Recognising the professionalism of what we do

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Engineering delivers…
BSC Sword of Honour

This rating clearly demonstrates your organisation’s commitment to health and safety – BSC July 2016

Four Swords of Honour awarded by BSC October 2016
Introducing BCS5

- Ballast Cleaner, CM (integrated Tamper/DTS), Power Wagons, 44 MFS wagons
- 1x 09-3x Tamper/DTS & 1x USP 5000 Regulator (bolster existing fleet)
- 2x 09-2x Tamper/DTS & 1x USP 6000 Regulator (designed for 3rd rail operation)
- 3rd rail ‘in-situ’ features – ballast ploughs and distribution, handling clamps.
- No external operating positions
- Diesel Particulate Filters fitted to all engines
- Removal of 44 generators from the material handling wagons
- Auto idle and Auto off facilities (like ‘Bluemotion’ cars’) & auto-operation
- ‘Panolin’ bio-degradable oil and LED lighting in all machines.
- Dust suppression and all operators in pressurised cabs.
- Built with maintainability in mind
Steel sleeper ballast cleaning

• A DTS (Dynamic Track Stabiliser) is attached to our machines and is used to vibrate the ballast at high frequencies to allow the ballast to “flow” in a similar way to a liquid. This “flow” enables the voids to be reduced.

• Used in conjunction with a tamper to tamp the site multiple times
Air-fed respirators

- User friendly and easy to use
- Greater protection to ballast dust
- No face-fit required
- Good eye protection
- Head torch/ personal lighting
- Ear piece and mike used under the visor
Thunderbird Fans

- Mobile tunnel ventilation and air monitoring systems
- Create natural air flow through tunnel to allow dust to escape working area
Improved Transportation

Road tilting lorries

• Reduce the need for onsite assembly and future maintenance liability

• Winner 2017 Heavies award for innovation
Improved S&C reliability by a factor of 5

- S&C inspectors hired and deployed across the business
- Lifting and handling best practice rolled out
- DRACAS (data reporting and corrective action)
- Getting the correct ballast stiffness
- Installing to exact position
- Hand tamping to support the core tampers
- Progressive assurance during construction
Critical Rail Temperature management

1. The CRT Assessment is made on site by the contractor’s assessor.

2. The Assessment form is input into the CRT Register by the Contractor’s CRT Coordinator.

3. The CRT information contained in the daily management report is used to deploy the contractor’s CRT Watchmen to site. Watchmen monitor the site for temperature and signs of buckling and impose ESRs or block the line, if required.

4. The Register is also used for reporting:
   - Hot Weather Preparation Report
   - Route Critical Rail Temperature Reports
   - Corporate And Regulatory Reporting Team (CARRT)
   - Internal KPI reporting (Unstressed track etc.)
Temporary Clamped Rail Joints

Installation quality is vital to maintain line safety

- IP Track have been working with Network Rail Training to develop training material to upskill the Supply Chain in temporary clamped rail joint installation.
- 454 people have been trained over the last year and an additional 390 spaces are funded by NR
- To supplement the training, a CGI ‘How to’ video has been developed in line with the format now standard across Network Rail – now available to the industry on You Tube
Under Sleeper Pads

- Have won or been highly commended at three national external Railway Awards & one NR internal award in Engineering Innovation & Environmental categories.
- Specification and application in Plain Line and S&C is now in the asset policy for NR and their use has grown significantly over the last 12 months.
- Have provided improvements at locations with track quality problems and shallow depth undertrack crossings.
- Two sleeper manufacturing depots in Doncaster and Birmingham are now supplying padded sleepers for track renewals.
- Long-term engineering benefits now recognised nationally. Ballast life is improved by up to 60%, meaning future renewal intervals can be increased.
RILA & RILA 360

- Surveys to design standards for both track and overhead lines
- UKRIA award winners for ‘Cost Base Reduction’ & ‘Design Innovation’ Categories
Surveying using drone technology

- Aiming to produce sub 5mm data
- Against current 30-60mm accuracy.
4D planning interface

• In conjunction with THINKlab

• Planners can create a 3D representation of the site that then allows them to create a 4D simulation of the track renewal activities

• Currently being used on 10 Network Rail renewals sites

• Winner 2016 national construction awards for BIM
125mph High Speed Handbacks of S&C

Belford – September 2016
Handed back at 125 MPH
09 4S DTS used in S&C North core renewal shift
In-Bearer Clamp Lock POE

Sandy – February 2017
Handed back at 125 MPH
09 4S DTS used in S&C North core renewal shift using 2x DTS Tampers working in parallel on a crossover
In-Bearer Clamp Lock POE
My PWI objectives for this year

- Increase number of professionally registered engineers
- Introduce experienced candidate route
- Develop the role of corporate members
PERMANENT WAY INSTITUTION

Who are we?

Dr. Brian Counter
PhD MBA BSc PGPLT CEng FICE FPWI
History of the PWI

• Formed in 1884 in Nottingham by a group of permanent way inspectors who were track engineers and supervisors, the first president was William Lewis Meredith

• Supported by early railway companies as a means of training and competency with meetings, books and journals

• Highlighted mainly from links with British Rail and London Transport from 1950 until 1996 at privatisation

• Had 15 years of challenging times!

• In 2011, the PWI was restructured and modernised to provide independent support to the rail industry
What do we do now?

• The professional body for track and rail infrastructure engineering affiliated to EC
• Learned society to expound knowledge through meetings, seminars, and communications
• Promote integration with corporates
• Qualifying body for permanent way engineers
• Train and promote development of people
• Accredit University and College courses
• Provide track specialist consultancy services
Website, journals, textbooks, Technical Hub, social media
Structure of the PWI

- PWI Board chaired by the President Steve Featherstone
- Executive team led by CEO David Packer
- Operations team for admin and professional registration
- Voluntary officers and professional reviewers

- Member organisation
  - 3000 individuals in UK, branches in Ireland and Australia
  - 27 corporates members including Network Rail, LUL, RSSB, ORR, RAIB

- Sections all over the UK with 200 meetings every year
- International conferences and seminars
- Supply chain and corporate events
People and professionalism

• Registration is the new railway future requirement
• CPD is compulsory as best practice in public industries
• Code of Conduct also is mandatory for engineers
• Share knowledge and meet other permanent way engineers
• Continuous quality improvements and innovations in materials, methods, processes
Membership grades

• **MPWI** – the standard membership

• **FPWI** – the accolade for experienced professionals

• Professional members
  • *EngTech MPWI, IEng MPWI, CEng MPWI*

• Honorary members and fellows

Following acceptance of the PWI Code of Conduct members may use designatory letters on email, letterheads, CV and business cards (post-nominal)
Routes to Registration

Engineering Technician

• Supervisors and technical staff open to all qualifications and/or experience

Incorporated and Chartered Permanent Way Engineers

1. Accredited HNC, bachelor or masters degree
2. Review of a package of qualifications
3. Experience and individual Technical Report Option
4. Dual membership with another body
What we need is more support and involvement from Rail Engineers!

Professional development advisers
• Review opportunities for registration now
• How to get there in the future
• Link to personal development

Professional Reviewers
• CEng and IEng reviews
• Technical Report reviews

Mentors
• Understand academic > experiential learning
A real problem of support!
Thank you