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THE INTERNATIONAL
AYR SHOW
FESTIVAL OF FLIGHT

8 - 10 SEPTEMBER 2023
AYR SHOREFRONT


OFFICIAL
PROGRAMME

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WELCOME



I am thrilled to welcome you to South Ayrshire and the International Ayr Show - Festival of Flight 2023.

This is the first air show to be organised by South Ayrshire Council and our partners. Whether you are one of our pilots, sponsors, exhibitors, traders or visitors, we are

delighted to have you here and trust you will have an amazing experience.

Over Friday evening and Saturday, we have a superb line up of aviation displays. Among these is the RAF Chinook, a huge transport and logistics helicopter that we are very privileged to have, as this is one of its few displays this season; the mighty RAF Typhoon jet fighter, known as "Black Jack", and its World War II counterparts, the Spitfires from the Battle of Britain Memorial Flight.

We also have a STEM focussed display which aims to showcase how advances in Science, Technology, Engineering and Mathematics can rapidly change the way we find innovating solutions to complex problems – look out for the stunning Gravity Industries with their Jet Suit, which enables quick access to difficult to reach locations in a military or medical rescue situation. And last, but not least, I'd like to extend our welcome to our Canadian neighbours at Prestwick Airport who will show us, up close, their CC130J Hercules transport aircraft, making our airshow truly international!

On the ground, there is a superb range of activities and entertainment for the whole family, with hot air balloons, classic cars, extreme sports displays, a cinema, motorbike displays, an aviation art exhibition, creative zone, fun fair and more. Plus, the Armed Forces each have their own village, so if you're interested in the British Army, Royal Navy or RAF, be sure to pay them a visit. Have a look at our site map on pages 16 - 17 to make sure you don't miss anything!

With our spectacular coastline, South Ayrshire is the ideal location for hosting an event of this kind. We hope many of you who visit Ayr over this weekend will return to South Ayrshire to see more of our beautiful coast and countryside, experience our heritage and culture, and enjoy our superb hospitality.

In addition to the event attractions and showcasing our region, there is another highly important element to the airshow and that is education, in particular STEM. The Council's Education service is committed to encouraging all our young people to explore the fantastic career opportunities available in STEM, ensuring the future talent for our thriving aerospace industry at Prestwick, home to Scotland's largest aerospace cluster and emerging space hub.

Inside the STEM marquee you'll find the SKYWAY to a career in aerospace with many of our local aerospace companies, along with several other organisations, supporting STEM. Pop in to have some fun at the hands-on exhibits and challenges, and to find out more about pursuing a career in STEM, whether you're preparing to take your first steps in the world of work or looking to try a different path.

The International Ayr Show - Festival of Flight has been made possible due to collaboration with our many partners, including our strategic partner theSKYLAB, local industry, education providers, external agencies, our event charity partner, the Royal Air Force Benevolent Fund and, of course, our sponsors, including our main event sponsor, Ashleigh (Scotland) Limited. We are immensely grateful to each and every one of these organisations.

South Ayrshire Council has a commitment to steadily grow the International Ayr Show in the future and is keen to continue building relationships with our partners for years to come. There has been much anticipation and excitement in the run up to this event and now that it is finally here, please do enjoy the show.

With best wishes,

Eileen Howat

Chief Executive of South Ayrshire Council



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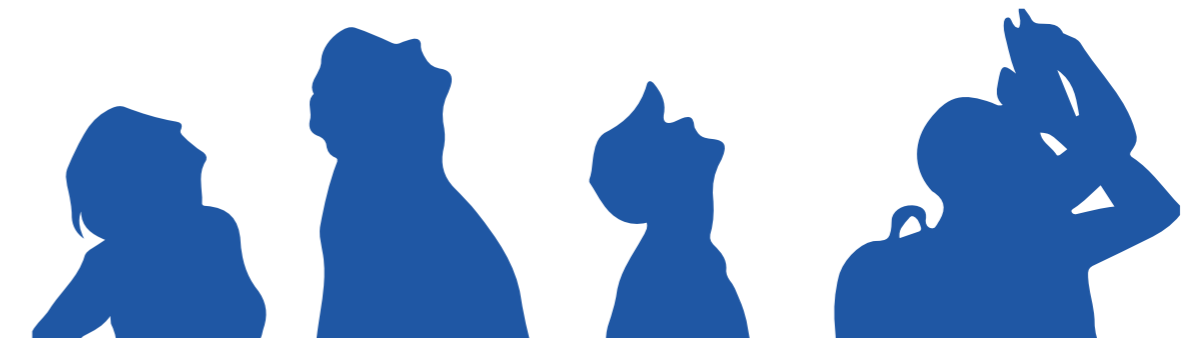
Stunning photographs and fascinating facts on all our stars of the show

48 FESTIVAL THANKS

The companies, organisations and people who made this event possible

50 SEE YOU NEXT YEAR!

We'll be back in 2024 – and we hope you'll join us



All information correct at time of going to print.

Ashleigh

BUILDING

We are delighted to be the Primary Sponsor of the 2023 International Ayr Show - Festival of Flight. Recognised as one of the major events in the Scottish Events calendar, the opportunity to support South Ayrshire Council on this spectacular occasion was too good to miss. We are all looking forward to seeing Ayr and the surrounding community thriving with what will be a memorable show. See you thAyr!



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FOREWORD

AIR OFFICER SCOTLAND, ROSS PATERSON CB, OBE, ADC



The Royal Air Force today has the most modern and capable equipment within its history, and we take immense pride in being the most forward-looking and technologically focused Service, offering opportunities for all. Yet, our success depends on the enduring support which we enjoy right across Scotland, through the Reserve Squadrons, two University Air Squadrons and our Royal Air Force Air Cadet Units. We are truly safer and stronger together.

I am thrilled to see the Red Arrows, a Typhoon, the Battle of Britain Memorial Flight and a Chinook on the display programme, as well as bustling RAF activity on the ground in the RAF Village. The Royal Air Force is committed to engaging with young talent and emphasising the importance of Science, Technology, Engineering and Mathematics (STEM). The Red Arrows will be bringing their STEM activities to the show and the central RAF STEM team have just finished delivering their workshops at our pre-show STEM week; engaging with 800 S2 pupils at Prestwick Airport. This effort follows a trip to the Isle of Arran where we delivered STEM engagement in every school on the island and is the latest in a nationwide programme reaching every corner of Scotland.

I hope that you enjoy a truly memorable and happy time here at The International Ayr Show - Festival of Flight.

Air Vice-Marshal

Ross Paterson CB, OBE, ADC

RAF Air Officer Scotland

It is a great pleasure to welcome you to Ayr and to The International Ayr Show - Festival of Flight on behalf of the Royal Air Force.

The Royal Air Force protects the United Kingdom, our people, our allies, and our values, by delivering world-class air and space power, every hour of every day. Our main operating base in Scotland, RAF Lossiemouth on the Moray Firth, plays a fundamental role in protecting our airspace with its front-line Typhoon squadrons. Also operating from this station, our P-8 Poseidon maritime patrol aircraft provide vital maritime surveillance to safeguard our seas. The forthcoming E-7 Wedgetail aircraft will then provide state-of-the-art Airborne Early Warning capability to keep the United Kingdom and NATO airspace secure.

In Scotland there are also four Royal Air Force Reserve Squadrons: Edinburgh, Glasgow, Leuchars and Lossiemouth – each providing a wide range of niche operational capabilities drawn from our part-time reservists who serve in these units.

BAE SYSTEMS





**Royal Air Force
Benevolent Fund**



FORMER RAF DOG HANDLER MICK MCCONNELL'S LIFE CHANGED IN AN INSTANT WHEN IN 2011 HE STEPPED ON AN IED HIS DOG HAD FAILED TO SPOT.

Mick, from Elgin, shattered his foot when he stepped on an improvised explosive device (IED), which eventually led to its amputation after two years of painful rehabilitation.

Since then, the RAF Benevolent Fund, the RAF's leading welfare charity, has been by his side, helping with a loan to buy a house. Relocating to Scotland from Lincoln enabled Mick and his wife Lorna to move closer to family who could be there to support Lorna during Mick's hospital stay and ongoing rehabilitation and recovery. The Fund helped with the necessary adaptations to make the home more accessible, including installing a wet room.

Talking about the day of his accident, Mick said: "I was working in the most dangerous square mile of Afghanistan when I was blown up on just my second patrol following R&R (rest and recuperation). Seven guys had been lost to IEDs before me, which is why they brought the dog handlers in."

He added: "I was the first person in my group to be injured and then three weeks later half of the platoon was injured in a grenade blast and the next day an IED blast took the rest of them. They all ended up in hospital next to me!"

Mick's recovery was a challenging time but reaching out to the RAF Benevolent Fund helped



Mick McConnell in his role as an RAF dog handler in Afghanistan

to ease his mind. He said: "After we phoned the Fund, life just started getting better from then on. The RAF Benevolent Fund supported us through the process of purchasing a house, which was a great relief and allowed me to place my wife in a position where she was supported when I was having my rehab."

Mick became an Ambassador for the Fund which he describes as, "the tonic that got me through a troubling time."

He said: "The Ambassador programme has allowed me to share my story which has been

tremendously therapeutic and helped me emotionally during my recovery period. I am honoured to share with others the breadth of support the Fund has provided us over the years. My wife Lorna has been supported when attending events and she knows the Fund are only a phone call away if we were to need anything, which is a huge comfort to both of us."

