilots for more than 30 years, the aerodrome at Biarritz has lately been developed into a £1½m modern international airport. As yet it is used by only one airline—British European Airways—but from July it will be included in the Air France network, and these companies will later be joined by Air Atlas-Air Maroc, Hunting-Clan and B.K.S.

The first scheduled transport to arrive at the new airport was the B.E.A. Admiral-class Viking G-AJBP *Sir Edward Spragge*, which, on April 11th, extended the existing Bordeaux service by flying on to Biarritz. Since then there have been two round trips weekly on the Northolt-Bordeaux-Biarritz route and on Friday last, May 28th, B.E.A. operated the first of two weekly direct flights to Biarritz. The aircraft concerned was, once again, *Sir Edward Spragge* (Capt. D. B. White, D.F.C.), and among its 25 passengers was a *Flight* representative.

We arrived [he writes] in brilliant sunshine within a split second of the advertised time—12.10 p.m. Behind us lay a pleasant 3hr 20 min journey from Northolt at 3,500ft—ahead a week-end of sight-seeing in the beautiful country of the Basque, and of excellent hospitality offered by the very air-minded tourist authorities in co-operation with B.E.A.'s station superintendent, Mr. Foster.

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military Connies building—R7Vs for the Navy and C-121s for the Air Force) may make the decision to build their jet first. Douglas are still cautious as a result of their precarious years in the late '40's when the DC-6 market dried up at about 140 aircraft. They came through well, however, and the first quarter of this year was the most profitable in the company's history. There is usually a little more money to be made out of civil than military orders.

If the Douglas organization is estimated to be worth a nominal \$100m what effect might a P.V. jet transport have? They state that in very round figures, a prototype might cost, say, \$25m; certification and production tooling \$50m; period to production and selling in break-even quantities the other \$25m, and so they may have to risk the lot—less perhaps tax adjustments. These estimates seem to be well on the high side, however.

The Douglas company usually reckons to be a little slower and more expensive over its prototype building but a bit cheaper and quicker in production. So far about \$3m has been invested in the DC-8 project to reach an advanced stage of readiness for construction. This compares with the Boeing outlay now approaching \$17m.* The DC-6B costs, in round figures, \$1¼m, and the DC-7 \$1¼m. The DC-8 jet airliner is costed at something like \$4m—a cost-price which perhaps now represents some 15-20 per cent of the aircraft direct operating costs with a large company. According to Douglas, to try to reduce the selling price by paring here and there would be to impair the aircraft's potential earning capacity. The cost of the Boeing 707 may be rather less than that of the DC-8, though in the same region, while the fully equipped Comet 3 may cost just under \$1m.

*In view of the statements and allegations regarding State assistance in the development of the Comet we may quote figures from American sources: Until the beginning of this year Boeing recovered 82 cents—which would otherwise have gone in taxes—of each dollar spent on the prototype. Since the start of this financial year Boeing and other companies have to pay in "48-cent dollars" rather than "18-cent dollars." Thus, in one sense, Boeing have already received a \$12m subsidy, four developed turbojets and B-52 wing data for the Stratotanker, as compared with about £1¼m received by de Havilland for the Comet 1.

Biarritz and neighbouring towns are making a great drive to attract more British tourists to the area, and there is tremendous enthusiasm for the new B.E.A. service. Passengers and crew arriving on the first Viking to land at Biarritz were greeted by more than 3,000 residents, including the Mayor, and a party of Basque dancers and musicians.

The work of modernizing the *Aérodrome de Biarritz/Parme Côte Basque* began in September 1951, and had progressed sufficiently by January 5th this year to allow the airport to be opened to public air transport. There is a single concrete runway (4,922 by 148ft, with a magnetic bearing of 100/280 deg) and a bright, spacious passenger terminal. The restaurant, with excellent food and service, is open to the public, and is proving very popular despite the fact that there are at present only eight scheduled arrivals or departures weekly. The five-storey control tower is almost completed and is due to be opened next month. Radio aids consist of a non-directional beacon two miles from the airport and V.H.F. air to ground communication. For the future it is intended to install a V.H.F. direction-finding scope, and runway lighting will be provided by the end of the year. To a passenger accustomed to 60-minute coach journeys between airports and city terminals, it came as a pleasant surprise to find that Biarritz Airport is only one and a half miles from the centre of the town.

Inauguration of the B.E.A. service reduces the time of the fastest London-Biarritz journey by about four hours, since it was previously necessary to complete the trip with a four-hour road or rail connection. If he so desires, the traveller can book through to San Sebastian in Spain, which is only a short distance by road from Biarritz. Journey time will be further reduced when traffic builds up to the point where Viscounts or Elizabethans can take over from the Vikings.

Meanwhile, these veteran airliners can still offer reasonably fast (200 m.p.h.) and comfortable service, even in 36-seat tourist form. And judging from our experiences of the inaugural flight, the passenger is assured of good cabin service and pleasant scenery *en route*. He can also be sure of a warm welcome and a memorable holiday in the picturesque Basque country, with Biarritz as its centre. When we prepared to board our Viking for the return journey we found that the proprietor of our hotel, the *Château des Falaises*, had made his way on to the apron to say goodbye. This incident was typical of the hospitality shown to British visitors during their stay.

Direct services to Biarritz leave Northolt on Mondays and Fridays, returning in the afternoons. Stopping services, which remain at Bordeaux for 30 min, leave and return on Saturdays and Sundays; during July, London-Bordeaux-Biarritz services will also operate on Tuesdays and Thursdays. Fares to Biarritz are £17 10s single and £31 10s return.

For popular consumption, Douglas estimate that an extra 1lb of structure weight represents 1 lb of gold in lost carrying capacity, and a sq ft of frontal area added is equivalent to 1 cu ft of gold in cost of drag—both for the life of the aircraft.

Regarding timing, it is felt in California that, if production tooling is to await a military order, the Boeing lead over other U.S. companies may not be as great as it seems. A military order would of itself delay civil deliveries and give the other companies a chance to catch up (though Boeings would retain some advantage in selling price, due to military-order aid to civil production).

If Lockheed went ahead tomorrow the prototype might fly in 18-24 months and deliveries might begin in a minimum of two more years; thus tickets might be sold early in 1959. This is the sort of date Boeing have in mind for the new Stratoliner, as they call the civil machine. Comet 3s may be able to cut as much as two years off this date if the troubles can be solved and no major structural changes are called for.

Of the British lead, the U.S.A. feels that the turbojet advance has been reduced and that it is also partly offset in the transport market by America's greater experience and superior engineering practices.

In conclusion, it may be recorded that Lord Hives, of Rolls-Royce, was described to the Editor, by two different people, as "the best aero engine salesman in the world." The development of his by-pass Conway is obviously being watched with interest in America, but we gather it is unlikely to be adopted unless P. and W. run into trouble with the civil J57 (when one is developed)—and trouble seems very improbable. Like very many other British engineering products, the Conway is not built on the North American continent; thus, however good, it starts off with a considerable handicap spareswise and service-wise, to use a convenient but overworked American suffix. This position might of course be remedied in more than one way. Americans say that by-pass engines are inflexible and must be matched to an airframe as the Conway is to the Vickers 1000. But this seems to apply equally to any gas turbine power unit.