The Office of Transport Safety Investigations (OTSI) is an independent NSW agency whose purpose is to improve transport safety through the investigation of accidents and incidents in the rail, bus and ferry industries. OTSI investigations are independent of regulatory, operator or other external entities.

Established on 1 January 2004 by the Transport Administration Act 1988, and confirmed by amending legislation as an independent statutory office on 1 July 2005, OTSI is responsible for determining the causes and contributing factors of accidents and to make recommendations for the implementation of remedial safety action to prevent recurrence. Importantly, however, OTSI does not confine itself to the consideration of just those matters that caused or contributed to a particular accident; it also seeks to identify any transport safety matters which, if left unaddressed, might contribute to other accidents.

This OTSI investigation was conducted under powers conferred by the Passenger Transport Act 1990. OTSI investigators normally seek to obtain information cooperatively when conducting an accident investigation. However, where it is necessary to do so, OTSI investigators may exercise statutory powers to interview persons, enter premises and examine and retain physical and documentary evidence.

It is not within OTSI’s jurisdiction, nor an object of its investigations, to apportion blame or determine liability. At all times, OTSI’s investigation reports strive to reflect a “Just Culture” approach to the investigative process by balancing the presentation of potentially judgemental material in a manner that properly explains what happened, and why, in a fair and unbiased manner.

Once OTSI has completed an investigation, its report is provided to the NSW Minister for Transport for tabling in Parliament. The Minister is required to table the report in both Houses of the NSW Parliament within seven days of receiving it. Following tabling, the report is published on OTSI’s website at www.otsi.nsw.gov.au.

OTSI cannot compel any party to implement its recommendations and its investigative responsibilities do not extend to overseeing the implementation of recommendations it makes in its investigation reports. However, OTSI takes a close interest in the extent to which its recommendations have been accepted and acted upon.
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GLOSSARY OF TERMS

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>All clear hand signal</td>
<td>‘I am aware of your approach’. To be displayed by a Lookout only if workers and their equipment are in a safe place.</td>
</tr>
<tr>
<td>Blocking Facility</td>
<td>A facility or device used by a Qualified Worker to prevent either the unintended issue of a Proceed Authority, or the operation of signalling equipment.</td>
</tr>
<tr>
<td>Cess</td>
<td>The space between an outermost rail and the rail corridor boundary.</td>
</tr>
<tr>
<td>Controlled Signal</td>
<td>A method used by Qualified Workers to carry out work on track using controlled signals set and kept at STOP.</td>
</tr>
<tr>
<td>Blocking</td>
<td></td>
</tr>
<tr>
<td>Danger Zone</td>
<td>Everywhere within 3m horizontally from the nearest rail and any distance above or below this 3m, unless a safe place exists or has been created.</td>
</tr>
<tr>
<td>Up and Down Lines</td>
<td>Trains that travel towards Sydney are Up trains. The lines that carry them are Up lines. Trains that travel away from Sydney are Down trains. The lines that carry them are Down lines.</td>
</tr>
<tr>
<td>Kilometrage</td>
<td>The track distance measured from the buffer stop at No. 1 Platform in Sydney Terminal (Central station).</td>
</tr>
<tr>
<td>Lookout Working</td>
<td>A method used by Qualified Workers to carry out work on track without a formally issued work on track authority. This method utilises a Lookout to warn of approaching rail traffic.</td>
</tr>
<tr>
<td>Four Foot</td>
<td>The area between the rails of a railway track.</td>
</tr>
<tr>
<td>Network Control</td>
<td>The function responsible for managing train paths and issuing authorities, including the authority to work on track.</td>
</tr>
<tr>
<td>Safe Place</td>
<td>A place where workers and equipment cannot be struck by rail traffic.</td>
</tr>
<tr>
<td>Six Foot</td>
<td>The area between the closest rails of adjacent tracks.</td>
</tr>
<tr>
<td>Whistle</td>
<td>A device such as a bell, whistle, siren, horn or hooter, fitted to a train or track vehicle to give audible warning.</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

At about 1415 on 27 November 2013, a group of five rail safety workers was engaged in manually removing rubbish and surplus materials from a track near East Maitland station. They were exposed to the danger of being hit by a train when the Protection Officer’s view of an approaching train was obscured by a train passing on the adjacent track. The Protection Officer (PO) had not anticipated such an eventuality in planning the worksite protection.

When the PO (acting as a lookout) saw the approaching train, he gave warning using a handheld air horn. The workers responded and were able to move to a safe place just before the approaching train reached their location.