Mick continued: "Before my injury, I wasn't aware of the work of the RAF Benevolent Fund. I heard about them for the first time when an army surgeon mentioned that I could reach out for



Mick with Group Captain (ret) Alastair 'Monty' Montgomery, detachment commander on the Ascension Islands for the Vulcan raids during the Falklands.

support. I now make it my number one priority to raise awareness of the help available and I shout about the invaluable work of the Fund wherever I go, to ensure the services are reaching those who may be in need.

"The fact that the RAF Benevolent Fund has helped us to move from a house where it took me ten minutes to get up and down the stairs, to a home that's easily accessible and close to family where we can get support, has made a huge difference to our lives. They've lifted this unbelievable weight from my shoulders."



Mick and wife Lorna

The Royal Air Force Benevolent Fund is the RAF's leading welfare charity. It exists to support current and former members of the RAF, their partners, and dependants, whenever it is needed. For more information visit: www.rafbf.org

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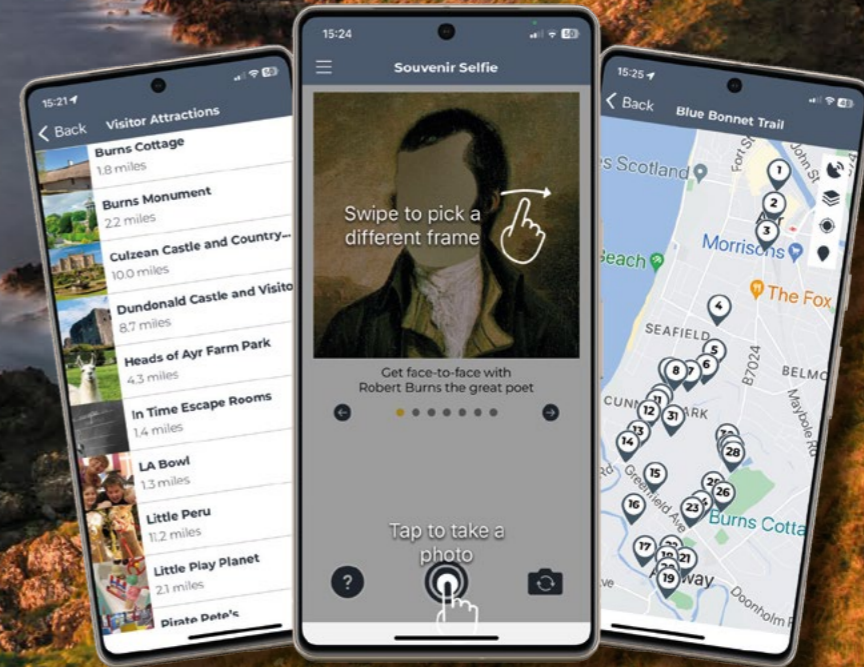


Registered charity in England and Wales (1081009) and Scotland (SC038109).

EXPLORE DISCOVER ENJOY

Destination South Ayrshire offers something for everyone, our website and new app showcase the best of the region.

Destination South Ayrshire App
Whatever experience visitors are looking for, they can find it here.



Explore everything South Ayrshire has to offer, from beautiful countryside to award winning beaches and visitor attractions. Discover our fascinating history; the birthplace of Robert Burns, Scotland's National poet and also Robert the Bruce.

Enjoy our warm hospitality and the finest natural produce that South Ayrshire has to offer. With miles of picturesque coastline and acres of farmland, it's no secret that Ayrshire is famous for its award-winning Scottish food and drink, such as freshly caught seafood, quality beef, potatoes, whisky and Hendricks Gin.

For golf enthusiasts, South Ayrshire is synonymous with some of the finest courses in the world. Prestwick is the Birthplace of The Open and Royal Troon will stage the Open Championship for the 10th time from 14 – 21 July 2024.

To find out more visit us at [destinationsothayrshire.co.uk](https://www.destinationsothayrshire.co.uk)

Download our new, free app, the perfect travel companion for visiting South Ayrshire. The app uses GPS and notifications to show places of interest close to your current location and GPS-triggered trails to follow.

Visit your device app store and search for 'Destination South Ayrshire'.

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Ayrshire College is a key partner in the ongoing development of the Aerospace sector in Ayrshire and beyond.

We will be on site all weekend to talk through our ambitions for aerospace skills, current and future courses, training and also **career opportunities** available throughout the College.

Take a tour of our virtual aircraft hangar for a hands-on experience.

We have plenty of other fun activities in our space including face painting and arts and crafts, so come say **hello!**

10 YEARS
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Ayrshire College **January courses available from October 2023** www.ayrshire.ac.uk



hub
South West Scotland

hub South West is a development partner working with public sector organisations to design and construct community facilities in Ayrshire, Lanarkshire and Dumfries & Galloway.

hub South West has a proven track record of delivering value for money, high quality and sustainable projects that generate local jobs and STEM skills opportunities.

Jointly owned by the Scottish government, public and private sector, hub South West has been involved in over £1 billion of projects to date. Every project has a strong focus on creating local employment and skills opportunities, recirculating project spend locally and delivering a range of programmes that develop local companies to win work, such as the Build Ayrshire SME engagement programme.

hub South West has enjoyed over a decade of partnership working with South Ayrshire Council, having delivered 16 award winning education, leisure, affordable housing, office and regeneration projects that have in turn across Ayrshire created 458 jobs, 432 apprenticeships and kept over £110 million of project spend in the Ayrshire region.

Hub South West are proudly sponsoring the International Ayr Show alongside the support of the following hub South West partners:



hub South West Scotland local SME engagement programme




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FESTIVAL SITE MAP

KEY

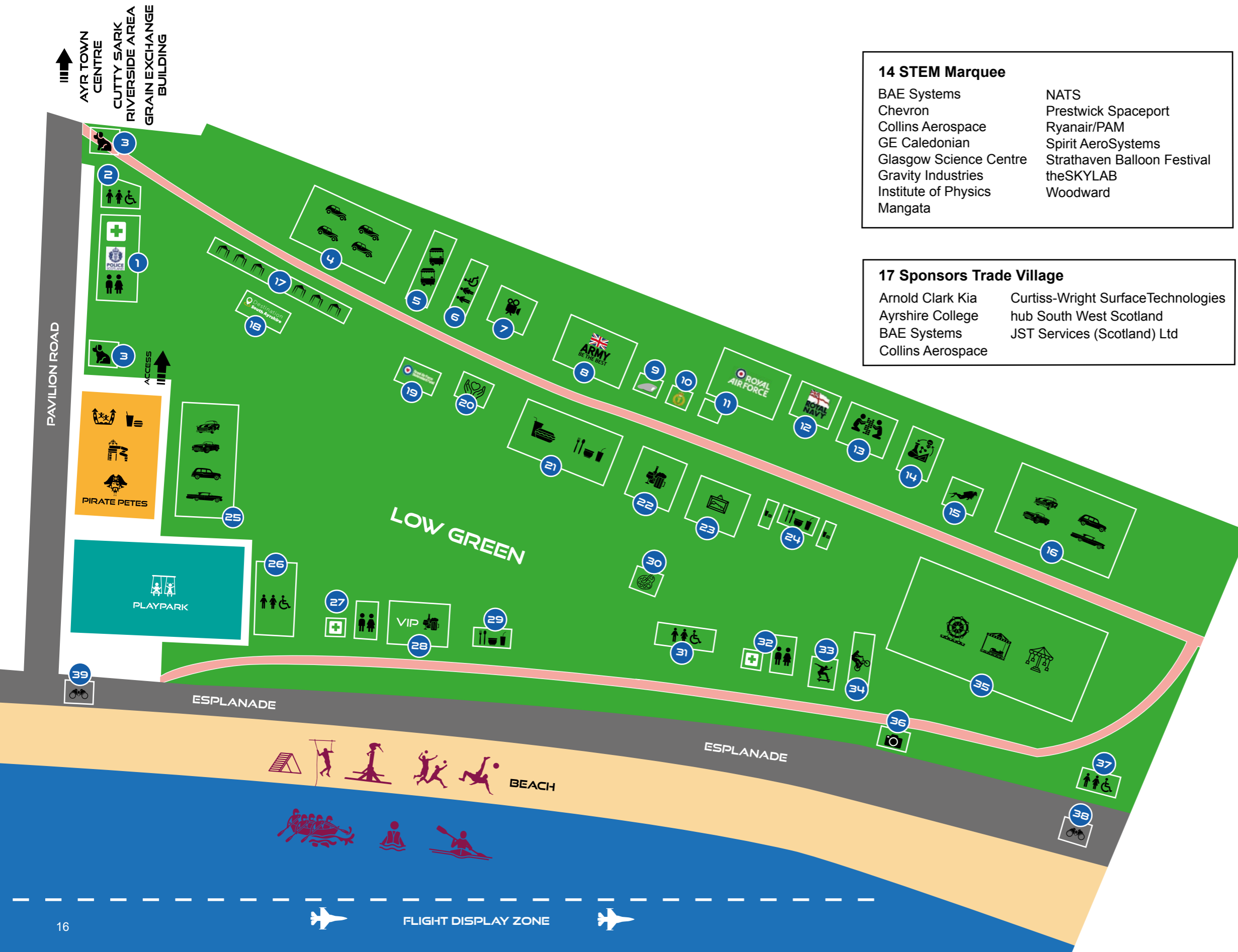
1. Police, First Aid & Lost Children
2. Toilets
3. RAF Benevolent Fund Dog Merchandise Selling Point
4. Heritage Centre Vintage Vehicles
5. Trade Area
6. Toilets
7. Cinema
8. Army Village
9. Veterans Meet and Greet
10. Royal Observer Corps
11. RAF Village including simulator
12. Royal Navy Village
13. Children's Creative Zone
14. STEM Marquee
15. Just Dive Scuba Experience
16. Classic Cars Exhibition
17. Sponsors Trade Village
18. Destination South Ayrshire Merchandise and Information Centre
19. RAF Benevolent Fund Welfare Area
20. Healing Centre
21. Food and Drink Village
22. Bar Area
23. Tragic O'Hara's Aviation Art
24. Food
25. Classic Cars Exhibition
26. Toilets
27. First Aid & Lost Children
28. VIP Bar & Bleacher Seating Area
29. Food
30. Face Painting
31. Toilets
32. First Aid & Lost Children
33. Team Extreme Sports Display Area
34. Team Extreme Public Ramp
35. Funfair
36. Photography Area (pre-booked spaces only)
37. Toilets
38. Accessible Viewing Platform
39. Accessible Viewing Platform

