

SOME CURRENT HIGHLIGHTS

1

Training Courses

AEGIS is in the process of delivering a series of training courses including Traction Systems, TMS, HVAC and CSM-RA. Get in touch if you would like more information.

2

Failure Investigations

AEGIS is currently working with an operator to investigate component failures and recommend alternatives and/or modifications.

3

EMC Assistance

AEGIS is currently helping more than one client to demonstrate that their products are compliant with the relevant EMC Standards.

Authorisation & Certification of a Schwebbau HSM

AEGIS is supporting Schwebbau GmbH with the introduction of a High Speed Milling Machine (HSM) into the UK. The HSM will be used by Network Rail as one of its track maintenance machines and AEGIS is responsible for the authorisation and certification of the machine which should be in service during May 2018.

Welcome to the new AEGIS quarterly newsletter



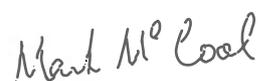
It's exciting times at AEGIS with lots going on, so we've decided to put together a quarterly newsletter to tell you about some of the highlights. The rest we will put on our website, which is currently undergoing a facelift.

AEGIS is 20 years old this year and has been actively and successfully supporting the UK Rail Industry from day one. Since our move to Derby in 2012 we have grown four fold and significantly expanded our range of services and our client base. We continue to grow as demand dictates and in this first newsletter we will introduce you to the latest three recruits to join the team. We will also be including a feature on other members of the team so you can get to know them on a more personal level.

We recently took part in the IMechE Railway Challenge where we teamed up with Birmingham University Centre for Railway Research and Education.

As our main feature in this issue we will give you an overview of the competition and our impressive 2nd place finish. As well as AEGIS providing financial support for the project, funding was also provided by the University of Birmingham Alumni. Without this kind of support projects of this nature would not be possible.

I hope you enjoy this newsletter and I look forward to meeting many of you as existing and new customers in the future.



Mark McCool
Managing Director



The Annual Railway Challenge



Organised by the Railway Division of the Institution of Mechanical Engineers, the annual Railway Challenge, held between June 29th and July 2nd took place at Stapleford Miniature Railway in Leicestershire.

Our Project Engineer Bing Yan has been working in collaboration with a team from the University of Birmingham to create a 5th generation hydrogen fueled rail vehicle to enter into the competition.

Whilst Bing headed up the project, the team also had the expertise of 2 PhD students, 3 Undergraduates and 2 Civil Engineer Students, who were visiting from the University of North Carolina, USA; as well as the expert help from AEGIS' Engineering Director Chris Hoare who helped with project management, traction specialist James Johnson and the design skills of Mechanical Engineers Christopher Beale and Sylwester Sulkowski.

Always thinking of future proofing solutions, the hydrogen fuel cell powered locomotive was designed as an attractive candidate for future railway solutions due to its high efficiency and competitive edge to alternative fuel sources as it is emission free at the point of use. Combined with a supercapacitor, the hydrogen cell

powered locomotive creates high power with a fast dynamic response, highlighting its suitability for this kind of application. Not only does this reduce the stress on the fuel cell, it also brings with it the economic benefit of cost saving on the fuel cell capacity hence reducing initial investment in the whole train.

After months of preparation the Railway Challenge finally arrived on June 29th and the team were more than ready to showcase their locomotive, having full confidence that it would perform on the day. The Railway Challenge is a fantastic opportunity for our engineering experts to compete against industry peers and showcase their engineering know-how in a fun environment, although this didn't detract from the team's competitive nature and burning desire to come out on top!

Governed by stringent competition rules our team rose to the challenge of designing and building a miniature 10 1/4" gauge railway locomotive, with fantastic results.

The locomotive was built to challenge the other competitors on several different aspects, these were:

- **Track based challenges:**
 - Energy storage challenge
 - Traction challenge
 - Ride comfort challenge
 - Noise challenge
 - Maintainability challenge
 - Reliability challenge
- **Presentation challenges:**
 - Design
 - Business case
 - Innovation

With an impressive overall finish of 2nd place, Bing and his team were thrilled to have achieved first place in the Energy Storage and Innovation Challenges and joint winner of the Reliability Challenge, showing that all their hard work had paid off. The choice of an innovative, leading edge hydrogen fuelled locomotive highlighted the potential this type of propulsion system has in the



market place, helping to pave the way for hydrogen fuel-cell technology.

Although quite rightly thrilled with a 2nd place result, Bing has already started planning for next year, determined to get all the way to the top in the Railway Challenge 2018. For the full article please click on the following link.

[CLICK HERE](#)

FOCUS ON

ANDY COLVER

Principal Engineer & Business Development Manager



Some of you may already know Andy as he has worked in the rail industry for 27 years. Andy is an electrical engineer but his many years of experience mean that he is also an excellent project, tender and commercial manager. Andy also leads the AEGIS Business Development and Marketing activities.

Outside of work, Andy is a family man being married to Helen with two teenage sons Bradley and Harvey. Like Andy, Brad and Harvey are sports fanatics and keep him on his toes. They are both rugby players and keen Triathletes. In his younger days Andy was a track athlete before moving sports to play rugby and he too now takes part in Triathlons as well as the odd Half Marathon. His aim over the next couple of years is to complete a half Ironman (1.2 mile swim, 56 mile bike and 13.1 mile run) and who knows, maybe even a full Ironman!

Three new additions to the AEGIS team



CHRISTOPHER BEALES

We are pleased to welcome Christopher to the team, who has joined us as a Project Engineer, providing engineering support.

Christopher recently graduated from The Queen's University Belfast with a MEng (Hons) in Mechanical Engineering.

"I am surrounded by engineers with a vast amount of knowledge and experience of the rail industry. I hope to immerse myself in some new projects and develop quickly under their guidance."



PAT WATKINS

Pat is a Chartered Mechanical Engineer with 20 years of rail vehicle engineering experience. She has expertise in mechanical, electrical, control and software design of brake and pneumatic systems, with knowledge of all other major on-train systems.

Pat's experience includes a broad knowledge of the design and maintenance of rail vehicles as well as planning and managing vehicle testing and commissioning.



HAYLEY THORNE

Hayley Thorne joins the AEGIS team as Finance Manager. Hayley has worked in accounts for 13 years in various roles and joining AEGIS is a natural progression in Hayley's career. Hayley says,

"After many years of committed service at my previous company I decided that I wanted to take on a new challenge to develop myself personally and professionally and I hope to become a valuable asset in my new role at AEGIS Engineering Systems Ltd."

We would like to welcome Hayley, Pat and Chris to the team.



THE POSITIVE CHOICE

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