

SOME CURRENT HIGHLIGHTS

Eurotunnel - Engineering Support

AEGIS is supporting Eurotunnel in its procurement of a new fleet of hybrid on-track machines to replace the current fleet of 12 Schoma Locomotives. The project is being run by experienced engineers to provide resident engineering support along with safety and approvals assurance support and the associated project management. AEGIS is also acting as a Certification Body for this project.

Freightliner - ETCS Freight Putting Into Use FIC Vehicles Operational Change Assessment Body

Putting Into Use (PIU) is the activity that follows gaining Authorisation to Place Into Service (APIS) from the ORR for a modified rail vehicle. APIS is necessary where the modification is deemed interoperable under R(I)R and addresses compliance with the applicable TSIs.

PIU is a safety process, covering requirements of the Duty Holder (in this case, the FOC) when operating and maintaining the modified vehicle under their SMS and ROGS Safety Certificate.

The change relates to the vehicles being equipped with ETCS and, where not already installed, with TPWS Mk4. FIC (First in Class) activities include dead haulage to and from RIDC Melton for testing, L-NTC shakedown running on the main line, and subsequent operation with the ETCS equipment rendered inoperable pending Fleet fitment.

AEGIS was the successful bidder and continues to assess the risk management processes applied and the outputs of these processes to control risks associated with the identified operational changes.

Welcome to the AEGIS Autumn Newsletter



We have been as busy as ever over the summer period working on a large variety of interesting projects, some of which you will read about in these pages. With the very important topic of the environment, and more specifically the railway's impact on it, becoming more and more prominent by the day, AEGIS is pleased to be working with several clients on various alternative power and hybrid projects.

We recently attended the Destination Decarbonisation event at Long Marsden. It was a very upbeat event, showcasing the many creative and exciting initiatives that will positively impact the industry's carbon footprint going forward.

We have many engineers who are continually expanding their knowledge and expertise with future technologies so we would encourage you to get in contact with us should you need some help or advice with a project you are undertaking.

In early October we celebrated the arrival of our 50th AEGIS staff member Gopalakrishnan Sivaswamy. Read more about Gopal later in the newsletter

As ever, we hope that you find this newsletter of interest and welcome your comments and feedback on it or any of the projects we are working on.



AEGIS release an updated strategy to our Health & Wellbeing Policy

Some time ago, AEGIS attended an evening workshop called The Mental Wealth Café, run by Wendy McCristals' Mental Wealth Company (www.mentalwealthcompany.co.uk). The question was asked "Hands up if you have a wellbeing policy?" and (along with probably most attendees) AEGIS' hand stayed down.



Well, we learn as we go – and we now have a Wellbeing Strategy as well as a Health and Wellbeing Policy. For this, we've taken a leaf out of Glenn Elliott's brilliant book on engagement, "Build it", and have devised a three-faceted approach to wellbeing, covering mental, physical and financial aspects of wellbeing.

Glenn's idea is that, while physical wellbeing is the area most commonly addressed by companies, the other two areas are arguably even more critical but typically are not addressed because of a perceived stigma around dealing with them. Our strategy is trying to put this right.

SPECIAL REPORT

In truth, many of the aspects of this strategy have been in place for years - such as our medical cover and extended sick pay policy, our approach to flexible working and our social fund (promoting cross-team social activities) – we just didn't call it a strategy.

Looking after people's wellbeing stems directly from our core values of "we care" and "doing the right thing". And of course as well as that, it all makes great sense on a purely business level: people who are happier and healthier will be more engaged and more productive.

