



midlands aerospace alliance

MIDLANDS

# AEROSPACE

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MAGAZINE

FARNBOROUGH AIRSHOW 2014 ISSUE

## FIGHTING SPIRIT



HONOURING THE MIDLANDS CONTRIBUTION TO FIRST WORLD WAR AVIATION – PAGE 3

Rob Leigh/Shuttleworth Collection

### THE MAA AT FARNBOROUGH

Highlights of members' displays and news – P3-8



### THE FACES OF NATEP

Meet your Regional Advisory Panel – P10



### THE ACADEMIC POINT OF VIEW

The benefits of working with industry – P14



## NEWS

### ON THE WEB

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

→ **Nasmyth Group** has been ranked as a *Sunday Times* Profit Track 100 company.

→ **Fuchs Lubricants** has received the prestigious ADS SC21 Silver Award.

→ **Hexagon Metrology** takes measuring technology to the next level with the launch of the Leitz SIRIO Xi.

→ **Alloy Heat Treatment (AHT)** has installed a drop bottom solution treating oven designed for intensive use up to 550°C.

→ **Invotec** has won new ESA approval for its flex rigid PCBs.



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



Rolls-Royce's Colin Smith addresses the audience of 160 delegates.

## SURVIVE AND PROSPER

*Second annual MAA conference delivers wide range of thought-provoking views.*

→ The future of the aerospace supply chain, especially small manufacturers, came under the scrutiny of six leading figures in UK civil and defence aerospace on 18 March at the second MAA annual conference.

The six keynote speakers, representing industry and government, presented a wide range of thought-provoking views to an audience of 160 at the Rolls-Royce Learning and Career Development Centre in Derby.

Speaking to the theme 'Survive and prosper', they highlighted many of the challenges facing the UK aerospace industry from the bottom up if it is to

maintain its pre-eminent position in aerospace among European nations and its second-place global ranking behind the USA.

Midlands supply chain companies attending were left with food for thought as they plan their own futures.

Our keynote speakers were:

- Colin Smith, Director of Engineering & Technology, Rolls-Royce
- Andreas Schell, President, Actuation & Propeller Systems, UTC Aerospace Systems
- Philip Dunne MP, Minister For Defence Equipment, Support and Technology, MoD
- Sir Brian Burridge, Vice-President

- Colin Sirett, Head of Research and Technology, Airbus in the UK
- Robert W Thomson, Partner, Roland Berger Strategy Consultants

Also speaking were Craig Askew, VP/GM Power and Hybrid Business Unit, TT Electronics, and Jason Aldridge, Managing Director, Arrowsmith Engineering (Coventry) who gave delegates their own thought-provoking presentations based on their experience managing small companies.



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



## UK SUPPLIERS GIVE THUMBS UP TO BERLIN

→ UK exhibitors at the ILA Berlin airshow in May returned with a positive impression of the German aerospace industry and optimism that their marketing efforts will pay off.

Five companies – Castle Metals, Delcam, Spincraft, Trittech and Westmoreland Mechanical Testing & Research – joined the UK Aerospace Suppliers Village for the three-day event, widely recognised as Europe's third largest airshow. The

stand was managed on behalf of ADS and the regional alliances by the MAA, and supported by UK Trade and Investment.

Marketing manager Emma Burgess said the international 'meet-the-buyers' event, exclusively for International Suppliers Centre exhibitors, was again a show highlight.

UK Business and Enterprise Minister Michael Fallon (pictured at left) spent time talking to exhibitors during his visit to the show.

BUSINESS INNOVATION PROGRAMME



# MIDLANDS BUILDS ON HERITAGE



Modern and heritage aircraft share the skies over southern England this July as Farnborough 2014 commemorates the start of the First World War and salutes a century of flight.

The Midlands Aerospace Alliance (MAA) and its members – exhibiting in Hall 1, stand B14 – are proud to be part of this year's event and see it as a continuation of the region's involvement dating from the earliest days of flight.

Wartime accelerated the development of aviation, and Midlands factories answered the call to produce aircraft for Britain's war effort.

Wolseley Motors was one of those. Primarily an engine and car maker, Wolseley turned its manufacturing expertise to aircraft. It produced in Birmingham 431 examples of the Royal Aircraft Factory SE5A in 1917-18 – including F904, which graces this issue's cover.

Across the region, companies such as Austin Motors of Birmingham, Standard Motor of Coventry, the Birmingham Carriage Company, Clayton & Shuttleworth of Lincoln, Brush Electrical Engineering of Loughborough and Sunbeam Motor Company of Wolverhampton also designed, constructed or assembled aircraft for the war effort.

"Our members here at Farnborough 2014 are the modern face of a relationship that runs deep," said MAA Chief Executive Andrew Mair. "They represent the engineering and manufacturing expertise that abounds in the Midlands. Many continue an old tradition with cross-overs between aerospace and many other high-value industries that benefit from capabilities built on aviation.

"Some of these companies are exhibiting with the MAA at Hall 1, Stand B14 and welcome the opportunity to talk about their heritage and current work."

● F904 is owned by the Shuttleworth Collection ([www.shuttleworth.org](http://www.shuttleworth.org)) and can regularly be seen flying in the collection's airshows.



## AMFIN ADDS SECOND SHIFT

Midlands-based **Abbey Metal Finishing (AMFIN)** returns to Farnborough flush with news of growing capacity and demand for its range of finishing, testing and inspection services.

The company's wide range of finishing operations has enabled AMFIN to sign a long-term agreement with a major customer to supply a large number of parts for Airbus A350 aircraft.

AMFIN is increasing capacity at its Leicestershire processing and finishing plant – which it describes as one of the world's most modern – to two shifts.

