



THE ROYAL AIR FORCE CENTENARY FLYPAST

10 JULY 2018





Air Chief Marshal Sir Stephen Hillier
Chief of the Air Staff

“Our founders one hundred years ago would be astounded by our air and space capabilities today, and what we have achieved throughout our history. But they would also be reassured that the identity, ethos and self-belief that they breathed into the Royal Air Force at our birth remains as fresh and powerful today as then.”

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Wayne Protheroe: *Flypast Formation/
Planning and Coordination*

The Cake

Standing 1.3 metres high, with a base layer 1 metre x 1 metre, the RAF's Centenary sherry and brandy fruit cake was inspired by Cpl Ian Mark, then a Chef Instructor at Food Services Training Squadron Air [FSTS(A)]. Acting as the Project Officer and Head Chef responsible for the innovation and creation of the cake, Ian was assisted by FS Alun Davies and Cpl Davey-Smith, fellow instructors from FSTS(A) Worthy Down. Students from Ian's Phase 2 Chef Basic Course also helped to make the cake's base. Ian used the RAF100 motto *Commemorate, Celebrate and Inspire* as his theme and created period aircraft to celebrate the RAF's achievements. All models were handmade from sugar paste, supported by wire wrapped in green, petal-paper hidden either by stripes or poppies. The red, white and blue stripes on the outside of the cake (from the bottom to the top of the cake) signify the coloured smoke of the Typhoon as it travels symbolically from 1918-2018. "It was a massive honour and privilege to have been asked to produce the cake for such a momentous occasion," says Ian. "It was a steep learning curve and one which I will never forget."

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FOREWORD BY AVM GERRY MAYHEW

Senior Responsible Owner for the RAF100 Flypast (then Air Officer Commanding, No 1 Group, now Assistant Chief of the Air Staff).
Image by SAC Jack Welson

As the Senior Responsible Owner for the delivery of the RAF100 Flypast in our Royal Air Force's centenary year, it gives me great pleasure to open this brochure with a short reflection on the pinnacle of what was an outstanding campaign.

Underlining the core tenets of RAF100 of Commemorate, Celebrate and Inspire, I was left in no doubt that the Flypast did exactly that. We showcased to Her Majesty The Queen, the Government, our Nation and people around the world, an uncompromising demonstration of the broad nature of the Royal Air Force's contribution to Air Power 100 years after the Service's formation as the World's first independent Air Force. From the commemorative aspects of the Battle of Britain Memorial Flight and the celebration of today's RAF personnel across so many of our current fleets of aircraft to the inspirational sight of 22 Typhoons in a perfect '100' formation, and, of course, our newest and most technologically advanced aircraft, the F-35 Lightning, the Flypast was an awe-inspiring spectacle. None of it would have been possible without the skills and determination of the men and women in this brochure.

Testament must also go to those who organised and planned this Flypast and to all who supported its success. What we all saw on the day was the final product of months of planning, engineering excellence, and practise. Delivered by the aircrew, they could not have achieved their goal without the dedication of their engineers, the skills of the Air Traffic Controllers, both military and civilian alike, and the collaboration of the Civilian Aviation Authority and the airfields and airports across the UK. In sum, this was a team effort reflecting the Royal Air Force of the past, the present, and undoubtedly of the future. I am immensely proud to have been involved with such a high-profile event and I trust you enjoy this superb brochure.

A handwritten signature in black ink, which appears to read 'G Mayhew'.

Air Vice-Marshal Gerry Mayhew
CBE MA RAF



INTRODUCTION BY WG CDR KEV GATLAND

RAF100 Flypast Project Officer and Chief of Staff, Tornado GR4 Force Headquarters, RAF Marham, responsible for all elements of coordination for the project.
Image by Cpl Victoria Goodall

On 10 July 2018, exactly 100 years and 100 days after the formation of the world's first independent Air Force, a large Flypast celebrating the Royal Air Force's centenary year overflew Buckingham Palace in Central London for review by Her Majesty The Queen.

Comprising of 103 aircraft of 24 types, and more than 250 aircrew from 25 squadrons, the Flypast epitomised the ethos of the RAF. Every trade, role and specialisation combined to create a spectacle that *commemorated* the RAF's glorious past, *celebrated* current achievements and will *inspire* future generations as the Royal Air Force enters its second century.

The Flypast – the largest formation of military aircraft over London in 30 years – operated from 14 RAF stations and 3 civilian airfields and had 19 spare aircraft, a stand-by air-to-air refuelling tanker and three weather check aircraft to ensure success. Utilising the largest ever Restricted Airspace put in place by the Civilian Aviation Authority, Air Traffic Control agencies communicated with the aircraft on more than 50 unique radio frequencies from 18 different locations, with the Flypast converging on Buckingham palace at 13.00 hours local time.

All 103 aircraft closed to within a 9 minute 15 second, 15km-long stream before splitting and overflying the Runnymede Memorial, the RAF Museum at Hendon, London's Heathrow Airport and Windsor Castle. More than half of the participating types were concurrently involved on operations in the UK and overseas.

This specially produced publication provides an historical record of those who participated in bringing together the Flypast and will go some way to demonstrate the breadth and depth of planning and organisation involved in delivering such a momentous event.

A stylized, handwritten signature in black ink, appearing to read 'K. Gatland'.

Wing Commander Kev Gatland
MA RAF



PARADE AND PAGEANTRY

The RAF100 Parade was commanded by Group Captain Anne-Marie Houghton, the first female navigator in the Royal Air Force. The Centenary Parade comprised 1,000 personnel and represented the diverse roles performed by the RAF during our first century. Music was provided by The Central Band of the Royal Air Force, The Band of the Royal Air Force Regiment, The Band of the Royal Air Force College and The Royal Air Force Pipes and Drums.

The parade also featured a Guard of Honour, the seven Royal Air Force Queen's Colours, the Service's

55 Squadron Standards and four Escort Squadrons, each including one Officer, 20 Senior Non-Commissioned Officers and 100 other ranks.

QUEEN'S COLOUR

Held in custody for the Royal Air Force in the United Kingdom by The Queen's Colour Squadron, the Queen's Colour for the Royal Air Force in the United Kingdom comprises Royal Air Force blue silk, with fringe, cord and tassels of mixed blue and white. It bears the Royal Cypher in the centre between the Union Flag and three roundels – red upon white upon blue.



Her Majesty The Queen presenting the new Colour to the RAF at Buckingham Palace. *Image by Sgt P J George*



Top: Image by Sgt P J George

Bottom: Image by Christopher Yarrow



Top: Royal Air Force Pipes and Drums. *Image by Cpl Scott Robertson*
Middle Left: Parade Commander, Gp Capt Anne-Marie Houghton. *Image by Kate Rutherford*
Middle Right: *Image by Hayley Ward*
Bottom Left: *Image by Sgt P J George*
Bottom Right: Feu de joie. *Image by Cpl Scott Robertson*

AIRCRAFT: THE PLAYERS

3x Puma HC Mk 2

6x Chinook HC Mk 4/Mk 6

2x Juno HT Mk 1

1x Jupiter HT Mk 1

1x BBMF Dakota C Mk 3

1x BBMF Lancaster B1

3x BBMF Spitfire

2x BBMF Hurricane

3x Prefect T Mk 1

9x Tucano T Mk 1

2x Shadow R Mk 1

2x Hercules C Mk 4/C Mk 5

1x Atlas C Mk 1

1x C-17A Globemaster III

1x BAe 146 CC Mk 2

1x Sentinel R Mk 1

1x Voyager KC Mk 2

1x Rivet Joint RC-135W

1x Sentry AEW Mk 1

9x Hawk T Mk 1

9x Hawk T Mk 2

9x Tornado GR Mk 4

3x Lightning F-35B

22x Typhoon FGR Mk 4/T Mk 3

9x Red Arrows

XW217, XW199, ZJ956 (Vortex)

