

PLANE TALK

AUTUMN 2021

Together Again

We're looking forward to finally welcoming you back to this year's Annual Conference.



Annual Conference

September 23, 2021

Dunkenhalgh Hotel



PLUS:

Members' news | SC21 Competitiveness & Growth

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YOUR CONTENT

Please forward all content for future editions of Plane Talk to our editor at Freshfield, Paul Tustin.

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NWAA Chairman's autumn statement

By Neil McKay



After all that we have been through across the past eighteen months, I am eagerly anticipating an autumn where we can finally expect to get together regularly at a whole series of events and workshops where we can spend time reflecting on where we are and where we need to get to as an industry. Simply being able to do that face to face will be so helpful in a way we obviously took for granted in the past.

Dialogue and communication of what is happening in all aspects of our sector is of paramount importance as we begin to digest the many and varied intentions of government, regional authorities and the primes. It is our intention therefore to draw on a variety of speakers and influencers over a number of events who are able to illustrate a background to our current situation as well as to home in on specific but important detailed elements that are relevant to our future constructive thoughts, plans and actions.

I have nothing but praise for the team here at the NWAA for the continuing of business messaging and informative support through connective media methodologies and I know many of you have found that most useful. Indeed this has become a most constructive tool for the future to aid membership support and improve contact and will enable us to be more agile in the future. All of us however have missed the close and social feature of our friends and colleagues in working activities in all that we do.

I have always enjoyed working in this interactive and stimulating way with a broad sense of a collaborative spirit mixed with determination, ability and togetherness always strongly evident here in the North West and it is a spirit that has greatly influenced me.

Due to family commitments my wife Sue and I will be moving to Hertfordshire early next year and so my time as Chairman will conclude at the year's end.

I have been a part of this organisation as a board member since 1996 and Chairman for the last 15 years and so this membership, its people and the community it serves, mean a great deal to me. I do believe we have achieved a great deal together when I look back on the previous 25 years and recall a number of momentous challenges and our responses to them.

This region's aerospace industry and the collective organisations that it constitutes are respected and recognised for the way they have evolved and responded to massive competitive and technological challenges with sterling cultural changes and a collaborative will from organisations that exemplifies a unique nature to others in the UK.

I am proud to have served this cause and have really enjoyed working with a broad mass of members as we built and developed the programmes that have been so fundamental to our growth and prestige. We took on some incredible strategic challenges that went to the heart of cultural and organisational change but took those challenges on with a 'can do' attitude and confident approach that will stand all in good stead for the undoubted challenges of the immediate future.

I have enjoyed the help and support of hundreds of people within this strong membership community and will undoubtedly miss all the innovation, drive and enthusiasm delivered with humour in a way I always loved.

Having said all that, I am still here for the remainder of 2021 and look forward to seeing many of you at the events that the team are arranging and working with you to enable our responses to the current difficulties presented to our industry.



NWAA Chief Executive's autumn statement

By Sharon McDonald

I hope that the reopening of international travel has enabled many of you to get away this year and to get some well-earned rest and relaxation. Unfortunately, we do know that the UK's traffic light system and travel restrictions has hindered the UK's aviation sector, which is recovering at just half the rate of the rest of Europe. For example, Manchester Airport's passenger figures are down 85.9 per cent with only 447,954 passengers travelling in July 2021 compared with 3,178,505 passengers in July 2019. In comparison, the Paris airports are down 71.2 per cent across the same period.

It has therefore been heartening to see how well the UK aerospace supply chain has responded to the unprecedented change that the pandemic has inflicted on the commercial aerospace market. Despite the slump in aircraft production from the two largest manufacturers (further exacerbated by the problems with the Boeing 737 MAX aircraft), there have been very few businesses that have succumbed to the impact of the pandemic. I'm sure that many NWAA members have had to go through the difficult process of re-sizing and re-shaping their businesses. I also know that many companies have been supported through the crisis by the UK Government's various business support schemes and especially the furlough.

However, we should also note that two important NWAA members have also helped to keep aerospace suppliers operating. Many NWAA members have benefited from the stability of military aircraft programmes led by BAE Systems, which has been largely unaffected by the pandemic and has acted to soften the blow to suppliers from the initial pause of commercial aircraft production. It is also clear that Airbus should be congratulated for its efforts to maintain a significant proportion of pre-pandemic production levels. In 2020 Airbus delivered 566 aircraft of which some 446 were A320 family aircraft. Whilst this represents a fall of 35 per cent on 2019 deliveries, Airbus deliveries are significantly higher than its main rival Boeing and the relatively healthy and stable production rates have helped Airbus suppliers survive the Covid-19 pandemic.

In 2020, Boeing produced 157 aircraft, significantly down from its record number of 806 deliveries achieved in 2018 although it is positive that Boeing has now delivered 154 737 MAX jets since the aircraft returned to service in November 2020.

Unfortunately, the next phase of the recovery of the industry is likely to be just as tough as the one we have been through. As aircraft production rates return to pre-pandemic levels, this is likely to cause as many problems as the downturn. In my view, this is because many companies will have been required to dip into cash reserves to ride out the downturn. As we return to growth, liquidity will be key as companies try to find the cash to invest in new machinery and resources to meet the demand for increased production. Another big concern for NWAA is that, after a period of re-sizing, where many experienced employees have been let go, bringing the workforce back up to strength will not be straightforward. We know that many of these skilled and experienced staff will have retired or moved to other sectors and we also know that the labour market in the UK is currently stretched. With so much uncertainty ahead, I believe it will be more important than ever for NWAA members to work together to solve the problems of how we build our industry back better.

In line with this, the regional aerospace alliances (North West Aerospace Alliance, Midlands Aerospace Alliance, Aerospace Wales, West of England Aerospace Forum, and Farnborough Aerospace Consortium) are working together to ensure that our members get the appropriate support to maintain competitiveness and ensure that manufacturing and high-skilled jobs stay in the UK. We are working to identify opportunities to support our members in areas such as productivity, business improvement, skills and training, and export support for the supply chain. Furthermore, the regional aerospace alliances have strong supportive relationships with our aerospace primes and Tier 1s, and we want to explore how this collaborative culture and activity could be developed further to maximise the impact to our regions and contribute to the government's levelling up agenda.