Growth in market demand for etch inspection has also led the company to enter a new joint venture with Atfin, a leading supplier of etching services, based in Peissenberg, Germany.

AMFIN now has a dedicated cost reduction and improvement team. One of its first projects was to install two temperature-controlled vending machines for masking tape, to monitor usage, control costs and increase shelf life.

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## WIN A WORK OF LASER ART

Derby-based **Accrofab** is introducing culture to its stand at this year's Farnborough. The class-leading precision fabrication and machining company is offering visitors the chance to win a laser-cut work of art such as the portrait of Frank Whittle (above).

It's a graphic illustration of the Nadcap-accredited laser cutting, welding, heat treatment and NDT processes which Accrofab combines with fabrication and machining performance to serve aerospace customers around the globe.

"Building on successful contract wins with major aerospace customers, we'll be demonstrating how we're helping top names in the business bring more efficient engines into service faster than ever," said Accrofab's Nick Willers.

Accrofab provides an end-to-end source, adding value across all phases of the product lifecycle.  
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## AERNOVA KICKS OFF UK BUSINESS

**Aernnova Engineering** is at Farnborough to publicise its new UK office and the advanced engineering services it is offering across aerospace, defence and other sectors.

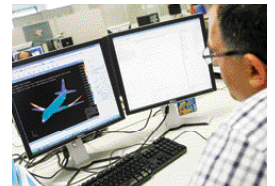
Headquartered in Spain, the Aernnova Group has a large talent pool of more than 1,000 design/stress engineers to meet the growing worldwide demand for its services.

It has invested heavily in the latest composite manufacturing facilities (ATL) in Spain to produce the Airbus A350 horizontal stabiliser, pressure bulkhead and other major aerostructures.

Also in production, for Bombardier, are the C-Series centre wing box and tail cone; for Embraer, the design and build of the KC-390 flaps, ailerons and rudder are in progress.

UK Country Manager Steve Welburn said: "Aernnova's engineers are in great demand – many work in-country supporting OEM colleagues with specialist design and stress skills."

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## Over 40 surface treatments and finishing operations on one site



## WORK HEATS UP FOR AHT

**Alloy Heat Treatment (AHT)**, the UK's only specialist in the heat treatment of aluminium alloys, is at Farnborough to promote its expanded capability resulting from investment in new machinery.

Dudley-based AHT has installed a drop bottom oven designed for intensive use up to 650°C. It will be used to apply heat treatment to semi-finished aero parts to increase their strength, endurance and life span.

New Projects Director Ian Perks said the investment was driven by the desire to continue serving the aerospace industry with the latest equipment and technology, coupled with a general return to confidence in manufacturing. "The investment will further reduce lead times for our customers and bring growth to our company," he said.

With the new oven becoming operational in June, AHT moved to two shifts. "We have the capability to improve our service to our customers and work with new ones," said Perks.

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## FAST ORDER TURNAROUND

Midlands-based **Alloy Wire International (AWI)** has developed an enviable reputation as a world leader in manufacturing precision drawn, flat and shaped wire in high-performance nickel alloys.

Approaching its 70th anniversary, the company is constantly developing its manufacturing range to ensure a comprehensive and competitive service. Customers benefit from quick manufacturing lead times and no quibble returns.

"This truly special service ensures your wire is manufactured within days and shipped by the fastest route to your door," said Sales Executive Tom Mander.

"We produce wire to your exact specification in just the quantity you require. With no minimum order quantity, our manufacturing policy saves you money because you don't have to buy large quantities.

"With more than 60 tonnes of raw material in stock, all traceable to primary source, we manufacture wire of all shapes and sizes to suit individual requirements."

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## INNOVATIONS IN MEASUREMENT

**Blum-Novotest** is highlighting its innovative, high-quality measuring and testing technology at Farnborough this year.

The company boasts more than 45 years of experience in aviation and other challenging industrial sectors.

Its Measuring Components division develops and produces tactile and optical measuring systems for workpiece measurement and tool setting applications in machine tools. The Measuring and Testing Technology division develops and manufactures production line integrated measuring and testing solutions, while the Novotest division engineers and produces test stands for gearboxes, pulse and burst test stands.

Company President Alexander Blum said: "In the recent years we entered the global market with both proven as well as innovative new products. Our distributors consist of system integrators which guarantee full service capability for our products.

"Today a network of Blum-Novotest subsidiaries and system integrators provide full service coverage in all major markets of the world."

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## INVESTMENT PAYS DIVIDENDS

Tooling design and build specialist **BWP Technical Services**, part of the Erodex Group, is reaping the rewards of major expansion and investment with a record volume of orders.

Serving many industries but best known for its aerospace work, BWP provides a one-stop shop for all tooling and workholding design and build requirements.

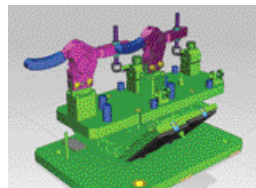
The company's new Midlands office, opened last year, gives it greater flexibility in serving Midlands and Northern-based customers and a base of operations for the project management team.

BWP draws on its design experience to provide robust, affordable, and innovative solutions – and then to project manage from a pool of approved toolmakers to ensure quality, cost effective builds. Major Account Manager Martin Boon said: "Not limiting our build teams to any one manufacturing facility, not even our own, enables me to provide my customers with optimum quality and delivery performance."

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## CUSTOMISED CONNECTIONS

In operation since 1915, **Cinch Connectors** is a specialist designer and manufacturer of interconnect solutions for harsh environment applications.

"We have great expertise with connectors and harnesses for expanded beam fiber optics, power, signal, RF, hermetics, and EMI/EMP suppression filter connectors. With many civil and military standardised and qualified connector products on offer, Cinch is well positioned to meet your interconnectivity needs," says Cinch's Michael O'Farrell.