ZK561, ZK559, ZD574, ZA704, ZA683,
ZA670 (Vortex)

ZM518, ZM519 (Spectre)

ZM500 (Spectre)

ZA947 (Dakota)

PA474 (Memorial)

MK356, TE311, PS915 (Memorial)

PZ865, LF363 (Memorial)

ZM305, ZM306, ZM319 (Warboys)

ZF290, ZF239, ZF512, ZF348, ZF407, ZF142,
ZF287, ZF374, ZF291 (Swift)

ZZ417, ZZ418 (Snake)

ZH887, ZH868 (Zorro)

ZM416 (Grizzly)

ZZ172 (Blackcat)

ZE700 (Blackcat)

ZJ692 (Snapshot)

ZZ330 (Tartan)

ZZ665 (Goose)

ZH103 (Sentry)

XX246, XX205, XX321, XX303, XX348, XX255,
XX202, XX318, XX339 (Aggressor)

ZK020, ZK012, ZK025, ZK013, ZK030, ZK010,
ZK028, ZK032, ZK031 (Ninja)

ZD849, ZA543, ZD792, ZG775, ZA585, ZA588,
ZA597, ZA546, ZG752 (Monster)

ZM145, ZM147, ZM148 (Gibson)

ZK354, ZK319, ZK320, ZK314, ZK308, ZJ942,
ZJ802, ZJ916, ZJ920, ZJ950, ZK306, ZK307,
ZK310, ZK312, ZK316, ZK342, ZK383, ZJ939,
ZK301, ZK357, ZK318, ZK304 (Warlord, Triplex,
Cobra)

XX219, XX244, XX245, XX278, XX310, XX311,
XX319, XX322, XX325 (Hawk)



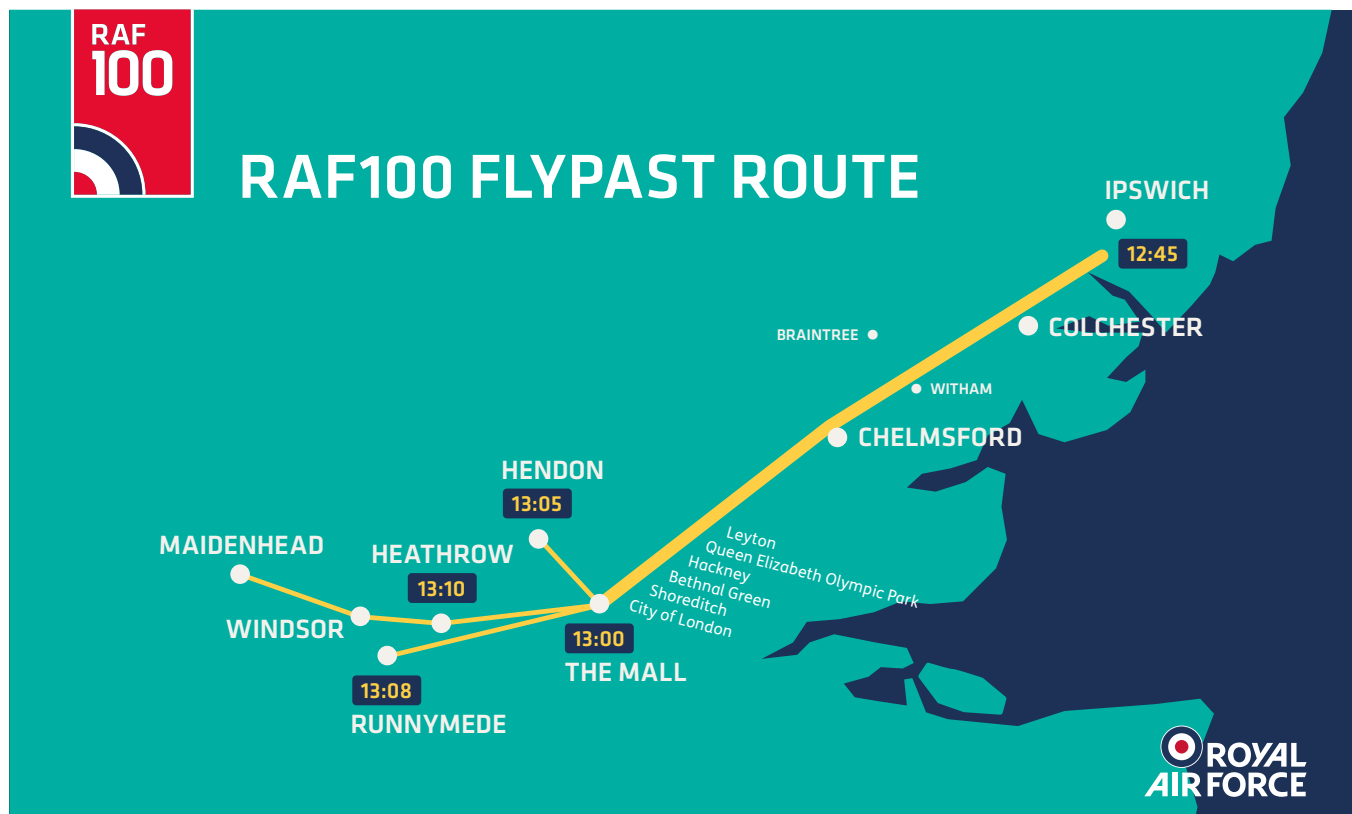
PLANNING AND COORDINATION

The Flypast of 'Windsor Formation' on the 10 July 2018 drew together all three goals of the Royal Air Force in its 100th year – to *Commemorate, Celebrate* and *Inspire*. The composition and size of the Flypast is truly momentous and worthy of the world's first independent Air Force. It is comprised of virtually every platform that the RAF currently operates, but to safely and efficiently generate such a spectacle, an incredible amount of planning over the previous 12 months has been completed.

The Flypast's Project Officer was Wing Commander Kevin Gatland, Chief of Staff at the Tornado GR4 Force Headquarters operating from RAF Marham.

Wing Commander Gatland has been responsible for all elements of coordination for the project, drawing operational and instructional experience as a Tornado GR4 Navigator to pull together all of the necessary components, both military and civilian. Before detailed planning could commence, engagement across the RAF was required to ascertain feasibility on the size, duration and formations of the Flypast, which aircraft types and squadrons would participate, and the final order of aircraft.

This extraordinary number of aircraft – more than four times as large as the annual Queen's Birthday Flypast – required detailed liaison and integration



RAF100 Flypast Route. Graphic by Richard Monk



with the Civil Aviation Authority to ensure that huge areas of busy and congested UK airspace were safely de-conflicted, while retaining maximum civilian usage and flexibility to continue operating into the national, regional and minor aerodromes in the South of England.

OPERATIONS AND CONTROL

Significantly, the cooperation of London Heathrow, London City Airport and numerous civilian airfields was critical to formulating a workable 'concept of operations' for the Flypast. All of this liaison had to be documented and approved and set out in an 'Operation Order' and distributed to all involved from the RAF's Chief of the Air Staff down to the most junior rank working in air traffic control or an operations room, as well as a myriad of civilian organisations.

Once the concept of operations of the Flypast had been agreed, Wing Commander Gatland along with Squadron Leader Matt Axcell and Squadron Leader Mo Abdallah commenced the task of detailed 'tactical-level' planning of individual aircraft and formation routes. Squadron Leader Axcell and Squadron Leader Abdallah, of 31 Squadron, who operate the Tornado GR4 from RAF Marham were also assigned the prestigious callsign of 'Windsor Lead' for 10 July 2018.

