



Taking off in Asia

Asia occupies four of the top ten spots for airport passenger numbers. 40% of all new aircraft will be for the Asian market.

- Positioning ourselves for further success in China
- Asia facts and figures
- What Enabling the Extraordinary truly means
- High Performance Culture in the workplace
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Integrity, honesty and fresh thinking

In 1850 two Italian craftsmen, Henry Negretti and Joseph Zambra, emigrated to Great Britain and established a revolutionary new business. The Negretti & Zambra partnership (now known as Meggitt Avionics) resulted in the world's first altimeter. 1850 also marked the year of the dog in the Chinese lunar calendar. Coincidentally, 2018 is also a dog year and, in honour of the Chinese calendar, this edition of Meggitt Review includes a special feature on Meggitt Asia Pacific where we already have a significant presence.

In Chinese astrology, strong dog traits are integrity and honesty, values that are just as current for the Meggitt family now as they were all those years ago when the company was founded. In business, the year of the dog heralds fresh thinking and fast problem solving. This is equally significant to us all as we begin the global roll out of Meggitt's high performance culture training which will enable us to develop these necessary skills.

Whether we celebrate the Gregorian or lunar calendar, 2018 promises to be an auspicious year. Several new platforms go live, the A330 Neo, Embraer E Jet E2, Japan's first commercial aircraft in 20 years the Mitsubishi Regional Jet (MRJ) and China's COMAC C919. These latter platforms are significant milestones as they represent the growth of aerospace in the Asia Pacific region. Analysts predict that by 2034 APAC will account for the largest regional operational fleet in the world, ahead of both North America and Europe.

We are proud to be an active player in this important growth market and hope you enjoy reading about recent highlights in the region.

Positioning ourselves for further success in China



China is changing, as are the expectations of the Chinese people. In 2010 the urban population of China exceeded the rural population, although even today over half a billion inhabitants of China still live in rural areas. As earnings increase in China, we have seen the emergence of a growing middle class with significant disposable income, creating a consumer boom and delivering opportunity in many of our core markets.

Anyone who has ever taken an internal flight in China can testify that there are usually very few empty seats and, despite huge advances in the transportation infrastructure (China now accounts for over 60% of the global high speed rail network), air traffic growth is expected to keep rising. In 2016, three of the top ten global airlines were Chinese (China Southern, China Eastern and Air China) and by 2022 China is expected to overtake the US in having the

which should create opportunity for many of our businesses. Heatric is an excellent example of a Meggitt business looking to capitalise on the growing energy market in China, winning their first major order from a privately owned Chinese customer in 2017 and following up with several exciting opportunities in 2018.

China is unique. Doing business there is different, and a deep understanding of Chinese Government policy is very important. Initiatives like 'One Belt, One Road' are likely to have a huge impact on infrastructure development; particularly in Central and Western China. The 'Made in China 2025' strategy will be at the heart of China's drive to upgrade their own manufacturing capabilities. Both programmes will have a significant effect on the fortunes of companies operating in China and they underline the importance of understanding the complex Chinese business environment.

China. We need to be able to develop our manufacturing and supply chain capabilities fully to support our growth plans and satisfy the needs of our customers. Our traditional customer base has provided valuable insight as customers advance their own regional strategies and share more about their future expectations. Many of them have their own capabilities in China and need partners who think globally, but work locally (and collaboratively) and are capable of supporting their regional manufacturing and supply chain solutions.

At the heart of our plan is the drive to enhance and fully utilise our manufacturing capability in China. Meggitt Xiamen (MXM) was established in 2003 and currently employs over 250 people, manufacturing a range of products for aerospace, energy and medical markets. The facility offers a lower cost manufacturing solution with the very highest levels of performance, and has recently become the second site to exit MPS Bronze Stage.

Accelerating the development of our manufacturing and functional capabilities within MXM is essential if we are to provide a complete supply solution, managing front end relationships, manufacturing, supply chain management and logistics. We are working with the SBUs to identify opportunities which will provide enhanced capability 'in China for China'. In parallel we are planning to develop our organisational structure promoting closer working relationships and optimising the resources we have in the country.

Our plans are coming together, but there is still much work to do. We are working with key customers on new and exciting opportunities in China which will help strengthen our position in this fast developing market and position Meggitt to take full advantage of new opportunities and exciting challenges to come. ●

At the heart of our plan is the drive to enhance and fully utilise our manufacturing capability in China

largest total global airline fleet. Analysts predict Chinese airlines will buy 1.1 trillion US dollars' worth of new aircraft during the next 20 years. To take advantage of this, China is developing its own commercial airliners. Meggitt must continue to strengthen its position supporting indigenous manufacturers as well as more traditional aerospace customers.

The energy market is equally exciting. China is forecast to account for 27% of new global electricity-generating capacity over the next 15 years (the US will account for only 6% during the same period). Although coal still dominates in China, there is an aggressive shift towards cleaner energy

Last year, to strengthen our position in China, we established a team of experts to review existing plans and develop a regional strategy with the aim of accelerating sales growth and fully optimising our manufacturing and supply chain capabilities.

