



13x9 Low Speed wind tunnel, 1952 (neg RAE99206)



Airfield runway construction, 1952 (neg RAE99896)

Queen's Platinum Jubilee

The country has recently celebrated H.M. the Queen's jubilee of her accession to the throne in February 1952. As the Queen's reign began, RAE Bedford (then known as the National Aeronautical Establishment) was beginning to come alive, with major building work on both the wind tunnel site and the airfield, as shown above. The 3ft x 3ft supersonic tunnel, the first of the wind tunnels to be completed, conducted its initial calibration runs on 29 April 1952. (Design and construction began in 1946.) On the occasion of the Silver Jubilee in 1977, as part of their own celebration of 25 years of 3ft tunnel operation, the staff at the tunnel sent a loyal message to congratulate H.M. the Queen, also noting the tunnel's anniversary. A reply was received. The staff re-union in May 1977 brought together some 120 guests, while more than 50 others were unable to attend. Research using the 3ft tunnel lasted until 1983, the final run being on 30 March. In 1952, other wind tunnels were progressing. The 13x9 low-speed wind tunnel was well on the way to completion, while the 8x8 supersonic tunnel was only in its early stages. The municipal water tower (all 2000 tons) was moved some 810 feet in 1952 from its original location to make room for part of the 8x8 tunnel. This involved a traction engine pulling the tower along a special track, see picture at right (neg M239).



Fire Engine

One of the more unusual queries that we have received recently asked if we had any information about, or images of, a Bedford RL fire tender reg CYY426C. This came from the Hampshire Police and Fire Heritage Trust, who have a collection housed in the Solent Sky Museum, Southampton. The trust has acquired this vehicle, currently described as "in a sorry state" (see picture, *IMG_3345*), and plan to restore it to its former glory, including RAE markings if appropriate. They believe this fire tender served at RAE Bedford from 1955. Our archive did not yield any specifically identifiable pictures of this vehicle, but the array of fire vehicles in this aerial view, below, of the fire station (neg *B7005K*, 1985) seems to show a similar vehicle, fourth from left.



The number plate cannot be read from the image. If anyone has any further information about this Bedford fire tender, please contact us via email.



The RAE fire section had to deal with a major incident in 1982, when Hawk XX344, landing on the main runway, was upset by the trailing wake from a large aircraft that had just taken off (neg *B5804-11*, Jan 1982). Both aircrew survived.



New Aircraft Carriers and RAE Research Legacy (Barry Tomlinson)

I recently had the privilege of a tour of one of the Royal Navy's new aircraft carriers, HMS *Prince of Wales*, while the ship was alongside in Portsmouth harbour, shortly after returning from a deployment to the Arctic. First-of-class, HMS *Queen Elizabeth* was also there. This brought home how aviation operations on these two very large ships are fostered today by several lines of research undertaken many years ago at RAE Bedford. Each ship has a ski jump (right, HMS *Queen Elizabeth*, author picture) as the primary means for the F-35B Lightning II aircraft to get airborne. The very first launch of a Harrier from a ski jump took place at RAE Bedford on 5 August 1977, some 45 years ago, and extensive tests at launch angles up to 20 degrees established the optimum as 12 degrees (picture below shows RAE research Harrier XW175 on 9 deg ski-jump, neg B4551H Oct 1977). The *Invincible* class ships were the first to have ski jumps in 1977. (More details can be found in BAHG Newsletter Issue 23, June 2016.)



Queen Elizabeth-class ships are also equipped with what is known as the 'Bedford Lighting Array', a system of deck lights which provide visual guidance to approaching aircraft when performing straight-in approaches for a Shipborne Rolling Vertical Landing (SRVL), a technique first demonstrated by Harrier XW175. The usual approach method is to hover alongside. The F-35B aircraft themselves employ flight control software in the low-speed regime down to the hover that was devised at Bedford using the Advanced Flight Simulator and then proven in flight in research Harrier XW175. (See BAHG Newsletter Issue 30, June 2018) These flight control laws simplify the pilot's flying task compared with the Harrier. The Merlin and Wildcat helicopters that also deploy on these ships use advanced main rotor designs derived from the joint RAE-Westland British Experimental Rotor Programme (BERP) conducted in the 1980s, using Puma XW241 (see picture right, neg B6667, 1984). This helicopter is now on display at the FAST museum at Farnborough. Boxes visible in the ship's hangar were labelled, somewhat unexpectedly, "EH101 BERP III Main Rotor Blade". In summary, RAE research initiated as much as 30-40 years ago is now in full operational service, a legacy of which we can all be proud.



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RAE Commemorative Plaque

Recently we have been thinking about whether some sort of permanent indicator, such as a memorial plaque, could be erected to record that the sites now known as Thurleigh Airfield and Twinwoods Business Parks were once the home of RAE Bedford, a world-class aeronautical research organisation. There are several potential schemes in existence. The Royal Aeronautical Society supports what it calls "Heritage Awards". The essence of the scheme is to erect plaques to commemorate significant people, places and things and thus to celebrate technological or operational achievements that made an original and unique contribution of world significance. Around 20 such plaques have already been erected around the UK but surprisingly RAE, neither Farnborough nor Bedford, has yet been included. English Heritage also has a "Blue Plaque" scheme, more to commemorate people, and the Transport Trust puts up "red wheels", such as this one at Cardington (image P1120025 Barry Tomlinson) to commemorate significant places and "things". There are several challenges for us, not least what the plaques could be attached to, as well as the cost. We would be interested to receive people's comments.



Two contrasting aircraft visiting Thurleigh in 1972



Boeing 707 on approach (neg B3101, 1972)



Concorde G-BSST (neg B3090, 1972)

Bedford Aeronautical Heritage Group

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