

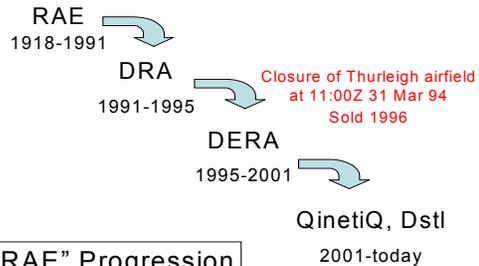


HP115 with Test Pilots, 3 Jan 1962
(Can anyone identify the pilots?)



FD2 in 8x8 wind tunnel, 25 June 1959

This newsletter is about the scientific and historical legacy of the Royal Aircraft Establishment Bedford and its successors (DRA, DERA), which the Bedford Aeronautical Heritage Group (BAHG) aims to preserve and publicise. BAHG addresses the work of both main sites, the wind tunnels and the airfield. The diagram here is a reminder of the main organisational changes. Thurleigh airfield closed for flying on 31 March 1994 but research continued at Bedford until 2001 and, indeed, under QinetiQ, until 2008.



“RAE” Progression

Stop Press - Jack Shayler (Superintendent BLEU in 60's) died on 5th September 2011.

Historic First Flight at Bedford – 50th Anniversary in 2011

On 17 Aug 1961 test pilot Sqn Ldr Jack Henderson emerged from the cockpit of the Handley Page HP115, XP841, at RAE Bedford having conducted the very first flight of this low-speed research aircraft. This flight lasted just 31 minutes. Built as part of the supersonic transport research programme, that ultimately led to Concorde, the HP115 was used to investigate the low-speed aerodynamic characteristics and flying qualities of what was then an entirely novel configuration, with its highly swept wing. One of the major unknowns of aircraft with such slender wings was how well they would fly at low speed. In those days, pilots didn't emerge from the cockpit saying “it flew just like the simulator”. There were only rudimentary simulators. Indeed, their experiences in the simulator at the company factory had left pilots with serious concerns about flying the HP115. These were not borne out in practice. The aircraft was described as a “delight to fly”. After some 500 hours of test flying, the aircraft's flight test career ended on 31 August 1973. While Concorde itself only flew for the first time in 1969, the first flight of the HP115 can truly be said to be the beginning of the Concorde era. It established that low-speed flight of slender wing aircraft was viable. The aircraft left Bedford on 31 January 1974, and is now at the Fleet Air Arm Museum, Yeovilton.



HP115 in flight over Thurleigh June 1972



After last research flight, 31 Aug 1973 (L to R: Aero Flight pilots Flt Lts John Fawcett; Ron Ledwidge, Peter Gordon-Johnson, & Sqn Ldr Terry Downey, CO BLEU pilots)

BAHG Talks

Our next talk, ‘Wings over Thurleigh: The Royal Aircraft Establishment Bedford 1952-2001’, will be given by Barry Tomlinson to the Bedford Branch of the RAeS, on 14 Dec 2011 (7 for 7.30) at the Aircraft Research Association, Manton Lane, Bedford (visitors welcome, admission: £1).



Merry Christmas & a Happy New Year to All



Harrier XW175 Research Aircraft and the VAAC Programme

XW175, a second development batch T2 two-seat aircraft, first flew in 1969 and was delivered to RAE Bedford in February 1975. It is a unique aircraft in that it spent most of its operating life in support of VSTOL research.

In the early 1970's RAE Bedford was tasked by MoD with a work package to enable Sea Harriers to recover to a vertical landing on a ship at night in poor visibility. XW175 was allocated as the trials aircraft and thus began its illustrious 38 year research career at RAE Bedford and then at QinetiQ Boscombe Down. During 1977/78 two sea trials were completed with HMS Hermes. The research programmes included recovery using MADGE guidance, VSTOL Head Up Display symbology, ski-jump launch, auto-stabiliser and autopilot development and FLIR demonstrations.

In the early 1980's, studies into advanced VSTOL aircraft concepts suggested that control at low speed and hover could be more complex than with the Harrier. The need for research into novel control methods led to XW175 being adapted for one pilot to have fly-by-wire control, when it became the Vectored thrust Aircraft Advanced Control (VAAC) Harrier, a unique UK VSTOL research vehicle.

Over the period 1986-2004, several 2-inceptor control concepts were progressively developed, first with simulation and then, from 1990, with extensive flight trials in the aircraft, including the first ever deck landing with unified control (HMS Illustrious, Sept 1998). In 2002 this Bedford 'Unified' control concept, having been shown to demand minimal pilot workload while maximising safety, was selected for the STOVL variant of the Joint Strike Fighter (Lockheed Martin F-35B). Several ship trials with HMS Illustrious and HMS Invincible were completed up to 2008 to further support JSF and to demonstrate the capability to UK and US pilots. These trials included automatic recovery and automatic vertical landing to a ship at sea, some 30 years after the original HMS Hermes trials with XW175 in 1977.

Having conducted its last research sortie on 18 November 2008, with QinetiQ at Boscombe Down, XW175's final resting place is now to be resolved. BAHG has expressed strong interest in bringing the aircraft back to Bedford. Major museums, such as the RAF Museum, are also making bids.



VAAC Harrier in flight



Joint Strike Fighter F-35B

The BAHG "Team"

The team recently celebrated Mike Dobson's 80th birthday. Mike was the last Chief Superintendent of Bedford. Here is the team (L to R: Gerry Shanks, Reg Harlow, Tony Manning, Mike Dobson, Barry Tomlinson, Barry Moulang & Peter England) outside the Fox & Hounds, Riseley, on 15 July 2011.



The book "Wings Over Thurleigh", first published in 2001, has been re-issued in a third edition, but has nearly sold out again. Anyone interested in buying a copy (£30 plus p&p) is urged to do so soon. While stocks last, as they say!

Contact Us

Finally, if you are not on our mailing list and would like to receive future copies of the BAHG Newsletter, to be published periodically, please send your email address to Barry Tomlinson (bahg-bt@hotmail.co.uk) – apologies for typo last time! "Snail mail" deliveries could probably also be arranged. And don't forget, if you have any material related to RAE Bedford, or recollections you would like to share, we would like to hear from you.

Bedford Aeronautical Heritage Group