There are clearly going to be lots of challenges and opportunities ahead of us and the whole NWAA team is eager to help and support our members. We hope to welcome back all our members this Autumn with the launch of our Annual Conference on September 23, 2021. The conference will be held at the Dunkenhall Hotel, near Blackburn, and will be themed around 'Next Generation Supply Chains in the UK Aerospace and Defence Sectors'. We have an impressive line-up of high-profile speakers from BAE Systems, Spirit Aerospace and the Aerospace Technology Institute who will give us their view on the future of the industry.

We also want to welcome you back in a more social environment and for this we have arranged to hold our Annual Aerospace Ball on Friday November 12, also at the Dunkenhall Hotel. Please do join us, we promise it will be a fun night with a fantastic live band, fabulous food and great company.

The NWAA welcomes the following new members...

British Standards Institution
www.bsigroup.com

Pendle Borough Council
www.pendle.gov.uk

Sangha Metrology
www.sanghametrology.com

OUR STAKEHOLDERS



State-of-the-art Technical Centre offers advantages to Ceratizit's customers



With the official opening scheduled for Tuesday, October 12, work at Ceratizit UK & Ireland's brand new 3,600 ft² Technical Centre located on Sheffield's Advanced Manufacturing Park is reaching a climax.

A total of eight machine tools have been installed, including the simultaneous five-axis UMC-5X machining centre from XYZ Machine Tools, a Mazak Integrex I250H multi-tasking machine from Yamazaki Mazak and sliding head technology in the form of a SR-20JII B from Star Micronics GB. All these machines will be available for demonstrations of Ceratizit's extensive range of cutting tool and workholding systems. In addition, the applications team will be able to take

customer's components from drawing to finished part with the entire process optimised for maximum productivity when taken back to their own premises.

Located at the heart of some of the most advanced manufacturing facilities in the UK, Ceratizit's new Technical Centre will be a hub of learning for cutting tool technology. It will provide industry-focused seminars, individual customer process assessments, machining tests and applications training.

"From our UK office located just a few minutes away we have had the capability to support customers with cutting trials for a few years now. This development will optimise that support with a dedicated facility with machinery that replicates what our customers have available in their own machine shops," says Tony Pennington, Managing Director, Ceratizit UK & Ireland.

With the opening of the new Technical Centre, along with the ability to draw on products from the four competency brands of Ceratizit, Komet, WNT and Klenk the applications team at Ceratizit UK & Ireland can continue to develop machining strategies with customers from a wide range of industries, such as aerospace, medical, automotive and oil & gas.

To come along and see what this means for you and your company contact your local Ceratizit Technical Sales Innovations Engineer for an invitation and the chance to benefit from Ceratizit's machining knowledge and opening offers and incentives.

University Square Preston's new beating heart



The University of Central Lancashire (UCLan) has officially opened the much-anticipated University Square, part of a £60million development, also featuring a stunning new Student Centre due to open its doors for the first time in September.

Following more than 100 weeks of major construction work, a symbolic key was presented to the University's Vice-Chancellor, Professor Graham Baldwin by representatives from AECOM, Bowmer + Kirkland, BDP and Hawkins\Brown who have been involved in the design and build of both the University Square and the Student Centre.

The University Square, Preston's first public square for 70 years will become the focal point of the University, at the heart of the Preston Campus. Featuring Wi-Fi and plenty of seating, it's a place where students and local communities can come together to enjoy various University and public events.

Measuring 5,000 sqm, the University Square will play host to its first event in September when UCLan welcomes students and their families as they celebrate their graduations.

At night, the area will celebrate the city's proud heritage with motion sensitive 'light threads', symbolising cotton strands, embedded into the natural stone granite paving, creating a stunning illuminated pathway and guiding visitors from the Square, through the Student Centre and into the main campus.

The new Student Centre is a 7,304 sqm facility including a spectacular rooftop terrace, informal learning spaces and a student wellbeing support centre. Work to install internal fixtures and fittings is progressing and the Centre will be ready to welcome students for the start of the new academic year.

Commenting on the official opening, UCLan Vice-Chancellor Professor Graham Baldwin said: "This is such a proud moment for the University, for Preston and for everyone connected with this much-anticipated and highly complex project which has been delivered within budget despite unprecedented worldwide circumstances.

"Our new Student Centre represents a superb new 'front door' for the University and underlines our commitment to continually enhancing our students' experience. Work is continuing to complete the building's interior and we are on schedule to officially open the doors for the first time when our students arrive in September."

David Taylor, Pro-Chancellor and Chair of the University Board, added: "This landmark development is a great example of the proud civic role we play in Preston's continuing evolution.

"This new city gateway will be truly transformational, stimulating further economic regeneration that's already making Preston a place where people want to live, work, study and spend quality free time."

UCLan Students' Union President Zuleikha Chikh said: "We're looking forward to the new Student Centre opening and hope all students will be able to enjoy these fantastic new spaces on the Preston campus. Allowing students a central, modern and inviting point to speak to University staff will make accessing support so much easier for them. We are grateful the University has continually involved the Students' Union in the project over the last six years. We can't wait for the Student Centre and the University Square to come to life when students return in September."

The new development is the culmination of UCLan's Masterplan project, launched in 2015, which set out a vision to create a state-of-the-art, sustainable campus for students, staff, visitors and communities for years to come.

Milling expansion for difficult-to-machine materials

Dormer Pramet has launched a new generation of solid carbide five-flute end mills, specifically for dynamic milling in general machining and die and mould applications.

The company's S7 assortment covers a wide range of operations in a variety of steels, cast irons and difficult-to-machine materials, including stainless steels and super-alloys.

These latest additions, S770HB, S771HB, S772HB and S773HB, offer increased feed rates up to 25 per cent, compared with four-flute cutters. All feature a positive rake angle for smooth cutting action and to reduce the risk of work-hardening.

