



midlands aerospace alliance

MIDLANDS

# AEROSPACE

ISSUE 38, SUMMER 2015

MAGAZINE



## MIDLANDS: HOME OF THE TRENT

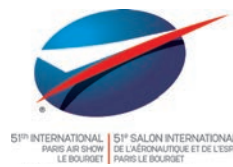
**UK MANUFACTURING HEARTLAND WELCOMES RECORD  
TRENT ENGINE ORDER FROM EMIRATES – PAGE 3**

### GLOBAL OUTLOOK, LOCAL DELIVERY

Insights into working in a global industry – p2

### PRODUCTIVITY POWERS INDUSTRY

Study reveals Midlands growth numbers – p10



### SPOTLIGHT ON THE MAA AT PARIS 2015


Midlands expertise at the Paris International airshow – p4-7

MAA chief executive Dr Andrew Mair introduces keynote speakers at the conference.



## GLOBAL OUTLOOK, LOCAL DELIVERY

THE GROWTH IN EMERGING ECONOMIES AND ITS IMPACT ON THE GLOBAL AEROSPACE INDUSTRY WAS A RECURRING THEME AT THE MAA ANNUAL CONFERENCE.

 Civil aviation will continue to drive growth in the aerospace sector for the next 10-20 years, particularly due to the expansion in demand from Asia-Pacific.

That was the observation of Rolls-Royce's Aerospace President Tony Wood, speaking to 160 delegates at the third MAA annual conference in March.

The theme of the event, held this year in Wolverhampton, was how to succeed in a global aerospace industry, and how we can all work better together to do that.

Much is beyond our control, said Wood, but companies need to develop their own strategies and particularly think about their presence outside the UK.

The "simple" business model that Rolls-Royce follows is to develop technology that gives customers the solutions to their

common requirements of lower fuel burn, excellent reliability, strong customer support and reduced operating costs.

As an industry, he said aerospace needs to "move faster" on data to be able to predict degradation in the performance of parts and materials before it becomes an issue.

Geoff Hunt, Vice-President, Engineering at UTC Aerospace Systems, said fuel efficiency was a driver for innovative work by UTC companies in the UK. Projects included developing more efficient generators, reduced-drag nacelles, better bleed extraction, thermal management, prognostics and system health management.

UTC's new Solihull-based Motor Drive Systems Centre has had some success in developing smaller, lighter, cheaper motor drives for electric engines. Hunt said the centre hoped to have a demonstrator of its lightweight affordable motor power system (LAMPS) flying in two years.

Other high-profile industry experts who presented an array of thought-provoking forecasts and views were Andy Moran of Airbus, Neil McManus of GKN Aerospace and Clive Lewis of Achieving the Difference.

Their observations were complemented by perspectives from local small companies, the MAA team and conference co-sponsor Wolverhampton City Council.

Neil Wyke of Heinrich Georg UK and MJ Sections' Craig Fullwood and Steve Cresswell gave delegates their own absorbing presentations based on their experience managing small companies.


Tim Johnson of Wolverhampton City Council showed how partners are working together to support the industry in the local cluster.

Delegate feedback was positive. "Excellent as always... a very worthwhile day... great insight into opportunities for SMEs... very useful and informative... well organised with quality speakers... very impressed with presentations and shared knowledge."

The annual conference has become "a must for Midlands SMEs", wrote one participant. "I'll be attending next year."

Said MAA chief executive Dr Andrew Mair who chaired the day: "A combination of super keynote speakers and support from our sponsors brought MAA members a very valuable day's conference – so thanks to all."

### STRATEGIC GUIDANCE IN OUTLOOK REPORT

 Delegates had a preview of the annual Global Aerospace Outlook report which is designed as an evidence-based view of the market to help UK supply chain companies of all sizes plan their export strategies.

New features in this year's report include timelines on major aircraft programmes and lists of already-announced Tier 1 and 2 contracts. The report is produced by the

ADS for UK Trade and Investment (UKTI).

"Every year we try to make it more valuable for UK companies," said Clive Lewis of Achieving the Difference, the report's data analyst and co-author. "It gives people information that they might not otherwise be able to obtain."

The report is available to MAA members in hard copy or download. Please contact [info@midlandsaerospace.org.uk](mailto:info@midlandsaerospace.org.uk)

 [www.midlandsaerospace.org.uk](http://www.midlandsaerospace.org.uk)



## NEWS

ON THE WEB

CLICK THROUGH TO THE MAA WEBSITE FOR CURRENT NEWS ON MEMBERS' ACTIVITIES:

→ **Hexagon Metrology** wins the first 'absolute innovation' award for its 360° Smart Inline Measurement Solutions (SIMS) system.

→ **Nasmyth Group** opens its new North American headquarters in Burbank, California.

→ **Ricardo Performance Products** wins contracts to supply two Rolls-Royce advanced engine technology projects.

→ **ASDEC** aids power generation industry in its drive to use lightweight and composite materials to improve efficiency.

→ **Delcam** launches the 2015 version of software for programming robots for machining.



[www.midlandsaerospace.org.uk/news](http://www.midlandsaerospace.org.uk/news)

# CELEBRATING THE TRENT'S SUCCESS

↘ The wider Midlands aerospace industry has cause to celebrate Rolls-Royce's good fortune in winning an order worth £9.2 billion from Emirates for Trent 900 engines to power 50 of its Airbus A380 aircraft.

The order, announced in April, is a record for Rolls-Royce and catapults the engine maker into the lead as top engine supplier for the A380. With the Emirates deal, Rolls-Royce will have supplied 600 engines for 150 A380s.

While the new engines will be assembled at Rolls-Royce's Seletar Campus in Singapore, not its home in Derby, the economic impact of the order is expected to be felt across the Midlands. Central England is the 'home of the Trent' – the heart of Rolls-Royce's large civil aero-engine technology development, manufacture and assembly. Trent family engines designed, developed and 'made in the Midlands' fly on the biggest Airbus and Boeing aircraft in the livery of many global airlines.