14 STEM Marquee

BAE Systems	NATS
Chevron	Prestwick Spaceport
Collins Aerospace	Ryanair/PAM
GE Caledonian	Spirit AeroSystems
Glasgow Science Centre	Strathaven Balloon Festival
Gravity Industries	theSKYLAB
Institute of Physics	Woodward
Mangata	

17 Sponsors Trade Village

Arnold Clark Kia	Curtiss-Wright SurfaceTechnologies
Ayrshire College	hub South West Scotland
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FESTIVAL SITE HEALTH & SAFETY



Medical and First Aid

Medical and First Aid for this event is provided by The Scottish Ambulance Service and St Andrews First Aid. Dedicated First Aid Stations are available at the North, Centre and South of the Low Green.

Parents/guardians with young children/vulnerable adults – please have a safety plan!

- Teach them your phone number. Phone number wristbands are also available free of charge at the Destination South Ayrshire Information Centre.
- Explain if they get lost, they should stop, stand still and look around for you. If they can't see you, they should approach a Police Officer, Steward or report to a Lost Children point at the dedicated First Aid Stations.
- If you lose someone, please report to one of the First Aid Stations and staff will radio to the other Stations to reunite you as soon as possible.

Emergency Messages

Be alert to any PA announcement that begins: **ATTENTION PLEASE, THIS IS A SAFETY ANNOUNCEMENT.**

In the event of hearing this, please listen carefully, as an important safety message will follow.



**Glasgow
Prestwick
Airport**

**AIRPORT STAFF PLAY A VITAL
ROLE IN FESTIVAL OF FLIGHT**

The airshow promises an unforgettable experience. However, behind the scenes of this spectacular event, there's a dedicated team at the airport working tirelessly to help make it all happen. Without the team's hard work and expertise, the Festival of Flight wouldn't be possible. Here, four key people explain what their role is in bringing this event to the skies.



**PHIL SMITH
AIR TRAFFIC CONTROL
(ATC) MANAGER**

"I have overall accountability for the day-to-day provision of Air Traffic Services. It's essential that all the aircraft operating both for the airshow and the airport's own regular flights are safely separated from each other. I'll be acting as the link between the Airport's ATC Team and the Airshow Flying Display Director who will be based at Ayr shorefront. This link is vital to ensure the smooth running of the event."



GILLIAN WATSON - ASSURANCE MANAGER

"My role is to plan for a safe airshow. I collaborate with a number of partners including South Ayrshire Council, the event organisers, Police Scotland, HM Coastguard – to name only a few. Our primary focus is to ensure due consideration and response plans are prepared for the safety of aircraft, aircrew, attendees and the surrounding community. On event days, I continue to work with partners to ensure all our plans are implemented."



RICKY BOYD - AIRFIELD OPERATIONS SUPERVISOR

"Airfield Operations involvement in the airshow begins when we start planning where aircraft will be parked to meet safety criteria, whilst continuing to handle other aircraft not involved in the airshow. During the event, the team will carry out routine inspections including daily airfield, bird control, airfield ground lighting and foreign object debris checks. The Airfield Operations Team will also ensure all visitors and staff follow safety guidelines as required when airside and provide a follow-me vehicle to escort aircraft."



GEORGIA CLARK - AVIATION SERVICES AGENT

"My role as an Aircraft Dispatcher is exciting and demanding. During event days, the atmosphere buzzes with excitement. My responsibility is to manage the logistics of aircraft arrivals and departures, ensuring all are handled with all regulatory and departmental policies and procedures in mind. I will monitor weather conditions, making any real-time adjustments where necessary. With attention to detail and effective communication skills, the team ensures every aircraft takes off and lands with precision. Being an Aircraft Dispatcher with a passion for aviation, the satisfaction of contributing to an unforgettable experience for spectators and participants is extremely rewarding."

AIRPORT'S VITAL ROLE IN DRIVING ECONOMIC GROWTH

In 1936, Glasgow Prestwick Airport's founder, Group Captain David Fowler McIntyre stated his intention to 'create an international airport and aircraft industry on the site within 10 years'. From its creation to the present day, the Airport, which now sits at the heart of a growing aerospace engineering cluster of businesses, has been a strategic asset central to economic investment in Ayrshire. Despite some turbulent periods during the intervening years, there has been one constant – a desire to drive economic growth.

Today, that desire remains as strong as ever and has been vital in returning the Airport to profit after a difficult few years. An impressive achievement considering the current economic climate which has had a considerable impact on all sectors, not least aviation.

The Airport has a robust growth strategy in place which, in addition to growing cargo, passenger and fuel, includes developing space launch services with the aim of being the leading horizontal launch spaceport in Europe by 2035. This is where an aircraft will take off carrying a launch vehicle loaded with satellites to put into orbit.



L-R: Zoe Kilpatrick, Glasgow Prestwick Airport Commercial Director; Ian Forgie, Glasgow Prestwick Airport Chief Executive; Paul Bate, UK Space Agency Chief Executive.

Prestwick Spaceport is part of the Ayrshire Growth Deal's ambitious and transformational Space and Aerospace programme for Ayrshire. This includes investment in infrastructure to deliver a

fully operational spaceport including a satellite integration facility, payload processing facility, mission control and range management systems.

Glasgow Prestwick Airport's latitude; over sea take off; metrological conditions; and the strong cluster of innovative aerospace companies located adjacent to it, makes it the ideal location for horizontal spaceport operations. Its creation will continue to drive economic development for the region and Scotland.

Currently, the Airport employs 350 people, supports a further 1,700 jobs through its supplier network and contributes £61.6 million annually to the Scottish economy. In total, 4,500 jobs are supported by the Airport and the surrounding Prestwick Aerospace cluster.

Ryanair's Prestwick Aircraft Maintenance base, PAM, which is based at the Airport and employs 500 permanent staff and 100 temporary personnel, is celebrating its 20th anniversary this year. PAM's long-standing partnership with the Airport has created job opportunities for thousands of people living in Ayrshire.

In addition to operators based at the Airport there are a growing number of aerospace businesses located on its doorstep.

Spirit AeroSystems has invested heavily in recent years and now has 1,074 staff at its Prestwick base. The US-headquartered company designs and builds aerostructures for both commercial and defence customers.

GE Caledonian employs 780 staff and is a full-service aero engine overhaul facility, while neighbour Collins, which has a 318-strong workforce at Prestwick, is a leader in technologically advanced and intelligent solutions for the global aerospace and defence industry.

There are more than a dozen other aerospace engineering companies located around the perimeter of the Airport – a number which has been steadily growing. So, almost 90 years on from when Captain McIntyre revealed his ambition for an aircraft industry on the site, it has certainly been achieved. Indeed, now with the planned spaceport, the development has gone far beyond the aviation entrepreneur's vision.

GLASGOW PRESTWICK AIRPORT IS DELIGHTED TO SUPPORT THE INTERNATIONAL AYR SHOW – FESTIVAL OF FLIGHT AND THE WIDER COMMUNITY.



