The National
Skills Academy

RAIL

NSAR Annual Report

2021

Contents

Dyan Crowther

I am delighted to introduce this report, having been in the chair at NSAR for over a year now. It has been a challenging and interesting year. As I write, passengers are coming back and investment in rail continues. NSAR has worked hard to adapt to the challenges of the past year. The NSAR board tasked the team with providing every support to our members and partners, whilst developing new services, and extending our reach of the all important industry data.

As ever, the top priority has been safety, and ensuring that training and apprenticeships could be delivered safely. This we did, working with our partners. It turns out 84 % of training can be delivered in a covid friendly way. At this point I'd like to pay tribute to our training partners, who did a superb job of providing training under tough circumstances; the problem of fixed costs but reduced income is one I well understand.

Turning to new developments, it has become critical for the rail and wider infrastructure sector to demonstrate social value. This means doing things that make a difference, and then measuring it. This has been a big focus for NSAR this year, working with employers and government to introduce kickstart, new traineeships, work placements and outreach. NSAR's data allows uniquely powerful measurement of this, and I'm proud of what we have been able to show. It won't be a surprise to you that the rail industry was already doing much to drive social value, but wasn't telling anyone. It's heartening to see the enthusiasm with which these new schemes have been taken up. These will become even more important as we seek to level up, ensuring all our communities can benefit from high value rail jobs.

You would have to have been isolating on a remote island to not have noticed the central importance environmental issues have assumed in both the political and public discourse. This is another area where rail has a good story, but one that could be told better, and built on. Developments in battery, hydrogen, electrification, brake regeneration and low carbon build are all important, but we must also reflect on how we use carbon in our day to day business. I'm delighted then that we are launching a new section within the RTAS assurance scheme for training businesses. There will be another element of recognition to those who reduce their carbon and increase awareness within their businesses. This will be free for 2022 and will be part of their wider audit. The scheme will be extended to the wider SME community in the first part of next year.

The last area I want to highlight is digital. NSAR has continued to develop the digital dimension to the wider workforce planning process. This is throwing up fascinating scenarios and underscoring how significant it will be. The Living Lab project continues to contribute to our understanding of how and where data, and other modern methods will be deployed. The use of digital twins and robots by HS1 in St Pancras, is a daily reminder to me that the future is here now. The symposium which accompanies the AGM will cover both environmental and digital issues.

I would like to close with a huge thank you to all NSAR's members and partners for your unwavering support. We rely on it to keep NSAR a vibrant resource for the industry. I look forward to hearing how we can support you further as we all continue to deliver in a rapidly changing environment. We also look forward to playing our part in supporting the emergence of Great British Railways.

Dyan Crowther
Chair – NSAR

Our Purpose and Values

Purpose

The purpose of NSAR is to help you be the best that you can be through high quality insights, expertise and support. We are dedicated to supporting members and clients navigate the skills landscape efficiently and effectively to create a safe and skilled workforce that is fit for the future.

Our work is divided into four pillars of support:-

Data Services

We are supporting businesses deliver on the big agenda items. We are guiding decision-making on levelling up, productivity and sustainability. We are delivering the workforce requirements of the future.

Skills

We are helping businesses navigate address the complex skills landscape connecting employer needs with access to government funding and matched to education provision.

Quality Assurance

We assure that risk is managed to reduce safety failures, protect members and industry reputation and provide peace of mind.

Policy

We promote the importance of skills and their impact on the economy and social mobility, providing businesses with a collective voice on skills.

Our Values

- Integrity
- Passion
- Trusted Partner
- Foresight
- Delivery
- Expert

Achievements and Strengths of NSAR

As a small organisation with a significant impact, it is useful to pick out a few highlights of what we have achieved over the past year and what our strengths have become established as:-

We have strengthened the quality of training and the audit process through ISO44001 accreditation

We continue to be trusted by government on skills, training and assurance issues

We offer vigorous and rigorous support for apprenticeships

We have launched services to support social inclusion, including kickstart and measurement

Our skills ID competence management system has been enhanced

Data reports on productivity, environment, digital and social value have been well received by industry

We are guiding the high-profile TIES Living Lab project

Our Skills Intelligence services are being exported to overseas markets

We have led the way on the 'Routes into Rail' sector promotion campaign

Membership

We have continued to provide services to members throughout the pandemic and are grateful for the support which has ensured that as an organisation we are ready to serve as we move forward into 2022.

To strengthen and maximise the value that members receive from our products and services, we will be increasing levels of engagement and interaction to enable us to get closer to member organisations, and by listening more, gain insights as to how we develop and ensure our products and services remain relevant.

As part of our drive to become more member and customer focussed we have developed a range of subscription membership packages which allow members to tailor services to their needs.

Subscription membership

This has been developed to provide a flexible package of support to members based on a menu of choices covering NSAR business-wide products and support services. The offer is aligned with our value proposition and is ready to launch, supported with marketing collateral.

The service allows members to access specialist expertise in workforce analytics, productivity, social value and inclusion, quality assurance, learning and development and procurement. Members can then add to existing capacity and capability in a cost-efficient way knowing they are working with a trusted partner who is a rail and skills advocate. It creates the ability for members to see how paid membership can be used to support their skills needs, year on year.

The subscription membership offer still leaves NSAR available for commissions involving specific and more bespoke work for employers. The choice of a fixed menu, along with an a la carte service demonstrates how NSAR is supporting members in the skills space, and allows members to select the products and services that return the greatest added value to their business.

New members

We are pleased to announce 2 new members to NSAR; Mott McDonald Ltd, one of the world's leading engineering and management consultancy and Dyer and Butler Ltd. who are a multi-discipline engineering services on transport infrastructure. We look forward to discussing with each how we can support and add value to their business.

Quality Assurance

BSI 19011:2018 International Standard for Auditing Management Systems

NSAR wanted to demonstrate that its assurance service was 'best in class' but recognised the service carried only the NSAR own stamp of authority. The assurance process lacked the credibility added by a respected third party.

The challenge was addressed through independent BSI assessment against ISO 19011:2018, the International Standard for Auditing Management Systems. The QA Team's 100 % BSI assessment 'score' clearly demonstrates to the rail industry that the quality of NSAR's assurance service is of the highest standard.

Positive attributes noted during the assessment

- Clear alignment of NSAR QAF for auditing to ISO 19011 by use of a compliance matrix

- Tools, processes and forms to be used as part of the delivery process and clear rules of engagement

- Excellent communications with training provider during the planning, execution and follow-up phases of the audit

- Clear specified requirements set out at the earliest content with the training provider

- Assessment techniques used during the audit

- Professionalism and attitude of the QAM's delivering audits – eased client disposition in the audit process

- Clear processes for reviewing evidence and material, production of reports and evaluation of final report (final evaluation by COO)

- Maintenance of records on SkillsBackbone (NSAR internal Document Management System)

" *On behalf of BSI, congratulations on a successful outcome and thank you to you and the wider NSAR team involved for the contribution and support during the audit process, making it a smooth and efficient process."*

M Stokes
Head of Managed Accounts and Customised Audit UK&I

Despite the pandemic, assurance visits have been completed maintaining the highest standards using a mix of methods i.e. remote or face-to-face interactions.

Our QA team have witnessed a number of initiatives from providers demonstrating a drive to exceed the minimum standards required by the RTAS Rules. Some recent examples are:

- 'A Centre Guidance for Trainers and Assessors,' to assist in standardisation, covering activities such as classroom layout, risk assessments and pre-requisites

- An internal staff safety net programme - highlighting staff who may have problems in their personal life which could affect work - feeds into rostering/ planning and promoting discussions and finding solutions/ support

- A system based CPD approval process that includes automatic email alerts, hour tracking, evidence monitoring and pre approval process before final submission

- Risk rating of trainer/assessors from their internal verification, observations and individual circumstances. This process impacts the number of observations required in addition to the minimum requirements

- Increased use of QR coded technology in classrooms that inform learners of fire and evacuation plans, company procedures, feedback and key policies

- Sourcing of educational specialists to drive up standards of quality in observations.

To align our Quality Assurance Framework [QAF] with Ofsted and to continually challenge providers, the QA team have revised the QAF to encourage an increased focus on the standard of delivery by trainers.