Our expanded beam fiber optic connectors and harnesses are used in land-based tactical, sub-sea, aerospace, unmanned vehicle, and military communications systems worldwide, with our EMI/EMP filter connectors being used extensively in civil and military aerospace applications, including sensors, controls systems, communications and flight critical systems.

"Cinch Connectors operates numerous manufacturing facilities throughout the world. Our core operations include fully automated computer controlled assembly adding competitive value, consistency, and reliability to the products we produce."

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## NEW DIMENSIONS

Birmingham-based **Columbia Precision Ltd** is using Farnborough to promote its increased machining capacity and capabilities, the result of £2m in investment earlier this year.

Columbia's latest additions include the Mazak Megaturn Nexus 900M and Matsuura MAM72-63V 6 Pallet Machine, as well as the latest in Delcam and OneCNC Software.

Ted Yarnell, Columbia Precision's Operations Director, said the new machinery gives Columbia the capability of manufacturing much larger components and engine parts, as well as increasing its milling envelope and unmanned running time to more than 520 hours a week.

Meanwhile, its Special Processes division has added Nital Etch to its list of processes, increasing the capacity of its Magnetic NDT to 600mm in length.  
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## INVENTORY OPTIMISATION

Inventory management is a specialisation of **ConsultAvila**, and the Midlands-based company and its development partner CANDA Systems have just received funding under the National Aerospace Technology Exploitation Programme (NATEP) to develop a visual management software tool (VIOS) that will enable the optimisation of inventory.

Described as a multi-echelon software tool enabling data visualisation and active and dynamic inventory planning and control, VIOS will incorporate best practices in inventory management, delivering the solution by 'cloud' technology.

"We will be working closely with two aerospace manufacturing end-user and test partner companies," says company director Dudley Wood. "In our experience, business can release more than 15% of the working capital while maintaining and even improving service levels.

"The VIOS project will encapsulate and build on our expertise to create a simple, visual, end-user toolset enabling businesses to continuously optimise their inventory."  
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## SMES PUNCH ABOVE WEIGHT

Three members of the **Coventry and Warwickshire Aerospace Forum (CWAF)** are expanding the envelope for SMEs in the area of funded collaboration.

They have linked up with the Coventry-based Catapult centre, the Manufacturing Technology Centre (MTC), in a successful application for project funding under the new National Aerospace Technology Exploitation Programme (NATEP) – a first for an SME cluster.

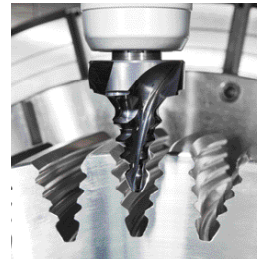
Forum Chairman Jason Aldridge, managing director of Arrowsmith Engineering, said the MTC has worked with the 13-member CWAF as it provides a link and unified voice to a tightly focused group of SMEs.

Collaborating with the MTC has given the Coventry and Warwickshire supply chain access to a world-class research establishment that usually works with large corporations.

"If the project is successful, it will result in a unique and innovative manufacturing process that will be advantageous to the whole UK aerospace industry," said Aldridge.

"It is imperative that the supply chain evolves and utilises the research establishments – and CWAF is leading the way."

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## EXPANDED SERVICES

Birmingham-based **Delcam Professional Services (DPS)** is using the show to promote its expanded range of services for aerospace manufacturers and MRO companies.

The range of support from DPS is mainly intended to help companies whose own engineering resource, whether people or equipment, is needed to maintain existing operations.

The Delcam services can vary from supplying extra design, programming and machining resources through to developing dedicated software to automate existing manufacturing methods or to establishing completely new turnkey processes to produce novel designs.

Recent developments from DPS include a novel five-axis machining method for the creation of complex 'fir-tree' profiles in components for turbo machinery, and advances in remanufacturing of high-value metal components, such as turbine blades.

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## WELCOME TO THE SUPPLY CYCLE

Packaging and logistics specialist **DS Smith**, with its Industrial business centred at Hinckley in the Midlands has taken 'supply chain' to its logical next step and is promoting the concept of the 'supply cycle' at Farnborough.

With 190 locations across 25 countries it believes that supply chain tells only half the story and misses the bigger picture. For everything that goes one direction in the chain, something moves the other way too, including inter-related processes – hence the supply cycle.

"The biggest challenges of a supply chain are actually circular," said Marketing & Innovation Director Peter Foot. "When you start thinking about the whole cycle, you begin to see the complete picture and the opportunities for efficiencies"

"We call this Supply Cycle Thinking. It's a unified approach for every area of our business and it makes our customers' lives easier by creating simplicity in otherwise complicated supply chains."

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 Quality for National Aeronautics and Space Administration  
 Emergency Manufacturing Service available



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 Quality for National Aeronautics and Space Administration  
 Emergency Manufacturing Service available

## NEW USES FOR PLASTICS

**Fibracon-Insoll** is using Farnborough to highlight the use of engineering plastics in CNC machined components.

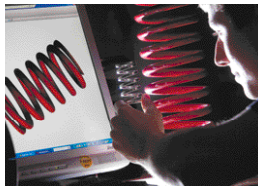
Plastics made from a range of high performance materials such as PTFE, Victrex® PEEK 450G, Torton® PAL and Vespel® Polyimide display a unique combination of wear resistance, self-lubricating properties and densities lower than metal while performing at temperatures up to 400°C.

Parts made from high temperature plastics are already used extensively in aircraft for bumpers, wear pads, bushings, seals and shrouds.

Fibracon-Insoll sales director Mike Fryer said the company provides impartial guidance on material selection to help with new component design. "We then provide a made-to-order prototyping service to prove our component performance, through to full scale-up production."

