



midlands aerospace alliance

MIDLANDS

# AEROSPACE

ISSUE 46. SUMMER 2018

MAGAZINE

## CELEBRATING 10 YEARS OF NEW TECHNOLOGIES

FARNBOROUGH AIRSHOW 2018 ISSUE



A decade of new ideas from  
supply chain companies

See page 10.

### HOT OFF THE PRESS

The winners of the first ever Midlands Aerospace Alliance Awards for Excellence are in! Turn to page 12 to discover who they are.

### VIEW FROM THE NORTH WEST

Manufacturers are boosting productivity with collaborative clusters – page 13



## NEWS ON THE WEB

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

→ Dunlop Aircraft Tyres has completed a £1.5m ATI-approved project to develop and test next-generation aircraft tyres.

→ PCB Manufacturer, **Amphenol Invotec**, was one of three selected from 11 finalists to win the Sharing in Growth 2018 All STAR showcase Integrity Trophy.

→ A £7m investment sees **Icon Aerospace**, in partnership with landlord, Strawsons, transform a Victorian building into a 21st century state of the art manufacturing facility.

→ **Naysmith Group** transfers its shareholding of Metal Process Services Ltd to fellow shareholders to boost investment for long term growth.

→ High performance components manufacturer, **Mettis**, enjoys rise in turnover and profits and is creating 20 to 25 new jobs to cope with growing business demand.

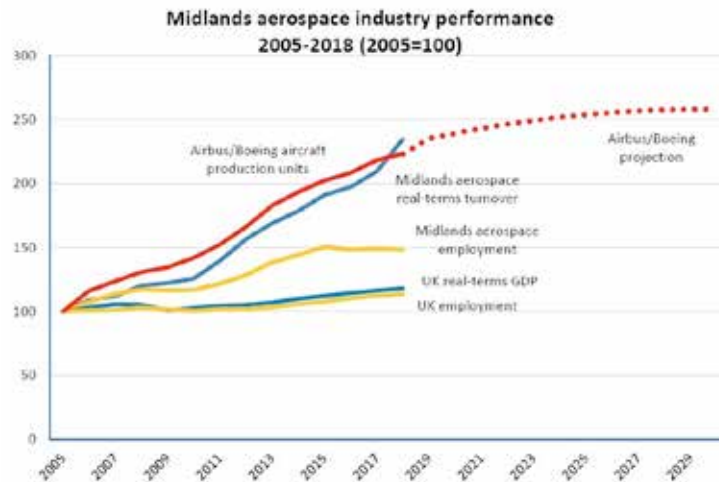
## NEW SURVEY RESULTS REVEAL LATEST STATE OF THE INDUSTRY

↘ The results from the MAA's latest survey of member companies are in. Carried out every year, the survey enables the alliance to truly keep its finger on industry development by tracking current growth trends.

This year's results show that the Midlands aerospace cluster is continuing to rapidly grow. Business turnover has increased by 20% in the last two years alone, further building upon the continuous growth that has been demonstrated over the last 13 years.

The increase comes as no surprise to the alliance, as the Midlands tracks, among many other things, the growth of aircraft output by Airbus and Boeing.

"As the Midlands industry, led by Rolls-Royce, is chiefly a supplier of engines, components and parts for Airbus and Boeing passenger



aircraft, it's only natural that the industry's business turnover rates should reflect the growth experienced by Airbus and Boeing too," said Dr Andrew Mair, MAA Chief Executive.

Interestingly, the survey has also revealed that while turnover has grown steadily, employment within

the industry has flattened out due to a combination of factors, including skills shortages, investment in automation, productivity increases and some offshoring to low-cost countries.

## BOOK YOUR PLACE AT THE MIDLANDS' PREMIER BLACK-TIE DINNER

↘ Join the Board of the Midlands Aerospace Alliance at the MAA's second annual black-tie business networking dinner on October 11.

Members of the aerospace and defence industry will gather at the Council House in Birmingham for an evening of business networking.

For more information about the forthcoming event, which will feature a VIP keynote speaker and VIP after-dinner speaker, contact Anne Esterson on 02476 430250. To book (£140 for MAA members and £160 for non-MAA members) visit <http://www.midlandsaerospace.org.uk/events/MAA-dinner-2018>

## SAVE THE DATE: AEROSPACE FORUM SET TO RETURN TO BIRMINGHAM

↘ Following the huge success of the first three-day forum held in Birmingham last year, the Aerospace Forum is set to return to the second city in 2019 for more of the same, if not better.

Last year's event attracted 400 delegates, 250 companies, 12 countries and involved 3,900 B2B meetings and an international summit.

**NEXT YEAR'S AEROSPACE FORUM WILL TAKE PLACE FROM MARCH 19 TO 21.**

Following the MAA Annual Conference on Day One, the event will provide two days of structured B2B meetings for customers and suppliers to meet. **For more details, turn to the back page.**



# FARNBOROUGH: PREPARING FOR TAKE-OFF ONCE AGAIN



The Farnborough International Airshow is back for another year and it promises to be even bigger and better than ever before.

As one of the largest events of its kind for the global aerospace industry, FIA18 will play host to more than 1,500 companies from across the world and span six exhibition halls.

Since being the location of the first powered flight in Britain, Farnborough represents a long history rich in pioneers; where visionaries meet cutting-edge innovation. And it's this unique combination of history steeped with pioneering insight that makes it such a show-stopper. On that note, here's a quick overview of some of the new attractions visitors can expect to see at this year's show:

## MIDLANDS AEROSPACE RECEPTIONS

You are cordially invited to join the MAA team, Midlands exhibitors and MAA members at one of our three networking receptions during the show, all 11:30am to 1pm on the MAA stand (Hall 1, Stand 1330), each seeing the award of one of the first Midlands Aerospace Awards for Excellence and the announcement of upcoming activities and opportunities.

### Monday

Business Development reception

### Tuesday

New Technology reception

### Wednesday

Supply Chain Performance reception

We look forward to seeing you there!