The area of wellbeing that we have developed most strongly in recent months has been the mental part. In this, we have engaged with Dragonfly Impact (www.dragonflyimpact.co.uk),

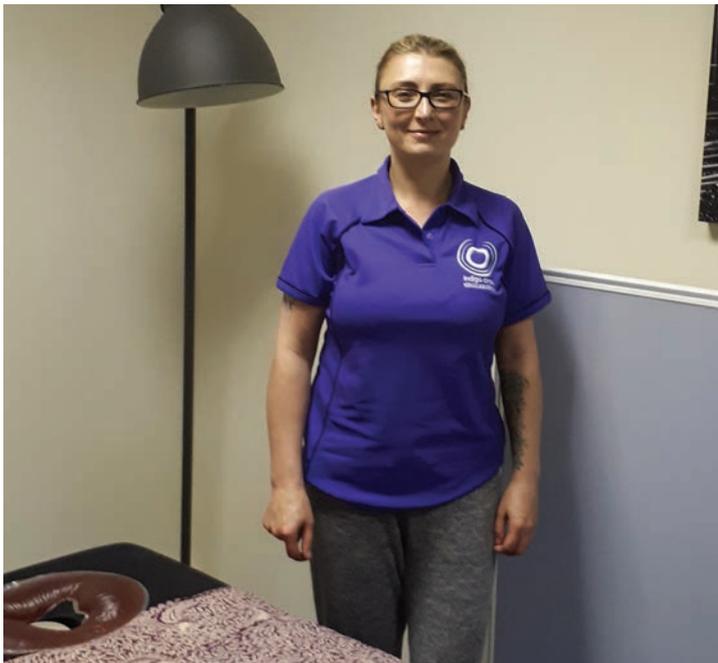


Award in First Aid for Mental Health. Then they rolled the training out across the company in "lunch and learn" sessions.

This arm of the strategy is also strengthened by providing access to counselling services and free advice services through the Employee Assistance Programme that is part of the income protection policy we provide. Our next step is with Wendy McCristal once again as we turn to resilience training to equip people better to deal with the day to day pressures of the working environment.

Other initiatives that go down well with AEGIS people are the massage sessions that are provided twice a month by Sarah (pictured left) from www.indigocirclehealthandbeauty.co.uk - and, for those who really want to keep their energies in balance, there are the weekly Tai Chi classes given by our very own Krish Chedumbarum.

a company that "champions the idea that emotional wellbeing is just as important as physical health". Rachael and Claire from Dragonfly have trained a core of AEGIS staff to create a cohort qualified with a FAA Level 2



So the next time that question is asked, AEGIS' hand will be able to go up, but at least partly that will be as a sign of volunteering to do even more to help our people's wellbeing.

SPECIAL REPORT

Anyone who follows AEGIS News or knows the company will be aware of the importance that we attach to speaking about and living our core values. When we first set up in Derby and began our current journey, we spent a lot of time and energy in defining our vision and values. Seven years on and the company has developed a great deal in size, diversity, client base, service offerings - most notably perhaps the establishment of our certification business. So we felt it was right to review those core values to ensure they remained relevant and vital. We set up a Culture Committee with people from across

AEGIS to do this review. The Committee came up with a succinct but descriptive list of 5 core values, as shown in the image. Four of these remained unchanged but the fifth (“Do the right thing”) is new - at least it is new in the way it is phrased, but it is a continuation of values such as conscientiousness, integrity, ethical, approachable....

The other new part of this is the brief paragraph with each value, setting into context the thought and meaning behind the simple words - to tell the story of why this set of values is AEGIS.

AEGIS
THE POSITIVE CHOICE

RESPECT
...BREEDS RESPECT

We value difference and diversity. We treat everyone with respect regardless of their views, beliefs, background or culture - behaving with consideration, good manners and thoughtfulness towards others and each other. When we do this, we find that respect is reflected back to us.

WE CARE
WE'RE A BUSINESS BUT IT'S NOT ALL ABOUT THE MONEY

It's in our upbringing, our DNA. Care for others will always be the central pillar of how we go about our lives. We care about our colleagues, our clients, the balance of our lives and the work we do. It's about the community we create and belong to, our environment and it's about our industry. Our caring shows that although we're a business, it's not all about the money.

EXCELLENCE
STRIVING FOR EXCELLENT OUTCOMES

Whether hiring top talent, developing our abilities, focusing on the technical quality of our work or delivering on our commitments to our clients, at all times we strive to create excellent outcomes for everyone.