The revised QAF has been designed to drive a change in trainers' behaviour:

- Reflect what happens in the classroom

- Encourage good teaching

- Increase trainers' skills and knowledge so that this benefits learners

- Stop teaching to the test

The new framework takes effect from January 2022.

The QA team's support to providers is continually acknowledged as valuable and feedback from both Delivery and Compliance visits remains positive.

" *Would like to take this opportunity to thank you personally for such a detailed and well delivered assurance visit and also for the advice and professional, value adding recommendations for improvements. We aim to be the one of the UK's top training/ assessment providers but we don't have all the answers/solutions and the support/advice you have provided will help us to further enhance/ improve what we do.*

The key thing for us (and it comes out clearly in the report) is the quality of training and also the career progression for learners will help Bridgeway and the Rail Industry going forward."

**Steve Diksa**
Corporate HSQE and Sustainability Director

Assurance Services

The current assurance regime was changed from dual grading, Delivery and Compliance, to a tri-grade regime with a further grade for Premises introduced from May 2020. This offers employers procuring training, a greater insight into an individual provider's standards.

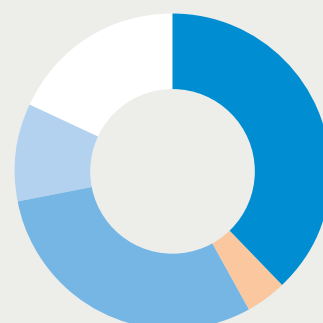To date the assurance grade results for the three separate grades are:

Compliance

- Gold
- Silver
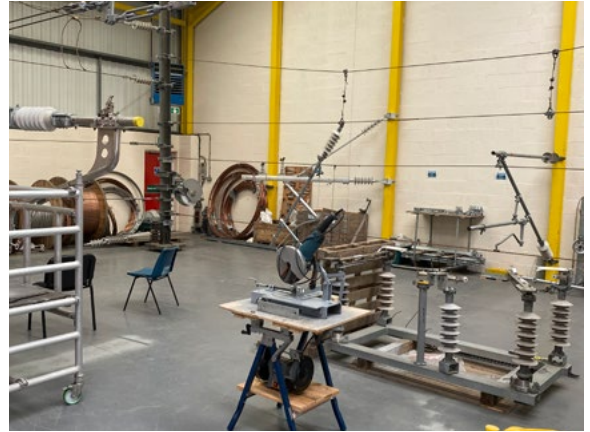- Bronze
- Inadequate
- N/A
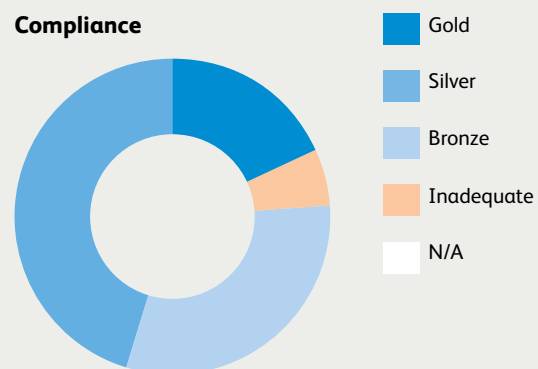
Delivery
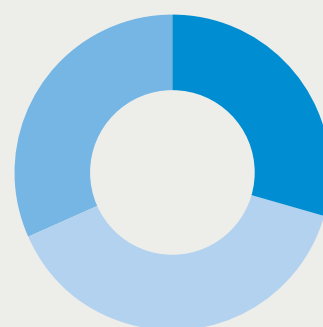
Premises

Premises Checks

Since the introduction of additional premises checks, we are noticing a drive by Providers to upgrade their facilities.

" *QTS we were delighted to have the opportunity to give NSAR a tour of our headquarters in Lanarkshire, Scotland while they undertook the premises check element of our assurance visit.*

We are extremely fortunate to be located in a beautiful area with so much space available to us for our facilities. As well as our five classrooms, and our recently refurbished offices, candidate waiting room, we have been able to create indoor and outdoor breakout areas and woodland walks that can be used both by our team members and our learners.

Learner experience is a key focus for QTS Training and as many of our learners are outside their comfort zone during classroom training, providing a modern, comfortable and spacious learning area helps them to relax and focus on the course they are undertaking.

NSAR provided us with valuable feedback on our premises and facilities with some excellent ideas for additional development which will help to further improve the learning experience and learner outcomes."

Lorna Gibson
Director, QTS Training

Practical Area

" *Overhead Line Electrification Consulting Limited are very proud of our indoor training span located in Bromsgrove. The span has been created to be interactive and the ability to recreate realistic scenarios seen when completing operational duties.*

We have created practical areas to develop learners knowledge not only in the classroom but in the stores with show & tell of all equipment to the indoor and outdoor overhead line spans.

The spans have been designed, created and built so multiple activities can be performed but without affecting the other learners using the equipment."

Nick Smith
Managing Director

Investigations

Why we undertake investigations

The level of competence obtained during training and ongoing workplace assessment directly impacts the safety of the competence holder, those working with and around them and rail passengers and freight.

Our Quality Assurance remit includes a responsibility to the industry, its workforce and the public who use the railway, to investigate allegations of serious breaches of the RTAS Rules v2.0 to make sure that competence standards are adhered to and the integrity of competence awards are secure, enabling the railway to be a safer place.

Positive impact on safety

Where investigations have identified potential risks to the safety of people and/or trains, temporary suspensions have been applied. In 2021, five investigations resulted in nine temporary suspensions involving a mix of individuals and providers, pending the conclusion and final determination of the investigations.

There has been one instance where assurance has been withdrawn as a consequence of a serious breach of the RTAS Rules v2.0.

QA Collaborations

Investigations are complex processes and multiple parties are involved in determining root causes and potential solutions. The need for collaboration is evident to create the required outcomes.

As a result of a serious incident at Rochford, the Rail Accident Investigation Branch (RAIB) determined that deficiencies in communications were a contributory factor, and that Network Rail should include an integrated working group to maintain collaboration of Network Rail Sponsors, Sentinel Investigations, Supplier Assurance and RTAS Assurance.

Further examples of collaborative working are:

1. RTAS Investigations & Sponsor Investigations

During 2020-21 approximately 50 Sponsors have been warned by Network Rail for instances where it was found that they were allowing individuals to pay for Personal Track Safety training when in many cases they had an insufficient command of the English language. (training for profit only)

2. RTAS Investigations & Education and Skills Funding Agency

ESFA relationships have continued to grow during 2021 with a significant sharing of information which is to the benefit of individuals working in the rail industry and the public purse. We have supported the ESFA to identify poor practice and in their quest to remove poor performing training organisations from the apprenticeship training environment.

- Outcome of ESFA investigation involving an RTAS Assured Provider so that RTAS outcomes can be determined with future prevention of parties involvement in RTAS Scheme.

- Termination of ROATP contracts referred to RTAS Investigation.

3. RTAS Investigations & Sentinel Investigations

During 2021 an increasing number of RTAS Investigations have had additional investigative actions undertaken resulting in a variety of sanctions on the Sentinel card holder.

· Two Individuals' Sentinel cards have been suspended and their competencies restricted to holding no higher than PTS for 2 years following failure to co-operate in RTAS Investigation.

· Sponsor response to a Sentinel Investigation evidence shared for inclusion in RTAS Investigation.

· RTAS investigation evidence shared with Sentinel Investigations to take action on Sponsors and Individual card holders, parties outside the scope of RTAS.

Project Louisiana (October 2020)

Over an extended period, a provider and a trainer were believed to have been committing serious breaches of the Rail Training Assurance Scheme (RTAS) Rules affecting 955 competences. After a lengthy investigation, including covert attendance of training, a 5-year period of suspension was imposed on both the provider and the trainer.

Neither party appealed the outcome of the investigation or the penalty imposed.

Project Otter (October 2020)

A training company, that was under a 4 year suspension order imposed by Network Rail, was suspected of continuing to deliver training and assessment. Our investigation, including covert attendance, found that this indeed was the case and that 338 competencies were affected. As a consequence of our investigation the provider and the trainer involved were permanently banned from holding RTAS assurance.