## AEROSPACE 4.0

What does the future of aerospace look like? Discover the answer to this question, and others just like it, in the Aerospace 4.0 zone. Sponsored by Deloitte LLP, the area will shine a spotlight on a range of advanced digital technologies, including:

- Cloud computing
- Internet of Things
- Autonomous robots

## THE FINN SESSIONS

The FINN Sessions (Farnborough International News Network) is a new feature to FIA, which will provide a forum to share and discuss the major topics and trends that are affecting the aerospace industry now, and in the future.

**THE SHOW RUNS FROM JULY 16 TO 22. THE FIRST FIVE DAYS ARE TRADE-ONLY; THE WEEKEND OF JULY 21 AND 22 ARE OPEN TO THE PUBLIC. VISIT THE MAA AND OUR EXHIBITORS IN HALL 1, STAND 1330.**

# FARNBOROUGH 2018

SEE US IN **HALL 1, STAND 1330**

## EXPANDING ROLE IN AVIATION MARKET

**Spincraft** and **Enginetics** are at Farnborough to showcase manufacturing processes and hardware components integral to their expanding roles in the aviation market. Spincraft's current Airbus contract includes single-piece and machined lipskins for A320NEO and A350 nacelles. This complements earlier A320NEO awards of the geared turbo fan engine, and five-piece exhaust plug and nozzle sets.

Enginetics' extensive metal-forming and precision machining capabilities support a broad range of next generation engines, including GTF and LEAP.

To support increased volume, a new 7,246 square metre Spincraft facility opened in 2016. The plant, located in the US state of Wisconsin, will specialise in aluminium close-tolerance aviation components.

In addition, £1million has been invested in Spincraft's Newcastle plant. The investment has enabled the plant to expand its capacity and in-house vertical integration capabilities within the aviation and space markets. The newly-built cell includes CNC forming, machining, CMM inspection, fluorescent penetrant and robotic surface finishing. ETG believes offering its customers full turn-key manufacturing solutions is crucial to meeting their long-term needs.

Together, Spincraft and Enginetics make up Standex International's Engineering Technology Group. With six facilities throughout the UK and US, the group provides global manufacturing solutions via collaborative engineering efforts. Precision metal forming technologies are supplemented with vertically integrated manufacturing processes to support aviation, defence and space system markets.

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## WE DEVELOP, YOU MAKE IT FLY

Celebrating its 50th anniversary in July, **GMT Aerospace** is a well-known family-run company with experience in the field of vibration, shock and noise control.

Headquartered in Bühl, Germany, the company employs more than 1.000 experts in design, development and production globally.

GMT's aircraft division is one of the newest facilities, ensuring GMT is capable of complying with the very latest technical requirements and quality standards demanded by the aerospace industry – GMT has proven to be a reliable partner of the aviation industry for more than 20 years.

Focusing on the development and production of shock-absorbing rubber-metal parts, as well as structure-stabilising elements, GMT's dedicated team of experienced developers meet customers' challenges and requirements on a daily basis.

Over recent years, the company has developed several new components that have set the benchmark for aviation standards amongst respected airplane manufacturers. It's currently developing the new EN Standards Tie Rods (EN4693/EN4694/EN4695).

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## GLOBAL ONE-STOP-SHOP

**Coventry and Warwickshire Aerospace Forum (CWAFF)** returns to Farnborough, having received assistance through the European Regional Development Fund from Coventry City Council's Business Support Programme.

The funding is specifically being used to help raise CWAFF's profile, enabling members to strike new business deals and promote Coventry and Warwickshire manufacturing to an international market at this year's show.

Boasting 13 engineering and manufacturing businesses that service global aerospace customers, CWAFF recorded an average growth of 20 per cent in turnover in 2017, adding £13 million revenue to the collective £65 million turnover generated in 2016.

CWAFF provides world-class products and manufacturing processes, encompassing working with local schools, colleges, universities and research centres to bring through aerospace's next generation of workers.

Jason Aldridge, CWAFF Chairman, said: "The niche offering of our members means CWAFF is uniquely positioned to offer a one-stop-shop for larger aircraft companies."

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## LEADING SUPPLIER SERVING LEADING NAMES

**Alloy Heat Treatment** serves the leading names in aerospace from its premises in Dudley.

Leading-edge technology enables the company to deliver a wide range of aluminium heat treatments, ranging from solution treatment and rapid quenching (ageing), to dye penetrant inspection (mechanical testing) aluminium shotblasting and metallographic inspection (setting).

Furthermore, the company can process components up to five metres long and three tonnes in weight. And its team of industry specialists can offer rapid quenching into either polymer or hot or cold water, if required.

Alloy Heat Treatment places great emphasis on seeking approvals and is particularly proud of being AS 9100-accredited and part of NADCAP. Its list of approvers for some of the biggest names in engineering includes Airbus SAS, BAe systems, Boeing, Rolls Royce and Westland Helicopters.

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## GROWING FROM STRENGTH TO STRENGTH

Midlands-based **Alloy Wire International (AWI)** will be at Farnborough after recently smashing its £10million barrier for the first time in its 72-year history.

A critical aerospace supply chain partner, supplying precision, drawn, flat and shaped wire in more than 60 nickel high performance alloys, AWI has seen sales increase by £3million since 2016.

The company, puts its sustained expansion down to three-week lead times, as well as growing demand for its Emergency Manufacturing Service. It's also invested heavily in stock, with 200 tonnes now available at any one time.

AWI provides its global clients with access to a range of corrosion resistant and high temperature performance alloys commonly used in aircraft fire detection, engine retaining rings, fasteners, high-temperature seals and engine compression springs.

Approved by BAE Systems, AWI produces 0.025mm to 21mm bespoke wire in Exotic alloys, including Nimonic 90, Inconel 600, Nimonic 75, Waspaloy, Titanium Grade 5 and Monel 400.

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## INDUSTRIAL 3D PRINTING PIONEERS

**Electro Optical Systems Ltd (EOS)** is returning to Farnborough for the fifth time this year to showcase the huge potential 3D printing has within the world of aerospace.

The aerospace sector remains a priority for EOS, both globally and in the UK. The company, is committed to delivering innovative solutions and empowering aerospace businesses to make the most of industrial 3D printing.

