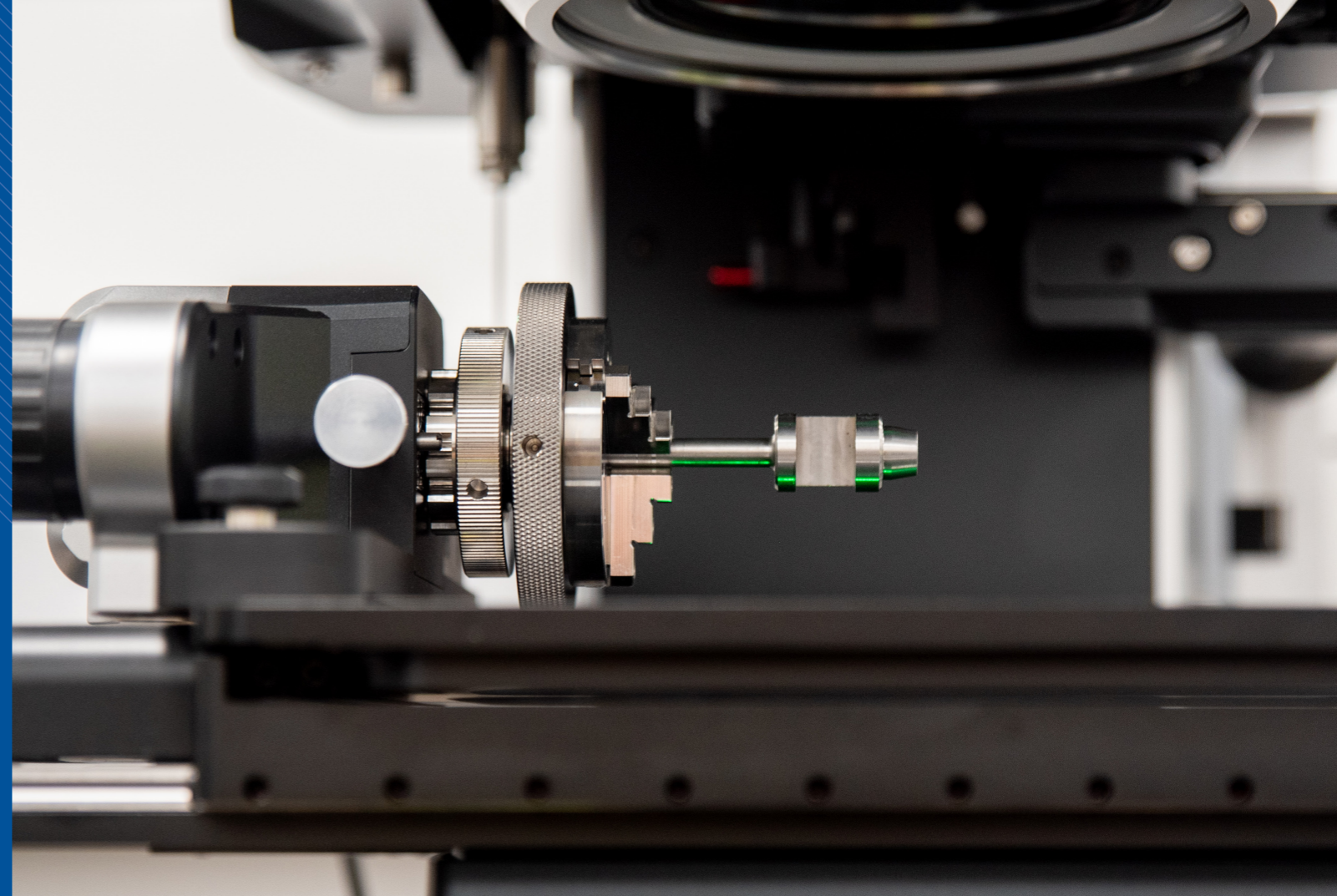




# ENGINEERING SERVICES

# OUR CAPABILITIES



## Technical Services

Portsmouth Aviation offers a wide range of technical services to complement their traditional manufacturing capabilities, ensuring they remain at the forefront of precision engineering industries. These services include product development, project management, design engineering with CAD, simulation and analysis, qualification and testing, product safety management systems, in-service support, weapons integration, technical authoring, and cyber security solutions. By utilizing state-of-the-art technologies, experienced engineers, and a collaborative approach, Portsmouth Aviation delivers innovative and reliable solutions to meet customer needs and industry requirements across a vast variety of sectors.