The standards of quality that Rolls-Royce demands of its supply chain are a major influence on the region's aerospace cluster, and a factor in their success on airliners that ply the world's long-haul routes. "Rolls-Royce and its supply chain



Cover photo and above: Rolls-Royce technicians in Derby prepare the the first production Trent XWB for entry into service on the Airbus A350 XWB. Photos courtesy Rolls-Royce.

account for half of the cluster's jobs," said MAA chief executive Andrew Mair. Radiating from the Rolls-Royce hub in Derby across the Midlands are the supply chains that define our aerospace cluster.

The Midlands is a key location for many world-leading aerospace companies, ranging from Rolls-Royce through a series of global leaders in the design and manufacture of aircraft and engine controls based on electrical, mechanical, hydraulic and electronics technologies.

"We're proud of our region's legacy in flight, from the earliest days of biplanes and piston engines, that underpins our position as an

important contributor to the global industry," added Mair.

Technology developed in the Midlands for the new Trent XWB and Trent 1000 engines is incorporated in the latest Trent 900s ordered by Emirates.

MAA data shows that at least 25 Midlands suppliers make parts for the Trent 900 engine, with an additional 20 making aircraft parts for the Airbus A380 aircraft itself.

Emirates selected the Engine Alliance GP7200 for the 90 A380s it had previously ordered.

 [www.rolls-royce.com](http://www.rolls-royce.com)

## SIGMA SECURES £1.6M RESEARCH PROJECT

↘ Sigma Precision Components has secured investment from the UK Government's Advanced Manufacturing Supply Chain Initiative (AMSCI) to develop composite drive shafts for aerospace applications.

The Leicestershire-headquartered business will work with engineers at the University of Manchester to develop composite drive shafts as a lightweight alternative to traditional designs.

The £1.6 million project is being supported by

Moog Aircraft Group based in Wolverhampton. Funding from AMSCI includes a grant of £700,000 and a loan of £300,000.

Mike Andraee, Director of Technology and Improvement at Sigma, said the project "offers real potential to reduce weight and improve the performance of this key component.

"The programme follows on naturally from our successful Clean Sky-funded COMPipe project, which developed new manufacturing techniques to manufacture composite aero-

engine pipes that offer significant weight savings when compared to their traditional, metallic counterparts.

"We're now looking to apply some of that technology to this new drive shaft project."

AMSCI is a UK-funding competition designed to improve the global competitiveness of the advanced manufacturing supply chain.

 [www.sigmacomponents.com](http://www.sigmacomponents.com)

PARIS 2015  
51ST INTERNATIONAL AIRSHOW

# EXHIBITING TO THE



Corporate & Commercial Banking

That's not just £400,000 of extra finance, that's another 15 people on your workforce.

Our relationship managers are sector specialists. So they understand when you need financial support and the difference it can make.

Search: RBS Commercial Banking  
Call: 0800 529 8059  
Text relay: 18001 0800 529 8059  
Open Mon-Fri 9am to 5.30pm

 Royal Bank of Scotland

Security may be required. Product Fees may apply. Over 18s only.

ANY PROPERTY USED AS SECURITY, WHICH MAY INCLUDE YOUR HOME, MAY BE REPOSSESSED IF YOU DO NOT KEEP UP REPAYMENTS ON A MORTGAGE OR OTHER DEBT SECURED ON IT.



When the 51st Paris International Airshow opens at Le Bourget's Parc des Expositions on 15 June, a group of MAA member companies will be poised and ready to make it their best-ever exhibition.

And if the advance publicity for the show is accurate, 2015 will once again eclipse all previous shows in size and scale.

GIFAS, the French aerospace association and organiser of the Paris airshow, predicts more exhibitors than the 2,215 recorded in 2013, an attendance in excess of 315,000 and business totalling more than \$150 billion (£95 billion).

At a pre-show press conference, Emeric d'Arcimoles, chairman and chief executive of Salon International de l'Aéronautique et de l'Espace (SIAE), emphasised the

# WORLD

Paris 2013 (left) brought more visitors, exhibitors and business to Le Bourget than any of the previous Paris International Airshows, records that the 2015 show is expected to break. Below, UK defence secretary Michael Fallon speaks to MAA exhibitors during a visit to the stand in 2013.



**VISIT THE MAA  
AT PARIS 2015 –  
HALL 2b, STAND G158**  
Trade-only days: 15-18 June

One is the challenge facing aerospace around the world of finding the right workforce. The other is climate change and telling the world at large what aerospace is doing about the environment. Climate Day, hosted by the French foreign minister Laurent Fabius, is a first for the Paris airshow.

The numbers that define the airshow are huge and appear to confirm the claims of the management team that Paris is the biggest airshow in the world, the most international and the most visited by official delegations.

Marketing director Nicholas Tran told journalists it is also the least expensive airshow for exhibitors and, crucially, has a satisfaction rating of 86 per cent from 2013.

MAA exhibitors will benefit from the geolocation capability outdoors and indoors – Paris is the only airshow in the world to have this feature. New this year, users will be able to use a geolocation app to create groups which, among other benefits, allows members to pinpoint where everyone in the group is, making it easy to set up meetings and to cover the entire site efficiently.

## THE MIDLANDS AEROSPACE ALLIANCE RETURNS TO PARIS IN 2015 WITH A GROUP OF EXHIBITORS INTENT ON SHOWCASING THE REGION'S CAPABILITIES TO A GLOBAL AUDIENCE.

show's desire to be a shop window for the entire global industry.

"We want to serve all the industry, not only the French aerospace industry," he said.

This is good news to the MAA and its eight exhibitors (see following pages for details).

"We have a group of exhibitors who are keen to make the most of this exciting marketplace," said MAA Marketing Manager Emma Burgess. "They're well aware of the results our exhibitors have achieved at previous Paris airshows and want to duplicate or better that for their own companies.