INDUSTRY, STEM AND ZERO EMISSIONS

THE STRATEGY BEHIND THE SHOW



The International Ayr Show – Festival of Flight has been designed by South Ayrshire Council and our strategic partner, theSKYLAB. Here, theSKYLAB CEO Dr Geoff Coxon explains what’s involved in organising the event, why Science, Technology, Engineering and Mathematics (STEM) has such a key focus and the aim to achieve AirshowZERO

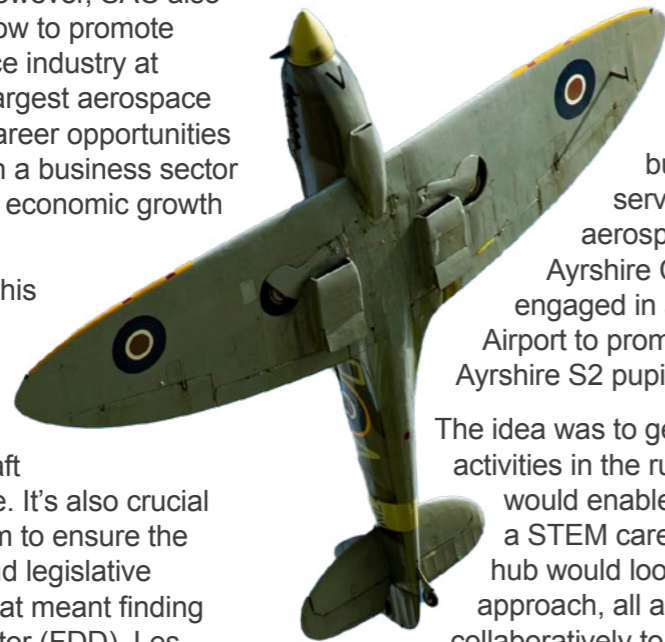
South Ayrshire Council wanted to create an airshow which would be an exciting, must-go-to event for everyone, would stimulate the local economy and would promote South Ayrshire as a destination of choice. However, SAC also wanted to use the airshow to promote the expanding aerospace industry at Prestwick - Scotland’s largest aerospace hub – and to signpost career opportunities to help seed and sustain a business sector that will bring significant economic growth to the region.

Organising an event of this scale is a complex process which begins with applying for the military air displays and securing the other aircraft for the flying programme. It’s also crucial early on to create a team to ensure the flying safety, logistics and legislative aspects are in place. That meant finding our Flying Display Director (FDD), Les Garside-Beattie. An ex-Harrier Jump Jet pilot and former Red Arrows Team Manager, Red 10, Les is also the FDD of the Farnborough International

Airshow and regarded as one of the best there is. Working closely with South Ayrshire Council’s site team, together we’ve collaborated with external agencies, emergency services, transport, the airport, entertainment, business and many more organisations.

In parallel with the airshow build, the Council’s Education service, the RAF, Royal Navy, the aerospace industries at Prestwick, Ayrshire College and Prestwick Airport engaged in an initiative at Prestwick Airport to promote STEM to 800 South Ayrshire S2 pupils.

The idea was to generate a week-long set of activities in the run up to the airshow that would enable pupils to understand what a STEM career at Prestwick aerospace hub would look like. In an innovative approach, all aerospace companies worked collaboratively to generate a set of workshops that represented how important STEM is in the work they do, what they do with it and how pupils could do the same.



Photograph by Paul Johnson/Flightline UK www.air-shows.org.uk

WE’VE MOVED THIS INITIATIVE TO OUR ‘STEM MARQUEE’ FOR THE FESTIVAL WEEKEND, WHICH INCLUDES A FEATURED STEM DISPLAY FROM THE FLYING PROGRAMME. FOR 2023, IT’S THE GRAVITY INDUSTRIES JET SUIT DEMONSTRATION, WHICH LOOKS MORE LIKE A SCENE FROM THE HOLLYWOOD BLOCKBUSTER, IRON MAN - OR IS IT IRON WOMAN? YOU’LL HAVE TO WAIT AND SEE!

A key theme this year is addressing how the airshow recognises its responsibilities towards reducing carbon emissions. Whilst it may appear contradictory to suggest that a massive event displaying jet aircraft should attempt to be environmentally friendly, the opposite is the case. Responding to the challenge, theSKYLAB has created an initiative called AirshowZERO. To establish how close we can get to a zero emission airshow, we’re looking at the type of aircraft, entertainment, site production and public transport to the airshow, and potential carbon offsetting, via the promotion of STEM activities and aerospace. We’re aware this is an ambitious challenge, but so was putting on this airshow! We’ll work hard towards achieving AirshowZERO, utilising the skills and expertise that are already well established in Scotland.

When you wander around the airshow, don’t just look to the skies. Visit the STEM Marquee, talk to people, and ask yourself if

you want to be a part of what you see. If you do, then go for it! The future opportunities in aerospace and space at Prestwick are limitless. From aircraft design, to aircraft maintenance, sub assembly, satellites, space science and so much more, the sky genuinely has no limits!

Have a fantastic weekend.

Dr Geoff Coxon
CEO theSKYLAB



Photograph by Paul Johnson/Flightline UK www.air-shows.org.uk

A SPECIAL NIGHT GLOW

On the Friday evening of the airshow, there will be a special tethered night glow, thanks to the organisers of the Strathaven Balloon Festival. As dusk settles in and nightfall comes, two hot air balloons, tethered to the ground, will light their burners to inflate their balloons and create a beautiful night glow.

Due to the proximity of Ayr’s Low Green to the town, sea and airport, it is not possible for us to have a balloon launch. However, you can get up close to the aeronauts, have a chat and witness the size and grace of these amazing craft.



On the Saturday afternoon, you can also meet the Strathaven Balloon Festival team in the STEM Marquee. Why not have a chat with them about how these balloons fly, see one up close and perhaps even find out about how to get into ballooning!

Copyright for photo – Les Hoggan Photography

THE INTERNATIONAL
AYR SHOW
 FESTIVAL OF FLIGHT

**FESTIVAL OPENING
 TIMES**

**FRIDAY 8 SEPTEMBER
 4PM - 9.15PM**

**SATURDAY 9 SEPTEMBER
 12 NOON - 6PM**

**SUNDAY 10 SEPTEMBER
 12 NOON - 5PM**

Please note times may be subject to change.

Photograph by Paul Johnson/Flightline UK
www.air-shows.org.uk

FLIGHT SCHEDULE

FRIDAY 8 SEPTEMBER 2023

START	ACT
19:15	GRAVITY INDUSTRIES
19:40	THE CALIDUS AUTOGYRO
20:00	RAF BLACK JACK TYPHOON
20:20	AIRBORNE PYROTECHNICS
20:40	A SPECIAL NIGHT GLOW

SATURDAY 9 SEPTEMBER 2023

START	ACT
13:20	GRAVITY INDUSTRIES
13:56	TEAM RAVEN AND THE GAZELLE SQUADRON FLYPAST
14:00	TEAM RAVEN
14:18	THE BAC STRIKEMASTER PAIR
14:32	RAF CHINOOK
14:48	OV-10B BRONCO DEMO TEAM
15:00	BATTLE OF BRITAIN MEMORIAL FLIGHT
15:16	RED DEVILS
15:35	THE CALIDUS AUTOGYRO
15:47	AIRBORNE PYROTECHNICS
16.01	THE GAZELLE SQUADRON
16:16	ROYAL CANADIAN AIR FORCE CC-130J HERCULES
16.28	THE STARLINGS
16:47	SE5A WW1 BIPLANE
16:57	ROLLS-ROYCE HERITAGE FLIGHT
17:19	RAF BLACK JACK TYPHOON
17:34	THE RED ARROWS

PLEASE NOTE: Timings are for guidance only. All acts were booked and timings correct at time of going to print, however may be subject to change. The International Ayr Show – Festival of Flight cannot be held responsible for the failure of any act to appear due to weather conditions, serviceability or other circumstances outwith their control.



THE RED ARROWS

THE ROYAL AIR FORCE AEROBATIC TEAM, THE RED ARROWS, IS ONE OF THE WORLD'S PREMIER AEROBATIC DISPLAY TEAMS AND HAVE BEEN DISPLAYING SINCE 1965. BASED AT RAF WADDINGTON IN LINCOLNSHIRE, HAVING LEFT THEIR PREVIOUS HOME AT RAF SCAMPTON IN OCTOBER 2022, THE RED ARROWS HAD FLOWN ALMOST 5,000 DISPLAYS IN 57 COUNTRIES, BY THE BEGINNING OF 2023 - THE TEAM'S 59TH SEASON.

Representing the speed, agility and precision of the Royal Air Force, the team is the public face of the service. They assist in recruiting to the Armed Forces, act as ambassadors for the United Kingdom at home and overseas, and promote the best of British.

Flying distinctive Hawk fast-jets, the team is made up of pilots, engineers and essential support staff with frontline, operational experience. Together, they demonstrate the excellence and capabilities of the Royal Air Force and the service's skilled, talented people.



All Red Arrows display pilots have flown operationally in frontline aircraft, such as the Typhoon, and helped the Royal Air Force to secure the skies every day of the year. They are joined by an RAF engineer who sits in the rear seat of the jet, and whose role is to look after and maintain their aircraft.

The engineers and support team with the Red Arrows are collectively known as the Blues. The engineers who are selected from the Blues every year to tour in the back of the jet are called the Circus. Red 1, the Leader of the Red Arrows flies with Circus 1. Red 2 flies with Circus 2, and so on. However, only the pilot is required to display the jet, which is why you will see the rear seat vacant.

For the 2023 display season, due to operational reasons, there are only eight Red Arrows and eight Blues. However, their display will be as dynamic and exciting as ever!



All photographs by Paul Johnson/Flightline UK
www.air-shows.org.uk

BLACK JACK

THE TYPHOON



THE TYPHOON DISPLAY TEAM IS BASED AT RAF CONINGSBY IN LINCOLNSHIRE. PART OF THE OPERATIONAL 29 SQUADRON, THEY FLY THE TYPHOON FGR.MK 4 - A HIGHLY CAPABLE AND EXTREMELY AGILE, MULTI-ROLE COMBAT AIRCRAFT, WHICH CAN BE DEPLOYED FOR THE FULL SPECTRUM OF AIR OPERATIONS, INCLUDING AIR POLICING, PEACE SUPPORT AND HIGH-INTENSITY CONFLICT.

