

Aerospace Engineering Services



Engineered To Help Your Business



For more information please
contact the Marshall sales team





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Located at Cambridge Airport, UK

Introduction to Marshall

Established in 1909, Marshall is a British aerospace and defence company with a rich engineering heritage and an enduring commitment to serving governments and prime contractors.

As a global leader in military maintenance, repair and overhaul (MRO), we work closely with aircraft operators to keep their fleets mission-ready and mission-capable. We have supported the C-130 Hercules since 1966, earning multiple world-first accreditations, permissions and accolades for our excellence on the platform.

Drawing on decades of engineering expertise and wide-ranging design organisation approvals, we are able to plan, integrate and certify complex programmes from start to finish, from standard avionics upgrades to completely bespoke special mission conversions.

We are also a leader in precision manufacturing, designing and producing parts, components and complex subsystems for flagship defence programmes under long-term contracts for some of the world's largest OEMs.

Our global network matches our diverse customer base. Wherever we operate, our people share a common sense of purpose and pride in our engineering excellence.

As a UK CAA Part 21J Design Organisation, we are able to independently design, implement, test and certify complex modifications and conversions on aircraft without OEM consultation.



A 1,965m / 6,447 ft asphalt runway



Congestion free with no runway slot restrictions



14 Aircraft Maintenance Bays plus 2 x Paint Bays



Skilled Air Traffic Control Staff



State of the art radar equipment and navigation aids



On site restaurant and catering facilities



Open to General Aviation



List X (FSC) Secure Site



CAT I ILS on runway



Can accommodate aircraft up to Boeing 747 (Light Load)



Extensive experience in handling military transport aircraft and in particular C-130 aircraft



On site fuel provision



UK Border Agency



Ground test running facility and Flight Test



Compass Swing Capabilities



117,000m2 of Hangar Space





Engineering pedigree

A globally respected engineering authority, Marshall Aerospace brings decades of experience and expertise to the applied engineering and technology solutions we provide to governments, OEMs and prime contractors.

With an aerospace legacy reaching back to 1912, today we proudly support a global customer base with independent design and assurance of aircraft modifications, major parts, sub-assemblies and complete products. Our highly adaptable teams are able to apply their expertise to provide a wide range of engineering solutions, designed to perform reliably in safety- and mission-critical applications.

Platform agnostic and enabled by our broad scope of design approvals, our Aero Engineering Services team can take products from concept to reality. Whether developing solutions, supporting manufacture and integration, providing product assurance and certification, or supporting in service, our teams can add value at every stage of the product life cycle.

Thanks to our ability to draw on the in-house strengths of our Maintenance, Repair and Overhaul operations and Advanced Manufacturing Solutions business, few companies can match our depth of expertise and breadth of capability.

We operate a flexible delivery model to best meet the changing needs of our customers, delivering turnkey solutions as well as acting in a consultative engineering services capacity to provide design approvals and liaison support.





Design organisation & approvals

Delivering safe, compliant, engineering solutions, our people and processes are approved to the highest standards.

Our approvals include:



Design Organisation

UK Civil Aviation Authority (CAA) Part 21J Design Organisation
UK Military Airworthiness Authority (MAA) Design Approved Organisation



Airworthiness

European Defence Agency (EDA) European Military Airworthiness Requirements Part 21J
UK CAA Recognised Assessment Entity for Flightworthiness (UAS)



Quality

ISO9001:2015 Quality Management Systems
AS9100:D Aerospace Quality Management Systems
ISO14001:2015 Environmental Management Systems





Consult & Define



Design & Develop



Build & Integrate



Test & Certify



Support & Maintain



Plan & Enhance

Aero Engineering: providing end-to end aerospace engineering solutions



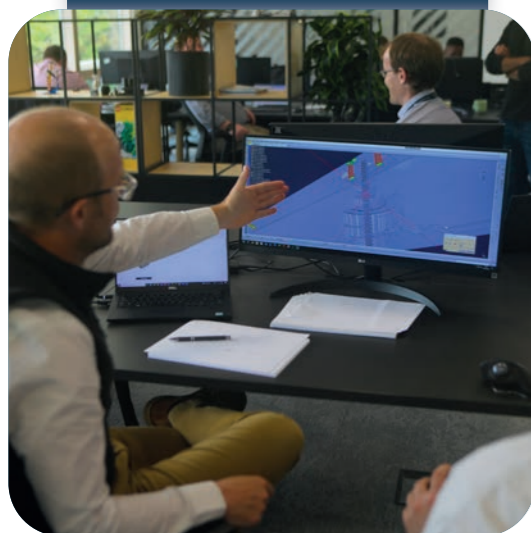
Consult & Define

The very early stages of any engineering development project are critical to its success.

Drawing on our long history delivering complex and varied aerospace designs and modifications, we work in these early stages to find concept solutions that balance technical feasibility and project risk alongside cost of delivery and future supportability.

Our systems engineers and concept designers thrive when finding solutions to our customers' most difficult problems. Whether modifying an aircraft or developing a completely new product, our experience allows us to confidently create design concepts, define approaches to verification and validation, advise on regulatory compliance, determine project costs and plan for project delivery.

Our ability to ensure that projects move forward in a controlled manner is critical to helping our customers to achieve their objectives.