"Civil aviation is the bedrock of our aerospace industry in the Midlands and the Paris airshow is one of the best places to make contacts for all the global aircraft programmes."

At the last Paris airshow in 2013, exhibitors reported brisk business throughout the show with exhibitors busy with customer meetings on their own 'pods' or the MAA stand's central meeting area. The MAA also welcomed several VIPs to the stand.

Reactions from MAA exhibitors were uniformly positive. "We had a very successful show, several appointments, lots of interest and

meetings already set up for follow ups," said one. "It was a great experience, we shall exhibit again."

Another reported that "our attendance at the show will have increased our visibility to the business world."

"We met several previous clients, and now we can reinstate our relationships and provide our services to them again," a third noted. Others commented on the benefits they received from the quality of the MAA presence and infrastructure support.

Two themes of the 2015 Paris airshow will resonate with the MAA and its exhibitors.

**PARIS 2015**  
51ST INTERNATIONAL AIRSHOW

**VISIT THE MAA  
AT PARIS 2015 –  
HALL 2b, STAND G158**

**Trade-only days: 15-18 June**

Scenes from Paris 2013.  
Photos courtesy GIFAS and MAA.



**SIGMA PRECISION COMPONENTS**

Sigma Precision Components is proud to be launching its 'Sigma Lite' initiative at this year's Paris airshow, showcasing work from R&D projects supported by Clean Sky, NATEP and AMSCI. This includes composite pipes, lightweight end fittings and composite drive shafts that are already creating significant interest from aerospace OEMs, thanks to the weight savings on offer.

Sigma also manufactures ducting, fabrications, sheet details, airframe sub-assemblies, rigid pipe assemblies, composite components, machined items and sub-assemblies, specialist fasteners, assembly and build fixtures for aerospace OEMs, as well as offering finishing and polishing services.

With manufacturing facilities across the UK and in China, the company can also manage the supply chain on a customer's behalf, delivering lowest-cost, lowest-risk solutions at every stage of the product lifecycle.

**Contact:** Mark Lambert  
**t** +44 (0)7833 595213  
**e** mark.lambert@sigmacomponents.co.uk



**CONSULTAVILA LTD**

ConsultAvila is a well-established business consultancy with a solid reputation for delivering real solutions and real results at pace. Its team of management professionals has a track record of achievement in the aerospace and defence sectors, providing support to clients through the entire process of change. ConsultAvila specialises in business transformation, working capital optimisation, strategic sourcing, sales, inventory and operations planning, performance improvement, and leadership development.

**Contact:** Dudley Wood  
**t** +44 (0)7958 796375  
**e** dudley.wood@consultavila.com



**DYNAMIC METALS**

As one of the UK's largest stockholders of titanium and super alloys, Dynamic Metals services the aerospace industry worldwide. From our new facility in Leighton Buzzard, we are proud to supply aerospace-quality materials on short lead times. We provide a high level of customer service with a personal, yet professional approach and no minimum order charges.

**Contact:** Sam Excell  
**t** +44 (0)7510 080911  
**e** sam@d  
dynamicmetalsltd.co.uk



**G&O SPRINGS**

G&O Springs is issuing a challenge to Paris show-goers: bring them a problem relating to springs that they can't solve, and they'll give you a bottle of champagne. Aerospace and other precision applications are G&O's forte. The company uses advanced spring design software to ensure the material used – including a variety of exotic metals – is suitable for its working environment and that cycle life, relaxation and cost are properly assessed.

**Contact:** Steve Boyd  
**t** +44 (0)7768 126886  
**e** steve.boyd@springs.aero





**The University of Nottingham**

UNITED KINGDOM · CHINA · MALAYSIA

**NOTTINGHAM INSTITUTE FOR AEROSPACE TECHNOLOGY**

The Institute for Aerospace Technology (IAT) at The University of Nottingham is a major centre for aerospace research with 50+ academics and 300 researchers providing world-leading research in materials and structures, manufacturing, electrical systems, engines and propulsion, and operations. The IAT provides a range of facilities for aerospace research and technology demonstration. We work with both SMEs and multi-nationals to provide access to our graduates, improve their innovation capacity and solve technology problems.

**Contact:** Mark Smith  
**t** +44 (0)7813 546852  
**e** m.smith@nottingham.ac.uk



**MAYCAST-NOKES PRECISION ENGINEERING**

Maycast-Nokes Precision Engineering is one of the UK's leading suppliers of fully finished machined castings, a specialist in the manufacture of high quality precision castings. Using precision sand casting and lost wax/investment casting manufacturing methods in conjunction with rapid prototyping techniques, it can supply castings on short lead times for initial trials. It can then supply production quantities of machined, finished and assembled castings. Maycast-Nokes complements its extensive on-site casting, machining and testing facilities with finishing, assembly and kitting capabilities.

**Contact:** Dave Blower  
**t** +44 (0)7814 498051  
**e** dblower@maycast.co.uk



**MJ SECTIONS LTD**  
 Part of MJ Sections Aerospace Group Limited

**MJ SECTIONS**

MJ Sections supplies precision-formed sheet metal fabrications and machined components to the UK and global aerospace markets, providing a fast and proactive response to our customers' needs. We're proud to include leading airframers and engine makers among our customers. They reap the benefits of our diverse range of major processes – all fully Nadcap approved – including welding, NDT and our most recent addition, vacuum heat treatment.

**Contact:** Steve Cresswell  
**t** +44 (0)7810 158360  
**e** steve.cresswell@mjsections.co.uk



**SPINCRAFT / ENINETICS AEROSPACE**

Spincraft and Eninetics Aerospace form Standex's Engineering Technologies Group (ETG). With six facilities located in the US and UK, the group provides global manufacturing solutions through collaborative engineering efforts. Precision net and near-net forming technologies are utilized with vertically integrated manufacturing processes. Components and assemblies are delivered with reduced input weight, part-count and cycle times. Our precision hardware solutions are found in civil aviation, defence and space-system markets. Standex ETG metal-forming capabilities include spinning, heat treating, machining, hydro/press forming, welding and other fabrication services for virtually all workable alloys. Approvals held include AS9100C, ISO9001:2008, ISO14001, Nadcap for Heat Treat, Welding, Non-conventional machining and NDT.

