

Brooklands Concorde Comeback

Of the six Concorde to survive in the UK, the first British production aircraft has faced the most difficult journey to becoming a display aeroplane. But at the Brooklands Museum at Weybridge, a skilled cadre of former Concorde engineers and a group of dedicated volunteers are working hard to get the Mach 2 airliner back into shape, as **TONY HARMSWORTH** reports

RIGHT Concorde c/n 202/G-BBDG at Brooklands on January 24, 2006. It now sits on a genuine Concorde undercarriage again, having been fitted with slave units at Filton during many of its years as a spare source. Owing to health and safety concerns, the hydraulic system will not be operable, so the droop nose will remain in the "up" position.

BELOW The same location, 35 years earlier; the forward fuselage of c/n 202, seen on the Brooklands production line during 1971.

DURING THE AUTUMN of 2003 British Airways' Concorde fleet gradually departed from Heathrow for retirement at destinations as far apart as Barbados, Seattle, New York and Manchester. These farewell flights culminated in the last landing of Concorde G-BOAF at Filton airfield, Bristol, on November 26, bringing the first era of supersonic passenger air travel to a close. But only yards away from the fanfare surrounding that last, emotional landing, hidden away in Filton's huge Brabazon hangar, sat the first British production Concorde, c/n 202, on a slave undercarriage, shorn of its droop nose and elegant fin, quietly awaiting its fate.

Concorde c/n 202/G-BBDG had made its last flight as long ago as Christmas Eve 1981, only 12 years after construction had begun at Brooklands. Its nose and forward fuselage left Weybridge in October 1971, bound for Filton, where



assembly continued until it was rolled out in December 1973. In February 1974 'BBDG made its first flight, during which it attained Mach 1 for 15min. Over the next few years it was used on test work and certification flights, but was never destined to carry paying passengers on the glamorous Atlantic route. In April 1982, four months after it had last flown, 'BBDG went into the Brabazon hangar at Filton and was kept at semi-readiness, able to be made airworthy in two weeks if required. In April 1984 BA finally acquired title to 'BBDG, but thoughts of putting it into service came to nothing, its fuselage skin being slightly thinner than that on the Concorde in airline service. It then gradually began shedding parts to keep in-service Concorde flying, the ultimate ignominy being the loss of its droop nose in 1995, which was fitted to G-BOAF. Late in life, 'BBDG came into its own for test work once again, albeit on the ground, being used for trial fittings for the prototype of a new, strengthened cockpit door, made necessary by the 9/11 atrocities.

After British Airways announced the retirement of its Concorde in April 2003, many museums requested an example for display, and on October 30 that year it was confirmed that 'BBDG had been allocated to the Brooklands Museum. The move from Filton to Brooklands was a real challenge, the narrow roads at either end of the route requiring the wings to be cut off inboard of the undercarriage, something never previously done. The fuselage also had to be severed in two places,





ABOVE The starboard engine nacelle awaiting fitting. **LEFT** Gordon Roxburgh, who runs the Concorde SST website, and is a regular volunteer on G-BBDG. Gordon first saw Concorde making training circuits at Prestwick, near his childhood home at Kilmarnock. **RIGHT** The port nacelle, lifted into place by a forklift lent by Linde Materials Handling for the day.





MICHAEL QUERTY/PHOTODISC

"On January 21, 2006, 30 years to the day after the first commercial Concorde

ABOVE Some of the former British Airways Concorde staff who work on G-BBDG, in the cockpit on January 24. From left to right: Miles Jordan, a BA engineer who worked on Concorde as a BAC engineering apprentice in 1970-73; Derek Potton, a BA Concorde avionics technician; and Keith Barton, a former Concorde captain, who flew the Mach 2 airliner over a ten-year period. **ABOVE RIGHT** The port nacelle being secured to the wing.

a high-tech diamond-tipped cutter being used for a very precise cut just a few millimetres wide.

On May 5, 2004, the nose of 'BBDG arrived back at Brooklands on a low-loader, 33 years after it had made the journey in the opposite direction. The wings arrived late on May 27, with the 100ft-long, 17ft-wide centre fuselage arriving at Brooklands on June 5-6. Air Salvage International (ASI), a Lasham-based company of former Dan-Air engineers, began to put the aircraft back together on March 1, 2005, by which time a force of 40 volunteers had been mustered to work on the airliner. On August 8 the structural elements of the forward fuselage rejoin were completed, using aluminium repair plates designed by the ASI team. The fitting of the starboard wing took six weeks, 200 aluminium channel sections being bolted into place using custom-built jigs.