The PO had recently been assessed and certified as competent by the Centre for Excellence in Rail Training which used documentation provided by the Australian Rail Track Corporation (ARTC) for the on-the-job training component. The safeworking incident occurred on his second day of work following certification. The investigation identified deficiencies in the process used by training providers to establish current competency in vocational rail safety functions.

Leighton Contractors Pty Limited, who were undertaking the work under contract to the ARTC, had recognised this and introduced a process to satisfy themselves that all safeworking personnel, whether direct employees or contractors, were suitably qualified and experienced to carry out the tasks to which they were assigned. However, the PO’s employer, Momentum Rail, had no such process, instead relying on the fact that personnel had been issued with certificates of competency as evidenced by their rail safety worker’s competency cards. Leighton Contractors were unaware of this and accepted the PO to be in charge of the worksite. In response to the incident, Leighton Contractors tightened their procedures to ensure that supplied contractor personnel meet their standards.

The main recommendation is that the ARTC review the ‘on-the-job’ training process to ensure it is both sufficient and verifiable, thereby allowing a training organisation to have a higher level of confidence that a rail safety worker is both competent and current. It is also recommended that the Office of the National Rail Safety Regulator determine if this is a matter with nationwide implications rather than one which resides only with the ARTC.
PART 1  FACTUAL INFORMATION

Overview

1.1 On 27 November 2013, a workgroup comprising a site supervisor, a protection officer (PO), a lookout and two labourers was engaged in picking up rubbish and materials left behind after a track refurbishment. The group was working on the Down Coal road near East Maitland station, picking up the material by hand and placing it into bags. The worksite protection used was ‘lookout working’.

1.2 The lookout was with the workgroup looking out for rail traffic on the adjacent Up Coal road while the PO was also acting as a lookout to warn of the approach of rail traffic on the Down Coal road.

1.3 When a loaded Aurizon Up coal train passed the worksite, it restricted the PO’s view of Down rail traffic thereby degrading his ability to warn the track workers to clear the worksite in a timely and safe manner. Before the PO could react to this, a train approached on the Down Coal road while the Aurizon coal train was still passing on the Up Coal road.

Location

1.4 East Maitland station is located in the Hunter Valley on the main line between Newcastle and Maitland (see Figure 1). The station is 29 km west of Newcastle and 189 km by rail from Sydney’s Central station.

1.5 The area is part of Australian Rail Track Corporation’s (ARTC) Hunter Valley corridor. There are four railway lines at the location; the Up and Down Coal roads and the Up and Down Main lines. The incident occurred on the heavily used coal roads. Intrastate and interstate freight and passenger trains also regularly use the corridor, mostly on the Up and Down Main lines.

1.6 The Up and Down Main lines are on the north-east side of the rail corridor. The Up and Down Coal roads are to the south-west.
The Rail Infrastructure Manager

1.7 The rail infrastructure manager responsible for managing the interstate rail network and the lines in the NSW Hunter Valley is the Australian Rail Track Corporation (ARTC, a Commonwealth government owned company).

The Work Scope

1.8 The work was awarded to Leighton Contractors Pty Limited (Leightons) as a variation to an existing contract. It was issued by ARTC on 21 October 2013 for the re-railing of 1226 m of the Up Coal road. The re-railing work scope was performed in three phases: preparatory work over two days (14-15 November), the main body of works during a track close down (19-22 November) and, due to Leightons finding there to be insufficient time during
the shutdown, further work to fit missing clips and to remove loose scrap and surplus material from the Up Coal road (26-28 November).

The Work Group

1.9 The workgroup was made up of the following personnel: a protection officer (PO) and a lookout, both employed by Momentum Rail; and a supervisor (also a qualified PO) and two labourers, all three employed by Leightons. The group had only worked together once before, on the day preceding the incident. The PO had only recently rejoined the rail industry and it was his second day on the job as an infrastructure worksite PO.

Worksite Protection

1.10 On the first day, the work was carried out on the Up Coal road using lookout working with controlled signal blocking (CSB) on the adjacent Down Coal road to provide a safe place. During periods when CSB was not available on the Down Coal road, lookout working was used on both lines, the Down cess being the safe place. The work was carried out without incident.

1.11 On the second day, work continued as before with a combination of lookout working and CSB. CSB was used to allow the workers to use a wheelbarrow on track to assist with the collection and removal of rubbish / spare material. At 1404 lookout working was authorised for two hours until 1604, but a request for CSB was declined by the ARTC network controller due to traffic volume. The PO assessed the work as being suitable for lookout working, as he had previously, providing that the wheelbarrow was not used.

