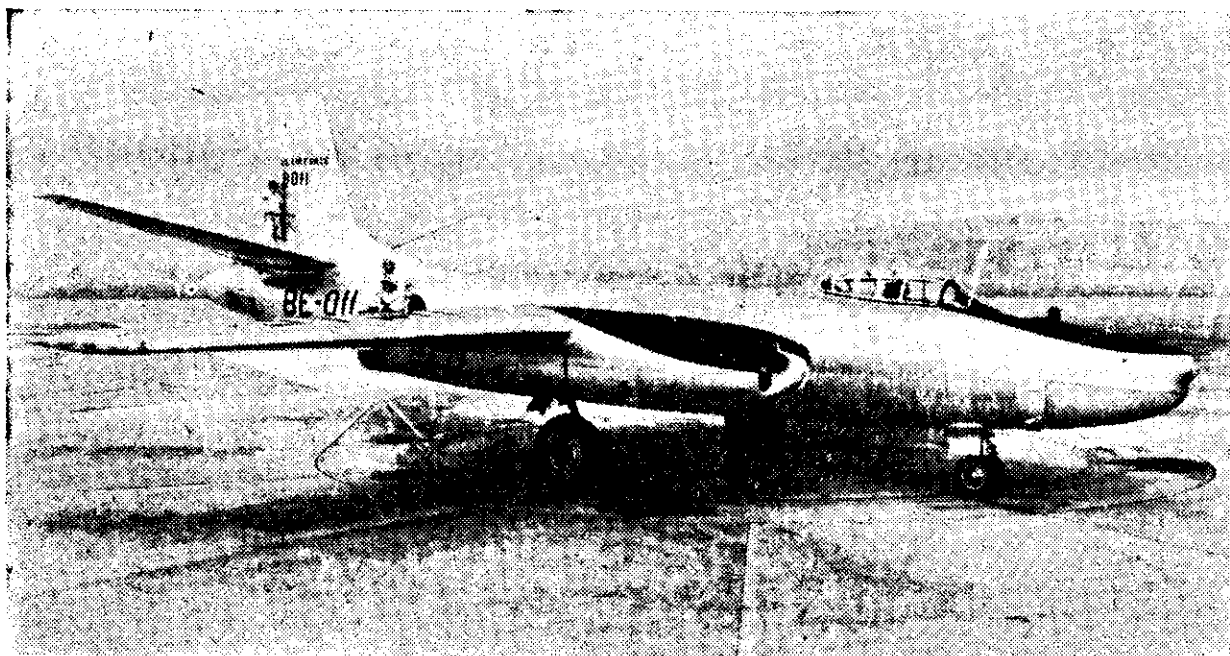




LEFT: The photo-reconnaissance version of the U.S. Air Force's Tornado jet bomber

HEATH ROW TO HAREWOOD—

"Pre-eminently a Navigators' Race"

INTEREST is mounting in the International Air Race from London to Christchurch which starts on October 8, and the speed section of the race recently took on a stronger flavour of international competition with the announcement of the late entry of a North American four-jet Tornado bomber, the B45. This plane, which appears on our cover in the "wing-tip tank" bomber version and on this page in the speedier photo-reconnaissance model, was entered as a substitute for the Twin Mustang entry of Major H. I. Hill, of the U.S. Auxiliary Air Force. It is likely, with its speed of over 550 m.p.h., to provide strong competition for the five Canberra jets entered by England and Australia, and may well prove the greatest competitor of the Vickers Valiant, the new four-jet bomber whose speed is believed to be over 600 m.p.h.

The XB45 (Experimental) was the first American multi-jet heavy aircraft to fly, the prototype making its first flight at Muroc on March 17, 1947. The plane is now out of production, a total of 139 having been built. The RB45, or photo-reconnaissance type, is still in operational service with both Tactical and Strategic commands of the U.S.A.F. The RB45c carries normally a crew of three—pilot, co-pilot and photo-navigator—and is equipped with two 1200 U.S. gallon wing-tip tanks as well as internal fuel tanks of 4500 U.S. gallons capacity. It is also equipped for flight refuelling. If such a tactic is permitted in the rules of the race, and there is apparently no prohibition of it, the Tornado would appear to be an even stronger contender for the Harewood Gold Cup and £10,000 cash prize.

An RB45 recently made a sensational flight in America, averaging 886 m.p.h. over a distance of 205 miles. The explanation for this as announced by the American Air Force was that the plane had accidentally picked up a lift from the jet airstream, the high-velocity wind that zizzags unpredictably through the subsonic atmosphere. The plane was flying

between Fort Worth, Texas, and Barksdale Field, Louisiana, and covered the distance in 13 minutes 50 seconds. No mention was made of the height at which the plane was flying.

To obtain an idea of the conditions under which the race will be run *The Listener* last week interviewed B. Cornthwaite, who has spoken frequently from NZBS stations on aeronautical subjects.

"In the Melbourne Centenary Race for the MacRobertson Cup," Mr. Cornthwaite said, "the emphasis was on the pilot. In many cases pilots did their own navigation, which was of an extremely simple type. High altitude flight was impossible, and the pilot worked out a course and then flew on compass and map-reading, maintaining contact with the ground from time to time to fix position. Thus the main problems in 1934 were the chances of running into bad weather—which made this type of flying extremely hazardous—and the job of keeping going for something like a week, flying as long as possible each day.