"Our tailored service for machined plastic components is used by a range of supply chains."

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## G&O ACHIEVES BRONZE AWARD

Supply chain company **G&O Springs** returns to Farnborough in celebratory mood – the Worcestershire-based spring specialist has just resubmitted for its Bronze award under the SC21 programme.

Managing Director Steve Boyd is particularly proud of his team for putting in the effort. "SC21 demonstrates to our customers that we can deliver to an exceptional standard on a regular basis."

Aerospace and other precision applications are G&O's forte. "We work closely with our customers, constantly evolving our manufacturing, test and supply methods to keep them ahead of the competition."

G&O expects its recent Sikorsky supplier approval, encompassing heat treatment special process, will open up a wealth of opportunities globally.

Once again, G&O is issuing its 'champagne challenge' – a bottle of bubbly to anyone with a problem relating to springs that G&O can't solve. Said Boyd: "We have yet to give away a bottle for a challenge that hasn't been beyond the laws of physics!"

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## MANAGEMENT BY EXPERTS

Supply chain management specialists **Global Partner Solutions (GPSi)** knew from its inception in 2006 that success depended on deploying only the best aerospace personnel available. As the business took off, so too did the need to expand to meet the world-wide requirements of its growing list of clients. This led to opening offices in key aerospace hubs, the latest being in the UK.

Global Partner Solutions focus on helping aerospace customers and suppliers overcome the challenges of ramp-up and meet their delivery, cost and quality obligations.

GPSi also works tirelessly with both customers and their suppliers to stabilise and grow their supply chains.

"We are recognised for our ability to provide high quality service, top notch personnel, fast response, global presence and willingness to do whatever it takes to improve our customer's core business," said UK representative Elizabeth Monk.

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## GÜDEL CLEANS UP IN AEROSPACE

Laser cleaning technology for the aerospace industry is the focus at Farnborough of **GÜDEL**, the global manufacturer of automation technology.

The Coventry-based company, part of the GÜDEL Group headquartered in Switzerland, is highlighting systems built from standard modular equipment and incorporating laser technology from partner company CleanLaser GmbH.

GÜDEL has a long history of innovation. Significant improvements in manufacturing costs, reliability and production rates have resulted from the support it has delivered to aerospace OEMs and primes in areas including mould cleaning, material handling, component preparation/finishing and assembly.

GÜDEL plans to increase its coverage within aerospace by utilising its range of well proven and diverse standard modular equipment.

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## SEAL SOLUTIONS FROM ICON

Nottinghamshire-based **Icon Polymer** is a world leading producer of highly engineered and technology-driven polymer based solutions used in sealing, containment, propulsion and protection systems.

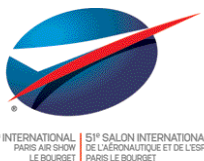
The company has a wide portfolio of products that improve performance, enhance the safety of personnel, optimise efficiency and protect the integrity of assets operating in extremely demanding environments.

"We have a strong heritage of gaining customer, product and material approvals throughout our 150-year history," said Chief Executive Tim Price.

"By focusing on our core values, providing engineering excellence, investing in technology and capital, alongside a keen awareness of providing commercial value, we have become the partner of choice on many new high-growth platforms."

Icon Polymer's technology-driven solutions can be applied across a diverse range of applications. Its global supply chain and highly flexible manufacturing facilities are designed to position the business to deliver maximum value to all its stakeholders whether customers, employees, suppliers or investors.

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**UNDERSTANDING REQUIREMENTS**

Farnborough exhibitor **Jonathan Lee Recruitment** has been supplying the engineering and manufacturing sectors with exceptional people for more than 35 years.

The Midlands-based recruitment company offers 'solutions through understanding' – which is a key to its success.

As many of its consultants come from engineering backgrounds, including the aerospace, defence, manufacturing and electronics sectors, Jonathan Lee takes pride in its in-depth understanding of the skills, experience and personal attributes required for specialist roles. It operates with professionalism and integrity, taking the time to listen to clients and candidates to find each their perfect fit.

"Our clients and contacts within the aerospace and aviation industry are really looking forward to this year's event," said Matthew Heath, Managing Consultant at Jonathan Lee Recruitment.

"We have been consistently busy during the past 12 months within the aerospace and defence sectors and it appears the need for experienced, qualified personnel is as strong as ever."

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**TOOLS FOR ALL MATERIALS**

Cutting tool maker **Kyocera Unimerco** specialises in the design and manufacture of cutting tools to machine all aircraft materials, from the softest aluminium to the hardest nickel alloys and most abrasive CFCs.

By grouping a typical aircraft into focus segments, the company has developed the correct tool materials, geometries and coatings to optimise production solutions and improve component accuracy in all materials and applications.

This means that its customers can benefit from a standard or special tooling solution that is application-specific, competitively priced and delivered within a short period of time, enabling them to produce higher-quality components faster.

For airframe, Kyocera Unimerco specialises in drilling, surface machining and trimming of composite components and assembly machining of composites and stack materials.

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**FROM CASTING TO FINISHING**

Farnborough exhibitor **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 rapid prototyping techniques, it can supply castings on short lead times for initial trials or fit, form and function tests. "We can then supply production quantities, from hard tooling, of machined, finished and assembled castings," said Sales Director Dave Blower.

Maycast-Nokes complements its extensive on-site casting, machining and testing facilities with finishing and assembly capabilities.

"We can offer most of the common surface treatments associated with aluminium components," said Blower. "We can also carry out mechanical assembly work."

"This means from one PO clients can source fully machined and finished castings assembled into complete assemblies or sub-assemblies which can go straight to the production line."

