Australian Government

Australian Transport Safety Bureau

ATSB TRANSPORT SAFETY INVESTIGATION REPORT
Rail Occurrence Investigation 2006013
Final

Collision between

freight train 9351 and an overturned semi-trailer

at Illabo, New South Wales

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Released in accordance with section 25 of the *Transport Safety Investigation Act 2003*

Published by: Australian Transport Safety Bureau
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ISBN and formal report title: see 'Document retrieval information' on page v.

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DOCUMENT RETRIEVAL INFORMATION

Report No.	Publication date	No. of pages	ISBN
2006013	6 March 2008	43	978-1-921165-95-5

Publication title

Collision between freight train 9351 and an overturned semi-trailer at Illabo, New South Wales, 2 November 2006.

Prepared by

Australian Transport Safety Bureau
PO Box 967, Civic Square ACT 2608 Australia
www.atsb.gov.au

Reference No.

Mar2008/Infrastructure 8058

Acknowledgements

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Abstract

Shortly before 2314 on Thursday 2 November 2006, the driver of a semi-trailer loaded with baled wool lost control of his truck whilst negotiating the approach to the Olympic Highway level crossing at Illabo, New South Wales. The truck overturned and slid along on its side coming to rest on the level crossing, obstructing both of the railway lines at the crossing. After climbing out of the prime mover cab, the driver realised that his truck was obstructing the railway lines and called the '000' emergency number. The '000' operator received the call and transferred it to the police communication centre who then called Junee train control. Junee train control then attempted four times to warn train 9351, which was approaching the crossing, without success.

At about 2324:35 freight train 9351 travelling at about 94 km/h collided with the overturned semi-trailer. The leading bogie on leading locomotive GL102 derailed as a result of the collision. There was moderate damage to the leading locomotive and the truck's prime mover. The truck's trailer was destroyed. There was significant damage to the level crossing signals, signage, and auxiliary trackside equipment. There were no serious injuries but the train crew were treated for shock.

In the interest of enhancing future road/rail safety a number of recommendations that address various safety issues including the need to ensure that the primary radio communication system, CountryNet, is operational at all times in the leading locomotive of all trains in New South Wales.

THE AUSTRALIAN TRANSPORT SAFETY BUREAU

The Australian Transport Safety Bureau (ATSB) is an operationally independent multi-modal bureau within the Australian Government Department of Infrastructure, Transport, Regional Development and Local Government. ATSB investigations are independent of regulatory, operator or other external organisations.

The ATSB is responsible for investigating accidents and other transport safety matters involving civil aviation, marine and rail operations in Australia that fall within Commonwealth jurisdiction, as well as participating in overseas investigations involving Australian registered aircraft and ships. A primary concern is the safety of commercial transport, with particular regard to fare-paying passenger operations.

The ATSB performs its functions in accordance with the provisions of the *Transport Safety Investigation Act 2003* and Regulations and, where applicable, relevant international agreements.

Purpose of safety investigations

The object of a safety investigation is to enhance safety. To reduce safety-related risk, ATSB investigations determine and communicate the safety factors related to the transport safety matter being investigated.

It is not the object of an investigation to determine blame or liability. However, an investigation report must include factual material of sufficient weight to support the analysis and findings. At all times the ATSB endeavours to balance the use of material that could imply adverse comment with the need to properly explain what happened, and why, in a fair and unbiased manner.

Developing safety action

Central to the ATSB's investigation of transport safety matters is the early identification of safety issues in the transport environment. The ATSB prefers to encourage the relevant organisation(s) to proactively initiate safety action rather than release formal recommendations. However, depending on the level of risk associated with a safety issue and the extent of corrective action undertaken by the relevant organisation, a recommendation may be issued either during or at the end of an investigation.

The ATSB has decided that when safety recommendations are issued, they will focus on clearly describing the safety issue of concern, rather than providing instructions or opinions on the method of corrective action. As with equivalent overseas organisations, the ATSB has no power to implement its recommendations. It is a matter for the body to which an ATSB recommendation is directed (for example the relevant regulator in consultation with industry) to assess the costs and benefits of any particular means of addressing a safety issue.

TERMINOLOGY USED IN THIS REPORT

Occurrence: accident or incident.

Safety factor: an event or condition that increases safety risk. In other words, it is something that, if it occurred in the future, would increase the likelihood of an occurrence, and/or the severity of the adverse consequences associated with an occurrence. Safety factors include the occurrence events (e.g. engine failure, signal passed at danger, grounding), individual actions (e.g. errors and violations), local conditions, risk controls and organisational influences.

Contributing safety factor: a safety factor that, if it had not occurred or existed at the relevant time, then either: (a) the occurrence would probably not have occurred; or (b) the adverse consequences associated with the occurrence would probably not have occurred or have been as serious, or (c) another contributing safety factor would probably not have occurred or existed.

Other safety factor: a safety factor identified during an occurrence investigation which did not meet the definition of contributing safety factor but was still considered to be important to communicate in an investigation report.

Other key finding: any finding, other than that associated with safety factors, considered important to include in an investigation report. Such findings may resolve ambiguity or controversy, describe possible scenarios or safety factors when firm safety factor findings were not able to be made, or note events or conditions which 'saved the day' or played an important role in reducing the risk associated with an occurrence.

Safety issue: a safety factor that (a) can reasonably be regarded as having the potential to adversely affect the safety of future operations, and (b) is a characteristic of an organisation or a system, rather than a characteristic of a specific individual, or characteristic of an operational environment at a specific point in time.

Safety issues can broadly be classified in terms of their level of risk as follows:

- **Critical safety issue**: associated with an intolerable level of risk.
- **Significant safety issue**: associated with a risk level regarded as acceptable only if it is kept as low as reasonably practicable.
- **Minor safety issue**: associated with a broadly acceptable level of risk.

EXECUTIVE SUMMARY

Shortly before 2314[1], on Thursday 2 November 2006, the driver of a semi-trailer loaded with baled wool lost control of his truck whilst negotiating the approach to the Olympic Highway level crossing at Illabo, New South Wales. The truck overturned and slid along on its side coming to rest on the level crossing, obstructing both of the railway lines at the crossing[2].

Following the road accident, the slightly dazed truck driver climbed out of the prime mover cabin, realised that the semi-trailer was blocking the railway lines at the crossing, and at 2314 called the '000' emergency number. The '000' operator forwarded the call to the police communication centre where the operator logged the information and then contacted Junee train control at 2316 to relay the information. The train controller at Junee realised that southbound freight train 9351 was approaching the crossing and was only about 10 km away. He immediately attempted to contact the train at 2319:59 via the CountryNet communication system but failed. A second attempt was made at 2321:35, a third at 2323:09, and a fourth and final attempt to contact the train was made at 2324:48, but all were unsuccessful.