One of the reasons why EOS attends the Farnborough Air Show each year is that it provides the company with an incomparable opportunity to engage with like-minded leaders, who have a passion for technology and innovation.

As a world-leading technology supplier in the field of industrial 3D printing, EOS will be showcasing its capabilities, which many of the world's leading aerospace companies are already benefiting from, as well as highlighting just what can be achieved, thanks to the latest 3D printing advancements.

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## TWO SITES, ONE COMPLETE SERVICE

**Kepston Limited** will be appearing at Farnborough for the first time, having gained AS9100 Revision D approval for both of its sites in the West Midlands.

The company's Aldridge site offers sub contract precision CNC jig and universal grinding and wire eroding. Its Wednesbury site offers sub contract furnace brazing and bright annealing, using vacuum and continuous furnaces and materials, including stainless, steel and copper alloys.

With its sights set on gaining the NADCAP accreditation next year, Kepston is uniquely placed within the aerospace industry, thanks to its ability to offer a specialist sub-contract service in vacuum brazing and heat treatment.

In addition to providing industry-leading services, the company also uses the latest generation wire eroders, with clean cut technology that leaves a zero cast layer, as well as specialised high precision CNC jig, surface and universal grinding, CNC turning and milling. Catch Kepston at **Pod Number 9**.

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## FROM MOTORSPORT TO AEROSPACE

Having made a name for itself in motorsport and automotive premium brands with advanced electric motors, **Integral Powertrain** will show the aerospace sector at Farnborough what is achievable in high performance, high efficiency, and power dense electric motors.

Celebrating its 20th anniversary this year, Integral Powertrain's key focus is the design, validation and manufacture of motors and control systems for the world's Aerospace & Aviation, Motorsport & Automotive, Engineering & Defence and Marine sectors.

IP offers innovation to existing and new topologies and will be showing an example of what a 3MW generator could look like for future applications.

"The motors we have on test today – which will be on our stand at Farnborough – are achieving between 20-30kW/kg with efficiencies approaching 99%. We actually have technology in R&D today that will push this even further," said Chief Engineer, Jason King.

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# FARNBOROUGH 2018

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## A LOCAL SOLUTION WITH GLOBAL REACH

**On Logistics Aerospace** is at Farnborough to showcase the benefits of its agile logistics service to the complete aerospace supply chain, spanning Tiers 1 to 4.

A division of On Logistics Ltd, an aerospace integrator to the OEM and MRO sectors in the UK & Europe, On Logistics Aerospace has just signed a contract with Rolls-Royce, Derby.

With a combined expertise of over 28 years, its team is highly skilled and adept at working with large and small aerospace businesses across the UK and Europe.

Nick Bennett, Managing Director, said: "We're exhibiting at Farnborough to demonstrate our ability to provide the governance of a corporate logistics provider, delivering the agility and responsiveness of an SME.

"We'll be exhibiting in conjunction with the opening of a new 22,000 sq ft temperature-controlled aerospace facility, offering both long and short-term storage solutions within one mile of Birmingham International Airport in support of its customers, Rolls-Royce and UTC Aerospace Systems."

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## NEW VERSION OF VIOS

Following on from its announcement in the last Farnborough magazine, **ConsultAvila** is pleased to announce it has developed a production version of their inventory optimisation app, VIOS.

Delegates will be able to find out all about the latest version of VIOS, which has been produced in collaboration with ConsultAvila's production development partner, ValueChain, at this year's show.

The latest development is testimony to ConsultAvila's vision and ability to deliver real solutions and real results at pace. Building upon its organisation transformation experience from over 25 years in the engineering, aerospace and automotive industries, the company constantly develops and applies new thinking and emerging best practices.

As a result, ConsultAvila, who will be exhibiting at Farnborough for the fourth time this year, continually innovates its approach to designing new organisations, business processes and value chains for its client.

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**CONSULTAVILA**  
real solutions - real results - at pace

## FINDING AND RETAINING THE BEST

**Jonathan Lee Recruitment** has been supplying the aerospace, defence and aviation sectors with exceptional people for more than 40 years.

Offering Solutions Through Understanding, the consultancy provides best-in-class recruitment and talent management services to clients globally.

With many of its consultants having direct experience in the sectors in which they recruit, the company takes pride in its in-depth understanding of the skills, experience and attributes that clients require in an increasingly competitive marketplace. Operating with professionalism and integrity through a partnership approach, Jonathan Lee Recruitment provides true consultancy to its clients and candidates alike.

Lead consultant, Neil Cayley, said: "We're fully committed to supporting our clients in meeting the demands of increases in build rates and passenger growth. Finding and retaining the best people is more critical than ever to success in this skills-short market."

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## MAJOR INVESTMENT BOOSTS CAPABILITIES

**Columbia Precision** will be exhibiting at Farnborough for the fifth time to promote its enhanced capabilities following investment of over several million dollars in modern plant and human resources.

The Birmingham-based firm has recently added two new Matsuura 5-axis prismatic CNC machines, a Studer twin-spindle CNC grinder. It will also be developing two new processes: gear skiving and laser welding, and adding 3D printing to its portfolio.

Columbia has been supplying complete precision engineering solutions to demanding markets, including aerospace and defence for over 40 years.

Operations Director, Ted Yarnall, said: "We're committed to on-going investment into NPI, new technologies and training to meet engineering and customer requirements. This enables us to cater for existing and new clients' requirements while still competing with low cost economies."

The company's specialist skills include the development and production of complex prismatic parts that can be supplied in kit form and as complete tested sub-assemblies.

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## MOST TRUSTED NAME IN MATERIALS TESTING

Founded in 2003 by its American parent company, **WMT&R Ltd** is now one of the largest single independent providers of materials testing in Europe – and this year it's celebrating its 15th anniversary.

The company views its UK location as being a positive advantage in serving 'local' automotive, motor sport, and aerospace sectors as well as Europe and the world.

WMT&R uses the latest technology to deliver high quality, reliable and cost effective results. Substantial capacity enables a quick turnaround on high volume tests for a broad range of materials. Its global customer base spans the aerospace, automotive, steel, aluminium, nuclear and marine sectors and includes a mix of individual manufacturers.