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**MGS PRECISION GOES GREEN**

Midlands-based precision manufacturing company **MGS Precision** is promoting its 'green' credentials at Farnborough.

The company claims the distinction of being one of the few companies in the UK that has adopted 'green machining' for efficiency, prolonged tool life and better control of waste.

MGS, formerly MG Sanders, has built a reputation for innovation with its Densamet range of heavy tungsten alloys, developed and manufactured in-house at its Stafford site. "It's the backbone of our business," said Aerospace Sales Manager Paul Atkinson.

MGS tailors alloys to client specifications, adding metals including iron, nickel and copper before sintering to suit the requirement. The metal is supplied in bars or plates, depending on the most productive shape for the end purpose.

"We machine the metal when it is still quite soft, at the pressing stage before sintering, to near net shape," said Atkinson. "After sintering, we finish off the machining."

MGS supports its robust machining capability with a cycle of investment.  
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**PRE-MET FOCUS ON GROWTH**

Metal component and sub-assembly specialist **Pre-Met Ltd** is at Farnborough with a story of consolidation and growth.

"We are entering a new phase," says Mark Smith, Sales and Marketing Manager. "We're building on our success by monitoring and reacting to new market trends and entering new market sectors that closely match our core competencies."

Aerospace is one of Pre-Met's most important markets. At the show, the company is highlighting its capabilities in metal pressing and stampings, proto-typing, component and tool design, and sub-assembly. A notable feature is the company's low volume capability.

These services, combined with outstanding on-time delivery and excellent quality credentials, make Pre-Met a supplier of choice to the aerospace supply chain.

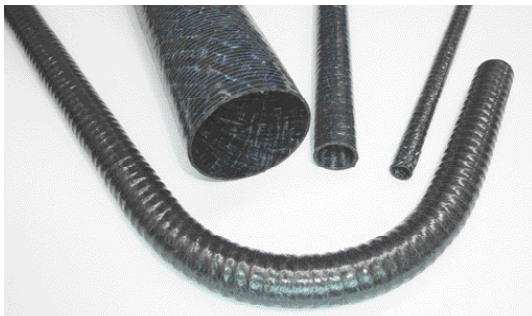
"With more than 70 years of experience, we believe we are at the forefront of our industry," says Smith.

**Contact: Mark Smith**  
**T: +44 (0) 1527 510535**  
**E: mark.smith@pre-met.com**  
**www.metallpressingsandstampings.co.uk**

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### BREAKTHROUGH IN COMPOSITES

**Sigma Components'** revolutionary COMPipe makes its debut at Farnborough. Developed by Leicestershire-based Sigma in conjunction with TWI Ltd as part of a €1.8m Clean Sky-funded project, this new composite pipe reduces the weight of pipe geometries by up to 50% while operating at the heat and pressure of aero-engine environments.

Testing is due for completion this autumn.

Mike Andreae, Director of Technology and Improvement at Sigma Components, said: "We believe this project is a great example of how UK aerospace companies are delivering ground-breaking innovations, which will have global impact.

"We have already received interest in COMPipe and the technologies involved from other markets and there is definitely potential for spin off projects in due course."

During the two-year project, Sigma's design and project management engineers worked closely with subcontractors, research organisations and universities to optimise a

process to manufacture thin-walled, non-porous composite pipes that can be reformed into the exact 3D shapes required for aerospace applications.

The team also developed new end fittings to connect the pipes with other engine components using metal and polymer materials.

Mark Johnson, Managing Director of Sigma Components and Avingtrans aerospace division, said: "As well as being a significant step for the aerospace industry, this marks a very important step-change for Sigma Components.

"COMPipe puts Sigma at the forefront of technological developments in the industry and building an R&D pedigree."

Sigma Components is a leading manufacturer of precision-engineered components for the aerospace sector. It supplies a range of pipes, ducts and fabricated assemblies, specialist aerospace fasteners and composite components to Tier 1 OEMs. **Contact: Mike Andreae**  
**Tel: +44 (0) 1455 445500**  
**Email: mikel@avingtrans.aero**

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

### STEELMAKER FOR AEROSPACE PLANS FOR NEW TEST FACILITY

**Acciaierie Valbruna** has been producing steel for close to 90 years, and is at Farnborough to promote its work with the global aerospace and defence industry.

The company produces more than 180,000 tonnes of stainless steels, duplex steels, nickel alloys and titanium long products per annum from three production plants, situated in Vicenza and Bolzano, Italy, and in the USA at Fort Wayne, Indiana.

It offers more than 700 special steel qualities in a range of sections.

Valbruna's ISO-accredited quality systems, philosophy and expertise permeate every aspect of production. This ensures the highest quality steel which meets the increasing demands of its high-tech markets with improved performances, reliability and machining consistency.

The company's extensive and strategic distribution network is its cornerstone in a global market, allowing not only a worldwide commercial presence, but also a continuous feedback with customers.

Its UK service centres are located in West Bromwich, Sheffield and Manchester.

**Contact: Keith Underhill**  
**T: +44 (0) 7721 920531**  
**E: keith.underhill@valbruna-uk.com**  
[www.valbruna.co.uk](http://www.valbruna.co.uk)

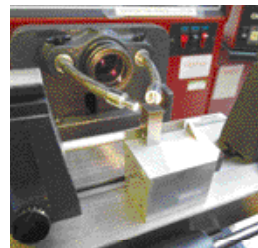
Oxfordshire-based **Westmoreland Mechanical Testing & Research Ltd** (WMT&R) is expanding its testing capabilities and capacity in 2014 with a move to a larger, modern test lab facility in Banbury.

This expansion will enable WMT&R to provide additional materials testing services and the substantial capacity will permit quick turnaround on high volume tests for a broad range of materials tests to aerospace and other high-specification industries.

