

# THE MILITARY INFLUENCE

—on Civil Air Transport: Sir Frederick Handley Page's Brancker Memorial Lecture

THE eleventh Brancker Memorial Lecture of the Institute of Transport was delivered in London on April 15th by Sir Frederick Handley Page, C.B.E., F.R.Ae.S., who had chosen for his subject *The Influence of Military Aviation on Civil Air Transport*. A digest follows.

Sir Frederick opened his remarks by recalling the slow growth of aviation as a whole before World War I, and the spur which the industry received during the period of hostilities. In particular, large, heavy bombers were produced—such as the H.P. 0/100 and V/1500. These aircraft had cruising speeds of the order of 80 m.p.h., and the latter type, with an all-up weight of 13½ tons, could lift a useful load of 6½ tons. When the war was over, it was natural that those who had been engaged in the manufacture of bombers should turn their minds to the development of such aircraft for civil purposes. Public opinion also favoured this aim—for a number of reasons, not all of which were well founded. It was felt that a progressive civil aviation policy would promote air-mindedness, provide a Merchant Marine of the Air, enable British manufacturers to equip foreign airlines, improve commercial communications, and even lead to better understanding between nations.

Unfortunately, it was not generally realized how much was lacking in the way of ground equipment, radio services, airfields and navigational aids. This relegated airline flying very largely to short-range, fair weather, daylight operations, and in these circumstances the impact of the new form of transport on surface methods could not be very great, even with the use of such cheap aircraft as converted bombers. Progress was very slow. It was recognized that large, multi-engined aircraft were desirable for civil use, but many years went by before it was understood that an increase in speed could mean increased revenue-miles flown without a corresponding increase in cost. Hence even in 1930 the Hannibal airliner, though remarkably comfortable and possessing admirable landing characteristics, cruised at only 100 m.p.h.

In 1931 the second monoplane era dawned, both Boeing and Martin introducing bombers of this configuration and with retractable undercarriages. Douglas revolutionized air transport with the DC-1 in 1933; thus the civil application once more followed the military lead. Great Britain, too, had advanced four-engined airliner designs on the board a few years later, but unfortunately warlike preparations caused them all to be shelved, and the years of grace thus given to America stood her in very good stead.

World War II itself, like its forerunner, once again had a great effect on the development of civil aviation: apart from the airframe and engine development associated with combat aircraft, there were the growth of military air transport, the development of radio and radar aids, the building of innumerable airfields (many, it is true, quite useless for civilian purposes), and the transformation of the gas turbine from an idea to a practical proposition. None the less, and in spite of these developments, we in Great Britain were placed at a serious disadvantage owing to the tremendous lead obtained by the Americans, who had built hundreds and even thousands of military transports during the war—aircraft which, unlike bombers, were eminently suitable for airline and small-company operation and were, moreover, available at very low prices.

Turning now to the question of production and research, Sir Frederick said that, ever since the aircraft industry became a major one during the First World War, it had depended upon military orders to keep itself going. This was still true today, and the fact had enabled civil aviation to ride along on the back of its military counterpart. Would this still hold good with the advent of supersonics and guided missiles? The lecturer thought that it would, so long as bomber and military transport aircraft continued to be built. The results of research directed at improved bomber performance—such as new wing-forms, powered controls, pressurizing systems, and so on—were all applicable to a greater or lesser degree to the modern jet airliner. It would be some time, however, before there was any question of commercial aircraft operating at supersonic speeds; and, if and when this did happen, a jump in cruising speed to 900 m.p.h. or so would be required, so that the economies arising from fast flight should be sufficiently great to offset the higher operating and first costs of supersonic aircraft.

Although development associated with bombers would benefit civil aviation indirectly, more direct advantages would accrue from the fact that the transport aircraft had become such an essential part of the equipment of modern air forces. In particular, air freighting—at present largely a military operation—was expected

to expand tremendously during the next few years. The civil operators had already realized the necessity of having two types of aircraft for freight and passenger operation, and the Air Force might well have to follow suit. This could benefit all concerned, as the long-range military transport might disappear as a special type and be replaced by passenger and freight machines having both military and civil applications. Thus increased numbers of a given aircraft could be built, with consequent reduction in cost. Other types of aircraft which could well be "shared" between civil and Service operators were the short-range, easily loaded machine which could utilize small airfields—the helicopter—and the flying-boat.

The liaison between military and civil transport operations was becoming ever closer, as had been shown by the Berlin Airlift, operations in Korea, and the American Civil Reserve Air Fleet Plan (whereby the Military Air Transport Service could take over some 400 four-engined aircraft in an emergency, together if necessary with their crews). Furthermore, air-trooping—which was now carried out as far as Great Britain was concerned not only by Transport Command but also under charter by civil companies—had proved itself not only vastly quicker than its surface counterpart but, recently, actually cheaper.

Thus the idea of a Merchant Marine of the Air had at long last almost materialized. The question was, how could the great fleet of transport aircraft required be secured, and then kept up-to-date once it had been secured? A possible solution would be to establish a finance corporation for air transport which would place orders for new aircraft with the manufacturers, and would then loan them to operators on hire-purchase terms. The State would need to supply guarantees by granting long-term trooping contracts and permits to operate scheduled services and, equally, might require safeguards as to adequate operation. In the event of operators being unable to continue the hire agreement, the aircraft would be at the disposal of the Air Ministry to form part of the Transport Command fleet, so that, whatever happened, the taxpayer would not lose on the deal. The scheme would provide this country with a reserve of modern revenue-earning transport aircraft without the necessity of having to maintain at the taxpayers' expense an unduly large force of aircraft in Transport Command. This must not be thought to suggest that a Transport Command of adequate size was not required: it was still essential for the Royal Air Force to have its own transport force.

In conclusion, said Sir Frederick, the recent growth of civil aviation was such that the aircraft industry was no longer solely dependent on the military for its survival, and this was certainly a welcome sign. Civil aviation, by its close association with that of the Services, had gained many advances in the past, but it had also lost some of its flexibility and economy of operation. Now was the time to try to obtain lower landing and take-off speeds, and thus be able once again to use small, cheap airfields. There were signs that the military planners were beginning to realize this, and that, when they did so, civil aviation would once more benefit from their decisions.

The lecturer expressed his appreciation of the great help which his assistant, Mr. J. G. Roxburgh, had given him in the preparation of the paper.

## No. 207 SQUADRON (Continued from page 518)

Ardent, and the more recent Jungle King, held during last March.

In common with other squadrons, No. 207 Squadron found their permitted flying hours curtailed by the oil-refinery strikes in the U.S.A. last June, but the effect was only temporary. Misfortune dogged the squadron in the 1952 Laurence Minot Trophy contest. On the first night of the competition, the Washington which represented No. 207 had an engine failure an hour after take-off. It continued on three engines but was unable to bomb the first and third targets owing to cloud, and the second because of a defective bomb-door jack. On the remaining three nights the squadron was very successful, but in the final figures showed only as eighth.

This history ends on a humanitarian note. During the floods which scourged East Anglia early this year, F/L. A. E. D. Murray took a party of airmen to assist in the evacuation and rescue of civilians marooned at King's Lynn and Hunstanton. The men gave invaluable aid, rescuing numerous people by troop transport and dinghies. In addition, from February 4th to 9th, the squadron provided 200 officers, N.C.O.s and airmen to assist in rebuilding the bank of the River Ouse at Magdalene. For his work F/L. Murray was complimented by the Chief Constable of Norfolk.