

Issued by :-

The Press Office,  
The Bristol Aeroplane Co. Ltd.,  
Filton House,  
BRISTOL.

BRABAZON C. OF A. BRINGS

NON-STOP LONDON-NEW YORK SERVICE NEARER.

AIRCRAFT JUSTIFIES DESIGNERS' CONFIDENCE.

With the granting of a new category of Certificate of Airworthiness permitting the carriage of non-fare-paying passengers, the Brabazon project has passed another milestone on the way to successful completion, and brought nearer the day when it will be possible to operate a first-class London to New York service that will be not only "through" but "non-stop."

How soon that service will come, no-one can say. There are factors other than technical progress to be taken into account. But what is certain is that from a technical standpoint the "Bristol" Brabazon Mark I has proved its qualities.

Its use in the immediate future will be principally for development of various special features to be incorporated in the turbine-engined Mark II, the production version of the aircraft, construction of which is now well advanced. An example soon to be seen is the eight-wheeled bogie undercarriage, which will enable the Mark II to operate from any runway strong enough to bear a Stratocruiser. An unretractable version of this undercarriage is to be temporarily installed in the Mark I aircraft and will be extensively tested in a series of "circuits and bumps."

The success so far achieved with the Mark I aircraft goes far to justify the confidence which the Government and the Brabazon's designers alike have had in the project throughout.

The aircraft has completed nearly 300 hours' test flying, covering stability and control, oil and engine cooling, stalling, C. of G. tests, and all essential tests to achieve the present C. of A. MASS BALANCES REMOVED.

An important visual indication of progress since the aircraft first visited Heath Row a little over a year ago is the removal of the mass balances from the rudder and elevators. These were originally fitted to eliminate the risk of oscillation and flutter.

Their gradual removal was completed early this month, following extensive test rig experiment and static tests on the aircraft. As a result, the "feel" of the machine is greatly improved, making it easier to fly, and drag is considerably reduced with consequent improvement in performance.

In addition, removal of the mass balances effects a saving in weight equivalent to that of three passengers.

#### PRESSURISATION SYSTEM

Considerable progress has been made on the installation of the pressurisation and air conditioning system and preliminary testing has begun. The system is designed ultimately to give full differential pressure of  $5\frac{1}{2}$  lb. per sq. inch, maintaining an equivalent cabin altitude of 8,000 ft. when operating at 25,000 ft. The length of the Brabazon will increase by  $\frac{3}{4}$  in. when under the full differential pressure.

Two Godfrey Type 30 Roots-type blowers are used, and cabin pressure is regulated by a Normalair automatic controller. The blowers are mounted on the accessory gearboxes behind the inner pairs of engines.

Initial target is a pressure of 4.1 lb. per square inch, giving equivalent cabin altitude of 10,000 ft. when at 23,000 ft.

GUST ALLEVIATING MECHANISM.

Substantial progress has also been made on the development of gust alleviation equipment. The only external indication of this is a detector vane of wing section which protrudes from the fuselage near the pilot's station and thus registers the effect of gusts a fraction of a second before they reach the mainplane. When the complete mechanism is installed, the reaction of the vane will immediately be translated to the ailerons, the position of which will automatically alter to counteract the effect of the gust. This mechanism will thus result in considerable lessening of the strain on the mainplane during flight, particularly during gusty weather conditions.

Response measurements are now being made with the detector vane in flight, while the rest of the mechanism is being subjected to bench tests.

AIR SPEED INDICATION SYSTEM

It will be seen that the long metal tube which was attached to the nose of the Brabazon when it visited London Airport last year, and which was the subject of considerable comment, is now missing.

Installed to ascertain true air speed by measuring the flow at a point where the air is undisturbed by passage of the aircraft, the tube has been removed to facilitate installation of the Decca Navigator system, and air speed is now measured by the normal pitot heads.

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### BRABAZON I IN SERVICE

#### Estimated Performance over the North Atlantic

Brabazon I was designed on the recommendations of the Brabazon Committee to meet the requirements for an airliner to maintain a non-stop service between London and New York. This route is particularly difficult as the machine must face persistent winds of high velocity during the crossing to America. To meet this requirement, the aircraft must be able to fly a distance of at least 5,500 statute miles, although the actual stage distance between the two airports is but 3,450 statute miles.

Brabazon I Mk. I, fitted with "Bristol" Centaurus engines, will meet this exacting requirement carrying a payload of 100 passengers and a crew of fourteen persons. The aircraft reaches maximum performance cruising at 50% engine power of 250 m.p.h. at 25,000 ft.

Brabazon I Mk. II is the developed version, fitted with "Bristol" Proteus turbo-propeller engines; it will carry a similar load, but at the increased speed of 350 m.p.h. at 35,000 ft. This is the type of aircraft that could go into service on the North Atlantic route.

In planning a Brabazon service to New York, two factors of importance merit consideration. The strong headwind that delays the machine on its West-bound crossing speeds its return flight, while the International Time difference reduces the crossing time from the passenger point of view by five hours.