At about 2324:35, train 9351 travelling at about 94 km/h collided with the overturned truck. There was a heavy jolt on impact and the leading bogie of the leading locomotive derailed. The locomotive jolted and swayed until coming to a stop 546 m past the level crossing.

There was moderate damage to the leading locomotive's front cowling and leading bogie but the train was able to resume its journey at reduced speed after minor repairs. The truck's prime mover received minor damage but the trailer was destroyed. The baled wool loaded on the truck was scattered by the impact. There were no serious injuries but the train crew were treated for shock.

The investigation found that the truck driver's timely action following the initial accident, in alerting authorities of the danger of his semi-trailer obstructing the rail lines, was commendable and showed considerable presence of mind in the circumstances. Had this information been passed to the crew of train 9351 in the 10 minutes or so following the truck driver's telephone call, it is likely that the subsequent collision would have been avoided.

The investigation found that:

- The truck driver losing control of his vehicle on the Olympic Highway level crossing at Illabo led to the obstruction of both railway lines at the crossing.
- The train crew did not switch on the train's LocoLAN radio and use it to call train control, and thus register on the CountryNet communication system, at any time prior to the collision. This omission led to train control being unable to warn the crew of the danger of the truck obstructing the rail lines at the Illabo level crossing using the train's primary communication system.

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1 The 24-hour clock is used in this report to describe the local time of day. All times are at Eastern Daylight-saving Time (EDT).

2 The up (towards Sydney) and down (away from Sydney) main lines were blocked.

- The train controller at Junee south train control centre did not take action to register the LocoLAN radio of the leading locomotive of train 9351 on the CountryNet communications system when the train was travelling through his area of control in the time leading up to the collision. It is very likely this omission contributed to the crew of train 9351 being uncontactable using the train's primary communications system prior to the collision.
- The train controller at Junee main train control registered the incorrect LocoLAN radio (in the trailing rather than the leading locomotive) in train 9351 on the CountryNet communication system when the train entered the Junee main train control area. This error contributed to the collision as it led to the warning calls prior to the collision being routed to the unmanned trailing locomotive.
- GrainCorp's procedures were not sufficiently clear with respect to the use of the CountryNet system as the primary communication system. Further, it was evident that the organisation's policy with respect to train communications actively encouraged the routine use of secondary communication systems by their train crews. *[Safety issue]*
- GrainCorp's train crew change-over procedures did not ensure that the status of train 9351's LocoLAN radio was checked as being activated and registered during the crew changeover at Goulburn and thus led to the train continuing its journey without being registered on the CountryNet communication system. *[Safety issue]*
- Network rules and procedures were deficient with respect to ensuring the registration of leading locomotive radios on the CountryNet communication system prior to departure. This increased the risk of trains entering the network without being registered on the CountryNet communication system and therefore not being contactable using the primary communications system during emergencies. *[Safety issue]*
- Network rules and procedures were deficient with respect to ensuring that back-up communication details were routinely recorded on train control graphs to allow for a seamless transfer in the event of primary communications system failure. *[Safety issue]*

Safety actions recommended as a result of the investigation relate to:

- use of primary communication systems
- crew change-over procedures
- registration of primary communication systems
- recording of back-up communication systems
- recording of train movements on train control graphs.

1 FACTUAL INFORMATION

1.1 Overview

At about 2324:35 on Thursday 2 November 2006 , freight train 9351, travelling at about 94 km/h, collided with an overturned semi-trailer on the Olympic Highway level crossing at Illabo, New South Wales (NSW). The leading bogie on leading locomotive, GL102, derailed as a result of the collision, shown in Figure 1.

Figure 1: Locomotive GL102

The train also received moderate damage to the leading locomotive's front cowling and leading bogie but was able to resume its journey at reduced speed after minor repairs. The truck's prime mover received minor damage but the trailer was destroyed. The baled wool loaded on the truck was scattered by the impact, shown in Figure 2. There were no serious injuries but the train crew were treated for minor injuries. Coincidentally, this train journey was the last for GrainCorp due to the drought conditions.

Figure 2: Some of the aftermath of the collision

1.1.1 Location

The Olympic Highway level crossing at Illabo is located on the Defined Interstate Rail Network (DIRN) between Cootamundra and Junee, 466.106 track kilometres from Sydney.

The railway line is managed and maintained by the Australian Rail Track Corporation (ARTC). The line approaching the level crossing is straight on a descending gradient of 1 in 1185. Road vehicle traffic over the crossing is actively managed by flashing lights, bells and half boom barriers that are activated by approaching trains. The Olympic Highway runs roughly parallel to the DIRN either side of the level crossing. The highway crosses the rail corridor at right angles and has curves of approximately 90 degrees on either side of the level crossing (see Figure 3).

Figure 3: Illabo level crossing

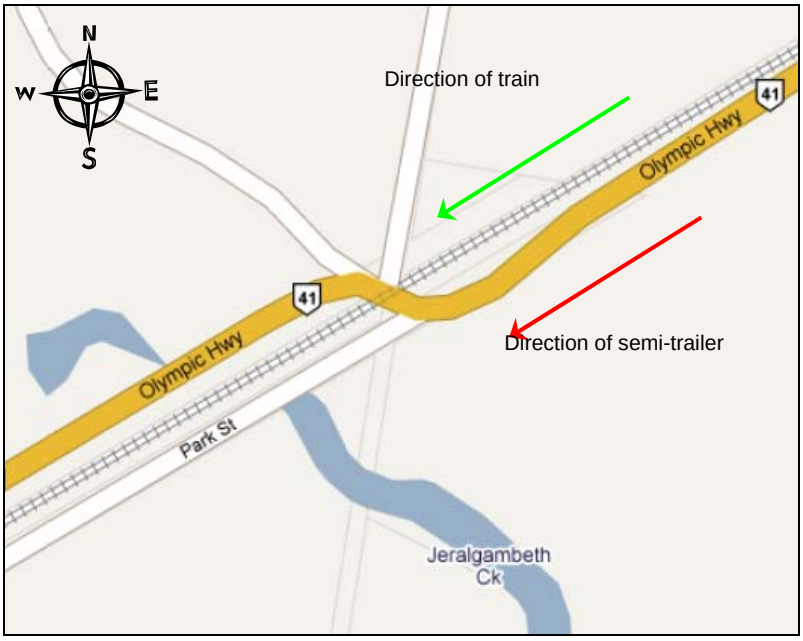


Figure 4 shows the approach to the Olympic Highway level crossing where the semi-trailer overturned. Note the advisory speed limit sign of 35km/h.