WMT&R provides crack propagation, fracture toughness determinations and other mechanical testing at ambient, sub-zero or elevated temperatures. And it boasts a range of facilities for evaluating corrosion, charpy impact, chemical analysis, surface roughness determination/profiling, sample CNC machining and extensive metallographic services (includes failure analysis).

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## SYSTEMS FOR ALL TYPES OF AIRCRAFT

**Orscheln Europe** will be making its debut appearance at Farnborough to promote its range of products within the aircraft markets.

The company supplies the world with innovative solutions and manufactures different types of mechanical control and cable systems for a wide range of aircraft – commercial, business, military, fixed wing and rotary.

Established in 1946, Orscheln has built a reputation as the leading supplier of motion control systems that are produced at its AS9100/ISO9001-approved manufacturing facility.

"This recognition comes from our continuous commitment to manufacturing quality, leading-edge products and providing superior service," explains Fraser Simpson, Orscheln's Technical Sales spokesperson.

Orscheln's extensive product range includes emergency gear release mechanisms; emergency air; fuel shut off; oxygen; rat release controls and cables; parking brakes; engine control cables – power, mixture, propeller pitch and ejection seat control cables/seat adjustment cables.

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## AWARD-WINNING OUTLOOK

**AE Aerospace** will be attending Farnborough hot on the heels of being named Manufacturer of The Year for companies with a turnover below £25m at the prestigious Insider Made In The Midlands Awards, and being highly commended in the national Made in the UK finals.

The Birmingham-based company, was established in 1996 and delivers a broad range of high quality precision machined components for names, including UTC, UTAS, Bombardier, Rolls Royce AeroEngines, Control Systems & Naval.

A class-leading supplier of cost effective solutions, AE Aerospace has established a large network of OEM customers and suppliers, giving it strong foundations for continuous, strategic growth.

The company's ethos is to remain competitive by continually investing in its people, technology and processes, and later this year the business will be moving to larger premises as it embraces Industry 4.0 and implements its "Glass Factory" approach of machining by the hour.

"Our success has shown the potential for businesses prepared to invest in the skills, technologies and processes required to compete on a global stage," said Peter Bruch, Managing Director of AE Aerospace.

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## BROADENING ITS REACH

**Advantage Resourcing** has been delivering recruitment services to the aerospace sector for more than 35 years and sees Farnborough as the perfect platform to highlight its work on a much broader level.

With five offices located across the UK, Advantage Resourcing is a national provider of permanent, temporary and interim recruitment solutions. The company also offers a wealth of other services, ranging from managed services and recruitment process outsourcing programmes, to outsourced payroll and employee vetting services.

Advantage Resourcing prides itself on its flexible approach, integrity and transparency and is looking forward to showcasing its extensive expertise at Farnborough.

Chester Boothe, Client Relationship Manager, said: "We've decided to exhibit at Farnborough because we want to promote our services to a wider audience, showcase our business and really show everybody what we're about and what can be achieved, thanks to our extensive expertise."

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## G&P QUALITY MANAGEMENT HAS ARRIVED MORE THAN A CENTURY IN THE MAKING

**G&P Quality Management Group** is aiming to demonstrate its arrival to the aerospace industry at Farnborough.

G&P has made significant investments to diversify into the aerospace industry, including introducing a new management team, new facilities and developing its in-house, real-time, software platform and data engine tool, QTrak.

David Whiffin, Director of Aerospace at G&P, said: "For almost a quarter of a century, G&P has been saving the automotive industry millions of pounds, eliminating waste and reducing the subsequent impact on cost and parts availability for clients. G&P is now progressively transferring the philosophy, tenacity, skills and expertise in support of the aerospace sector."

G&P is now seeing a growing appetite from the aerospace sector for the practices so successfully deployed in the automotive sector. The industry faces many similar complex challenges seen by G&P over the past 25 years.

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**CW Fletcher** will be showcasing more than a century's experience in precision engineering that spans a diverse range of industries.

The Sheffield-based aerospace and nuclear manufacturing company offers a wide range of complex fabrications and specialises in sizes up to two metres.

Covering industry sectors ranging from aerospace, nuclear and space, to marine and power generation, CW Fletcher's extensive client base includes Kawasaki Heavy Industries, GKN Aerospace, Sellafeld Limited and Rolls Royce, to name but a few.

As well as specialising in sizes up to two metres, the company also works with a wide range of materials, including steels through to titanium alloys and nickel based materials, all produced in our expanding AS9100 Revision D approved facility.

With several NACAP accreditations to its name, CW Fletcher's has established a global reputation for delivering the right product, on plan and to the right cost. The end result: world-renowned quality and innovation, delivered by industry pioneers right here in the UK.

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## HIGH PERFORMANCE METALWORKING FLUIDS

**CIMCOOL** is exhibiting at Farnborough for the first time this year, providing another opportunity for the aerospace world to find out more about its comprehensive range of CIMCOOL fluids.

Specially formulated for high precision, difficult to machine alloys commonly found in aircraft of all types, CIMCOOL's fluids are used for a range of applications, from commercial aircraft to NASA space programmes.

The fluids are proven to create substantial improvements in terms of productivity and fulfil, or even exceed, the demands of the aviation industry.

CIMCOOL's Technical Manager UK, Matthew Jelves, said: "During this, our first participation in the Farnborough International Airshow, we are introducing a comprehensive line of products for machining and grinding aerospace alloys.

"CIMCOOL recognises aerospace as one of the most technically-driven industries in the world. CimShield and InSol technology demonstrate our understanding of the global demands to create products that are boron and formaldehyde free while providing productivity gains in today's most demanding aerospace applications."

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## BEST SKILLS DEVELOPMENT EMPLOYER

Leading manufacturer of premium quality castings, **Maycast-Nokes Precision Engineering**, is recognised as being one of the best employers in the UK for skills development.

The Essex-based foundry is the UK's most comprehensive aerospace casting facility, offering fully finished precision sand, investment and gravity die castings in aluminium and steel.

In addition to its extensive foundry and machining services, the company's NADCAP approved x-ray and metallurgy departments are certified to write and sanction bespoke process techniques for companies wishing to test the integrity of their components.

