

# MACH 2

Concorde magazine

COMMEMORATIVE  
ISSUE

*50 years since the first  
Concorde flights*



The maiden flights  
*Concorde's emergence*

Concorde at 20  
*A double display*

The story goes on  
*Celebrations in the UK  
and France*

Issue 21  
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# INTRODUCTION

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*The subject of this commemorative issue is Concorde's 50th anniversary. Half a century ago, in the spring of 1969, the work of more than six years and 250,000 people was brought to fruition when the two Concorde prototypes made their maiden flights. We look back at those momentous occasions and what they meant to the participants and spectators.*

*Colin Mitchell, former director of Goodwood Travel, remembers an earlier anniversary – the 20th, for which he and his company organised a double Concorde flight by British and French aircraft.*

*Lastly, we have news of the anniversary celebrations in France and the UK. These events have included crew members from those first flights; former Concorde pilots, engineers, and cabin crew members, passengers; and enthusiasts. Their vivid memories and continuing delight in Concorde leave no doubt about the love and admiration that people still hold for the aircraft now.*

*Here's to the next 50 years.*

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Editor: Katie John  
Contributing editor: Nigel Ferris  
Cover: French prototype Concorde 001 (F-WTSS)  
takes off for his first flight.  
Photo © Fleet Air Arm Museum

# THE MAIDEN FLIGHTS

*Exactly 50 years ago, civil aviation took a giant leap forward that has never since been equalled – Concorde took off for the first time. Mach 2 Editor Katie John looks back at the challenges and triumphs of those first flights.*

ON 2 MARCH 1969, Concorde 001, the French prototype, took to the air over Toulouse and made aviation history. Five weeks later, on 9 April 1969, this feat was matched by 001's British partner, prototype 002, which made the 50-mile flight from her birthplace at Filton to RAF Fairford.

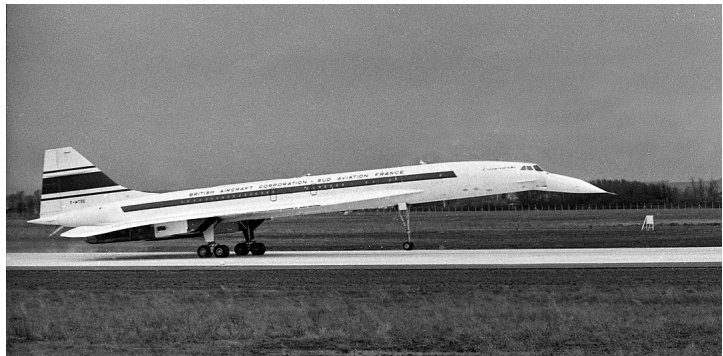
Just to reach the start of its active life, Concorde had had to overcome significant challenges. Two old, proud nations had combined their expertise and efforts into a huge and complex (and expensive) organisation. As the world's first supersonic airliner, Concorde would undergo tens of thousands of hours of examination, testing and refinement of every aspect of its structure and functions. Yet while the Anglo-French team were breaking new ground with the design, other nations watched Concorde's progress with envious eyes, while some politicians on both sides of the Channel disputed whether the project should continue at all.

Through it all, though, Concorde survived, and during the mid-1960s the aircraft began to take shape. Finally, on a bitterly cold winter's day in Toulouse, Concorde 001 was revealed to the public for the first time. Aviation would never be the same again.

## One small step

18 February 1969: 001 lifts his nose wheel off the ground during a taxi run.

Photo: Fonds André Cros, Toulouse / Wikimedia Commons CC-BY-SA 4.0



## The French prototype: 001 (F-WTSS)

The public life of 001 (F-WTSS) began on 11 December 1967, when he was first rolled out of the Sud Aviation hangar at Toulouse-Blagnac airport, in front of French and British politicians, VIPs, media, and representatives of the 16 airlines who held options to buy Concorde.

Despite the cold, more than 1,100 people stood outside the hangar to await Concorde's emergence. As British Airways Concorde Flight Manager Brian Calvert put it, in his book *Flying Concorde*: "The hangar doors rolled back ... and there she was, sideways on, long, sharp, and sleek. ... this, the first sight of a real Concorde, stopped the breath, leaving it hanging in condensed wisps over the thousand-odd heads."



## Official ceremony

British Minister of Technology Tony Benn (centre left) and French Minister of Transport Jean Chamant (centre right) cut the ribbons to release 001 from his hangar. On the wall behind the aircraft are the logos of some of the 16 airlines holding options to buy Concorde.

Photo: Fonds André Cros, Toulouse / Wikimedia Commons CC-BY-SA 4.0



## 001: Flight crew

**André Turcat** Commander

**Jacques Guignard** Co-pilot

**Michel Rétif** Flight Engineer

**Henri Perrier** Flight Observer

**Claude Durand** Flight Test Observer

**Jean Belon** Assistant Chief for Flight Test, SNECMA

After this first glimpse, there followed over a year of rigorous ground testing, with the first taxi runs taking place in August 1968. The Olympus 593 engines had also undergone their own test programme, amounting to more than 5,000 hours. The date for the first flight had had to be postponed several times, and even at the last it was delayed for two days because of wind and heavy mist.

Finally, on 2 March 1969, the French were ready. The day is described in *Concorde: Le Magnifique*,

by aviation writer Yves Marc. VIPs, industry figures, and media from around the world waited to see Concorde. One of those present was fellow Concorde test pilot Jean Pinet, who had been asked to give a commentary on the flight to the guests. Another was Jacqueline Auriol (see Mach 2, March 2016), who would become Concorde's only female test pilot, and one of the first people ever to take the aircraft through the sound barrier.

Normal air traffic had been suspended for the day. By 10.30am

the flight crew, commanded by Concorde Chief Test Pilot André Turcat, were in their seats; however, the weather was still poor and the cloud base was too low for flight, so they left the aircraft and went to have lunch. By about 3.00pm, the weather had improved enough for the crew to begin their preparations. Then, just before 3.40pm, 001 began his take-off roll. Just 23 seconds later, he was in the air. "Il vole!" the French commentators declared. "She flies!" exclaimed British TV reporter Raymond Baxter.

From the start, the spectacular new shape in the air thrilled onlookers. Gilbert Defer, another Concorde test pilot, who was flying the Meteor chase plane that accompanied 001, was heard by the Concorde crew to exclaim, "Looking from here, you wouldn't believe how beautiful it is!".

### It flies pretty well...

Concorde 001 photographed from a French chase plane during the maiden flight over Toulouse.

*Photo: Fleet Air Arm Museum*



The aircraft passed over Toulouse and the surrounding area; one local football match was even paused for a few minutes so the players and spectators could watch Concorde pass overhead.

The flight, at an altitude of 10,000 feet and a speed of 250 knots, lasted 27 minutes. Com-

mander Turcat left the nose and undercarriage down throughout. The flight crew focused on assessing the controls and calibrating the air speed indicators with those of the chase aircraft. Their work was made more challenging by a failure of the air conditioning on board, leaving them sweltering. However, they

brought 001 in to a perfect landing. Afterwards, Commander Turcat gave a speech to the media about the flight; he said simply, "The machine flies, and it flies pretty well."

A film of Concorde 001's first flight can be seen here: <https://www.youtube.com/watch?v=zHT6r4wPLKE>

## The British prototype: 002 (G-BSST)

The roll-out of British prototype 002 (G-BSST) at the British Aircraft Corporation (BAC) factory at Filton, on 19 September 1968, was a very low-key affair compared to 001's first appearance.

