

■ ■ ■ MARSHALL

C-130 Hercules

Experience and Capability Overview



Service | Sustainment | Engineering

marshallgroup.com



The Ultimate Partnership in C-130 Hercules Support

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Introduction to Marshall

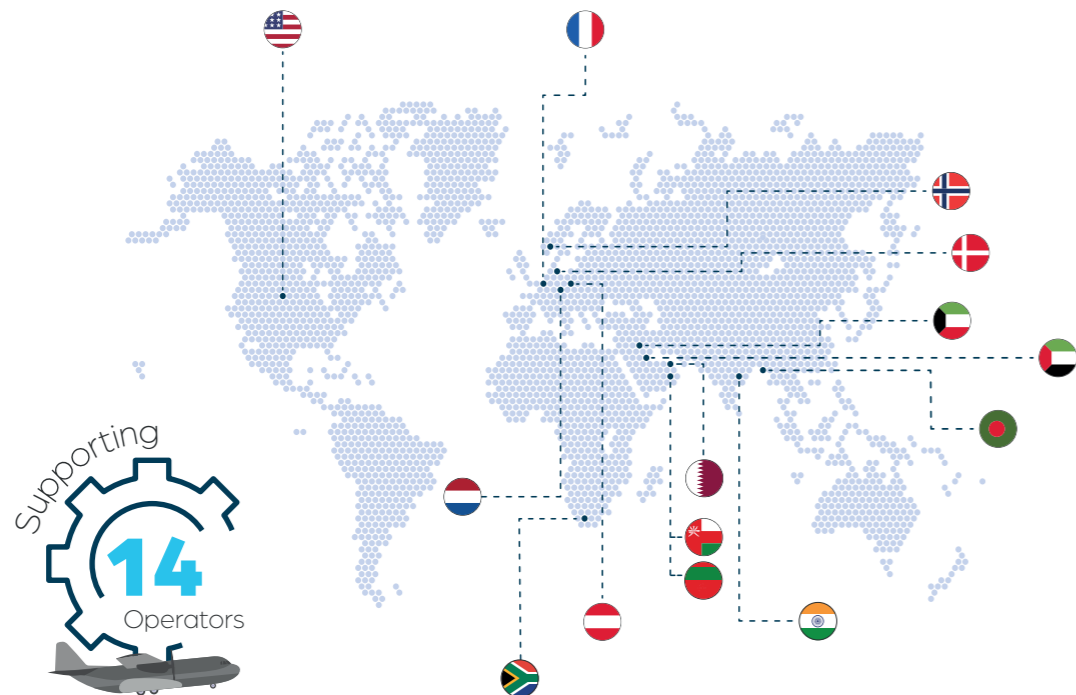
Marshall is an independent aerospace and defence company delivering innovation and excellence in engineering, support solutions and services on civil and military aircraft platforms. Headquartered in Cambridge, UK, and with offices in Canada, the Netherlands and in the United Arab Emirates, we have a worldwide customer base.

Marshall specialise in the engineering, modification, maintenance and support of civil and military aircraft and the provision of personnel, training and technical advice. Marshall is renowned and respected worldwide for quality of service, engineering excellence, adaptability and reliability.

C-130 Pedigree

Marshall prides itself on establishing and maintaining long-term contractual relationships with its C-130 customers. Marshall currently has several long-term contracts in place with 14 international C-130 operators providing maintenance, supply chain and engineering services as well as aircraft modifications and fleet sustainment activities. For more than 58 years, Marshall has not only maintained its customer's C-130 aircraft, but also performed major avionics and structural modernisation programmes delivering increased capability and fleet sustainment.

Recognised as a global leader in supporting the C-130 aircraft, Marshall holds approvals as a Lockheed Martin approved C-130J Heavy Maintenance Centre (HMC) and as a Lockheed Martin authorised Hercules Service Centre (HSC) for the Legacy C-130 B thru H aircraft.



Cambridge, UK

- 14 Aircraft Maintenance Bays plus 2 x Paint Bays
- Supporting 14 customers globally
- Located at Cambridge Airport, UK
- Ground test running facility and Flight Test

Greensboro, USA

- 6 Aircraft Maintenance Bays plus 7th Narrow Body Paint Bay
- Hangar space; 190,000 square foot
- Ramp space / Apron 381,000 square foot
- Location at Piedmont Triad International Airport, USA

Engineering and Technical Capability

Marshall has decades of experience in developing non-standard structural repairs on the C-130B thru H and J aircraft, having completed over 15,000 repairs. This vast experience enables Marshall to design and substantiate non-standard repairs without the need for reach back to Lockheed Martin on the C-130B thru H aircraft and where not required by the customer, on the C-130J aircraft. All repairs are designed to maintain the airworthiness and structural integrity of the aircraft with all repairs designed with fatigue in mind.

