Handley Page's H.P. 115

AFTER the first flight of the H.P.115, on August 17th this year, Handley Page commented that it had already done its most important job, merely by proving that a man could fly in an aeroplane with such a wing.

Aircraft which earn this kind of remark are usually "hot" and rather frightening. But when the 115’s test pilot, Sgt. Ldr. Jack Henderson of the R.A.E., landed after the 31-min. flight, he said that he had felt confident enough to explore most of the basic handling characteristics and was reported as "brimming with enthusiasm."

Equally significant to readers of Model Aircraft is the Jetex H.P.115 featured elsewhere in this issue. Such a simple to trim model would hardly have been possible had the full-size aircraft relied on complicated arrangements of leading-edge flaps, trailing-edge flaps, slots, spoilers, air-brakes and similar devices to stay right way up from take-off to touch down.

The H.P.115 is itself virtually a piloted "scale model" of the slim delta wing shape proposed for Britain's first supersonic airliner. What is more, it was built only after Handley Page had spent years testing small-scale models in its wind tunnels. Many of the latter were flexible models of an entirely new kind, which enable scientists and engineers to study flutter speeds and the effects of structural distortion on stability and control far more easily than with old-type rigid models.

Of course, the H.P.115 is intended to carry on this research only at comparatively low speeds. No performance figures may be published, but its 1,900 lb. thrust Bristol Siddeley Pegasus 9 turbojet is unlikely to give it a top speed much over 300 m.p.h. This does not matter, as a wing like this, with a leading-edge sweep of 74° 42′, creates greater problems at low speeds than in cruising flight.

So far as we know, no other aircraft has ever flown with such a high degree of sweepback, the nearest being the 69° sweep of the Short SB.5 in its latest form. Most people were surprised to see that the wing has a straight leading-edge, without even conical camber at the tips, as it is generally expected that the wings of a delta supersonic airliner will have an ogival, or curved, planform. However, Handley Page have a few tricks up their sleeve, as the 115's leading-edge is detachable and the present form will be replaced by all kinds of fancy shapes during the future test programme.

The position of the engine air intake also might seem strange, as deltas invariably land nose-high, which would appear to blank off much of the airflow into the intake. The answer is that in a slim delta of this type the airflow separates from the leading and trailing-edges so that the wing is, in effect, permanently stalled and dependent mainly on vortex lift. As a result, an adequate supply of intake air is always provided by the vortex flow.

Structurally, the H.P.115 is straightforward and all-metal, except for the rudder and full-span tab-controlled elevons which are fabric-covered. Apart from the pilot's unpressurised cabin nacelle, the fuselage is a shallow, flat-bottomed structure of little significance. The tricycle undercarriage is non-retractable and there is a large perforated air-brake ahead of each main wheel unit.

Equipment includes a Martin-Baker ground-level ejection seat, an anti-spin and braking parachute in a housing above the jet-pipe, and a camera in a fairing on the leading-edge of the fin to photograph wool tufts on the wing during flight. The behaviour of those tufts will not only be interesting but may even be vital. No other nation has yet put into the air a shape designed specifically for a supersonic airliner, and the H.P.115 is therefore, giving Britain a head start in the development of one of the most important and prestige-packed aircraft in flying history.

Dimensions: Span 20 ft.; length 45 ft.; wing area 430 sq. ft.