DO THE RIGHT THING
DELIVERING IN THE RIGHT WAY, THE AEGIS WAY

We believe absolutely in doing business the right way. We are conscientious and approachable; we always act with integrity. We respect all those we deal with and seek to build relationships that are win-win. We will do what we do the right way, the AEGIS way, which will be from the heart.

PASSIONATE
BELIEVING IN WHAT WE DO AND WHY WE DO IT

We believe that what we do and how we do it can make a real positive difference. Being passionate means being motivated to work energetically and with enthusiasm, to engage positively with everyone around us in the performance of our duties and to have fun while we do it.

OUR VALUES

THE SAFETY ENGINEERING TEAM

Safety Engineering has always been at the core of AEGIS' business ever since the company's inception in 1997. We have a team of ten dedicated safety engineers covering disciplines such as CSM, RAMS, EMC and Software/Hardware Assurance. Over the last year or so we have worked on a diverse range of projects including reliability studies for motorway signs and safety cases for laser experiments as well as passenger and freight rolling stock, on track machines and infrastructure projects. The team has expanded rapidly over the last year with the creation of a dedicated EMC team and the expansion of our software assurance capability.

What has been very interesting is the number of hybrid projects that we are working on (the integration of a traction battery and, often, the upgrade of the traction system to provide "off-wire" or non-diesel operation).

We are supporting these projects by providing safety cases, EMC studies, software assurance as well as specialist engineering support. Our EMC team is also undertaking compliance and compatibility testing of the hybrid units.

The services that the safety team offers includes safety engineering (compliant with the Common Safety Method for Risk Evaluation and Assessment), safety cases, reliability, availability and maintainability assessments (EN50126 and EN50129, train and infrastructure compatibility (RIS-8270-RST compatibility files for EMC and electrification for example), verification support (RIS-2700-RST), failure and incident investigation and software assessments (notably to EN50128). We also offer training courses and have provided training to manufacturers, maintainers and train operators in engineering change, including CSM-RA and RIS-2700-RST, EN50126, EN50128 and EN50129 and EMC.

We are confident that next year will see us develop our capabilities even further as we continue to grow to support the needs of our clients. There seems to be a real impetus in the railway industry right now with a drive to low carbon, sustainable transport involving innovative engineering solutions and AEGIS is ideally placed to support its safe delivery.



JAMES JOHNSON

James has been our Safety Engineering Director since March 2015 and in this time has overseen the doubling of the AEGIS Safety Engineering team. James started his career in the lift industry (vertical traction) before joining GEC as an Applications

Engineer on Manchester Metrolink. He became Lead Traction Engineer for various projects including Northern Line Tube Stock and WMATA (Washington Metro) responsible not only for the design but also the safety case for these traction systems. After fourteen years at GEC, GEC Alstom and Alstom, James left to pursue a career in Assurance starting with Engineering Acceptance and progressing to Lead Assessor and continues to be heavily involved in safety and compatibility for new and upgraded rolling stock. This is a very interesting time for safety engineering as new and novel technologies are being introduced, such as hybrid drives and latest technology traction batteries, with challenges to overcome to ensure their safe introduction and deployment.



PAT WATKINS

Pat is a Chartered Mechanical Engineer with over 20 years' rolling stock system engineering and safety engineering experience. Pat has contributed on all aspects of braking systems from tender

to commissioning including new build projects for London Underground and UK mainline. Pat also has expertise in mechanical, electrical, control and software design of brake and pneumatic systems, with knowledge of all other major on-train systems. She is currently managing testing for the installation of AC traction on a fleet operating in the UK and carrying out safety engineering for another similar traction upgrade project, whilst also working on a project to install hybrid traction equipment on existing DMUs.



KATH UTHAYANAN

Kath has over 7 years' experience in the rail industry. He joined AEGIS after completing his graduate scheme where he undertook placements at Network Rail and Southern Railway. During his time at AEGIS he has worked with various departments to develop his skills and is now a Member of the IMechE and a Chartered Engineer. He has worked as a Level Crossing Risk Assessor where he assessed safety of level crossings and produced safety reports and as a Safety Engineer where he has facilitated Hazard Identification Workshops and developed the safety assurance reports. Kath has now joined the Software Team as a Software Assessor where he evaluates safety software and its development process to ensure it complies with the EN50128 and/or other software standards.