Marshall has a dedicated Repairs Group which supports aircraft during maintenance at its facilities and at customer locations when required. The Repairs Group has extensive knowledge of the Lockheed Martin drawings and document set supplied for the C-130 aircraft. This enables the Repairs Group engineers to resolve any structural issues during maintenance or at the customer's facility as quickly as possible.

As well as having an established engineering capability, Marshall has a dedicated Technical Support Group that provides technical support during in-service operation and maintenance. To help minimise the impact of any unforeseen technical issues that may arise during maintenance, Marshall's Technical Support Group can provide general technical support and advice as well as performing fault analysis and investigation work relating to problems discovered during aircraft maintenance.

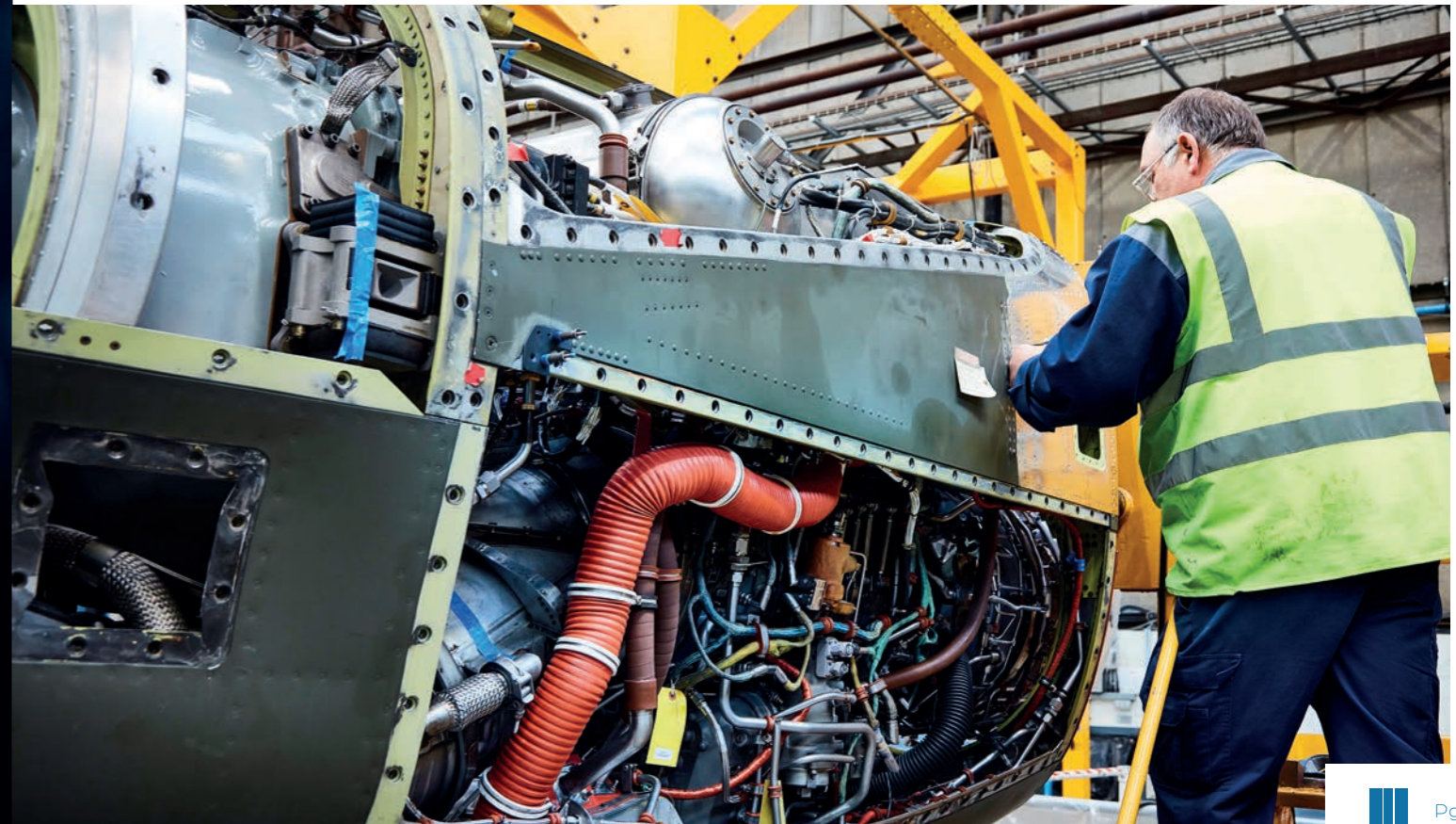
The Technical Support Group can also support structural integrity and fatigue management, provide ageing aircraft studies, conduct repair assessment programmes, conduct structural damage assessments and provide airworthiness advice, provide corrosion control advice, provide obsolescence and reliability management, as well as identifying suitable alternative parts. Through Marshall's Technical Support Group the following services can be offered to customers to support the sustainment and airworthiness of their C-130J aircraft:

-  Continued airworthiness management
-  24hr technical support hotline
-  Cost benefit analysis
-  Reliability centred maintenance
-  Spares optimisation
-  Technical publication management
-  Repair solutions
-  Obsolescence management
-  Fleet management

Marshall supports many of its C-130 customers with engineering and technical support, providing long-term sustainment of their aircraft.

Engine and Propeller Support

Utilising our long term relationships with OEMs and OEM approved service centres, Marshall can effectively manage all levels of scheduled and unscheduled maintenance on engines and propellers both in Cambridge during maintenance and at our customers base of operation.



Spares and Ground Support Equipment

Marshall in partnership with Lockheed Martin are able to offer suitable spares packages based on the customer's operational requirements. Flyaway kits are also available as an option. These kits provide essential spares for 'most likely' failures during a 30 day overseas deployment.

Throughout the service life of any aircraft, spare parts will be required to support the operation and maintenance of the aircraft. Marshall can manage the repair and overhaul of rotables through our partnerships with OEMs and OEM approved service centres. Additionally, Marshall's vast supply network and relationships with C-130 suppliers will be available to our customers to ensure the timely delivery of spares and overhaul/repair activity.

Having conducted maintenance on the C-130 for over 58 years, Marshall has replaced almost every major structural component on the C-130B through H and J. Having the correct Ground Support Equipment (GSE) is vital to ensuring efficient maintenance activity. Over the years, Marshall has developed bespoke GSE to enable maintenance and significant structural items to be replaced in the most efficient, cost effective way. As such Marshall is well positioned to provide the necessary guidance for its customers on the GSE required to suit the level of maintenance required at their main base of operation.



Training and Development

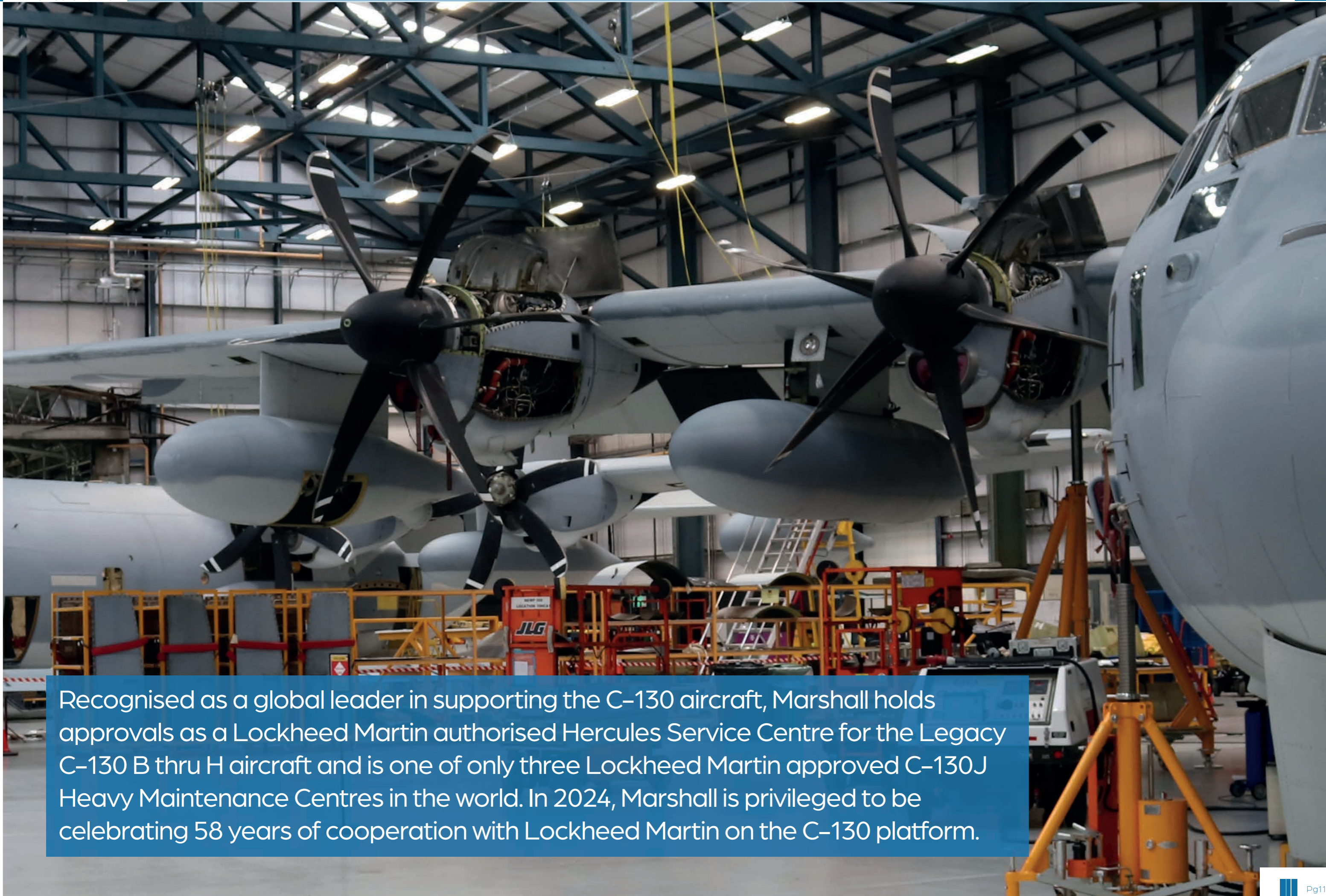
Marshall's training facility provides specialist career and technical training to support many civil and military aircraft maintenance activities and operations. With over 58 years' experience working on the C-130, Marshall is extremely skilled and familiar with the training and education of personnel required to equip them with the necessary skills and knowledge to work proficiently on C-130B thru H and J aircraft.