Figure 4: Approach to the level crossing

1.1.2 The semi-trailer

The semi-trailer involved in the collision was owned and operated by Bethungra Transport. It consisted of a Kenworth prime mover and 15 m Freighter flat top tri-axle trailer fully loaded with 133 bales of wool. The truck was travelling from Bethungra, New South Wales, along the Olympic Highway in a south westerly direction towards Junee and onto Melbourne, shown in Figure 3.

1.1.3 Train 9351

Train 9351 was operated by GrainCorp[3] and was travelling empty from Port Kembla to Junee at the time of the accident. The train consisted of two locomotives, GL102 (leading) and GL101 (trailing), hauling 40 grain wagons for a total length of 657 metres and weight of 1184 tonnes.

The train was crewed by two drivers. Both drivers were employees of GrainCorp, suitably qualified and fit for duty. Both drivers had considerable experience on the rail corridor, having accumulated in excess of 30 train journeys each in the previous 12 months and both had been driving trains in excess of 20 years.

Each of train 9351's locomotives was fitted with LocoLAN communication equipment which uses the CountryNet communication system. The CountryNet system is a combined terrestrial and satellite communications system for trains

3 Rollingstock hired by GrainCorp from Chicago Freight Car Leasing Australia (CFCLA).

operating in country NSW. Locomotive GL102 was fitted with a radio uniquely identified as OT60 and locomotive GL101 with radio OT59.

In addition to the CountryNet system the train crew had a CDMA mobile telephone and a hand-held satellite telephone for official use as well as a hand-held open channel two-way WB radio[4] for operational use. The hand-held satellite telephone was only used for outgoing calls when needed, and was generally stored switched off. As part of GrainCorp's normal operating procedures, the train crew's CDMA and CountryNet satellite telephone numbers were listed on the train manifest report which was provided to the train control office.

1.1.4 Train communications

In NSW all locomotives that travel over a main line must be fitted with a communication system which meets the relevant requirements. In April 2006 the rail regulator in NSW, the Independent Transport Safety & Reliability Regulator (ITSRR), announced amendments to the *Rail Safety (General) Regulations 2003* (The Regulations) regarding train radio communication requirements commencing on 1 September 2006. The amendment required trains to have a radio communication system and a back up system. Regulation 60A of The Regulations states that an accredited person must ensure that each train for which the person is responsible, is at all times during which the train is on the NSW rail network, fitted with a radio communication system that complies with this clause (CountryNet). Further, a back-up means of communication must be used if the radio communication system fails. (The relevant excerpt from The Regulations is attached in Appendix A.)

When entering a main rail network, train drivers must log the train's LocoLAN radio onto the CountryNet system so that it can be used for communication with train control. At the time of the incident, GrainCorp drivers used the log-in procedure specified in the company's Rail Safety Management Plan which referred to the LocoLAN user instruction manual[5] issued by the manufacturer.

Section *2.2.1 To "Power up" the mobile and register with train control* states:

> 2.2.1 To "Power up" the mobile and register with train control
>
> a. Ensure DC power to the unit is on. (Check that the Radio circuit breaker is on). If the handset display is blank, then press the (PWR) key firmly for 2 to 3 seconds.
>
> b. Within 10 seconds, the phone will acquire service, the handset will light up and display the signal strength and standby message.
>
> c. The amber LED indicator on the locomotive dash will change from a single flash to a double flash.
>
> d. Initiate a call to control as described in section 2.2.2.

---

4 A Without Brakevan (WB) open-channel, Ultra High Frequency (UHF) radio, limited to line-of-sight range without a repeater station.

5 *LocoLAN Train Radio, CountryNet Interface, User Instructions for GL Class Locomotive* dated 21 April 2004.

In the Sydney metropolitan area a similar system called MetroNet is used by RailCorp to communicate with metropolitan passenger trains. Freight trains travelling through RailCorp territory rely primarily on the WB radio to communicate with signallers, train control, and other trains. Not all RailCorp signalling complexes have CountryNet but emergency messages are transferable between the MetroNet and CountryNet systems. Only the goods train controller in Sydney Central has CountryNet access.

In the ARTC NSW network trains and signallers generally used the WB radio to communicate with each other.

In certain locations around NSW additional systems are also used to augment the WB radio, CountryNet and back-up train communication systems. The line from Inner Harbour Port Kembla to Moss vale is one such location. Trains that travel over this section of railway line must carry a 'mountain radio', as described in Local Appendix Unit (LAU) 280. The radio is used to communicate directly with Wollongong signalling complex and receive automated warning messages originated from digitised-voice, land slip detectors located along the line. LAU280 is summarised below:

> Separate frequency two-way radios are in use for all trains travelling over the Moss Vale - Unanderra line. These are the only radios that can operate the base stations and the digitised slip site and rock fall detectors between Moss Vale and Unanderra, and be used to speak to Wollongong signalbox. These radios are known locally as "mountain" radios. The "mountain" two-way radio system provides 98 % coverage over the line between Moss Vale and Unanderra, and will also operate through Illawarra Range No.2 tunnel. The radios can be used on the normal train radio system but, under no circumstances, are they to be used by trains operating outside the Moss Vale - Port Kembla area. These radios are marked with a white stripe on the front and are inscribed "Moss Vale - Port Kembla". Train crews travelling over the Moss Vale - Unanderra line must obtain one radio per train at either Moss Vale or another nominated location in the Wollongong area. A panel is provided in Wollongong signalbox to allow the Signaller on the south panel to select the base station that is closest to a train or trains travelling over a specific section of the line.