## CNC Machining

Portsmouth Aviation has an extensive knowledge of CNC Machining, boasting state-of-the-art equipment and an experienced team. This Computer Numerical Control process involves using computerised controls and machine tools to remove material layers from workpieces, creating custom-designed parts.

With over £10 million invested in plant upgrades, our CNC machining equipment ensures efficacy and top-quality results for customers. Our process inspection technology enables zero-defect practices, reducing rework and enhancing cost-effectiveness. Lights-out manufacturing capacity further streamlines production.

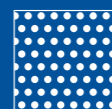
Portsmouth Aviation's CNC department features 17 CNC mills, including 3, 4, and simultaneous 5 Axis capabilities, and 10 CNC lathes with Mazak Integrex machines offering simultaneous 5 Axis. Driven Tooling lathes with twin spindles and Y-axis capabilities, as well as 2-axis lathes, complete our comprehensive CNC machining services. With in-house facilities and cutting-edge technology, we guarantee precise, efficient, and controlled manufacturing processes to meet diverse customer needs.



TECHNICAL SERVICES



CNC MACHINING



METAL FINISHING



QUALIFICATION, INSPECTION & TESTING



METAL FABRICATION



PAINT & FINISHING



## Metal Finishing

Metal coating at Portsmouth Aviation enhances performance, durability, and protection of components, ensuring reliable and lasting solutions. Metal coating involves applying substances to metal surfaces for protection, appearance, or performance, protecting against corrosion and deterioration with minimal maintenance. With 60 years of experience and one of the largest facilities in the region, Portsmouth Aviation offers a wide range of efficient metal coating services, meeting high-quality standards and exceeding customer expectations. Services include anodising, electroplating, ALOCROM coating, chromic anodising, hard anodising, nitric acid passivation, heat treating, non-destructive testing, salt spray testing, zinc plating, and zinc-nickel plating.



## Qualification, Inspection & Testing

Portsmouth Aviation upholds the highest engineering standards with its Qualification, Inspection, and Testing services. These critical processes ensure the reliability, compliance, and performance of engineering products and systems. By evaluating design, manufacturing, and functionality, potential issues are detected early for necessary improvements. With extensive experience in defence and aerospace sectors, Portsmouth Aviation possesses a wide array of approvals and testing equipment.

Their comprehensive inspection capabilities include advanced CMM machines, 3D laser scanners, and optical measuring machines. Expert Quality Engineers and Technicians in welding and fabrication maintain top-quality standards. The onsite mechanical test facility handles static testing up to 30 tons. Additionally, an onsite laboratory conducts solution analysis and salt spray testing to support metal plating operations. Portsmouth Aviation's commitment to quality and well-equipped facilities ensure safe, reliable, and high-quality engineering solutions that surpass industry standards.



## Metal Fabrication

Portsmouth Aviation excels in metal fabrication and welding, offering expert solutions for diverse projects. Metal fabrication involves constructing metal structures using cutting, folding, and assembly, yielding both stock and custom products. Welding, a key process, fuses two or more parts through heating with or without pressure and filler material.

Our specialized engineers boast extensive experience and skill, utilizing cutting-edge manufacturing equipment. We deliver tailored solutions and prioritize innovation, ensuring projects align with clients' needs. Complying with the latest certifications, our welders are trained in various welding technologies.

Our 15,000 square meters of manufacturing space enable us to create bespoke work areas for customers. We provide sheet metal fabrication, utilizing advanced press punching and CNC machining for precision. Our welding capabilities include MIG, MAG, TIG, spot welding, and more. With a keen eye on quality, compliance, and customer satisfaction, Portsmouth Aviation remains at the forefront of metal fabrication and welding services.