**Contact:** Christopher Porter  
**t** +44 (0)7803 655200  
**e** cporter@spincraft-etg.com



**GET INSIDE THE BIG FOUR EUROPEAN AEROSPACE MARKETS WITH THE MAA**

*The simple solution to taking your marketing message to the heart of international aerospace*

For details, please contact  
 emma.burgess@midlandsaerospace.org.uk

# NATEP: MAKING IDEAS HAPPEN

↙ NATEP, the National Aerospace Technology Exploitation Programme, is a £40m programme established in 2013 to deliver 100 new technology projects in the UK aerospace supply chain, strengthen the capabilities of 250 supply chain companies, and create or sustain 1,200 high value jobs. From its first three calls for projects, NATEP approved funding for 103 companies, seven universities and two Catapult Centres. Here are examples from that cohort.



**PROJECT:**  
INHIBITING DELAMINATION IN  
CFRP COMPOSITES

**PARTNERSHIP:**

- » M Wright & Sons (3D composites – lead partner)
- » Composite Innovations (composite tooling)
- » GKN Aerospace (customer)

**GRANT / DURATION:**  
£150,000 / 24 months

**THE PROJECT WILL:**

- » Quantify the benefits of the through thickness reinforcements in 3D Carbon Fibre Reinforced Plastic composites, in particular their effect on delamination and crack propagation.
- » Deliver confidence to allow design of aerospace parts at optimum weight, performance and efficiency.



**PROJECT:**  
LIGHTWEIGHT PIPE  
END FITTINGS

**PARTNERSHIP:**

- » Sigma Precision Components (design, machine, test – lead partner)
- » 3T RPD (ALM)
- » Aerospace company (customer)

**GRANT / DURATION:**  
£143,834 / 12 months

**THE PROJECT WILL:**

- » Redesign a selection of typical end-fittings to minimise weight and cost, suitable for metal additive layer manufacture.
- » Manufacture samples in special materials and develop quality control procedures.
- » Validate the new parts through a combination of analysis and rig testing.



Pins indicate the location of companies which are benefiting from NATEP funding under Calls 1-3. By the time Call 5 projects are in full swing, in 2016, there will be three times as many pins on the map. NATEP is also being started up in the devolved administrations of Scotland, Wales and Northern Ireland.







**PROJECT:**  
RAPITIME OBJECT CODE ANALYSER

**PARTNERSHIP:**

- » Rapita Systems (software development – lead partner)
- » University of York (certification consultancy)
- » Controls & Data Services, Airbus Defence & Space (customers)

**GRANT / DURATION:**  
£150,000 / 18 months

**THE PROJECT WILL:**

- » Develop the next generation of safety-critical software verification tools reducing the effort of timing measurement by at least 25%.
- » Produce a certifiable solution for DO-178B/C Level A.
- » Take the technology from TRL 3/4 to TRL 5/.



Photo courtesy of Coriolis Composites

**PROJECT:**  
XENON PULSE TECHNOLOGY IN FIBRE PLACEMENT

**PARTNERSHIP:**

- » Heraeus Noblelight (Xenon technology – lead partner)
- » Hexcel (composite material)
- » Rolls-Royce (customer)

**GRANT / DURATION:**  
£145,000 / 18 months

**THE PROJECT WILL:**

- » Demonstrate how Heraeus Noblelight Xenon Flash technology offers potential cost and performance advantages in the processing of composite materials for aerospace applications.
- » Result in a fully operational demonstrator at the National Composites Centre.



**PROJECT:**  
PLASMA CLEANING IN MCM  
ADVANCED MANUFACTURE

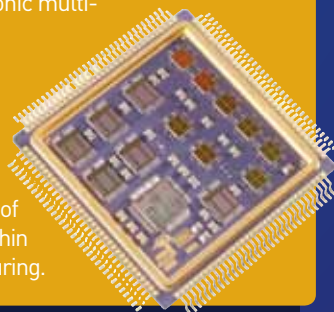
**PARTNERSHIP:**

- » Welwyn Components Power & Hybrid (MCM manufacture – lead partner)
- » Accelonix (plasma cleaning)
- » Controls & Data Services (customer)

**GRANT / DURATION:**  
£70,000 / 15 months

**THE PROJECT WILL:**

- » Develop the use of plasma desmear as a cleaning process for high reliability electronic multi-chip modules.
- » Test and qualify an automated cleaning process that will improve the yield and quality of wire bonding within MCM manufacturing.



**PROJECT:**  
ADDITIVE AERO VALVE OPTIMISATION (AAVO)

**PARTNERSHIP:**

- » Meggitt Aerospace (design and manufacture – lead partner)
- » Ashton & Moore (finishing)
- » GE Aviation (customer)

**GRANT / DURATION:**  
£142,500 / 15 months

**THE PROJECT WILL:**

- » Develop a bleed air valve (BAV) by additive layer manufacture which is optimised for weight, reliability, acoustic emission and manufacturing method.
- » Maintain current BAV non-recurring costs while reducing component recurring costs.
- » Use lessons learned to develop a broader optimisation capability.



# PRODUCTIVITY FUELS GROWTH

PRODUCTIVITY IN MIDLANDS AEROSPACE MANUFACTURING HAS BEEN GROWING AT A HEALTHY 3.4 PER CENT ANNUAL RATE SINCE 2005.



The Midlands aerospace cluster continues on the path of growth it has followed for the past decade, according to the 10th Midlands Aerospace Alliance annual business survey.

The study has also highlighted the productivity increases that drive that growth.