Long-standing supporters of British engineering, Maycast-Nokes is the leading SME for apprenticeship training in the East of England and operates an award-winning training scheme.

In 2016 and 2017, Maycast-Nokes was named in the prestigious Centrica Top 100 Apprenticeship Employer list, joining companies such as Mercedes Benz and BAE Systems in being recognised as one of the best employers in the UK for skills development.

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## NEW LARGE VOLUME CAPABILITIES

**G&O Springs** returns to Farnborough for the sixth year, re-invigorated by widespread major developments in its manufacturing plant and processes.

Over the last year, the company has added CNC coiling to its capabilities to reduce costs and increase capacity, with very encouraging results.

Managing Director, Steve Boyd, says G&O is looking at growth of more than 50% after adding a complete auto-coiling department. The first of three new cells has been set up and is being commissioned.

"We've always been seen by our customers as a small-volume niche supplier," he said.

"This development allows us to achieve the same excellent levels of quality in much higher and more cost-effective production runs.

"Our weekly output has risen by 46%, but we're targeting an additional 50% increase with the new system."

In the region of £375,000 has been invested to date, with additional spending set to take place later this year.

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## PUSHING THE ENGINEERING INNOVATION BOUNDARIES

**MJ Sections Ltd** will be appearing at Farnborough for the second year running.

The company will be showing examples of its pioneering work including its latest engineering innovation that's designed to cut lead times and costs. Among its latest investment into new capabilities, include the introduction of 5-axis laser cutting, which will be implemented from July this year.

MJ Sections Ltd supplies precision-formed sheet metal fabrications and machined components to the UK and global aerospace markets, providing a fast and proactive response to its customers' needs. And it's proud to include global airframers and engine makers amongst its customers.

Currently undergoing a major expansion programme, the company's portfolio of parts include rolled rings, rolled stringers for airframes, precision sealing rings/wires/honeycomb rings, pressed brackets and fabrications, machined parts made from turning and milling (3 and 5 axis).

It also offers a diverse range of special processes – all NADCAP approved – including welding, NDT, vacuum heat treatment and vacuum brazing.

MJ Sections' latest engineering innovation is to replace (traditionally) expensive machined forgings with sheet metal rings (and hold critical tolerances where needed). The driving forces behind these are the significant lead time and cost reductions that will be made, where the finished product could actually cost less than the forged starting material/ring.

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**SIGMA DRIVES PRODUCT INNOVATION**

Leading aerospace manufacturer, **Sigma Components**, is working in partnership with OEMs and Tier 1 suppliers on new technologies to drive innovation and environmental performance in the aerospace sector.

Mark Johnson, founder and CEO, said: "Thanks to technology, multi-site capabilities, capacity and our focus on lifecycle management, our innovations offer a real step change for future aircraft environmental performance."

Sigma's world-class centre for new product introduction allows the team to look at the full product lifecycle – from initial R&D and NPI to full production – whenever a new product is devised.

Johnson added: "Being able to offer this in-house capability means we can take an idea from initial concept – testing that idea with customers and securing development funding – right through to devising the method, tooling and production procedures, then honing these before moving into full production. This work is also supported by our Chinese facility, which is increasingly taking on its own NPI work, not simply delivering new products developed in the UK."

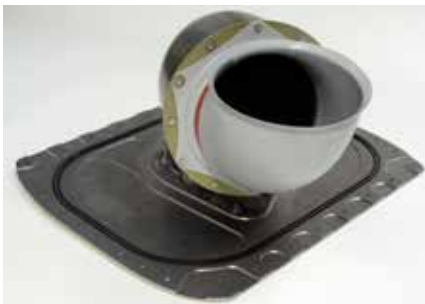
Sigma's New Product Introduction and R&D team, comprising dedicated design engineers, fabrications and pipe engineering specialists, CNC programmers, commercial engineers, project managers and even engineering interns, invests in its own R&D, working closely with customers to innovate and add value.

The R&D team is already revolutionising component design with its SigmaLite range of lightweight composite and additive-manufactured components, while the NPI team is delivering exciting new parts for the BR700NG, XWB and A350 programmes.

Sigma will be showcasing its SigmaLite range, including new products and works in progress from Sigma's on-going R&D programmes, at Farnborough on stand 1330, in Hall 1. These include, composite pipes (COMPipe), lightweight end fittings and composite drive shafts for airframe and aero-engines offering weight savings of more than 50% versus traditionally-manufactured components, providing a real step change for future aircraft environmental performance.

The company's R&D programmes were announced at Farnborough Air Show in 2014, with lab tests demonstrating that the thermoplastic composite pipe is capable of withstanding operating temperatures of up to 240°C, operating pressures of up to 450 psi and a typical engine operating environment, including fireproof requirements under certain fluid flow conditions. The flagship technology is currently undergoing application-specific testing, with results expected towards the end of the year.

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Mobilising Nasmyth's rich technical knowhow

# CELEBRATING 10 YEARS OF NEW TECHNOLOGIES

Everyone has ideas. Many make the headlines, some even make history. Others get rejected, are forgotten or fail to get heard at all. But what if great ideas are being missed?

We know just how many amazing ideas people are coming up with, at work, every day at every tier of the aerospace industry. The best ideas don't all come from the top. Many ideas may seem small but, collectively, they can help us overcome the challenges our aerospace industry faces to design more fuel-efficient aircraft at a time of unparalleled growth in the number of aircraft being manufactured, uncertain economic conditions and intense global competition.

The Midlands is home to one of the largest aerospace industry clusters in the world so naturally it's teeming with exciting new ideas. Over the last ten years, the MAA is proud to have helped more than 50 companies access £8m in funding and expert help to bring new technologies to market. Our support has helped them add more value, become more competitive and move up in the industry by developing intellectual property that they own.

It's often assumed that lower-tier supply chain companies should focus solely on efficiency initiatives and that R&D isn't for them. The truth is, these organisations are often full of great ideas but lack the resources to develop them. With the

right support, their ideas can be turned into better products or improved manufacturing processes that can really take off.