An AlCrN coating provides thermal stability, reduced friction, excellent wear resistance and prolonged durability, while a small corner radius and cutting-edge design gives a stable performance and prolonged tool life.

The S771HB and S773HB cutters are suitable for narrow pocketing, trochoidal slotting and profiling applications. These end mills include

a chip divider to break swarf into manageable smaller pieces, helping to reduce spindle load and increase metal removal rates. This provides a 50 per cent bigger width of cut compared to tools without a chip divider.

A neck recess helps avoid contact with the wall in shoulder operations, while through coolant improves welding resistance and enables a wide range of processes, especially for difficult-to-machine materials.

The S770HB and S772HB are more suitable for profiling, trochoidal slotting, and semi-finishing applications, offering maximum productivity due to optimal metal removal rate and reduced machining time.

Meanwhile, Dormer Pramet has added three multi-application high performance cutters within its S7 range for use on both CNC and conventional machine tools.

The new additions - S722HB, S765HB and S768 - support most common operations, such as slotting, plunging, contour milling, ramping and copy milling in various materials, including medium strength steels, stainless steels and super alloys.

These four-flute cutters have a specific tooth design for improved chip evacuation. The AlCrN and Titanium Silicon Nitride (TiSiN) coatings support longer tool life, higher cutting speeds and increased heat resistance, making them ideal for dry machining.

Finally, the global manufacturer has added a new solid carbide cutter to enhance its assortment of end mills for hardened steel above 49HRC. The S561 is specifically for high performance milling in a variety of applications, including die and mould machining.

This four-flute end mill features a specific tooth design for improved chip evacuation. A sharp cutter for hardened steel (52-70HRC), the S561 offers excellent surface finishing, while a gash land to improve strength and chipping resistance.

For more information regarding all the latest products launched by Dormer Pramet please visit www.dormerpramet.com or contact your local sales office.

Evolving from equipment manufacturer to benchmark partner

Nowadays aerospace customers are not only demanding first-class solutions which are tailor-made to their exact requirements. They also expect a deep, industry-specific expert knowledge. Rösler France supported by Rösler UK handles the numerous tasks arising from these challenges in its new department, Industrialisation.

The aerospace industry is governed by stringent technical specifications and specific, highly detailed regulations. Compliance with these requirements poses special challenges to the companies who supply capital goods and other products. The industry prefers partners who possess a deep knowledge of the respective manufacturing technologies and are familiar with all regulations and the latest technical developments. As a matter of fact, the suppliers are expected to have the same technical knowhow and knowledge of the production methods as the customers. Rösler France, the Rösler Group specialist manufacturer of aerospace shot peening and shot blasting systems, has fulfilled these demands since the beginning with many successful installations in the UK.

With the creation of the new department, Industrialisation, specialising in solutions for the aerospace industry has now gone one step further. The new team consists of

experts with deep knowledge of process and automation technologies within the aerospace industry. This integrated approach guarantees that all essential aerospace aspects are taken into consideration in the equipment concepts to make sure that the end products are turn-key complete solutions. Therefore, the result is not just a piece of hardware but a system that is in total compliance with the latest aerospace regulations and fulfils all customer-specific requirements. Such an integrated approach includes also the pre-commissioning of equipment at our production facility under actual manufacturing conditions. This allows us to quickly determine whether the equipment and/or process requires any further optimisation.

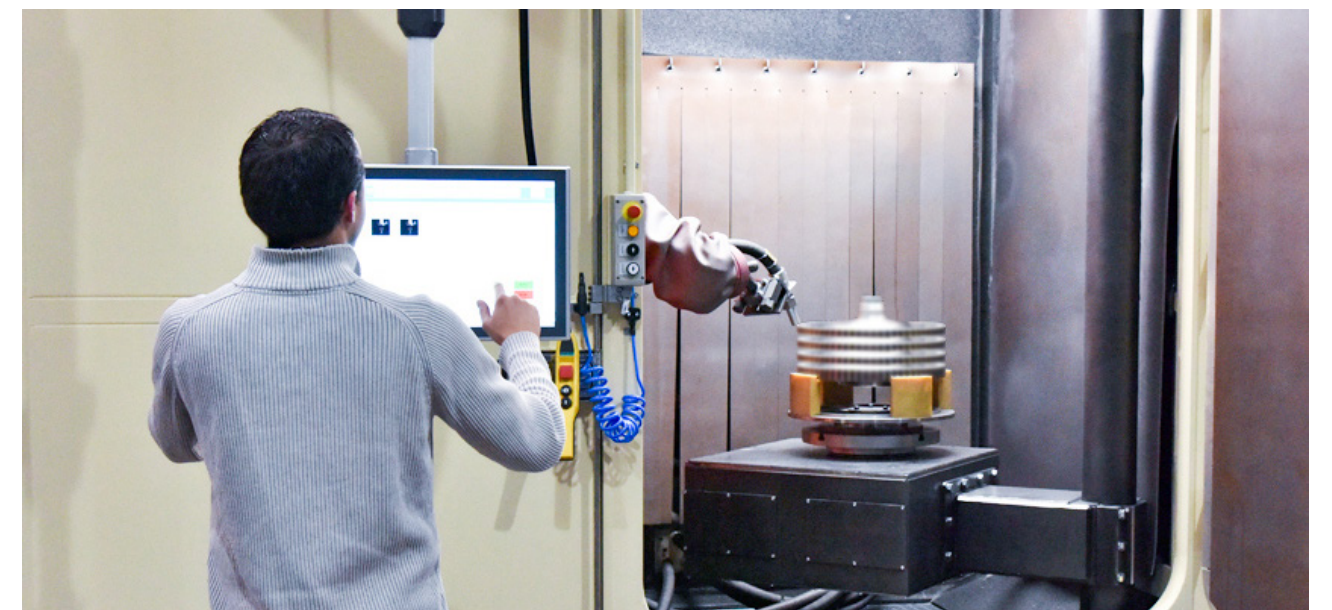
Another important function of the department is the training and qualification of the employees in internal and external manufacturing facilities of various aerospace

companies. This ensures that irrespective of where components are manufactured or by whom, they are always made with consideration to the technical level specified by the customers and with a consistently high quality.