Brian Trubshaw, BAC's Chief Concorde Test Pilot, recalled in his book *Brian Trubshaw: Test Pilot*: "there was no ceremony, no guests, only the work force to watch it. It was regarded as a normal working day and the aircraft was taken straight to the running base for commencement of the ground runs." Even Tony Benn, Minister of Technology in the British government – and the MP for Bristol South East (the area including Filton airfield) – was not invited to witness the occasion.

By the time 002 was brought out of the Brabazon hangar, the designers and manufacturers of Concorde were already at work on the pre-production versions; Concorde 101 (G-AXDN), with her new all-glass visor, could be seen taking shape inside the hangar. The prototypes did, however, still go on to play a part in the test flights and sales tours – including, most notably, 001's unequalled 74-minute flight to follow the solar eclipse of June 1973 (see Mach 2, June 2018).

### Preparatory testing

Brian Trubshaw, commanding the flight, had already been participating in taxi runs with 001, as co-pilot to André Turcat. He had also had



### An ordinary working day

Concorde 002 is rolled out of the Brabazon Hangar for the first time, as workers watch. There is no ceremony; the aircraft is immediately started on testing.

Photo: George Rollo

the benefit of attending 001's first flights (there had been nine in all by 9 April) and flying 001 himself on the French aircraft's fifth outing, on 21 March.

Now he and his flight crew would take 002 through the ground testing in preparation for her first flight. Like her French counterpart, Concorde 002 was put through a rigorous programme of ground and engine tests. As Commander Trubshaw carried out fast taxi runs with 002 on the three days before the first flight, however, he was concerned by a failure flag that came up on the Captain's air speed indicator as soon as he reached about 100 knots. He was aware, though, that the fine weather would change after 9 April.

Therefore, while planning for another fast taxi run, he decided that if the snag did not reappear he would keep going and take off.

### Going out to bat

For the day of the take-off the world's media were in attendance, although there was perhaps less glamour attached to the occasion than there had been for the French flight. Tony Benn later recalled the event (*Guardian*, 17 October 2003) as being "just like a village cricket match ... Brian Trubshaw ... came out, and people waved at him as if he was going out to bat. 'Good old Trubby!', that kind of thing."

When Brian Trubshaw started the engines, at around 2.20pm that

afternoon, the thunderous noise startled observers – allegedly causing Brian Watts’s wife to faint. The crowds matched it with their cheering, though, when 002 took off.

As with 001, the undercarriage and droop snoot were left down. After a 22-minute flight, at 8,000 ft and 280 knots, accompanied by a Canberra chase plane, 002 was approaching RAF Fairford when another problem appeared: both of the radio altimeters failed. As Commander Trubshaw recalled in his book, “This was definitely unfriendly.” Without the benefit of the height calls from his colleagues as 002 descended, and having to take account of Concorde’s nose-high at-

*“no alternative but to eye-ball the landing”*

titude, he “was left with no alternative but to eye-ball the landing and make the best of the situation”. As he laconically put it in a later TV interview, “I think we arrived about a quarter of a second early ...” Despite this major challenge, Brian Trubshaw brought 002 down safely.

There would still be almost seven years of work ahead of test flights and route-proving, before produc-

002: Flight crew			
<b>Brian Trubshaw</b>	Commander	<b>John Allan</b>	Leader, Flight Test Engineers
<b>John Cochrane</b>	Co-pilot	<b>Mike Addley, Peter Holding</b>	Flight Test Engineers
<b>Brian Watts</b>	Flight Engineer		

tion Concorde F-BVFA and G-BOAA inaugurated the Concorde passenger services for Air France and British Airways. Yet these first two flights, 50 years ago, represented the first steps into a new and still unmatched realm of air travel.

A film of 002’s first flight can be seen here: <https://www.youtube.com/watch?v=zfilF9IhEs0>

**Well-judged landing**  
Concorde 002 landing at Fairford.  
Photo © BAE SYSTEMS



## The Communist Concorde

*Few people now remember, but Concorde had a rival from the Soviet Union – and that rival beat our supersonic transport (SST) into the air.*

The Tupolev Tu-144 prototype 00-1 (CCCP-68001) first flew on 31 December 1968, two months ahead of Concorde 001. The Soviet airliner was also the first to fly supersonically, in June 1969, and to exceed Mach 2, in May 1970.

Despite the tragic loss of one aircraft in 1973, when it crashed while performing a display at the Paris Air Show, the Tu-144 entered commercial service on 26 December 1975, flying between Moscow and Alma-Ata. However, passengers found it extremely noisy, and the passenger service stopped on 1 June 1978 after just 55 flights

(although Aeroflot used the aircraft for freight until 1983). The Tu-144 did, however, set world records for speed (2,031.55 kmh/1,263 mph) and altitude (18,200 m/59,700 ft) in July 1983. Then, in the 1990s, CCCP-77114 was used as a flying laboratory in NASA’s work to develop a second-generation SST. This aircraft made a total of 27 flights between November 1996 and April 1999.



**Tupolev Tu-144**  
Photo: Lev Polikashin / RIANovosti Archive / Wikimedia Commons CC-BY-SA 3.0



# A LANDMARK ACHIEVEMENT

*Mach 2 is delighted to welcome David Morris, Curator of Aircraft at the Fleet Air Arm Museum, Yeovilton. Here, he considers the impact of that first flight by Concorde 002, now the centrepiece of the museum's aviation collection.*

**T**HE YEAR IS 1969: the space race is in full swing, and the world waits with bated breath to see man set foot on the moon for the first time. However, four months before this world first takes place, another aerospace landmark achievement is happening right here on earth.

Sharing much of the same space-age technology, Concorde 002 (the first British Concorde to fly) takes to the skies over the south-west of England and begins a series of test flights that would culminate in trans-Atlantic air crossing times being achievable in a little over three hours. One of the most significant points here is that a half a century later, the fastest air crossing time for Concorde is still more than twice that for other passenger-carrying aircraft! Twenty-three miles per minute, 1350 mph, carrying passengers faster than a bullet from a gun and flying nearly 30,000 feet above all of the world's other airliners in clear, uninterrupted air space, Concorde 002 would set the bar very high indeed.

Growing up 60 miles south of Bristol, the sight and sound (definitely the sound) of Concorde up on test flight would be something that without fail would stop an entire high street of people, or playground of children, and cause them to stand and gaze skywards at the great white triangular shape – remaining there, fixed to the spot in a respectful silence, until she had passed overhead.

## Visitors' impressions of 002

People seeing Concorde up close for the first time often respond with a comment along the lines of how small it looks, compared with a Jumbo jet, especially when they step on board. It is only after their thoughts have condensed all of the information that they begin to realise that the fastest passenger jet in the world is not necessarily the largest, and that for such speed something has to be sacrificed. After all, even on a London to New York flight, you would not be on it for long.

Stepping inside, people are equally amazed by the banks of huge, archaic-looking com-



puters and data-gathering devices from the 60s and 70s, which a couple of today's good lap-tops would be able to match with ease. The hyposcope (upside-down periscope) looking through the floor of the aircraft is also an object of great fascination – originally used to view the underside of the aircraft during test flying, to observe any leaks or condensation trails forming from the underside structure or intakes at supersonic speed. It was necessary to have such a device to make these observations, as no other aircraft could keep up with 002 for long enough at Mach 2 to make effective air to air visuals on test flights.