We already have stable platforms in the region, a very capable local team, strong relationships with key customers and excellent suppliers. One thing our Chinese team knows is there are still significant areas of opportunity. Our plan is to build our relationships and extend our reach, and ensure our teams are coordinated and share a clear vision for

ASIA

facts & figures



In 2016 Vietnam registered the largest per capita increase in traffic growth, up 25.6% on previous year.

Asia will receive

41%

of all new plane deliveries over the next 20 years.



+1%



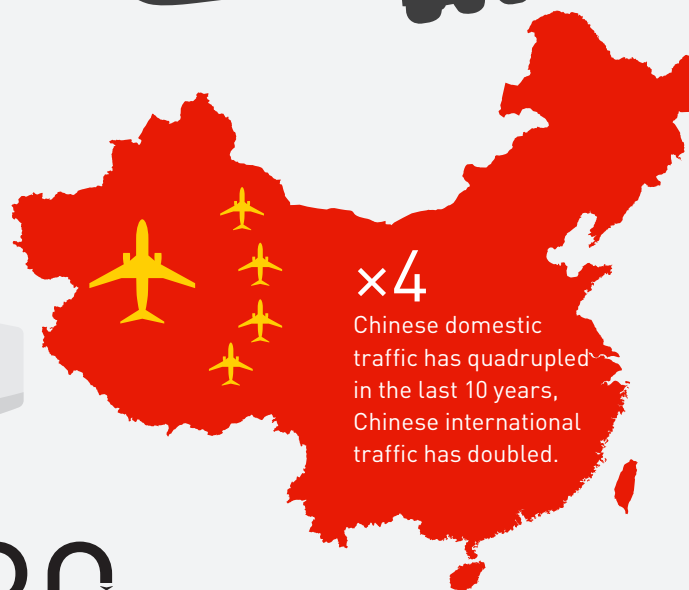
Asian fleet growth will fuel MRO demand. By 2036 the regional market could be worth US\$660 BN, a growth of 10% compared to 2016. 10% of global MRO output is contributed by Singapore's aerospace industry.



Asia occupies four of the top ten spots for "Airports in the World by Passenger Traffic"

#2 Beijing Capital International | 95 million
#5 Tokyo Haneda | 80 million
#8 Hong Kong | 71 million
#9 Shanghai Pudong | 66 million

Astonishingly Asia represents 40% of passenger traffic for the top ten airports:

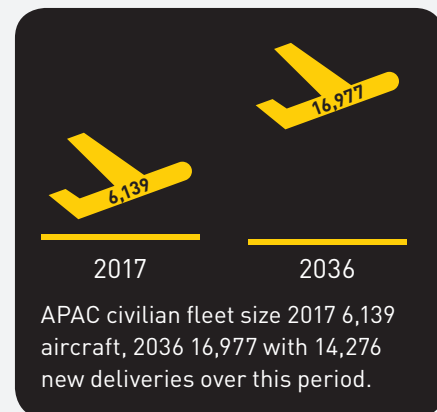


130

Singapore alone has one of the largest and most diverse concentrations of aerospace companies in Asia with over 130 players operating locally.

EXPORT

China is one of the largest overall export markets for US aerospace products. The US aviation sector exported \$13.2 billion worth of products to China in 2016, accounting for 58 percent of China's total imports in the aviation sector.



Meggitt Vietnam expansion close to completion

Asian civil aircraft demand is growing and we need to be ready to seize new opportunities in the region. Last year we started a major programme to expand our Vietnamese facility adding an additional 60,000 square feet. This will enable General Manager, Paul Tran, to relocate the transformer workshop and create new cells to produce components for the LEAP engine.

We are also investing in new production machinery including an electron beam welding machine enabling Paul and his team to produce new products for Meggitt Avionics and OECO. By the time of programme completion, Meggitt



Vietnam will have a production space of 100,000 square feet housing close to 800 employees. Below we can see the work in progress, we look forward to updating you with final pictures of the building in the very near future. ●

+ 60,000 ft²



Singapore Airshow sees increased focus on MRO activities

The Singapore Airshow is over for another year and it proved to be another successful show for Meggitt. Several key meetings took place and our presence helped us position ourselves as one of the leading aviation suppliers in the region. But what other news did the show have to offer?

In spite of the air of optimism in the region, unusually for this show, new plane orders were few and far between. Boeing and Airbus, key players in the Asian aerospace market, remained upbeat and senior managers from both organisations

recognised that Asia will continue to be the key market for commercial airplane makers for the next 20 years.

According to senior Boeing executives, the region is set to represent about 40% of global demand by 2036. This means that Asia will require more than 16,000 new planes between 2017 and 2036, representing 39% of the global total. China is the biggest market, taking up half of the demand, followed by Southeast Asia. The number of air travelers worldwide exceeded 4 billion for the first time in 2017. Boeing expects the number to reach 4.3 billion this year with half of the growth achieved in Asia-Pacific. Asia is adding a staggering 100 million airline passengers each year, with global passenger totals expected to reach 9.5 billion by 2036.

MRO activities created the biggest talking point of the show.