Concept development

Feasibility assessment

Risk assessment

Trade study

System specification





Design & Develop

Globally respected, Marshall has decades of experience delivering aircraft modifications.

Marshall's in house capabilities around systems engineering, mechanical design and analysis, electrical system design, fluid systems and flight sciences allow us to take early ideas from concept to reality, delivering new and enhanced capability for our customers.

Approved to AS9100 and ISO9001 standards, our flexible and tailorable engineering processes allow controlled evolution from requirements through to final certification, with customers in the loop at key design reviews and decision points.

We have delivered more than 1,700 bespoke modifications and upgrades to civilian and military aircraft, including:

- Major structural modifications
- Avionic system upgrades
- Auxiliary fuel and air-to-air refuelling systems
- Intelligence, surveillance and reconnaissance systems (including power, data and cooling)
- Defensive aids



Product life cycle planning

Systems engineering

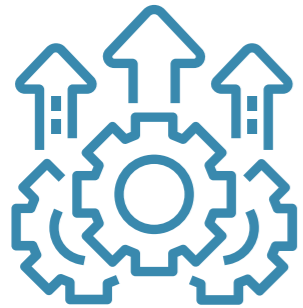
Design assurance

Safety

Design and integration

- Mechanical design & analysis
- Electrical design
- Fluid systems
- Flight dynamics





Build & Integrate

Working alongside our in-house Part 21G manufacturing organisations and our maintenance, repair and overhaul operations, our heavy maintenance capability allows us to integrate modifications in parallel with scheduled maintenance, reducing aircraft downtime and minimising cost.

Marshall has an exceptional track record in delivering upgrade programmes that enable aircraft to continue to support tactical operations around the world for decades to come, offering an end-to-end solution for our customers.

Our design-for-manufacture and integration expertise ensures our products transition smoothly from CAD to reality. Where variation exists, our liaison specialists work alongside production teams to identify the root causes of, and efficiently resolve, any challenges encountered.



Parts manufacture

Complex sub system assembly





Test & Certify

As an experienced Part 21J design organisation, Marshall's in-house engineering capability is supported by a team of certification verification engineers (CVEs) with recognised competencies on 13 EASA/CAA certification panels.

Our CVEs and subject matter experts use their knowledge and expertise to shape the direction of airworthiness regulations and standards through contributions to working groups, and to learn from industry peers and regulators, ensuring we remain at the forefront of industry developments.

Marshall's engineers and pilots have flown, maintained, repaired, modified and trained aircrews on hundreds of types and variants of aircraft models, from light aircraft to commercial airliners.

Over millions of work hours and flight hours we have created, built, tested and certified experimental designs and novel modifications from the legendary Concorde nose to the Airbus A400M's engines.

Building on this heritage and applying our expert knowledge, we offer flight test, ground test and certification services of all the work we perform, from routine maintenance to major structural modifications and system integrations.



ITEAP

Flight test

Ground test

Certification Services

- CVE & SME Support





Support & Maintain

Our dedicated repairs group supports aircraft during maintenance at our facilities and at forward locations as needed, designing and substantiating non-standard repairs to maintain the airworthiness and structural integrity of the aircraft.

Drawing on our long history with the Lockheed Martin C-130 aircraft, our liaison engineers integrate with and enhance production teams, quickly and efficiently determining the correct investigative and remedial actions to return an aircraft to airworthy condition.

Our experienced technical support teams cut through complexity, providing our customers with actionable insights. To date, we have designed and delivered more than 15,000 bespoke structural repairs.

Working alongside our Part 21J Design Organisation, we provide advice and recommendations to ensure airworthiness and safety, whilst optimising aircraft availability and operational efficiency.

Our technical support teams have years of experience tracking aircraft baselines, usage and FRACAS data to ensure the correct maintenance activity is completed at the right time. Our technical support teams have answered more than 24,000 technical queries.



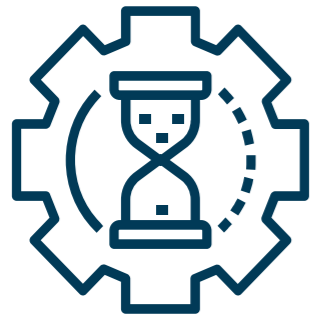
Support solutions

Repair design

Obsolescence management

Reliability centred maintenance





Plan & Enhance

We serve as a trusted partner to operators, helping them maintain freedom of manoeuvre throughout the life of their valuable aerospace assets, ensuring they remain as capable at the end of their life as they were at entry into service. This is a substantial challenge that goes beyond maintaining airworthiness.

A changing landscape of mission requirements, threats, interoperability requirements and regulations mean that the environment in which aircraft are operated is constantly evolving. Alongside this, considerations such as system obsolescence can degrade capability and mean that we are no longer able to operate aircraft how we want, when we want and where we want.

We work alongside operators to understand their capability needs, advise on the impact of upcoming changes, and create, integrate, test and certify design solutions.

Our conceptual design teams and systems engineers then work with our customer teams to refine requirements and complete technical feasibility assessments & trade studies to determine the most cost-effective options for modifications. This includes assessment of commercial off-the-shelf equipment or, where necessary, development of detailed system specifications to be developed in house or in partnership with system primes and/or our established international supply chain.



Usage evaluation

Fleet management

Continued airworthiness management

Upgrade road mapping

