

Non-technical skills: Fad or aid?

Dr Stephen Fletcher, Occupational Psychologist and Director of The Occupational Psychology Centre (OPC) and OPC Assessment, examines the importance of non-technical skills (NTS) to the rail industry.



What are non-technical skills?

As the name suggests NTS are all about those personal characteristics employees need to have that will help them to undertake their roles safely, efficiently and effectively. They can include interpersonal and cognitive skills that complement a safety critical employee's technical ability. They could also include communication skills, situational awareness, decision making, interpersonal skills, team working, alertness etc.

NTS have been used extensively within the aviation industry and likewise in the nuclear, maritime and off shore oil industry. They have also been used in the healthcare and emergency services sectors (1). The UK rail industry has begun to embrace and use NTS too. However, it is fair to say that we have been using NTS in UK rail industry since the 1990's, but under a different guise.

The link between NTS and technical skills

NTS and technical skills (TS) are inextricably linked. The outputs of any role are the successful application of an employee's TS i.e. a train driver drives the train, the train dispatcher dispatches trains, the signaller controls the movement of trains, the track worker maintains the track and the shunter moves trains in a depot. These employees will need to apply the right NTS so that they can apply the correct TS. This in turn will help them perform their job safely, effectively and efficiently. So NTS can be seen as the inputs and TS as the outputs.

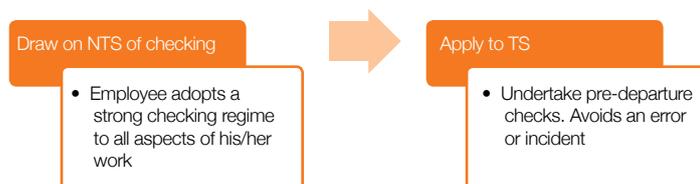
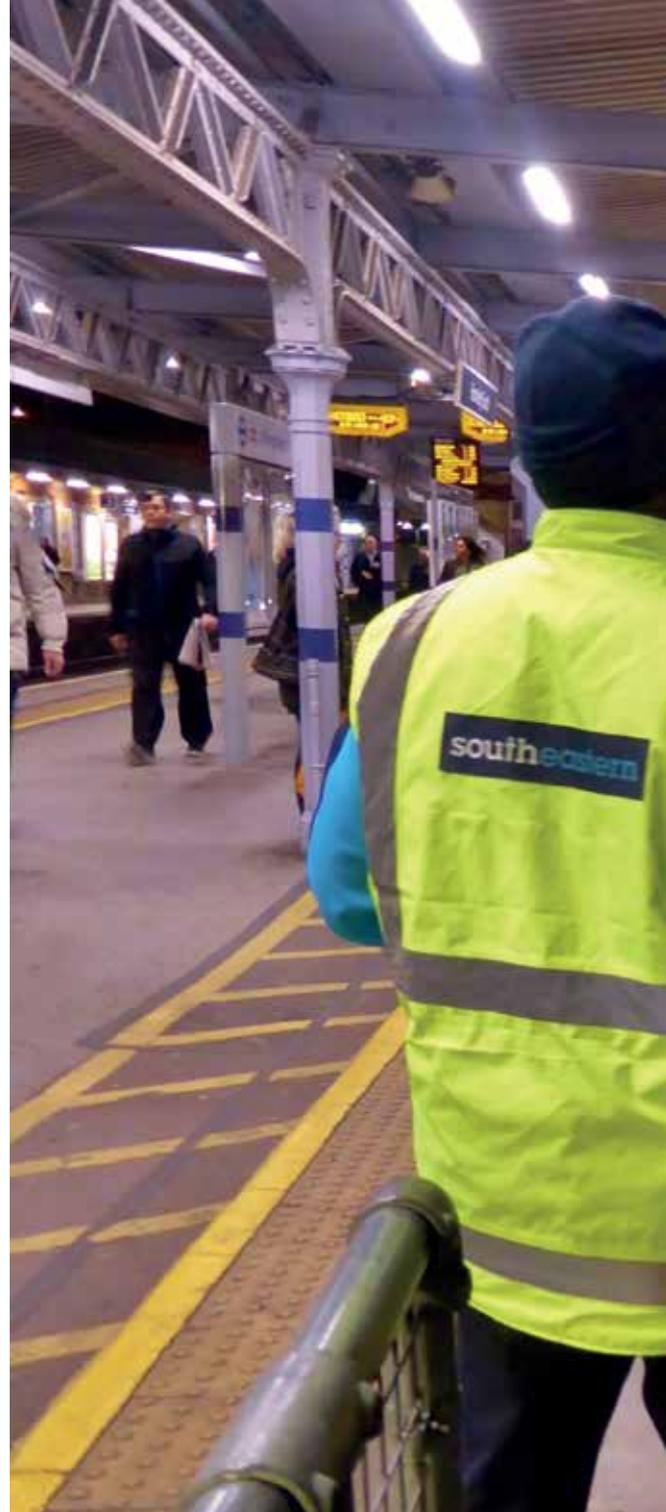


Figure 1: NTS and TS are interlinked

If we capitalise on NTS as our inputs, then it could lead to improvements in our job outputs i.e. improved performance and safety. However is there any evidence to support this claim?



