



Short SC1 XG905 in hover (neg C7501, c. 1960)



HS125 XW930 on ground (neg B3138C, 1972)

Corona Virus First, we hope you are all keeping well and sane in the current circumstances! Our work in the archive has necessarily come to a halt, but we thought a newsletter should still go out.

Some Anniversaries

Vertical take-off research at RAE Bedford began with the Rolls-Royce Flying Bedstead and progressed to the Short SC1, the first of which (XG900) arrived in 1960, having made its first conventional flight at Boscombe Down on 2 April 1957. The second SC1 (XG905), actually at Bedford from 1959 (as reported in *Flight* magazine for 11 Sept 1959), made the first ever transition of a jet VTOL aircraft from hover to conventional wing-borne forward flight and back to the hover. This significant achievement of a crucial manoeuvre was flown at Bedford by Short's test pilot Tom Brooke-Smith on 6 April 1960. XG905 made its last flight at Bedford on 3 May 1973 and is now in a museum near Belfast.

Later in 1960, on 5 September, Fairey FD2 WG774 left Bedford for Filton, for conversion into the BAC221 as part of the Concorde research programme. WG774 returned in May 1966.



1970 saw the arrival of HS125 XW930, joining Aero Flight for a variety of research tasks, including measurements of air turbulence, of the air wake of other aircraft, the effectiveness of noise-abatement engine nozzles, and laser wind shear detection (*picture left, neg B5410C, 1980*). The aircraft transferred in 1985 to the Radar Flight Trials Unit at Bedford.



Another aircraft to arrive in 1970 was Gnat XP505 (now in the Science Museum store, see Nick Cooke's picture, bottom of next page). The aircraft was used initially for buffet research associated with the Multi Role Combat Aircraft, known later as the Tornado. Subsequently the aircraft was used extensively for gust research, flying over the mountains of Wales to measure air turbulence at low level (*picture above right, neg B5152E*). XP505 made its last flight on 28 April 1983, piloted by Dennis Stangroom.



An unusual helicopter arrived one night by Hercules in October 1970: the Lockheed XH-51N (NASA 531) rigid rotor helicopter. The aircraft was on loan from NASA Langley to give the UK some experience with such a rotor prior to the first flight of the Westland Lynx - at that time a novel concept and an offering into an important Anglo-French collaboration defence procurement.

In addition, a direct comparison was made between the XH-51N and a modified Westland Scout helicopter which used the same rotor technology. The picture (*neg B2858C*) shows the XH-51N hovering by the flight-line outside the Aero Flight hangar. The aircraft was returned to NASA on 24 May 1971 having made 25 research flights.

Some distinguished test pilots visited Bedford in 1970: André Turcat from France, who made the first flight in the French Concorde in March 1969, and Brian Trubshaw, who made the first flight in the British Concorde in April 1969. They came to RAE Bedford for Turcat to fly autolandings in a Varsity and for both pilots to experience the use of a take-off director in Comet XP915.

Bedford Aeronautical Heritage Group

Don't forget, to contact us with any news or comments, please email (bahg-bt@hotmail.co.uk).



Bedford test pilot John Lewis, with Turcat, Sackmann, John Cannell & Flt Lt Gardner (neg B2735D, April 1970)

John Cannell, Brian Trubshaw, John Lewis, and Lockspeiser (neg B2798, July 1970)

In the wind tunnels, a major research theme in the 1980s explored the optimum aerodynamic configuration for future combat aircraft. A variety of models with the generic label High Incidence Research Model (HIRM) were evaluated. In later years, these concepts evolved into EFA, the European Fighter Aircraft project and the Eurofighter Typhoon. Many Typhoon-type models were tested (see picture below) in the 8x8 supersonic wind tunnel. We never had a visit from a Eurofighter Typhoon as it only made its first flight at about the same time Bedford airfield at Thurleigh closed (on 31 Mar 1994, at 11:00Z).



High Incidence Research Model (HIRM) in 13x9 tunnel, High May 1980 (neg CL635)

EFA model with under-wing stores in 8x8 tunnel, Feb 1990 (neg A4532)

Another “world first” for RAE Bedford occurred in 1980, when BAC 1-11 XX105 was equipped with an Electronic Flight Information System (EFIS), supplied by Smiths Industries at Cheltenham. This was the first such installation in an airliner (picture left, neg B5361B, Aug 1980).



Rapid development of the display technology resulted in full colour displays being fitted in 1981, and then full integration with an advanced Flight Management System (picture right, neg A9066, 1993), with the BAC 1-11 undertaking a month-long tour of the USA to demonstrate the new system capabilities (picture below of team prior to departure, neg B5758B, Oct 1981). The Airbus A320 was the first production airliner to adopt such cockpit displays, known as a “glass cockpit”, making its first flight in 1987.



1-11 & Team



Gnat XP505

Bedford Aeronautical Heritage Group

Don't forget, to contact us with any news or comments, please email (bahg-bt@hotmail.co.uk).