

# 'A pair of Tiger Moths strapped together...'



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*Continuing his reports on the flying qualities of some vintage aircraft, David Ogilvy gives his personal views on the de Havilland Dragon Rapide*

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A few aeroplanes fulfil roles that other types cannot begin to tackle; the de Havilland DH89A Dragon Rapide was one such machine, effectively bringing short-haul air services to practical reality in the mid nineteen-thirties. Perhaps we could even give the Rapide some of the credit (or the blame?) for sowing the seed for today's traffic growth, as after a period in military camouflage it re-emerged as a simple, reliable light airliner in the years immediately after World War II. It was one of a line of de Havilland designs that took the leads in their respective fields, just as the original DH60 Moth had placed club and private flying on its feet from the mid twenties.

So let us examine this world winner, known in its earlier days as the Dragon-Six. Although in the thirties the de Havilland name was attached mainly to the large numbers of light machines in the Moth range, several larger designs saw daylight and most succeeded in attaining the aims set for them. Developed

from the DH 84 Dragon of 1932, which normally seated six passengers on the power of two Gipsy Majors (also products of the de Havilland empire) and the DH86 which accommodated ten to the power of four Gipsy Sixes, the DH89 was a compromise. Two Gipsy Sixes (later, Queen 3s) did the work and the cabin held up to eight passengers; here was the most successful light transport of its time, which saw service in almost every country. This was not the first DH compromise that eventually proved to offer the right formula; nearly ten years earlier the ideas behind the diminutive, under-powered DH53 and the oversize, over-weight DH51 had been merged to produce the original DH60 Moth – and the immortal, worldwide success of that needs no build-up here.

The first DH89 carried no British civil registration, flying in April 1934 with the test identity E-4 until it was sold abroad. Of wooden construction with fabric covering, with

a fixed trousered undercarriage and pointed wings of equal span upper and lower, the Rapide looked right, was right and worked well. Railway Air Services, Olley Air Service and Hillman Airways were among the leading British users, while airlines with names still known today, such as KLM and Aer Lingus, had Rapides on their pre-war fleets. At the start of the war in 1939 many were impressed for service with the RAF and the Air Transport Auxiliary, while production continued until 1946 with a military version, known later as the Dominie. Many flew with the Fleet Air Arm.

The Dominie had two main jobs. The mark 1 flew as a radio trainer and the 2 plied many paths on communications work. After the war, considerable numbers were released for civil use and once again Rapides set the scene for many short-haul airline services; British European Airways (the short-haul precursor of today's BA) called them Islanders (not to be



BMW photos via Philip Jarrett

Above: DH 84 Dragon of 1932 and the DH86 powered by four Gipsy Sixes. Right: military Dominies were converted to civil use after the war. Below: BEA Islander



confused with Britten-Norman's machine of this name, which is the world's only true Rapide replacement) and used them on runs to Jersey and Guernsey, round the Scottish Isles and between Lands End and the Scillies. It was this last task that saw BEA's final use for the type, as the small size of St Mary's Airport necessitated Rapides remaining on this run until suitable helicopters were available. Derby Aviation (predecessor of today's British Midland Airways) used them on all schedules until, through demand for more seats, they were replaced by DC3s in the late fifties;

Hunting Aerosurveys and Fairey Air Surveys used them as ideal camera platforms. Most of the UK's aircraft manufacturing companies, including Armstrong-Whitworth, Blackburn, Hawker, Shorts, Vickers and Westland, used them as communications "hacks"; some people parachuted from them, others had pleasure flights in them and oil prospectors went to work aboard them. The Iraq Petroleum Company inspected their desert pipelines from them.

Now let us concentrate on the Rapide (or Dominie) as a flying machine. Perhaps the first

feature to strike a pilot on initial acquaintance is the single narrow cockpit that feels – and is – both high off the ground and a long way ahead of anything else. With no chance of a dual check, the occupant of this barely furnished rostrum, which boasts no frills or non-essential trim, is really on his or her own in every sense; sometimes guidance was provided by another pilot standing in the door hatch behind and just to the right of the sole seat, but more frequently any advice was limited to a pre-flight briefing and a hasty exit.

Everything in the cockpit is well-placed and

logical, with the possible exception of the layout of the instrument panel, which has a typical vintage haphazardness not confined to the type. The port fuel cock, sensibly, is on the left wall and the starboard on the right wall; nothing is out of easy reach, with the throttles and mixture controls fairly high on the left side, the elevator trim-wheel beneath them, the brake lever on the left of the seat and the two position flap lever on the other side. A very desirable feature for use in hot weather or for de-misting purposes is a downward sliding clear-vision window on each side of and just behind the two angled front windscreens.