NTS could bring real improvements to our safety

There is a growing body of evidence that suggests NTS can have a real impact on improving safety and performance. The Rail Safety Standards Board (RSSB) undertook a review of the potential benefits that NTS could bring to the rail industry (2). For example, research with rail organisations in Canada and Australia has shown some promising results following the introduction of NTS. A Canadian rail company reported a 46% reduction in human caused incidents after the application of NTS. This research suggests that NTS has the potential to bring significant improvement to safety in the rail industry, so it should be a serious consideration for investment of time and money in the rail industry.

So what NTS should we focus on for safety critical roles?

In the UK the RSSB undertook some key work in conjunction with the UK rail industry to identify the NTS that would be associated with safe and effective train drivers. Twenty six NTS were identified.



These included but were not limited to 'Motivation', 'Maintain Concentration', 'Checking' and 'Clarity of Communication'. These NTS are generic enough to be appropriate for other safety critical roles too i.e. managers and even psychologists!

Using and applying NTS across the whole employee life cycle

If a rail organisation is to maximise its return on investment and gain the best advantage from NTS then NTS needs to permeate all aspects of the safety critical employee's life cycle from recruitment through to post incident management.

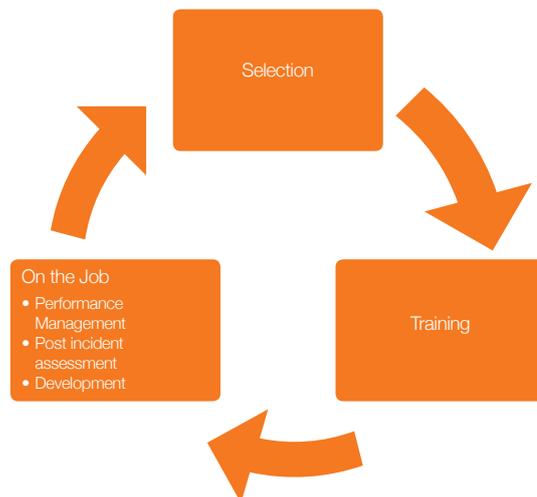
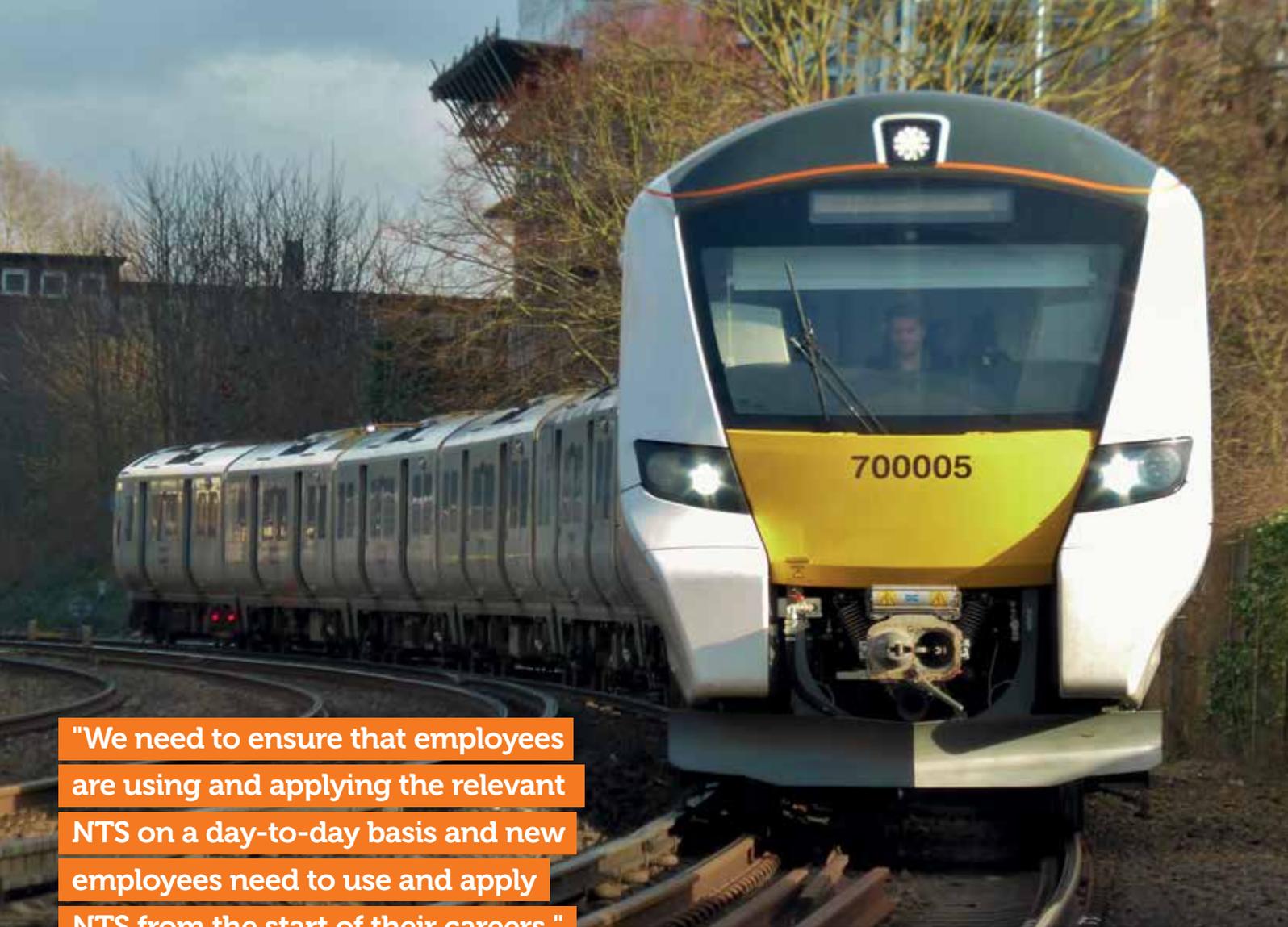