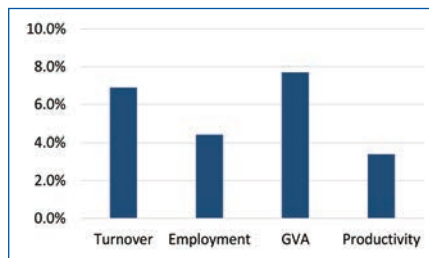
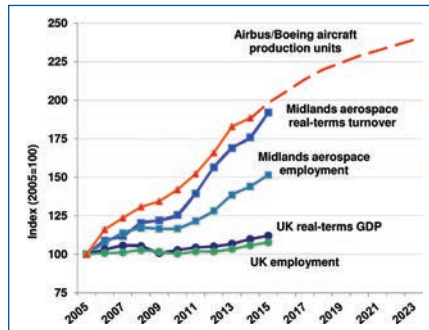
The latest study, conducted with MAA members this spring, reveals further increases in real-terms business revenue (after aerospace industry inflation has been subtracted) as well as employment. Compared with a 2005 index of 100, in 2015 real-terms business turnover has grown at an annual rate of 6.9 per cent to nearly double at 192.

At the same time, the employment index has grown by 4.4 per cent to reach 152 – meaning that the industry now sustains half as many jobs again as it did in 2005. For the UK economy as a whole, the comparable index numbers are 112 and 108.

The aerospace industry directly employs one of every 100 Midlands workers, not counting the region’s airports and RAF bases.

Benchmarking against other key aerospace statistics is instructive. Rising Midlands aerospace output is closely aligned with the number of passenger aircraft Airbus and Boeing deliver each year. The Midlands has therefore

MIDLANDS AEROSPACE GROWTH RATES 2005 – 2015



been holding its own in the face of increasing industry globalisation, keeping pace with the steady growth of the industry across the world. The upwards trajectory of projected aircraft deliveries reveals the opportunities ahead for

the Midlands cluster – if it can retain its share of global growth.

Continuous improvements to manufacturing productivity play a key role in sustaining growth by keeping prices competitive. Productivity is a measure of the real-terms (after inflation has been subtracted) value that is added by each person working, and productivity in Midlands aerospace manufacturing has been growing at a healthy 3.4 per cent annual rate since 2005.

Midlands aerospace has been bucking the trend of languishing productivity in the UK economy as a whole.

The productivity drive helps keep Midlands aerospace buoyant in the face of competition from other mature aerospace industries, in the USA and Germany for instance, as well as lower cost new entrants like India and China. Increasing productivity also helps counteract the squeeze on manufacturing capacity caused by the continuing pressure on skills availability.

But while continuous productivity increases are helping the Midlands retain and grow business now, in the long term Midlands aerospace companies will need to keep creating new technologies if they are to retain their competitive edge. That is why the UK now has an Aerospace Technology Institute and a National Aerospace Technology Exploitation Programme.

**5 compelling reasons...**  
for your company to become a member of the MAA –

- Regular networking with your peers and customers.
- Active promotion of your company in the MAA’s annual directory and the MAA website.
- Unique access to government funding for the UK aerospace supply chain, and expert support to obtain it.
- The prestige of belonging to the world’s second largest\* regional aerospace organisation.
- Do your part to support one of the UK’s crown manufacturing jewels by joining our community.



midlands aerospace alliance

It costs only £395 a year if you are in the Midlands or £590 if not. Can you afford not to belong?  
For more information go to our website: [midlandsaerospace.org.uk](http://midlandsaerospace.org.uk) or contact the MAA office.

\* only Aerospace Valley between Toulouse and Bordeaux has more subscribing members!

# RETHINKING CAPACITY – GROWING CLOSER TO THE ACTION

OPPORTUNITIES ABOUND FOR UK COMPANIES WHO WISH TO TAP ON SINGAPORE'S AEROSPACE ECOSYSTEM TO EXPAND CAPACITY AND LEVERAGE OPPORTUNITIES IN ASIA PACIFIC'S RAPIDLY GROWING AEROSPACE INDUSTRY

 The global aerospace industry is enjoying a major boom. In 2013, Airbus and Boeing had record sales for aircrafts while aircraft deliveries worldwide increased for the 5th consecutive year in 2014. This is driven by the Asia Pacific region's strong demand for air travel. In fact, Boeing forecasts that almost 48% of global air traffic will be to, from or within Asia Pacific by 2033. In response, both Airbus and Boeing have announced plans to increase their production capacities in 2015 to fulfil backlogs of close to 8 years for aircraft.

These developments present engine manufacturers and aerospace suppliers with an opportunity to better align their global manufacturing footprint with the growing market in the Asia Pacific region. However, companies need to consider carefully how they can operate in the region. Not only is Asia Pacific a culturally, politically and economically diverse region, expanding into Asia Pacific will stretch companies' distribution, suppliers and operations.

Ranked by World Bank in 2014 as the easiest place to do business for the 9th consecutive year, Singapore offers aerospace companies a trusted base to help them navigate an increasingly complex global supply chain. Access to a large and growing pool of skilled aerospace engineers, a strong intellectual property protection regime and proximity to key customers have enabled Singapore to grow a sizeable aerospace cluster. This includes the leading original equipment



Boeing 787 Air Management System

manufacturers (OEMs) as well as a strong and expanding supplier base comprising both foreign and Singaporean firms.

For example, Singapore will soon become the first location outside the United States to manufacture hybrid fan blades for Pratt & Whitney's Geared Turbofan engine. In 2014, UK company RLC Engineering Group opened in Singapore its first production facility in Asia Pacific to supply Rolls-Royce's wide chord fan blade manufacturing facility in Singapore. Since 2004, US-based Barnes Aerospace has been manufacturing in Singapore a variety of aerospace engine components for GE Aviation, Rolls-Royce, and Snecma.