Everyone remembers where they were the first time they saw Concorde. Whether it was 002 up on test in the early 70s, or an in-service aircraft on a commercial flight, Concorde has always had that rare, special power to embed in people's memory where they were on the day that they first saw her. Not many things have the ability to do that.

## 002 today

Concorde 002 in her present location, at the Fleet Air Arm Museum, where she has pride of place. *Photo: Ian Kirk / Wikimedia Commons CC-BY-SA 2.0*

## Concorde cavalcade

On 9 April, at 9.30am, there will be a cavalcade of Bristol cars and buses departing from Aerospace Bristol, home of Concorde G-BOAF, to visit 002 at Yeovilton. For information and tickets, see the Fleet Air Arm museum's web page: <https://www.fleetairarm.com/event/155.aspx>

## Concorde's 20th anniversary

*As we celebrate Concorde's half-century, Colin Mitchell, former Director of travel company Goodwood Travel Ltd, recalls his company's role in an earlier anniversary event, held in 1989 to commemorate 20 years since Concorde's maiden flights.*

In 1989, as the 20th anniversary of the maiden Concorde flight approached, we at Goodwood Travel realised that neither British Airways nor Air France were planning to commemorate the event in any way. For us, this seemed a golden opportunity to offer a unique tour.

Toulouse would be the obvious destination – with possibly a combination of a British Airways and an Air France aircraft? Could we manage to gain access for our guests to the Airbus (formerly Aérospatiale) plant at Toulouse? A celebration lunch – maybe in a French chateau? Could we make contact with the original test pilots and include them?

### Putting together a plan

The first step of course, was to secure the aircraft. Both airlines confirmed availability and issued contracts. We made contact with a local agent with the right connections and Jan, my business partner, and I flew to Toulouse to see what could be done.

It was not going to be easy to gain entrance for 200 enthusiastic Brits to the hallowed Airbus

establishment. We were soon made only too aware that Airbus wanted to be seen as forward-looking; the Concorde was the past for them. However, as a special favour, they would make “Concorde Numéro Un”, 201 (F-WTSB), which was in store at the site, available for our guests to view.

We visited this aircraft, standing forlorn outside a hangar, with BA livery on one side and Air France on the other. No plant visit was possible. That was it. We visited some local chateaux and chose one that was just perfect for our celebratory banquet, a short drive from the plant, and secured local coaches and guides. Things were just about falling into place.

### Reaching out to the pilots

Our great hope was to make contact with Brian Trubshaw, the British Aircraft Corporation (BAC) Chief Test Pilot who had flown the British maiden flight in 1969. Help was on hand thanks to our friend, British Airways Captain Tony Meadows – one of the early BA Concorde captains, who knew Brian well.

The introduction was made, and we were delighted when Brian Trubshaw agreed not only to come with us but also to take the fourth seat on the BA flight deck and provide an in-flight commentary in both directions. Our guests would fly out on one airline's aircraft and back on the other. We needed to persuade Air France to take a retired BA Captain, Brian Titchener, on their flight deck since normally no PR was provided. They agreed!

The tour was put on sale and was soon full. The Air France aircraft would fly supersonically to LHR from CDG the previous evening, and return the morning after, in both directions filled with our guests on Paris tours. We were delighted to receive a call from Air France Captain Edouard Chemel, their Chief Pilot, to say that he personally would command the flights and would we have any objection, since he was a keen philatelist, for him to take a quantity of “commemorative covers” on board? Naturally we agreed; we had no idea how useful this would prove to be. We also took the opportunity to put him in contact with Captain Meadows; could they possibly land and park nose to nose for us?

Out of the blue, a few weeks before departure, we had a call from Air France; there was no longer an aircraft available on the date we required. We soon discovered that Airbus had realised the publicity value of our visit, and now they and Air France did not want the British

### Concorde Numéro Un

Development Concorde 201 (F-WTSB), in store at the Airbus site in Toulouse, was all that was initially offered to Goodwood Travel for their event.

*Photo: Colin Mitchell*







to take the credit and wanted to do the operation themselves. A big event had hastily been organised at the plant, Concorde No 1 was being repainted in anticipation, and there would be no place for our British guests. Telephone lines buzzed.

Captain Chemel had connections. Proud of the fact that he was President Mitterand's personal pilot and with, we discovered later, a financial interest in the operation (his covers), the flights were magically reinstated.

### A double display

The big day came. Both aircraft were ready at Heathrow, and everything was in place. Little did we know that more magic was being performed behind the scenes, since Airbus had contacted Brian Trubshaw directly and invited him to join his French counterpart, André Turcat, at their event. Loyal to his promise to us, Brian told us later that he had declared that he was "working for Goodwood Travel"; he had offered to participate in the French event on his arrival only if a helicopter was provided to take him to our chateau in time for our lunch, and further that their event be made open for all

### A faultless arrival

Jan Knott (left) and Colin Mitchell (right) of Goodwood Travel in front of the British and French Concorde that they chartered for this 20th anniversary double flight. The two aircraft had performed a simultaneous landing and nose-lowering for the crowds, before parking nose to nose.

*Photo: Doug Goodman, Goodwood Travel*

our guests to enjoy. He even asked André Turcat, his French counterpart, to join him there as a surprise for our guests. What more could we have asked for?

Both flights to Toulouse operated faultlessly, with a Mach 2 loop out over the Bay of Biscay en route and the two captains coordinating their final approaches and taxi arrangements. Brian Trubshaw was enthralled our guests with tales of his first flight, and the "dryness in the throat" when he pushed the throttles open for the British maiden flight 20 years before. We taxied in; both aircraft performed a synchronised nose lowering, and the passengers disembarked to a brass band playing and crowds of spectators. The sun was shining and many photographs were taken.

At this point we were made aware of Brian Trubshaw's alternative commitment. Would the French honour their promise and return our prized after-lunch speaker to us in

time? We made for the chateau, the top table laid out with the guest of honour's seat vacant ...

We hardly heard the roar of the helicopter rotors through the thick medieval walls of the chateau, but arrive he had. Having landed on the adjacent lawn, Brian was introduced to our waiting guests to a standing ovation, and took his rightful place, making his eagerly anticipated speech after lunch before we all left for the plant.

### Sierra Bravo

F-WTSB was now inside, surrounded by galleried seating, and repainted by a local art college in a glittering red, white and blue. The French had finished their celebration; now our guests could enjoy the whole spectacle – plus the surprise of meeting the two original test pilots together, happy to chat and sign autographs!

The day's events were not yet over. Back at the airport both air-

craft were awaiting us ... but where were the BA crew? Air France were operating the day with one crew, while BA had chosen to fly a second crew out to Toulouse for the return flight, utilising a Dan-Air scheduled flight that was ... late.

We still had Tony Meadows with us, though. Taking control of the situation, he supervised the boarding of the aircraft, with the assistance of our tour managers. To say that the cabin crew were surprised on boarding the aircraft to find a hundred passengers in place singing "Why are we waiting?" would be an understatement.

Both aircraft took off for Heathrow. The Air France aircraft made a spectacular take-off; however, a video of the event subsequently revealed that something was wrong ... Sparks were emanating from one of the engines ...

Both aircraft flew the requisite supersonic route and landed back

at Heathrow. Our guests dispersed, having enjoyed a truly wonderful day. The Air France aircraft rested at Heathrow until the following morning when I, in the company of Brian Titchener, boarded it with a new party of guests heading for Paris.

On take-off there was a sudden lurch and vibration felt throughout the aircraft. Brian Titchener announced from the flight deck that we had suffered a "nose wheel shimmy" and that there was nothing to worry about. In fact, as he well knew, we had lost an engine.