Companies across the Midlands aerospace cluster are continually competing to be positioned on the aircraft programmes of the future. Developing new capabilities, processes and technologies is vital to stand out. To enable more companies to do this, the MAA supports companies in all the different stages of their projects.

For complex structures and precision welding company, Nasmyth Technologies, difficulties in manufacturing a make-to-print legacy combustion chamber component in a highly competitive market presented a difficult choice; this was to either decline the work, accept a high attrition rate arising in particular from three troublesome processes, or invest in finding solutions, working with the customer, GE Aviation, to seek design changes where necessary.

Nasmyth decided that, whilst the business case might not at first seem very attractive, there was a strong case for helping the customer, which was committed to continued support of the engine. The company came to the MAA for support and, after being accepted for a grant from the NATEP programme, they were soon on their way to developing a solution.

Working closely with partner Hucknall Sheet Metal, Nasmyth carried out research into the three processes - welding,

graphite bonding and thermal barrier coating of a perforated surface – all of which were having a negative impact on combustion chamber throughput. Alternative new processes were successfully developed for each of these areas, which were presented to the customer. For Nasmyth Project Leader Mac Fletcher, the project had added benefits: “This project helped show our customer that Nasmyth is more than a make-to-print company and can add value through innovation. We firmly believe this underpins the development of a mutually beneficial long-term relationship”.

The MAA is pleased that more and more Midlands manufacturing companies, like Nasmyth, are coming forward. “Even if at first they don’t think R&D and new technology is for them – “that’s the domain of the big boys” – everyone wants to do things better, and R&D is just improving things in a systematic way,” says MAA Supply Chain Technology Director Bridget Day.

The MAA’s hands-on approach to supporting companies makes all the difference, especially when working through numerous barriers and challenges on the way to success. Our MAA Technology Group, chaired by Rolls-Royce’s Robin Hill, reviews and offers advice on project ideas from germ to fully-fledged project. Our Technology Managers support and mentor companies at every stage and take a collaborative approach. Companies benefit from accessing the expertise of a team that has spent decades in the aerospace industry between them. They can get help with project management, financial control and, crucially, getting potential customers to hear about the new technologies or new manufacturing processes they’re developing. Some companies have gone on to establish ongoing relationships with contacts at leading aerospace companies such as Airbus, Boeing and Rolls-Royce which ensures opportunities continue to come to them in the future.

Says MAA Chief Executive Dr Andrew Mair, “we’re proud of all the companies that have developed new technologies or new processes over the past ten years, many of which are already seeing real results such as a changed perception of them in the market place, a new respect from customers, and increased sales as their new ideas are implemented. One of the things I’ve learned during this time is just how deep the well of fresh ideas is within our aerospace supply chain. It’s a privilege to be part of helping transform these concepts into real competitive advantage. However, there’s a lot more work



to do to ensure more projects get support and what we call ‘bottom-up innovation’ really takes off.”

To celebrate, the MAA has compiled over forty success stories from the last ten years in a new booklet called ‘The New Technology Catalogue’. We hope they’ll inspire you to work with some of these brilliant businesses and to talk to us if you have a great idea you’d like to develop.

Ideas are our future. Together, we need to keep making them happen.

## GOVERNMENT CO-INVESTS

We are grateful to Government for co-investing in our technology development programmes and projects over the last decade: Advantage West Midlands and ERDF for ATEP 1 and ATEP 2; BEIS, AMSCI and Finance Birmingham for NATEP. Thanks too to our sister regional aerospace alliances and national organisation ADS with which we have worked to deliver NATEP projects!

# RECOGNISING SUCCESS

WINNERS OF THE FIRST ANNUAL MAA EXCELLENCE AWARDS

## AWARDS GET OFF TO A FLYING START

Three industry-leading companies have set the benchmark for excellence after becoming the first ever winners of the Midlands Aerospace Alliance Awards for Excellence.

This year is the first year that the awards, which have been created by the alliance to recognise excellence in business development, supplier performance and technology development, have been made. Winners were recommended by the three MAA Working Groups that focus on these areas.

### THIS YEAR'S WINNERS

**Category:** Award for Excellence in Supplier Performance  
**Winner:** Hucknall Sheet Metal  
**Awarded by:** MAA Supply Chain Performance Group, chaired by Annette Rothwell

#### Why they won

This award has gone to Hucknall Sheet Metal in recognition of how the company's performance has helped its aerospace business grow significantly in recent years.

A great case in point is how the company has provided one of its customers, Rolls-Royce, with Fast Make support by making newly-designed engine parts quickly so the development of new engines can be accelerated. This service also provides Rolls-Royce with rapid response support, such as helping to manufacture components for a period to enable Trent XWB production to continue uninterrupted during production ramp-up.

**Jason Thorpe, Managing Director of Hucknall Sheet Metal,** said: "We're very honoured to win such a prestigious award. It's a tribute to the hard work and dedication from the team in providing complete customer satisfaction."

**Category:** Award for Excellence in Technology Development  
**Winner:** G&O Springs  
**Awarded by:** MAA Technology Group, chaired by Robin Hill

#### Why they won

Redditch-based G&O Springs led its first ever R&D project as part of the MAA's ATEP programme, starting in 2009.

G&O recognised that because there was little empirical test data for springs manufactured from special aerospace alloys, customers like actuation systems makers inevitably tended to be conservative, with high design margins leading to larger-than-required springs and heavy housing. After their research project was complete, with results validated by the Institute for Spring Technology, customers such as BAE Systems and UTC Actuation Systems are now able to develop smaller lighter aerospace components.

**Steve Boyd, Managing Director at G&O Springs,** said: "We're honoured to win this award, it means everything to us. We've put a lot of hard work in over the last year to implement new technology.

"We don't feel like we deserve the award, if the truth be known, because we're doing what we've always done. It's come as a bit of a surprise to us, but it's nice to be noticed for how we're working hard to improve."



The excellent Red Arrows – also based in the Midlands

**Category:** Award for Excellence in Business Development  
**Winner:** MJ Sections  
**Awarded by:** MAA Business Development Group, chaired by Wendy Stopher

#### Why they won

MJ Sections have received the award for their successful international diversification strategy, which is allowing the company to rapidly grow with existing Midlands customers while developing links to new customers at the same time.