1.12 The PO instructed the lookout to position himself with the workgroup which was to work on the Down Coal road adjacent to East Maitland station. The PO positioned himself in the cess to act as a Lookout for rail traffic approaching in the Down direction. The PO’s location was close to the William Street footbridge (188.700 km) about 250 m towards Newcastle from the worksite’s furthest extent (see Figure 2).

1.13 The worksite was on the Down Coal road, this line being the closest to the southerly edge of the rail corridor. Adjacent to the Down Coal road was the
Up Coal road with the Down Main line next, followed by East Maitland station platform then the Up Main line.

1.14 The Up Coal road’s speed was normally 90 km/h but, at the time of the work, there was a Temporary Speed Restriction of 20 km/h in force between 189.100 km and 187.800 km, which was applicable to all rail traffic.
The track speed on the Down Coal road was 95 km/h on approach to the worksite with a maximum available sighting distance of about 550 m. However, if rail traffic was present on an adjacent line, this distance was significantly reduced (see Figure 3).
The Principal Contractor

1.15 The principal contractor was Leightons. They had responsibility to ensure that the planning and delivery of all work was carried out in a safe manner.

The Rail Safety Worker Supplier

1.16 Momentum Rail is a national provider of services to the rail industry, including the provision of safeworking staff such as POs. Momentum Rail is part of Engenco Limited, an international company operating in various transport and engineering spheres.

The Incident

1.17 On 27 November 2013 at 1436:40, a station camera operated by Sydney Trains on East Maitland station recorded MR960, a loaded Aurizon coal train, approaching on the Up Coal road. The train’s speed was reducing to comply with the 20 km/h temporary speed restriction located at 189.100 km, approximately 100 m before the work location. The worksite lookout, who was standing between the Up and Down Coal roads, appeared to observe its approach. At 1437 the driver of the train sounded his whistle (which also caused the locomotive’s ditch light to flash for a period). The lookout relocated himself to the Down Coal road four foot. Shortly after, the lookout and two workers moved to a position where vision of them from the CCTV camera was blocked by a station sign.

1.18 The Aurizon train was 1.4 km long and, at 20 km/h, took nearly five minutes to pass the location. As the train passed, the workgroup remained in the danger zone on the Down Coal road and continued to work. The PO, as lookout for Down trains, remained in position in the cess in the vicinity of the William Street footbridge.

1.19 At about 1442, Pacific National empty coal train SF915, with two drivers in the cab, approached the worksite on the Down Coal road. The PO, acting as a lookout, saw it as it emerged from around the curve where it had been obscured by the Aurizon train. The lookout gave a warning using his air horn and an all clear hand signal to the crew of SF915.
1.20 The train continued to a position just short of the PO from where workers, still on track, became visible to the crew. The driver immediately applied emergency braking and sounded the locomotive’s whistle. The train came to a stand beyond the worksite.

**Environmental Conditions**

1.21 The incident occurred during daylight hours and the weather was warm and dry with good visibility. The nearby weather station at Maitland recorded a temperature of 24.7°C at 1500 with a light easterly wind and low humidity. There is no evidence that environmental conditions had any bearing on the incident.

**Emergency Response**

1.22 The train crew notified the ARTC network controller of the incident, followed by their own management. The train then recommenced its journey after remaining stationary for 2 minutes and 27 seconds.

1.23 On seeing the train come to a stand, the PO called the ARTC network controller using his mobile phone. He was informed that the train crew had reported a ‘near miss’ incident and instructed him to cease work and wait for an ARTC employee to come to the site.

1.24 The ARTC network controller dispatched an investigator to the site. The PO and lookout were drug and alcohol tested and returned negative results.

**Communications**

1.25 Communications between the PO and ARTC network controller were exclusively by mobile phone.

1.26 When acting as a lookout, communication between the PO and the workgroup (including the other lookout) was by a handheld air horn used to warn them to move off-track to a safe place.
**Rail Safety Worker Certification**

1.27 The two labourers on site had Rail Industry Safety Inductions. As the name suggests, this is an induction required by the rail industry and allows workers access to the rail corridor under supervision.

1.28 The lookout held the correct competency for that duty.

1.29 Although holding a PO3 competency, the supervisor was not engaged in PO work, being on site solely in the role of worksite supervisor.

