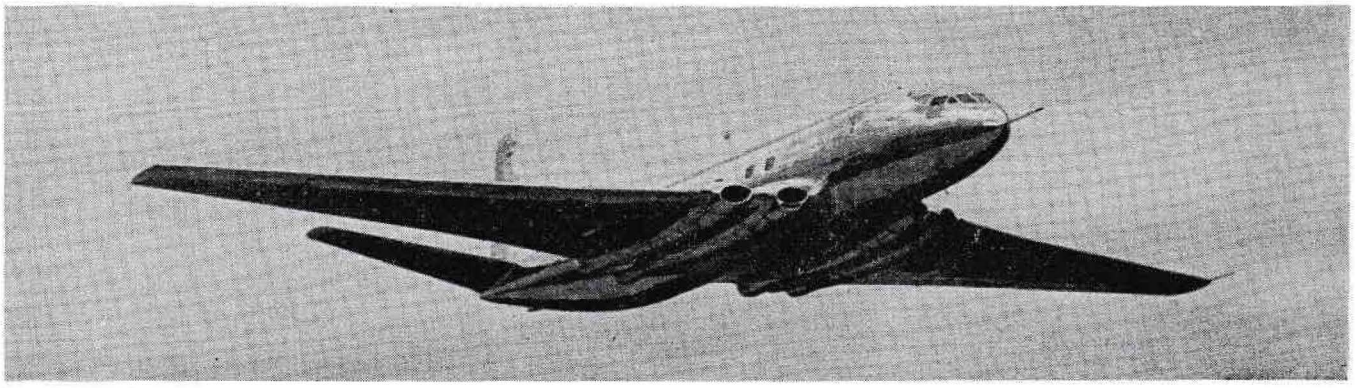


DH COMET FLIGHT TRIALS MARK JET TRANSPORT ERA

FIRST PURE jet passenger liner to fly, the de Havilland Comet is undergoing flight trials preliminary to type approval. Meantime, work is proceeding in the D-H factory on an order for 16 Comets, 14 ordered "off the drawing board" by British Overseas Airways Corporation, and two for development work.

Following is a report of the Comet's first flight, written by Canadian Aviation's correspondent who was there.

By Geoffrey Dorman, ARAeS

THIRTY-FOUR MONTHS after the design began, the de Havilland Comet made its first flight. This historic date was July 27, at 6.17 p.m.

Soon after seven a.m. of the big day, John Cunningham, D-H chief test pilot, brought the Comet from its hangar with a crew of four and taxied around the perimeter track to the main runway. He then taxied fast and, finding everything satisfactory, he lifted it a few feet from the ground and flew for 500 yards. Then he did the same thing again and she was taken back to the hangar for minor adjustments.

At 11 a.m. a party of reporters was invited to inspect the Comet and Cunningham brought her out for further taxiing. The motors gave an unearthly scream as they were idling. Sir Frank Whittle, the jet inventor, who was watching, told me that noise will be suppressed, and in any case will not be evident when the engines are giving cruising or full power. Whittle, who has been in very poor health for many months told me that the sight of the Comet in the air had done him more good than any doctors could do. This was his dream come true.

In the evening Cunningham brought the Comet out again and took off with the intention of making a real flight. He was airborne at 100 mph and soon climbed to 10,000 feet. He made climbing turns, gentle descents, and stalls, and found control and stalling characteristics were very good. He said nothing about speed, but it was clear that a speed in the region of 500 mph was attained. She looked the essence of a BOAC "Speedbird" which she is intended to be.

Tests will be pressed on quickly, and those who know the enterprise of the de Havilland Co. Ltd. are now sure that the Comet, 16 of which are already being built, will be ready for operational service with BOAC by 1952/3 as promised, and may even be ready considerably earlier than then. Major Frank Halford, designer of the Ghost gas turbine motor, four of which provide the power, told me that development of such a radically new type must necessarily be slow. But the word "slow" in the de Havilland vocabulary is the equivalent of "quite fast" for most other firms.

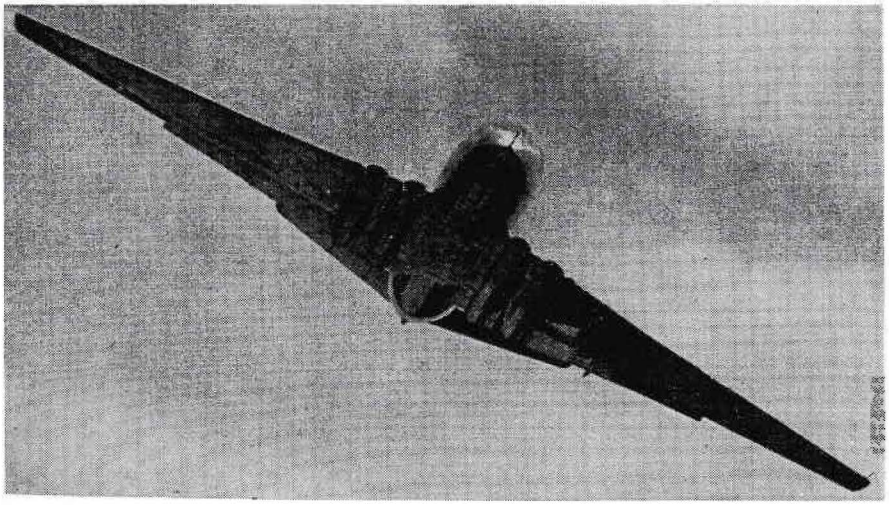
At 500 mph the Ghost motor produces nearly 10,000 hp so the total available power at cruising speed will be nearly 40,000 hp.