After numerous meetings, and following the concept of a safe 'chock-to-chock plan', the team painstakingly and meticulously specifying every individual aircraft's route and timing from the first turn of a propeller or turbine to 'wheels stop' on landing. The plan was constantly iterated as new information was obtained from both the squadrons involved, as well as the expert guidance of the RAF air traffic control team.

Top: Sqn Ldr Mahmoud Abdallah planning with Flypast crews. *Image by Cpl Steve Buckley*
Right: Graphic by Wayne Protheroe



Led by Squadron Leader Lorraine Hawthorne and Warrant Officer Mel Young, a robust communications plan was required that incorporated the RAF and civilian controllers at the National Air Traffic Services control room as well as wider military and civilian controllers at airfields across the UK.

The controllers were responsible for the safe and expeditious passage of the aircraft flying over London, but also played a crucial role in bringing over a hundred aircraft together as one formation



in East Anglia before safely dispersing and routing them back to their home airfields across the UK.

ROUTES AND OVERFLY

Intricate formation planning was held at RAF High Wycombe and RAF Marham where individual formation lead aircrew were brought together and the aircraft routes were finalised prior to the release of the 'Flypast Operation Order'. Additional sites were selected to have elements of the Flypast overfly. These included the Northerly runway at Heathrow Airport, the RAF Memorial at Runnymede, Windsor Castle and the RAF Museum at Hendon. Each of these locations required additional comprehensive planning and coordination.

The planning phase was concluded on 28 June when the team presented one of the most complicated and detailed UK multi-formation plans ever devised, to the Senior Responsible Owner for the Flypast, Air Vice-Marshal Gerry Mayhew (then Air Officer Commanding, No 1 Group, now Assistant Chief of the Air Staff). With his approval, the task of turning the ambitious plan into airborne reality began. During the month of June, individual aircraft types rehearsed their specific formations, while

continuing to maintain operations across the globe, protecting UK skies and generating training output for future generations of pilots, aircrew and engineers. The superlative work of the engineers was matched by every trade across the RAF with Logistics, Operations, Administration and Communications being fully involved in generating the largest single mass of aircraft seen for many decades.

FINAL APPROVAL

Prior to the main event on 10 Jul 18, approval and a final confirmation of the Flypast was required by Air Vice-Marshal Gerry Mayhew. This requirement was satisfied by a successful practice Flypast conducted overhead RAF Cranwell where the RAF Officers' College was a fine stand-in for Buckingham Palace. With a host of Senior RAF Officers, VIPs and national Press observing from the ground the final approval for the historic Flypast was granted.



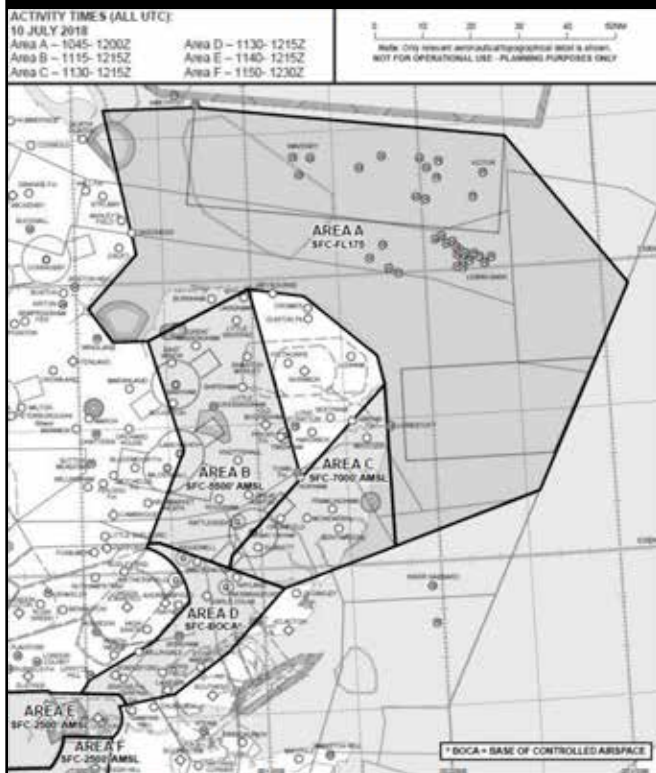
Top: RAF100 Rehearsal. Tornados over RAF College, Cranwell.

Image by Gordon Elias

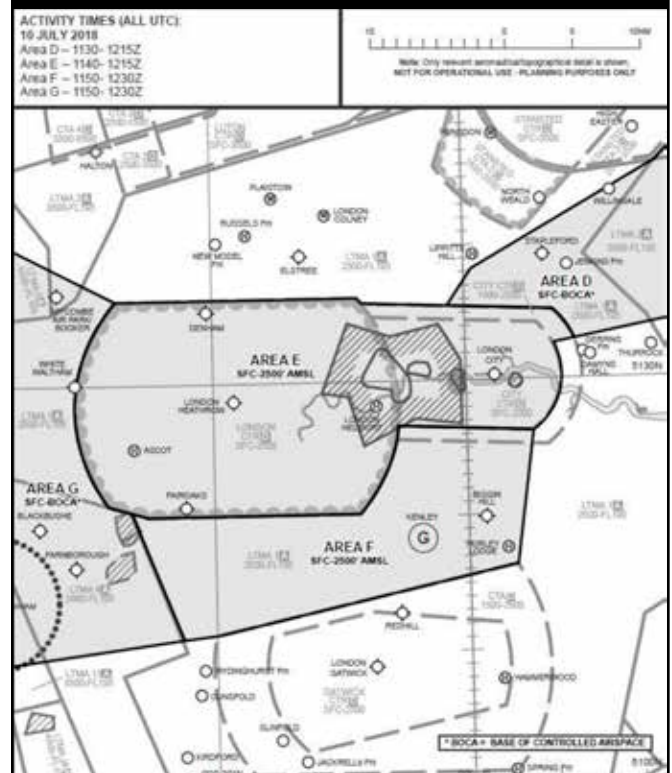
Bottom Left: Sentinel planning meeting.

Bottom Right: *Image by SAC Amy Lupton*

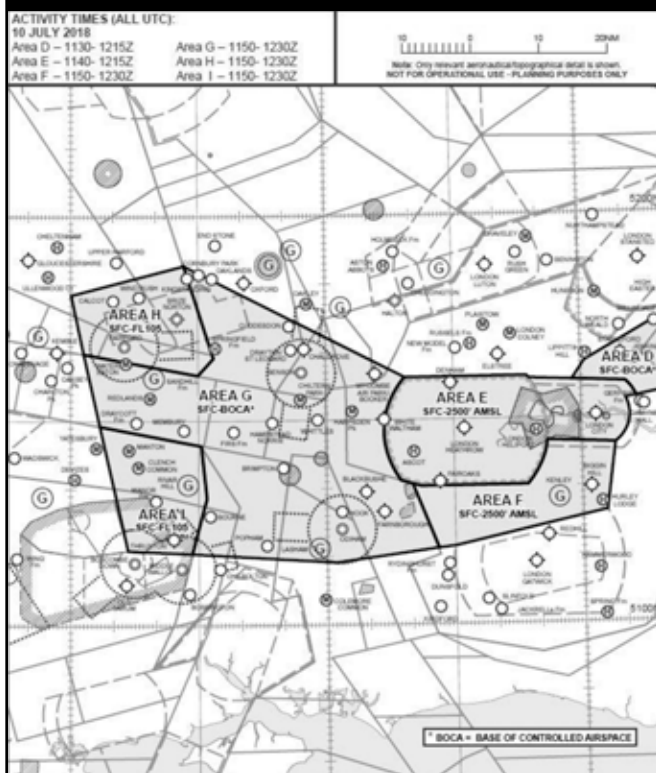
RAF100 ANNIVERSARY FLYPAST (CHART 1 OF 4) 10 JULY 2018