For smaller aerospace suppliers, partnerships with well-established Singaporean companies can help to ease their entry to the Asia Pacific region. Some prominent Singaporean aerospace companies include (a) Wah Son, a specialist in the area of high-quality and high-complexity toolings, not only manufactures aerospace engine, nacelle and airframe toolings but also partners other tooling and aerospace suppliers to provide a full suite of engineering and prototyping services; (b) Singapore Aerospace Manufacturing (SAM), a manufacturer of a variety of aerospace components, including engine cases and nacelle beam structures, is a supplier to GE Aviation; and (c) JEP Precision, which designs, fabricates and manufactures

parts for customers like Messier-Bugatti-Dowty, UTC Aerospace Systems and MOOG.

*Ranked by World Bank in 2014 as the easiest place to do business for the 9th consecutive year, Singapore offers aerospace companies a trusted base to help them navigate an increasingly complex global supply chain.*

To support greater collaboration between OEMs and their suppliers, the Singapore government is investing £122 million in initiatives that encourage OEMs to work with either foreign or Singapore-based suppliers to improve their productivity, upgrade their capabilities, and develop new technologies.

In summary, with close to one-third of all new aircraft deliveries headed to the Asia Pacific region, aerospace OEMs and suppliers can look to Singapore and the region for opportunities to grow their production capacity in order to capture market growth. The Singapore Economic Development Board will work closely with companies that are keen to explore these opportunities either by establishing a presence in Singapore, or by working through the local aerospace supplier ecosystem

#### Terence Gan

International Director for Europe,  
Singapore Economic Development Board



Machining of GE90 Engine Casing

To find out more, contact the Singapore Economic Development Board at [London@edb.gov.sg](mailto:London@edb.gov.sg)  
Singapore Centre, Grand Buildings, 1-3 Strand, London WC2N 5HR

# COMMON MARKETS

THE TRANSNETAERO (TNA) INITIATIVE HAS GIVEN MAA MEMBERS VALUABLE INSIGHTS INTO EUROPEAN AEROSPACE MARKETS AND BUSINESS CULTURES.

➤ A theme that has emerged from TransNetAero (TNA) events over its two-year span has been the benefit to participants of networking with a good mix of European colleagues and counterparts.

At the recent TNA-backed inspection and measurement technology course co-hosted in February by the University of Derby and the MAA were delegates from the UK, Germany and the Netherlands. Among the 18 registered participants were mechanical engineers, technicians, PhDs in physics and electronics and representatives of a small companies trying to add new skills to their commercial offering.

"It was a very broad base representative of the industry," said MAA manufacturing specialist Michael Cunliffe, who is now leading the body's activities in the European network. "The people attending said they found that useful."

The Derby course was one of six given internationally by universities across the TransNetAero member regions in Belgium, France, Germany, Holland, Switzerland and the UK. Courses are offered free to members of the participating aerospace organisations, and lead to transnational professional qualifications in various aerospace subject areas.

In addition to the skills and training aspects, the TNA initiative has also promoted a broader and deeper understanding of cross-border supply chain opportunities. Recent events include a tour, briefing and networking at Diehl Defence industries in Überlingen, Germany, and workshops on better SME business strategies conducted with Rolls-Royce in the Midlands (see box) and Fokker Aerospace in the Netherlands, both led by MAA chief executive Dr Andrew Mair.

The German event was considered very successful and well-attended, attracting over 40 delegates. Cunliffe said the event had several benefits. "It was set up to give participants an understanding of how to offer services to a major company like Diehl, with an insight into how they interact with suppliers.

"These events help to highlight the different ways of working and the different business cultures of our partner nations.

"We in the UK can learn from that. In an environment of globalisation, where we're



## HOW TO APPROACH A PRIME CONTRACTOR

➤ The Rolls-Royce workshop at the MAA offices in April attracted 13 SMEs, including three Dutch companies, who heard Paul Snelling, Rolls-Royce's Head of Supplier Collaboration for Component Engineering, describe how best to approach companies such as Rolls-Royce, and to understand what they would be looking for.

During the workshop, the attendees worked together to see how they could strengthen their own "pitches" to larger companies, said Cunliffe. "Opportunities to market yourself to companies like Rolls-Royce don't come along often, and nobody wants to waste them.

"Paul used his experience to offer valuable guidance. He also benefited himself by getting a good perspective on how typical small companies today think. Big companies tend to become distanced from SMEs because they're more frequently dealing with larger companies, which creates barriers."

Feedback on the workshop was universally positive, with comments including:

- Interesting day with some 'best practice' sharing and networking.
- Very useful to have a room full of aerospace and defence suppliers to talk to.
- A good mix of companies with different ideas about supplying large customers. The Rolls-Royce presentation was especially valuable.
- The Dutch industry-UK industry interaction is a great way of forming alliances. So successful was the Rolls-Royce workshop that the MAA plans to repeat it.

trying to work together, especially across Northern Europe where distances are quite easily commutable now, we can build useful relationships and access good technology. This has to become part of your business strategy."

The Dutch workshop involved the active participation of the Procurement Director for Fokker Aerospace. A version of the business planning workshop is planned in Germany by the TNA partner Forum Aerospace Baden-Württemberg (LBRW), using representatives of Diehl Aerospace to present the big company perspective.

The transnational workshop format will also be used by the MAA on the topic of technology roadmapping with the University of Nottingham in early summer. Cunliffe expects it will feature

one of the Midlands' major industry players going through its technology roadmap, together with how it tries to bring suppliers on board with its vision of future direction.

→ TransNetAero will be using the Paris airshow to celebrate the work done over the last two years with a reception at the Belgian embassy on the evening of Tuesday 16 June to celebrate the knowledge transfer projects that grew out of the six courses run as part of the initiative, and a networking event on the MAA stand on the morning of Tuesday 16 June. For more information contact [michael.cunliffe@midlandsaerospace.org.uk](mailto:michael.cunliffe@midlandsaerospace.org.uk)

*TransNetAero is part-funded by the European Union's Interreg programme.*



## THE GIFAS VIEW FROM PARIS

*“The aerospace industry is a major growth asset for our country. It must be preserved.”*

*Marwan Lahoud, chairman of the French aerospace and defence association GIFAS, outlines the French sector’s strengths and challenges.*

 The French aerospace industry is often cited as an example by the powers that be. Our industry is well organised and therefore doing well. Our industry exports and therefore increases our country’s influence abroad.