Neither party appealed the outcome of the investigation of the penalty imposed.

Project Washington (December 2020)

Following receipt of reports that a training provider and a number of trainers were regularly committing multiple breaches of the RTAS Rules, we initiated an investigation.

As a result the provider and several individuals were suspended for a combined total of 23 years. An appeal by the parties of the outcome of the investigation was rejected by Network Rail.

Project Carp (May 2021)

A covert operation was instigated following receipt of reports that an assessor was uploading competences for workers without attending site to undertake workplace assessments. The investigation confirmed the reports and that workplace assessment records were being falsified.

The assessor and the provider have been suspended for 10 years. The appeal period is open until 24/11/2021.

Age Profile Data

An unintended consequence of the pandemic has been that retirement rates amongst trainers and assessors has accelerated, leaving the training and assessment community short on experience. The last study of trainer and assessor providers was in 2011, and with evidence that numbers were declining, a fresh study was commissioned.

Our study explored in detail the age demographics of the active trainer/assessors and, for the first time, looked at specific age and retirement numbers by capability. We identified that there are 326 active trainers and 250 active assessors in the industry. Understanding the age demographics by capability provides valuable insight to the qualifications and training courses that will be affected most by a shortfall in trainer/assessor numbers.

The report reveals those capabilities at highest risk of losing personnel through retirement over the next ten years. One of those capabilities is electrification.

Working with industry groups we have identified a tool aimed at new trainers and assessors, and the upskilling of existing ones. A pilot scheme is currently being developed and electrification will be included in the first pilot.
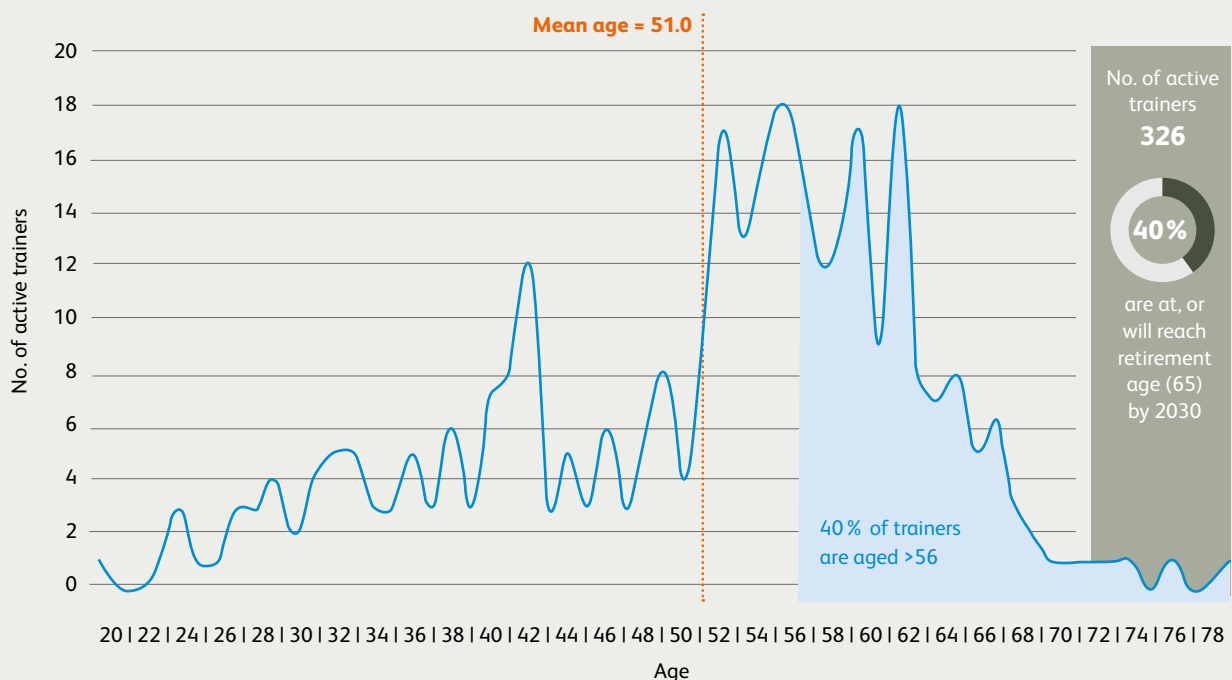
Skills Backbone Enhancements

New features and functionality were released during the year in response to feedback from training providers and assessors to improve the efficiency and greater automation of QA processes and communication for the assured individuals.

New Quality Mark – Portable Plant

A new Quality Mark assurance programme is being trialled for portable plant competencies after NSAR identified that portable plant is high risk with competencies not already under any other quality assurance scheme. There has been positive feedback from the first cohort of providers that were part of the trial, who are all supportive of NSAR introducing the quality mark scheme.

Age Demographics of active trainers

Age profile of active trainers

Mean age = 51.0

No. of active trainers
326

40%

are at, or will reach retirement age (65) by 2030

40% of trainers are aged >56

Age

Skills and Training

Occupational Traineeships

Our Skills team has worked in partnership with the ESFA's Traineeship team, other government agencies and employers to create a number of rail related traineeships that make an attractive training proposition for employers, and to develop a range of Occupational Traineeships for rail and beyond, e.g. tunnelling.

We have developed traineeships with a track and off-track focus targeting track operative progression, along with progression into vegetation management and fencing roles.

The Track Traineeship, developed in partnership with Network Rail, Colas, QTS, labour organisations and others, has been piloted with two cohorts and independently evaluated by the Learning and Work Institute. It is now available to those providers and employers wanting to use it for direct progression into track operative roles or as part of progression onto an apprenticeship.

So, our trainees that participated on our first course, for the seven weeks they worked hard, they showed their practical experience, they were showing what they learnt in their technical knowledge, and then applying it to practical knowledge. And our recruitment consultants really wanted them on their teams because they had the work experience."

Employer on pilot quoted in The Learning and Work Institute evaluation report to Department for Education, 2021
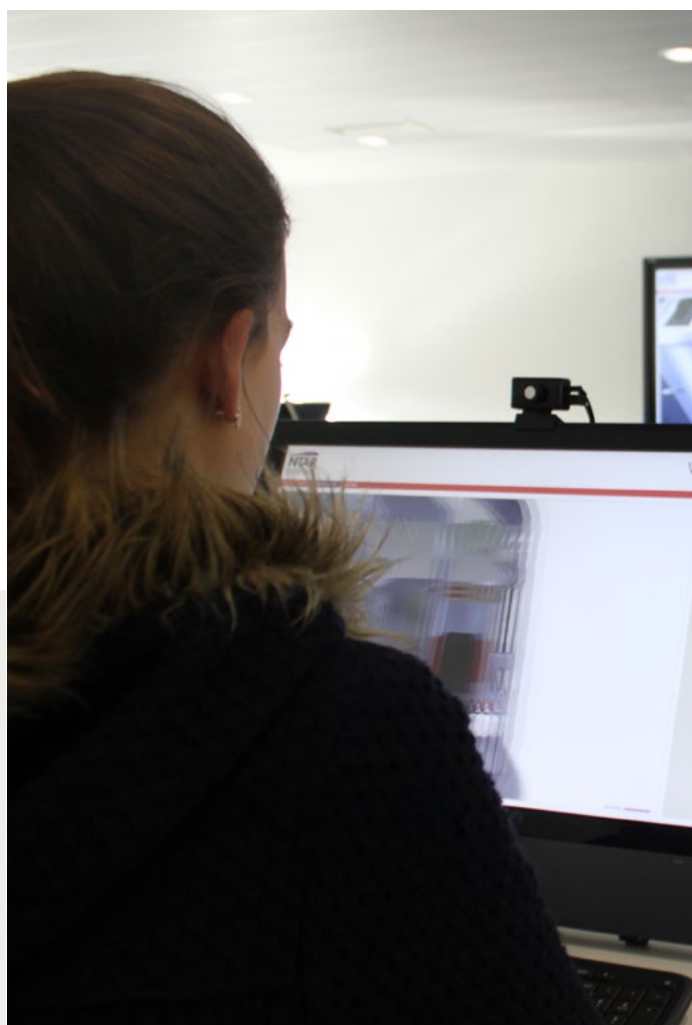
The Track Occupational Traineeship has been designed to provide a recognisable quality provision for progression into track entry roles that can be recognised and trusted by employers. This is in direct response to concerns about how easy it is for poor quality provision to surface, exploiting the enthusiasm of learners keen to work in rail by offering courses with varying degrees of value, quality and legitimacy.