As the number of aircraft entering operation increases and the existing fleet matures, demand for Maintenance Repair and Overhaul (MRO) operations

Asia continues to be a powerhouse for growth

is set to soar. MAAP, close to Changi airport in Singapore, is perfectly placed to take advantage of growth in the region. Strategically located at the heart of Asia, this CSS organisation leverages Meggitt's full engineering expertise to supply tailor made added value aftermarket solutions and repair services to all our customers in the region. ●



An indicator of how important it is to establish our own aftermarket and MRO services in the Asia Pacific region: on the first day of the Singapore Airshow Boeing announced orders valued at more than \$900 million for services, including maintenance and part replacements.

Powering up in China

Demand for sustainable energy solutions in China secures major contract for Heatric



Aviation isn't the only growth market for Meggitt products in Asia. Did you know that an estimated 160 million South East Asian residents still do not have direct access to electricity? Across all regions renewable energy projects are seen as a general catalyst to economic growth.

China is the world's second largest producer of hydro-electricity and the country continues to look for greener sources of energy. At the start of 2017, the government announced that it would invest \$360 billion in renewable energy by 2020, proof of the country's commitment to reduce carbon dioxide emissions and set new environmental standards.

These measures include ways of combining renewable fuels with improved process efficiencies. In support of this goal, Heatric, Meggitt's power generation heat transfer expert, has secured a major

contract to supply heat exchangers for a new sustainable energy project in Sichuan province, China, valued at \$850,000. The heat exchangers were delivered earlier this year.

Heatric has decades of experience in developing heat transfer concepts and was the natural choice to join the programme team, which was formed from a partnership between the China Western Power Industrial Company (CWPC), the Nuclear Power Institute of China (NPIC) and Tiancheng International Trading.

The plant uses biomass and waste as a primary fuel and is currently trialling an innovative thermodynamic cycle which uses supercritical CO₂ instead of steam as its working fluid. This process reduces the pumping power from the compressor, increasing the thermal-to-electric energy conversion efficiency. Heatric's high spec heat exchangers are one of the few that can

deliver the high pressure, high temperature and high efficiency performance required.

Local know-how, the essential ingredient for selling cutting-edge technology

With manufacturing in the UK and sales teams in Brazil, US and Singapore, Heatric has a strong international footprint. China has a very distinct business culture and the Heatric team worked closely with Meggitt Xiamen (MXM) to secure this business. MXM continues to provide on-the-ground support to help understand and develop strong relationships with local customers and identify new opportunities in this growing region.

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Giving our customers what they want

With a funnel of other new business opportunities opening up, the Heatric/MXM relationship is clearly bearing fruit. Heatric can now offer Chinese customers a range of added value benefits such as contracting through MXM, transacting in local currency and supporting on-going technical and commercial discussions from the comfort of their own office without the message being lost in translation. ●



Meggitt content overview

COMAC C919



The first large passenger jet to be designed and built in China



Developed by:	Commercial Aircraft Corporation of China (COMAC)
Maiden flight:	May 5th 2017
Entering service:	2021
Powered by:	CFM International LEAP 1C
Accommodates:	156-168 passengers
Range:	3,000 nautical miles
Current order book:	785 aircraft
Length:	127.62 ft
Wingspan:	117.45 ft
Cruising speed:	834 km/h (528.22 mph)

Meggitt content includes

C919 aircraft:

- Engine interface control unit
- EPAS system
- Flight lock actuator

LEAP 1C engine:

- Modulated turbine cooling valve
- Accelerometer (bearing 1)
- Accelerometer (TCF)
- Oil level sensor
- Oil temperature sensor
- EGT sensor harness left
- EGT sensor harness right
- Engine temperature sensor
- Speed sensor

What Enabling the Extraordinary truly means

It's just over twelve months since **Tony Wood** joined Meggitt. What a perfect time to catch up with him to get his thoughts on the past year and understand what the future has in store.



Q: Twelve months must have flown by Tony, what is the most surprising fact you've discovered about the company and what do you think is Meggitt's greatest strength.

Tony: There are two things that strike me about Meggitt: the staggering technology we provide for our customers and the people I meet every day. I've worked in the aviation industry for most of my career and from a technology perspective I knew that Meggitt was a leading supplier for aircraft brakes, fire suppression equipment and sensing systems, but it's only when you get into the details that you truly understand and appreciate how extraordinary this technology is, not to mention the technology that we're developing for the future.

For instance, we're currently working on products based on a technology called Time Domain Reflectometry (TDR), which

is effectively using radar technology in innovative measuring devices. Our teams have developed sophisticated probes, with no moving parts, that you can put in a fuel or oil tank to provide live data, not only on fuel and oil levels, but also on whether there are impurities in the tank, such as water, dirt or oil. This is one of many game-changing technologies that Meggitt is pioneering to enable significant advances in the safety, environmental performance and affordability of aircraft.