All photographs by Paul Johnson/Flightline UK
www.air-shows.org.uk

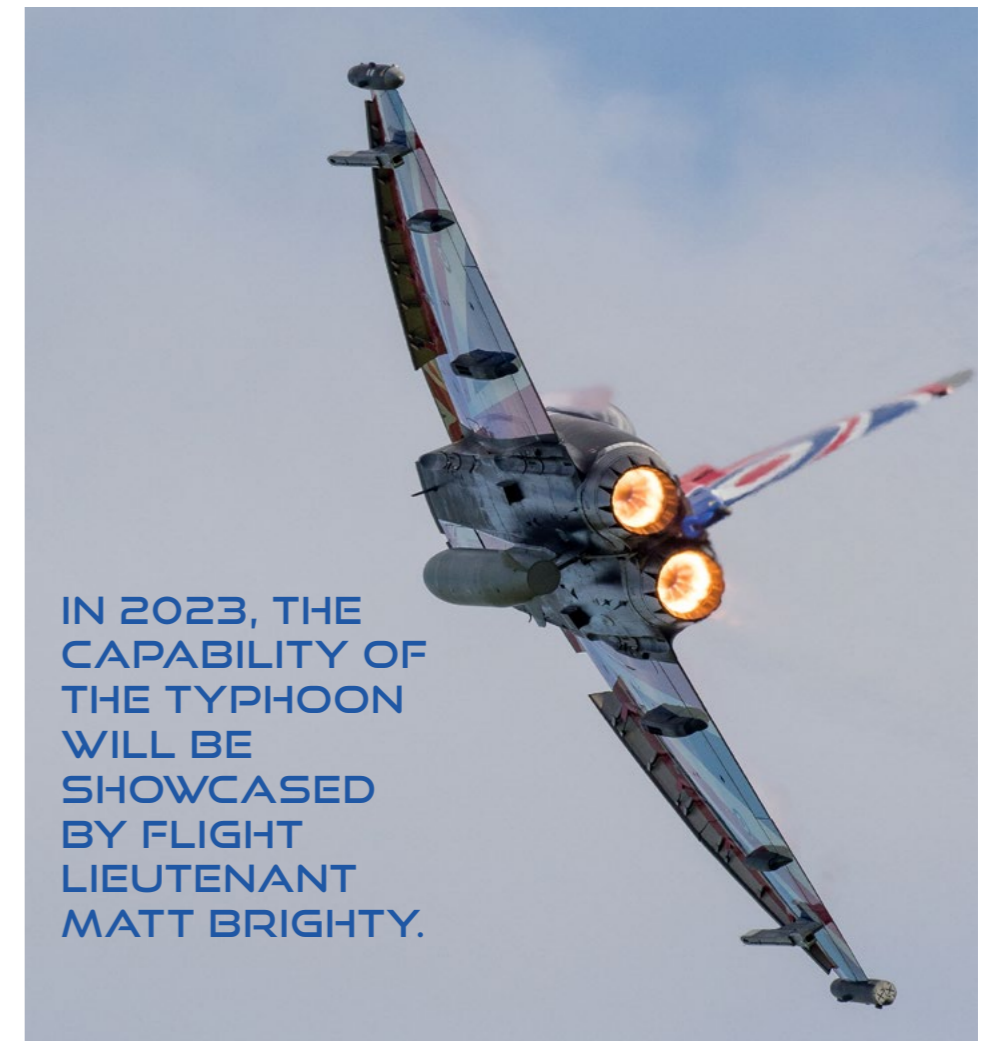


The pilot performs many essential functions through the aircraft's Hands On Throttle And Stick (HOTAS) interface which, combined with an advanced cockpit and the Helmet Equipment Assembly (HEA), renders the Typhoon superbly equipped for all aspects of air operations. This year, the Typhoon is nicknamed "Black Jack" for obvious reasons!

Although the Typhoon has flown precision attack missions in all its combat deployments to date, its most essential role remains the provision of Quick Reaction Alert (QRA) for UK and Falkland Islands airspace. Detachments have also reinforced NATO air defence in the Baltic and Black Sea regions.

This year's team from 29 Squadron comprises a specialist from every aircraft trade, along with support and management teams to assist both the pilot and the trades, all of whom work closely together to bring you the dazzling spectacle that is the Typhoon Display.

The future of the Royal Air Force is firmly in the team's sight, especially in their promotion of Science, Technology, Engineering and Mathematics (STEM). Indeed, our very own strategic partner, theSKYLAB, helped pioneer this platform with the team, showcasing the mind-blowing display of speed, power and agility of the aircraft.



IN 2023, THE CAPABILITY OF THE TYPHOON WILL BE SHOWCASED BY FLIGHT LIEUTENANT MATT BRIGHTY.

BATTLE OF BRITAIN MEMORIAL FLIGHT

THE ROYAL AIR FORCE BATTLE OF BRITAIN MEMORIAL FLIGHT (BBMF) OPERATES FROM RAF CONINGSBY, A TYPHOON BASE IN LINCOLNSHIRE, BUT WAS INAUGURATED ON 11 JULY 1957 AT RAF BIGGIN HILL. IT WAS INITIALLY CALLED THE RAF HISTORIC AIRCRAFT FLIGHT AND CONSISTED OF THREE PR MK XIX SPITFIRES AND THE RAF'S LAST AIRWORTHY HURRICANE, LF363. IT WAS THEN RENAMED TO BE THE BATTLE OF BRITAIN FLIGHT BEFORE A FINAL RENAMING IN 1969 TO WHAT IT IS KNOWN AS TODAY, BBMF.

The mission of the RAF BBMF is to maintain the priceless artefacts of our national heritage in airworthy condition, to commemorate those who have fallen in the service of this country. The RAF BBMF also serves to promote the modern day Royal Air Force and to inspire future generations.

The Flight operates six Spitfires, two Hurricanes, a Lancaster, a C47 Dakota and two Chipmunk aircraft (primarily for training). The aircraft are flown by regular RAF aircrew.

For our airshow this weekend, the RAF has given us the privilege of displaying two of their iconic Spitfires. Due to their commitments and serviceability, the RAF are unable to confirm which of their six Spitfires will arrive to display this weekend. They operate three Rolls-Royce Merlin engine powered variants, which were the type that served in the Battle of Britain and in operations soon afterwards. These are a Mk IIa built in 1938, a Mk Vb built in 1941 and a Mk IXc built in 1944. They also operate three of the later generation Rolls-Royce Griffon powered types, which were in service with the RAF for some time after the end of World War II. These aircraft are PR IXe variants built in late 1945 which were used primarily as photographic reconnaissance aircraft.

REGARDLESS OF WHICH SPITFIRES ARRIVE, YOU WILL BE ABLE TO WITNESS A STUNNING AND GRACEFUL DISPLAY WHICH WE HOPE ALSO SERVES TO HONOUR OUR ARMED FORCES, BOTH IN THE PAST AND CURRENTLY SERVING.



All photographs by Paul Johnson/Flightline UK
www.air-shows.org.uk

GRAVITY INDUSTRIES

IT'S NOT IRON MAN.
IT'S GRAVITY
INDUSTRIES, THE
INTERNATIONAL AYR
SHOW - FESTIVAL OF
FLIGHT FEATURED
STEM DISPLAY
FOR 2023

Every year the International Ayr Show - Festival of Flight will have one display as its key central piece on Science, Technology, Engineering and Mathematics (STEM). With STEM at the heart of our airshow, we want this display to be a key signpost to the exciting possibilities of how STEM can change and shape the future if we think differently. For 2023, we are delighted to team up with Gravity Industries as they showcase their amazing Jet Suit. Here they really have turned something from a Hollywood movie into reality.



WHO ARE GRAVITY INDUSTRIES?

Gravity Industries designs, builds and flies Jet Suits, pioneering a new era of human flight. The company, which is scaling towards an International Race Series, was founded to challenge perceived boundaries in human aviation and to inspire others to dare to ask, "What if?" Launched in March 2017, the business secured \$650,000 investment within the first two months from Tim and Adam Draper, with Tim best known for his early investments in Baidu Inc., Tesla and Skype.

Founder and Chief Test Pilot, Richard Browning, ex Royal Marine, leveraged cutting edge technology to reimagine human flight, forging an elegant partnership between mind, body and machine. This vision led to the creation of the world's first patented Jet Suit. The Jet Suit currently can perform speeds in excess of 50mph and is technically capable of reaching an altitude of 12,000ft (although for safety purposes it is flown lower).

As the aerospace industry, indeed the world, becomes more focussed on alternatives to carbon based fuels, Gravity Industries has also produced a new lithium polymer (LiPo) battery powered eJet Suit. Exploiting the same physics to propel the pilot, rather than using a jet turbine, it uses large electric ducted fans - similar in many ways to a hairdryer or garden leaf blower.