PHILIPPA KNOTT

Philippa is a Chartered Physicist and has over 20 years of Safety Engineering experience in the high-risk nuclear industry, working for Rolls-Royce Submarines. She has produced several Safety Cases involving HAZID and HAZOP studies, the assessment of ALARP options and the production of technical reports. She produced and lectured on the ALARP course at Rolls-Royce for over 10 years and has read across that knowledge to the rail industry provide a similar course for AEGIS. Philippa has been with AEGIS since January 2019 working in the Safety Department and has been mainly working on Safety Risk Assessments and technically checking work for colleagues.

DAN STEENSON

See photo of Dan in recruitment section. Dan has 4 years' experience in railway engineering and joined AEGIS in July. He previously worked for SNC-Lavalin where he also completed an MSc in Professional Engineering. Dan is experienced in many aspects of EMC work including preparing strategies, control plans, management plans, test plans, longitudinal voltage assessments and safety cases. He is supporting all aspects of EMC for rolling stock and infrastructure projects.



DANIELE DIANA

Daniele is a Chartered Electrical Engineer with over 15 years' experience in the RAMS field in different sectors including railways. He has experience of working with many rail manufacturers on managing and demonstrating RAMS requirements for large multinational projects across Europe, USA and Asia. In the past he successfully managed and completed the RAMS activities on multiple metro, LRV driverless as well as high speed trains projects. He has wide experience in mentoring people on RAMS standardisation, methodologies and tools. He is one of the UK representatives in various RAMS standardisation committees.



ED BRUNDLE

Having started his career as a railway engineering consultant in Derby, Ed has 15 years' experience in the rail and nuclear and process industries and is a Chartered Engineer with the IMechE. During this time, he has primarily specialised in safety engineering but has also held

a variety of positions including Project Engineer, Engineering Manager and Safety Manager. Since joining AEGIS in 2018, Ed has supported a range of clients in implementing the Common Safety Method safety management process as assisting with the introduction of new rolling stock to the UK railway and modification of existing vehicles.



COLIN PLACE

Colin is a Chartered Engineer with 28 years of experience in electrical engineering in UK Rail and 20 years in railway EMC. In addition to playing key EMC roles in numerous high-profile projects such as Crossrail and London Underground 2009 and S Stock, Colin has worked on Research and Development projects and is currently chair of a European Standards committee defining EMC testing requirements for rail vehicles. Colin joined AEGIS in March from Bombardier where he was a 'Fellow Expert' in EMC and Head of Bombardier Global Centre of Expertise EMC. At AEGIS Colin has been involved in EMC work for the Class 442 re-traction and auxiliary converter replacement, Glasgow Subway and Class 165 Hybrid Multiple Unit projects.



LUCIA CAPOGNA

Lucia is a Principal Engineer & Software Assurance Specialist. She has worked at AEGIS for 4 years and has more than 10 years' experience in verification and validation, software V&V, Software assessment and testing, requirements management and process improvements. She has applied the same principles in different sectors (Defence, Oil & Gas and Renewable Energy) before joining AEGIS. She is currently involved in several Railway SW Assessment Projects, such as Propulsion, ASDO, ETCS On-Board, TCMS, TPWS and other signalling SW Assessment projects. She is an active BSI/CENELEC committee member for the new Railway Application Software Standard and Cyber Security Technical Specification.



EFTHIMIA KALOGERAKI

Efthimia is a Graduate Engineer following our IMechE accredited AEGIS Developing Engineer Scheme. She joined AEGIS after completing a graduate traineeship at the European Union Agency for Railways, in France. During her first year at AEGIS she has worked in various projects focussing on developing skills and knowledge in the area of safety engineering. Projects involving safety statistics, Level Crossing Risk Assessment and implementation of the Common Safety Method on risk evaluation and assessment.