We put considerable effort into enabling all industry players, especially SMEs, to expand internationally. There are a number of initiatives under way in France and abroad.

In early 2014, a large-scale national programme called ‘industrial performance’, with a budget of 23 million euros, was launched as part of a joint investment between the state and the industry with the support of the regions. We want to improve the performance of the entire sector; we want to improve the responsiveness and the competitiveness of our suppliers. It is a real success.

At the same time, we are pursuing existing initiatives. We are continuing to develop and improve the BoostAeroSpace secure portal which facilitates data exchange between all stakeholders in the sector. We regularly check to ensure that the industry agreement extending the order book to six months, plus six months provisional for all players, is being adhered to. I think it is important and we are starting to see results in terms of facilitating relations with the banks and especially for applications to fund working capital.

And finally, we have set up the industry fund Aerofund III to provide



*“There is no such thing as a purely civil aviation industry anywhere in the world, there are only dual civil/military aviation industries.”*

structural support for consolidation or transfer of assets operations.

Strengthening the sector means planning for the future to be able to meet the challenges ahead. It means pursuing long-term co-investment programmes with the state so we can anticipate major strategic decisions. It means representing the aerospace industry in the structures created and overseen by the state in order to meet the major challenges facing the industry.

I would first mention Corac, France’s civil aerospace industrial strategy committee. You are familiar with Corac, which was set up in 2008 to create a proactive approach to collaborative research with ambitious goals. It is working well.

Corac has already spawned similar bodies, and the one we are concerned with is Cospace. It involves all stakeholders in the sector and defines the space sector’s priorities in today’s context.

And there is Cofis, the security industry committee, so you can see that we are

committed to promoting and strengthening the position of our industry and the models that we are proposing.

These models of cooperation between industry and the state can work as long as everyone knows their place.

Preparing for the future means preserving the dual nature of our industry. This is the essence of our industry. There is no such thing as a purely civil aviation industry anywhere in the world, there are only dual civil/military aviation industries.

We therefore pay great attention to the funds allocated to the Ministry of Defence, not for short-term orders, but for tomorrow’s business, to make the right strategic decisions about the development of our industry. Defence still accounts for 20 per cent of our revenues and it is part of the fabric of the country, part of our national identity.

We can be justifiably proud of our industry. It ranks one of the highest in the world. We are the country’s foremost industry economically and competitively, despite the complex environment. We are holding our position in high-end markets with strong growth potential. The aerospace industry is a major growth asset for our country. It must be preserved; it contributes to our sovereignty and economic development.

**→ Extracted from the chairman’s comments to the last GIFAS annual meeting. Marwan Lahoud is Airbus Group’s chief strategy and marketing officer.**



[www.gifas.asso.fr/en/](http://www.gifas.asso.fr/en/)

## PROFILE

VIEW FROM THE MAA BOARDROOM

“It’s important to decide where to put your effort and where not to, and to remain targeted.”

*MAA board member Stuart Mclachlan, newly appointed Group Vice-President for Moog Aircraft Group, sees getting the right balance as the key to success.*

### HOW DID YOU GET WHERE YOU ARE TODAY?

I started at what was then Dowty Boulton Paul in Wolverhampton in 1987, did an apprenticeship and was eventually sponsored for a BEng degree. After my apprenticeship, I spent time in engineering, programme management, operations and eventually business management which is where I am today. The multiple roles helped me get a wide range of experience in different business environments with different customers; some more internally facing roles, others more customer facing. The company changed around me – Dowty, then Smiths, GE and now Moog – effectively the same business.

### COULD SOMEONE STARTING OUT NOW FOLLOW THE SAME PATH?

I think so. My path wasn’t unique. I’ve been fortunate to work with some great people. The key would be to focus on building experience in the business as well as in the functions you work in and with.

### WHAT HAS INDUSTRY TAUGHT YOU THAT YOU COULDN’T GET FROM EDUCATION?

Building relationships is important but so is education. It’s not one or the other. You can’t simulate all the challenges and opportunities you face every day in the real world of business – it’s always changing – so students of today will benefit by striking a balance between academic and on-the-job experience.

### ARE THE DAYS OF SMALL INDEPENDENT SUPPLIERS TO AEROSPACE NUMBERED?

I don’t think so. I do recognise that the investment-and-return equation, particularly in aerospace, can often be a challenge when a company operates independently. The key to success is understanding the needs of



*“You have to make sure size doesn’t impede your agility as a business with overly burdensome controls and bureaucracy.”*

your customer base, and where you’re trying to take your business. Concentrate on areas where you’re successful and can add value. Innovate in processes as well as products. It’s important to decide where to put your effort and where not to, and to remain targeted.

### HOW DIFFICULT IS IT TO ADAPT TO A DIFFERENT CORPORATE CULTURE AFTER A CHANGE IN OWNERSHIP?

Each situation is different and dependent on the culture of both the business being acquired and the new parent. Also, the culture that exists within various global sites is often different, but ideally covered by the overarching culture. A key to being successful as a business is being open to change, building a strong relationship with the new business and trying to understand

how they operate. Above all, be positive about integration.

### CAN A BUSINESS GROW TOO BIG?

This is a subjective debate in our industry with the consolidation of recent years. It’s about preserving the core values of what makes you successful as a business. You have to make sure size doesn’t impede your agility as a business with overly burdensome controls and bureaucracy.

### WHAT ADVICE DO YOU HAVE FOR SOMEONE PLANNING A MOVE TO A NEW FACTORY?

Don’t underestimate the task, especially with a newbuild. Appoint a full-time project manager from inside your business who understands the business requirements. In parallel, bring in an external project manager experienced in building projects. That way you’ll be able to move the building project forward while continuing to run your business. When Moog moved to new premises at i54, the disruption was significant. But three years later, output is positive and we have a world-class facility.