I find examples like this every day as I visit our sites and meet our teams. It's one of the most exciting parts of my job, discovering pockets of expertise and meeting the people that make it happen. I met our team developing next generation thermal management systems last week. The invention of ultra-high bypass ratio jet engines with powerful gearboxes is redefining the importance of high performance heat exchangers and cooling systems on aircraft—an area where Meggitt have deep expertise in design and manufacturing—creating new opportunities for long term partnerships with our customers. I always learn something new, something that's just at the cutting edge. There are so many other fascinating examples whether it is ground breaking optical sensing systems, world-leading all electric braking systems, fuel containment systems, aircraft safety systems or defence and security systems all delivered by passionate and talented teams across the business.

Technology is at the heart of Meggitt, the ability to innovate, solve problems and enable our customers to do more for less; that is essentially our purpose and the foundation upon which we are building Meggitt for the future.

Q: You mention people being enablers ...

Tony: A company can have the best strategy and the best technology in the world but it's people that deliver it, not just individuals but teams. I was surprised at the level of teamwork and cooperation that already existed in the business. I knew Meggitt as a 'holding company' historically and as such assumed it was run as a financial entity with a silo mentality. I was surprised how networked people were, people knew of each-other and were trying to share. This was one of the things that first attracted me to Meggitt.

Anything we can do to nurture and develop this sense of teamwork can only make us stronger, taking us from a very good company to a truly great business. We are aiming our sights at being the best company in our sector and our peer group. These are companies with the highest ratings in technology, customer satisfaction, financial performance and employee satisfaction. That is what we are targeting. I am confident based on our early progress that we can achieve this through supporting our teams and building a shared ambition for Meggitt.

Q: How do we plan to accelerate this?

Tony: There is no 'silver bullet' to building a top performing company. It takes time, effort and a relentless focus on our performance for and relationships with our customers. That's where high performance culture (HPC) comes in. Whilst my own journey is one where I struggled with what looked like little more than common sense ten years ago, I've become a firm believer in the benefits of a structured approach to building HPC having seen the difference it can make, not just in helping people to work together but in helping them work together in a really productive way, enabling them to solve problems faster. Already more than 800 colleagues at Meggitt have been through the training and we continue to roll it out over 2018.

Q: If you had a crystal ball, how different does Meggitt look in five years' time compared to today?

Tony: We have a new vision, "Enabling the Extraordinary: to Fly, to Power, to Live". This really captures the purpose of our business. It defines us. We are a high technology product and systems provider to customers who build planes, power stations, energy platforms and defence systems. Those platforms depend critically on the technology we supply across the

I expect that in five years' time we will see a big change in how our customers view us and indeed a big change in how it feels to work at Meggitt

many decades throughout which they operate. In short, we enable others to do their jobs and by continually improving how we do this, in five years' time, I see a good company becoming a really great company.

I hope that our customers increasingly recognise Meggitt as a company that is deeply relevant and trusted in enabling them to deliver on their ambitions. As we continue to grow we are becoming much more aligned with the strategies of our major customers. Building the next generation aircraft, the next generation energy or defence platforms is all about working in close partnership and anticipating our customers' requirements.

So, I expect that in five years' time we will see a big change in how our customers view us and indeed a big change in how it feels to work at Meggitt. Meggitt is a good place to work but it can, and should, be the best place to work. That's one of the reasons why we carried out the employee engagement survey last year. We needed to establish the starting point: what do we each need to do, and improve upon, in order to deliver the working environment we would all choose?

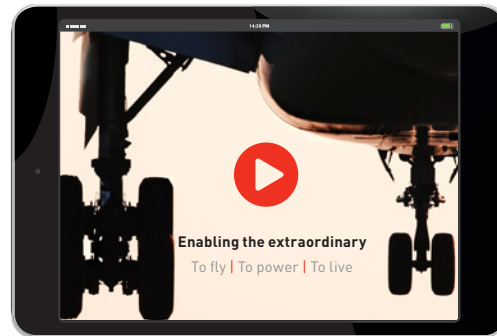
If we can do these two things right, work with our customers and listen and respond to our colleagues, then in five years' time our owners (ie: our investors) will be delighted with the performance of Meggitt. Investors will support us to grow and re-invest in order to continue making Meggitt great. We have already done some great things. We have grown our aircraft ship-set values by 20-250% on the new aircraft programmes through investing over 10% of sales each year into research and development for example.

Yet we must remember that the journey never ends. We must continue to grow. We have many opportunities ahead. Aviation is growing, more people are using air transport than ever before, especially in parts of Asia, where a growing middle class is becoming increasingly mobile. The world is not currently getting any safer and we are now seeing an increase in defence spending in many regions as a result. In our energy markets the demand for power is

increasing and specifically for sustainable power solutions. Meggitt is already playing a significant part in designing and enabling future technologies in all of these markets. We are very well positioned. In fact, through our shared vision "Enabling the Extraordinary: to Fly, to Power, to Live", we are already strongly aligned with the macro

trends of the world and enabling people to truly live safer, more prosperous and more fulfilling lives, every day. ●

If you have any questions for Tony, please let us know: communications@meggitt.com



A moment in time that made me realise why this industry means so much to me

Prior to joining Meggitt I worked at Rolls Royce. In 2008 I was the COO of the Civil Aerospace division when a Boeing 777, British Airways flight number 57, travelling from Beijing to London, suffered a double engine failure, two miles out from Heathrow. The pilot only just managed to crash-land the aircraft on the perimeter of the airfield. Thankfully there were no fatalities or serious injuries, but it was one of those heart-stopping moments when everything pauses momentarily before the surge of activity as the whole aviation industry comes together to support the investigation team to find out what happened and to ensure it never happens again.