1.1.5 Train control

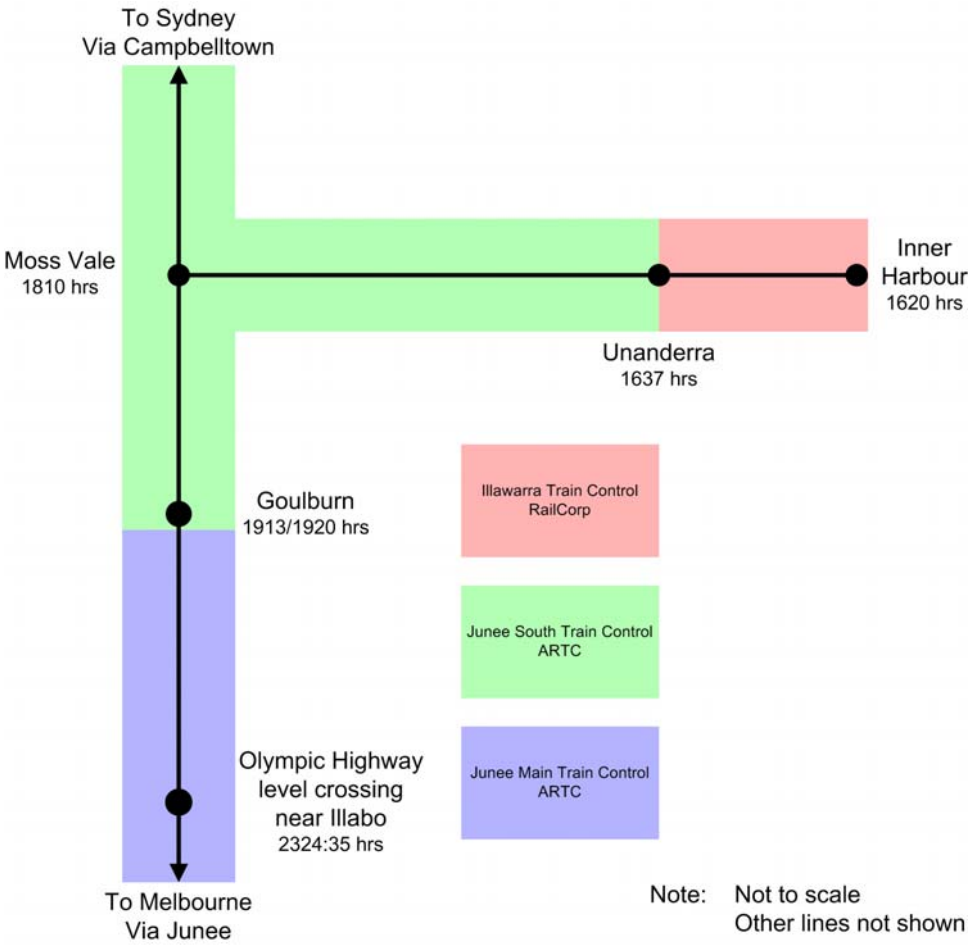
Train 9351 travelled through three train control jurisdictions, shown in Figure 5. Inner Harbour to Unanderra section is controlled by Sydney Illawarra train control, managed by RailCorp. The Unanderra to Goulburn section is controlled by Junee south train control, managed by ARTC. The Goulburn to Junee section is controlled by Junee main train control and also managed by ARTC. Train controllers use train control graphs[6] to record operational information and manage train movements.

In NSW train control centres there is a monitor that displays live train information from the CountryNet system. When a radio is turned on and connected to the CountryNet system an unregistered icon is displayed on the train controller's

6 The train control graph is used to record locomotive numbers, number of wagons, train length, train mass, driver details, and any other operational notes. (RailCorp Operator Specific Procedure [OSP] 19)

monitor showing the radio number, locomotive number, and GPS[7] location. When the train controller registers the radio to a train journey, the icon displayed on the monitor also shows the train journey number. When trains move between train control jurisdictions the CountryNet information is automatically transferred to the next train controller's monitor.

Figure 5: Diagram of train control jurisdictions



1.2 The occurrence

At 1400 train 8962, loaded with grain, arrived at Inner Harbour Port Kembla for unloading. Locomotive GL101 was the leading locomotive with locomotive GL102 trailing. Unloading started at 1500 and was completed at 1610. At 1503 the registered information for radio number OT59 in locomotive GL101 was cancelled on the CountryNet radio system. Radio OT59 remained switched on but was unregistered on the CountryNet system. Sometime prior to departure, the train's locomotives were reversed so the leading locomotive became GL102 with GL101 trailing. The LocoLAN radio in GL102 was apparently not switched on or registered by the train crew. At this time one of the train drivers was also relieved with a new driver.

7 Global Positioning System (GPS), updated every 20 minutes.

At 1620, the train now designated 9351, departed from Inner Harbour Port Kembla[8] bound for Junee. At 1624 the train crew made contact with Wollongong signalling complex using a 'mountain radio' to exchange operational information. The train continued to travel through the RailCorp network without the LocoLAN radio in the leading locomotive switched on or registered.

At 1637, train 9351 entered the ARTC Junee south train control network at Unanderra. The CountryNet system operated correctly and transferred the train information to the new controller's monitor, in this case the unregistered radio OT59 in the trailing locomotive, the only radio on the train which was apparently switched on.

At 1644, after entering the ARTC network, the train crew called Junee south train control using the CDMA telephone in the lead locomotive. Although train operations were discussed, the train continued with the lead locomotive's radio switched off and unregistered on the CountryNet system. Neither the train crew nor the train controller used the opportunity to register or confirm the correct LocoLAN radio number on the CountryNet communication system.

At 1913 train 9351 arrived at Goulburn for a partial crew change over. One crew member changed over with another and after a brief handover the train departed at 1920.

At 1924 train 9351 entered the Junee main train control area just south of Goulburn. Again the CountryNet system operated correctly and transferred the train information to the new controller's monitor. At about this time the train controller registered the only displayed CountryNet radio icon OT59 with train number 9351. From this point on, all communications from 'Train Control' to train 9351 were routed to radio OT59, in the trailing, uncrewed, locomotive.

At about 2300, the Bethungra Transport semi-trailer left Bethungra with a full load of 133 bales of wool. Shortly before 2314, as the truck was approaching the Olympic Highway level crossing at Illabo in rainy conditions, the driver lost control of the semi trailer which then overturned. The driver could not recall the speed of the truck but stated that he thought that the load may have shifted.

Following the road accident, the slightly dazed truck driver climbed out of the prime mover cabin, realised that the semi-trailer was blocking the railway lines at the crossing, and at 2314 called the '000' emergency number. The '000' operator forwarded the call to the police communication centre where the operator logged the information and then contacted Junee main train control at 2316 to relay the information that there was an overturned truck fouling the rail lines at the Illabo crossing. The train controller at Junee then called the signal boxes either end of the section to stop all train movements. He realised that southbound freight train 9351 was approaching the crossing and was only 10 km away. He then attempted to contact train 9351 at 2319:59[9] via the CountryNet communication system but failed. A second attempt was made at 2321:35, a third at 2323:09, and a fourth and final attempt to contact the train was made at 2324:48, but all were unsuccessful.

8 Refer to Appendix B for a sequence of events diagram.

9 Time derived from the Optus satellite phone system.

Meanwhile, the train was approaching the crossing at a speed of about 100km/h (the speed limit for the train) with the headlights on high beam. The headlights were dipped from high beam for an approaching road vehicle. About 100 m from the level crossing the crew noticed an obstruction. However, darkness and moderate rainfall, accompanied by the dirty and non-reflective underside of the semi-trailer, prevented the train crew from clearly identifying the object. Almost immediately the train driver made an emergency brake application at 2324:32.

At 2324:35 the train travelling about 94 km/h collided with the overturned truck. There was a heavy jolt on impact and the leading bogie of the leading locomotive derailed. The locomotive jolted and swayed until coming to a stop 546 m past the level crossing.

At 2325:30 a crew member of train 9351 called Junee main train control using the train's CDMA telephone to report the collision. At 2326:23 an emergency call was made by the other crew member on the CountryNet radio system in the leading locomotive GL102 (OT60).