GOPAL SIVASWAMY

See photo of Gopal on recruitment section. Gopal has recently joined AEGIS as a Principal Engineer and brings 20 years of cutting-edge embedded software industry experience, across multiple domains, including rolling stock software validation, assurance and authorisation. He was previously responsible for the validation and authorisation of safety critical software systems deployed on Bombardier AVENTRA platform vehicles at Bombardier Transportation, Derby. He brings to AEGIS a wide range of consultancy experience in process engineering, continuous improvement, operational excellence, governance and delivery models, spanning the entire product life cycle.

Rail Infrastructure Networking Event

Due to AEGIS's success at the 2018 event, we are once again exhibiting at RIN at York Racecourse on 21st November. Come along and see us, it's a great opportunity for companies to get involved in the infrastructure side of the railway industry.

Register to attend at: www.rinevents.co.uk

Modern Railways RVE Show



We exhibited for the 2nd year running at the Modern Railways RVE Show on 3rd October at Derby Arena. Thank you to everyone who visited our stand to meet us and ask us about our services.



Roundhouse Dinner

We hosted a table at the annual Roundhouse Dinner on 17th October. We were delighted to be joined by guests from companies Gemini Rail UK, King Rail UK, Siemens Mobility and newly formed The Mental Wealth Company. Yet again another fantastic night!

Our People

Congratulations to our two summer interns; **Oliver Johnson** and **Mikala Smit**. Oliver gained a 1st Class MEng in Electronic and Communications Engineering and was awarded the Mappin Medal (for greatest distinction shown by a final year candidate in the Electronic and Electrical Engineering Department) and the Peter Hopkinson prize (for the best final year project).

Mikala also gained a 1st Class MEng in Electrical and Electronics Engineering. Both graduated from Sheffield University. Oliver was with us during the summer of 2017 and assisted with the analysis of EMC data for a new train project and Mikala undertook fleet performance analysis of another new fleet in 2018.

Oliver is joining an RF Comms company in Cambridge and Mikala is starting with a railway electrification company in York. We wish them every success in their chosen careers.



Graduate Training Programme Placement

Efthimia has just completed an eight-week placement at CrossCountry Trains as part of her training and development towards achieving chartered status under our Developing Engineer Scheme. During her placement she was part of the Fleet team of CrossCountry working primarily for Class 170 fleet. She had the opportunity to experience the daily operations, ensuring availability, effective maintenance and quality service in a fast-paced environment.

She undertook assignments related to engineering change, maintenance instructions and used videos as a training method for frontline staff. She also visited various CrossCountry depots, observing not only routine maintenance, but also high scale modification work. The placement was highly valuable for gaining an appreciation of an operator's working environment and fleet management processes. AEGIS would like to thank CrossCountry's Fleet team for providing this valuable opportunity.

New Starters



DAN STEENSON

Dan has joined as a Senior EMC Engineer and has 4 years' experience in railway engineering. Dan made a career change from being a musician to become an engineer and he graduated as a mature student with a BEng in Electrical & Electronic Engineering. He previously worked at SNC-Lavalin where he also completed his MSc in Professional Engineering. Dan is experienced in many aspects of EMC work including preparing strategies, control plans, management plans, test plans, longitudinal voltage assessments and safety cases. He has a good knowledge of railway EMC requirements, standards and processes.



ALEXANDRE DESEMERY

Alexandre Desemery has moved to the UK from Canada to join us as a Principal Engineer and is working in the Infrastructure Team.

He has 18 years' experience working in the aerospace and railway industries. Alexandre has previously worked for Thales, Electro Motive Diesel and Parsons. He has highly experience in System Assurance and Testing & Commissioning on major projects, most recently working for SNC Lavalin as part of the Light Rail Transit consortium project in Toronto.



GOPALAKRISHNAN SIVASWAMY

Gopal has joined as Principal Engineer in the Software Assurance team. He brings his 20 years of cutting-edge embedded software industry experience, across multiple domains, including rolling stock software validation, assurance and authorisation. He has wide ranging consultancy experience spanning process engineering, continuous improvement, operational excellence, governance and delivery models, across the entire product life cycle.

We would like to welcome Dan, Alexandre and Gopal to the team!



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