As a UK CAA Part 147 approved training facility, we meet the highest standards of quality assurance and regulatory compliance, enabling Marshall to provide world-class technical training and to conduct examinations at the Aircraft Maintenance License level and perform Aircraft Type / Task training for both the civil and defence sectors on the Lockheed Martin C-130B thru H, J and L100/382 aircraft.

We work closely with our customers to identify their specific training needs, ensuring all material is developed and delivered to meet their bespoke training and operational requirements. All Marshall teaching staff are professionally qualified instructors, with many years industrial and military experience in the aerospace sector. Marshall also has the flexibility to deliver training courses at customer's facilities to further support with the development of indigenous skills and capabilities.

Combined with Lockheed Martin's state of the art, purpose built Hercules Training Centre, Marshall, in partnership with Lockheed Martin, can provide the necessary training for ground crew, flight engineers, flight crew and other functions of the customer's organisation, to ensure they have the necessary training, skills and regulatory qualifications to meet their operational requirements.





Recognised as a global leader in supporting the C-130 aircraft, Marshall holds approvals as a Lockheed Martin authorised Hercules Service Centre for the Legacy C-130 B thru H aircraft and is one of only three Lockheed Martin approved C-130J Heavy Maintenance Centres in the world. In 2024, Marshall is privileged to be celebrating 58 years of cooperation with Lockheed Martin on the C-130 platform.

C-130 Maintenance Repair and Overhaul Experience

Marshall's current HMC and HSC approvals and associated Technical Assistance Agreements, enable Marshall to support C-130B thru H and J aircraft maintenance requirements at its facilities. Furthermore, these approvals enable Marshall to provide technical support to customers at their home bases and to their areas of operation through highly skilled and experienced contractor working parties.

Marshall fully understands the importance of fleet availability, capability and airworthiness, together with the associated challenges for specific military operations. Through delivering long term support contracts on the C-130 for over 58 years, Marshall has developed a unique capability to provide tailored support solutions to meet the requirements of many different military operators.

Based on this experience, Marshall has developed 'best practices' that are further enhanced by a continuous improvement process, leading to accurate scheduling and managing of depth maintenance inputs. At its Cambridge, UK site Marshall has 14 slots dedicated to delivering

high-quality, low risk C-130 depth maintenance by 300 fully qualified and experienced C-130 aircraft personnel to support the scheduled and unscheduled maintenance, repair and overhaul requirements. All of which is underpinned by a comprehensive engineering and technical support team and an established supply chain and component repair and overhaul network.

In 2025, Marshall will be fully operational at the newly established US facility in Greensboro, NC, providing a further 6 aircraft maintenance slots plus an additional dedicated paint bay

Marshall prides itself in consistently providing the highest level of service to its customers through established contract management, scheduling and delivery. With vast experience, Marshall has an in-depth understanding of potential challenges, such as common areas of rectification, diminishing sources of supply and repeatable repairs. By applying effective planning, we are able to minimise aircraft downtime and provide predictable aircraft turn-around-times, ultimately maximising fleet availability.

Marshall fully understands the importance of fleet availability, capability and airworthiness, together with the associated challenges for specific military operations.