1.30 The PO had been issued with a Rail Safety Worker’s card on 21 November 2013. This authorised him to carry out a number of rail safety activities included in Handsignaller 1, Handsignaller 2, PO1, PO2 and Safeworking Level 1 competencies (see *Appendix 1*).
PART 2 ANALYSIS

Pre-planning

2.1 The work was undertaken due to the full scope of track re-railing works not being completed during the shut down (19-22 November 2013). Consequently, the work was scheduled at short notice with an email sent to Momentum Rail requesting the provision of a PO2 and Handsignaller 2 (as a lookout) at 1335 on Friday 22 November. This left three days (effectively one working day after the weekend) to plan the job’s execution and resourcing.

2.2 The Leighton’s Safeworking Coordinator stated after the incident that the minimum form of protection should have been CSB. But this advice was not communicated to Momentum Rail by Leightons prior to commencement of the work.

2.3 This contrasts with a two day pre-shutdown job when Momentum Rail was given a week’s notice of the requirement for a PO1 with the additional requirement: “It is important that the candidate has knowledge of the area as tight track curvature and high track speeds exist”, although there was no mention of CSB.

2.4 In planning its scope of works, Leightons had a weekly meeting where safeworking aspects could be discussed. This was an important part of the planning and assurance process where requirements could be reviewed and risks identified, eliminated or controlled. However, in this case due to the timescale, the scope of works was not discussed at these meetings.

2.5 The PO was assigned the job on 22 November and elected to travel to the site at East Maitland from his home on the NSW Central Coast the day before the work commenced. The PO did this in his own time and at his own expense as he was not familiar with the location. However, the PO only familiarised himself with the immediate area with a view to using lookout working. When the PO realised that CSB would be required, due to the use of a wheelbarrow, the PO had to visit the nearest station to consult the appropriate maps to
establish the signal number and location on the Down Coal road in order to be able to request and implement CSB.

**Worksite Protection**

2.6 The lowest level of protection available to access the danger zone is lookout working. Under this method, trains continue to run normally with a worksite having a minimum of one lookout to observe the approach of rail traffic and warn workers to move to a safe place.

2.7 The next level of protection is CSB. Rail traffic can be excluded from the worksite by a number of methods, most commonly by placing and keeping a signal at stop while workers are in the danger zone. CSB provides a higher level of protection than lookout working although in its basic form it provides no redundant protection in the event of rail traffic failing to stop at a signal or the network controller failing to place or keep a signal at Stop.

2.8 On the first day of the planned three days of work, the focus was on the Up Coal road. A combination of lookout working and, due to the use of a wheelbarrow, CSB was used as required. In the case of lookout working, the Down cess was used as the safe place with workers crossing the Down Coal road from the Up coal road to reach it whenever rail traffic approached from either direction (on the coal roads).

2.9 On the second day, work on the Up Coal road was complete and the focus moved to the Down Coal road. The work was again undertaken under a combination of lookout working and CSB. Shortly before the incident, with CSB not being available from the network controller due the volume of rail traffic, the PO elected to work using lookout working. An appraisal of the location shows that the worksite, at this location, could comply with ARTC’s rules and procedures for lookout working.

2.10 However, when planning the work at the incident location, the PO did not take into account the affect that rail traffic on the adjacent Up Coal road (or, to a lesser extent, the Up and Down Main lines) would have on his sighting distance and therefore on his ability to warn his workgroup of approaching rail traffic on the Down Coal road. Additionally, neither the PO nor the lookout
was aware of the requirement for a lookout to “stand or walk in a safe place” (ARTC Lookout procedure, ANPR 711). The lookout had located himself on track adjacent to the workers. While this gave him a good view of approaching rail traffic on the Down Coal road, it was not a safe place.

**Sighting Distance**

2.11 Sighting distance to observe rail traffic approaching on the Up Coal road, due to the reduced speed required to comply with the 20 km/h Temporary Speed Restriction, was more than adequate for a lookout to warn workers of approaching rail traffic.

2.12 Sighting distance to observe rail traffic approaching on the Down Coal road was restricted at the worksite because of the proximity of the station structure and the curvature of the track. However, a better sighting distance was obtained by placing a lookout on the Newcastle side of the station (see Figure 2).

2.13 In the PO’s position at 188.700 km, he had a sighting distance of about 550 m looking across the Up and Down Coal roads as the track curved away from his location. With a line speed of 95 km/h, the PO had about 20 seconds warning of traffic approaching his location.