Based in Knowsley, Rösler UK is focused on mass finishing and shot blasting technology and is a well-known and trusted supplier to the aerospace, medical and Formula 1 sectors as well as multi-national and small engineering companies.

The business has supplied equipment and systems for all types of aero-engine components, including airframe, landing gear and control system to OEMs. Thanks to the renewed ISO and new AS9100D and BS EN ISO 9001:2015 accreditation, Rösler UK can now offer sub-contracted services directly rather than customers having to invest in expensive capital plant.

Fully automatic shot peening system with robot and computer process controls



Managing turbulence: How digital solutions transform aerospace supply chains



Supply chain visibility is absolutely essential to the aerospace sector. How do strategic and fully integrated digital services lend transparency and control to your supply chain processes?

In the aerospace industry, everything needs to move in perfect rhythm and harmony, like clockwork. Since all the operations and tasks are interdependent, even a single disruption in the supply chain can cause major ripple effects like jeopardised work packages, grounded aircrafts, or increased deferred defect rate. This makes **dynamic planning and round-the-clock transparency vital** for shipments in transit.

From engines to hydraulic systems and standard line-replaceable units (LRUs) or big structural items, aircraft parts are extremely diverse, sensitive and valuable assets.

Any delays in their delivery have major cost implications for your business. It is therefore important that their storage, handling and transport gets special attention.

To ensure a smooth process it is important you have material access to high-end digital tools that help you avoid setbacks.

End-to-end visibility that empowers customers

In certain industries, standard track and trace functions are sufficient for monitoring goods and maintaining a healthy supply chain. It provides customers with information about the delivery dates and the transport progress of the shipment – helping them manage operations. In the aerospace sector, however, 360-degree visibility - down to part number (PNR) and serial number (SNR), is fundamental for a robust supply chain and proper material management. It benefits both the suppliers and their customers by capturing relevant data that promotes informed and efficient decision making.

Advanced digital solutions for complete control

Safe and efficient transportation and management of aerospace parts is crucial for the growth of your business. Digitised dashboards provide consolidated data on vendor performance and other key KPIs that you can select according to your needs. It helps you proactively plan maintenance and production, identify and minimise bottlenecks early, and optimise for costs.

Advanced technology ensures that you have access to accurate, real-time data, so you can establish a clear communication channel with your suppliers and customers. Not only does transmission of this information foster trust between different contributors, it also helps you stay one step ahead at all times – ensuring a truly transparent and collaborative supply chain for your business.

For more information about Kuehne+Nagel Aerospace digital solutions please visit <https://uk.kuehne-nagel.com/-/services/aerospace-logistics>

A dedicated partner for Aerospace



We know Aerospace + we know Logistics

We have been an active part of the Aerospace community for 30 years - with **technology** and **sustainability** at the heart of our progress.

→ How can we help your logistics needs?



North West SC21 Competitiveness and Growth Aerospace Cluster of Excellence

ACE Companies awarded £1.28m Grant funding

In the last issue of Plane Talk, we announced that seven members of the ACE have now been awarded circa £1.28M in grant funding, which they will match totalling £2.56M to support their commitment to continuous development and improvements within their organisations.

The majority of the beneficiaries have now selected their training providers and are commencing their improvement plans. We are pleased that several local training providers have been successful in being chosen. Three of the ACE members are pleased to share an update on their progress to date:

Clive Winby, Commercial Director, Silcoms states: "We have made a good start to the programme supported by our training providers The Excellence Partnership. We are focusing initially on charter one, Strategy and Leadership. Four work streams across the business have been identified and are progressing well."

Another ACE Member, Velocity Composites Ltd, had agreed on its training providers pre-Covid, so were ready to hit the ground running in December 2020. Kelly McGrath, HR Business Partner, who is overseeing the programme for Velocity, said: "Starting initially with our leadership development training with Redthorn and moving gradually on with APQP and lean training with industry forum, we have made great in-roads with the training, having completed an impressive 2000 hours of training since December."

"COVID has obviously had a significant impact on us, just like everyone else and we are starting to feel the strain of this however we continue to do the training as and when resource allows it which has resulted in us now almost completing the training and moving into the coaching elements of the training plans. We have also started to prioritise which charters we want to complete that will have the biggest impact so the future plan is to

ensure we complete these charters with the resource available to us before the March 2022 deadline - should this be extended we can then schedule the rest of the training."

A&G Precision and Sons Ltd. has been working with the NWAA and the ACE team members since the initial launch of the C&G/NMCL initiative well before government funding was confirmed.

Andy Cash, Business Development Executive, advises "A&G recognised the value of the programme as a natural progression from our SC21 Operational Excellence activities and Gold award achievement. The NMCL diagnostic tool kit and business case set against business improvement opportunities in the form of charters, which are a baseline reminder of each of the improvement initiatives and the training programme that help companies deliver. This charter format was used successfully in the NWAA ASCE1 and ASCE2 programmes, all these charters contribute directly to the A&G Continuous Sustainable Improvement Plan (CSIP)."

Once the business case was submitted, the tangible financial benefits were apparent - the start of training provider selection and an agreed delivery plan was soon in place with training starting remotely. To date A&G has completed eight and a half days training against the first charter.

Andy continues: "Developing the A&G business integration strategy and the leadership capability to deliver it, A&G has taken a short break from C&G training to allow for the tri-annual SC21 O/E diagnostic

assessments. Re: BUS-EX, MAN-EX and REL-EX, which are closely allied to the same criteria and common A&G CSIP."

In other activity we have hosted our bi-monthly ACE Steering Group. This is made up of representatives from several key customers in support of the wider SC21 C&G programme but also the focused support to our ACE members.

Best practice workshops under way

In addition to the Steering Group, we also held our bi-monthly user group where ACE members provided an update and a round table discussion of how they were progressing with their own improvement plans and feedback on sessions they had undertaken with training providers.

We also commenced our customer best practice workshops. These workshops enable the members of the ACE Cluster to learn from each other and their customer how they have implemented key processes in their businesses. This provides suppliers with unique insight as to how their peers and customers work and how they might reflect this in their own businesses.