Not only has the company's business turnover risen by 50% in recent years, but MJ Sections has achieved approval from US companies, Pratt and Whitney and GE Aviation, as well as starting to supply a UK company with parts for the new LEAP engines for French engine maker, Safran.

**Craig Fullwood, NPI Manager at MJ Sections,** said: "We're honoured to receive such an award, it's fantastic to be recognised by such a superb organisation as the MAA for our success. Our MD has worked tirelessly to keep MJ Sections heading in the right direction and breathed a new lease of life into the company, which has seen us reach another level in a relatively short space of time.

"We couldn't achieve any of this without the hard work of our dedicated and loyal teams here in Netherton and Halesowen – we feel very lucky to have such hard-working employees."

### WHAT THEY'VE WON

As well as being recognised for being 21st century champions of excellence, the winners will:

- **Receive an award** – in honour of their achievements that will be given to them at this year's Farnborough International Airshow
- **Be taken to lunch** – at this year's Farnborough airshow
- **Have their award officially presented to them** – by an aerospace VIP guest at their site.
- **Receive two free places** – to the MAA Dinner on October 11th at the Council House in Birmingham.

## THE VIEW FROM THE NORTH WEST



### *Working together to boost productivity*

*Dr David Bailey, Chief Executive Officer of the NWAA, reveals how a group of like-minded member companies are working together to improve their performance – and how the region's Primes and Tier 1s are helping.*

For the past year or more, we have been setting up a cluster of members of the North West Aerospace Alliance that have pledged to work together to improve their performance. The NWAA has a history of helping our companies like this, having achieved a great deal with our ASCE (Aerospace Supply Chain Excellence) programmes some years ago. We are calling our new initiative the "North West Aerospace Cluster of Excellence (ACE)" and we are linking it firmly to the UK's Aerospace Growth Partnership and a new iteration of the well-regarded SC21 (Supply Chains for the 21st Century) programme.

The NWAA is leading the cluster, with the active support of our national organisation ADS together with BAE Systems, Safran Nacelles and Boeing; most recently Rolls Royce has also come on board. Eleven of our supply chain companies, including some of

*"The AGP's UK Aerospace Supply Chain Competitiveness Charter describes how industry challenges the UK aerospace supply chain to engage actively in structured continuous improvement."*

our best-known firms, agreed to form the cluster in June 2017, and they all signed up to the AGP's Aerospace Supply Chain Competitiveness Charter. The Charter describes how industry challenges the UK aerospace supply chain to engage actively in structured continuous improvement, through programmes such as SC21 Competitiveness + Growth, to become sustainably globally competitive, undertake the new cross-sector "NMCL" Capability Assessment and develop an investment business plan capable of achieving a recognised national standard of performance.

So far we feel we are making great progress. Rolls-Royce joining further strengthens the Prime and Tier 1 support for the North West ACE, recognising and supporting North West supply chain companies in their quest in improving productivity and increasing competitiveness in the regional, national and global aerospace industry. Five companies have now undertaken the two-day NMCL assessment, and are moving through assessment to receive their final investment business case for improvement.

The cluster members have not only benefited from user groups and knowledge sharing thus far, but we are pleased to have welcomed mentors from BAE Systems, Safran Nacelles and Rolls-Royce. These mentors will add great value to the programme and the companies

participating as part of the cluster. The aim of the mentor is to support their designated cluster company through the NMCL process and in implementing the findings from the investment business case.

The mentor will offer support and guidance to the senior team at their company and in some cases, also at operational levels. They will work with the companies to ensure they are on track with their plan in becoming more competitive within their markets. The provision of mentors as an 'in kind' contribution by the region's leading aerospace manufacturing organisations is unique to our ACE programme and further builds on the successful approach of the NWAA's earlier ASCE programmes.

We have offered our support to the MAA's Supply Chain Performance Group led by Annette Rothwell of Esterline, who I know have been looking at what we are doing to see if something similar can be done in the Midlands.

If it sounds interesting to you, why not contact Andrew Mair and his team at the MAA? Email: [info@midlandsaerospace.org.uk](mailto:info@midlandsaerospace.org.uk)



[www.aerospace.co.uk](http://www.aerospace.co.uk)

## PROFILE

VIEW FROM THE MAA BOARDROOM

# “Aerospace supply chain businesses need to talk to and understand each other to get best value”

*Peter Bruch, Managing Director at AE Aerospace, believes that there is a world of opportunity out there for those who want to work hard to achieve their goals, and who have the right attitude.*

### WHERE DID YOU GET YOUR START IN AEROSPACE?

After gaining an Honours Degree in Mechanical Engineering, my first ‘proper’ job in Aerospace was when I joined British Airways Engine Overhaul at Heathrow in 1989. I was initially a Production Engineer supporting the Fuel Systems and APU cells.

### WHAT WAS THE MOMENT THAT CHANGED YOUR AEROSPACE CAREER?

At BA, I joined the transition programme moving the Heathrow division of Engine Overhaul to the facility in South Wales. There were a number of project related issues that I started getting involved in and fixing. By accident, I created my career, which has involved fixing projects and turning round departments, leading on to full company turnarounds.

### WHAT PART OF THE JOB DO YOU MOST ENJOY?

Autonomy to get on and make things happen. This was always ‘interesting’ when I worked in corporate companies and owner managed SMEs, but since owning AE Aerospace we have been able to implement some of the plans and ideas to move forward rapidly. At AE, I’ve also learnt how long things can take when you’re an SME and how hard you need to work!

### WHAT DO YOU SEE AS THE BIGGEST CHALLENGE FACING SUPPLY CHAIN COMPANIES IN THE MIDLANDS?

It all comes down to attitude, whatever you do. Sadly, there seems to be a belief these days that individuals are ‘owed a living’ and that if you’re not doing as well as you want, then someone else is causing the problem. When this spills over into companies gearing up for the fourth industrial revolution, it can lead to reduced productivity and reduced competitiveness if we have outmoded attitudes. With the global marketplace in aerospace becoming increasingly competitive, every link in the supply chain needs to be working collaboratively and effectively.