## Paint & Finishing

Portsmouth Aviation's paint and finishing services are essential for ensuring the quality and durability of their engineering products. Their meticulous attention to detail and advanced coating technologies guarantee the longevity and optimal performance of critical components, reflecting their commitment to delivering high-quality and reliable solutions to customers. The services offered include shot blasting, powder coating, wet spray, and thermal spraying. Their thermal spray capabilities include Arctec 28E, known for exceptional corrosion protection and wear resistance, as demonstrated in their recent project for V&A East Storehouse's flooring. Portsmouth Aviation's comprehensive specifications and compliance with industry standards further reinforce their expertise in paint and finishing for engineering.



## Investment in Employees, Facilities, and the Future

Over the past decade, our company has made significant strides in growth and development, with over £10 million invested in modern plant and facilities.

Our commitment to nurturing talent is evident through our ongoing work with apprentices and investments in training and education for our current staff, fostering a skilled and dedicated workforce. The loyalty of our employees is remarkable, as some have been with us for nearly half a century. Embracing sustainability, we have recently installed solar panels in our factories, emphasizing our dedication to a greener approach to engineering and a more sustainable future.



We will always perform with enthusiasm, commitment and flexibility and go the extra mile to deliver precise requirements, on time and within budget to meet our customer's needs.

**Simon Escott, Managing Director**

# OUTSTANDING QUALITY

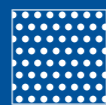
Portsmouth Aviation is capability driven, third generation family run business, that prioritises customer requirement and a bespoke approach to engineering.



TECHNICAL SERVICES



CNC MACHINING



METAL FINISHING



QUALIFICATION, INSPECTION & TESTING



METAL FABRICATION



PAINT & FINISHING

## About Us

From the design and build of the Aerocar, to the pioneering work of infamous aviatrix Amy Johnson, Portsmouth Aviation has a rich and vibrant legacy.

This legacy and history not only set us apart but have created and cultivated this innovative company. We are constantly evolving and modernising, utilising our experience and knowledge of the industry to inform how we develop as a company. What this company offers is a bespoke approach to engineering solutions, all of which can be done in-house. Our capabilities include CNC Machining, Qualification & Testing, Paint & Finishing, Metal Coating, Metal Fabrication and Technical Services.



Our state-of-the-art facilities and comprehensive expertise are channelled to our customers via our people and teams; working in close collaboration with our customers, we listen, challenge, and innovate, adding value and reducing risk throughout the project.