If you would like to join the ACE companies and improve your organisation's competitiveness and growth there is still an opportunity for companies to apply to the national programme and benefit from the government funding available. We are also welcoming new members to the ACE which will aide and support companies through the journey.

Benchmark your Competitiveness and Growth

The NW SC21 C&G ACE is welcoming new members to its cluster membership and would encourage all members who are committed to improving their competitiveness to join.

ACE combines the benefit of being involved with a nationally recognised programme, and with focussed support and guidance that NWAA has become renowned for from our ASCE/ASCE2 programmes.

Companies can join the ACE to support you through your SC21 C&G NMCL assessment and enjoy benefits which include:

- A bi-monthly collaborative ACE member meeting
- North West steering group review process supported by key stakeholders (ADS, BAE Systems, Boeing, MBDA, Rolls-Royce, Safran and Spirit AeroSystems) and the valuable feedback they provide.

• Companies are benefitting from best practice/mentoring support from senior representatives of the key customers (typically two days per month).

• New business development opportunities are being created from new relationships and new ways of working.

• Companies are seeing opportunities to collaborate on marketing and technology development.

• NWAA is marketing the North West ACE nationally and internationally.

There is an annual membership cost of £5,695 to join the ACE. For more information on the ACE and how you can join, please contact **Catherine Toon** via **catherine.toon@aerospace.co.uk** or **075300 97899**.

Aerospace Cluster of Excellence



An ATI Programme

NATEP

Aerospace R&D funding for UK SMEs

NATEP Autumn 2021 & Spring 2022 Calls - now open

aerospace.co.uk/technical

Developing Lancashire’s next generation of leaders

The Lancashire Careers Hub is calling for the county’s employers to consider their recruitment needs in advance of an influx of new talent into the world of work and act now to create and promote their apprenticeships, trainees, and other vacancies.

Groups and organisations are being asked to publicise their vacancies on social media, however employers can also commit to engaging with young people and supporting their education by signing up to the Lancashire Skills Pledge.

The Lancashire Skills Pledge provides businesses with one place to find out more about employer facing skills and training initiatives.



You only need to sign up and then a Pledge Partner, who is an expert, will get in touch with you to find out more about employer facing skills and training initiatives and to achieve your pledge. Pledging will give your business recognition for the things it does to upskill, recruit and inspire the people of Lancashire.

You can choose to sign up for as many pledges as you would like, whether that is all seven or just one or two. For each pledge you choose you have two options:

- 1) Tell us that you’re interested in doing it.
- 2) Tell us you’re already doing it and provide a bit of information about what you’re doing.

The seven pledges include:

- Give an hour
- Be an Enterprise Adviser
- Offer industry placements
- Take on an apprentice
- Become an Apprenticeship Ambassador
- Employ people who are out of work
- Skills support for the workforce

To sign up visit:
www.lancashireskillshub.co.uk/lancashire-skills-pledge/

Become a Three Minute Hero



The Lancashire Careers Hub wants every young person to access careers advice from those who’ve been through the journey themselves – you! After all, there’s no one more qualified to do this than real people with real experience.

We would like members to send in three-minute videos to us. You all have various lived experiences that can shed light on how to build a career for young people. We want to ensure that our members’ voices are heard, and you can bestow the knowledge and guidance you have on young people looking for employment opportunities in similar sectors. All you need to do is complete a short form, pick a question from the list to answer and upload your video so that you can be matched with young people who have similar backgrounds/interests!

To take part, visit:
hero.startprofile.com

Lancashire Enterprise Advisor Network

Lancashire Careers Hub’s success is fundamentally reliant on the amazing support of all its Enterprise Advisers who all generously volunteer their expertise, skills, and knowledge to help schools and colleges develop and deliver a world class careers programme.

Lancashire’s Enterprise Advisers are individuals who represent our wide and diverse economy range from chief executives, senior leaders, business owners and consultants from both private and public sector who collectively share a passion to ensure all our young people are provided with and can be the best they can be.

Find out more about the Lancashire Enterprise Advisor Network by visiting lancashirecareershub.co.uk/employers

“We are delighted to be building on our successful partnership with the North West Aerospace Alliance, by engaging more members in the work of the Enterprise Adviser Network and Careers Hub. Advanced manufacturing and aerospace constitute the backbone of the Lancashire economy and we have the opportunity to work together to build our future STEM talent pipeline, whilst also boosting the aspirations and social mobility of our young people. We look forward to more members of the network stepping forward to help build momentum, and look forward to recognising contributions via the Lancashire Skills Pledge”

Dr Michele Lawty-Jones,
Director
Lancashire Skills and Employment Hub

Record-breaking A* mazing results for outstanding Burnley College Sixth Form Centre



Principal of Burnley College Sixth Form Centre Karen Buchanan with just some of our amazing triple A* A Level students

The Class of 2021 at Burnley College Sixth Form Centre are celebrating achieving outstanding A Level results which will see them progress to some of the UK’s leading universities, including the University of Oxford and Durham University

Hard-working students achieved an impressive 79 A* grades and 156 A grades, with a record-breaking number of students each achieving three A* grades.

In an academic journey impacted by Covid, all students have received grades which reflect their dedication and performance throughout their two-year A Level course, determined by tutors and independently verified.

This year’s published results see the College achieve:

- an overall A Level pass rate of an outstanding 100%
- 94% of A Level students achieve at least one A*-C grade
- 74% of A Level students achieved at least one A*-B grade and
- 45% of A Level students achieved at least one A* or A grade.

These outstanding results reflect students’ curiosity, dedication and love of learning; the innovative teaching methods, passion and individualised support offered by exceptional tutors; the eclectic programme of extra-curricular activities, trips and lectures which bring learning to life and the College’s outstanding £100 million campus facilities.

Burnley College Principal Karen Buchanan said: “The Class of 2021 will not forget their A Level journey in a hurry. It is the resilience, determination and motivation shown by our truly amazing students which will remain in our memory. Covid turned their world upside down in Spring 2020 with the announcement of lockdown and remote learning but their fortitude and resolve has been inspirational and has made a huge impact on the whole Burnley College family.