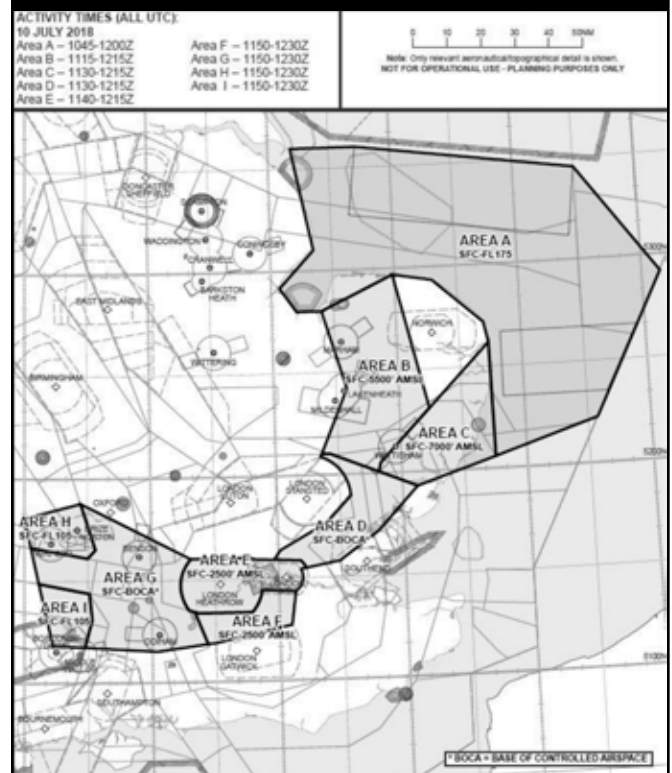
RAF100 ANNIVERSARY FLYPAST (CHART 2 OF 4) 10 JULY 2018



RAF100 ANNIVERSARY FLYPAST (CHART 3 OF 4) 10 JULY 2018



RAF100 ANNIVERSARY FLYPAST (CHART 4 OF 4) 10 JULY 2018



The RAF100 Restricted Airspace - the largest that the CAA has ever put together;
key to this process were Rob Gratton and Matt Lee.



FLYPAST EXTRAVAGANZA

PUMA AND CHINOOK: The RAF Support Helicopter (SH) Force operates under Joint Helicopter Command and includes the *Chinook HC Mk 4/Mk 6* (based at RAF Odiham) and the *Puma HC Mk 2* (based at RAF Benson). Both stations provide critical, rapid support for UK military operations throughout the world and deliver direct support to the Field Army, Royal Marines and UK Special Forces. They can be tasked in a

variety of roles including assault trooping, transport, refuelling and aeromedical evacuation. Both SH platforms are incredibly versatile, able to operate in all weathers, day and night and in any environment. Both types are supported by a joint Operational Conversion unit, 28 (Army Co-operation) Squadron, and Joint Helicopter Support Squadron based at RAF Benson.



Top: Image by SAC Amy Lupton

Middle Left: Image by SAC Amy Lupton

Middle Right: Image by SAC Pippa Fowles

Bottom: RAF Odiham, 27 Sqn aircrew.

Left to Right: Flt Lt Jenny Boyd (Pilot); Sqn Ldr Jay Berry (Pilot & Captain); Flt Sgt Pete Welsh (Crewman); Sgt Kelly Fitzpatrick (Crewman). Image by SAC James Goff



JUPITER AND JUNO: The Defence Helicopter Flying School (DHFS) based at Royal Air Force Shawbury now operates the *Juno HT Mk 1* as the primary training aircraft, as well as three *Jupiter HT Mk 1* aircraft at RAF Valley. These new aircraft represent a leap in technology compared to previous types and provide an excellent platform to prepare students for the rigours of operating increasingly

complex frontline types in the most challenging of environments. The DHFS provides helicopter training for pilots and rear-crew from the Royal Navy, Royal Marines, British Army and Royal Air Force, as well as partner nations. It takes them to a level where they are ready to move on to operational aircraft with frontline conversion units.



Top and Middle: Image by Cpl Tim Laurence

Bottom: Juno and Jupiter aircrew. Image by Ian Forshaw



THE BATTLE OF BRITAIN MEMORIAL FLIGHT (BBMF):

Comprising one *Dakota C Mk 3*, one *Lancaster B 1*, three *Spitfires Mk IX* (MK356), *Mk XVI* (TE311) and *Mk XIX* (PS915), and two *Hurricanes Mk IIC* (LF363) and *Mk IIC* (PZ865), these iconic Second World War aircraft are preserved as a tribute to those who lost

their lives while serving in the Royal Air Force.

The BBMF epitomises the commemorative element of the RAF100 celebrations, remembering all those who have lost their lives serving in the Royal Air Force, or its predecessor the Royal Flying Corps, in all conflicts from 1914 up to the present day.



Top: Image by Cpl Tim Laurence

Middle Left: Spitfire TE311 from the back of the Lancaster. Image by SAC James Skerrett

Middle Right: SAC Burke works on Hurricane LF363. Image by SAC Helen Rimmer

Bottom Left: Inside the Lancaster cockpit on the way to RAF Fairford after the Flypast. Image by SAC James Skerrett

Bottom Right: The 'Trenchard Plus' formation, created for the centenary in honour of Lord Trenchard.

Image courtesy of Clive Hubbard



PREFECT: Elementary Flying Training (EFT) transitions to a new aircraft and new way of training. Part of No.3 Flying Training School, the EFT's job is to teach pilots from the RAF, the British Army and the Royal Navy how to fly. The Tutor, the mainstay of EFT since the millennium, has been replaced with the *Prefect T Mk 1*. With well over twice the power, a digital glass cockpit and a retractable undercarriage, the Prefect represents the first stage of flying training for new pilots and is one of the newest aircraft in the RAF's inventory.



Top: Image by Cpl Tim Laurence

Bottom: Prefect aircrew led by Wg Cdr Ian Bews (centre). Image by Paul Saxby



TUCANO: Having served the RAF for more than 25 years, the *Tucano T Mk 1* is a Basic Fast Jet Trainer at No.1 Flying Training School (FTS), RAF Linton-on-Ouse, training all RAF and Royal Navy Fast-Jet pilots. The aircraft goes out of service in October 2019, handing over to the new *Texan T Mk 1* that will be based at RAF Valley. Students on Tucano learn to fly formation, advanced handling and navigate to find targets at low level, with only a map and stopwatch, before being awarded their Fast Jet Wings and progressing to the *Hawk T Mk 2*.



Top: Image by Richard Beattie

Bottom: Pilots of 72 Sqn involved in the 9-Ship flypast.
Image by Ron Blenkinsop

SHADOW: Operated in the Intelligence, Surveillance and Reconnaissance (ISR) role by 14 Squadron based at RAF Waddington, the *Shadow R Mk 1* is a modified version of the civilian Beechcraft King Air 350 series and entered service in 2009 as part of an urgent requirement to support Operation HERRICK in Afghanistan. Through its comprehensive suite of sensors, the aircraft provides vital real-time information to commanders on the ground.