Different to many conventional testing companies, WMT&R has the capability to pursue bespoke work for unique situations and its team of experienced and knowledgeable professionals uses the latest technology to provide high quality, reliable and cost-effective results.

Founded in 2003, it is now one of the largest single independent test laboratories providing materials testing in Europe and is accredited to UKAS ISO/IEC 17025 and NADCAP standards and many OEM approvals.

**Contact: Vinay Vaghela**  
**T: +44 (0) 1295 261211**  
**F: vvaghela@wmtr.com**  
[www.wmtr.co.uk](http://www.wmtr.co.uk)



### WOLVERHAMPTON. MAKING IT HAPPEN

**The City of Wolverhampton** is home to the largest cluster of aerospace suppliers in the West Midlands and is active in its support of the sector's growth and development.

The city takes pride in being a hub of advanced engineering with the likes of Moog (pictured above), Timken, UTC Aerospace Systems – Actuation Systems and UTC Aerospace Systems – Marston.

They underpin the Wolverhampton cluster, helping it top £300 million a year and provide jobs for more than 2,000 people, a highly-skilled, creative and adaptable multinational workforce.

Wolverhampton's aerospace cluster works in collaboration with the University of Wolverhampton, the city council and key companies in the sector. Wolverhampton encourages public and private research facilities to work with technology companies to drive new ideas and enhanced shareholder value.

**Contact: Jay Patel**  
**T: +44 (0) 7584 491216**  
**E: jay.patel@wolverhampton.gov.uk**  
[www.finditinwolverhampton.gov.uk](http://www.finditinwolverhampton.gov.uk)

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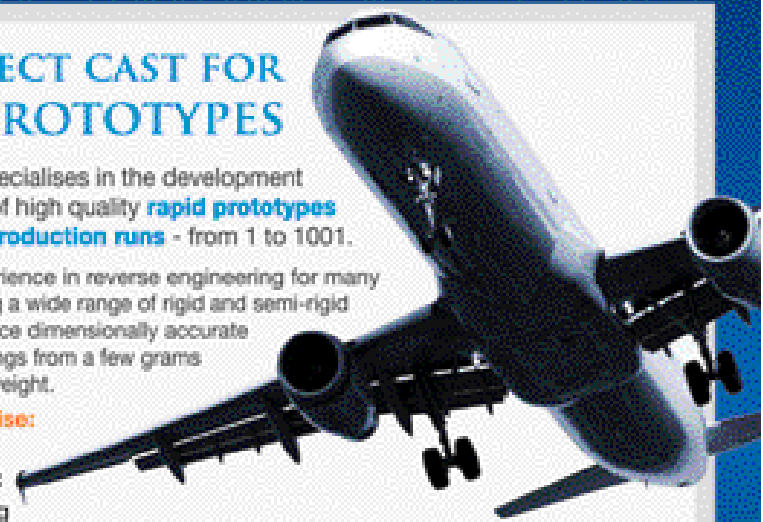
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NATEP's Regional Advisory Panels (RAP) bring together industry experts with wide expertise and experience. Meet the members of your Midlands RAP:

# NATEP IT'S A RAP

## 1. MALCOLM WHITMORE

Malcolm is a non-executive Director with Winbro Group Technologies Ltd, Coalville. He has wide experience in electrical, mechanical and control engineering and particular expertise in the design and development of special purpose machine tools and processes.

## 2. ADAM AMADEO

Adam is Engineering Director with UTC Aerospace Systems in Wolverhampton. His expertise covers the design/development of aerospace equipment and systems working at both component and aircraft level, with experience in landing gear, fuel and engine systems.

## 3. MALCOLM DIPLOCK

Malcolm is a Principal Engineer with GE Aviation in the UK, and works from his home office close to Wolverhampton. He specialises in metallic materials and manufacturing special processes, including advanced surface engineering technologies and is engaged in various collaborative R&D programmes at the national and EC framework level.

## 4. IAN GURNELL

**(non-voting)** Ian is a NATEP Technology Manager serving the regional aerospace alliances from the NATEP national office. In addition to his R&D and project management expertise, Ian has wide experience in advanced composite technologies, matrix chemistries, and



material processing. He has been actively involved in many UK and EU-funded advanced composite research programmes.

## 5. TOBY HUTTON

Toby is Manager of the Friction & Structural Materials Engineering Department at Meggitt Aircraft Braking Systems, Coventry. Toby's materials expertise includes the application of carbon and carbon composites, light alloys, steels, polymers and ceramics in advanced aerospace applications.

## 6. BRIDGET DAY

**(non-voting)** Bridget

is NATEP Deputy Programme Director, having previously been Technology Manager for the MAA ATEP programme. Before joining the MAA, she was Engineering Director at HS Marston, where her responsibilities included the management of development programmes for civil and military heat exchanger and fluid flow components.

## 7. MARK HANCOCK

Mark is Engineering Director of Meggitt Polymers & Composites based in Loughborough. Mark has extensive experience in the design and development

of military and civil aircraft ice protection systems and composite structures.

## 8. PAUL SNELLING

Paul is Head of Supply Chain Collaboration - Component Engineering at Rolls-Royce, Derby. In addition to his supply chain management skills, Paul has engineering expertise covering large civil airline avionics, civil aircraft maintenance, nacelle technologies and design, aircraft gas turbine engine technologies, and airline management.

## 9. PETER KNIGHT

**(non-voting)** Peter joined MAA in January

2014 as Midlands NATEP Technology Manager, having previously been Operations Director with ITP Engines UK. Peter's engineering expertise covers control and monitoring systems, software research and development, fluid power systems design and development and aero engine manufacturing quality systems.