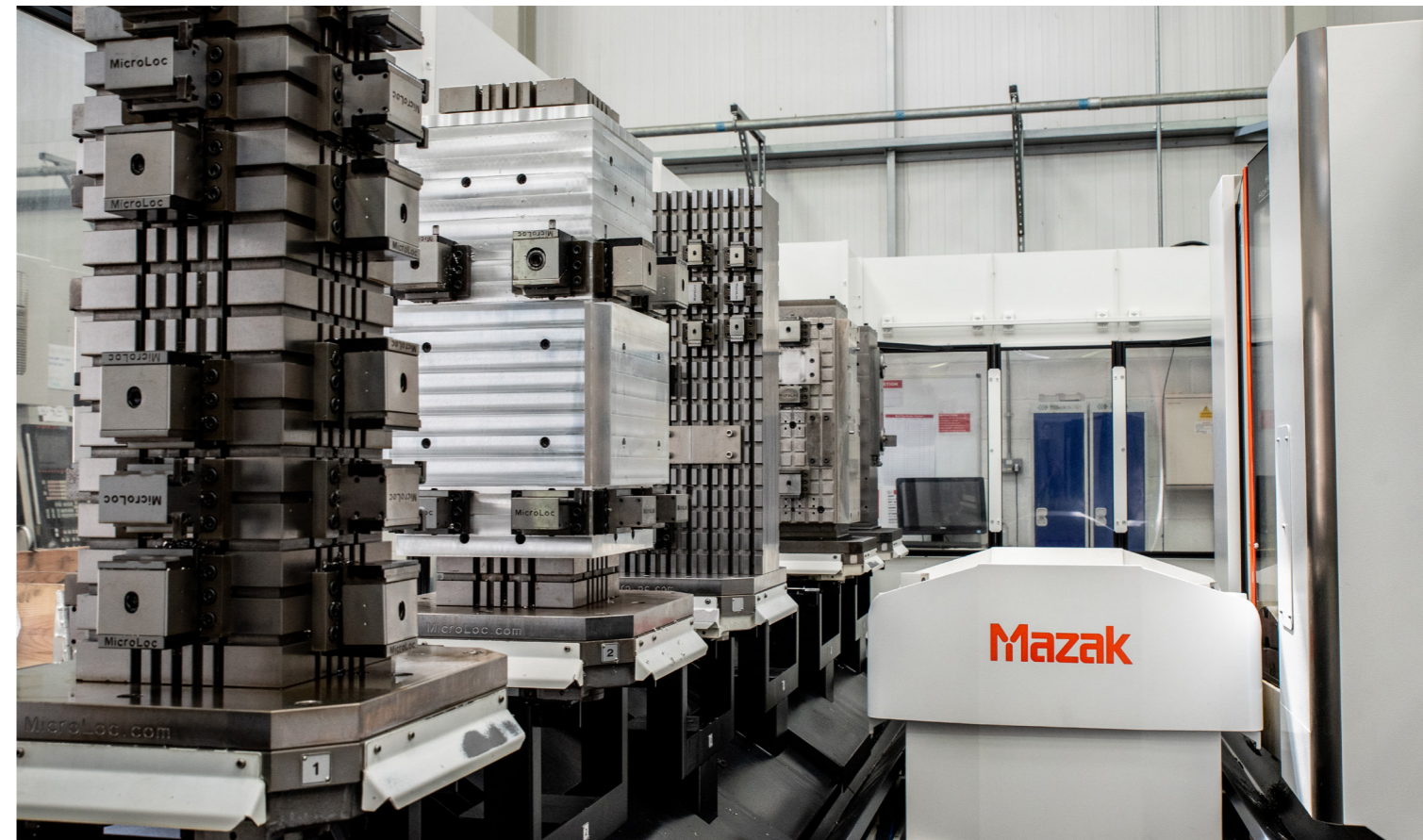
**Simon Escott, Managing Director**

FOUNDED IN  
1929



Since my grandfather started the first air taxi service, ferrying passengers all along the south coast more than 85 years ago, we've always sought to seek out innovative ideas and apply them for the benefit of the businesses and individuals who use them.

Simon Escott, Managing Director



### History

Portsmouth Airport, also known as Portsmouth City Airport, PWA (Portsmouth Worldwide Airport), and Hilsea Airport, was situated in the northeastern corner of Hilsea on Portsea Island, located along the South coast of England.

This airport held a unique distinction, being one of the few commercial airports in the United Kingdom that boasted a grass runway. It has a rich history that dates to 1932 when it first became operational. Originally founded in 1929 under the name Inland Flying Services, Portsmouth Aviation primarily operated passenger flights to and from the Isle of Wight. Over the years, the company underwent significant expansion and diversified its operations, becoming involved in engineering services across various sectors, not limited to aviation alone.

During the 1940s, amidst World War II, Portsmouth Aviation played a pivotal role in supporting the allied forces. The company transformed its focus to support the war effort, engaging in crucial manufacturing activities. This included the production of aircraft like the Airspeed Oxford and Horse Glider, which significantly contributed to the war efforts. With its engineering prowess and dedication to innovation, Portsmouth Aviation emerged as a key player in military aviation.

The company actively manufactured essential aircraft components and played a significant role in the development of advanced fighter planes. Among its remarkable creations was the highly praised PAV-9, a versatile and manoeuvrable aircraft that garnered recognition for its exceptional combat effectiveness.

The airport continued its operations until December 31, 1973, when it witnessed its last official flight. However, despite its closure as an airport, Portsmouth Aviation's legacy lived on. The company continued to flourish and expand beyond aviation, leaving a lasting impact as a prominent provider of engineering services across diverse industries.