“Our students have earned fantastic A Level grades which have opened the door to degree study at some of the UK’s top universities - and progression on to rewarding careers. Additionally the strength of character each student has developed truly helps them to stand out from the crowd.

“We share in the pride our students’ family and friends are feeling right now and wish each and every one of our students every success in their future University studies and successful careers where they will be leaders and influencers shaping the future of industry and society.”

Rising to the Post-Covid Challenge – How One North West Aerospace Consultancy Has Adopted MSC Apex

By Dr Steffan Evans, Lead FEA Engineer & NAFEMS PSE, Evotech CAE Ltd and
Jerrod Hartley, CEO & Chief Engineer, Airframe Designs Ltd



One area which has been hit harder than most by the pandemic is the aerospace industry. With limits on travel, the number of passengers in the air has fallen to previously unseen levels, which has placed the airline operators and aircraft suppliers under significant, sustained pressure. According to Forbes, international flights in 2020 saw a drop of 68 per cent compared with the previous year, however recent reports have suggested that the industry will bounce back, with market intelligence suggesting that double-figure growth will return by 2022.

Airframe Designs

One player with its roots planted firmly in the North West aerospace supply chain is Airframe Designs Ltd. An engineering services provider based at the Blackpool Airport Enterprise Zone in the UK. Founded in 2009 by Jerrod Hartley, the business has grown a strong team of aerospace engineering specialists, and concurrently supports a wide range of aerospace and defence projects. The core business is aviation safety, supporting UK CAA and EASA Part 21J design organisations to certify structural changes and repairs to flight structures. Historically, its skills have been in very high demand due to a shortage of experienced aerospace stress engineers, both in the UK and globally.

AFD works across multiple industries with an emphasis towards the aerospace, defence, and special mission sectors. They also work on a range of platforms and products including aircraft, rotorcraft and many types of interior structures. Commercial projects are numerous and have included bespoke VIP galley upgrades, narrow-body aircraft seat design, and various antenna installations to support avionic upgrades. For the special mission sector, AFD has certified a family of helicopter lifting baskets for human external cargo to access high-voltage power lines. Military projects have included support to ejection seat sled testing, UK Puma helicopter upgrades, and design activity associated with sixth generation fighter aircraft.

AFD specialises in employing static analytical methods to assess airframe structures, fatigue/damage tolerance assessment to ensure continued airworthiness, vibration assessment, especially prevalent for rotor and spacecraft and regulatory compliance to ensure that design changes meet the necessary airworthiness requirements.

However, one area which underpins all this work, is in the application of an effective FEA strategy to yield a detailed understanding of structural behaviour in a virtual environment.

AFD's Journey

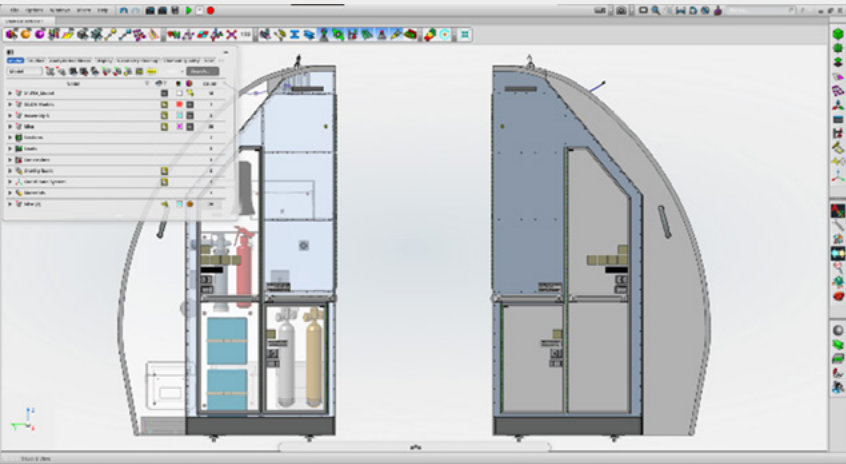
AFD had been reliant on a number of legacy FEA programs for the past decade and assessment of contemporary methods highlighted many new platforms and toolsets which were now available and could improve its overall analysis offering. AFD performed a significant review of the modern FEA software market. The bulk of the aerospace market relies on the industry standard FEA solver, MSC Nastran, both for regulatory compliance and the ability to interact with other parties using a common data format. This meant that any new toolset must support this data format.

Discussion with numerous CAE/FEA software vendors showed the development in capability and deployment of many different toolsets over the past decade. It became obvious to AFD that MSC Apex, a contemporary, next-generation CAE platform developed by Hexagon/MSC Software, was gathering pace within the aerospace industry. Through initial contact at an aerospace industry event, AFD engaged Evotech CAE Ltd, Hexagon/MSC Software partner and dedicated MSC Apex training provider, to help with their initial assessment, through an offload development project.

Aircraft Galley Structure

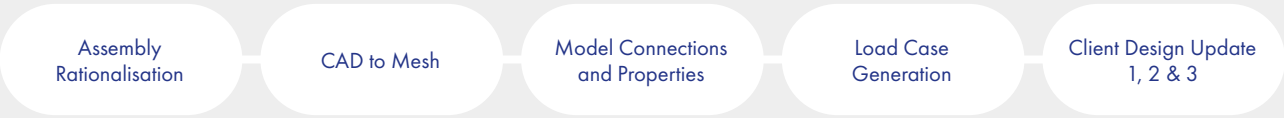
Once an offload consultancy project had been completed by Evotech, an in-house comparison was undertaken. This looked at a typical aircraft galley structure, a Boeing 737 stowage compartment, constructed of lightweight metallic and composite sub-structures, detailed joint definition and the appropriate loading. Client CAD was made available for detailed assembly definition and idealisation, dependent on the downstream meshing strategy.

AFD engineers took initial MSC Apex training using Evotech's 12-hour online training course 'Intro to FEA with MSC Apex', which gave the requisite skills to hit the ground running, followed by bespoke Evotech/Apex training in the application of specific galley structure FEA. Once enabled, AFD Lead FEA Engineer, Bill Thorne, performed the model build and analysis in MSC Apex.