Starting is straightforward, and as the Rapide relies on electrical power from a wind-driven generator on the top wing, there is no engine-driven supply, so it matters little which



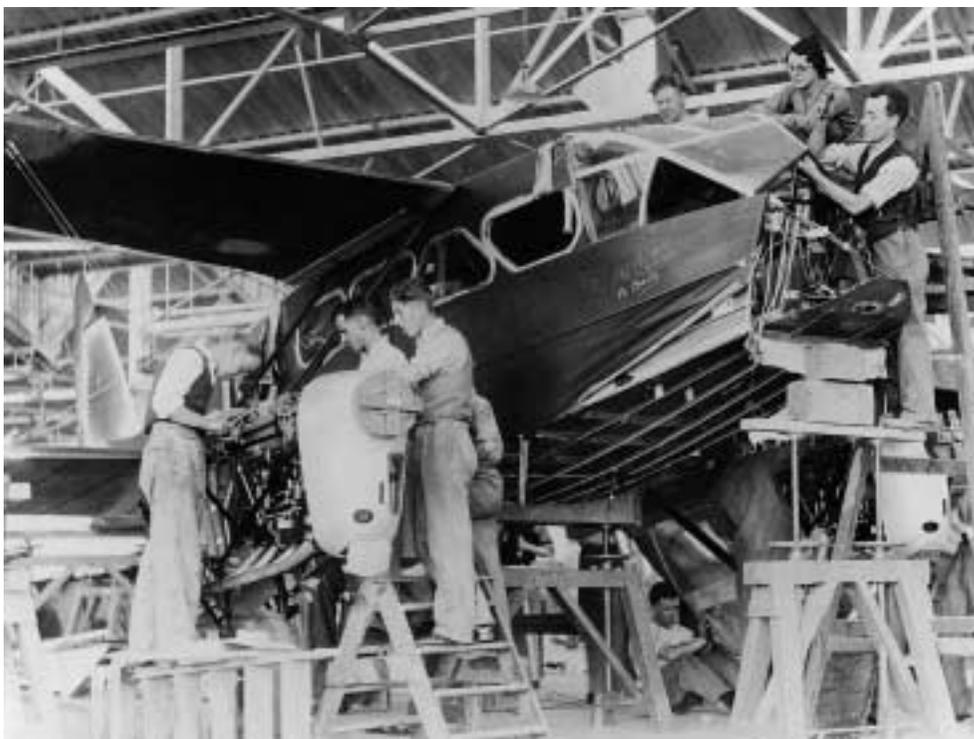
is started first; however, habit makes a starboard start the normal practice. In the early stages the Rapide's structural flexibility is noticeable, but when both engines are settled into smooth operation the result is a comforting purr.

With fixed-pitch propellers (except on later mark 1Vs) and a non-retracting undercarriage, there are relatively few checks for a machine of its size (48ft. span) and weight, which normally stops at 5,500lbs., but which was permitted to nearly 6,000lbs in wartime radio or communications service. Rudder trim is the only item to notice that is additional to the checks on, say, a Tiger Moth.

Take-off into wind and at light load (and all aeroplanes are at their nicest when nearly empty of everything except pilot and fuel) is a sprightly process. The tail comes up almost as soon as the throttles are opened and while one is wondering whether it will swing it flies off the ground at little over 60mph with hardly any help from within. Naturally events are a little more protracted with a cabin full of bodies aboard, but even at maximum take-off weight the get-away is quite creditable. In-flight performance is not quite as lively as the take-off suggests, but a steady climb at 95mph IAS produces something over 800 feet per minute.

I remember being told by a very experienced Rapide pilot that it is just like flying a pair of Tiger Moths strapped together. I could not quite determine what to expect from this, for either this could mean twice the pleasure of a Tiger or double the trouble of keeping in balanced flight. In fact, neither extreme was true, but there is an indefinable quality that attaches some truth to the statement. At all normal operating speeds the controls are pleasantly responsive without being too light for the job.

Stalling is straightforward, although there is not an excessive amount of warning. Empty, the Rapide falls away at just under 60 IAS, but almost invariably the port wing goes down with the nose; it does this in a fairly leisurely manner unless the column is given a slight backward tweak at the point of break-away. Then it shows a determined spirit. Normally, from a straight stall, release of back pressure produces full and immediately effective results.



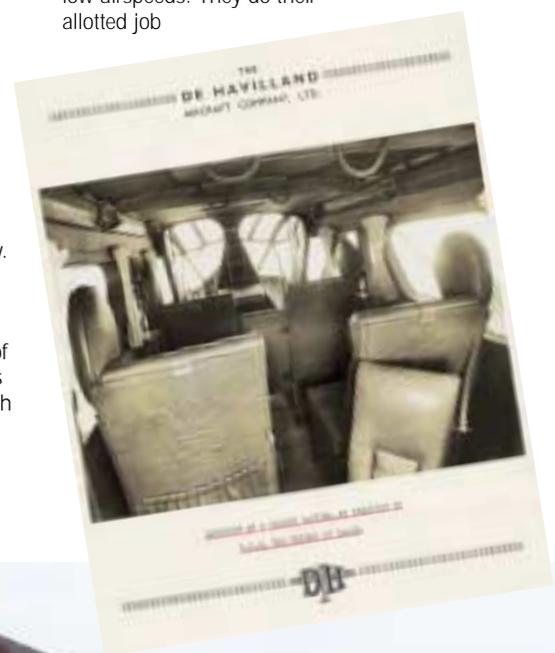
*Above left: the AA used Rapides as traffic spotters during the 1950s and 60s  
Above: Rapide during construction at Hatfield*