A key success of this programme was that content was tailored to make trainees as employable as possible within the rail industry, by providing them with practical learning and experience.

Conclusion from Learning and Work Institute evaluation findings.

Kickstart

The Kickstart scheme was launched in 2020 to provide job placements for 16-24 years olds in receipt of Universal Credit and deemed at risk of long-term unemployment. Employers could apply for a grant to cover minimum wage salary and related payments for each 6 month, 25-hour per week placement. Additionally, employers receive a training allowance (£1,500) to cover initial equipment and training costs. NSAR has looked to support rail employers in navigating and participating in this challenging government programme, implemented by the Department for Work and Pensions, via Job Centre Plus work coaches.

NSAR has been involved in supporting Kickstart on two fronts: as a Gateway for businesses with small numbers of placements they want to make available, and as a support for Network Rail's Kickstart programme. As a Gateway, NSAR has been able to support employers to create 204 actual Kickstart placement opportunities. We have supported 49 Kickstart participants within Network Rail to date; there are a further 30 in the recruitment process as of October 2021.

By the end of October 2021, of the 43 young people started on the Network Rail programme, 11 have finished their placements with 5 young people going on to secure further employment with Network Rail. One was offered a job but turned it down as they wanted to use the experience they had gained during the placement to find employment in a different area. Another two decided to attend University and credit the experience of work as the driving force behind their decision. One of the young people credits the Kickstart Scheme for raising her aspirations.

> *Thanks to the experience Kickstart has given me I have decided to attend university to study a degree in finance so that I can pursue this as a career. I wouldn't have done this if it wasn't for my placement."*

Network Rail Kickstart participant

Direct feedback from the young people during the pastoral care sessions led by NSAR has been that the placement has helped them be in a better place mentally. Our observation has been that the scheme has not only given the young people work experience that will be vital for finding employment after the 6 months placement is over but has also had a positive impact on young people's mental health.

The safeguarding, employability and pastoral care support that was part of the NSAR Kickstart service has been adapted to become a support offer for work placements, in-house programmes and T Level placements for NSAR members.

Rail Delivery Group

The Skills team has been working throughout the year on with RDG members on a project aimed at professional recognition at levels 3 and 4. The team have also been developing route maps to navigate the plethora of different initiatives related to workforce development, skills training and levelling up.

This work has been alongside our continued support to the train and freight operating company-related trailblazer apprenticeship group. NSAR has provided support to the main trailblazer group and to its separate working sub groups.

Apprenticeship Standards

NSAR has continued to support employers with the development of Rail Apprenticeship Standards.

- **Train Driver**

  Revision of the standard has been submitted to the Institute for Apprenticeships & Technical Education (IFATE) but its approval has been delayed as IFATE review their policy on what can and should be taken into account within the apprenticeship assessment plan. It is anticipated that this policy review will not be completed until Spring 2022. We are working towards an end-result that will see end-point assessment for the train driver apprenticeship work much more effectively and efficiently with the train driver licence and certificate achieved on programme.

  Issues with end-point assessment that impacted on the first two years of implementation have been resolved to a large extent, and the standard is seeing a healthier through-put of apprentices completing the apprenticeship.

- **Passenger Transport Onboard and Station Team Member (PTSOTM)**

  Like the Train Driver apprenticeship standard, this standard has been rewritten by employers working with NSAR and IFATE, and has been submitted to IFATE for final approval prior to finalising the assessment plan and funding arrangements. This particular standard has been

more rail focused and will emerge fitter for our purposes in supporting members' rail passenger transport needs when it is published and available from Summer 2022.

- **Rail Engineering Standards**

Rail employers, working with IFATE and NSAR, have scoped a series of changes to refresh the existing rail engineering apprenticeship standards at levels 2, 3, 4, 5, 6 and 7.

Initial plans were approved by IFATE during the Summer 2021 with the headline changes:

- Name changes at Level 2, 3 and 4 to reflect new additions to the standards coverage.

  o Rail Engineering Operative will become **Rail and Guided Transport Operative;**

  o Rail Engineering Technician will become **Rail and Guided Transport Technician**, and

  o Rail Engineering Advanced Technician will become **Rail and Guided Transport Advanced Technician.**

- The name changes reflect the intended addition of Tram and Tramways, and High Speed Rail pathways to rail engineering standards, meaning these standards will be switched off in the future.

- Rail and Rail Systems Engineer at Level 5 will become **Rail Engineering and Rail Systems Manage**r, with more of a focus on managing specialist rail engineering teams.

- Rail and Rail Systems Engineer Level 6 will, as an integrated degree apprenticeship, provide a stepping on point for appropriately qualified, new undergraduate entrants to the sector pursuing a degree apprenticeship in rail. Progression from the rail engineering apprenticeships at level 3 or 4 is also a key consideration for the new level 6.

Celebrating Excellence: Apprentice of the Year

NSAR has created a rail sector-focused Apprentice of the Year Awards process. It allows employers to identify and select suitable apprentice candidates to be forwarded to a sector-wide, national competition. The process, based on quality selection criteria, works alongside the relevant apprenticeship standards and assessment plans and is easily imported into employers' existing practice.

The initial award is targeted at train driver, passenger transports and on-board station team member and passenger transport manager apprenticeships, but will be expanded next year to include data analyst and other digital areas within the rail and guided transport sector. The objective of this initiative is to help raise awareness of careers within rail, especially among those interested in digital roles. The awards will coincide with the National Apprenticeship Week 2022, with a celebration of winners and a national promotion campaign and broadcast of the national winner.

Medway Apprenticeship Support Programme

Medway Council has re-appointed NSAR for a second year to deliver its employer apprenticeship support service. The service supports employer uptake, capacity building and awareness raising around apprenticeships. Our service involves levy recovery and workforce development planning through to linking employers with appropriate training providers and funding sources.

This is an important project for NSAR as it helps the skills team to assess how national policy is being understood and interpreted 'on the ground', providing key insights into how better to communicate with and support employers. It also serves as important CPD for the team strengthening their awareness of all aspects of the end-to-end apprenticeship journey, from workforce planning through to training provider selection and setting up digital accounts with employers. The insights gained are helping to refine and further develop our own products and services.

External Quality Assurance Apprenticeship Service

We run the employer-led external quality assurance model and work with four different employer boards (rail, digital, adult care and logistics). We rema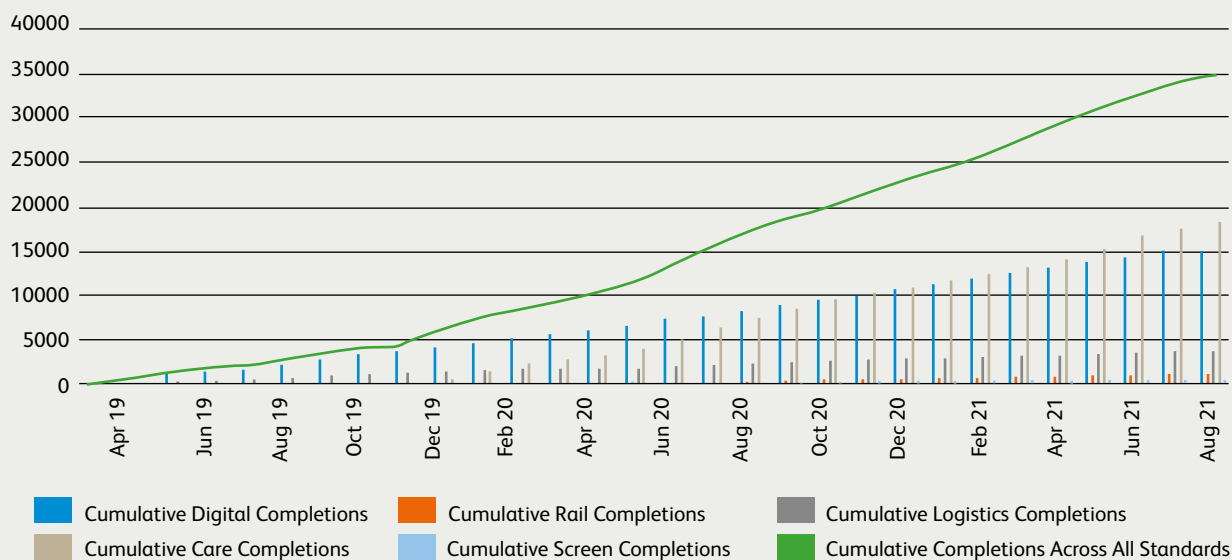in the third largest provider of EQA services to apprenticeships, third only to OFQUAL and IFATE. NSAR is the largest provider of employer led EQA for apprenticeships.