Top Right: Image by Cpl Tim Laurence

Bottom: Shadow aircrew led by Sqn Ldr Matt Leyman (centre). Image by SAC Phil Burke

FLYPAST FORMATION



Hurricane Mk IIc

Spitfire IX

Lancaster B1

Spitfire XVI

Prefect T Mk 1

Dakota C Mk 3

Spitfire XIX

Hurricane Mk IIc

Atlas C Mk 1

C-17A Globemaster III

BAe 146 CC Mk 2

Sentry AEW Mk 1

Hawk T Mk 1

Typhoon FGR Mk 4, T Mk 3

Red Arrows,
Hawk T Mk1



HERCULES: The *Hercules C Mk 4/C Mk 5* is the longest-serving operational aircraft in current service. The C-130 has been continuously deployed at the forefront of global operations and will continue to do so into the future. At the end of the Falklands conflict, over 36 years ago, it was the first British tactical transport aircraft to land at Port Stanley and

the C-130 fleet maintained a presence at Mount Pleasant until April 2018, before handing over to the *Atlas C Mk 1*. The C-130 was also the first British aircraft to land in various conflicts: in Kuwait after the Iraqi retreat, in Bagram during the liberation of Afghanistan and in Tripoli during the withdrawal of UK civilians from Libya.



Top: Image by Cpl Tim Laurence

Middle Left: Image by Paul Crouch

Middle Right: Image by Luka Waycott

Bottom: Hercules aircrew: Wg Cdr Andy Johnson, OC47 Sqn; Flt Lt Mark Raymond, 47 Sqn; Flt Lt Tom Arnold, 47 Sqn; Flt Lt Derek Oldham, 622 Squadron; Sgt Steve Stubberfield, 47 Sqn. Image by Paul Crouch



ATLAS: The latest multi-engine airlifter to join the RAF fleet, the *Atlas C Mk 1* was first delivered to RAF Brize Norton in November 2014, and the Atlas Force has steadily increased to the current 18 out of a planned 22 aircraft as of July 18. As well as standard airfields, it can operate from natural surface runways such as grass, sand or gravel. The Atlas has

already proved its worth in RAF service supporting military operations around the world, with aircraft currently deployed to the Falkland Islands and the Middle East. The Atlas Force is on constant readiness and was rapidly deployed in 2017 to provide much needed humanitarian aid to the Caribbean Islands devastated by Hurricane Irma.

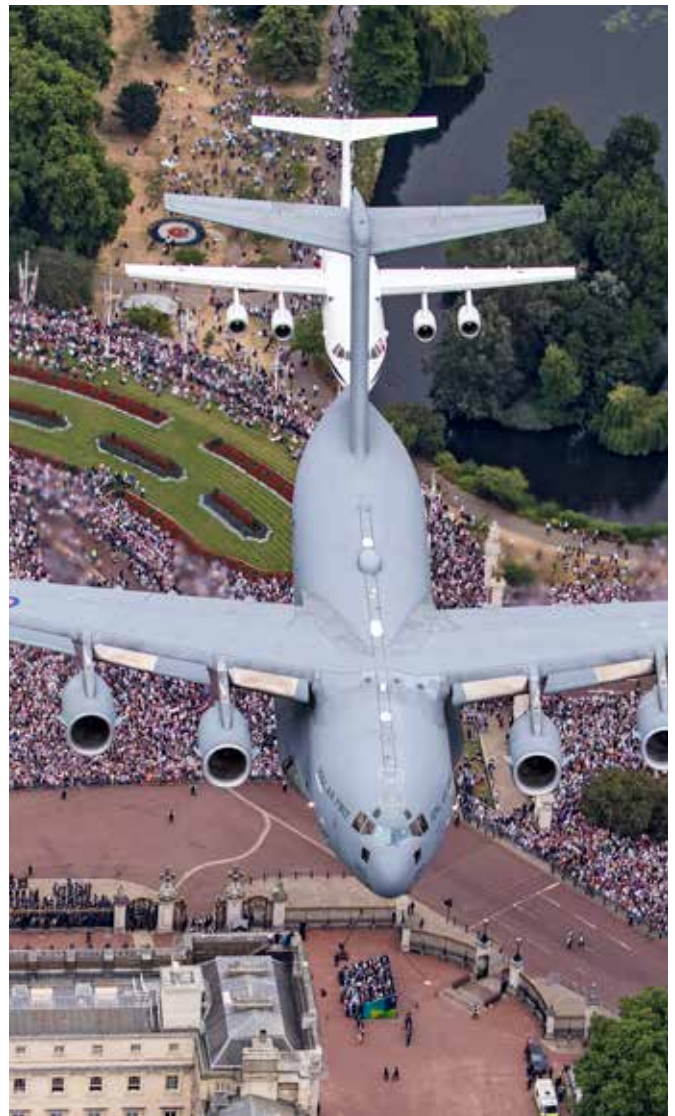


Top Right: Image by Cpl Tim Laurence

Bottom: Flt Lt Dave Ellis, Flt Lt Gary Davison, MAcr Ozzy Hicks.
Image by Sharon Floyd

C-17: Operated by 99 Squadron at RAF Brize Norton, the *C-17A Globemaster III* is the backbone of the Air Mobility Fleet. It provides the ability to transport vast quantities of vehicles, equipment and personnel to the furthest corners of the Earth, 365 days a year and at short notice. In its 100th year, Number 99 Squadron continues to fly global missions, recently providing disaster relief after Hurricane Irma in the Caribbean. The Squadron is also supporting the United Nations by delivering vital medical supplies to South Sudan and supporting military operations in Iraq, Afghanistan and Syria.

BAe 146: Operating with Number 32 Squadron, the *BAe 146 CC Mk 2* conducts transport duties for dignitaries, including the Royal Family.



Top Right: Image by Cpl Tim Laurence

Middle Left: Image by Kate Rutherford

Bottom: Left to Right: Flt Lt Andy Hoaen; Flt Lt Alan Davies; OC 99 Sqn Wg Cdr Marc Holland; Sgt Mike Bevan. Image by Steve Lympany



SENTINEL: Whether it is assessing the impact of flooding in Somerset, looking for the kidnapped Chibok schoolgirls in Nigeria or hunting Da'esh in the Middle East, V(AC) Squadron is constantly in

high demand. *Sentinel R Mk 1* aircraft are actively deployed on operations, and can be found flying at much higher altitudes providing wide area surveillance of the ground.



Top: Image by Cpl Tim Laurence

Bottom: Left to Right: V(AC) Sqn Sentinel aircrew. Image by SAC Phil Burke



VOYAGER: Operated by Number 10 and Number 101 Squadrons, the *Voyager* KC Mk 2 provides air-to-air refuelling, to extend the time in the air of the aircraft of the Royal Air Force, as well as transporting passengers and cargo. Voyager entered service

in 2011, replacing the RAF's fleet of *VC10* and *TriStar* aircraft and immediately began supporting RAF operations worldwide, including Afghanistan, Falkland Islands and more recently in Iraq and Syria.



Top: Image by Cpl Tim Laurence

Middle Left: Image by Cpl Sally Raimondo

Middle Right: Image by SAC Kitty Barratt

Bottom: left to right, Flt Lt Adam Mercieca, Sgt Andy Emberton, 10 Sqn Flt Lt James Beattie, 101 Sqn. Image by Paul Crouch



RIVET JOINT: Operated by Number 51 Squadron, the *Rivet Joint* RC-135W delivers battle-winning Signals Intelligence capability, supporting national and theatre requirements globally. The information

the aircraft provides enables Commanders to make informed decisions about the environment before them, from the strategic to the operational and tactical levels.