## 10. DAN PRICE

Dan is Engineering Director at ITP Engines UK, based in Leicester and Lincoln. He has considerable expertise in the design and manufacture of gas turbine systems and components as

well as the design and manufacture of mechanical and aero thermal rigs.

## 11. KEVIN COOKE

Kevin is R&D Technology Centre Manager at Teer Coatings (Miba Coating Group) in Droitwich. Kevin has expertise in advanced surface engineering, including physical vapour deposition (PVD) and plasma assisted PVD, with application fields from tribology to low carbon/renewable energy components. Kevin is involved in multiple collaborative R&D programmes at both the national and EC framework level.

# NATEP ISSUES NEXT CALL FOR PROPOSALS

↘ The UK's vaunted ability to innovate is alive and well, judging by applications received by the National Aerospace Technology Exploitation Programme (NATEP).

In the lead-up to Farnborough 2014, the programme was preparing to announce that a second tranche of supply chain innovation projects has been awarded funds.

"We're continually impressed by the quality of the ideas put forward by companies not normally associated with this kind of research and development," said Bridget Day, Deputy Programme Director of NATEP. "Many proposals test the wealth of expertise among members of our Regional Advisory Panels (RAPs) which assess them – now four in England, one in Northern Ireland and one in Wales. Often their projects straddle a number of disciplines – a reflection of industrial integration at every level."

During Call 2 a total of 27 full proposals from across the country involving 64 aerospace supply chain companies and 34 primes or Tier 1 end-users were assessed by the RAPs. The Midlands RAP made its recommendations to the NATEP National Steering Board which makes the final decisions on which projects will be approved.

Meanwhile, Call 3 is open, and MAA Technology Manager Peter Knight is busy advising Midlands companies how they too can participate in NATEP. "Small companies often struggle with the bureaucracy associated with grant-funded schemes," he said. "That's why I, and my Technology Manager colleagues around the country, are here to help companies through the process.

"The NATEP application process has been set up to give small companies the best possible chance to get involved," he added. "The application form has been designed to be as easy as possible to complete."

The application form can be downloaded from the NATEP website. The deadline for submission of outline proposals under Call 3 is 22 August.

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



## 12. MARK SCULLY

Mark was until recently the Chief of Research and Technology at Aero Engine Controls, Birmingham. Mark's contribution to the Midlands NATEP Panel covered aero engine control and monitoring systems, control and automation, electro-mechanical systems, electronics, microcontrollers and electronics, signal processing and software safety critical systems.

## 13. PAT WHEELER

Pat is Director of the Institute for Aerospace Technology and Professor of Power Electronic Systems,

Faculty of Engineering at Nottingham University. He specialises in More Electric Aircraft technology, power electronics, power converters, electrically driven action systems, electrical power systems, electrical machines and drives.

## 14. JULIAN THOMAS

Julian is Engineering Director of the Power & Hybrid Business of TT Electronics, based in Lutterworth. As well as his current responsibilities in micro-electronics, Julian's experience includes heat transfer, analytical methods, software development and

specialist mechanical test rigs.

## 15. ANDREW MAIR

Andrew is Chief Executive of the MAA, sits on the Aerospace Growth Partnership Supply Chain and Technology Committees, and also chairs the Midlands NATEP Regional Advisory Panel.

He is the architect of the NATEP programme, having previously designed the successful ATEP programme in the Midlands.

## 16. DAVID WIMPENNY

David is Chief Technologist in Component Technology at the Manufacturing

Technology Centre, Coventry. He specialises in high value manufacturing methods, in particular additive manufacturing (AM), net shape (MIM, powder HIP), laser cladding, design for AM, metal powder production, characterisation and handling.

## 17. STEVE SPROSON

Steve is Chief Materials Engineer of UTC Aerospace System - Actuation and Propeller Systems based in Wolverhampton. He specialises in materials and manufacturing engineering/technology in the aerospace, energy and marine sectors.





## VIEW FROM WESTMINSTER

*“Changing economic forces... are creating opportunities for UK businesses to compete in, and export to, new markets.”*

*Richard Burden, Shadow Transport Minister and Labour MP for Birmingham Northfield, sees education as the key to growth.*

➤ A year after the launch of the Government's Aerospace Industrial Strategy, and with more than 100 years of aviation behind us, the Farnborough Airshow is a timely opportunity to reflect on the UK's industrial strategy.

As members of the Midlands Aerospace Alliance know, in 2014 British manufacturing faces huge challenges from changing economic forces. Growth in the global South and East is startling. China is increasing spending on science by 36% a year. But these shifts are also creating opportunities for UK businesses to compete in, and export to, new markets – and for people in this country to earn our way to higher living standards too.

That is the context for Agenda 2030, Labour's long-term plan for economic growth. At the heart of our plan is an 'active government'; one that promotes long-term investment and strategic direction for specific sectors, such as aerospace, to encourage long-term decision-making and sustainable growth. This is fundamental to tackling deep-seated problems in our economy – which, despite welcome recent growth, remains dangerously imbalanced.

The former Labour Government laid the foundations of the UK's industrial strategy in a sector close to my heart, the motor trade. In 2009 we created the Automotive Council, a forum uniting industry and government to drive



*“At the heart of our plan is an ‘active government’; one that promotes long-term investment and strategic direction for specific sectors, such as aerospace.”*

innovation, tackle technology challenges and meet the needs of our supply chain. It has been an unprecedented success, driving a revival in UK automotive.

I'm pleased that the Coalition Government recognised the success of the Council, and has developed similar partnerships and industrial strategies in other sectors such as the Aerospace Growth Partnership (AGP). But sadly this agenda remains very much buried in BIS. We need the engagement of all departments to deliver an ambitious industrial strategy.