2.14 As the head of the Aurizon train passed the PO’s location, it moved into his line of sight across the coal roads, progressively restricting the PO’s ability to observe approaching rail traffic (see Photographs 1-4). Elapsed time between the first and last photograph in the sequence amounted to 18 seconds. In an effort to see round the train, the PO moved diagonally away from the track but this proved to be ineffective.
2.15 At the same time, an empty Pacific National (PN) coal train SF915 was approaching on the Down Coal. It travelled on the outside curve around the Aurizon train; its lead locomotive came into the PO’s view when it was approximately 200 m away from him. The PO sounded his air horn to warn the workgroup of the train’s approach and gave the crew an all clear hand signal. The train was travelling at about 70 km/h. It took an estimated 8 seconds to travel from the point where it became visible to the PO (depending on exactly where he was standing) to a point about 40 m from the PO. Here, the workers who were still in the danger zone became visible to the driver.
2.16 The train crew reported that some workers were in the danger zone with the closest about 100 metres ahead: “at least one of these workers was in the four foot, carrying a large white bag”. At interview, one labourer reported that he was about halfway between the worksite and the PO when the warning was given. This would place him approximately 150 metres from the lead locomotive at the point he came into the crew’s line of sight.

2.17 The driver immediately sounded the locomotive’s whistle and applied emergency braking, bringing the train to a stand, after 420 m and 36 seconds, with its head at 189.200 km, approximately 200 m past the worksite. The lookout and workers had moved to a safe place before the train reached their location.

Protection Officer

2.18 The Momentum Rail PO had 22 years of previous rail experience with the Rail Corporation NSW (RailCorp) and its predecessor organisation, the State Rail...
Authority (SRA), before taking a redundancy in May 2013. He had worked exclusively as station staff at various locations, rising to the position of station duty manager. Part of his duties required him to be safeworking qualified to operate signalling equipment, use CSB to retrieve property from the railway lines and to go on track to respond to failed points, signals and level crossing warning equipment.

2.19 The PO presented his RailCorp / SRA training record to the Centre for Excellence in Rail Training (CERT) which, along with his work experience, allowed CERT to assess his training and assessment needs. The PO underwent both face to face training and assessments in a training room environment which, combined with a period of on-the-job training, resulted in the him being certified as competent in Handsignaller 1, Handsignaller 2, PO1, PO2 and also Safeworking Level 1 competencies. He was issued a Rail Safety Worker’s card which reflected this. ARTC document SP-05-02 Competency / Communication Protocol for Entering Rail Corridor lists the activities that can be undertaken for each competency (see extract in Appendix 1).

2.20 The training and assessment processes leading to the PO being issued with a Rail Safety Worker’s card, including PO and Safeworking Level 1 competencies, were carried out by CERT. CERT is a Registered Training Organisation1 approved by ARTC and the training and assessment was performed in accordance with current industry standards.

2.21 CERT used ARTC on-the-job training and assessment documents. These documents to assess the PO’s competency were adopted from the Rail Infrastructure Corporation (RIC), the custodian of NSW Network Rules and Procedures at the time of ARTC’s NSW lease commencement in 2004. However, the documents have been amended as necessary from time to time to reflect changes made to ARTC safeworking rules and procedures. The format of the documents has remained the same since their introduction in the 1990’s. RIC’s successor organisation was RailCorp followed by Sydney Trains in July 2013. Sydney Trains was requested to supply information about

1. Registered Training Organisations deliver Vocational Education Training and are regulated by the Australian Skills Quality Authority. Their website can be accessed at: http://www.asqa.gov.au/
the history of these documents. Sydney Trains in turn referred the matter to Transport for New South Wales, but no relevant records could be located.

2.22 ARTC requires training providers to assess rail safety workers as competent against a number of Nationally Recognised Training Units. However, the assessment tools provided by ARTC to training providers do not, of themselves, satisfy the scope of these units. CERT has undertaken a gap assessment and developed additional steps to bridge the gap between ARTC’s documents and the Nationally Recognised Training Units. Using these tools, CERT determined that the PO was competent to perform all safeworking tasks in the relevant competencies (Handsignalling Class 1 & 2, PO1 & 2, and Safeworking Level 1). Since the incident, ARTC has, with the assistance of a Registered Training Organisation, reviewed current training resources to align them with Nationally Recognised Training Units.

2.23 The assessments were done in a training room environment, one to one with a CERT trainer. In addition to the paper assessment tools, the trainer satisfied himself of the PO’s knowledge, experience and competency by discussing the PO’s work experience and his knowledge of safeworking with him and by reference to his training records from his last employer, RailCorp. The assessments were signed off as having been satisfactorily completed on 1 November 2013.

2.24 To support the assessments, the PO was required to complete “on the Job” workbooks covering the various systems of safeworking, work on track methods and other competencies required to fulfil the various requirements.