"The problems facing the pilots of highspeed aircraft are entirely different," Mr. Cornthwaite said. "Whereas the aircraft in the MacRobertson Race were in the 150 to 200 m.p.h. class (the winner, a de Havilland Comet, flown by C. W. A. Scott and T. Campbell Black, averaged 176.8 m.p.h.), the new jet aircraft are in the 550 to 600 m.p.h. class. Instead of being limited to short flights at low altitudes, they will be flying at somewhere between 30 and 50 thousand feet for long flights.

"The speed section will be pre-eminently a navigators' race," he said. "The planning of such a flight is a highly complex matter. From the performance of his aircraft and weather information the navigator must decide on the pattern of the flight, that is, whether it is going to be better to climb sharply to maximum height and then start on a long flat descent, or to climb gently at a high forward speed, hold a flat course, and then make a steep descent at the destination.

"Every few minutes the navigator will fix his position by means of astro sights

and radio aids and will check fuel state. The pilot must concentrate continuously on maintaining his height, speed, course, and engine power to the directions of the navigator to extremely fine limits. The modern high speed aircraft travels so fast that a small error in a compass course could be fatal to the aircraft's chances of winning.

"Thus this race will mean continuous concentration by the crew for about 24 hours—one on dials and pointers and the other on mathematical calculations. Added to this the intense cold will necessitate some form of heavy clothing and the lower air density will require continual wearing of oxygen masks. These factors tend to increase the fatigue which would normally be experienced as a result of such prolonged concentration. The wearing of oxygen masks also makes eating virtually impossible, so it is clear that these high-speed aircraft carrying a small crew will make the utmost possible demands on the physical stamina of the fliers."

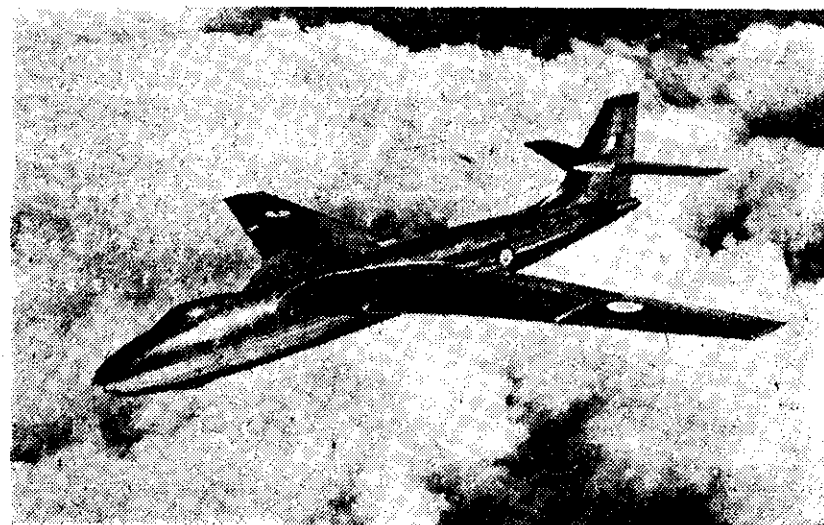
Some idea of the men and women who will be flying across the world in

the race is given in an NZBS programme called *London to Christchurch Air Race, 1953*, which will be broadcast from the four ZB stations and 2ZA on Sunday, September 27, at the following times: 1ZB, 2.45 p.m.; 2ZB, 11.45 a.m.; 3ZB, 8.45 p.m.; 4ZB, 6.30 p.m.; and 2ZA, 4.30 p.m.

The programme discusses the lives and personalities of such fliers as the Australian Aubrey Oates; Diana Bixby, who founded the Women's Annual Transcontinental Air Race in America; Captain Reavelly, pilot of the Rausch Lodestar entry; and the New Zealander Flight Lieutenant J. L. Whiteman. The programme also examines the difference between the Speed and Handicap sections of the race. In the Handicap section the planes are handicapped by a formula which takes into consideration design, speed, power, maximum all-up weight, total load and passenger comfort. This formula was devised by the Air Ministry, the Royal Aero Club, and the Ministry of Supply. *London to Christchurch Air Race, 1953*, was produced by Allan Sleeman in the Christchurch studios of the NZBS.

Further information about the race can be found in a well-produced Official Souvenir Programme, *The International Air Race Across the World, England to New Zealand, October, 1953*. The programme gives details of the different entries in the race (with the exception of the late-entered Tornado bomber) and a history of previous races, a coloured map of the route, and photographs of airports, contending planes, and some of the pilots. There is also a short photographic survey of the history of flight during its first 50 years, from the Wright Brothers' first attempt at Kittyhawk in 1903 to such modern planes as the Comet jet airliner and the experimental Douglas Skyrocket. The souvenir programme was designed by Albion Wright Limited. It contains two small errors—the photograph on page 21 is of a de Havilland Hornet, not a Mosquito, and the photograph of London Airport on page 40 has been printed from a reversed negative.

"THE INTERNATIONAL AIR RACE ACROSS THE WORLD, ENGLAND TO NEW ZEALAND, OCTOBER, 1953, Official Souvenir Programme; A. H. and A. W. Reed; 5/-"



THE R.A.F.'s Vickers Valiant four-jet bomber, generally regarded as the most formidable entry in the speed-section of the International Air Race