JET SUIT SPECIFICATION

- Launched 1 April 2017
- Started as a Jet Suit with one engine
- Turbines: Five
- Fuel: Jet A1 or Premium Diesel
- Engine: 1050bhp / 144kg
- Fight Time: Typically 1-3 minutes, up to 4 depending on conditions.
- Speed: Max forward speed is typically in excess of 50mph
- Typical pilot weight not more than 85kg with current Jet Suit
- RPM = 120,000
- Altitude limit = Technically 12,000ft but limited for safety reasons

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CHINOOK

Photograph by Paul Johnson/Flightline UK
www.air-shows.org.uk

THE RAF CHINOOK DISPLAY TEAM, BASED AT RAF ODIHAM IN HAMPSHIRE, EXISTS TO DEMONSTRATE THE CHINOOK FORCE'S CAPABILITY. IN ADDITION TO SERVING ON THE DISPLAY TEAM, THE CREW IS ALSO PART OF A FULLY OPERATIONAL SQUADRON, WHERE THEY BALANCE THEIR OPERATIONAL TRAINING DEMANDS WITH PRACTISING THE DISPLAY SEQUENCE.

The Chinook is an extremely capable and highly versatile support helicopter that can be operated from land bases or ships in a range of diverse environments, from the Arctic to the desert or jungle. The aircraft can be armed, fitted with effective ballistic protection and is endowed with self-defence equipment that enables it to operate within contested battlespaces. Crews are trained to operate against a plethora of land, sea and air based threats. Chinooks are primarily used for moving troops around the battlefield to deliver air manoeuvre, provide logistical resupply and conduct battlefield casualty evacuation. They can carry up to 55 troops or approximately 10 tonnes of mixed cargo.

The Chinook's secondary roles include search and rescue, and supporting a wide variety of specialist tasks, such as the National Resilience commitment. A Chinook crew traditionally comprises two Pilots and two Weapons System Operators, which can be augmented by specialists,

depending on the requirements of the mission.

In addition to its traditional war fighting roles, the Chinook's lifting capability is held at readiness under the National Resilience commitment to respond to emergencies in the UK. In recent years, these have included resupplying snowbound farmers in Northern Ireland and moving tons of aggregate to help reconstruct flood defences damaged by winter storms. The Chinook Force was also pivotal in preventing Toddbrook reservoir dam from collapsing, with the Chinook used as an airborne crane to accurately position ballast to sure up the dam wall.

At our airshow this weekend, they will be displaying the Boeing Chinook HC Mk 6. The helicopter has a huge rear door which is normally used for loading and unloading its cargo and troops. However, today this is where one of the crew will stand and wave at you with a pair of large dayglow gloves. So be sure to give them a wave back!

TEAM RAVEN

The name 'Raven' comes from a play on the letters 'RV' (which makes more sense if written 'RaVen' as it is on the team's badge). RV refers to the aircraft the team displays, the amazing Vans RV-8. It's an all-aluminium tandem two-seater, fully aerobatic with good 'g' limits. The RV-8's 180hp engine has an excellent power-to-weight ratio which, combined with an efficient airframe, gives the aircraft the performance and fighter-like handling that make it perfect for formation flying.

The team's aircraft have been modified with smoke systems, greatly adding to their dynamic display which exploits the RV-8 capabilities to the full. Entirely self-funded, Team RaVen are based at Swansea Airport.

The team comprises of six highly skilled pilots:

Raven 1: Simon Shirley. A former RAF fast jet pilot with nearly 6,000 hours' flying time.

Raven 2: Pete Wells. An experienced pilot, flying since aged 16, with over 6,000 hours recorded.

Raven 3: Barry Gwynett. 2,500 hours recorded, with significant display experience.

Raven 4: Gerald Williams. A former professional rugby player, who has flown many jets on the air display circuit, including Hawker Hunters with Team Viper.

Raven 5: Russ Eatwell. An ex-Navy helicopter and fast jet pilot, with over 15,000 hours on 70 different types of aircraft.

Raven 6: Mark Southern. An ex-RAF fast jet pilot, instructor and civilian airline pilot.

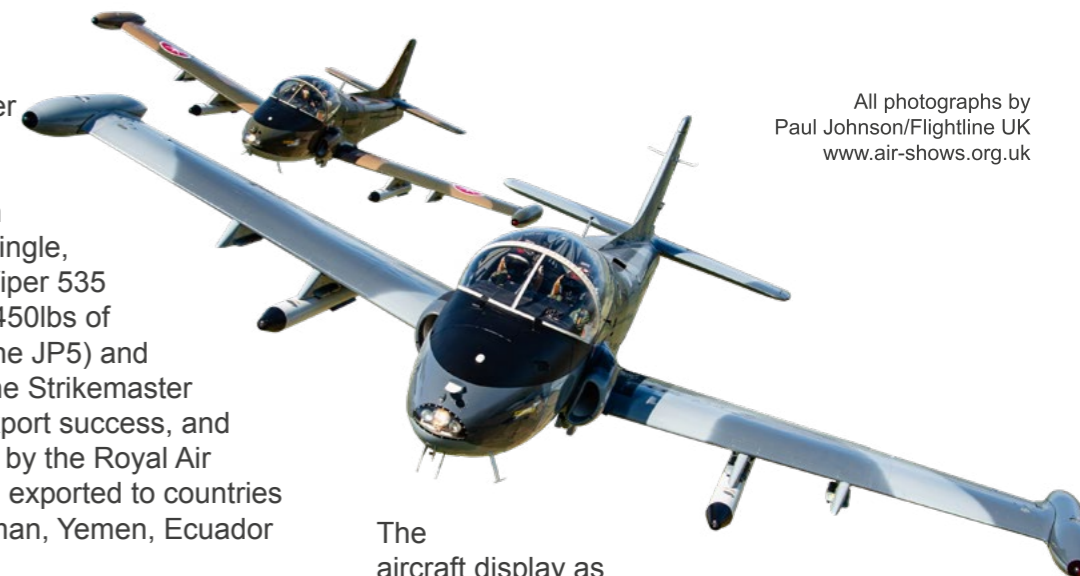


Team RaVen's display at the airshow this weekend lasts for 14 minutes and comprises crocodile loops, battle loops and tail chase double loops. Close passes and barrel rolls also lead into precision formation flying in 3 ship "VIC" (V for Victor) formation, 4 ship BOX formation and 6 ship DELTA formation in the shape of a triangle. Why don't you see if you can spot these formations when they display?

All photographs by Paul Johnson/Flightline UK www.air-shows.org.uk

THE BAC STRIKEMASTER PAIR

BAC 167, the Strikemaster was a light ground-attack export version of the Jet Provost Mk5a that has an armoured cockpit and a single, but robust, Rolls Royce Viper 535 engine with more than 3,450lbs of thrust (1,000 more than the JP5) and manual flying controls. The Strikemaster achieved considerable export success, and whilst none were ordered by the Royal Air Force, 146 were built and exported to countries such as Saudi Arabia, Oman, Yemen, Ecuador and New Zealand.



All photographs by Paul Johnson/Flightline UK www.air-shows.org.uk

The aircraft display as a pair, using a sequence of manoeuvres to best show the aircraft's capabilities. The first part of the show sees the aircraft conducting close formation aerobatics at speeds in excess of 300kts, whilst still remaining in good view of the crowd. The aircraft then split to conduct some opposition manoeuvres, much like the Synchro Pair of the Red Arrows, before further aerobatics, this time as a pairs tail-chase.

Speeds through the display will vary from 100kts over the top of the looping manoeuvres to more than 350kts in the fastest flypast. Whilst the aircraft is capable of pulling 5.5g, the manoeuvres in the display require no more than 4.5g, which helps to preserve the life of these beautiful aircraft. Throughout the sequence, the display is enhanced using a purpose-built smoke system.



In the display today, you will see two aircraft. G-SOAF (the grey one) (Mk 82a) belongs to the Strikemaster Flying Club based at North Wales Military Aviation Services Ltd (NWMAS), Hawarden, North Wales. This aircraft was imported by Mark Petrie in 2004 from Oman, and it is in an immaculate grey camouflage colour scheme as it would have been in service. The aircraft is actually the youngest of all the Strikemasters ever produced, built as a one-off in 1986. The aircraft has accumulated a little over 2,400 hours in its life so far. It is currently carrying two 100 litre tanks on the inboard wing pylons to supply the smoke system.

The second aircraft, G-RSAF (the brown and green one) is owned by NWMAS Leasing Ltd and started life as serial number 1120 for the Royal Saudi Air Force. However, the wings on this aircraft actually saw active service in the Royal Air Force of Oman during the Dhofar war. During that conflict, the wings were damaged and they now have repaired bullet holes.



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AIRBORNE PYROTECHNICS

GRACE, BEAUTY AND
BRILLIANCE IN THE SKY

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THE DISPLAY

At our airshow this weekend, the team will complete two displays. On the Friday evening, they will fly their dusk routine, where they attach pyrotechnics to the tips of their wings and light up the darkening sky. On the Saturday, they will swap over the pyrotechnics for a smoke system and lay smoke trails as if drawing on a canvas.

THE TEAM

Team Leader Tim Dews has been flying the Grob 109b for over 30 years, all over the world. Tom Dews is the second pilot and went solo in the Grob on his 16th birthday, as did his brother Ben. Matthew, the youngest of the three sons, not wanting to be outdone by his brothers, went solo in a glider at 14, following a rule change. All four fly gliders locally, along with the motor gliders.