2.25 The PO took these books to a worksite at Hexham in the Hunter Valley where he had arranged to do his on-the-job training. Although a railway infrastructure site, this was more akin to a major civil infrastructure construction site. Most work was conducted away from operational railway infrastructure with the live railway lines being fenced off. This was the site where the PO undertook his practical experience and, over a period of seven days (1 to 7 November 2013) had his workbooks signed off.

2 Nationally Recognised Training Units are administered by the Commonwealth Department of Industry. Their website can be accessed at https://training.gov.au/
2.26 All three workbooks were of a similar format with lists of “tasks / procedures” each requiring four sign-offs. For example:

<table>
<thead>
<tr>
<th>Task/Procedure</th>
<th>Demonstrated by On Job Trainer</th>
<th>Carried Out Under Close Supervision</th>
<th>Carried Out Under Minimal Supervision</th>
<th>Consistently Carried Out Under Minimal Supervision</th>
</tr>
</thead>
<tbody>
<tr>
<td>The correct procedure is followed when directing shunting movements by ensuring:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-the correct procedure is followed when propelling over a level crossing..........</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In total, across the On-Job-Workbooks supplied to OTSI, there were 220 individual tasks / procedures requiring a total of 880 individual sign offs (or initials) by the trainer. Some tasks / procedures had the option “or the correct procedure can be described” rather than have the task / procedure demonstrated / carried out. However, the majority required sign off as per the above table.

2.27 While on site for on-the-job training, the PO’s experience was mostly looking after heavy machinery working on the construction site, fenced off from the live railway lines. His exposure to rail experience was limited to taking a track occupancy authority in a refuge loop (and clipping and locking the refuge loop’s points). In particular, no lookout working or CSB experience was gained. Notwithstanding this, all columns of every task / procedure had been initialled as satisfactorily completed over the seven-day period. OTSI has been informed that this represents usual practice.

2.28 On the basis of the prescribed process being successfully completed, CERT issued the PO with a rail safety worker’s card. While the PO did have the qualifications ‘on paper’ from previous experience with RailCorp / SRA and passed the various assessments, his experience when looking at the range of competencies covered by the five safeworking classifications, was limited and far from current. These limitations included activities such as Lookout Working for moving worksites, handsignalling for track work authorities and a
number of activities relating to Safeworking Level 1. At interview, the PO commented: “training is never enough. Anyone can read a book…it doesn’t mean you know what you’re doing when you’re doing it...the on the job training is where you learn”.

2.29 However, the safeworking trainer noted, with reference to the costs associated with any future increase in training and competency verification requirements: “the challenge of a decentralised and casualised industry is how to ensure that the cost burdens (of enhanced training and competency verification) are appropriate, proportionate and fair”.

2.30 OTSI notes that there is not an option to issue a restricted or part competency with only those tasks / procedures in which the rail safety worker is competent being listed (e.g., for a PO1, CSB but not lookout working {refer Appendix 1})

Leightons Site Supervisor

2.31 The Leightons site supervisor held a current qualification as a PO3 and had 39 years relevant rail experience. The supervisor’s job on site was to supervise the two labourers and not to arrange worksite protection. However, it is considered that the supervisor, taking account of his qualifications and experience, could have questioned the decision to work in the danger zone while the Up train was passing. Alternatively, he could have made his own decision not to work and, with the lookout and two labourers, gone to and remained in a safe place until it was safe to resume work.

Leightons Verification of Competency Procedure

2.32 Leightons had a “Verification of Competency” (VOC) procedure which overlaid the competency certification provided by training organisations. A previous incident between Bengalla and Mangoola on the Ulan line in 2012, when a reversing a ballast train collided with an unstaffed stationary track machine, alerted Leightons to the fact that there could be a mismatch between a rail safety worker’s certificate of competency and his or her actual experience in, and ability to perform, particular work. It was determined by Leightons that the certification of rail safety staff could not be relied upon and that further
assurance was necessary before allowing them to undertake safeworking duties.

2.33 In correspondence with OTSI during this investigation, Leightons noted that:

“Training is only a small part of developing the skills required to make a person competent at their role. Safe Working is a high risk activity that currently relies on the use of significant decision making and communication skills. The current training regime focuses on the knowledge of a set of rules, but does not provide the development of the skills required to implement these rules effectively or safely. This has been recognised in the UK by Network Rail who have a communications module as a critical part of the skill development for safe working personnel. Until we, as an industry, recognise that communication and decision-making are key components of the required competency, we will not see any improvement in the standards out on the track and unfortunately, people will continue to experience serious consequences. Leightons has recognised this weakness in the system and has attempted to develop Verification of Competency processes to ensure that we know who is going to provide this safety critical role, what experience, knowledge and attitude that person has and that we are satisfied that the individual will provide the best level of care to both our people and others on the rail corridor.”