Let's look at the aerospace industry. The UK has an enviable 17% of the global market share for aerospace, second only to the US. Labour wants to maintain and enhance that. With a multi-trillion order book and 27,000 new aircraft needed by 2030, there is a huge opportunity for greater growth in this high innovation, high productivity industry. But we need a highly skilled work force to deliver it.

While the AGP is leading important initiatives to develop skills – through

apprenticeship schemes and the Aerospace Masters programme – is education policy doing the same? I know many companies, particularly small ones, find taking on apprentices daunting. And all too often opportunities are not reaching the young people who need them. The Government's education policy is failing to deliver the quality vocational education to meet demand for engineering and manufacturing skills.

So it's welcome that in local areas people are getting together to do this independently. Take the Greater Birmingham and Solihull area, where FE colleges are forging a new partnership and working with the Local Enterprise Partnership to develop the range and quality of apprenticeship opportunities. It's the kind of approach Labour wants to encourage.

We will continue the work we started to build a better economy, as an active Government which listens. Where things work we will build on them. After 2015, we want to work with you to take the successful AGP and Aerospace Industrial Strategy to new heights, and build a stronger economy that works for everyone.

➔ The views expressed are those of the author. A range of political party views is carried in issues of *Midlands Aerospace*.



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## PROFILE

VIEW FROM THE BOARDROOM

# “Seeing ideas moving into industry is rewarding”

MAA board member Professor Patrick Wheeler, director of Nottingham University's Institute for Aerospace Technology, sees the pressure on academics to work more closely with industry as a positive development.

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

A. I did a degree in electrical engineering and PhD in power electronics at the University of Bristol. I came to Nottingham as a Research Fellow in 1993 and have worked my way up to Professor. About 15 years ago, we realised that new technology would be needed in power electronics, which broadly speaking is the use of electronics to control electric power, for the More Electric Aircraft (MEA). That got me heavily involved in MEA research with the major airframers and their supply chain, and this led to the creation of the Institute for Aerospace Technology (IAT).

### Q. WAS POWER ELECTRONICS YOUR FIRST CHOICE?

A. When I went into it, power electronics was out of fashion. It was the early 1990s; the mobile communication industry was booming and that's where everyone wanted to go. I thought the communications area was a bit crowded. I quite liked big electric power and there was a nice empty lab downstairs in the Department at Bristol. The opportunity to work in power electronics was there and I've never regretted taking it.

### Q. HOW HAS THE RELATIONSHIP BETWEEN ACADEMICS AND INDUSTRIALISTS CHANGED?

A. Over last 20 years, I think the need to make sure that research is relevant to industry, to helping them make money and add value to their business, has become increasingly important. I've always been commercially aware and enjoy this aspect of my work. It means the power of research has impact, is useful and generates



wealth. Of course fundamental research is still important in defining the ideas that industry doesn't yet know it needs. But as an academic, seeing ideas moving into industry and being used is rewarding. And of course as long as collaboration with industry continues to grow, we'll see it supported by UK and European funding.

### Q. ARE THERE WINNERS AND LOSERS IN THIS CHANGE?

A. I see it in a positive way. It makes research relevant and is a good use of public money.

### Q. DO POLITICAL AND FINANCIAL DEMANDS PREVENT RESEARCHERS FROM ACHIEVING THEIR POTENTIAL?

A. At the moment, in aerospace and power electronics, there is great interest in moving the technology forward and sufficient financial backing to do that. It's been a good time to be involved. We're

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*“Over last 20 years, I think the need to make sure that research is relevant to industry, to helping them make money and add value to their business, has become increasingly important. I've always been commercially aware and enjoy this aspect of my work.”*

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fortunate at Nottingham to have the IAT bringing together all things to do with aerospace R&D. Most, but by no means all, of this research sits within engineering disciplines. Most projects by their nature are very large. The IAT is one of the largest research sectors in the University and that size gives us visibility that helps project the capabilities of our organisation to external partners.

### Q. ARE TODAY'S STUDENTS UP TO THE CHALLENGE?

A. As an academic, I see it as part of my job to motivate students to want to learn. Well motivated students will learn far more. Our job is to make subjects interesting, accessible and applicable. We need to make sure that our teaching methods and our curriculum remain focused so that students come out at end of the degree process with the skills they need to work in modern industry.



[www.nottingham.ac.uk/aerospace/](http://www.nottingham.ac.uk/aerospace/)

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## CALENDAR

### NATEP CALL 3

22 August 2014

This is the deadline to get your outline funding application into NATEP: help for the supply chain to develop new aerospace technologies.

### TRADE MISSION TO ITALY

October 2014

MAA/UKTI trade mission to the aerospace industry of southern Italy, following 2013's successful mission to the northern Italy aerospace clusters.

### 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.

### VIP VISIT TO RAF CONINGSBY

September 2014

A chance for MAA members to see the Eurofighter Typhoon up close and meet the flight crews and support teams of the RAF's 3(F) Squadron. See MAA website for details.

### 24 HOURS INSIDE DUTCH AEROSPACE

6 November 2014

The fifth TransNetAero B2B meeting will be held in the Netherlands. See MAA website for more details.



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 Aero Engine Controls, UTAS Actuation Systems, Meggitt, Moog Aircraft Group



and Rolls-Royce, 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.

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### DWF LLP

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*Brierley Hill*

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### SCHIVO GROUP

*Narborough*

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### STRAALTECHNIEK INTERNATIONAL

*Sheffield*

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### VECTOR GB

*Solihull*

Supply of open development platform of tools and software components.



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

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



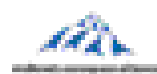
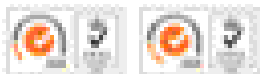
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