Top: Image by Cpl Sally Raimondo

Middle: Image by Cpl Tim Laurence

Bottom: Rivet Joint aircrew. Image by SAC Phil Burke



SENTRY: Operated by Number 8 Squadron, the *Sentry AEW Mk 1* provides airborne command and control. The Arabian *Khunjah* (Dagger) was adopted as part of its crest along with the Latin inscription '*Uspiam et Passim*', which translates to 'Everywhere

Unbounded'. Returning to the UK in 1972, 8 Squadron settled into its new Airborne Early Warning role at RAF Kinloss before relocating to RAF Waddington in 1991 to operate the E3-D Sentry.



Top: Image by Cpl Tim Laurence

Above: Sentry aircrew from 8 Sqn. Image by SAC Phil Burke



HAWK: Number 100 Squadron from RAF Leeming led the fast jet package in the Flypast. The *Hawk T Mk 1* was followed by its upgraded counterpart, the *Hawk T Mk 2* operated by Number IV Squadron from Royal Air Force Valley training fast jet pilots. While flying the

agile Mk 2 jet trainer, the next generation of fighter pilots are tested with air-to-air and ground-to-air threats which develop their cognitive decision-making skills and teach them the tactics, techniques and procedures they will need to thrive on the front line.



Top Left: Image by Cpl Sally Raimondo

Top Right: A Diamond 9 of No IV Squadron Hawk T Mk 2 on the return flight to RAF Valley.

Middle: Hawk T Mk 1 aircrew. Image by SAC Hazel Reader

Bottom: Hawk T Mk 2 aircrew.



TORNADO: Number 31 Squadron and Number 9 Squadron are the last squadrons to fly the *Tornado GR Mk 4* bomber, which has evolved into today's dynamic platform that can deliver air effects precisely where and when needed. Striking multiple targets from long range, collecting reconnaissance imagery, supporting troops from directly overhead with live video feed of their enemy's position backed with accurate

weapons, the Tornado has proven itself time and time again. In continuous operational service since the Gulf War I, the mighty 'Fin', as she is affectionately known, has been the backbone of the RAF's ground attack and reconnaissance capabilities since its introduction to service in 1982. Due for retirement in March 2019, the Tornado Force is on operational service over the skies of Syria and Iraq today.



Top: Image by Cpl Tim Laurence

Middle Left: Taking off from RAF Marham to join the Flypast. Image by Sgt Nik Howe

Middle Right: Image by Luka Waycott

Bottom: Tornado aircrew. Image by Cpl Jimmy Wise



LIGHTNING: Flown by the historic Number 617 'Dambusters' Squadron – and operating from RAF Marham, the *Lightning F-35B* is an exceptionally capable aircraft, combining stealth with an array of intelligence, surveillance and air and ground attack

capabilities. Formed in 1943 as a specialist flying unit, and initially tasked to attack the dams of the Ruhr industrial area, 617 Squadron went on to be involved with many more special operations throughout the war, and indeed throughout the past 75 years.



Top: Image by Cpl Tim Laurence

Middle Left: Image by SAC Chris Thompson-Watts

Middle Right: Image by Cpl Paul Oldfield

*Bottom: 617 Sqn Lightning takes off from RAF Marham to join the Flypast.
Image by Sgt Nik Howe*



TYPHOON: Based at RAF Coningsby with Numbers 3(Fighter), 11(Fighter) and 29 Squadrons, and at RAF Lossiemouth with Numbers 1(Fighter), II (Army Cooperation) and 6 Squadrons, the *Typhoon FGR Mk 4* is a highly capable and extremely agile multi-role combat aircraft capable of being

deployed across the full range of air operations including air defence and ground attack. Comprising the largest display of the day and impressively showcasing a '100' formation in the sky, the Typhoon formation comprised 22 aircraft, including the T Mk 3.



Top: Image by Cpl Tim Laurence

Bottom Left: Wg Cdr Andy Chisholm who led the formation. Image by SAC Wade

Bottom Right: Image by Hayley Ward



RED ARROWS: The RAF Aerobatic Team (RAFAT) is in its 54th display season, showcasing the skill and professionalism of everyone in the Royal Air Force. Based at RAF Scampton, the Red Arrows first displayed in 1965. Since then they have performed almost 4,500 times in 57 countries, demonstrating the agility of the RAF, and representing the UK

at home and overseas. They promote the best of British, support UK industry and inspire people with a display of precision and teamwork in the air and on the ground. The team flies the *Hawk T Mk 1* and comprises 130 personnel, including pilots, engineers and essential support staff with frontline experience.



Top: Image by SAC Rose Buchanan

Middle Left: Cpl Lydia Ford. Image by SAC Rose Buchanan

Bottom Left: Wg Cdr Andrew Keith (OC RAFAT). Image by Cpl Steve Buckley

Right: Image by Cpl Tim Laurence



MEDIA ENGAGEMENT THE HIGHLIGHTS

Build-up and reaction to the 10 July Parade and Flypast

Social media posts across HQ Air Command channels encompassed: 25 TV news networks (excluding regional); 29 national press articles; 8 national radio broadcasts; and more than 60 regional radio broadcasts. The total reach from TV, radio and print media was approximately 148.28m.

Twitter Reach: 8.1m (414k engagements)
Facebook Reach: 10.07m (601k engagements)
Instagram Reach: 1.78m (169k engagements)

In July, 293,015 people visited the RAF100 Website – a 392% increase month-on-month, and the highest



Top Left: Image by WO Andy Malthouse
 Middle Right: On The Strand.
 Image by Lisa Hunter, MHP Communications



number of visits in a single month. Also in July, the RAF gained; 23,263 followers on *Facebook*, 5,337 followers on *Twitter* and 12,290 followers on *Instagram*. This is the most gained in a single month all year. RAF Social Media content was liked, commented on and shared 1,026,103 times.

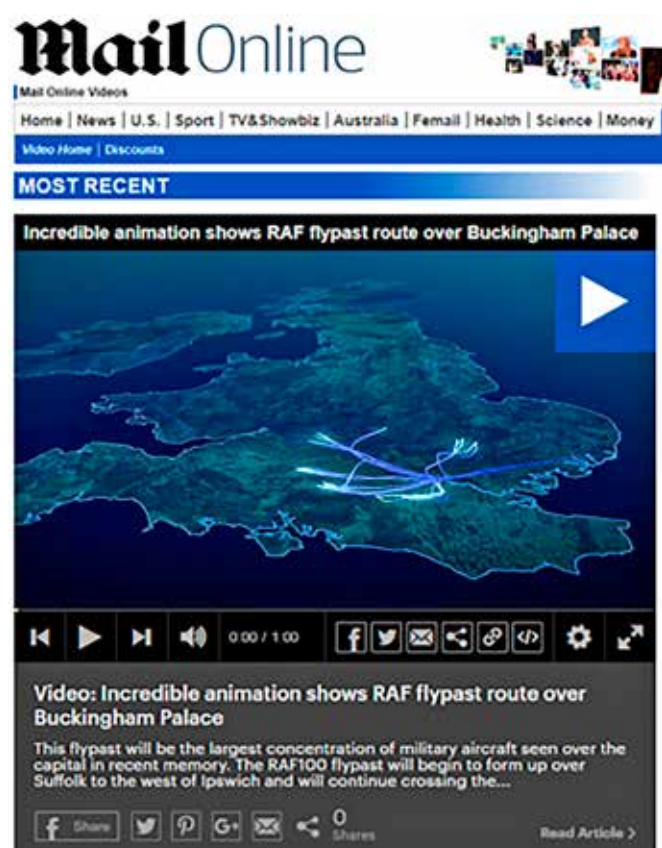
TELEVISION COVERAGE

With widespread national TV coverage on BBC and BBC News, ITV News, Sky News, Channel 4, Channel 5 Forces TV and other regional outlets, the estimated reach exceeded 25 million viewers.