It transpired that BA57 had flown through unusually severe Siberian weather conditions and some of the coldest conditions recorded. This extreme weather had caused ice crystals to form in the fuel-oil heat exchangers that feed fuel into the engines, blocking the flow and starving the engines of fuel.

This incident resonated very strongly with me. The extraordinary response of the aerospace industry, all pulling together to solve issues and the extraordinary technology and products that many take for granted which underpins the safe travel of millions of passengers everyday. During the interview we discuss Time Domain Reflectometry, a game changer in the measurement of fuel levels and impurities within it. It's technologies like these that demonstrate just how far technology continues to progress and how Meggitt is right at the forefront of making flying even safer for passengers everyday.



Enabling the Extraordinary

Advancing heat exchanger technology

Last September we announced that, together with a consortium of partners, we secured UK Government funding of £3.7 million to finance research and development in advanced thermal systems technology for next generation energy efficient ultra-high bypass ratio (UHBR) aero engines.



The UHBR thermals research initiative is a direct descendant of two other partner funded programmes DBAHx (diffusion bonded aero heat exchangers) and NIPSE (novel integration of powerplant system equipment). All these programmes have the same aim, developing innovative new technologies that will enable the design of increasingly lighter, more compact thermal management solutions to maximise aero engine performance. We can't really look at them in isolation, and here's the first of our regular updates on how our thermal

management technologies are evolving.

"In terms of technology readiness the UHBR programme will elevate our heat exchanger development programme to level 6. That means that we are at a stage where we can demonstrate the technology and that we are moving ever closer to commercialisation of next generation product," explains Phil Walsh, Director of Technology.

It's always logical to start at the beginning so let's remind ourselves of the starting point for this third phase development. Meggitt's diffusion bonded

etched plate technology is key to the future heat exchanger product range. Tomorrow's jet engines will run hotter than ever. Fans are getting bigger and space inside the nacelle is increasingly at a premium. Space and weight savings are becoming critical design criteria.

In the DBAHx project we benchmarked tried and tested Meggitt heat exchanger technology, developed by Heatric, and currently employed in the oil and gas sector. We wanted to see how we could apply these advanced solutions to aerospace. This resulted in the

development of our diffusion bonded etched plate technology. Basically, to maximise heat transfer at very high temperatures, we chemically-etch channels with highly complex geometries onto individual metal plates, which are then laminated together using diffusion bonding.

We worked closely with The Welding Institute (TWI) to develop diffusion bonding capabilities. A prototype diffusion bonded etched plate heat exchanger has been manufactured, and is being tested to carry out final proving of the bonding strength; it's a pivotal moment in the project.. This new concept of fuel-oil heat exchanger offers potential for step change improvements in component weight and volume and demonstrates the capability for Meggitt products to operate at extreme

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fuel pressures.

"Unlike traditional plate-and-fin and shell-and-tube exchangers, our laminated heat exchanger design can be formed into more complex 3D shapes, making the best use of available space," explains Phil. "It also facilitates the factoring in of apertures for pipework from other equipment. Due to the innovative design it even allows you to integrate other functions within a single component."

Introducing stepchange technology is a vital part of our future strategy, developing individual components so that we can integrate them into Meggitt mini systems which are specifically designed to improve overall product performance. Future editions of the Meggitt Review will look at what this means for our future offering in more detail. ●

US engineers clinch Chartered status



IT'S TAKEN FOUR YEARS OF HARD WORK behind the scenes (and beyond their day jobs), but two Meggitt Control Systems personnel have just become Chartered Engineers – the first US employees to do so.

The pair who were able to pop the metaphorical champagne corks on getting the coveted C.Eng award were ALM AR&T Development Manager Scott Lathrope and Manager of Advanced Technology & Analytics Engineering Jeff LeHew.

Chartered status, bestowed by the Institute of Mechanical Engineers (IMechE), is a big deal. It recognises engineering professionals' progress in their jobs beyond simply their technical skills. It also emphasises 'softer' skills ranging from leadership ability to corporate responsibility.

So, you have to be good at dealing with humans, not just equations.

Gaining chartered status for developing engineers typically takes three to four years and involves candidates measuring the experience they gain against specific engineering competencies under the guidance of a technical mentor.

Applying for chartered status with the IMechE – a global engineering professional association based in the UK – requires a mentor who is a Meggitt employee and has themselves previously earned the right to put the letters C.Eng after their name.

"The prerequisites in the US are a bachelor's degree in some engineering fields," explained Jeff. "You don't need any professional experience before joining the programme. Based on the length of the programme, however, you'll have at least

four years of engineering experience by the time you finish." More experienced engineers—those who already have 4+ years' experience—can apply for Meggitt's Fast Track session.

So, what do the new qualifications give Jeff and Scott?