Comfort Without Noise

The Comet will carry up to 36 passengers with a crew of four and two stewards in comfort comparable to the Constellation, without the noise or vibration of that or any airliner powered by piston motors.

On long main line stages, a much briefer and smoother flight therefore becomes possible at competitive prices. The fuel being kerosene, the risk of fire is vastly reduced.

High flying is necessary to economy in jet transport so this called for the main body to be pressurized to a greater degree than previously. The air which will be outside at the operational level of 40,000 feet will be



Sleek, swept-back lines of the Comet are revealed in these maiden-flight pictures at left and above.

very dry so that some humidity must be introduced and it must also be conditioned for temperature.

The Comet, while having the purest aerodynamic form of any previous transport vehicle, is not very revolutionary in appearance, and at once gives confidence. It is rather a logical step in normal development than a daring stride.

It has a normal looking fuselage which betrays its ancestry from the de Havilland "Albatross" of 1938. The wing has a moderate sweep-back and the four Ghost motors are completely buried. The photographs show the great concentration of power near the centre line, such as never been seen before in any airplane. Having no airscrews it has been possible to mount the motors almost touching one another.

There is a pronounced dihedral to the tail plane, and the fin and rudder betray another forebear, the Mosquito. Wing loading is moderate and speed has not been attained by the sacrifice of slow-flying qualities. The landing speed is lower than that of existing landplanes of comparable load. The all-up weight is in the region of 40 British tons.

It is designed to do the run from London to Montreal in six hours, but clearly, with such terminal handling qualities it should be regarded as a main liner suitable for use anywhere in the world, for no abnormal runways are needed.

In the prototype, single wheels are fitted to each of the three legs, but in production models multi-wheels will be fitted.

In the Comet there is great hope of retrieving the leeway in airliners which was lost during the war. Two Comets have been ordered for the Ministry of Supply, and 14 "off the drawing-board" by BOAC. It is almost certain that BOAC will order many more, and already famous airlines all over the world are showing great interest, as also is RAF Transport Command. It seems likely that this air liner will sweep the world even more than the Constellation has done, and its price will be within the reach of most airlines.

A STATEMENT from the Comet manufacturers brings out further details of the design and its prospects:

"The need for speedy and dependable methods of handling liners into terminal airfields becomes greater with jet propulsion than it has been for propeller-driven aircraft because the fuel consumption in stand-by conditions is heavier, but this is a matter on which the experts are concentrating their attention and for which lessons have been learned during the war and in the Berlin air lift. Development of the aircraft and of its handling technique will proceed concurrently in a natural way.

"First among the advances in regard to drag and weight reduction which are immediately apparent, the almost complete burying of the turbines within the depth of a relatively thin wing marks notable progress. The direct entry of air to the compressor through the front spar of the wing, made possible by The de Havilland engine-design principle of the single-sided centrifugal impeller, is a basic advantage and leads to other excellent features—satisfactory fire prevention and anticing of the engine bay, an absence of any pressurized

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TOP—The Comet leaves the runway for the first time, a historic flight which marks the era of jet-propelled air travel.

CENTRE—In distinguished company—Major Halford; Sir Frank Whittle, inventor of the jet engine; Sir Geoffrey de Havilland; and C. C. Walker.

LOWER—First outing of the Comet at Hatfield, England, when the engines were run in preparation for taxiing tests. The aircraft has four D-H Ghost gas turbines, each of 5,000 lb. static thrust.

. . . Your correspondent is very ill qualified to write about BEA as he has never travelled on our services . .

J. C. Henry
Public Relations Officer
British European Airways
Ruislip, Middlesex, England.

DH Comet Flies

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cowling, and a particularly simple and light installation.

"The low engine weight allows a greater fraction of the flying weight to be utilized as fuel for a given payload. The attractively short undercarriage, possible because there are no propellers, yields a weight saving which is cumulative in that the shortness itself reduces the loadings on this part of the structure.

"Especially important is the developed use of the Redux process of cementing metal to metal which has been employed for some years in The de Havilland Dove light transport aircraft. This eliminates a great deal of riveting in the wing and fuselage and improves the strength-weight ratio of the entire airframe as well as simplifying the cabin pressurizing and other such problems.

"Certain details of the aircraft's present appearance are transitory. The mass balances on control surfaces have been fitted as a precautionary measure. The single-wheel undercarriage legs will later be replaced by bogies in order that the widespread use of the Comet may be less dependent upon the strength of runways which may not be in British control.

"The de Havilland engineers realize that there is a great deal of work to be done before the Comet can make its remarkable advantages available to the traveling public. The transition from piston engines and propellers to the simpler, swifter, smoother jet propulsion is one of the greatest developments that aviation has seen and its problems must take some years to master.

"These problems could be tackled only from the background of a profound experience, and if there is one aspect which impresses itself upon de Havilland executives more than any other it is the vital importance which now attaches to a direct and intimate working association between the aircraft and the power-unit design teams.

CPA Executives

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of western lines at Edmonton where subsequently, on Nov. 2, 1948, he was made operations manager followed by a promotion to his present position of assistant manager on March 15, 1949.

LEO JAMES DALTON, superintendent of Quebec district, with headquarters at Montreal, began his career in aviation with the mapping division of Fairchild Aerial Surveys of Canada. After serving with various aviation companies he joined CPA in 1941 as superintendent of the Northern Quebec district. Subsequently he was superintendent St. Lawrence district and later superintendent of CPA's Central district. Prior to his present appointment Mr. Dalton was operations and business manager of Aerial Surveys Limited, an organization formerly owned by CPA.

A native of Ottawa, where he was born 53 years ago, Mr. Dalton, in addition to his service with Fairchild Aviation, was General Manager of Dominion Skyways Limited, from 1934 until 1941.