It is Leightons opinion that the current ARTC approved training regime is not delivering the required outcomes, hence the VOC process.

2.34 For all safe working personnel, Leighton’s require a VOC to be conducted on site by an in-house assessor. The assessor is independent of the site operation and reports directly to the Leighton’s National Manager, Safety & Assurance – Rail. The VOC is normally carried out prior to commencing work but, on this occasion, the short notice mobilisation resulted in the VOC not being completed.

2.35 Momentum Rail relied solely on the issue of the certificate(s) of competency based on training organisations’ assessments. But, Leightons assumed that Momentum Rail had a similar system to theirs for verifying the competency of their safeworking staff. Leightons therefore did not communicate this additional requirement to Momentum Rail.
Momentum Rail

2.36 Momentum Rail is a national provider of services to the rail industry including the provision of safeworking staff such as POs. Momentum Rail is part of Engenco Limited, an international company operating in various transport and engineering spheres.

2.37 Momentum Rail had a “training partner and Registered Training Organization (RTO)” which traded as the Centre for Excellence in Rail Training (CERT). CERT was also an Engenco company.

2.38 Momentum Rail has a Safety Management System which includes a Procedure Manual (issued 22 May 2013). This manual includes the following passage under the heading Training and Competency: “Personnel shall be assessed as competent on the basis of skills achieved through education, training or experience to perform assigned tasks taking into account their WH&S responsibilities and risk associated with the work activities they are to be engaged in.”

2.39 Momentum Rail took the view that if a person held a valid Rail Safety Worker’s card then that person was suitably qualified and deemed competent to carry out all and any of the duties pertaining to the qualification(s) (e.g., PO1 or PO2) listed. This reflected the requirements of the rail infrastructure manager, ARTC. However, the PO’s on-job ‘trainer’ sought assurance from the PO that he was confident about looking after the crew at East Maitland as the PO did not have the specific local knowledge at the time of the request. The PO responded in the affirmative. Additionally, Momentum’s safe working coordinator stated that she did discuss the parameters of the job with the PO when the job was allocated to him to ensure that he was aware of what was required and to check that he was confident that he could do it. Follow up calls were made on each work day to check that all was well.

2.40 Momentum’s safe working coordinator had about 4 years rail experience as a PO and had only been in her role with Momentum for about 10 weeks prior to the incident. Since the incident she has successfully completed a Certificate IV in Assessment and Workplace Training to enhance her ability to carry out the role.
PART 3 FINDINGS

Immediate Cause

3.1 The workgroup clearing scrap material from the Down Coal road was exposed to the danger of being hit by a train because the Protection Officer’s view of a train approaching on the Down Coal road was obscured by a train passing on the Up Coal road.

Contributing Factors

3.2 The Momentum Rail PO had not previously experienced a loss of sighting distance due to the passage of rail traffic on an adjacent track and had not taken it into account when planning his worksite protection.

3.3 The training and assessment leading to the issue of the PO’s certification had not identified this gap in his experience and therefore his competence.

3.4 Leightons made an assumption that their supplier, Momentum Rail, had a system in place to ensure that the PO provided for the job was suitably qualified, experienced and competent, beyond being the holder of an appropriate certificate of competency, to undertake the required tasks at the worksite.

3.5 The request from Leightons for the supply of a PO at the same location on 14 and 15 November had included the following passage: “It is important that the candidate has knowledge of the area as tight track curvature and high track speeds exist”. This requirement was not reiterated in the request for the supply of a PO for 26 to 28 November.

3.6 The planned work was not reviewed during one of Leighton’s weekly safeworking meetings and so the opportunity to review the method of work and stipulate minimum safeworking requirements was lost.

3.7 The on-job training provided to the PO was inadequate. Although the PO’s on-job workbook was signed off to confirm that the PO had demonstrated knowledge in a wide range of tasks and procedures, the reality was different. While the PO demonstrated his knowledge of the majority of the tasks and...
procedures, he actually had experience in performing only a small number of them.

3.8 The Leightons site supervisor, a protection officer with 39 years experience, did not question the work method, specifically continuing to work while the Up train passed.

Other Safety Matters

3.9 The Momentum Rail lookout was positioned in the danger zone. While this gave him a better view of the approach of rail traffic in the Down direction, it contravened ARTC Procedure ANPR 711 *Lookouts* which directs that lookouts must “Stand or walk in a safe place”.