C-130 Manufacturing Capability

 C-130B/H/J parts manufactured by Marshall since 2004

4795

Marshall is extremely proud to be the only HSC/HMC in the world approved by Lockheed Martin for the manufacture of C-130J parts, via the Authority to Manufacture process. With approval sought from Lockheed Martin on a case-by-case basis to access the necessary technical documentation, Marshall has the capability to facilitate local manufacture of parts to support maintenance inputs for difficult-to-obtain and long lead-time items. This unique capability, enables Marshall to significantly de-risk emerging findings during maintenance inputs, ensuring a highly predictable and low-risk, dependable aircraft turn-around-time is consistently achieved.



Flight Test Capability

Marshall recognises that not all C-130 operators will have the immediate ability or resource to conduct flight test. Marshall is able to offer the services of its highly qualified and experienced C-130J flight test pilots and flight test engineers to support its customers. Along with conducting any flight tests associated with the maintenance, Marshall's pilots can deliver the aircraft to the customer's main base of operation.

Marshall pilots are approved to support and conduct functional check flights to meet both military (UK MoD and many foreign Air Forces) and civil (UK CAA, EASA, FAA) requirements employing qualified test Pilots, Flight Test Engineers and Flight Engineers.

World Leading Paint Facility

To complement the Maintenance, Repair and Overhaul capability, Marshall is pleased to offer a world class, in-house, full strip and repaint capability in Cambridge. This facility, together with a trusted, dedicated paint partner ensures a cost effective

and high-quality paint finish. Marshall's paint facility capabilities include stripping the aircraft to bare metal or heavy sanding, resealing of all production joints, corrosion removal and treatment, composite repairs and complete aircraft repainting.

Marshall's aircraft paint facility opened in early 2015 and can accommodate Boeing 747-400, 777 and Airbus 330 sized aircraft, making it one of the largest paint facilities in Europe. As well as supporting civil customers, it is used extensively for C-130 aircraft customers.



Sustainment

Having supported the C-130 for over 58 years, Marshall has extensive in-depth knowledge in the support and sustainment of this platform. In particular, Marshall has provided total sustainment for the RAF's fleet of C-130J aircraft since 2006. Marshall stands by ready to support all customers with the future sustainment of their C-130J aircraft to suit their specific operational needs.

Centre Wing Box Replacement

The life of an aircraft is predominantly limited by the combination of the hours flown and the severity of the operational loads applied to the aircraft structure during service. These continuous operational loads applied to the aircraft structure will fatigue the structural components, ultimately resulting in failure. With the Centre Wing Box (CWB) attracting the highest operational loads, the CWB is a fatigue lifed item that will require replacement at some point to ensure the continued airworthiness of the aircraft.

The Enhanced Service Life (ESL) CWB extends the fatigue life of the aircraft, with an unlikely future replacement of the CWB required. The ESL CWB is the latest CWB produced by Lockheed Martin with significant structural enhancements, giving an increased fatigue life of approximately 2 to 3 times the original C-130J CWB fatigue life. As part of the CWB replacement, Marshall will replace the existing riveted (permanently installed) centre wing-to-fuselage fairings with removable fairings to facilitate the ease of future inspections of critical structure. The plumbing (along with the auxiliary fuel tank cells) and wiring within the CWB will also be replaced. Furthermore, Marshall will thoroughly

inspect the interfacing structure with the fuselage and will replace major attaching highly loaded structural components recommended by the OEM, effectively re-lifing the C-130J aircraft. This will ensure the prolonged airworthiness and through-life structural sustainment of the customer's C-130J aircraft.

Marshall is the only MRO outside of the United States and the first Lockheed Martin approved HMC to have replaced the CWB on a C-130J aircraft. Marshall bespoke facility has the infrastructure and tooling ready to carry out this complex structural replacement programme. To date, Marshall has replaced the CWB on more than 70 Legacy C-130 aircraft and more recently eight RAF C-130J. This provides our customers with a low risk, cost effective solution that will minimise aircraft downtime while maximising fleet availability.

Marshall will work closely with the end user to understand the remaining CWB life of their aircraft. Marshall, in conjunction with Lockheed Martin can help the customer determine the best time to replace the CWB if required. The CWB can be replaced as part of the Entry into Service process.

Marshall is the only Maintenance, Repair and Overhaul organisation outside of the USA capable of replacing the Centre Wing Box (CWB) on both legacy C-130 and C-130J, providing valuable aircraft life extension.