Unable to fly supersonically, Captain Chemel called me and asked whether he should continue to Paris or return to Heathrow. We continued; those passengers would be offered their supersonic experi-

ence on a later flight, but they would at least still be able to enjoy the French capital.

### **Lasting memories**

It was an event to remember, for many reasons. We had commemorated the anniversary in the best way possible and given 200 people memories to last a lifetime. We had the pleasure and honour to make the acquaintance of the two original test pilots as well as Captain Chemel, with whom we remained in contact until he passed away relatively recently. Visiting him near Paris once, I was taken for a hair-raising ride in his sports car – which, even in his advancing years, he drove as if he was flying his great love, that beautiful supersonic "oiseau blanc".

### **Anniversary outfit**

Concorde F-WTSB formed the highlight of the Airbus event to commemorate the 20th anniversary of Concorde's maiden flight. The aircraft had been painted in the colours of the French flag by local art students in Toulouse.

*Photo source: Colin Mitchell*





## From first to last

*Mach 2 Contributing Editor Nigel Ferris has had a unique personal view of this aviation icon. Having worked at Filton during the aircraft's development, he saw the very first flight, when 002 left on 9 April 1969 – and the very last, when BA Concorde G-BOAF came back in to Filton 34 years later, on 26 November 2003.*

**From the moment I started work at BAC Filton, on the Concorde project in 1964, the aircraft has become part of my life.**

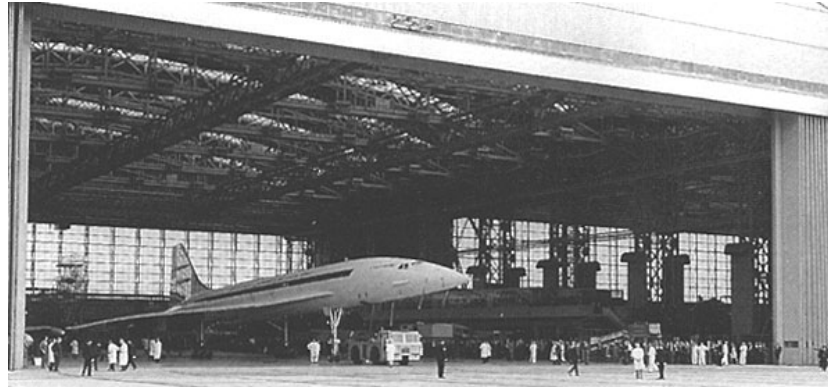
I was young, greatly interested in engineering and aviation, and Concorde appeared as a pinnacle of design and innovation. From her shape, the noise, the powerplants, the technical innovation, to the realisation of carrying 100 passengers in luxury at fighter aircraft speeds she was unprecedented and unrivalled. Even now.

### The emergence of 002

My employment meant that on a daily basis, I was able to watch the British prototype, 002 (G-BSST), assembled, from the very first structural part arriving and being placed on the jig. All the other components followed, then completion of the airframe and removal from the jig. Then came all the systems installations, hydraulics, electrics, undercarriage etc., and testing in the hangar.

Roll-out onto the apron was a magical sight, leading up to engine runs, taxiing, fast taxi runs, until she was ready for flight.

Then 9 April 1969 arrived; this was the day she was scheduled to fly. The engines were started, the flight crew went through their pre-flight check lists, and then came the moment when the engines were throttled up. We had been told she would do a fast taxi run first, but Chief Test Pilot Brian Trubshaw had decided to go for take-off. Down the runway she hurtled, noisy, smokey, reached V1 and rotated. Off she went for her maiden 22-minute flight to RAF Fairford, where all the testing was to take place. A very



important day for me – I had been part of a rewarding experience, seeing this marvel of engineering and aviation design taking to the skies, and it was absolutely thrilling.

27 years of near faultless service ensued, with some hiccups on the

*“seeing this marvel  
... taking to the skies  
... was absolutely  
thrilling”*

way – getting her into the USA being one example (see Mach 2, December 2017). But she prevailed, carrying 1.5 million passengers, becoming an icon and world beater.

The tragic crash in Paris in 2000 was a severe blow – but BA spent millions on modifications and refurbishment, returning Concorde to service in 2001. However, little did anyone realise the effect that the 9/11 atrocity in New York would have on air travel, and Concorde suffered as well. So for financial and political reasons, Air France and British Airways decided that the French and British aircraft would be retired from service. (Worth noting that in 2003, the aircraft could have gone on flying for maybe 15 years.)

### A magical sight

Concorde emerges from the Brabazon Hangar, Filton, as Nigel Ferris and other workers watch.

*Photo source unknown*

### Concorde comes home

There followed a period of last flights (all fully booked), retirement, and delivery to various museums around the world. It was decided that Concorde G-BOAF (construction number 216) would be the last to fly, and be delivered to the place of her birth at Filton.

With thousands of other people round Bristol, we gathered at various places in the city and beyond to witness this memorable but sad event. I went to the A38, which ran by the Filton runway, and positioned myself to watch – and get very emotional.

The weather was cloudy and raining, but at her appointed time blue sky appeared. AF approached from the east, at 1500 feet, and did a slow fly-past. (How we all wished she would swoop in low, select full power and reheat and climb away in spectacular fashion.) The flight plan, on a radar circuit, took her to Avonmouth, over Bristol, down the Bristol channel, turning inland and heading east to begin her approach onto finals. The familiar, graceful,



purposeful, glorious shape got bigger, and Captain Les Brodie brought her in for a final perfect touch-down. The Rolls-Royce Griffon-engined Spitfire did a salutary fly-past over Concorde as she slowed with her powerful carbon fibre disc brakes and reverse thrust. She taxied back down the runway, drooping her nose to the crowds in salute, and finally came to rest, shutting down those wonderful Olympus engines. So ended the life of the most beautiful, safe, and crowd-pleasing commercial aircraft ever to fly.

### Concluding thoughts

In my view the retirement was premature – but the sight and sound of seeing Concorde take off, fly, and land will be etched in my memory forever, and I will always feel terrible sadness that the dream ended – but grateful that I saw the first and last flights of Concorde in Britain.

The last landing engendered just as much emotion as the first flight, with sadness (and anger), the touch-down prompting as many sensations as the first flight. However, my passion is undiminished. I am a member of various Concorde support groups, all dedicated to the preservation and presentation of these beautiful aircraft, and keeping the memory alive.

She also serves as an inspiration to young people today, seeing what was achieved as incredible technical advances in the 1960s, and hopefully leading these youngsters to become involved in STEM (Science, Technology, Engineering and Mathematics) so they can become the designers and engineers of the future. So, Concorde – from me, a heartfelt “Thank You” for providing a beautiful sight and sound, showing the world just what the UK is capable of doing.

Please visit whichever airframe you can, and marvel at the achievement. And feel the tingle through your body as you take in the “Concorde Effect”.



### Returning home

Concorde G-BOAF returns to Filton, where the British Concorde fleet was built, on 26 November 2003. The aeroplane was on display from 2004–2010 at “Concorde at Filton”, where Nigel Ferris was one of the volunteer guides. She has now been re-housed and once again put on display to visitors.

*Photo: Gordon Roxburgh*

### Alpha Foxtrot – the story continues

Concorde G-BOAF, the last Concorde ever to fly, has not been operational since she arrived at Filton, her birthplace, in 2003. In recent months, however, a team of volunteers at Aerospace Bristol, her new home, have been working to restore the famous droop snoot to life. The first nose move since 26 November 2003 is planned to take place on 9 April. The first public nose moves are planned for Saturday 13 April, at 11.00am and 1.00pm.