Our service ensures that the end-point assessments are compliant with the employer-created assessment plans for the apprenticeship standards and are consistently applied and comparable across the different end-point assessment organisations offering assessment for these standards.

Since last year's annual report, NSAR has provided external quality assurance of end-point assessment for over 35,000 apprentices. The graph shows the spread of the EQA activity across our EQA footprint (by sector).

Keeping the apprentice assessment accessible, available and flowing over the past 12 months has been the major focus of the EQA team and incredibly rewarding. It has been most gratifying to do so for adult care apprenticeships given everything that has gone on this year with the pandemic and given the skills and recruitment crisis this sector now faces.

Cumulative Completions by Sector

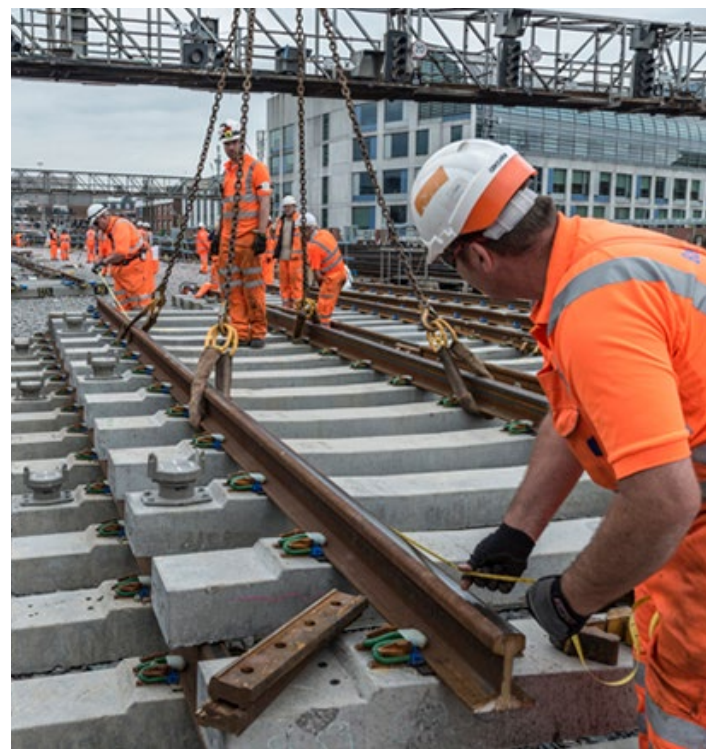| Legend	
Cumulative Digital Completions	Cumulative Rail Completions
Cumulative Logistics Completions	Cumulative Care Completions
Cumulative Screen Completions	Cumulative Completions Across All Standards

Work to maintain the COVID-19 end-point assessment flexibilities will continue to be a priority for the EQA team up until 31 December 2021. From 2022, IFATE hopes that assessment will revert to the original apprenticeship standards' assessment plan intentions and we are readying the system to transition back to the pre-pandemic position. The insights and lessons learned during the pandemic, will be incorporated into future assessments going forward.

For rail, the graph below shows accumulated totals across the rail apprenticeship standards that we provide external quality assurance services for. The data shows completion data, as opposed to numbers starting apprenticeships.
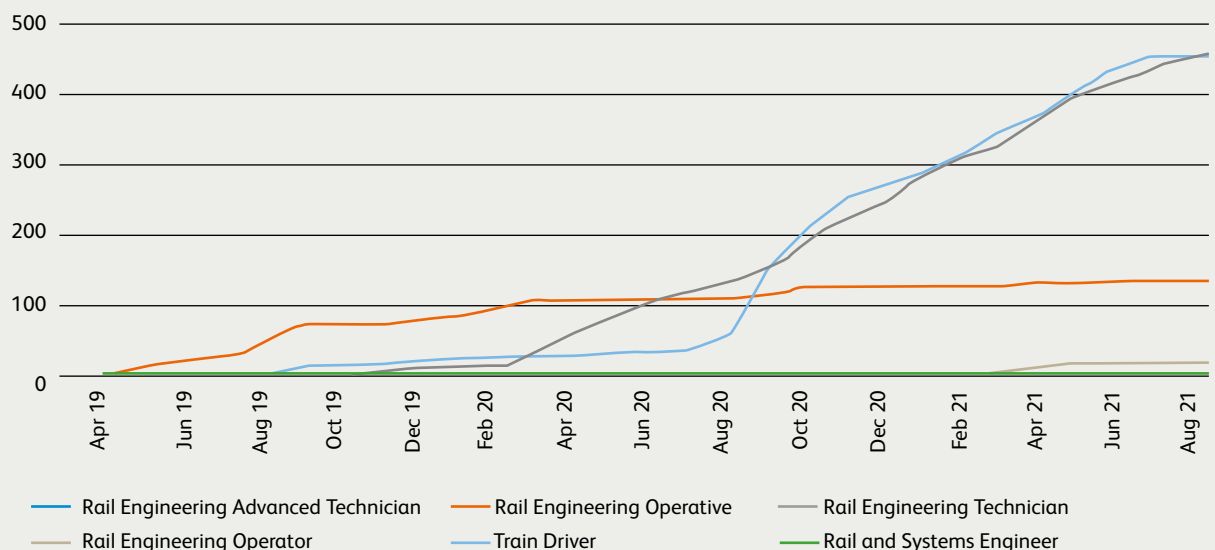
The overall completion rates run < 50 % of apprenticeship starts, and though the attrition occurs during the on programme phase and outside our EQA responsibilities, we are working with providers and employers to understand why apprentices are dropping out at such high rates. The knowledge gained will provide valuable insight to assist in the refresh of apprenticeship standards.

NSAR has been appointed to the OFQUAL and IFATE Register of Employers and will be called upon when expert advice is needed in the apprenticeship development cycle.

From September 2022, OFQUAL will have responsibility for external quality assurance and evaluation for all apprenticeships with this register representing their way of ensuring there is an employer 'voice' in this process and NSAR is delighted to represent rail in this way. Work commissions in this capacity are already being received from OFQUAL.

Rail Completions by Standard (Cumulative Totals)

Legend:
- Rail Engineering Advanced Technician
- Rail Engineering Operative
- Rail Engineering Technician
- Rail Engineering Operator
- Train Driver
- Rail and Systems Engineer

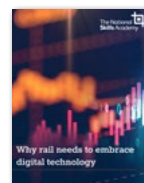# Skills Intelligence Industry Support

NSAR is providing advice and support to both major rail infrastructure organisations; for Network Rail we are working with the regions analysing workforce data to achieve the objective of improved productivity through better deployment of resources, and helping TfL to understand how strategic workforce planning can play a powerful role in their wider people strategy.

We continue to work alongside RIA ensuring key messages about skills planning for the industry are delivered consistently and coherently for both member organisations.

In April, NSAR held an online conference on digital skills and their impact of the rail industry. We looked at key features of new technology; what they meant for the rail sector and how the adoption of new technology will change the nature of the rail workforce over time. The conclusion of those attending was that the industry must acknowledge and accept the changes coming because of new technology and its demand for digital skills, even though it may necessitate some difficult decisions. Planning how that change affects people is critical and NSAR can support the industry and individual organisations through its strategic workforce planning service, to ensure we have the right people, with the right skills at the right time.

