



"First, there is the exceptionally good power/weight ratio of the aircraft, with its great reserve of power to get away from the ground in the minimum of time." This is the clipped-wing Mk 3B G-ANLO, prototype of the Mk 4B

Comet 4: A Pilot's Aeroplane

—AND, FOR THAT MATTER, A PASSENGER'S TOO

By PETER BUGGE

"The Phoenix is a bird of gorgeous plumage, with a sweet voice. It is unique of its kind and is reputed to have risen out of the ashes of its forefathers."

ALL this seemed very true of the first Comet 4 when it took the air for the first time on April 27, 1958. The sweetness of its voice may have been occasionally disputed; but to the multitude of de Havilland workers who had put down their tools, pencils or telephones to watch the take-off, the roar of the four Rolls-Royce Avons was sweet music indeed.

That the Comet is a handsome bird nobody will deny. Ever since the first mark set the standard for cleanness and grace of line it has been steadily improved upon. Now it looks so absolutely "right," and so at home in the air, that it inspires in any pilot not only confidence but an immediate desire to get at the controls.

Further faith in the Comet 4 was given to us who flew it by the fact that, like the Phoenix, it had literally risen out of the ashes. This aircraft was not somebody's brand-new brainchild. It was the accumulated result of unparalleled experience, both of success and of disaster. The period of operation of both the Comet 1 and the Comet 2 had given us a wealth of opinions on handling and operational techniques and allowed us to incorporate a great deal

of refinement. The disasters had made us go into the structural testing of components and the whole aircraft on a scale which was quite unheard of before, but which has since become mandatory for all similar aircraft. So, although the first Comet 4 looked outwardly exactly like the Mk 3, we knew well that the resemblance was not even skin-deep. Not one item had been taken for granted; many were changed altogether, more were altered. New manufacturing processes had been devised; and in many cases different materials were used. The whole added up to a quantity which was known and trusted in every detail.

The *grand finale* to the structural testing was to me the breaking of the wing on the fuselage under ultimate stress. The dramatic and highly expensive noises as it broke up—in the right place, and at the right time—seemed to put a seal on the soundness and authority of years of testing.

Thus everything possible was done to enable pilot and aeroplane to get together on really intimate terms long before the first flight. In any flight-testing there should be no surprises, no little tricks that somebody had hoped to get away with. The job of the aircrew should be to record and prove performance, handling, and so forth to a given schedule. If anything falls short it should be reported and the matter sorted out with the designer responsible before going any further.

This was where, in the Comet 4, experience really started to tell. We all knew that, whatever happened, this was one aeroplane that was going to be better in every way than its predecessor. The only surprise it held for us was that it turned out to be so much better.

* * *

Getting into the cockpit of the Comet 4, one immediately notices the very efficient-looking and handsome instrument layout. It is evident that it was designed as a whole, after much thought. One criticism of British practice, as distinct from American, has been that our instrument panels just seem to grow by one dial at a time, and space usually runs out before they are all in. Probably there will never be a perfect panel (or at least not one that everybody will agree is perfect) but the present Comet layout will be very hard to beat. The comparative simplicity of the engines has, of course, reduced the number of dials, as has the advent of the Smiths Flight System. Against this there are new devices demanding the attention of the pilot, such as cloud-and-collision-warning radar, V.O.R. and the like. Each new piece of equipment seems to bring forth some fanatical follower, and for the placing of its indicator battles have to be fought every half-inch.

One brand-new instrument we have had to put into the Comet 4 is a power-loss indicator. There is one for each engine; it indicates the pressure in the exhaust cone and will give a warning of failure which might in certain cases only become apparent by watching

THE AUTHOR

of this article is de Havilland's chief development test pilot. He was one of the Norwegian Air Force pilots who escaped to England in 1940 to join the Royal Air Force; serving with Nos. 604, 255 and 85 Sqs, he had a distinguished night-fighter record on Beaufighters and Mosquitoes. After the war he became an S.A.S. pilot, flying DC-4s on the company's European routes. In 1949 he joined de Havilland as an assistant to John Cunningham, and has since that date amassed over 2,000 hours of Comet development test-flying