Boeing 737 Stowage Compartment – CAD Definition

The main steps in the FEA model build were



MSC Apex proved to be significantly more efficient than Patran, the legacy AFD toolset, but also Altair Hypermesh and Siemens FEMAP (where build data was provided by sub-contract resource), two other popular FEA model build toolsets used in the aerospace industry.

Three interesting observations could be made by this comparison:

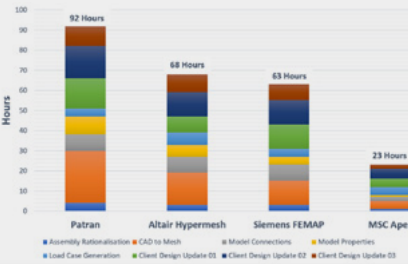
- 1) The MSC Apex build was performed by engineers with minimal product exposure and training, compared with significant exposure to all three legacy tools.
- 2) The Apex model build time took less than three days whereas using legacy toolsets were all around eight days or more.
- 3) The efficiency gains made using Apex could translate into more time optimising a product, rather than simply verifying a non-optimal initial design, as would have been seen with legacy toolsets.

In terms of the stowage compartment FEA model build, the main technologies which gave an advantage were,

- 1) CAE-specific 'Direct Modeling', which allows powerful geometry editing, idealisation, and mesh control, in a manner unseen in legacy toolsets.
- 2) 'Generative Model Update', where any change to the underlying CAD definition resulted in upstream model changes (such as mesh, properties, and loading) to update automatically.
- 3) Python tools to allow automation of several build aspects, including mid-surfacing/composite lay-up generation directly from source geometry, and fastener connections.
- 4) 'Analysis Readiness' using the embedded Apex solver to ensure component verification during build and full assembly verification to ensure that the external MSC Nastran analysis of the full assembly would run first time.

So, What Does This Mean to Airframe Designs?

MSC Apex allows AFD to achieve far greater efficiency for their FEA modeling and simulation tasks for both new and existing structures. Time saved allows for effort to be focused on different areas of the design process, which simply would not be possible using legacy methods and toolsets. Clients can be assured that their development goals can be achieved earlier and with reduced risk.





Specialising in protective treatments, advanced manufacturing and surface technologies

Hycrome Aerospace Ltd was established by Score Group to focus entirely on the aerospace sector and to offer customers solutions to their supply chain issues. Emerging from Hycrome Europe, a well-established business with an enviable reputation for the provision of engineering, manufacturing and protective coating solutions to the industrial power generation and oil & gas industries, the company's focus on aerospace is boosted by the highly regarded Hycrome name.

Tracing its origins back to 1947 when the original business was established to service the local textile industry, natural evolution has seen activities increasingly grow in the aerospace industry. Following continual investment in personnel equipment and approvals in order to tackle increased demand, the decision was made in 2015 to create a standalone business.

Now confidence couldn't be higher. It follows private investors – SCF Partners – acquiring Score Group with a view to increasing market share through an expanded offering alongside establishing a presence in new international markets.

Based in Burnley, Lancashire, the business specialises in protective treatments, advanced manufacturing and surface technologies. Hycrome Aerospace offers a comprehensive range of solutions including NADCAP

certification in five disciplines including Thermal Coating, NDT, Surface Enhancement (Shot Peening), Heat Treatment and Chemical Processing.

Providing customers with a flexible solution, Hycrome Aerospace is particularly heralded for the wide range of thermal coatings it provides. Indeed, it uses High Velocity Oxygen Fuel (HVOF), Plasma and Electric Wire Arc to apply the following – Tungsten Carbide, Chrome Carbide, Nickel based coatings, Zinc spray, Ceramic thermal barrier coatings and abradable coatings. And it can develop bespoke coatings in some cases to meet needs where necessary.

Stephen Kelly, Operations Director, says the business has a number of strengths, its modern 15,000m² facility being one of them. Being part of Score Group also allows it to invest in new equipment and technology. "We are a

'one-stop shop' for customers which enables us to improve lead times, offer competitive pricing, and have in-house quality control."

This has enabled it to establish many long-term relationships with some of the industry's biggest names. "We are proud of our customer base, which has been built on the development of processes that we have perfected and the industry approvals we have gained. We have direct relationships with industry end users such as Bombardier, BAE and Safran. Plus, we support the first-tier suppliers into companies such as Airbus, Spirit, Rolls Royce, and GE Aviation."

Collaboration and communication are vital. Stephen continues: "We are always a phone call away to assist solving customer supply chain issues. Hycrome has dedicated account managers for all customer accounts."

Our account managers provide a positive, timely and attentive service to ensure the customer receives excellent customer service which has helped maintain long-term relationships."

Hycrome's growth strategy has seen it invest in key areas of the business to assist in targeting new markets and stay competitive in the global market. "We have been on a journey over the last 15 years away from conventional electroplated hard coating by investing in the thermal coatings department and most recently purchased a vacuum furnace to develop our brazing technologies"

It has also increased the number of spray booths from one to four which are all robotically controlled for safety and repeatability. The four pieces of robotic equipment cover plasma, wire arc and HVOF and are interchangeable between each booth. Investing in multiple equipment is part of Hycrome's risk mitigation plan.

Similarly, Hycrome's innovation strategy is proactive and customer focused. We have recently had a breakthrough with an international client where we have designed a repair process to solve the part being remanufactured and preventing it from being scrapped.