The event is being held in conjunction with the Fleet Air Arm museum (see page 7). For further details from Aerospace Bristol, please see the web page: <http://aerospacebristol.org/droop-nose>

*Photo: Katie John*



# LES SOUVENIRS DE 50 ANS

*The weekend of Concorde's half-century, 2–3 March, was an occasion of pride and respect in both Toulouse, where Concorde 001 was built, and Paris, where the French prototype is now housed at Le Bourget.*

## The commemoration begins

*The 50th anniversary celebrations started early in Toulouse. On Sunday 24 February, Cap Avenir Concorde (CAC) hosted a conference to honour the pilots and engineers who worked with Concorde from the first flight to the final retirement. CAC member Julian Grosso describes the events of that day.*

The illustrious attendees included Michel Rétif, the Flight Engineer on 001's first flight, as well as Camille Combis and André Chaumeton, two of the engineers who had participated in the flight tests with 001. CAC were delighted to welcome these "elders of Concorde" to the event; it was fabulous, 50 years after that momentous day, to share memories with those who had been there at the time.

Also present were some of the people involved in the very last Concorde flights for Air France: Captain Jacky Ramon, who had flown Concorde 205 (F-BVFA) to Washington on 20 June 2003, and Sandrine Pichot, one of the cabin crew members on the last ever Air France Concorde flight, on 27 June 2003, when F-BVFC was brought back to his birthplace at Toulouse. Finally, there were two other notable

guests: Kevin and Laurence Keniston, who had been a passenger and a cabin crew member, respectively, on the last ever Concorde flight, when British Airways Concorde G-BOAF returned to her birthplace at Filton.

The gathering thus encompassed the full extent of Concorde's life, from the earliest development and flight tests to the moment when those mighty Olympus engines were turned off for the last time.



### The elders of the Concorde family

ABOVE: Sandrine Pichot, flight attendant on the last Concorde flight, shares her reminiscences with Camille Combis, engineer on prototype 001, as Air France Captain Jacky Ramon speaks.

ABOVE RIGHT: Camille Combis takes the stage; in the front row are André Chaumeton (centre, by wheelchair), and (in scarf) Michel Rétif.

RIGHT: The last meets the first! Kevin Keniston, one of the final passengers on Concorde, speaks in front of Camille Combis (left) and Michel Rétif (centre), as Louis Paulus, head of CAC, looks on.

Photos © Espace Concorde – Toulouse-Blagnac





## Toulouse: where it all started

*Toulouse – the site where the French Concorde was built, and the airfield from which 001 made his first flight – devoted a day to its most illustrious product on Saturday 2 March. Attendees ranged from engineers to artists, and from the very first participants in the Concorde project to Airbus personnel of today.*

The event was hosted by the Musée Aeroscopia, at the edge of the airfield. Aeroscopia is the home of Concorde 201 (F-BTSS), first Concorde to land at New York, on 19 October 1977 – and of 209 (F-BVFC), the last Air France Concorde to leave JFK in June 2003.

### Highlights of the day

Sierra Bravo's flight deck was opened for visitors, and the volunteers of Virtu'Ailes gave tours of the simulator. The museum gave a guided tour, entitled "Concorde, avion de légende!", in which visitors were shown around both Concorde, with a talk on the history and technical features of the aircraft.

The highlight was a round-table discussion in front of Sierra Bravo, with members of the Académie de l'Air et de l'Espace and luminaries of the Concorde world including Jean Pinet, a former test pilot on 001; Michel Rétif, flight engineer on 001's first flight; and Dudley Collard, one of the designers who created Concorde.

### A constellation of Concorde experts

Dudley Collard (centre, with microphone) speaks as part of a panel including Michel Rétif (third from right) and Jean Pinet (second from right).

*Photo: Musée Aeroscopia*

Present and possible future achievements were considered in a talk entitled "Will the future be supersonic?" – a look at emerging plans for second-generation supersonic airliners, from Serge Bonnet, a senior aircraft designer at Airbus.

In addition, there was an exhibition of memorabilia, photographs, and pieces of art inspired by Concorde. Thus the day constituted a meeting of science, art, and inspiration – just like Concorde itself.

For further news and information about the events of that day, see the museum's website: <http://www.musee-aeroscopia.fr/fr/actualites/un-grand-merci-a-tous-nos-partenaires-et-intervenants>

### A glimpse of the future

The talk by Serge Bonnet of Airbus included a video on the future of supersonic civil aviation.

*Photo: Musée Aeroscopia*





# A weekend of remembrance

On 2–3 March this year, the Musée de l’Air et de l’Espace (MAE) at Le Bourget held a weekend of lectures, films, and guided tours to commemorate the first flight of prototype 001 – now one of MAE’s centrepieces, displayed together with Air France Concorde F-BTSD in the Concorde Hall.



## Concorde 001 on display

001 with F-BTSD in the Concorde Hall.  
 Photo: Eric Salard / Wikimedia  
 Commons CC-BY-SA 2.0

Sierra Delta’s engine bay was opened to display the engines. There were also display cases showing Concorde memorabilia, and merchandise to commemorate the event.

APCOS held a talk on the theme “Paris–New York en Concorde avec ceux et celles qui l’ont fait voler”, with a film of a Paris–New York flight on Concorde, and speakers Pierre Grange (former Concorde pilot) and Annick Moyal (former chief flight attendant on Concorde).

In addition, there was a filmed interview with Jean Pinet, one of 001’s original test pilots; this can be seen on YouTube: <https://www.youtube.com/watch?v=KCefTWIa0vA>

The event was the brainchild of Museum director Anne-Catherine Robert-Hauglustaine. It was organised by Amis du Musée de l’Air et de l’Espace (AAMA), led by President Alain Rolland and Vice-President Jean-François Louis, together with the Association des Professionnels du Concorde et Supersonique (APCOS), under President (and former Concorde pilot) Pierre Grange.

as well, on the subject “Concorde: la légende supersonique”, focusing on Concorde’s history. Former cabin crew members were present, some wearing their original uniforms, to greet the visitors.

Films were shown on screens around the Concorde Hall, including the Pathé film of 001’s first flight, an interview with André Turcat about that flight, interviews with pilots and engineers associated with Concorde, and two further films: “Un ciel signé Concorde”, and “Plus vite que le soleil”.

APCOS set up a mini-simulator showing a Concorde flight as seen from the cockpit. There was also a Concorde-themed quiz.

## A worthy tribute

Over the weekend, the museum welcomed almost 4,000 visitors to Concorde. Attendees included local dignitaries, national politicians, and the media, with the event being shown on national TV.

For further information on Concorde events at the MAE, see the museum’s website: <https://www.museeairespace.fr/en>



## Souvenir of the day

The badge commemorating the 50th anniversary of 001’s flight.

Photo © AAMA

## Events and insights

During the weekend, there were guided tours of both 001 and F-BTSD (Sierra Delta). APCOS gave a tour entitled “Du prototype à l’avion de ligne: 7 ans de développement” (From prototype to airliner: 7 years of development), focusing on the features and innovations that had led to Concorde’s technological success. AAMA offered a tour

## Driving passion

One of the most remarkable exhibits was a car whose bonnet was painted with a scene of Concorde in flight over New York – a real labour of love.