Value and Benefits

- Replacing the CWB will effectively re-life the C-130J aircraft
- The proposed ESL CWB is unlikely to require future replacement, maximising the life of the C-130J aircraft
- Marshall will apply learning from the RAF C-130J CWB replacement programme, providing a low risk, cost effective solution
- Rarely inspected interfacing structure will be inspected. Highly loaded major structural components on the fuselage will be replaced, saving future replacement costs
- Marshall will replace the centre wing-to-fuselage fairings with removable fairings to aid future maintenance and inspections, reducing future maintenance duration
- The existing 20-year-old plumbing (including the auxiliary fuel tank cells) and wiring within the CWB will be replaced – removed hardware/components could be serviced and kept as spare stock



Structural Modernisation

Marshall holds an in-depth understanding of the C-130 structure and has replaced almost every major structural component on the C-130 without Original Equipment Manufacturer (Lockheed Martin) involvement.

To enable this, Marshall has developed bespoke jacking and trestling instructions and developed equipment to enable significant structural items to be refurbished and replaced. For this reason, Marshall occupies a leading position in the non-standard repair and replacement market. Keeping aircraft airworthy and structurally sound can often extend beyond routine maintenance and sometimes calls for repair or complete refurbishment of major components. Marshall offers the full spectrum of engineering capability to


extend aircraft life and ensure crew safety.

The structural life of an aircraft is predominantly limited by the combination of the hours flown and the severity of the operational loads applied to the aircraft structure during service. With the Centre Wing Box attracting the highest level of operational loads, the Centre Wing Box is a fatigue-life item that will require replacement to ensure the continued airworthiness of the aircraft.

Marshall has a bespoke facility with the infrastructure and tooling to carry out this complex structural upgrade programme. This important modification supports the through-life structural sustainment of the C-130 aircraft for many years to come.


Marshall major structural repairs, replacements, refurbishment programmes, include:

- Flight deck window doubler repairs and replacements
- Engine truss mount repair and replacement (including force-mate bushing installation)
- Inner and outer wing attachment (rainbow) fitting replacements
- MLG beams, fuselage beam caps and belly skin replacements
- Sloping longeron (FS737-FS1041), upper BL61 and BL20 longeron repairs and replacements
- Centre wing drag angles, chine angle and chine cap repair and replacement



70+ Centre Wing Box replacements on the Royal Air Force C-130

70+




Marshall has recently completed the 8th of 14 Centre Wing Box replacements for the Royal Air Force C-130J aircraft

8TH

Marshall truly boasts a complete C-130 Centre of Excellence under one roof, ensuring the customer receives a world class service experience from start to completion.

Quality, Safety and Security


Quality

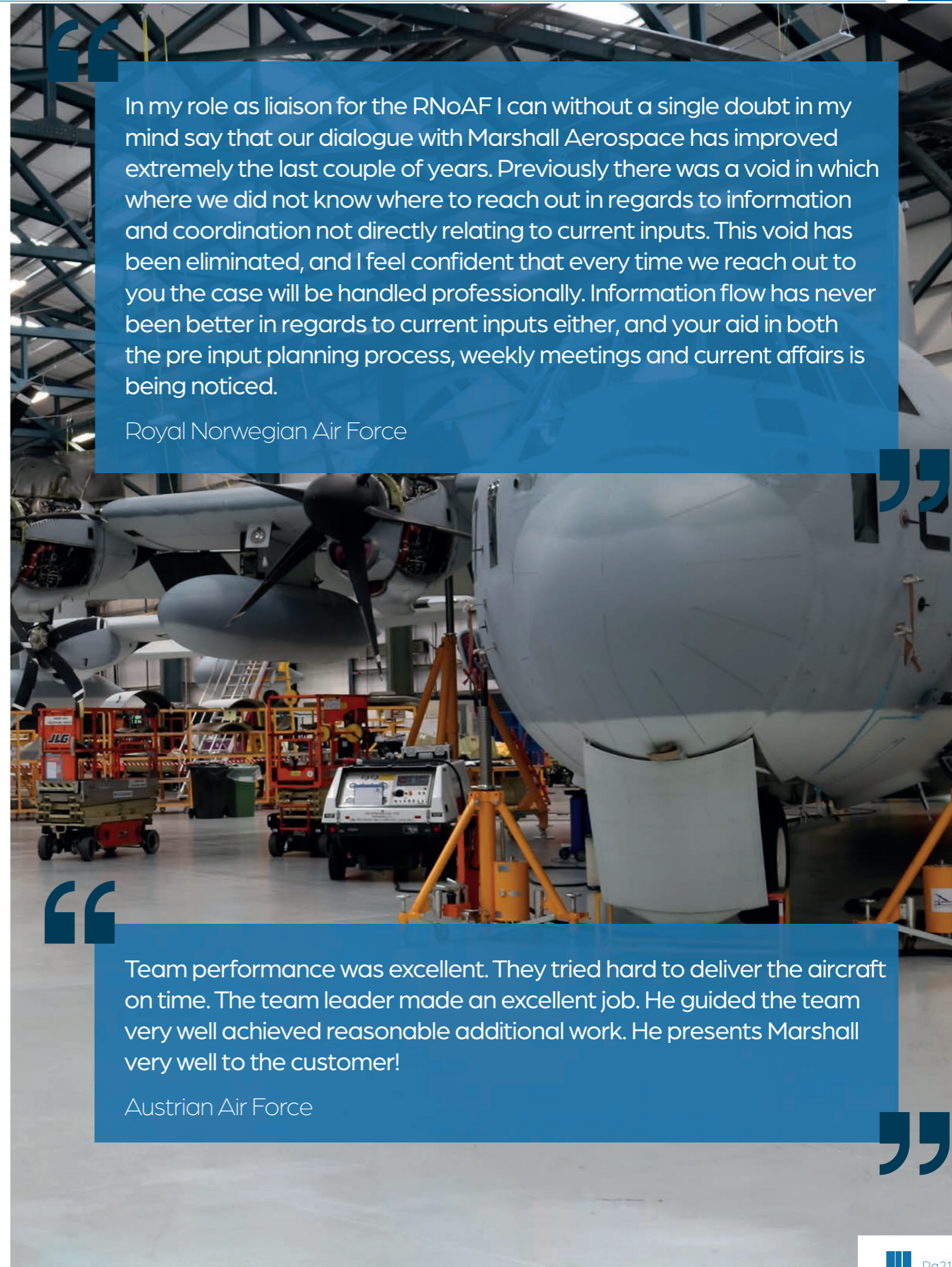
 Key to providing a low-risk, reliable service is reassurance that all operations are reinforced and managed by a robust quality management system accredited by AFNOR AS9100/AS9110, along with a dedicated in-house Quality Assurance team. Quality policies and processes ensure the design, production and maintenance of products (hardware, software or documents) and all services are delivered to meet the contractual requirements to a predetermined quality standard.