1.3 Post occurrence

Emergency services started arriving at the site from 2350, responding from Junee, Wagga Wagga, Illabo, and Cootamundra. The Olympic Highway was closed with diversions for all road vehicles.

Both train crew members were breath tested for alcohol by NSW Police from the Wagga Wagga station, returning zero readings. The truck driver was also breath tested and returned a zero reading.

1.3.1 Loss and damage

There was moderate damage to the leading locomotive GL102 of train 9351. The locomotive was able to continue the journey once re-railed and initial repairs were made.

There was significant damage to the level crossing signals, signage, and auxiliary trackside equipment.

There was moderate damage to the truck's prime mover but the trailer was extensively damaged.

2 ANALYSIS

On 2 November 2006 at about 2355, an investigation team from the Australian Transport Safety Bureau (ATSB) was dispatched to investigate an accident at the Olympic Highway level crossing near Illabo in south-western New South Wales.

Evidence was gathered from various sources, including: the NSW Police, the ARTC, GrainCorp, RailCorp, various telephone communication providers, and Bethungra Transport. Evidence included train control graphs, train control voice and data logs, locomotive data logs, CountryNet data logs, organisational rules and procedures, network rules and procedures, technical documents, site drawings, maintenance records, and truck and train driver/co-driver records. The investigation team also examined and photographed the accident site, including the approaches to the level crossing.

2.1 Sequence of events analysis

At the time of the accident, train 9351 was under the direction of the ARTC train controller located in Junee main train control. The train drivers had the correct authority to occupy the section of track between Cootamundra and Junee, the section where the accident occurred.

Event loggers on locomotives GL101 and GL102 captured time, speed, distance, brake, headlight, whistle and vigilance activation data. The speed recorded by the data loggers was corrected for wheel diameter variation to accurately calculate the train's speed. An examination of locomotive data was used to reconstruct events leading up to the collision. Based on this information the following was concluded:

- The train was travelling at the prescribed track speed of 100 km/h before the collision.
- The train headlight was on full beam before the collision, and was only dipped for oncoming road traffic.
- The train whistle was used in accordance with standard operating practice.
- The emergency train brakes were applied at 2324:32, just in advance of the level crossing, when it became apparent to the train driver that there was an obstruction and a collision was imminent.
- The collision occurred at 2324:35.
- The speed of the train at the time of collision was 94 km/h; this was 6 km/h below the track speed for this class of train. The speed reduction is reflective of the achievable braking effort from the time that the train driver reacted to the risk of a collision and applied emergency braking.

An inspection of the headlight and whistle of locomotive GL102 was conducted while the train was at the accident site. This inspection established that:

- The headlights and ditch lights were on and in good working condition, apart from the damage caused by the collision.
- The whistle was in good working order.

CountryNet system data confirmed that trailing locomotive radio OT59 was functioning correctly but the radio in the leading locomotive OT60 did not log any data during the journey of train 9351. This lack of logged information from radio OT60 indicates that it was either not functioning correctly or that it was not switched on.

The radio system in the leading locomotive GL102 (OT60) was tested on the morning following the collision (Wednesday 3 November 2006 at 0940). The system was logged-on and incoming and outgoing calls were effectively made to and from Junee main train control centre. At the time of the test both incoming and outgoing calls were received loud and clear. Records from GrainCorp also indicated that both radios, OT59 and OT60, were in a serviceable condition.

Throughout the journey the train crew did not use the CountryNet radio to communicate instead opting to use the CDMA telephone or the 'mountain radio', secondary or back-up communication devices. However, records show that an emergency call was made by the train crew at 2326:23 using the CountryNet system in the leading locomotive soon after the collision.

The evidence is that it is very likely that LocoLAN radio OT60 in the leading locomotive GL102 had not been switched on for the journey and was only switched on to make the emergency call following the collision. However, both train drivers stated that they believed the CountryNet radio had been switched on and registered on the network because the radio had chirped and the orange radio indicator light was flashing whilst travelling through Cullerin, about 32 km west of Goulburn.

The truck driver promptly reported his initial accident. If the LocoLAN radio in the leading locomotive had been turned on and properly registered on the CountryNet system in the time before the accident there should have been sufficient time for the train crew to take action to avoid the collision with the obstruction on the track. Unfortunately the radio calls from train control were routed to the radio in the trailing locomotive. A sequence of events is diagrammatically illustrated in Appendix B.

As the train approached the level crossing, the high beam lights were dimmed for an approaching road vehicle. Given the speed and mass of the train, headlight illumination limits, the non-reflective underside of the overturned truck, and limitations of human visual perception, there was nothing the train crew could do approaching the level crossing to prevent the collision.

2.1.1 Summary

It is therefore concluded that:

- There were no deficiencies that relate to the mechanical condition of the locomotive. Train speed, braking, headlight illumination and the sounding of the whistle were appropriate.
- There were no factors identified that relate to the performance of the train crew in their handling of the train. The train crew were unable to take any avoiding action other than braking when they saw the line obstructed.
- The train crew did not switch on the LocoLAN radio in the leading locomotive and use it to call train control, and thus register it on the CountryNet communication system, at any time prior to the collision.

- The train crew had used secondary communications systems to communicate operational information during the train's journey prior to the collision.
- Both LocoLAN radio systems in locomotives GL101 and GL102 were in a serviceable condition based on service records and onsite testing.
- The CountryNet system was found to be functioning correctly and information was automatically transferred correctly between each train control jurisdiction.

2.2 Truck driver actions

Given the inclement weather conditions, it is likely that the truck driver was driving too fast to safely negotiate the curve approaching the level crossing, or the load shifted, resulting in a loss of control of the truck and it subsequently overturned on the level crossing obstructing both railway lines. The truck did not have an on-board data recorder that could be used to provide information regarding its speed, nor was there evidence of failed or inadequate securing of the load.

There have been numerous road incidents at or near the Olympic Highway level crossing near Illabo. Based on information from a NSW Roads and Traffic Authority (RTA) report[10], in the period September 1998 to August 2006 a total of nine accidents occurred in the immediate area of the Olympic Highway level crossing. A review of the data shows that six incidents have resulted in two fatalities and injuries to seven persons, and three incidents with no casualties. Heavy vehicles in both rigid and articulated forms have been involved in five of the incidents. Contributing factors identified were speed (90.9%) and fatigue (27.3%)[11]. There was no evidence to suggest that the truck driver was fatigued.

While the truck driver losing control and overturning his vehicle on the level crossing at Illabo was a serious road accident, his timely actions following the accident in alerting authorities to the fact that his semi-trailer was obstructing the rail lines was commendable and showed considerable presence of mind. Had this information been passed to the crew of train 9351 in the 10 minutes or so following the truck driver's telephone call, it is likely that the subsequent collision would have been avoided.