Photo © AAMA





## CONCORDE WATCH

### Concorde G-BOAC

British production aircraft

**Location:** Runway Visitor Park, Manchester, UK

**Reporter:** Richard Chatham **Date:** 2 March 2019

THE HISTORY of commercial aviation has been through so many stages and so many anniversaries, but it is still only 105 years since that first commercial flight on 1 January 1914.

The Model 14 Benoist – a seaplane design – carried the pilot and one passenger at a maximum speed of 64 mph. The design was already seriously dated 5 years later by 1919.

Just 55 years later, on 2 March 1969, André Turcat lifted Concorde 001 off the runway at Toulouse. And on 2 March 2019, 200 enthusiasts gathered at the home of G-BOAC – pride of the fleet – in the Runway Visitor Park at Manchester Airport to celebrate that 50th anniversary in the history of flight.

#### A magnificent display

It has to be said that ‘AC’ looked magnificent, and credit must be paid

#### “Open the door – let me out!”

G-BOAC looks ready for action as she faces the runway.

*Photo: Richard Chatham*

to all those at The Aviation Society (TAS) and Heritage Concorde for her condition and the superb shine, which reflected the “runway lighting” in the building. We were welcomed by the staff as we walked through the Concorde shop into the magnificent setting for the Star of the Show. For a design that was drawn out 60 years ago and flew 50 years ago, she looked like a time machine – and had she managed to get out through the window (as she appeared to be wanting to do all afternoon), she would have taken pride of place on the runway without any doubt (move over, A380).

The three-hour celebration event was timed to start at 12.00 noon but many visitors arrived early, some as early as 10.30am, to enjoy



the opportunity of a conducted tour of Alpha Charlie by the tour guides. Most of us there had either been tour guides, enjoyed tours, or even flown on Concorde, but there is always something new to learn and something different to see no matter how committed one is to our iconic friend. The interior looked as sparkling and polished as one would expect any Concorde that had made over 6,700 supersonic flights and 22,000 hours to look, except ... has anyone a piece of carpet to go by seat 1a and 1b? – it looks a bit worn there! Comments were made by several aficionados; well, you would expect that with 200 experts in attendance!

As noon approached we all took our seats at the tables that had been immaculately prepared under the wings. Before the speeches and presentations, the 200 guests enjoyed a Concorde-type tea with beautifully prepared sandwiches and an array of cakes and the like, well suited to a snack on board and presented in a manner one would expect associated

#### A glorious setting

Concorde G-BOAC stands gleaming in the light, among the immaculate tables set out for the afternoon’s celebration.

*Photo: Richard Chatham*





with Concorde, tea and coffee being served by the cabin crew.

### Memories and celebrations

The entertainment programme comprised presentations by Peter Hampson, Chairman of The Aviation Society (TAS), ably supported by Debbie Riley, Secretary of TAS; John Hepple, one of the tour guides at TAS; and the guest speaker, Fred Finn, the man who made 718 flights on Concorde and gained a place in the *Guinness Book of Records* for the most travelled man in the world.

Peter Hampson opened the show with a welcome and an introduction



#### A humorous moment

TAS Chairman Peter Hampson hands the microphone to a guest.

*Photo: Richard Chatham*

to the event, explaining what would be happening during the afternoon. To complete the celebrations at 2.30pm there would be the inaugural public lowering of the nose in time with other Concorde in the UK. He thanked all those especially who had worked on AC to bring her back to life over the past ten years, with interior and flight deck lighting and the recent work to install auxiliary hydraulic power to the nose section. He gave special thanks to the staff at Heritage Concorde who carried out so much of the work, and the hydraulics company who

had provided so much of the extra equipment required.

John Hepple gave an insight into why Concorde was designed with a nose that lowered; he described the angle at take-off and landing and the angles of droop required.

Peter Hampson then took the microphone again for a half-hour session of personal stories from the audience; Debbie Riley was kept busy taking the roving microphone from one speaker to the next, all of us adding our own special memory.

The range of personal anecdotes was wide. One quite special contribution was from Rory McLoughlan, now one of the Senior Managers on the Airports Transformation Project. He recalled a fascinating memory of when he was a Duty Manager (OPS 3) providing a “follow-me” for Concorde on a very foggy day at Manchester. He quietly drove across the airfield with all lights flashing to guide the Captain and crew to the stand, and at one point he looked in his mirror but could not see the aircraft and thought she was lost in the fog. It was not until he looked again that he realised that she was so close, and the nose wheel was positioned so far back, that he was actually driving under the nose.

### Doctor Who and the Time Machine

Another fascinating story related to the TV programme *Doctor Who*. Alpha Charlie actually featured in an episode by the name of “Time-Flight”. Peter Davison, the Doctor Who at the time, managed to win two tickets for himself and his wife to take stand-by seats. All was looking good until the last two stand-by seats were sold and Peter and his wife were taken off the aircraft. Just before take-off, the Captain asked

### Heritage Concorde

Graham Cahill (left), head of Heritage Concorde, with John Timmis, father of Helen Tonks of Hydraulics Online, the firm supplying the pump for the nose.

*Photo: Richard Chatham*

the cabin staff to escort Doctor Who to the flight deck. When told that he was no longer on the flight, the Captain advised that the plane was going nowhere without

*“the plane was going nowhere without Doctor Who”*

Doctor Who. Some quick changes were made to seating arrangements, and the Chairman of the Bank of England gave up his seat to Mrs Davison; he and Doctor Who spent the whole flight on the flight deck with the crew.

### Bonds of friendship

The personal anecdotes continued with memories of anniversaries celebrated on the plane and memories of flights. The Mayor of Altrincham, who was there in his official capacity, spoke of his round trip to Cairo. Paul Evans, who now runs the Foxie’s Filton Flyers Concorde group, related that he had been involved with a team that looked after one of the planes (Alpha Foxtrot) after 2003; from that had been created a friendship, through the love of and pride in Concorde, between individuals and groups associated with the preservation and the continued enthusiasm and passion for this special aircraft.

Many of those present had become friends through their own individual following of Concorde. One comment was from a visitor who had travelled up from Gloucestershire. He commented that 60 years on there was still a sense of pride





from those involved in the design and manufacture, and he was often stopped by people who said that they had designed or engineered some part of her and still felt a pride and ownership in Concorde.

Peter Hampson rounded off the personal memories with his own fascinating recall of a telephone conversation from a colleague in TAS. British Airways had announced that they were grounding the fleet and Concorde would stop flying, and were looking for suitable sites for the seven remaining aircraft. He and his colleague immediately agreed to approach BA requesting an aircraft for Manchester, as they were looking for extra exhibits for the viewing area. Peter wrote to BA giving a hundred and one reasons why they should have Concorde. A few weeks passed, and then he was summoned to appear before a BA interview panel to expand on his case for Manchester. He described the interview as worse than a job application: Where would she stand? What facilities will you provide? Will she be under cover? What access for visitors? He returned home quite exhausted.

He had almost forgotten about the request until the phone rang one morning and his secretary said, "Mr. BA on the phone." Peter recalled that he took the call and nearly fell off his chair when the question was, "Which aircraft would you like?" The answer – "Alpha Charlie". "So when will this happen?" asked Peter. The reply: "She will be flying in tomorrow morning."

### Stories from Fred Finn

Peter then introduced Fred Finn, who gave a spirited insight into his life with Concorde and how his career in international law and marketing, the transfer of technology to third world countries, and arranging commercial contracts between businesses and countries had demanded high-speed travel across the globe. Thanks to Concorde, he made three



trips across the Atlantic in one day to negotiate and sign up an important trade deal in one case.