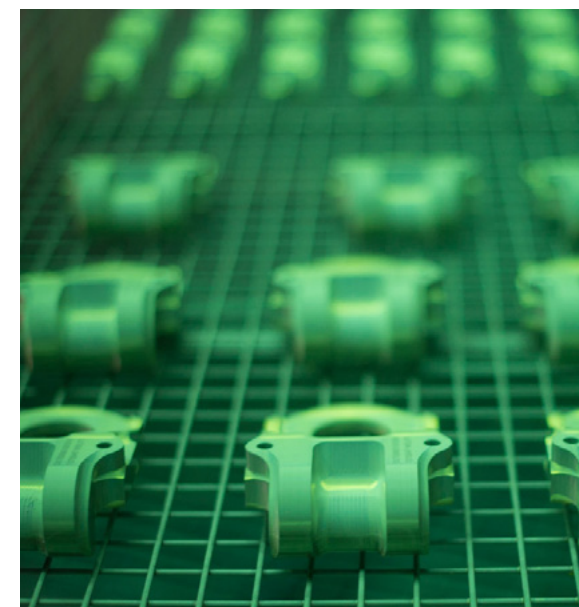
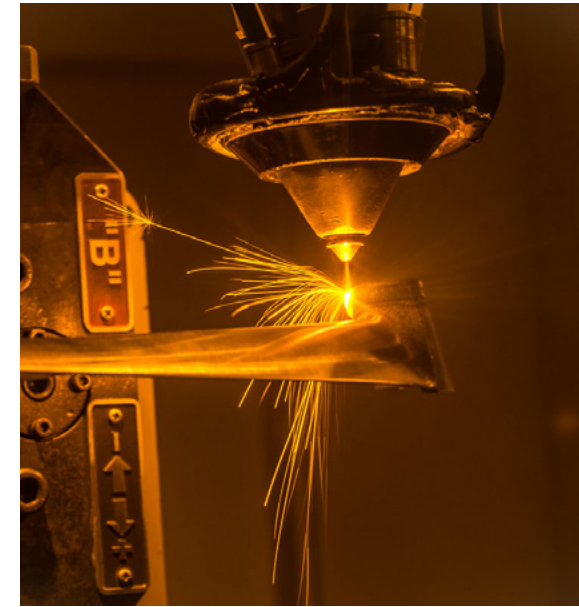
In-house, we take a design-led approach to all our processes to constantly improve. We work to identify our customers' needs to ensure we develop our services accordingly and create ideas to improve lead time, quality and save costs. From this we have invested in robotics and automation for our processes. The business now has a rapid prototype engineering department that has a 3D printing capability to support this work.

Another stand out feature of Hycrome Aerospace is the fact four of its NADCAP accredited processes have Merit status. This technical expertise is complemented by ongoing investment in skills including a successful focus on the next generation of engineers. Despite the pandemic and the impacts of COVID-19 on the aerospace industry, Hycrome has recently recruited six apprentices in mechanical engineering and business administration.

Hycrome Aerospace prioritises business improvement and employee training. Our investment in staff development is what has helped us achieve over the years and our apprenticeship programme has received numerous awards over the years including North West 'Apprenticeship Scheme of the Year'.

Elsewhere, support from the North West Aerospace Alliance on business improvement activities such as the SC21 Competitiveness & Growth (C&G) programme ensures the company is improving its organisational capability to deliver supply chain excellence based on national manufacture competitiveness levels. Hycrome's continuous improvement process has seen it achieve ISO9001 Rev D certification.

As a privately owned business within Score Group, Hycrome Aerospace can react quickly to changing market demands by matching services and products to customer requirements. Its reputation has been built upon the ability to provide the customer with a reliable service that exceeds their expectations on quality, cost and delivery. Hycrome's success is rooted in the development of a sustainable business driven by well trained and knowledgeable employees who work to a management system accredited to the highest industry standards in safety, quality and environmental activities.



Launch of the fourth division - Jeaton Industrial Tooling

Jeaton Ltd is delighted to announce the launch of the fourth division of its business, Jeaton Industrial Tooling. This is the newest member of the Jeaton Group, sitting alongside Jeaton Industrial, Jeaton Aerospace and its paper and print business Splice Solutions.

The Jeaton Industrial Tooling division provides customers with access to the premium partner brands, which include Trumpf, Gesipa, ATA, Dynabrade and Chicago Pneumatic to name just a few. With a consistently high level of customer service, Jeaton is committed to ensuring you receive a premium quality service for new product sales, fully warranted service and repairs, and its dedicated technical support, all provided for a wide variety of tools for our leading brands.

Along with continuous training and development on the latest products of our leading industrial tool brands, Jeaton aims to maintain the highest of standards for service

and repair. Services include tool calibration, torque analysis and tool efficiency checks at either the customer's site facility or at its headquarters in Preston. On-site and in-house vibration testing is also available for all makes and types of air and electric tools by IOSH trained engineers, Martin Gillett and Stuart Sanderson.

Jeaton is also really excited to announce that we are the exclusive distributors of the Trumpf Slat cleaner which is an intelligent monitoring system that cleans your slats quickly and effortlessly for those involved in laser cutting applications.

Jeaton Industrial Tooling can also offer a complete Trumpf Slat Cleaner maintenance and repair service so you can continue to gain improved performance from your existing tooling.



Finally, you can have lights-out probe calibration

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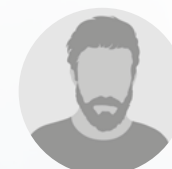
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Save the date

NWAA has been running a series of informative and interactive webinars since the start of the pandemic. Please regularly check our website, LinkedIn and Twitter page for the latest upcoming webinars.

If you would like to register your interest for any of our webinars, please contact Claire Lambert direct:

claire.lambert@aerospace.co.uk
07791957195 or register via EventBrite.
www.aerospace.co.uk @NWAerospace

Thursday, September 23, 2021

NWAA Annual Conference
Dunkenhall Hotel, Clayton Le Moors
Contact claire.lambert@aerospace.co.uk

Friday, November 12, 2021

Annual Aerospace Ball
Contact claire.lambert@aerospace.co.uk

Copy deadlines

Express News

Copy deadlines for members wanting to share news

October 21
November 18

Plane Talk Winter 2021

Copy deadline for members wanting to share news in the next edition of Plane Talk

November 8, 2021

Please send all information to
nwaa@freshfield.com

NWAA Annual Aerospace Ball

*Friday 12th
November 2021*

The Dunkenhall Hotel

*Speak to Claire today about buying
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sponsorship packages,
01772 648800*

See You There!

Our Partners:



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