Read the report here

Case Study

Since April 2020, we have been working with Porterbrook to build a growing profile of their workforce demographics. The picture presented demonstrates areas of growth in the business and provides an indication of differences across their business disciplines especially from a diversity perspective. Porterbrook have benefited from this information as it has allowed them to identify and prioritise the next business area for development. The business has also undergone several changes during this time and the trend analysis has demonstrated the impact of some of the realignment across the business. The information will be used to identify which roles need further development and which areas need targeted recruitment for continued business expansion.

We have continued to build upon the success experienced through the challenges of 2020 and have been involved in two high profile projects The first of these was the revised HS2 report – building the skills for the future, released in August. This is our fourth collaboration with HS2.

Read the report here

The second report was published in October and involved a collaboration with Oxera and IPEX, delivering a commission for the Rail Delivery Group (RDG). This report focuses on the opportunities created by the further commitment to decarbonise the railway as part of the wider government strategy to achieve net zero by 2050. It allowed us to demonstrate our economic expertise in a wider sphere through allocating values to newly created jobs as a direct result of rail investment schemes.

Read the report here

We are working with RSSB on the Digital Skills Framework as part of the Rail Technical Strategy update. To date we have facilitated two workshops with the wider industry to understand what the challenges are and determine a range of appropriate solutions. The next step is to review the developing content for the framework.

NSAR is providing input to DfT in support of the transition to Great British Railways and how the will impact the rail industry. Also part of the discussion is the nature of the ongoing support to be provided by NSAR once GBR is up and running.

We have also been working with a variety of government departments to ensure they are fully abreast of the skills landscape and aware of any skills areas where critical shortages may exist. This is particularly important at the current time when future government departmental budgets are being decided, recognising the contribution that infrastructure investment makes to national economic growth.

Strategic Workforce Planning

We have continued to provide the industry with future skills demand intelligence through the strategic workforce planning service. We are working with Network Rail to ensure the modelling best fits the needs of the business. We are also working with Train Operating Companies through the Rail Delivery Group to ensure these organisations have foresight of the skills they require for the future.

Wider sector work sees us continue supporting the Offshore Wind sector with their skills demand forecasting. Using the NSAR Skills Intelligence Model (SIM) to model their data , they were able to report progress against their sector deal objectives.

Read the report here

From an overseas perspective, we have continued to deliver our contract to the Norwegian Rail Direktorate in which they have licenced their own instance of the NSAR SIM. We are engaged in a long-term relationship with the Norwegians, providing advice and support on how to maximise the benefits of the SIM and the data captured. We have also been in discussion with China, Australia and the Philippines about how SIM data informs strategic workforce planning.

Economic Analysis

This is an area of NSAR's work where we have experienced a lot of interest in the past 12 months, and due to the quality of the work, demand for our expertise in this topic area is growing. We have supplied reports to support a variety of business cases. Examples include; the economic value of jobs and the wider contribution provided to the economy, the value of creating jobs through re-opening dis-used rail lines and proposals to Government seeking support in funding applications for major projects. These have showcased NSAR's developing reputation in this area.

We intend to increase the added value of our economic analysis work by including an extra feature that enables us to calculate the social value benefits arising from infrastructure investment projects.

Annual Workforce Data Survey

Work has commenced on NSAR's annual 'State of Rail' report to be published in the Spring 2022 with requests to industry employers to provide updated workforce data. This is an important report - the data gathered is used to update the industry workforce skills database held in the SIM. This database is the basis to the skills intelligence information that NSAR provides to industry leaders to aid their decision making on workforce planning.

Decarbonisation

As the decarbonisation agenda continues to gain importance, we are working with our industry partners to understand the requirements for 'green' skills and the definitions of these as well as how rail can support sustainable careers for future generations.
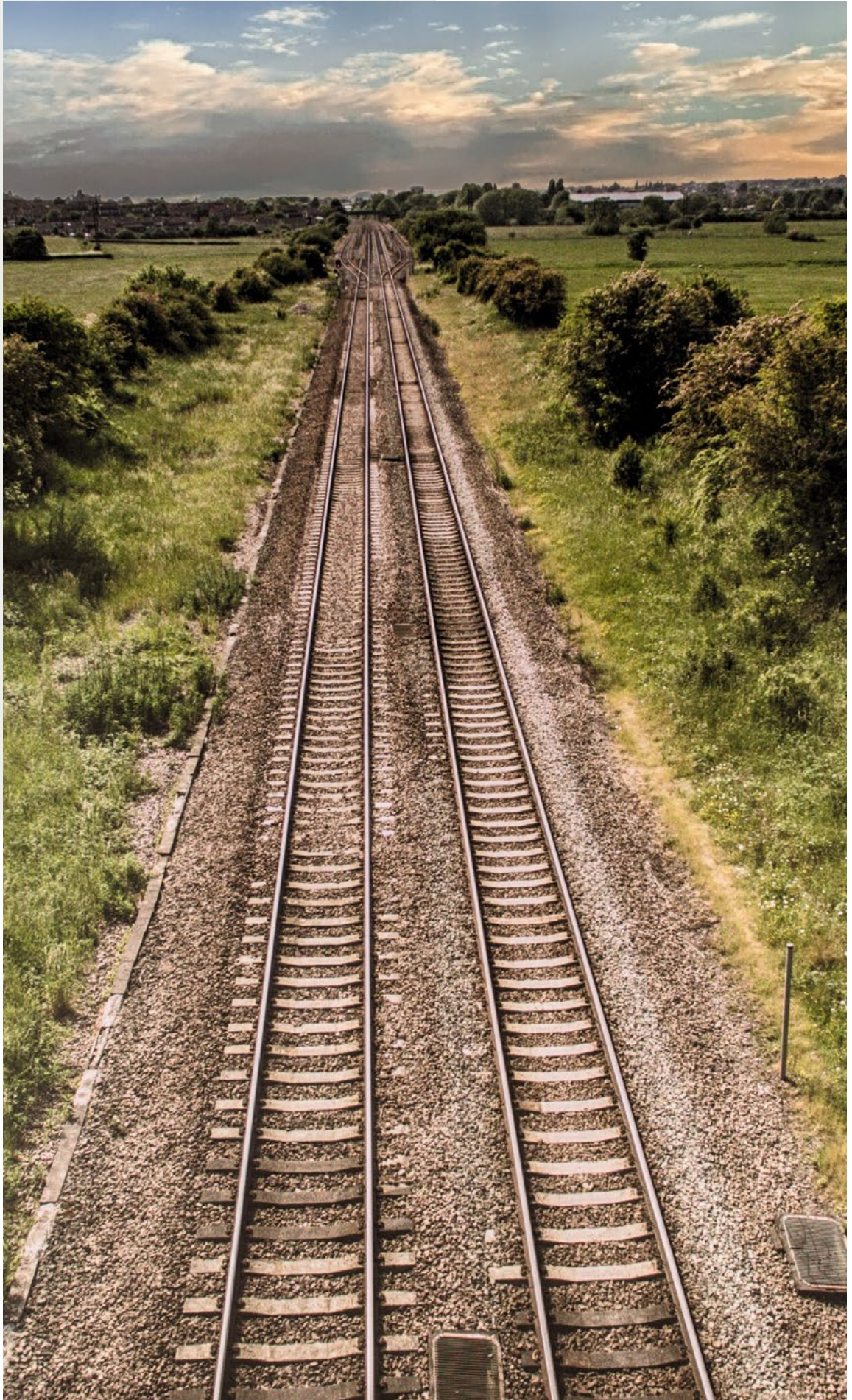
Business Development and Marketing

Through 2020, the general bidding environment slowed down materially as a result of Covid-19, however despite the slowdown we have been active in bidding for new work across the full range of NSAR's skills and capabilities. We have been successful in winning new contracts for quality assurance and assessment, EQA, SkillsID and became part of the successful consortium, led by KPMG, to provide Learning and Development services to National Highways (formerly Highways England). We have also been successful on being appointed to a number of high-profile frameworks, such as DWP, DFE, and Network Rail.

RFLI have appointed NSAR as its External Quality Assurance Assessor for signalling and MEP plant on the Elizabeth Line. NSAR will be working with SRC to deliver the services which commence in January 2022.

Building on the success as an EPAQ, we have been successful in our application to be appointed by IFATE to its EQA Employer Directory.