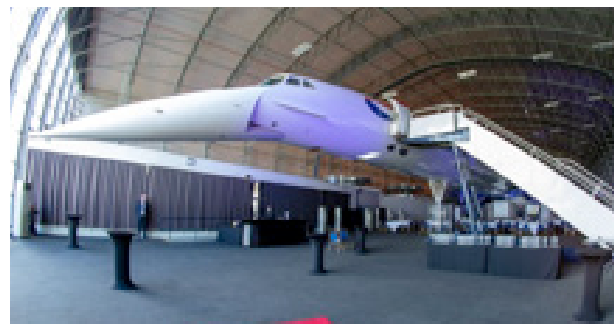
As one would expect, Fred's tales covered a wide spectrum of travel tips and memories. His first Atlantic crossing took just over 19 hours, landing at two intermediate airports to refuel. His fastest crossing was 2 hours 59 minutes. He now travels the world giving talks on his experiences, including tips on successfully packing ten wine bottles in a suitcase, using socks and toilet rolls!

On his first Concorde flight, he was given seat 9a – which for the next 718 flights became his seat. Boarding one day, he was told his seat had been sold and he had been allocated a seat on the flight deck. He asked the cabin crew to check that he would still be allowed his glass of Dom Perignon on the flight deck; that Captain agreed. On another occasion he was out with David Leney one evening when, at 11.00pm, David said they had to go the airport to do a brake test. Sitting in the right-hand seat, he had the opportunity to take Concorde up to

### Practice run

The first trial of the nose droop. The later public demonstration was not successful, but this first move was seen by some of the guests.

*Photo: Richard Chatham*



### A spectrum of stories

Fred Finn enthralled the audience with his tales of life on board Concorde.  
*Photo: Richard Chatham*

near V1 speed – it was an interesting experience. Having flown Concorde for 27 years, he was still passionate about her, as anyone who has met him will understand, and his presentation showed that commitment to this wonderful aircraft.

Following the speeches, everyone took up position around the nose of Alpha Charlie to wait for the first official nose lowering since she arrived at Manchester in 2003. There was a palpable air of excitement – but sadly, due to an unforeseen action on the lowering switch, the fail-safe system kicked in and, no matter how hard the lads worked, AC said no. However, the audience did not show their disappointment and everyone toasted Alpha Charlie and the memory of 50 years.

TAS put on a magnificent day, with a relaxed, friendly atmosphere. There was plenty of time to inspect G-BOAC, which had been immaculately prepared for the day. It was a gathering of friends to celebrate a special day in the history of flight in general and Concorde in particular.

For more photographs of this historic day, see the TAS website: <https://www.tasmanchester.com/concorde50thanniversary>

For further information on Concorde events at the Runway Visitor Park, see the RVP website: <https://www.runwayvisitorpark.co.uk/visit-us/explore-our-aircraft/>

## Concorde G-BBDG

## British development aircraft

**Location:** Brooklands Museum, Weybridge, UK

**Reporter:** Mhairi-Anne Banham **Date:** 2 March 2019

On the 50th anniversary of the first French Concorde flight, Brooklands Museum held a VIP day. I was attending the day as a volunteer and general spectator.

The VIPs all arrived, dressed up for the occasion, and were shown to their tables. Each table was named after a location that Concorde visited during her time in service.

### The Captains' speeches

I was lucky enough to hear Captain Mike Bannister's introductory talk. This included some of his own personal videos and it was interesting to look around the room while this was playing. As a volunteer at the Museum, I am always amazed by the range of emotions Concorde can command from those who flew in her, those who missed the opportunity to fly, those who wanted that flight of a lifetime and even those who simply spent years stood on the ground watching as she flew overhead. This was also obvious during Captain Bannister's speech. He talks with such passion it's very difficult to not be swept along with his celebratory memories.

A number of ex-Concorde pilots were at Brooklands, including Captain John Hutchinson, who also held a talk. To have the opportunity of hearing both these great Captains was a highlight of the day for most people. The pang of regret you feel when you hear their stories and just how much Concorde meant to both of them hits you hard, but the humour and sheer joy you see as they talk is also uplifting. Looking around the room you could see the guests hanging on every word they said and the sheer delight at just how special an opportunity this was.

### Concorde simulator

The simulator stands ready for action. Several guests were lucky enough to "fly" the simulator with guidance from one of the Concorde pilots. *Photo: Mhairi-Anne Banham*

Walking around the museum there were a lot of visitors. Following a news article on the local BBC news the night before, quite a lot of local people had come along to see Concorde. Delta Golf had been washed and as the sun made an appearance in the late morning, she really was the star of the day.

Brooklands is also home to the British Airways Concorde simulator. This is a working simulator with the 150° screen; when you are looking out of the window, you still get a good sense of movement. During the day some of the guests had booked to sit next to one of the ex-Concorde pilots and "fly" Concorde. This attracted a lot of attention from the visitors, who were able to walk around the back of the simulator and see some of these flights in progress. The highlight had to be watching a group of Concorde pilots having a discussion and sorting out paperwork for the flights. It's something I'm not likely to see again, and for a brief moment I got a glimpse of the past.

### Flight planning

Former Concorde pilot Ian Smith doing the paperwork for a Concorde "flight". A former flight engineer on Concorde, also named Ian Smith, stands to his left. *Photo: Mhairi-Anne Banham*



### The nose droop

At 3pm people started congregating around Delta Golf with the BA Band playing in the background. Her nose was due to be dropped at 3:40pm, so the early gathering of crowds of people trying to find the best vantage point for a photo added to the excitement.

After a countdown the lucky winner of the raffle was allowed to drop the nose. This is always a special thing to see, so the team seemed to be going along with the crowd and Delta Golf's nose was dropped a few times, to the sheer delight of the crowd.

After the nose drop, a photo opportunity was taken to get all the Brooklands volunteers together under Delta Golf. It is the first time I had seen the size of the team who rebuilt her and the simulator, who maintain her and have shared their





passion with nearly 500,000 visitors who have sat on board her.

The whole day was busy with a constant stream of VIP and Museum visitors doing the Concorde Tours and hearing the history of Concorde, Delta Golf and Brooklands as an aircraft factory, responsible for making 30% of each of the 20 Concorde. There were Concorde Captains, pilots and air hostesses, all with their own incredible stories, along with those of the visitors. As someone pointed out to me, you see a plane and you say “oh that’s an Airbus A380”, but it was always “There’s Concorde”. It was never “a Concorde”; it was just “Concorde”. The love for this aircraft continues and the ability to hear and meet those who were lucky enough to be involved with her personally made for a really special 50th anniversary day.

### Keeping the spirit alive

At the end of the day I was lucky enough to get the opportunity to drive Captain Hutchinson and his wife to the local train station. As they left the car, Mrs Hutchinson said to me, “Keep the Concorde Spirit alive”. For me this just summed up the day and the strong emotions Concorde still generates in everyone, even though she hasn’t flown for nearly 16 years.

Well done, Brooklands team. You are keeping the spirit alive.

For information about Concorde events, see the Brooklands Museum Concorde pages: <https://www.brooklandsmuseum.com/concorde>



### Celebrating Concorde

ABOVE: Mhairi-Anne with Captain John Hutchinson, one of the fascinating speakers for the event.

BELOW: G-BBDG with her nose drooped. The aircraft performed a simultaneous nose droop with G-AXDN at Duxford (see following article).