## Amy Johnson

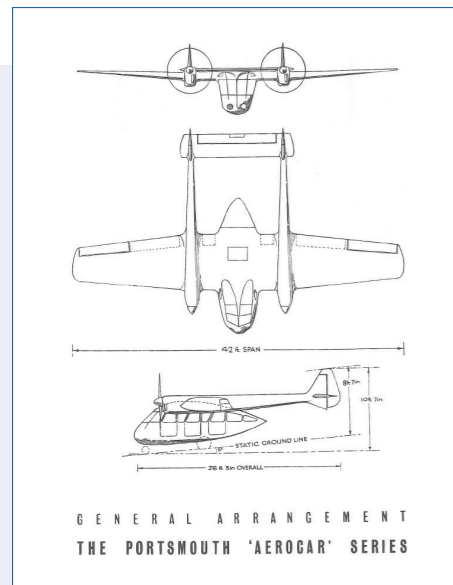
Amy Johnson, born in 1903, was a pioneering British aviator who left an indelible mark on the history of aviation. Hailing from Hull, England, she developed an early passion for flying, and her determination and courage would lead her to achieve remarkable feats in the skies.

In 1930, Amy Johnson achieved a historic milestone by becoming the first woman to undertake a solo flight from England to Australia. Her awe-inspiring journey covered a staggering distance of over 11,000 miles, showcasing her exceptional skill and resilience in the face of challenging conditions. This daring achievement not only earned her international acclaim but also inspired countless women around the world to pursue careers in aviation.

In 1934, Johnson's remarkable achievements caught the attention of Portsmouth Aviation, and she joined the company as their first female ground engineer. This move was groundbreaking, as it defied prevailing gender norms and shattered barriers in the male-dominated aviation industry. Her presence at Portsmouth Aviation not only represented a significant step forward for women in aviation but also brought a fresh perspective and invaluable expertise to the company.

During her time at Portsmouth Aviation, Amy Johnson's work was characterized by outstanding contributions that further cemented her legacy as a true trailblazer. Her remarkable combination of aviation expertise and engineering skill made her a role model for aspiring aviators and engineers alike. Johnson's pioneering spirit and achievements continue to inspire generations of aviation enthusiasts, and her legacy remains an integral part of Portsmouth Aviation's history.

As a company, Portsmouth Aviation takes immense pride in its association with Amy Johnson and the pivotal role they played in supporting her pioneering endeavours. They hold deep respect for her groundbreaking accomplishments and are honoured to have been a part of her journey and lasting impact on the aviation world. Amy Johnson's legacy remains a source of inspiration and motivation, and her contributions to the field of aviation continue to be celebrated and cherished.



### The Aerocar

One of Portsmouth Aviation's most notable achievements was the design and construction of the revolutionary Aerocar, a pioneering concept that bridged the gap between road transportation and air travel.

The culmination of extensive research and engineering expertise, the Aerocar made its debut at the prestigious 1948 Farnborough Air Show, capturing the attention of aviation enthusiasts and industry professionals. This groundbreaking vehicle was unlike anything seen before, featuring detachable wings and a propeller-driven engine, which enabled it to function both as a conventional road car and a light aircraft.

The Aerocar was not only a remarkable technical achievement but also a testament to Portsmouth Aviation's commitment to innovation and pushing the boundaries of what was possible in aviation and transportation.

The design principles and ideas behind the Aerocar laid the groundwork for future developments in the field of flying cars and vertical take-off and landing (VTOL) vehicles. It served as an inspiration to engineers and designers exploring the potential of personal air transportation and contributed to the ongoing evolution of the aviation industry.

As a company, Portsmouth Aviation takes immense pride in its association with Amy Johnson and the pivotal role they played in supporting her pioneering endeavours.



# CONTACT OUR TEAM

Whatever your engineering need, our expert design, build and manufacturing teams are on hand to help your business create a tailored solution. Find out how we can support you on your project.

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