*“With the global marketplace becoming increasingly competitive, every link in the supply chain needs to be working collaboratively and effectively.”*

### WHAT IS THE BEST ADVICE YOU HAVE RECEIVED?

I wish that I could have met with either of the first two gentlemen who are attributed with the quotes below, but my mentors have quoted them to me:

W. Edwards Deming: ‘In God we trust, all others must bring data.’ Or the shortened version, ‘Speak with Data’, which is a Lean term.

Henry Ford: “Think you can, think you can’t, either way you will be right.”

And from Jeremy Clarkson, who I have worked with: “How hard can it be?” and “What could possibly go wrong?”

### WHAT ADVICE DO YOU OFFER TO YOUNG PEOPLE/NEXT GENERATION?

There’s a great wide world of opportunity out there for those who want to work hard and achieve their goals. Again, it’s all down to attitude. The world is no

harder or easier place than it’s ever been, just different. And it will be different again for the generation that follows you.

### WHAT IS THE BEST/MOST REWARDING PART OF SITTING ON THE MAA BOARD?

Being able to help fellow SMEs and guide OEMs and Tier 1s on how to do business together, better. Our relationship is vital to the UK industry. If aerospace supply chain businesses talk to and understand each other to get best value, we will win over adversarial, lowest cost cultures.

### HOW DOES IT FEEL TO BE CROWNED MIDLANDS MANUFACTURER OF THE YEAR?

Surprising, shocking, lots of emotions. We know that we’ve come a long way and we’ve got an even greater distance to go. We’re never satisfied with what we’ve achieved, especially in this sector where there is always a drive for continuous improvement and innovation. It was a really nice accolade, and great to be recognised. But, we can’t lose focus on the day job of providing quality products for our customers, a safe and secure working environment for our staff and positive cash flow and profit to reinvest in the business.

### WHAT IS THE FUTURE ASPIRATION FOR AE AEROSPACE?

Very exciting. Our rapid growth has meant that we’ve now run out of space and machining capacity at our Dymoke Street site. We are about to announce our move to a new factory in the Birmingham area, which will take place in autumn, and a further £1m investment in machine tools.

We intend to keep investing and growing to meet our customers’ capacity and capability requirements and to work towards our vision of a transparent factory operating model.



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

# FOR YOUR DIARY

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

## CALENDAR

### The MAA organises more than 20 events a year

#### CYBER SECURITY FOR AEROSPACE SUPPLIERS

19th September  
AMTC Coventry

Cyber security is important for aerospace suppliers. The MAA's Business Development Group has organised this special event for members.

#### UK AEROSPACE ADDITIVE MANUFACTURING IN THE SUPPLY CHAIN (2)

23rd October  
AMTC Coventry

Understand how the DRAMA project could benefit your business and support your additive manufacturing journey.

#### WORK WITH YOUR MAA PEERS TO IMPROVE PRODUCTIVITY

11th July  
MAA offices

Join a cluster of like-minded manufacturers and work together to improve your quality and delivery performance with active support from our big aerospace companies.

#### MAA ANNUAL DINNER

11th October  
The Council House,  
Birmingham

Join the Board of the Midlands Aerospace Alliance at our second annual black-tie business networking dinner.



For further information and to book your place at an MAA event, please 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 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  
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E: [info@midlandsaerospace.org.uk](mailto:info@midlandsaerospace.org.uk)

## NEW MEMBERS

The MAA welcomes the following new members

#### BASE MATERIALS

*Whetstone*  
Manufacturer of pattern and tooling materials.

#### COVENTYA

*Wolverhampton*  
Speciality chemical products for electroplating and surface finishing.

#### ECM DEVELOPMENTS

*Lincoln*  
Specialist in electrochemical machining technology for machining of complex forms.

#### HARWIN PLC

*Farlington*  
Supplier of interconnect solutions for PCB and in-the-box applications.

#### INTEGRATED TEST SYSTEMS

*Coventry*  
Offering a complete turnkey solution for Test Rigs and Test Equipment.

#### JWA TOOLING LTD

*Leicester*  
Specialist in subcontract precision engineering, tooling and fixture design and manufacture.

#### KINETIC ENGINEERING

*Worcester*  
Specialist in high volume production of high tolerance, complex machined components.

#### MAJENTA PLM

*Worcester*  
Supplier of Siemens PC software solutions and services.

#### MARKETING DERBY

*Derby*  
The inward investment agency for Derby.

#### MIE SOLUTIONS UK

*Redditch*  
A leading provider of MRP productions control software.

#### MTI WELDING TECHNOLOGIES

*Kingswinford*  
Manufacturer of friction welding systems.

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 regional bodies. It costs your company only £520 per year if you are in the Midlands or £725 if not.

#### WHAT CAN THE MAA DO FOR YOU?

A three-fold strategy guides the MAA's activities.

- Sharing knowledge and information
- Delivering expert support to members
- Leading coordination of shared strategy

For information about membership of 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)



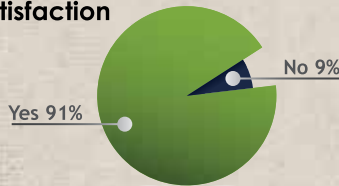
midlands aerospace alliance

## MARCH 19-21, 2019

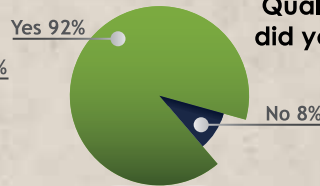


Supply chain event exclusively based on pre-arranged meetings between buyers and vendors.

Overall satisfaction



Quality of the attendees:  
did you meet companies  
that you selected?



“Participants can expect excellent business opportunities, with the MAA Conference and B2B meetings combined into one exciting Forum”

Andrew Mair, Chief Executive,  
Midlands Aerospace Alliance.

**KEY  
FIGURES**



**300**  
Companies



**15**  
Countries



**5000**  
Meetings

Some of the 2017 key participants:



Rolls-Royce

MOOG



UTC Aerospace Systems

Registration: [www.birmingham.bciaerospace.com](http://www.birmingham.bciaerospace.com)

Organized by:  BCI AEROSPACE