"It's a mark of achievement in meeting a certain professional standard, so it could help your career advancement," said Jeff. "You could use this to get certification with other engineering societies, so it can be good for building a better network."

"It's like having the next step after a degree," Scott agreed. "C.Eng can be a useful springboard to further advancement." In addition, chartered engineers have the opportunity to mentor other developing engineers through the C.Eng process.

Scott feels that other Meggitt personnel should consider pursuing C.Eng development: "It's good for someone who's either starting out or in their second role," he said. Meggitt provided the pair with work time to pursue their qualifications, but it did take extra effort beyond their day-to-day tasks: "I would say there were one or two days a quarter when I was really involved with it," said Scott. And there was an underlying level of work throughout the rest of the time.

The qualification also helps impress clients, Jeff reckons. Which can't be a bad thing.

Engineers of all levels who wish to apply for this global engineering recognition should contact Sushma Hayes, Group Learning & Development Director. ●

HPC in the workplace

Two division presidents talk about High Performance Culture



Chris Allen Living our high performance culture

SOMETHING SPECIAL IS GOING ON OUT THERE.

Our strategic 'blue chip' to establish a high performance culture throughout Meggitt is taking shape – and doing so in a rather exciting way. I've worked at Meggitt for ~13 years, in both business and functional roles, and this is like nothing like I've ever witnessed before. It all started about this time last year with the Group Leadership Team's work to shape our vision and purpose as a company. You will recognise this work in 'To fly, To power, To live' as well as in the video which nicely captures our purpose. For me, however, the real start to truly living a high performance culture (HPC) happened when 21 busy employees from across the company volunteered their time to become HPC facilitators.

Becoming an HPC facilitator is hard work, uncomfortably stretching at times, disruptive and time consuming. It offers no promotion or financial reward whatsoever. To volunteer for this gig takes some courage and a whole lot of care – care for Meggitt, care for your fellow employees, care for our customers and care for the future in general. Not only did this group care enough to stick their hands up, they have truly gelled as a team – which adds even more to the 'specialness' of it all.

These HPC facilitators have been very busy taking our leadership teams around the world through *Unfreezing sessions* where everyone learns concepts on how to uncover, release and exploit high performance within themselves and within the teams they are on. Perhaps you've noticed some of the concepts already being put into practice. Concepts such as *shadow of the leader*, the *mood elevator*

and *blue chips* are often adopted early—and for good reason. To date, over 600 employees have been *unfrozen*. In February, will come a second wave with the next level of leadership getting their chance to be *unfrozen*, while the first wave will participate in what's called *reinforcement*. With such strong demand, it's time to add more HPC facilitators to the team. If you have a little courage and a lot of care, I would encourage you to stick your hand up—you will not regret the experience. In the meantime, everyone is encouraged to actively practice using the concepts and thus contribute to building our high performing culture brick-by-brick.

One last point. You may have noticed that I have written this piece without referring to HPC as a programme, as an initiative, as a training workshop or even as 'a thing' for that matter. This is important to me. Our high performance culture comes from within us and will be all around us. It's not something that can be measured via KPIs or captured into PowerPoint. Keeping it well-away from such corporate norms will allow it to achieve even higher heights in my view.

Something special is going on out there—and it's called High Performance Culture.



Dennis Hutton High performance culture —it's more than just the numbers

MANY OF YOU KNOW I TRAVEL A GREAT DEAL FOR WORK. I am in and out of hotels, airports, restaurants, trains and shuttle vans all the time. I've been doing this for a very long time. Along the way I have seen the good and the bad of business travel and business travellers. Some travellers take the chance to catch up on the news or finish off a book that they have been working on for a while and others just power up their laptops and work as if they were in the office. They hold conference calls, they send email, and they write reports as if nothing was different.

What I have noticed though is that there's a small set of business travellers that have what Meggitt would call *High Performance Culture*. Whether I am in a

restaurant grabbing a quick bite or the airline lounge waiting out a layover, I see these high performers, huddled in teams working on solving problems. It's not that they are working that makes them obviously high performing—everyone works on the road—it's the way they *choose* to work that makes them stand out.

I was in Cleveland not long ago, delayed between flights, and I was in the lounge catching up on my email. One of these high performing "pods" popped up over by the coffee machine and I sort of wandered over to see what I could learn.

They were employees of a pharmaceutical company. They appeared to be engineers and scientists, sales and operations and one or two finance folks. They were a true cross-functional team working together to solve a market/product problem. They were passionate and animated. They fought and laughed and argued and at one point, towards the end, they got very calm, all looked at each other and said, "yes, that's the answer we are going with", or something like that.

A bit later I ran into one of the team at the bar and I asked them how long they had been together as a group. The guy said, "well, we just ran into each other in the lounge by accident. We work in different parts of the company and that was the first, and likely the last, time we would get together." He went on to say that one of them had a real problem to solve and had asked if he could use the opportunity of them all being together to solve it. The guy said they were happy to help and they all dove in with everything they had to work towards a solution.