3.10 A peer who holds the correct qualification(s) (e.g., PO1), with no regard for the candidate’s experience or other suitability, is able to sign off the On-Job Workbook. There is no requirement for this person to hold a Certificate IV in Assessment and Workplace Training.

3.11 There is no provision to tailor a certificate of competency to the needs of an employer or the competency / experience of a rail safety worker. A “Safeworking Competency” has to be issued covering a defined suite of “Permitted Activities” whether or not each activity will be required by an individual in a particular employment.
PART 4 RECOMMENDATIONS

The following recommendations are made in relation to matters identified in the course of this investigation.

Australian Rail Track Corporation

4.1 Review the ‘on-the-job’ training process and requirements for Handsignaller, Protection Officer and Safeworking Level 1 competencies to ensure that on-the-job training is both sufficient and verifiable, to allow a training organisation to have a higher level of confidence that a rail safety worker is both competent and current.

4.2 Examine the feasibility of introducing a restricted, or part, competency with only those tasks/procedures in which the rail safety worker is found to be competent being listed.

The Office of the National Rail Safety Regulator

4.3 With reference to the recommendation at 4.1, determine if this is a matter with nationwide implications rather than one which resides only with the ARTC.
## PART 5 APPENDICES

### Appendix 1: Extract from Table 2 of ARTC document SP-05-02
Competency / Communication Protocol for Entering Rail Corridor

<table>
<thead>
<tr>
<th>Safe-working Competency</th>
<th>National Competency</th>
<th>Permitted Activities</th>
</tr>
</thead>
</table>
| **Hand signaller Level 1** | TDTW1 01A_1 Operate under track protection rules A(2) (Hand signalling Level 1) | • Act as a look out  
• Act as an inner or outer hand signaller  
• Hand signal rail traffic at a work site or within a possession  
**Condition:**  
• Cannot perform hand signalling activities at fixed signals or level crossings. |
| **Hand signaller Level 2** | TDTW1 01A_2 Operate under track protection rules B (2). (Hand signalling Level 2) | • Activities as prescribed for hand signaller level 1  
• Act as an inner or outer hand signaller at a fixed signal  
• Act as a hand signaller at defective signals  
• Pilot rail traffic into, within and out of a possession area  
• Hand signal at level crossings |
| **Protection Officer Level 1** | TDTW02 01A_1 Coordinate and manage track protection A(3) (PO1) | • Assess risks  
• Identify level of protection required  
• Implement No Authority Required (NAR)  
• Implement Controlled Signal Blocking (CSB)  
• Act as a lookout person |
| **Protection Officer Level 2** | TDTW02 01A_2 Coordinate and manage track protection B(3) (PO2) | • Activities as prescribed for Protection Officer Level 1  
• Implement a TOA  
• Arrange for track vehicles or work trains to enter the limits of a TOA  
• Obtain the staff in token sections for a TOA  
• Obtain the half pilot staff for a TOA |
| **Safe-working Level 1** | TDTF58 01A_1 Apply safe-working rules to rail operations A(2) (Safe working Level 1) | • Activities prescribed for a Hand Signaller Level 2  
• Operate ground frames  
• Operate signalling equipment at unattended locations  
• Operate on authority of a Special Proceed Authority (SPA)  
• Transfer track vehicles as a train  
**Condition:**  
• Must be certified to the system of safe-working in use in the area in which they are operating |
Appendix 2: Sources and Submissions

Sources of information

- Aurizon
- Australian Rail Track Corporation
- Centre for Excellence in Rail Training (CERT)
- Geoscience Australia
- Interviews with protection officer and others on site
- Leighton Contractors Pty Limited
- Momentum Rail
- NSW Branch Office of the National Rail Safety Regulator
- Pacific National Pty Ltd
- Safeworking trainer (CERT)

Submissions

The Chief Investigator forwarded a copy of the Draft Report to the Directly Involved Parties (DIPs) to provide them with the opportunity to contribute to the compilation of the Final Report by verifying the factual information, scrutinising the analysis, findings and recommendations, and to submit recommendations for amendments to the Draft Report that they believed would enhance the accuracy, logic, integrity and resilience of the Investigation Report. The following DIPs were invited to make submissions:

- Australian Rail Track Corporation
- CERT
- Leighton Contractors Pty Limited
- Momentum Rail
- Office of the National Rail Safety Regulator
- Protection Officer
- Safeworking trainer

Submissions were received from all DIPs other than Momentum Rail and the Protection Officer. The Chief Investigator considered the representations and responded to the author of each of the submissions advising which of their recommended amendments would be incorporated, and those that would not. Reasons were provided where any recommended amendment was excluded.