PRESS COVERAGE

Estimated reach: 101.2 million readers across national and international print titles, with such headlines as:

- 📰 *A roar in salute to 'tenacious, gallant' RAF* (**Daily Telegraph**)
- 📰 *Our affection for the boys and girls in light blue runs deep* (**Daily Mail**)
- 📰 *Palace flypast is centrepiece of RAF's party* (**Western Daily Press**)
- 📰 *Remembering 100 Years of the RAF's Tenacity & Gallantry* (**The Scotsman**)



Top: Image by SAC Chris Thompson-Watts



- 📰 *High Praise for RAF from Queen at Centenary event (Press & Journal)*
- 📰 *RAF's still flying high (Daily Star)*
- 📰 *100 Glorious Years of the RAF, photo tribute that makes you proud to be British (Daily Mail)*

ONLINE COVERAGE INCLUDING SUCH COMMENTS AS:

- 📺 *The RAF100 Flypast App allows users to see the historic formation flypast over Buckingham Palace in the comfort of your garden, at school or even in your front room. (CNET)*
- 📺 *Typhoons amaze crowds with '100' display above Mall. (AOL)*
- 📺 *The British Royal Air Force is 100 years old today. They celebrated their centenary in style! By flying 100 military planes over London. (UniLad)*
- 📺 *I wrote to the RAF asking to come to the flypast. I am especially looking forward to seeing the amazing Spitfires. (Newsround: Harry, aged 7)*

INTERNATIONAL COVERAGE

Print

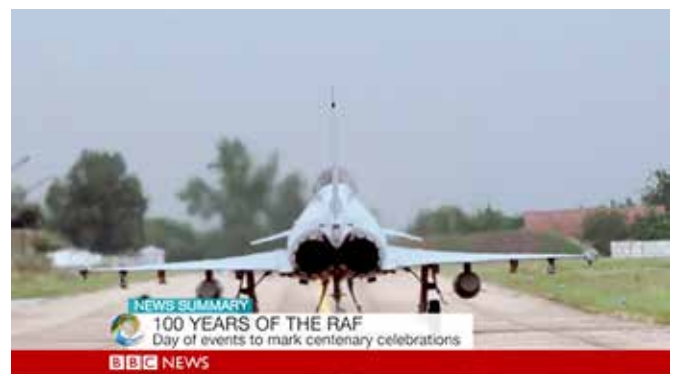
- 📰 *China Daily: International Readership, 45,000,000*

Television

- 📺 *Sikh TV: National viewership, 4,500,000*
- 📺 *WZTV-NAS (FOX)/Nashville, TN/US: Local Viewership, 11,620; National Viewership: 3,360,986*
- 📺 *BBC World News America: National Viewership, 1,701,303*
- 📺 *CNN International Europe: National Viewership, 630,038*
- 📺 *NBC: National viewership, 4,150,000*

Radio

- 📻 *2GB Radio/New South Wales Metro, Australia*



Win, Win
Eusters goodie bags
● R'n'R p3

DAN BUTTIS
Baker's treat
Danny's stage return
● R'n'R p4

Write on
TV star on books and Rhianna
● R'n'R p4-6

ROYAL AIR FORCE
Friday June 29 2018
No 1446 70p

RAF News

Football
UKAF boss it in Rostock
● Sport p30

Fit for the fight - F-35 at Marham
See p5

Motor Sport
Drift racer aims for Scots glory
● Sport p31

London calling

Historic flypast marks century

■ **Top Guns over capital**

■ **Up to 100 aircraft in action**

■ **25 RAF squadrons**

■ **200 aircrew from 14 RAF stations**

● See p3, 18, 19, 21

Fit for Heroes – The Forces' favourite newspaper

Top: Image by Cpl Helen Rimmer



Lion Cubs
Benson
boosts
cup hid
● News p13



Nat chat
Dormer's
dressed
to thrill
● R'n'R p3



Green queen
Midwife's
Laura is
Shrek star
● R'n'R p4



ROYAL AIR FORCE
Friday July 13 2018
No 1447 70p

RAF News



Typhoon star ready to rock RIAT
Airshow exclusive
See p12, 20-21



Sea Fishing
RAF News man
gets hooked



● Sport p36

Rugby League
UKAF battle
to Cup loss



● Sport p32

UK salute for RAF century



THE RAF marked its 100th anniversary at the RIAT. The Queen and the Prime Minister led the tributes to the world's oldest independent Air Force. Senior members of the Royal family joined political and military figures at Westminster Abbey.

for the historic occasion. More than 70,000 spectators gathered at 1,000 RAF personnel paraded along The Mall led by Qp Capt Anne-Marie Houghton, the first female navigator in the RAF.

The Queen, accompanied by Prince Charles, presented the RAF with a new Queen's Colour at Buckingham Palace ahead of the biggest flypast over the capital for more than 50 years. ● See p1, 4-5 for full report

Celebrating 100 years 1918-2018

Royal Air Force News Friday, June 29, 2018 P18

Royal Air Force News Friday, June 29, 2018 P19

Tornado

- The Tornado has been central to the RAF's strike capability for almost 40 years and can hit multiple targets from long range, collect reconnaissance imagery and support troops with live video feeds of enemy positions and accurate weapons.

Sentinel R1

- WACOps will fly the Sentinel R1 in the flypast. More usually found at much higher altitudes, it is the RAF's only long range, wide area battlefield surveillance aircraft. It has been used to assess flood damage in Somerset, search for kidnapped Chibok schoolgirls in Nigeria and hunt Danish terrorists in the Middle East.

E-3 Sentry

- E Squadron was formed in 1915, celebrated its own 100th birthday in 2015 and operates the E-3 Sentry AWACS aircraft from RAF Waddington. They are the only aircraft in the world capable of refuelling by both probe and drogue and boom methods.

Atlas C Mk 1

- The Atlas C Mk 1 is the RAF's latest tactical airlifter and can operate from grass, sand or gravel. Its maximum unrefuelled range is 6,000km, the equivalent of flying from London to Chicago, and it can carry a 35-ton payload – three times more than a C-130 Hercules.

BBMF

- The Battle of Britain Memorial Flight of World War II aircraft is a living tribute to all those killed serving in the Royal Air Force or the Royal Flying Corps. Thousands of people see its iconic Lancaster, Spitfire (pictured), Hurricane and Dakota aircraft display every year.

Typhoon

- The RAP100 display will be the largest formation flypast the Typhoon Force has ever conducted, with aircraft from all five frontline squadrons taking part. For the event, they will operate from RAF Coningsby and it will take eight minutes to get all 22 aircraft airborne.

The flypast of the century

TYPHOON FAST jets will take pride of place in the spectacular RAF Centenary flypast over Buckingham Palace on July 10, organisers have revealed.

But RAF100 Flypast Project Officer Wing Commander Kevin Gattand said there would still be plenty for the crowd to see on the big day.

"We're certainly hoping to have up to 100 aircraft taking part, subject to operational commitments, serviceability, and weather conditions on the day," he said. The Battle of Britain Dakota will be among the oldest aircraft taking part and the Juno H135 training helicopter will be among the newest.

But the Typhoons will form the single biggest element with aircraft from six squadrons based at Lossiemouth and Coningsby displaying.

Tornadoes

A total of seven Tornados from the two remaining Marham squadrons will also participate in one of the veteran bomber's last public appearances before it goes out of service in March.