Photos: Mhairi-Anne Banham





## Concorde G-AXDN

## British pre-production aircraft

**Location:** Imperial War Museum, Duxford, UK

**Reporter:** Katie John

**Date:** 2 March 2019

CONCORDE G-AXDN was the first of the British Concorde to have her nose restored to operation. She regularly performs nose movements for the public on the last Sunday of every month. In this additional event, though, she was to synchronise her nose moves with those of Concorde G-BOAC at the Runway Visitor Park in Manchester and G-BBDG at Brooklands Museum, for a unique simultaneous salute on the 50th anniversary of Concorde's maiden flight.

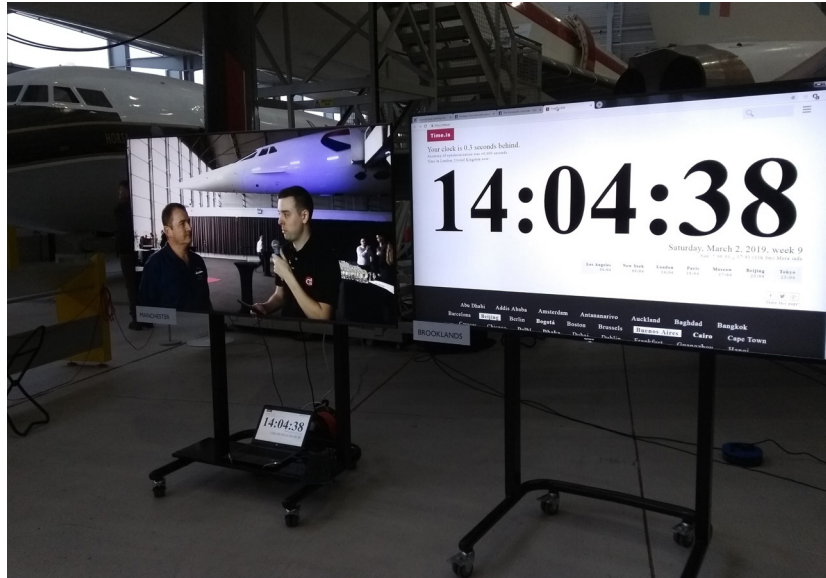
### The nose moves

The British Airliner Collection (BAC), which forms part of the Duxford Aviation Society (DAS), had planned two nose moves for the day: one at 2.30pm, synchronised with G-BOAC, and the full three-nose movement at 3.40pm, the time when the very first Concorde, 001 (F-WTSS), took off from Toulouse on 2 March 1969.

The event was managed by Chrissie Eaves-Walton, Public Relations officer for DAS. The team held a raffle for the chance to sit in the co-pilot's seat and the engineer's seat and observe each nose lowering. They offered 100 tickets in all: free tickets to everyone who booked a tech tour (a total of 40 people), and the remaining tickets offered to the spectators just before the nose move. In my capacity as Editor of Mach 2, I was invited to draw each pair of winning tickets and show the winners up to the flight deck; I was honoured to be asked.

### Triple video link

The Duxford team had set up video screens beside G-AXDN to show live feeds from Manchester and Brooklands. Unfortunately there



### Live feeds from Manchester and Brooklands

Video screens were set up beside G-AXDN so that we could watch the events taking place at these other Concorde museums. At 3.40pm we were able to see G-BBDG's nose move, in perfect co-ordination with our Concorde.

*Photo: Charles Butler*

was a fault at Manchester so they were not able to operate G-BOAC's nose; but at 3.40pm, G-AXDN and G-BBDG performed a double move that was synchronised to the second.

The nose moves were carried out by Steve Jeal, DAS Registrar, with commentary from Peter



### Precise control

Adrian Taplin of Wave FX co-ordinates the live streams between Duxford and the other two museums.

*Photo: Charles Butler*

Archer, Vice-Chairman of DAS.

Peter explained the role of Heritage Concorde in planning and organising the restoration work on all three Concorde, and he thanked Hydraulics Online for supplying the pumps that enabled the nose mechanisms to be brought back to life.

As was normal for G-AXDN, the aircraft had her visor lowered, and then the nose lowered to 5°, 17.5°, and 12°, with Peter explaining each move. The BAC had created a mini-story around the moves, linking each one to a particular phase of a Concorde flight (taxying, take-off, flight, landing). He also explained the significance of G-AXDN's ability to lower her nose to 17.5°, unlike the production aircraft. After the nose moves, Peter offered the spectators the chance to visit the flight deck, which is not normally open to the public.

## Visitors from around the world

This was a fairly low-key event, but the spectators were excited and enthusiastic to see the nose move and to learn more about Concorde. There were people from many walks of life, some of whom had their own stories to tell about the aircraft. One lady I spoke to had been on the Concorde flight to Greenland in 1996 (see Mach 2, October 2017). One of the raffle winners was a woman whose family had come from Zimbabwe; she gave her ticket to her father, as today was his birthday. (At the other end of the scale, another raffle winner was a cousin of DAS volunteer Clive's wife!) I was particularly touched to see a big group of cub scouts, who sat cross-legged under G-AXDN's nose and watched her with rapt attention as she performed her party piece.

## Thanks and acknowledgements

The BAC/DAS would like to thank Nick Cheek and Roberto from the Imperial War Museum's IT team, who provided the large TV screens and fast internet connection for the live streams. They also thank Jamie Huckle, cameraman Adrian Taplin, and the team from WaveFX in Cambridge, who set up and ran the live stream. As well as being seen at Manchester and Brooklands, the live stream was sent to the other Concorde sites and the rest of the world.

The day was a great success, with G-AXDN playing her part in educating and inspiring new generations of people – a fitting tribute to that extraordinary first Concorde flight, 50 years ago.

G-AXDN has her nose moved on the last Sunday of each month. For information on nose moves and other Concorde events, see the Duxford Aviation Society website: <http://das.org.uk/category/concorde/>



## A captivated audience

G-AXDN performs her nose move in front of a fascinated audience of adults and children. DAS held a raffle with the prize being a chance to sit on the flight deck as the nose was moved. *Photo: Katie John*

## Concorde app: Virtual Tour

The British Airliner Collection at Duxford are continuing to develop and refine their Concorde tours. They offer a three-phase tech tour, covering the top, underside, and inside of the aircraft. They also developed their own app to give a 360° "virtual tour" of G-AXDN, showing and explaining Concorde's features. The son of Charles Butler, photographer for the Duxford Aviation Society Archive team, adapted a desktop computer program to create it. Charles's daughter developed the promotional material for the app; this was a real family effort!

The app is based on a program that allows photos to be connected to create 360° views. It gives all-round views of the cockpit and the cabin, with videos and pull-out features to explain particular points; there is also a small location map to show the direction of view. DAS runs the program on screens beside the aircraft, so that visitors who are unable to go on board can still benefit from this information. Since it was launched last September, the app has been downloaded by people across the world. It has proved enormously effective in bringing Concorde to a wide range of people beyond the museum itself.

A promotional graphic for the Concorde 101 G-AXDN 360° Virtual Tour app. The graphic features the text "Support our charity today..." and "SIMPLY DOWNLOAD THE APP!". It highlights that the app is available for only 99p and offers a 360° virtual tour. The graphic also includes a QR code and a link to the app on the Google Play and App Store. The text at the bottom of the graphic reads: "Scan the QR code to download and install the app on your Android or Apple device or search Concorde 101 G-AXDN @ Duxford. Available for devices running Android OS version 2.1 or newer and Apple iOS 9.0 or newer. Discover more about the charity on our website das.org.uk".