Skills ID

A new promotional video has been produced to promote SkillsID and its benefits and cost savings that organisations can realise through using the system. We are working to develop a commercial model that will offer SME businesses access to the system at an affordable price. SkillsID added two new customers and renewed contracts with existing customers.

Watch video here

The forward pipeline looks positive and with a number of large value opportunities due to be released in the coming months, some of which we will be seeking to work with other parties in a consortium approach.

NSAR continues to provide services to the Train Operating Companies through the RDG HRD Group. The support provided is a mixture of specific projects that are relevant to all TOCs and individual consultancy to organisations.

> *Skills ID has been a long awaited requirement of the business and is proving very popular with the workforce. From the initial concept through to execution and beyond Skills ID have been supportive and receptive to all our requirements to ensure that the system meets all of our business needs. Skills ID is proving popular due to how easy it is to navigate, the flexibility it gives in identifying information and accessibility through a number of platforms. "It is a system that the company has been waiting on for the last 10 years" quotes one employee."*
>
> **Amanda Scott**
> HR Director, AmcoGiffen

International

Development of international business has been extremely challenging due to the pandemic which restricted contact with potential customers. Prior to the lockdown we secured a contract with Zhengzhou Railway Vocational and Technical College following an agreement signed between the two organisations during a visit to China by Neil Robertson. We delivered a week long programme of virtual workshops to over 100 delegates, spanning the set up and organisation of the UK Rail to NSAR products and services.

Despite COVID-19 restrictions, we have maintained existing relationships in Malaysia, Australia and China and developed new relationships in Malaysia, Indonesia, Philippines and Columbia, some of which are generating business development opportunities.

As the economies begin to reopen and infrastructure build restarts across SE Asia, we are anticipating an increase in international activity as countries seek to tap into UK expertise in rail vocational and technical training as well as quality assurance and assessment.

Asian Development Bank

NSAR were asked by the Asian Development Bank to write a chapter for their latest publication, Powering Learning Societies During an Age of Disruption. The book reflects on disruption at the current time that is having an influence on learning, such as new skills needed to navigate the Fourth Industrial Revolution and the adoption of new and emerging technologies, changing learning styles of millennials or the 'digital natives'. It also looks at aging societies that require people to stay active in the workforce much longer than before, the need for regular skills upgrade and knowledge updating, and the rise of online learning and emergence of new technical domains.

The book consists of articles from leading experts including academics, practitioners, private sector representatives, heads of professional organisations, business leaders and representatives of international development organisations.

NSAM(Sb)

During Q1 and Q2 of 2021 NSAR supported Solent Marine in its application for HM Treasury funding to set up a National Skills Academy for Shipbuilding (NSAM(Sb)) to address forecast skills shortages in response to the National Shipbuilding Strategy. The model that we developed with Solent Marine offered a growth opportunity for NSAR to expand into an adjacent industry within the Transport sector by providing shared services to the new entity. The submission was not successful in the first round of funding and will be reviewed again in 2022.
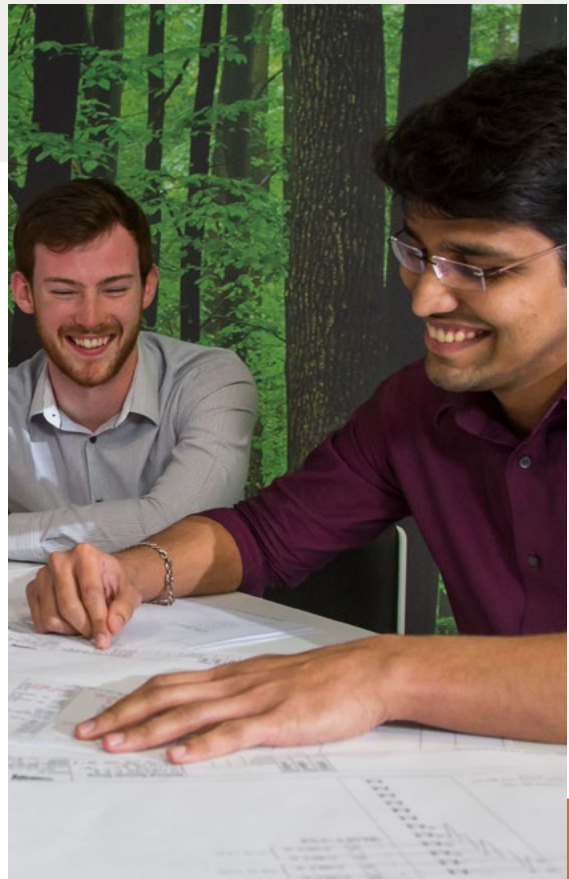
Marketing and Communications

New NSAR Branding

During the year we worked on the NSAR value proposition and held internal workshops to build a proposition that made clear the benefits to members and clients of purchasing the products and services available, and distinguished NSAR's offer from its competitors. The value proposition work was a precursor for a review of the NSAR brand.

We undertook a review of the existing NSAR brand and considered whether it still reflected the vision, value proposition and direction of NSAR. We concluded that it did not and engaged a brand consultant to develop a set of design options offering a new fresh and contemporary image. The shortlist was presented to the NSAR Board and a final choice made. The new brand and logo will be introduced during Q1 2022.

Website

As part of the new branding rollout, a refresh of the website has begun and will be complete by the end of Q1 2022. The new design will be easier to navigate and give a higher profile to the range of membership services.

Key projects

routesintorail

We launched Routes into Rail at last year's AGM and Skills Symposium and since then we have been working closely with employers to develop a strong library of content of videos, employee stories, career information and case studies for use in promoting careers in rail to school students, graduates, parents and influencers and job switchers.

The funders of the project – Amey, BEIS, HS2, Network Rail, Porterbrook, RIA and VolkerRail – are supporting the shaping of the promotional activity, with a series of regular review board meetings.

Website

The website itself is a key area of focus as the project progresses, with career data gathered from the Skills Intelligence team, which is displayed on the website in terms of general role descriptions and average salaries. Live vacancy data is 'scraped' from a job board aggregator, where we are able to specify what employer jobs and roles are 'pulled through' for display on the Routes into Rail website. This is updated on a weekly basis.

Website analytics

Since data was available in May 2021, we have seen over 7,500 unique users on the website, which translated into 30,000+ page views over 9,500+ sessions. This compares favourably with other similar websites in their first year of operation. The average session time is over 2 minutes which suggests that users are engaged, reading and discovering the information they need from the site.

Current Activity

Current initiatives that we are working on:

- Filming has taken place at a number of partner locations, which is used on the website as career stories and 360degree tours.
- Outreach packs for schools, teachers, and parents. These packs will also be used by employer outreach ambassadors
- Resource webpage aggregating all partner lesson plans and interactive activity content for young people to engage with
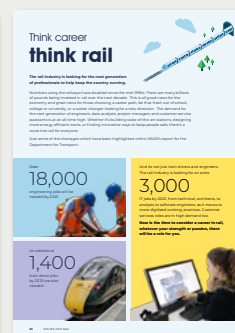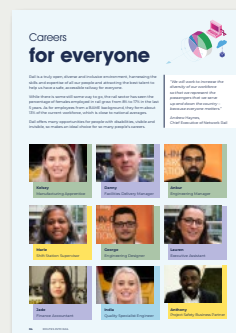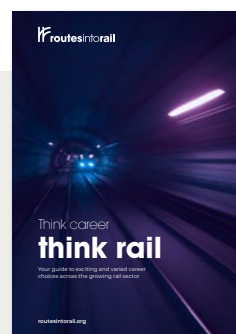
- Videos and written content on electrification for inclusion in Year 6 STEM lesson plans
- 2022 Campaign and event calendar

Events

We have worked with CareerMap and held panel sessions at both the National Apprenticeship Week and National Graduate Week, which were viewed by over 800 participants each.

We were an exhibitor at Student Pride, attended Rail Live, the Rail Industry Association Innovation Conference and the Trailblazer North Reception, all of which gained good feedback.

We supported Muslims in Rail in their Birmingham event to attract local people to a career in rail, and we live-streamed our Graduate webinar to the attendees.