If a steady westerly wind of 70 m.p.h. be assumed over the whole route the following time schedule might be visualised, operating one Mk. II aircraft cruising at 350 m.p.h. :-

Sunday: Depart London Airport midnight (G.M.T.)  
Monday: Arrive New York 0800 hrs. (E.S.T.)  
Depart New York 1830 hrs. (E.S.T.)  
Tuesday: Arrive London Airport 0800 hrs. (G.M.T.)  
Depart London Airport midnight (G.M.T.)  
Wednesday: Arrive New York 0800 hrs. (E.S.T.)  
Depart New York 1830 hrs. (E.S.T.)  
Thursday: Arrive London Airport 0800 hrs. (G.M.T.)  
Depart London Airport midnight (G.M.T.)  
Friday: Arrive New York 0800 hours. (E.S.T.)  
Depart New York 1830 hrs. (E.S.T.)  
Saturday: Arrive London Airport 0800 hrs. (G.M.T.)

With three aircraft allotted to the route - two operating and one in reserve - seven services a week in each direction could be maintained. The degree of comfort provided by the Brabazon merits special attention. It would be possible to leave London after a full evening's engagement, sleep throughout the crossing, and arrive in New York early the next morning, refreshed and ready for any business engagements. A day later, a passenger could be back in London. No intermediate stops with all passengers forced to leave the machine while re-fuelling takes place. A service giving speed with utmost comfort, an essential unit in the network of North Atlantic airlines.

PROGRAMME  
FOR DEMONSTRATION PASSENGER FLIGHTS  
BY BRABAZON I AT  
LONDON AIRPORT

DATE OF EVENT - Wednesday, July 25th 1951

PROGRAMME

During the day the Brabazon will make five separate flights of approx. 30 mins. duration each, carrying on each flight, not more than 26 guest passengers of the following categories in sequence as shown -

*1/2 Boarding & Clu ->  
Engines starting up.  
1/2 Looking round plane  
1/2 Struc & Boarding  
1/2 interior struc.*

- No. 1 Flight - Parliamentary Scientific Party.
- No. 2 " - Minister of Supply and party
- No. 3 " - B.A.C. guests.
- No. 4 " - Press, Newsreel, B.B.C. Representatives (1st party)
- No. 5 " - Press (2nd party)

The programme will be timed approx. as follows-

- 10.00 . Arrival of Parliamentary Party passengers for first flight.
- 10.30 FIRST BRABAZON TAKE-OFF with Parliamentary Scientific Party.
- 11.00 First landing.
- Interval for reception M.O.S. and party; press photography interviews etc.
- 11.30 SECOND BRABAZON TAKE-OFF with M.O.S. and party.
- 12.10 Second landing.
- Buffet luncheon facilities opened in both marquees.
- 12.30 THIRD BRABAZON TAKE-OFF with B.A.C. guests.
- 13.00 Third landing.

90 mins. interval for luncheon etc.

- 14.30 FOURTH BRABAZON TAKE-OFF with Press passengers  
(1st party)
- 15.00 Fourth landing.
- 15.30 FIFTH BRABAZON TAKE-OFF with Press passengers  
(2nd Party)  
Light teas from 15.30
- 16.00 Landing of fifth and final flight.

#### GENERAL INFORMATION

##### FLIGHT TICKETS

To ensure that an accurate list of flight passengers for each flight is available for press and other purposes, would each flight passenger, on entering the aircraft, please hand one half of the flight ticket to the M.C., or his deputy, who will be positioned at the foot of the entrance steps to the aircraft.

##### COMPANY REPRESENTATIVES ON AIRCRAFT

Up to six representatives of The Bristol Aeroplane Company will accompany guests on each of the flights.

##### RESTRICTIONS ON PERSONS ENTERING AIRCRAFT.

No unauthorised persons will be permitted to enter the Brabazon during the day unless accompanied by a Company Director or official, or the Chief Test Pilot. Only the rear entrance to the aircraft will be available for crew or passengers.

##### RECEPTION MARQUEES

Two marquees, each with buffet luncheon and refreshment facilities, will have separate enclosures to which admittance will be gained only by visitors wearing lapel badges issued by the Company.

##### AIRPORT ENTRANCE

Visitors are requested to enter the Airport by the Hatton Road gate (see map appended), which has been specially reserved for the event by the Airport authorities. Press Invitation cards will be exchanged for lapel badges at this entrance. Guests with blue lapel badges and windscreen labels

will pass straight through.

ROUTE FOR GUESTS WITHIN AIRPORT

Cars entering the Hatton Road entrance will find the route clearly signposted. When the B.O.A.C. hangar area is reached guests are asked to follow a sequence of circular yellow Target signs which will lead them to the marquee site.

CAR PARKS

Separate car parks are provided for cars displaying blue or yellow windscreen labels primarily to facilitate ease of departure for Parliamentary guests.

INFORMATION BUREAU

An Information Bureau of The Bristol Aeroplane Co.Ltd., will be sited in the press marquee, and a special Brabazon release will be available for the press. A souvenir brochure will be available for all guests in the enclosures.

The Passenger list of each flight will be issued after take-off.

Issued by:-

The Publicity Department,  
The Bristol Aeroplane Co.  
Filton House,  
BRISTOL.

PUB/LAK/WD