The Australian Rail Track Corporation submitted:

> Road accident history for the site clearly indicates that a number of road vehicle drivers have experienced difficulty in safely negotiating the curved roadway approaching the level crossing and this may be indicative of substandard road geometry, inappropriate approach warning signage or driver behaviour problems.
>
> When the road accident data is considered it would appear that statistically the incident currently under review was predicable if not almost inevitable!

10 RTA Planning and Analysis Unit, Wagga Wagga. 10 November 2006.

11 Speed identified in eight accidents and/or fatigue identified in two accidents.

> If the current investigation was expanded to include a recommendation to review both road vehicle driver behaviour and an engineering assessment of the level crossing approaches it would have a more significant public safety outcome than is achievable by identifying and implementing change in rail industry controllable factors alone.
>
> Based on accident history which identifies excess speed as a significant factor in a number of incidents involving road vehicles it is suggested that a review of signage size, type, placement and applicability to the road's physical characteristics becomes a Safety Recommendation on the Road Authority responsible for Olympic Highway.

2.3 Train communications

Train 9351 passed through the rail network managed by RailCorp before entering the rail network managed by ARTC. Both track managers require all trains operating on their network to have functioning primary and back-up communication systems in accordance with their respective network rules and Section 60A of the *Rail Safety (General) Regulations 2003*.

The network rules and/or procedures do not specifically state that train crews must call train control before departure to register and test either the primary or back-up communication systems. Train crews, however, are required to contact the signaller/yard controller prior to departure to confirm departure and train details which is an effective check of at least one communication system. If the train crew had followed the company procedures which referred to the instructions in the LocoLAN manufacturer's manual, which stipulated that a call must be made to train control when the radio is turned on, the LocoLAN radio would have been logged on and registered on the CountryNet system.

In essence, if the company procedures had been followed prior to departure from Inner Harbour, or at any other time before the collision, (or if any contact with 'Train Control' was made via the leading locomotive LocoLAN radio) the risk of a collision at the Olympic Highway level crossing at Illabo would have been substantially reduced.

The Australian Rail Track Corporation submitted:

> Following the incident Australian Rail Track Corporation began recording all incidents where trains were found to be noncompliant with regulation 60A; these incidents were advised to ITSRR as Category B safety related incidents.
>
> During the period 1st November 2006 and 30th June 2007, 371 incidents were recorded and reported to ITSRR; the extent of corrective action initiated by ITSRR with the operators involved has not been advised.

2.4 Train crew change-over procedure

A crew change was conducted at Goulburn. GrainCorp use the ARTC network rule ANGE 232 *Responsibility of train crews and track vehicle crews* which states that during change over the driver must tell a relieving crew about any conditions that could affect the operation of the train. On this occasion the status of the LocoLAN radio was not checked or confirmed during the change over. The failure by the train crew to confirm the status of the LocoLAN radio during the changeover at

Goulburn meant that the radio remained switched off and unregistered on the CountryNet system.

2.5 Train control

Train 9351 travelled through two different train control areas, prior to the train entering the area controlled by Junee main train control, with the radio in the leading locomotive unregistered on the CountryNet system. It started its journey under the control of Sydney Illawarra train control. In this case the train crew did not call Illawarra control, but called Wollongong signalling complex using the mountain radio. They also called Junee main train control using the CDMA telephone to confirm train running information when they arrived at Unanderra instead of using the LocoLAN radio on the CountryNet system.

Junee south train control permitted train 9351 to enter the network and continue on its journey without the LocoLAN radio in the leading locomotive (OT60) being registered or logged-on to the CountryNet system. It was only when train 9351 entered the Junee main train control area just south of Goulburn that the unregistered condition of the LocoLAN radio was detected. If the Junee south control train controller had realised the LocoLAN radio was not registered on the CountryNet system, and had checked the train graph, the discrepancy with leading locomotive numbers may have been identified and remedied. Similarly, if the train crew had made contact with train control during this time, the discrepancy with leading locomotive numbers may also have been realised and remedied. The failure of the Junee south train controller to detect the unregistered status of the radio of the leading locomotive of train 9351 meant the train continued its journey through his area without its primary communications system operating.

The train controller responsible for the Junee main train control area noticed the unregistered radio and registered the only displayed radio number OT59 on the monitor with the train number 9351. He took the information displayed on the monitor as correct and assigned train number 9351 to radio number OT59 without confirming this information with the train crew or on the train control graph.

The radio in the trailing locomotive (OT59) had remained on and connected. From the train controller’s perspective, the information displayed on his monitor gave the incorrect impression that locomotive GL101 (radio OT59) was leading when in fact the lead was locomotive GL102 (radio OT60). Given that the train had travelled through two other train control areas and there was no other contradictory information, apart from the leading locomotive information on the train control graph, it was possibly reasonable for the train controller at Junee to assume that the information was correct. However his failure to check the information at hand, and consequent registration of the incorrect radio, led to the subsequent emergency calls being routed to the wrong locomotive.

During emergency situations, the network rules state that train drivers and controllers must use ‘whatever communication method is available’. In this instance when the train controller at Junee main train control received the call from the police communication centre, he immediately tried to contact train 9351 via the CountryNet radio system on four separate occasions to warn them of the imminent danger on the Olympic Highway level crossing at Illabo.

The train controller contacted the signal boxes either side of the section and used the CountryNet system by selecting the train 9351 registered icon on the monitor to warn the crew of the imminent danger. Unbeknown to the train controller the call was routed through to radio OT59 which was in the trailing locomotive GL101. The train crew in the leading locomotive GL102 (radio OT60) were completely unaware of the incoming calls and the imminent danger. After the fourth attempt at about 2324:28 the train controller was distressed at not being able to contact the crew of train 9351. He knew that the Illabo area is a 'dead spot' for open channel WB radio communications and with no information about the train's CDMA telephone number recorded on the train control graph (explained further in section 2.6.2), had exhausted all known communication options. In addition, there were no signals ahead of the train which the controller could have used to stop the train before the crossing.

The Sydney Illawarra train control graphs were examined. The graphs did not have any information recorded on them reflecting the travel of train 9351 through that jurisdiction from Port Kembla to Unanderra. It was suggested that the omission could be attributed to staff shortages at Wollongong signalling complex resulting in train movement information not being recorded for the period of the train's journey, or perhaps that train controllers were regularly not recording short train movements briefly passing through their jurisdiction. Given that other freight train movements had been recorded it is likely that this was an isolated occurrence. The omission has been addressed by RailCorp.

2.6 Organisational issues

2.6.1 GrainCorp

GrainCorp's Rail Safety Management Plan G-RT-002 Part 6.5 (dated April 2006) outlined the requirements for train radio communications on GrainCorp trains. The document also referred to changes in *Rail Safety (General) Regulations 2003* citing the minimum requirements for radio communications systems, in particular, primary and back-up systems.