We have attended numerous School Career Fairs, and are looking at establishing an ambassador programme with Young Rail Professionals to increase presence at similar events across the country.

Industry Investment

We are currently finalising media packs which will be presented to other interested rail sector employers, who have expressed an interest to be part of this programme. In order to continue in our promotional activity, we will need to secure further investment in this industry-wide initiative which is gaining momentum.

Awareness of and interest in this programme is growing amongst both small and large organisations in rail, as the urgency to attract talent into rail grows greater.

The TIES Living Lab programme ⬈

The TIES Living Lab programme, for which NSAR run the Project Management Office, was started in May 2020 and is expected to run to July 2022 at least. Determined to increase the productivity and value-for-money of transport infrastructure projects, a transformative collaboration of 25 partners together with Government, i3P and the Construction Innovation Hub formed TIES Living Lab.

There are 25 partners (including NSAR) collaborating to deliver 10 projects that will showcase several key physical demonstrators and digital tools, as well carrying out analytics on project performance. Ultimately, the benefits of the methods, tools and physical demonstrators will be disseminated, driving exploitation and cultural change to enable transformation across the sector.

The partners are in several categories as follows.

Lead Party: NSAR Ltd

Government and Arm's Length Bodies (ALBs): Department for Transport, HS2 Ltd, Transport for London, Highways England Ltd, East West Railway Company Ltd, Network Rail Infrastructure Ltd, Office for National Statistics

Large companies: Costain Ltd, Kier Construction Ltd

SMEs: Accelar Ltd, Akerlof Ltd, Bryden Wood Technology Ltd, Expedition Engineering Ltd, Powercube Ltd, Social Profit Calculator Ltd, Strategic Rail Consultants Ltd, Walker Construction Ltd, Whole Life Consultants Ltd, X-Treme Systems Ltd

Professional bodies: Royal Institution of Chartered Surveyors

Research and Technology Organisations: Manufacturing Technology Centre Ltd, University of Dundee, University of the West of England, University of Leeds

The programme is funded with a £6.3m grant from InnovateUK through its Transforming Construction programme, a £1.4m grant from the DfT and at least £2.8m from the TIES parties (DfT, HS2, National Highways, Network Rail, TfL).

The partners are supported by several key stakeholders, including the Construction Innovation Hub, the Centre for Digital Built Britain, the IPA, the CLC and i3P.

▲ Automating cable route management system designs
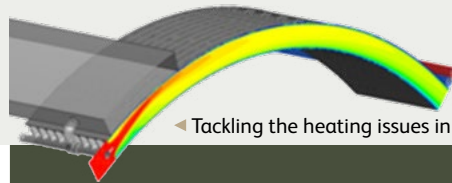
◀ Tackling the heating issues in tube networks

TIES Living Lab programme benefits

Environmental
- Reducing carbon emissions
- Less pollution & noise
- Carbon & sustainability benchmarking
- Reduction in waste

Societal
- Reduced disruption for passengers
- Identifying opportunities for maximising social value opportunities with SMART Infrastructure calculator

Productivity
- Maximising collaborative opportunities for improving productivity across sector
- A connected research and development hub driving the sector's innovation

Safety
- Improved working conditions
- Reduced workload on site
- Greater comfort on the tube
- Reduced risk to general public due to reduced logistics to & from site
- Health benefits from reduced pollution

Economic
- Achieving better assurance programme's likely cost, & identifying drivers of cost
- Lower build costs & reduced long term running costs
- Estimated £15.75bn of benefits over 10 years from a grant investment of £8.1m

Summary of the Projects

1 | **Metrics, Benchmarking and Repository**

Data is to be collected which will enable the creation of benchmarks against which Living Lab and future projects can be assessed. The benchmark data will be held in a Central Data Repository provided by the ONS.

2 | **AI for Data Mining**

This project is using AI/machine learning techniques to extract, classify and analyse cost data from various sources and put it into a standardised format for parties to use.

3 | **Identifying Drivers of Project Performance**

Using the data to undertake top-down statistical analysis, deep learning techniques and process benchmarking of what drives costs, duration, sustainability and differences in performance for transport infrastructure projects.

4 | **MMC Footbridges**

Turning an approved bridge design which will fit any station, into reality. Network Rail is the primary client for this bridge but there is interest from other parties.

5 | **MMC Signal Rooms**

The project is creating a new generic standard for equipment rooms, with the design phase expected to complete in early 2022.

6 | **CRMS Automated Design**

This cable route management system project is now able to confirm the benefits, through a summary report issued by TfL. This will include how the automation tool could develop further under future projects.

7 | **Cooling Panels**

A Cooling Panel prototype which will tackle the heating issues in tube networks, has been demonstrated at Acton Town depot. Initial assessments suggest it is providing confidence in a viable solution.

8 | **Intelligent Infrastructure Control Centre (IICC)**

This will provide the latest, greenest, safest and most cost-effective way to design, deliver or operate transport infrastructure projects.

9 | **Advanced Logistics**

This project will assist in the smart planning of advanced offsite logistics of infrastructure projects. A cloud-based platform is now being developed to facilitate online access to the tool.

10 | **Social Value Transport Infrastructure Calculator**

Measurement of the social value derived from transport infrastructure projects is the purpose of this project. Integration of the MMC features and functions within the existing Social Value Calculator is underway, alongside focus on Social Value case study development and advocacy.
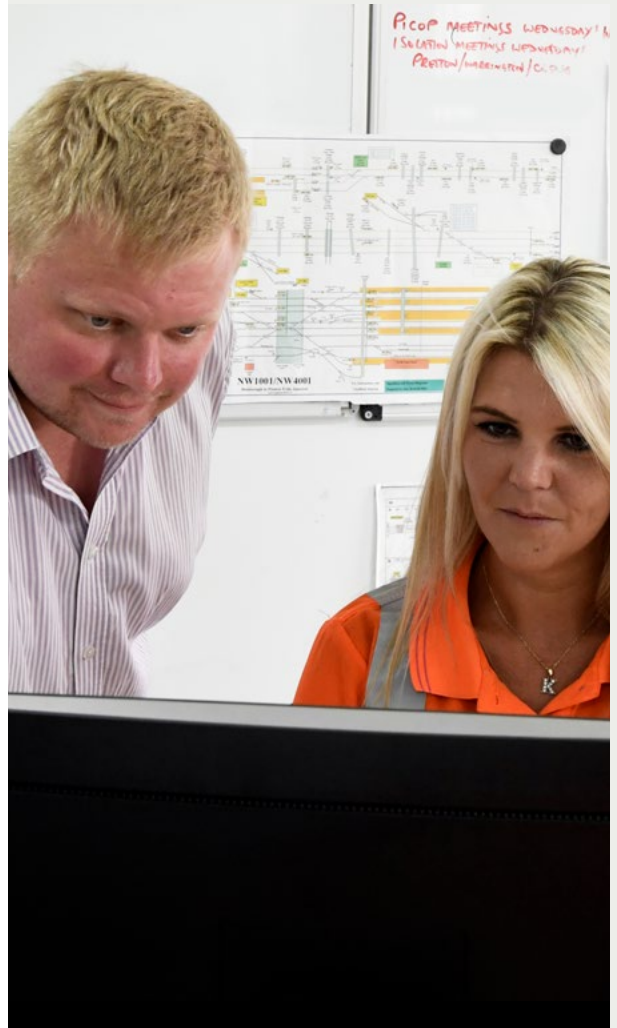
The 11th project will be Dissemination & Exploitation, as the outputs from all projects will be disseminated in several publicity events through to the end of July 2022. These events are being scoped and planned to mobilise the required resources and engage target audiences, with the help of the TIES Steering Groups. There is significant focus on the elicitation and validation of benefits, prioritising the demonstrator projects, which will be reported to InnovateUK and shared with all partners. The scaling and exploitability of the Living Lab solution should expect to make a significant impact on the value for money of future transport infrastructure spend, which is currently estimated at £18bn pa (30 % of the total infrastructure pipeline of £60bn pa). There is good engagement with and support for the recently launched Communities of Practice, which are expected to leave a lasting legacy beyond July 2022 and there is significant interest from the ALBs in generating a pipeline of collaboration projects to continue the Living Lab approach.

The National Skills Academy
RAIL