"It's taken the best part of a year to co-ordinate all the different elements, military and civilian, to put this together with minimum disruption to commercial aviation," said Wg Cdr Gattand. He added that the Civil Aviation Authority had imposed its largest ever restricted airspace zone, stretching from the North Norfolk coast to central London and out to Oxfordshire, to enable the flypast to go ahead.



Red Arrows

- In 2018, the Royal Air Force Aerobatic Team, the Red Arrows, are performing at more than 60 events, as part of the Service's centenary year and the squadron's 54th display season. Based at RAF Scampton, the Red Arrows first displayed in 1965 and have performed almost 4,500 times in 57 countries.

Hawk T1

- Operating out of RAF Leeming, 100 Squadrons in the Air Transport and Air-to-Air Refuelling Role. Extensive service in 2011, it replaced the VC10 and Trident aircraft and immediately began supporting operations in Afghanistan, the Falkland Islands, and, more recently, in Iraq and Syria.

Voyager

- The Voyager aircraft is operated by 10 & 101 Squadrons in the Air Transport and Air-to-Air Refuelling Role. Extensive service in 2011, it replaced the VC10 and Trident aircraft and immediately began supporting operations in Afghanistan, the Falkland Islands, and, more recently, in Iraq and Syria.

H135 Juno & H145 Jupiter

- The H135 Juno and H145 Jupiter are the RAF's latest helicopter training fleet. They provide helicopter training for pilots and crew for all three Services and partner nations from basic training to advanced mountain and maritime flying skills.

Grob Prefect

- In 2018 the RAF replaced the Tutor with the Grob Prefect, a two-seater aircraft which has been trained all of Defence's pilots since the turn of the century with the Grob Prefect, a significantly more capable aircraft, providing heavy lift at very short notice on operations worldwide and in the UK – where they delivered fuel and food to communities cut off by heavy snowfall in Cumbria earlier this year.

C-17 Globemaster III

- The C-17 Globemaster III can transport vehicles, equipment and personnel across the world. The most powerful aircraft in the RAF, its engines can produce 161,000hp of thrust. When fully laden, the C-17 weighs 86 tonnes – the equivalent of 200 family cars or two-and-a-half blue whales.

Hawk T2

- All advanced jet training is carried out by the Hawk T2 – a fully aerobically low-wing, transonic, two-seater trainer, with avionics similar to frontline aircraft. The T2 has a data link that gives the pilot synthetic radar for intercept training and sensors which allow them to practise combating surface-to-air missiles.

C-130 Hercules

- Celebrating its 50th birthday, the C-130 Hercules is the longest-serving operational RAF aircraft and is currently supporting Operation Shader in Iraq. The iconic transport was the first British aircraft to land in Port Stanley at the end of the Falklands War in 1982 after the Iraqi retreat and in Tripoli during the evacuation of UK civilians from Libya.

Shadow

- The Shadow R11 Intelligence, Surveillance and Reconnaissance aircraft has been almost constantly deployed on operations since it entered service in 2009 as part of an urgent requirement to support Op Herrick in Afghanistan. Through its comprehensive suite of sensors, the aircraft can provide vital real-time information to commanders on the ground.

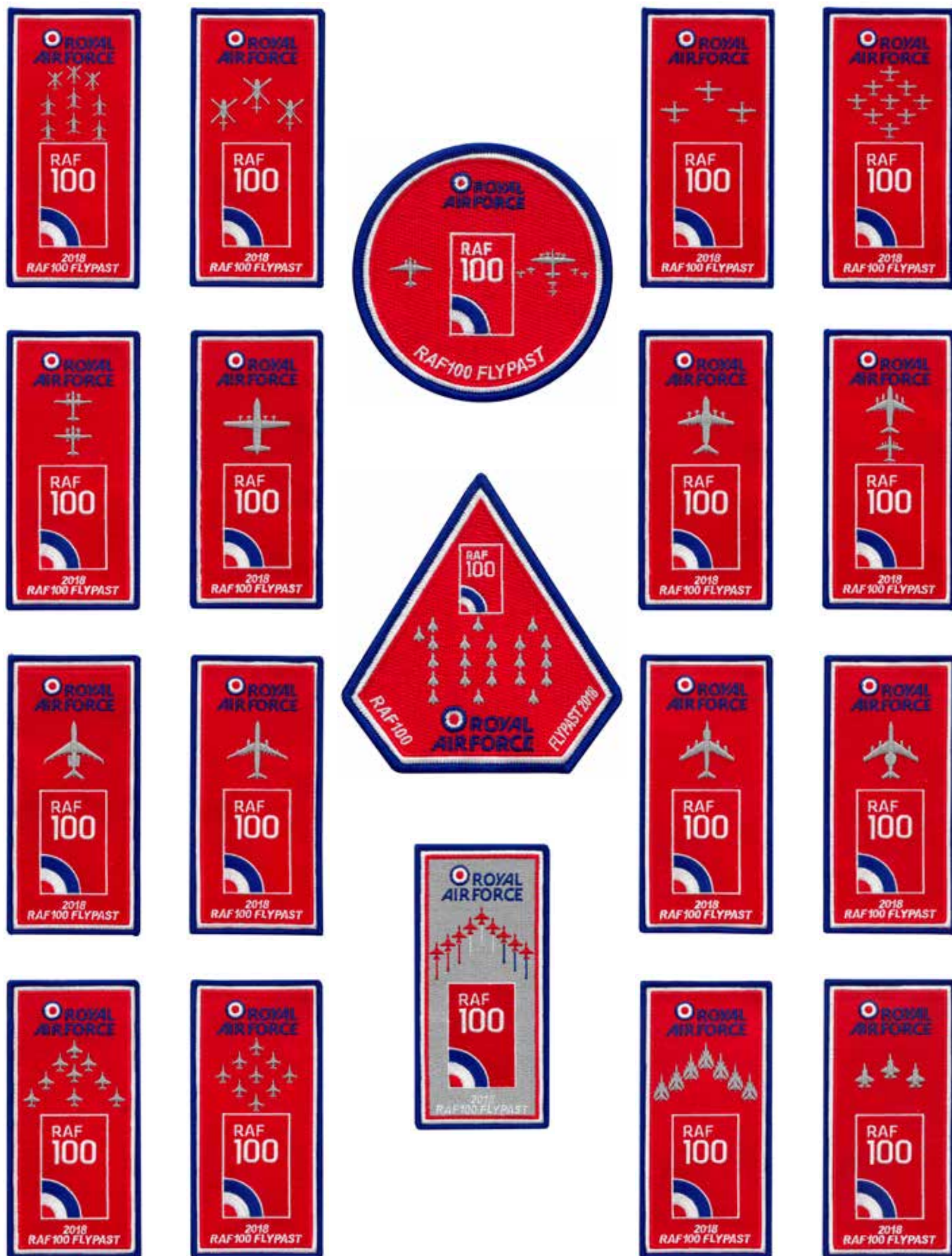
RC-135 Rivet Joint

- The RC-135 Rivet Joint of Waddington-based 51 Squadron collects signals intelligence which is analysed and relayed to commanders on the ground. The aircraft has been operational since entering service in May 2016 and British and American crews can use each other's aircraft under a unique co-manning agreement.

Top: BBC broadcaster Babita Sharma talks with former RAF pilot Roger Wilkins. Image by Cpl Pete Devine



*Top: Image by SAC Chris Thompson-Watts
Bottom Left and Right: Images by Cpl Scott Robertson*



RAF100 Badges, produced by Squadron Prints Ltd, show the entire 'planned' Flypast.