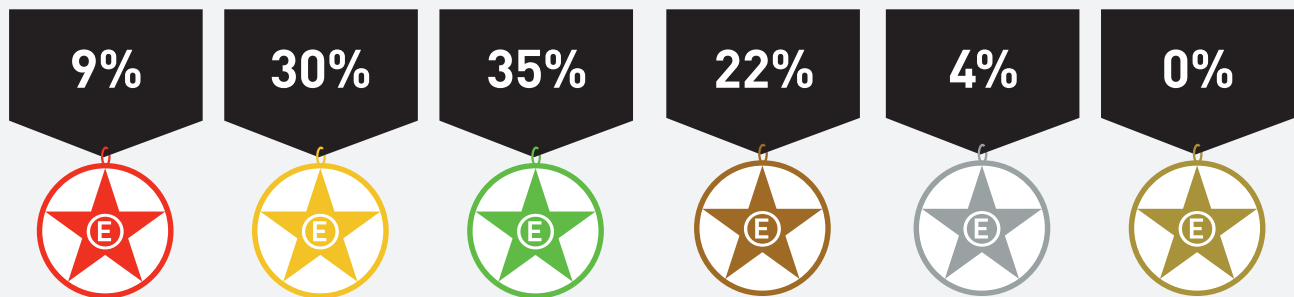
I observed in that encounter some elements of high performance culture:

- A leader unafraid to ask for help to solve a problem
- A leader willing to trust the contributions from near strangers that were part of the same global organization—he trusted their motives
- Colleagues willing to give up "free time" to help another member of the larger team
- Teamwork towards a common goal
- Respectful debate, wrapped in fun
- Closure that looked to me to be real and lasting

You will hear more about Meggitt's drive for high performance culture as time marches on. When you do, think about my little story about being stuck in Cleveland and how you can play the same game as those colleagues did in the lounge. ●

Upping the ante with the Meggitt Production System

Spring-boarding off 33 site exits in 2017, MPS continues to mature all sites towards Green level and above. We are committed to drive business performance aligned with business strategy, and ultimately to satisfy our customers.



Site state progression as of 31 December 2017

MPS HERO

Find out why Heatric is a champion for MPS.

Three years ago, Heatric was facing major difficulties. The worldwide slump in oil and gas prices had led to drastic reductions in revenue and unfortunately, headcount.

On top of that, problems in producing its heat exchangers had reached the point where On-Time Delivery (OTD) to the end customer had slipped to single digits.

Today, OTD is almost 100% and the company is ready to take advantage of the recovery in hydrocarbon prices, while at the same time building a diversified product portfolio which will help free it from the oil industry's historic cyclical nature. A significant contributor to the turnaround ... implementation of the Meggitt Production System (MPS).

"When I joined in 2014, our OTD to our customers and to our in-house plans was effectively zero," says Business Leader and Operations Director Tim Bycroft. "It's now in the very high 90s and it was the early stages of MPS that got us out of the mire."

"We had some technical challenges, but I think the main issue was that we had problems but didn't know where they were and how to start solving them."

Heatric faced problems that are endemic to many organisations. Individuals were so enmeshed in their individual difficulties that they couldn't see the wood for the trees. And when problems were identified, staff tried to come up with a

perfect solution, rather than breaking down the problem into bite-sized chunks.

"We were trying to boil the ocean, rather than focusing on small things that we could do now," explains Bycroft.

With the introduction of MPS, teams started to solve small problems, which gave them confidence that there was a way out of the maze. "That created disciples for MPS," Bycroft says. "It started to snowball. Once you get one or two disciples in each section of the business, you don't have to preach. It sells itself."

The core of MPS is the Daily Layered Accountability (DLA) meeting. Each team gets together to look at the metrics from the previous day, to determine 'Are we winning or losing? If we're losing, why?'

Once a problem has been diagnosed, someone is delegated to fix it. If it can't be fixed by that individual, it gets escalated through levels of the company until a solution is found. "The important thing is that, when it's solved, feedback is given to the initial team, so there are no open loops."

Heatric has successfully completed the red, yellow and green stages of MPS and is now into bronze, just three years after launching the programme.

Engineering Director Giles Corbett admits that he was initially less than enthralled by the thought of MPS. "Having previously had 'green belt' lean manufacturing training, the one thing that struck me was that it's all common sense. I became cynical, because it felt as though someone had tried to label common sense as 'corporate initiatives' and attach fancy acronyms to it."

So, was he cynical when MPS was brought in? "Absolutely! However, when we launched MPS, we did it in a very formal way. We had all sorts of interactive

exercises, from welders and etchers to Human Resources."

For Corbett, DLA is the most important part of the process. "For me, it's looking at a failed metric and following up on action daily – that begins to drive the accountability and discipline you need. We encourage our teams to not be afraid of the red! Keep identifying opportunities to improve."

"When people get challenged and have problems, they tend to get a silo mentality. MPS takes away the emotion and drives it to be cross-functional: it's not an engineering or a manufacturing problem. It's a business problem."

Initially, Heatric focussed MPS on the production side of the business where objectives are readily understandable. "It's about taking out waste and inefficiency. It's easier to sell MPS in a production environment because the benefits are much more visible and objective. The impact, especially on the shop floor, in the bottom line financials and, more importantly, to the customer, is clear and obvious. Through the yellow and green stages activity became more focussed on indirect business functions and we've managed to drive cost out of product design and make managing key delivery projects much more efficient. Throughout Heatric's MPS journey, key business metrics (Safety, Quality, Delivery, Inventory and Productivity) have all significantly improved", says Bycroft.