The Marshall quality system documentation and methodologies are fully compliant with the following standards:

■ AFAQ	ISO 9001 : 2015	2008/32550.17
■ AFAQ	AS9110:C / SJAC 9110:B / prEN9110:2018	2013/57102.9
■ AFAQ	AS9100:D / JISQ 9100:2016 / EN 9100:2016	2008/32551.17
■ Boeing International Corporation	D1-4426 Manufacturing Process	Process Code No. BE10047515
■ Boeing International Corporation	D6-82479 Develop/Manufacture	
■ Civil Aviation Authority (CAA)	Aerodrome Certificate	UK - EGSC-001
■ Civil Aviation Authority (CAA)	CAA 21G Production Organisation Approval Certificate	UK.21G.2078
■ Civil Aviation Authority (CAA)	CAA 21J Design Organisation Approval	UK.21J.0181
■ Civil Aviation Authority (CAA)	CAA 145 Maintenance Organisation	UK.145.0003
■ Lockheed Martin	Hercules Service Centre	Contract GLX-20-C130-0012
■ Lockheed Martin	Heavy Maintenance Centre	Contract GLX-20-C130-0013
■ Lockheed Martin	Lockheed Martin Special Processes	QCS-001
■ Lockheed Martin	Supplier Engagement and End Item Acceptance	D&B Number 218083210
■ Military Aviation Authority	DAOS	UK.MAA.DAOS.153
■ Military Aviation Authority	MRP Part 145 MAOS	145.1001
■ Military Aviation Authority	Contractor Flying Approved Organization Scheme (CFAOS)	UK.MAA.CFAOS.0011
■ MoD (DE&S)	Design Organization for the RAF C-130J Aircraft	DES AS C130J PT/04/07/07
■ MoD (DE&S)	Letter of privileges to be invoked as the Type Airworthiness Authority (TAA) for the C-130J Aircraft	DES AS C130J PT/04/07/07

Safety and Security

 Marshall takes the safety and security of customer's assets and personnel extremely seriously. As a UK Civil Aviation Authority approved international airport, Marshall surpasses the standards set by this authority. Site access is strictly controlled ensuring only authorised personnel have access to Marshall's facilities. Each customer will have accesses to the Customer Service Centre, the main site and only the specific hangar where their aircraft maintenance will be conducted. Access to other areas of the site and other hangars will be prohibited unless escorted by the Customer Service Manager.



In my role as liaison for the RNoAF I can without a single doubt in my mind say that our dialogue with Marshall Aerospace has improved extremely the last couple of years. Previously there was a void in which where we did not know where to reach out in regards to information and coordination not directly relating to current inputs. This void has been eliminated, and I feel confident that every time we reach out to you the case will be handled professionally. Information flow has never been better in regards to current inputs either, and your aid in both the pre input planning process, weekly meetings and current affairs is being noticed.