Textbooks credit the Rapide with a cruising speed of 130mph, but no power setting is quoted. In practice, 1900rpm produces about 115mph on the dial, and this provides a most pleasant flight condition; the slightest throb through lack of synchronisation, though, transmits itself through the machine with the result that panels pant and fabric flutters. In roughish conditions the wings flex noticeably, but this is a designed-in feature for structural safety.

The Rapide is a pleasure to fly. It is a steady, stable platform in all but the roughest of weathers and only laterally does it show a very slight tendency to a wandering instability. It asks to be "flown" and rolls beautifully and precisely into steep turns, which can be sustained indefinitely so long as full power is maintained. It rolls out equally cleanly. It is, of course, non-aerobatic. On one engine there is no climb performance and at full load the path is slightly downhill, but at normal weights height can be held at about 85mph IAS; rudder trim range is sufficient to remove all footload in this condition.

Pre-landing check are few. The manual

mixture controls must be placed fully rich in case of a missed approach and, apart from the usual fuel and allied checks, only flaps remain for action. The very earliest Dragon-Sixes had no flaps, but the remaining Rapides have them in a very basic up or down form. In effect they are airborne barn doors and they offer no intermediate positions for take-off (for which they are quite unnecessary, anyway) or flying at low airspeeds. They do their allotted job



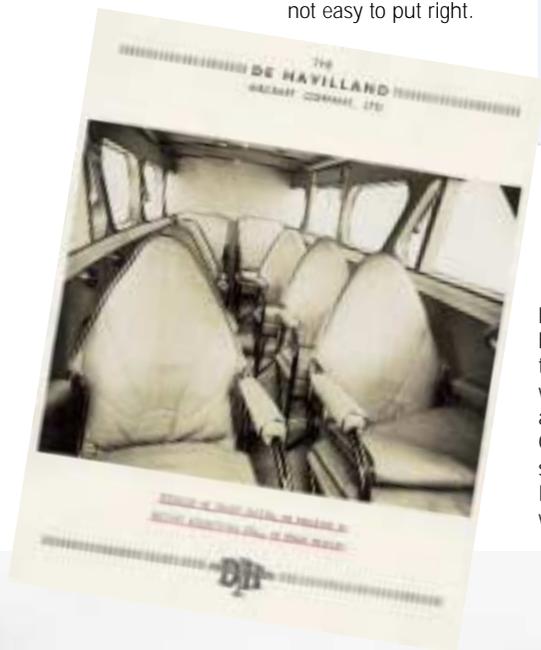
*Rapide in the colours of the Prince of Wales, and the DH brochure showing the interior  
Opposite: Railway Air Services Rapide, and interior of the same aircraft*





Left: the panel has a typical vintage haphazardness not confined to the type  
 Above: the instructor dispensed advice from the door hatch behind the sole seat  
 Below: Rapides have flaps in basic up and down form

moderately well and allow a light-load fence-crossing speed of 70mph. The next stage, though, is when the Rapide shows some strange spirit. As I discovered to my embarrassment, any pilot who is doggedly determined to three-point anything that he handles may have a shock; a tail-down wheeler presents no problems, but in certain sets of conditions a precise all-wheels-on touchdown may lead to a marked wing-drop that is not easy to put right.



In this case no damage was done, as the down-going wing just escaped making contact with the hard runway beneath, but it provided a well-warranted dent in my personal pride; I was in my twenties, so I thought I knew how to fly. We all need physically harmless incidents such as this to learn the truths of human fallibility. Wing dropping is a well-established characteristic with certain aircraft that have pointed wingtips; the DH88 Comet of pre-war England-to-Australia fame suffered badly in this respect and the original DH87 Hornet Moth did likewise until it had its wings cropped.

728 civil Rapides were built, as were 521 military Dominies, but, as identical aeroplanes, many swapped roles during their active lives. Some started as Rapides, saw war service as Dominies and survived to return to civil status. Today, eight Rapides remain active on the UK register and five of these have certificates of airworthiness in the Transport category. Surprisingly, one of the latter, G-AKIF, is recorded as operating still with early Gipsy Six 1 engines. These figures are encouraging, for 30 years ago there were five in use and only two were certificated for commercial operation.

To operate on a C of A, a type is required to have a CAA approved design authority and, fortunately, the DH 89A is covered by de Havilland Support Limited, based at Duxford in Cambridgeshire. Clearly and understandably, the Rapide has an enthusiastic following, which should ensure that the unique sight and unmistakable sound will be with us for many years to come. ■