Both are now convinced of the value of MPS in solving seemingly insurmountable problems. "MPS is simply common sense applied rigorously!" says Bycroft. Strive to make everything you do simple ... it's then so easy to do it well! Don't overthink your improvement activity; remember the old adage ... never let perfect get in the way of better!" ●

News round-up

Meggitt's new Executive Committee

A new Executive Committee took effect on January 1, which strengthens the effectiveness of the senior team and simplifies the organisation.

Our five division presidents now report directly to Chief Executive Tony Wood, as do Chief Financial Officer, Doug Webb; Executive Director of Commercial & Corporate Affairs, Philip Green; Director of Group HR, Geoff Lloyd; Director of Engineering & Strategy, Hugh Clayton; and Group Company Secretary, Marina Thomas.

The Executive Committee will drive the vision and strategy of the company, ensuring that our organisational culture leverages the diversity, industry knowledge, global perspective and customer insight of all colleagues.

Stephen Young's retirement

In November Stephen Young announced his plan to retire at the end of April 2018.

Stephen joined Meggitt in 2004 as Finance Director and became Chief Executive in 2013. He stepped down as Chief Executive on 31 December 2017; the role was taken up by Tony Wood effective 1 January 2018.

Stephen believes that people are at the heart of the business, and it's the people he will miss the most. In his retirement, he plans to devote more time to playing his guitars.

We wish Stephen all the best for a long and healthy retirement.

Interim Director, Group Operations Strategy appointed

In January Russell Buxton, MCS UK Senior Vice President and General Manager, was appointed to the role of Interim Director, Group Operations Strategy. Russell's new responsibilities include continuing development of our operating functions and group-wide activities to improve operating performance and reduce costs.

We wish Russell all the best in his new/expanded role.

Garret Mertz joins Meggitt Polymers & Composites

Effective January 2, 2018, Garret, formerly General Manager for MCS San Diego, joined MPC as Vice President, Operational Excellence. Division operations functions (including quality, material management, MPS, procurement, EHS and footprint) and all MPC facility leaders report to Garret.

MPC welcomes you, Garret.

Ken Thrasher becomes SVP/GM for MCS NoHo

In February MCS announced the appointment of Ken Thrasher to the role of SVP General Manager for the transformed and recently expanded North Hollywood facility. Ken was previously SVP Operations for the division, and therefore has considerable knowledge of MCS' global operations.

Best of luck to you, Ken.

CSS signs distribution agreement with Proponent

Proponent will become the exclusive third party global distributor to selected non-military aftermarket customers for the supply of MSS (excluding Securaplane) and MCS products. Choosing Proponent as our extended distribution arm increases our product reach, underscoring our

commitment to provide partnership solutions and ensure our customers' specific needs are met.

MTSI's new virtual simulator

Meggitt Training Systems demonstrated its export-friendly FATS® 100MIL small-arms training system at the SimTEX in February. This product is a major expansion in weapons training capability, introducing revolutionary features and providing an impressive array of functionality for both instructor and trainee.

MSS launches six new websites

The goal was clear: 'MSS' websites needed a refresh to improve navigation; make our technology easy to understand and our products easy to find; improve search engine optimisation; generate sales leads and ensure a good user experience on mobile devices.

Mission accomplished! Six websites launched in 12 months, two* with eCommerce capability.

[Endevco*](#)

[FW Bell*](#)

[Meggitt Avionics](#)

[Meggitt Ferroperm](#)

[MeggittPower](#)

[MeggittSensing](#)

Securaplane obtains FAA STCs for SLA mainship batteries

Securaplane has obtained three separate FAA Supplemental Type Certificates (STCs) authorizing installation of sealed lead acid (SLA) mainship batteries on Saab, Bombardier and Pilatus aircraft. The STCs were obtained under a teaming arrangement with AeroMech Incorporated.

RMU++ reward programme

Small changes that make a huge difference

CSS wants *your* bright ideas. The scheme encourages Meggitt employees to submit repair, modification and upgrade ideas for in-service products, and relates to CSS's enhanced RMU programme, RMU++.



(The original)



(The upgrade)

Why RMU++?

RMU++ stands for retrofits, modifications and upgrades.

+ is for repair schemes, reducing the usage of new parts during MRO by introducing repairs to used serviceable parts.

++ signifies smart scoping—revisiting component maintenance manuals and general maintenance practices to ensure all activities actually add value to products.

How it works

Under the incentive scheme employees can earn a cash award of up to £1,000 for each successful RMU++ suggestion, with an additional annual award of £3,000 for the best idea.

Submissions don't have to be detailed or product related. Service improvements are equally important. Anyone with a snippet of an idea can submit an outline and, if there's a glimmer of promise in it, we will do the rest.



For further information or to submit an idea, please contact Roger Sharpe (roger.sharpe@meggitt.com) or just send an email to: rmu@meggitt.com

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