Figure 2: Incorporating NTS into the whole employee life cycle

We also need to see the implementation of NTS into the whole employee life as a long term change process. We are then likely to reap the maximum benefits of NTS. There is a temptation to see NTS as a quick fix. This could lead a rail operator to run a short NTS programme for e.g. its train drivers – hoping that it will significantly improve safety performance. In our experience any benefits from this approach are likely to be short-lived and to lead to long term despondency. If NTS are to work and to be sustainable then they need to be applied and integrated to the whole employee life cycle, and to be done so over a prolonged time.



"We need to ensure that employees are using and applying the relevant NTS on a day-to-day basis and new employees need to use and apply NTS from the start of their careers."

So how has the OPC used NTS with UK rail organisations across the employee life cycle?

Using NTS at selection to help recruit safe and effective employees

The OPC psychologists have been using and applying NTS within selection for safety critical roles since 1992. Once the key NTS has been identified for a role then we will identify suitable assessment tools that would assess the relevant NTS at selection. These tools might include an interview, psychological tests, role play or group exercises.

Applying NTS in training

We need to ensure that employees are using and applying the relevant NTS on a day-to-day basis and new employees need to use and apply NTS from the start of their careers. This will involve running appropriate NTS training for new recruits.

NTS development with existing employees

If a rail organisation is looking to seek significant benefits from the application of NTS then it will need to engage its existing employees. These employees need to be encouraged to use and apply NTS too. The OPC psychologists have worked with a UK train operator that has adopted a long term, holistic and life cycle approach to introducing NTS amongst its 1000 strong driver function with some very positive results.

Investigation and employee rehabilitation following a safety incident

The OPC psychologists have undertaken hundreds of in-depth post incident assessments with safety critical employees but predominately

train drivers. We discover what NTS may have been lacking at the time of an incident, whether it is a failure in maintaining concentration or not anticipating a risk. We then help many of these employees to return to work with a bespoke NTS development plan.

So are NTS a fad or an aid?

This article has explored the role NTS can have on safety performance for the rail industry. However, if NTS are to really work then we need to embed them into all stages of the safety critical employee's life cycle. To ensure NTS are given the best chance of working we also need to play the long game. It will be interesting to see how our industry continues to embrace NTS over the coming

months and years. Watch this space!

Dr Stephen Fletcher is an Occupational Psychologist and Director of The Occupational Psychology Centre and OPC Assessment. He joined the British Railways Board (BRB) in 1992 as an Occupational Psychologist. He left the BRB with his colleague Jo Lawrence in 1995 as part of privatisation to set up The Occupational Psychology Centre Ltd. Steve continues to work with the UK rail industry and with rail companies around the world. His particular areas of specialism are selection of safety critical personnel, human error, human factors and Non-Technical Skills. Steve can be contacted at steve.fletcher@theopc.co.uk.

References

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