### HOW DO YOU COPE WITH THE PERSONAL IMPACT OF GLOBALISATION, SPLITTING YOUR TIME BETWEEN SEATTLE AND WOLVERHAMPTON?

I have a very understanding wife and family! Dealing with the US West Coast, which is eight hours behind UK time, means a lot of working out of normal UK business hours, and a lot of travelling. I try not to adjust fully to the temporary time zone. I keep fit by running, and I make full use of a suite of communication technology. My iPad, iPhone and laptop go everywhere with me!



[www.moog.com](http://www.moog.com)

# FOR YOUR DIARY

ONLINE: [WWW.MIDLANDSAEROSPACE.ORG.UK/EVENTS](http://WWW.MIDLANDSAEROSPACE.ORG.UK/EVENTS)

## CALENDAR

### PARIS AIRSHOW 2015

Paris Le Bourget,  
15-21 June

Exhibit with the MAA at one of the world's biggest and most important aerospace trade shows: a key event for the industry.

### SC21 TASK FORCE CONFERENCE

Glasgow, 25 June

This event offers networking opportunities and the chance to meet with the ADS SC21 project team, representatives from SMEs, primes and the Ministry of Defence.

### AEROSPACE AND DEFENCE MEETINGS

Torino, Italy,  
17-19 November

Join the MAA and the Torino Piemonte Aerospace cluster for this great opportunity to get inside the Italian aerospace market.

### INSIDE DIEHL AEROSPACE

Stuttgart, Germany  
23 June 2015

An opportunity to gain an insight into international customer requirements and how they may impact onto your business strategy. A free TransNetAero event.

### UK SPACE CONFERENCE 2015

Liverpool, 13-15 July

"Space-enabled futures" is the theme of the flagship biannual event of the UK space community, which brings together important players from the entire space industry.



For further information and to book your place at an MAA event, please scan the QR code or visit [www.midlandsaerospace.org.uk/events](http://www.midlandsaerospace.org.uk/events)



## ABOUT THE MAA...

The Midlands Aerospace Alliance (MAA) is the voice of companies in the British Midlands supplying global aerospace. Its 300 member organisations range from global aerospace players to SMEs. The MAA board comprises senior managers from Controls and Data Services, Meggitt, Moog Aircraft Group, Rolls-Royce and UTAS



Actuation Systems, elected supply chain representatives and key regional partner bodies.

For additional copies of *Midlands Aerospace*, or to add your colleagues to the distribution database, please contact the MAA by any of the means below.

If you have a query or suggestion that you would like to make, please contact the MAA.

T: +44 (0) 2476 430250  
F: +44 (0) 2476 430251  
E: [info@midlandsaerospace.org.uk](mailto:info@midlandsaerospace.org.uk)

## NEW MEMBERS

The MAA welcomes the following new members

### ADI GROUP

Kings Norton, West Midlands  
Multi-discipline engineering solutions.

### EXACTAFORM CUTTING TOOLS

Coventry  
Manufacture of advanced PCD cutting tools.

### FISHER SMITH LLP

Ringstead, Northamptonshire  
Supply of Machine Vision system.

### IBM

Warwick  
Technology and consulting solutions for the aerospace industry.

### IMPREGLO UK

Tamworth, Staffordshire  
Specialist coating applicator.

### JOSS ENGINEERING

Leicester  
Manufacture of aircraft fasteners.

### LGG

CHARLESWORTH  
Malvern, Worcestershire  
Precision injection moulder.

### MICROJET PRECISION SERVICES

Nottingham  
Manufacture of components by 2D and 3D water jet cutting.

### MPI AVIATION

Telford, Shropshire  
Specialist aviation recruitment.

### ORCHARD ENVIRONMENTAL SYSTEMS

Wolverhampton, West Midlands  
Design, manufacture and installation of wet process equipment.

### PORVAIR PLC

Kings Lynn, Norfolk  
Specialist filtration and environmental technology group.

### SPECIALIZED SHOT PEENING

Nottingham  
Shot peening and blasting services.

### TATA TECHNOLOGIES

Coventry  
Aerospace engineering services.

### TRAINING 2000

Blackburn, Lancashire  
Group training association providing courses and apprenticeship programmes in aerospace.

### VAULT IP

Leamington Spa, Warwickshire  
Engineering IP law firm.

### VERIFY EUROPE

Mancetter, Warwickshire  
Outsourced product verification and delivery assurance services.

Become a member of the MAA and join the 300+ other companies and organisations who are already enjoying the benefits of belonging to one of Europe's largest aerospace industry trade groups. It costs your company only £395 per year if you are in the Midlands or £590 if not.

For information about membership in the MAA, go to our website: [midlandsaerospace.org.uk](http://midlandsaerospace.org.uk) or contact the MAA office.

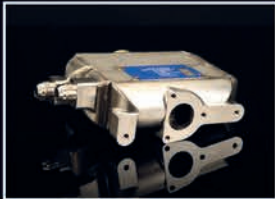


[www.midlandsaerospace.org.uk/join](http://www.midlandsaerospace.org.uk/join)



midlands aerospace alliance

# UTC Aerospace Systems was proud to sponsor the MAA 2015 conference



## Engine & Environmental Control Systems

Marston Aerospace provides a wide range of heat transfer and fluids management products and services for the commercial aerospace markets, motorsport and electronics industries.

**Marston Aerospace**  
Wobaston Road, Fordhouses  
Wolverhampton WV10 6QJ  
United Kingdom  
Tel: +44 (0)1902 572777

## Actuation and Propeller Systems (APS)

APS is a global leader in actuation and propeller design and manufacture for commercial and military aircraft. With facilities located worldwide APS has a truly global reach which provides design, manufacture, maintenance and support.

**Actuation and Propeller Systems**  
Stafford Road, Fordhouses  
Wolverhampton WV10 7EH  
United Kingdom  
Tel: +44 (0)1902 624644