Tim and Ben import the Grob motor glider for customers all over the UK and run a composite aircraft repair business from a farm strip in Wiltshire. Airborne Composites (the other half of Airborne Pyrotechnics) developed the systems used in the pyrotechnic display

THE AIRCRAFT

The team use two Grob 109b motor gliders which are super efficient, quiet and graceful. They can fly at night, have thousands of coloured LEDs, engine smoke and 4kgs of pyrotechnics on each wing tip. Developed by Grob Aircraft AG of Mindelheim Mattsies in Germany, the Grob 109b first flew in 1980. It is a two-seat, self-launching motor glider in which the pilot and passenger or student sit side by side, with good visibility provided by large windows.

The aircraft was also used by the Royal Air Force Volunteer Gliding Squadrons (VGS) to train air cadets through the gliding induction and gliding scholarship courses up until May 2018, when it was retired from service. The Grob 109b was known in RAF service as the Vigilant T1. The G 109 was the first motor glider built using composite construction which makes it extremely light, yet strong, for an airframe.

over the last
five years. This
was used at the Para
Olympic Games Opening
Ceremony in London 2012, in
partnership with Aerobility.



The Gazelle helicopter was designed by Aerospatiale in the South of France in the late 1960s. It is a 5-seat aircraft that was used in all three Services for pilot training, battlefield observation, light transport, reconnaissance and, for the British Army, as an Air Observation Post directing artillery fire onto the enemy. The Gazelle was the first helicopter to feature the distinctive ducted fan tail rotor, known as the Fenestron.

At our airshow this weekend, the Gazelle Squadron will display four Gazelle helicopters. This is something that was a regular occurrence from 1975 to 1992 with the Royal Navy Sharks and later with the Army Air Corps Eagles display teams.

The Gazelle has a cruising speed of 164mph and a maximum speed of 193mph. It still holds the record as the fastest single engine helicopter manufactured to date.

The team operates from their base at Landmead Airfield near Wantage and is made up of ex Army Air Corps, Royal Marine and Royal Navy pilots. Additionally, the team is very lucky to have volunteer ground crew who give up their time throughout the year to assist in bringing these fantastic aircraft to the display circuit, and is also supported by the owners, Falcon Aviation.

The aircraft being flown here at the International Ayr Show - Festival of Flight are:

Lead, a blue ex Empire Test Pilot School HT2. You can see the extended probe on the nose used to measure aircraft movement very accurately. This had the original registration of XZ939 and was used by the test pilot school between 1991 and 2016 while at Boscombe Down.

Number 2 on the right of the diamond formation is an ex Royal Air Force HT3, originally delivered as XZ934. It was sold into civilian use in 2002.

Number 3 on the left is an ex Royal Navy HT2 from 705 Squadron RNAS Culdrose. This had the registration XW857 and was used in the Sharks display team during the 1985 season.

Number 4 at the back, originally a Royal Navy 705 Squadron machine built in 1975. Today's pilot Kev Mathieson enjoyed his first helicopter solo flight in the airframe back in June 1983.



All photographs by Paul Johnson/Flightline UK www.air-shows.org.uk

ROYAL CANADIAN AIR FORCE CC-130J HERCULES



All photographs by Paul Johnson/Flightline UK www.air-shows.org.uk

Making the International Ayr Show - Festival of Flight a truly international event, is the Royal Canadian Air Force (RCAF). With a detachment of CC-130J Hercules aircraft at Prestwick Airport, their presence is now very familiar around South Ayrshire. The RCAF has a presence at Prestwick as part of Operation REASSURANCE. This is currently the Canadian Armed Forces' (CAF) largest overseas mission, through which the CAF contributes to NATO assurance and deterrence measures in Central and Eastern Europe. It is part of the biggest reinforcement of Alliance collective defence in a generation.

On 15 September 2022, Air Task Force Prestwick (ATF-P) was created to expand the tactical airlift detachment that previously supported Operation REASSURANCE.

ATF-P is the main transport hub via which the CAF sustains various operations across the world, including NATO assurance and deterrence measures. In addition to its missions in support of Ukraine, ATF-P supports CAF deployments in Central and Eastern Europe (Op REASSURANCE), the Middle East (Op IMPACT) and Africa (Op PRESENCE), while also supporting observation flights under the Open Skies Treaty.

To ensure capacity and operational flexibility, ATF-P operates three CC-130J Hercules aircraft and employs support personnel responsible for maintenance, cargo movements and

administration. ATF-P is made up of approximately 60 Canadian Armed Forces members, with further augmentation based on operational requirements.

The CC-130J Hercules has a range of more than 4,000 miles and can transport approximately 80 passengers, operate on short, unpaved runways and fly in severe weather conditions. Its cargo bay has a length of 12.5m, width of 3.05m and a height of 2.75m, enabling it to hold a payload of nearly 20,000kg and giving it a maximum take off weight of 70,000kg. These capabilities make the CC-130J an excellent aircraft for search and rescue operations, and transport missions over the vast span of Canada's central and northern regions, as well as its operations out of Prestwick.

On the Low Green this weekend, look out for members of Air Task Force – Prestwick, as they will be looking forward to meeting you and telling you what they do.



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THE STARLINGS

Formed in the 2021 display season, "The Starlings" are former British Aerobatic Champions, Tom Cassells and Michael Pickin. Both pilots have a combined aerobatic experience of over 50 years in airshows and competitions, having flown all over the world as solo acts and as part of a formation.

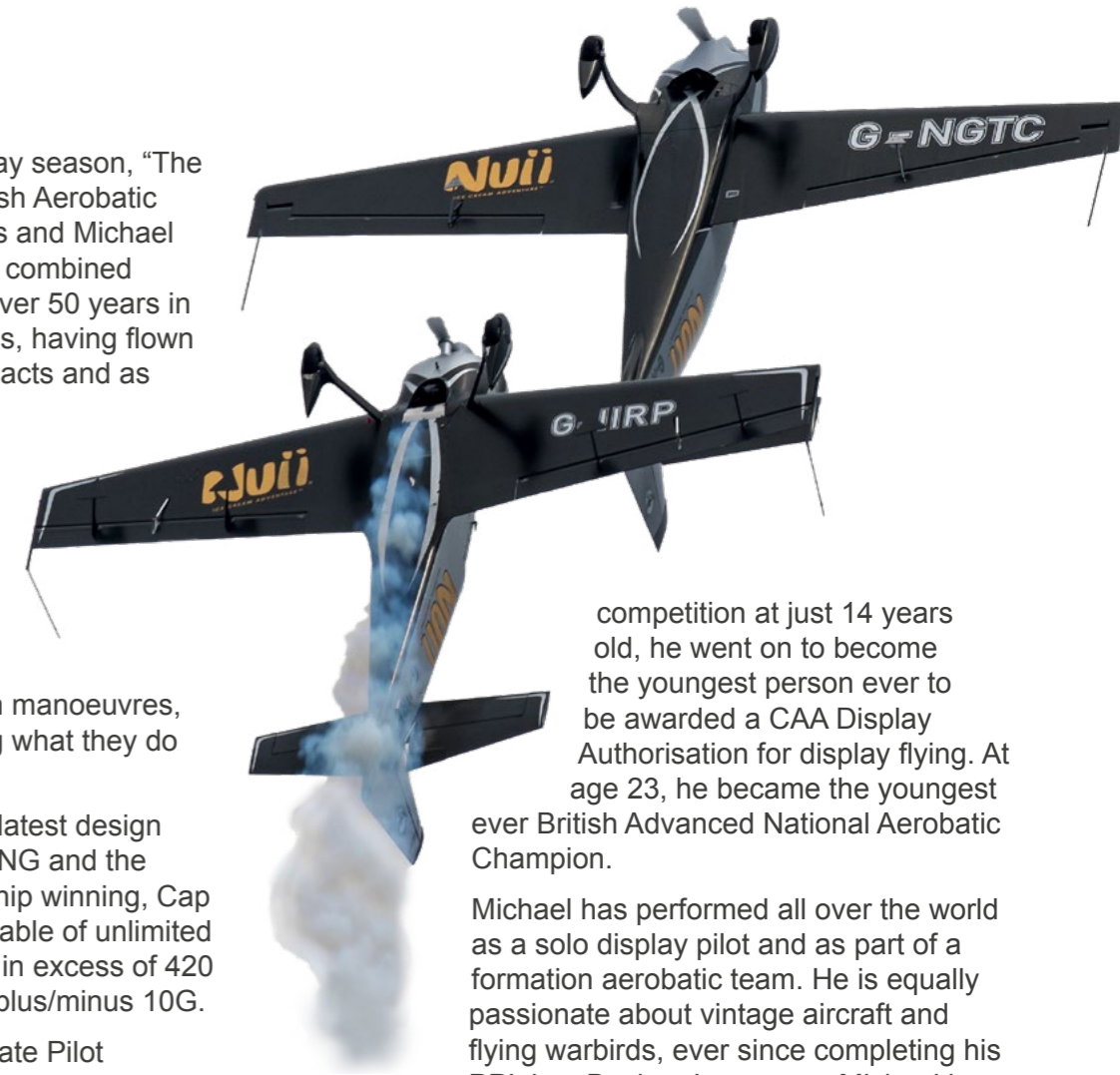
The display this weekend will showcase the performance, skill and abilities of both pilot and aircraft. The first half of the routine will demonstrate formation aerobatics and opposition manoeuvres, illustrating the team doing what they do best.