During October 2005 the nosecone was refitted just in time for a visit from Chancellor of the University of Surrey, HRH the Duke of Kent. The

university has become closely involved with the restoration of this icon of local technology, as part of a degree course in which students from as far apart as Iran and Germany embrace the chance to work on such a legendary machine. Ross Kelway, the university's Student Initiatives Officer, says, "It feels strange that Concorde, probably the most glamorous, exotic airliner ever, is now our pet project; a project that, on the surface, may appear to be slightly agricultural and hand-to-mouth. We are doing the best we can with basic tooling, but, with time and effort, the end product will look just as it did 30 years ago. We have been using parts from other members of the Concorde fleet supplied to us by British Airways, and it is fun to get something out of a box and find it was a part that crossed the Atlantic at Mach 2 attached to a different Concorde."

The latest major rebuild landmark was on January 24, when several BA Concorde engineers braved freezing conditions to supervise the re-



RIGHT Looking aft down the cabin of G-BBDG as the internal fitting-out begins. **ABOVE FAR RIGHT** The elegant nose of 'BBDG. The coaches in the background brought two of the increasing number of school parties visiting Brooklands since Concorde was opened. **BELOW FAR RIGHT** The museum's Curator of Aviation, Julian Temple, explaining to the author (taking notes) his plans for the cabin. In place of the temporary display boards seen here will be a £40,000-£50,000 audio-visual system explaining the history and technology of Concorde. Visitors will enter through the rear cargo door, and there will be Perspex panels in the floor revealing some of the structure and portions of the 90 miles of wiring which winds its way through the aeroplane.





FAR LEFT The two fuselage cuts, now filled and rubbed down, are just visible in this view of the port fuselage of 'BBDG, taken from the cabin door, as are the replacement leading edge sections. **LEFT** Holding the fuselage together at the cut points are these riveted aluminium repair plates. They were designed and installed by the team from Air Salvage International, the company which has been responsible for the dismantling and structural reassembly of the Brooklands Concorde.

flight, 'BBDG was opened to the public; internal fitting-out is now under way.'

fitting of the two steel-honeycomb engine nacelles. With a hand shivering from the cold, Ross Kelway pointed to a group of men in reflective jackets: "We are very lucky to have a team of six BA engineers who help on their days off with tasks such as fitting the intakes and droop nose, as well as being on call to provided answers to our many questions." Julian Temple, Curator of Aviation at Brooklands, adds, "The Olympus engines will not be fitted, as an extra safety margin following the wing repair. Visitors wouldn't be able see the engines anyway, as they are enclosed in the nacelles, but two engines will eventually be displayed underneath the aircraft. The complex series of intake baffles and ramps, used to regulate airflow during Concorde's wildly different flight regimes, will soon be fitted inside the nacelles, as will the thrust-reverse buckets at the rear. Missing items include the No 3 elevon, many access hatches, and 15ft-high airstairs."

Ross Kelway continues, "We are starting to

build up a list of companies that can help construct missing items, including a sheet-metal company to make up our five missing leading edge sections. Some of the missing brackets, fixings and panels can be fabricated by students in the university workshops."

On January 21, 2006, 30 years to the day after the first commercial Concorde flight, G-BBDG was opened to the public. Internal fitting-out is now under way, with seats from G-BOAB, which is still at Heathrow, due to arrive in July.

As the late afternoon temperatures at Brooklands dropped below zero, Ross Kelway reflected, "On October 26, 2003, I was one of many that travelled to Filton to see G-BOAF make history with the last-ever Concorde landing. I knew nothing about 'BBDG, gathering dust just across the airfield, so couldn't imagine that I would be involved in bringing back to life the history that was just waiting to be unlocked on that historic day."



ABOVE Ross Kelway, the Student Initiative Officer at the University of Surrey, who has brought several students from the University on to the Brooklands Concorde project.



■ Brooklands Museum is open daily, 1000–1600hr (1700hr in summer). Adult admission costs £7. For more details see www.brooklandsmuseum.com or call 01932 857381; for more Concorde information see Gordon Roxburgh's website at www.concordesst.com

LEFT Concorde G-BBDG making its last landing at a snowy Filton on Christmas Eve 1981. Although it was wearing British Aircraft Corporation titles at this time, it was subsequently painted in the original British Airways colour scheme, and will become the only preserved example wearing those colours.