Royal Norwegian Air Force

Team performance was excellent. They tried hard to deliver the aircraft on time. The team leader made an excellent job. He guided the team very well achieved reasonable additional work. He presents Marshall very well to the customer!

Austrian Air Force



USMC Demonstrated Performance

Maintenance Event	Aircraft Quantity	
	Running Contract Total	Last 12 Months (Aug 2023 – Aug 2024)
PMI	11	6
O-Level	7	0
MDI	23	11
ISR	2	2
Total Induction	43	19

USMC CPARS 2024 Overall Rating

	Previous 2023 Rating	New 2024 Rating
Quality	Very Good	Very Good
Schedule	Exceptional	Exceptional
Cost Control	Satisfactory	Satisfactory
Management	Very Good	Very Good
Regulatory	Satisfactory	Satisfactory
Engineering	Very Good	Exceptional
Safety	Satisfactory	Satisfactory
Supply	Very Good	Exceptional

Total Fleet Size 2023
100+ A/C

Global Leader in C-130 Maintenance and Fleet Support

Marshall's history in aerospace and relationship with the U.S. goes back to the middle of the 20th century.

During World War II we modified and repaired over 5,000 aircraft as part of the U.K. government's Civilian Repair Organisation, including the Douglas Dakota, de Havilland Mosquito, Hawker Typhoon, Armstrong-Whitworth Whitley, and Boeing B-17 Flying Fortress. We also trained over 20,000 aircrew, including pilots, observers and flying instructors. Our training scheme was adopted by the Royal Air Force in 1941, and continues in use to this day.

In the late 1950s we were trusted to service Lockheed Martin's Super Constellation aircraft and a decade later we played an integral role in the development of Concorde, designing and developing its iconic drooping nose – used so effectively to facilitate transatlantic travel.

We are also proud of our 30 year relationship with Boeing, which has seen us manufacture auxiliary fuel tanks for its 747 and 777 aircraft and over 1100 tanks for the military P-8 platform for export around the world. Marshall has also carried

out many modifications on 777 and 747 aircraft for different operators.

We have maintained extraordinarily close cooperation and partnership with Lockheed Martin on its much-loved C-130 Hercules platform since first being appointed as the U.K.'s technical center for the Royal Air Force fleet in 1966. Since then we have been honored to be trusted to maintain C-130 fleets for numerous other nations, including Canada, where our Abbotsford, British Columbia based colleagues continue to support the Royal Canadian Air Force.

Other long-term customers include the Swedish and Royal Netherlands Air Forces who have been partnered with us for 45 and 25 years respectively, during which time we have performed major avionics and structural modernization programs, delivering increased capability and fleet sustainment. In addition, we support the majority of C-130J operators in the Middle East. No wonder then that between them our teams have notched up an incredible three million man hours working on the C-130 platform alone.





Marshall's performance on this first aircraft gives me the confidence that we will be able to continue to meet the U.S. military's needs for C-130 maintenance and positively impact readiness and sustainment goals within the Naval Aviation Enterprise.

Commanding Officer Fleet Readiness Center Western Pacific, LtCol Kevin M. Ryan, USMC

Customer Service

Marshall seeks to uphold four values that are at the core of all activities we undertake for customers and are fundamental to Marshall's success.



Customers

Putting our customers above all else



Integrity

Upholding the highest standards of integrity and fairness



People

Recognising that people are the heart of our success



Innovation

Maintaining competitive edge through innovation and creativity

Marshall strives to provide the highest level of service possible and is extremely proud of the excellent reputation it has on the market for the quality of service we provide. After significant growth in Marshall's international C-130 market share in recent years, Marshall looks forward to welcoming new C-130 operators to its facilities. To support this growth, in 2018 we created a dedicated Customer Service Team to assist and guide customers with their day-to-day tasks and ensure consistently high-levels of customer service are maintained at all times. The Marshall Customer

Service Team, which operates 24 hours a day, ensures all customer needs are accommodated for and any queries swiftly resolved.

As a Lockheed Martin approved Heavy Maintenance Centre and Hercules Service Centre, it is our duty to uphold the values and quality of service entrusted to us by the Original Equipment Manufacturer. Below we have included testimonials from customers relating to the quality of service provided by Marshall:

January 2018 – Present Customer Feedback



90%

Excellent rating for Service Quality, Product and Performance

180 responses received



75%

Excellent rating for Milestones delivery

180 responses received



86%

Excellent rating for Responsiveness and Flexibility for delivery

180 responses received



92%

Excellent rating for Customer Communication

180 responses received

All information contained within this document was correct at time of publication on 1 June 2021



 MARSHALL

For a full set of capabilities please contact the
Marshall Sales team or take a look at our website.