The aircraft used are the latest design from Germany, the Extra NG and the classic, world championship winning, Cap 232. Both aircraft are capable of unlimited aerobatics, with roll rates in excess of 420 degrees per second and plus/minus 10G.

Tom gained his PPL (Private Pilot Licence) in 1983. Since then, he has flown some 40 types, accumulating around 7,000 hours' experience. Some of this was spent as a parachute drop pilot, operating his own BN-2 Islander for five years and also participating in AFF (Accelerated Free Fall) parachute drops. The late Pete Clark introduced Tom to aerobatics in 1992. Flying Pete's Slingsby Firefly, Tom won his first contest at Brighton that same year.

Success continued with a win in the Tiger Trophy for Standard level pilots. At the end of 1994, Tom acquired a Zlin 50LA with which he won the 1995 UK Advanced Level Championship. His regular aircraft since then has been a Cap 232 which he bought in 1998. Tom won the Icicle Trophy in the same year and he also placed third in the Nationals. He has been Unlimited National Champion three times.

Michael started flying at a very young age, inspired by his father. Winning his first aerobatic



competition at just 14 years old, he went on to become the youngest person ever to be awarded a CAA Display Authorisation for display flying. At age 23, he became the youngest ever British Advanced National Aerobatic Champion.

Michael has performed all over the world as a solo display pilot and as part of a formation aerobatic team. He is equally passionate about vintage aircraft and flying warbirds, ever since completing his PPL in a Bucker Jungmann. Michael has flown over 50 different aircraft types, ranging from gliders to airliners, and is an active Commercial Pilot on the Boeing 757/767.



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www.air-shows.org.uk

ROLLS-ROYCE HERITAGE FLIGHT

The Rolls-Royce Heritage Flight consists of two World War II iconic aircraft, the Spitfire XIX and the Mustang P51D. They exist to promote the engineering heritage of the company, namely that of the engines that power both aircraft. In the case of the Mustang, this is a Rolls-Royce Merlin, whereas the Spitfire is a Rolls-Royce Griffon - the latter being the more powerful and advanced evolution of the Merlin.

The North American P51D Mustang was built in 1945 and so did not see active combat during World War II. Instead, it probably spent most of its service life in various training units in the USA. In 1951, it was delivered to the Royal Canadian Air Force and assigned Serial No. RCAF 9279. It served with No 403 City of Calgary Squadron until April 1959, when it was retired.



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Paul Johnson/Flightline UK
www.air-shows.org.uk



GRIFTON POWERED SPITFIRE, PS853 WAS ALSO BUILT IN 1945, BUT FOR USE AS A PHOTOGRAPHIC RECONNAISSANCE PLATFORM. IT PREVIOUSLY SERVED WITH THE BATTLE OF BRITAIN MEMORIAL FLIGHT, ALSO HERE AT THE INTERNATIONAL AYR SHOW - FESTIVAL OF FLIGHT. ALONGSIDE THE MUSTANG, THE TWO AIRCRAFT ARE A PERFECT COMBINATION THAT EPITOMISES THE TWO MOST FAMOUS PISTON ENGINES EVER BUILT.

THE CALIDUS AUTOGYRO



WHAT LOOKS LIKE A
HELICOPTER, BUT ISN'T A
HELICOPTER? THE
CALIDUS AUTOGYRO!

Honestly. This is not a helicopter....Why? The rotor blades of the Autogyro are completely free wheeling in flight, driven solely by the air going up through the rotor disk. There is no mechanical drive to the rotors in flight - the phenomenon of autorotation drives them. Once airborne, the rotors just look after themselves and keep spinning, even if the airspeed indicator is showing zero!

The propeller of the aircraft pushes it through the air for forward flight. The rotor is inclined slightly back and the air flows up through the rotor disk and keeps the rotors spinning. Stop the engine and the aircraft slows and descends. The air still flows through the disk and keeps the rotors turning, even when flying sideways or backwards - birds don't even fly backwards deliberately!

In flight, the Autogyro has one other major advantage over both aeroplanes and helicopters - safety in the event of an engine failure. If an engine fails in a gyro, the same thing would happen as if the pilot tried to fly too slowly - no stall, the aircraft would slowly descend vertically under full control. In fact, the procedure for landing an Autogyro after engine failure is similar for landing one under ordinary circumstances -

quite simple and with a 3m landing roll, very safe to be put down anywhere.

The pilot of the display this weekend is Peter Davies. Peter has been flying Autogyros for nearly 30 years and is cleared for 30ft fly pasts, in a visibility of 1km, cloud base of 200ft and 25kts cross wind. Now, not many displays can be flown in those conditions, but this one can! Peter can be displaying when virtually everyone else is grounded!

The Autogyro display has been formulated to be fun, exciting, exhilarating and safe - there is definitely something different in the air. The essence of the display is "Up Close and Personal".



All photographs by
Paul Johnson/Flightline UK
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SE5A

WW1 BIPLANE



Photograph by Paul Johnson/Flightline UK
www.air-shows.org.uk

We turn the clock back to the beginning of RAF fighter technology with the World War I biplane, SE5A. Flown by Neil Geddes, this aircraft is a replica of the fighter plane that once was the cutting edge of fighter design and capability.

The SE5A was built by the Royal Aircrafts Factory in 1916 and was a single seat fighter aeroplane used by the then Royal Flying Corps (RFC), the predecessor to the modern Royal Air Force (RAF). It entered service in March 1917 with 56 Sqn RFC, before being deployed into action at the Western Front.

As you will see with Neil's display, the SE5A is a far cry from the loud and fast agile displays from the Typhoon, the current frontline aircraft of

the RAF. In fact, the aircraft was of a small and light design, and powered by a 150 HP Wolseley Viper, or Hispano-Suiza, V8 engine, only capable of 138mph. Nevertheless, the SE5A was an incredibly important aircraft of its generation and paved the way for the modern RAF fighters we now see.

OV-10B BRONCO

DEMO TEAM



Photograph by Paul Johnson/Flightline UK
www.air-shows.org.uk

The Bronco Demo Team was formed in 2010 by a group of OV-10 Bronco enthusiasts, with the aim of keeping this historic aircraft flying at air displays across the world. Adding to the international theme of the airshow, the team are based at Kortrijk-Wevelgem Airport, Belgium.

The aircraft they fly is a North American Rockwell OV-10 Bronco, a turboprop light attack and observation aircraft. It was developed in the 1960's for Counter Insurgency (COIN) combat. Its primary mission was as a Forward Air Control (FAC) aircraft. It was specifically designed for the Vietnam War and deployed successfully during the Cold War and Gulf War I (Operation Desert Shield).

The OV-10B Bronco variant was produced for Germany as target tug. Eighteen aircraft were delivered in the early 1970's and were equipped with a steel cable winch inside the fuselage. A clear dome replaced the

rear cargo door and a backward facing seat was installed for the winch operator. Following a career spanning 20 years, the Bronco was finally replaced by Pilatus PC-9s and IAI Westwinds in 1991.

The team's flying display shows the excellent flying characteristics and agility of the OV-10 Bronco, highlighting its Short Take Off and Landing (STOL) performance and manoeuvrability. The airplane's agility means the team can perform in a relatively small "box" right in front of the public.

The driving force behind the team is also the main display pilot, Tony de Bruyn. Passionate about aviation since his early boyhood, Tony is now a commercial pilot with some 5,000 flying hours.

THANK YOU

We are indebted to the many companies, organisations and individuals who have made The International Ayr Show – Festival of Flight happen.

A huge thank you to all our sponsors, supporters, partners and suppliers for your invaluable support in making The International Ayr Show - Festival of Flight possible. We are delighted you saw the value and benefit in what we were aiming to achieve with this event, and enthusiastically got on board.

Logistics and safety are paramount in holding an event of this scale. Thank you to all the agencies and organisations who have assisted with this. Special thanks also to our Flying Display Director, Les Garside-Beattie, Geoff Coxon of theSKYLAB, and the Ayr Show Health & Safety and Site team.

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OUR VOLUNTEERS

Thank you to our 100+ volunteers for giving up their time to help us run this event by assisting across a variety of roles – some more glamorous than others! We appreciate every single one of you, you are all wonderful.

OUR STAFF

Staff from many of our services have been involved in organising this event, led by the Destination South Ayrshire team. Thank you to everyone who has 'gone the extra mile' to ensure a superb experience for all our visitors and participants.



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**SEE YOU
NEXT YEAR!**

Thank you for joining us at The International Ayr Show – Festival of Flight 2023.

We are delighted to be returning next year, when we will once again be pulling out all the stops to bring you a spectacular event.

Planning for the 2024 airshow will begin almost as soon as the site is cleared from this weekend, so please get in touch with us if you'd like to be involved.

BECOME A SPONSOR

To register your interest in sponsorship opportunities for the 2024 International Ayr Show, please email sponsors@south-ayrshire.gov.uk

BECOME A FRIEND OF THE AYR SHOW

This is a new initiative we're planning for 2024, allowing individuals to support the event. To be added to our mailing list for more information on this, please email ayrshow@south-ayrshire.gov.uk

BECOME A VOLUNTEER

There will once again be lots of opportunities for you to help us deliver an action-packed festival. To volunteer again for 2024 or to register your interest in volunteering for the first time, please email volunteers@south-ayrshire.gov.uk

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