The LocoLAN radios carried by GrainCorp trains using the CountryNet system conform to the minimum statutory requirements, consequently this system is the primary communication system and thus the primary means for the transmission of emergency information. GrainCorp trains also carry a CDMA telephone, a satellite telephone and two-way WB radio as back-up communications. However, during the investigation GrainCorp[12] management indicated that, in their view, the CountryNet communication system was not necessary and as such was not used unless in Train Order territory[13]. They suggested that time lags in the CountryNet system led to the increased use of the on-board CDMA telephone for train operations outside Train Order territory.

In summary, GrainCorp management were aware of the amendments to the *Rail Safety (General) Regulation 2003* in regard to train radio communication

12 GrainCorp investigation report into the collision.

13 A safeworking system used to manage train movements in some areas of New South Wales.

requirements. The company's Rail Safety Management Plan had been amended to reflect those changes. However, GrainCorp train personnel were still using the on-board CDMA telephone as the primary means of communication instead the of CountryNet system, even though the CDMA telephone is considered a secondary system. This apparent tacit approval by GrainCorp management led the train crew to believe that their actions in failing to use, and thus adequately ensure the operability of the CountryNet radio system, were acceptable when in fact they were not, and in this instance contributed to the accident.

The Independent Transport Safety and Reliability Regulator of New South Wales submitted:

> It is noted that GrainCorp no longer employs crew and or operates trains under their accreditation within NSW. Should GrainCorp seek to alter their accreditation scope to recommence train operations, GrainCorp will need to address the issues identified in the draft report in an application for a variation to their accreditation.

2.6.2 Train control (ARTC and RailCorp)

The network rules and procedures imply that train crews make contact with the signaller/yard controller or train control before departure to confirm departure and train details. This could be achieved by using the train's primary communication system (CountryNet) or back-up communications systems such as mobile phone, WB radio, signal post phone, or other method. The network rules and/or procedures do not specifically state that train crews must call before departure to test and register the primary communication system on CountryNet. Although there is intent, the network rules and procedures do not adequately reinforce, to both train crews and train controllers, the importance of having a fully operational primary radio communication system that is registered on the CountryNet system, in line with Section 60A of the *Rail Safety (General) Regulations 2003*, before the train departs. The failure of the network rules and procedures to ensure that leading locomotive radios are registered on the CountryNet system prior to departure is considered to be a safety issue that contributed to the occurrence.

The train control graphs from all three train control areas had relevant information such as train number, locomotive numbers, train length and mass, crew details, and the number of wagons. None of the train control graphs included information about back-up or secondary communication systems. However, this is not a specific network rule requirement. It is only when the primary equipment is deemed to be defective, that alternative means of communication is arranged and advertised[14]. In this instance GrainCorp had supplied a train manifest report to Junee train control office which included the train's back-up CDMA telephone number, but the information was not transferred to the train control graph. Ordinarily, train controllers rely on the train crews to provide and confirm this information during the logging-on process. The lack of back-up contact information recorded on the train control graph significantly hindered the transmission of a safety critical message during the unfolding emergency. The failure of the network rules and procedures to ensure that back-up communication details were recorded on train

14 ARTC Network rule ANTR 410 *Defective Equipment*.

control graphs is also considered to be a safety issue that contributed in the occurrence.

2.7 GrainCorp Submission

In the response to the draft report, GrainCorp argued that the train crew were not obligated to turn on the CountryNet radio in the first place and that the signalling infrastructure at that time did not support the use of the CountryNet radio system. Relevant excerpts from the GrainCorp response are included below:

> This accident could have been avoided had the crew been contacted using the CDMA phone. Whether this system of communication is designated "primary" or "secondary" is not relevant. GrainCorp was compliant with the regulatory regime as it understood was applicable to it. The existence of regulation 60A needs to be considered in the context of GrainCorp's obligations to ARTC, the Network Controller, under the terms of the Access Agreement between GrainCorp and ARTC.
>
> However paragraph 2.2 contains the conclusion that the truck driver's actions were a "contributing safety factor". With respect, this conclusion cannot stand. We do not dispute that the truck driver's action following the accident was commendable; however the driver's actions after the event should not obscure or qualify in any way the driver's actions which caused the event. We do not seek to defend the railway communication system, and in fact see this as an opportunity to review the operation of that system. Nevertheless, the proximate cause of the accident was the presence of the truck across the tracks. It should not have been there. The fact that it was there is prima facie evidence of negligence on the part of the truck driver…
>
> Para 2.3 of the draft Report contains the statement that:
>
> > The failure of the train crew to switch on the LocoLAN radio, log onto and register on the CountyNet system from the leading locomotive was directly causal in the collision and is considered a contributing safety factor.
>
> In this regard we refer you to the annexed opinion of [railway consultant]. The above finding assumes that the crew should have used the LocoLAN. It further assumes that the LocoLAN system was the train's primary communications system. For the reasons contained in [railway consultant's] report this is not the case.
>
> The finding is also flawed in concluding that the omission led to train control being unable to warn the crew. A finding that the failure of the primary system directly caused the collision is effectively the same as concluding that train control had no other means of contacting the train crew.
>
> This is manifestly not the case. Train control had 3 options for contacting the train, namely:
>
> 1. The LocoLAN radio;
>
> 2. The CDMA phone;
>
> 3. The GrainCorp 24-hour number.

> As soon as the LocoLAN failed, the controller should have defaulted to the second or third option. In fact the controller continued to use the LocoLAN unsuccessfully on 3 occasions. Whether or not the LocoLAN system can be described at the train's "primary" system is with respect, irrelevant. Any contact with the train was the critical issue, whether that contact was made using the primary or any other form of communication system.
>
> Further, the reason that a "primary", then "secondary" (then tertiary etc) system exists is to provide a safeguard if the primary system fails, for whatever reason. Simply using the LocoLAN unsuccessfully on 3 occasions and not defaulting to the back-up or secondary system was unsatisfactory conduct on the part of the controller.
>
> At the very least, the final ATSB Report should explain why the controller failed to attempt to contact the train using one of the back-up systems. The report explains that the train controller ruled out using the WB because on the black spot.

Although the GrainCorp response has merit, Section 60A of the *Rail Safety (General) Regulations 2003* is quite clear in that all trains entering the network must have a functioning primary system, which is in this case is the LocoLan radio using the CountryNet system.

3 FINDINGS

3.1 Context

At about 2324:35 on Thursday 2 November 2006 , freight train 9351, travelling at about 94 km/h, collided with an overturned semi-trailer on the Olympic Highway level crossing at Illabo, New South Wales.

From the evidence available, the following findings are made with respect to the collision and should not be read as apportioning blame or liability to any particular organisation or individual.

3.2 Contributing safety factors

- The truck driver losing control of his vehicle, due to over speed and/or load shift, on the Olympic Highway level crossing at Illabo led to the obstruction of both railway lines at the crossing.
- The train crew did not switch on the train's LocoLAN radio and use it to call train control, and thus register on the CountryNet communication system, at any time prior to the collision. This omission led to train control being unable to warn the crew of the danger of the truck obstructing the rail lines at the Illabo level crossing using the train's primary communication system.
- The train controller at Junee south train control centre did not register the LocoLAN radio of the leading locomotive of train 9351 on the CountryNet communications system when the train was travelling through his area of control in the time leading up to the collision. It is very likely this omission contributed to the crew of train 9351 being uncontactable using the train's primary communications system prior to the collision.
- The train controller at Junee main train control registered the incorrect LocoLAN radio (in the trailing rather than the leading locomotive) in train 9351 on the CountryNet communication system when the train entered the Junee main train control area. This error contributed to the collision as it led to the warning calls prior to the collision being routed to the uncrewed trailing locomotive.
- GrainCorp's procedures were not sufficiently clear with respect to the use of the CountryNet system as the primary communication system. Further, it was evident that the organisation's policy with respect to train communications actively encouraged the routine use of secondary communication systems by their train crews. *[Safety issue]*
- GrainCorp's train crew change-over procedures did not ensure that the status of train 9351's LocoLAN radio was checked as being activated and registered during the crew changeover at Goulburn and thus led to the train continuing its journey without being registered on the CountryNet communication system. *[Safety issue]*
- Network rules and procedures were deficient with respect to ensuring the registration of leading locomotive radios on the CountryNet communication system prior to departure. This increased the risk of trains entering the network without being registered on the CountryNet communication system and

therefore not being contactable using the primary communications system during emergencies. *[Safety issue]*

- Network rules and procedures were deficient with respect to ensuring that back-up communication details were routinely recorded on train control graphs to allow for a seamless transfer in the event of primary communications system failure. *[Safety issue]*

3.3 Other key findings

- The emergency message from the truck driver was communicated effectively to the emergency ‘000’ operator and police communication centre who then advised Junee train control in a timely manner.
- Train 9351 travelling at 94 km/h collided with the semi-trailer on the Olympic Highway level crossing at Illabo.
- The leading locomotive GL102 derailed on impact and travelled 546 m before coming to rest.
- Both radio systems in locomotives GL101 and GL102 were in a serviceable condition based on service records and onsite test results.
- The CountryNet system was found to be functioning correctly and information was automatically transferred correctly between each train control jurisdiction.
- As the train approached the level crossing, there was nothing the train crew could do to prevent the collision.
- The Sydney Illawarra train controller did not record the movement of train 9351 on the train control graph.

4 SAFETY ACTIONS

The safety issues identified during this investigation are listed in the Findings and Safety Actions sections of this report. The Australian Transport Safety Bureau (ATSB) expects that all safety issues identified by the investigation should be addressed by the relevant organisation(s). In addressing those issues, the ATSB prefers to encourage relevant organisation(s) to proactively initiate safety action, rather than to issue formal safety recommendations or safety advisory notices.

All of the responsible organisations for the safety issues identified during this investigation were given a draft report and invited to provide submissions. As part of that process, each organisation was asked to communicate what safety actions, if any, they had carried out or were planning to carry out in relation to each safety issue relevant to their organisation.

Depending on the level of risk of the safety issue, the extent of corrective action taken by the relevant organisation, or the desirability of directing a broad safety message to the rail industry, the ATSB may issue safety recommendations or safety advisory notices as part of the final report.

4.1 GrainCorp

4.1.1 Use of primary communication systems

Safety Issue

GrainCorp's procedures were not sufficiently clear with respect to the use of the CountryNet system as the primary communication system. Further, it was evident that the organisation's policy with respect to train communications actively encouraged the routine use of secondary communication systems by their train crews.

ATSB safety recommendation RR20080016

The Australian Transport Safety Bureau recommends that GrainCorp take action to address this safety issue.

ATSB safety advisory notice RS2008001

The Australian Transport Safety Bureau advises that all rail vehicle operators in New South Wales should consider the safety implications of this safety issue and take action where considered appropriate.

4.1.2 Crew change over procedures

Safety Issue

GrainCorp's train crew change over procedures did not ensure that the status of train 9351's LocoLAN radio was checked as being activated and registered during

the crew changeover at Goulburn and thus led to the train continuing its journey without being registered on the CountryNet communication system.

ATSB safety recommendation RR20080017

The Australian Transport Safety Bureau recommends that GrainCorp take action to address this safety issue.

ATSB safety advisory notice RS2008002

The Australian Transport Safety Bureau advises that all rail vehicle operators in New South Wales should consider the safety implications of this safety issue and take action where considered appropriate.

4.2 The Australian Rail Track Corporation

4.2.1 Registration of primary communication systems

Safety Issue

Network rules and procedures were deficient with respect to ensuring the registration of leading locomotive radios on the CountryNet communication system prior to departure. This increased the risk of trains entering the network without being registered on the CountryNet communication system and therefore not being contactable using the primary communications system during emergencies.

Action taken by/response from the Australian Rail Track Corporation

Following the incident Australian Rail Track Corporation began recording all incidents where trains were found to be non-compliant with regulation 60A. During the period 1st November 2006 and 30th June 2007, 371 incidents were recorded and reported to ITSRR.

ATSB safety recommendation RR20080018

The Australian Transport Safety Bureau recommends that the Australian Rail Track Corporation continue to take action to address this safety issue.

ATSB safety advisory notice RS2008003

The Australian Transport Safety Bureau advises that all rail vehicle operators and track managers in New South Wales should consider the safety implications of this safety issue and take action where considered appropriate.

4.2.2 Recording back-up communication systems

Safety Issue

Network rules and procedures were deficient with respect to ensuring that back-up communication details were routinely recorded on train control graphs to allow for a seamless transfer in the event of primary communications failure.

ATSB safety recommendation RR20080019

The Australian Transport Safety Bureau recommends that the Australian Rail Track Corporation take action to address this safety issue.

ATSB safety advisory notice RS2008004

The Australian Transport Safety Bureau advises that all track managers in New South Wales should consider the safety implications of this safety issue and take action where considered appropriate.

APPENDIX A : EXCERPT FROM REGULATION 60A

An excerpt from Regulation 60A of the *Rail Safety (General) Regulation 2003* outlining the minimum requirements for communication systems in trains on New South Wales main railway lines.

A radio communications system for a train must:

(a) enable the driver of the train to verbally communicate with any network control officer responsible for the area in which the train is operating, and

(b) be working at all times that the train is being operated, and

(c) be capable of receiving and transmitting emergency calls, and

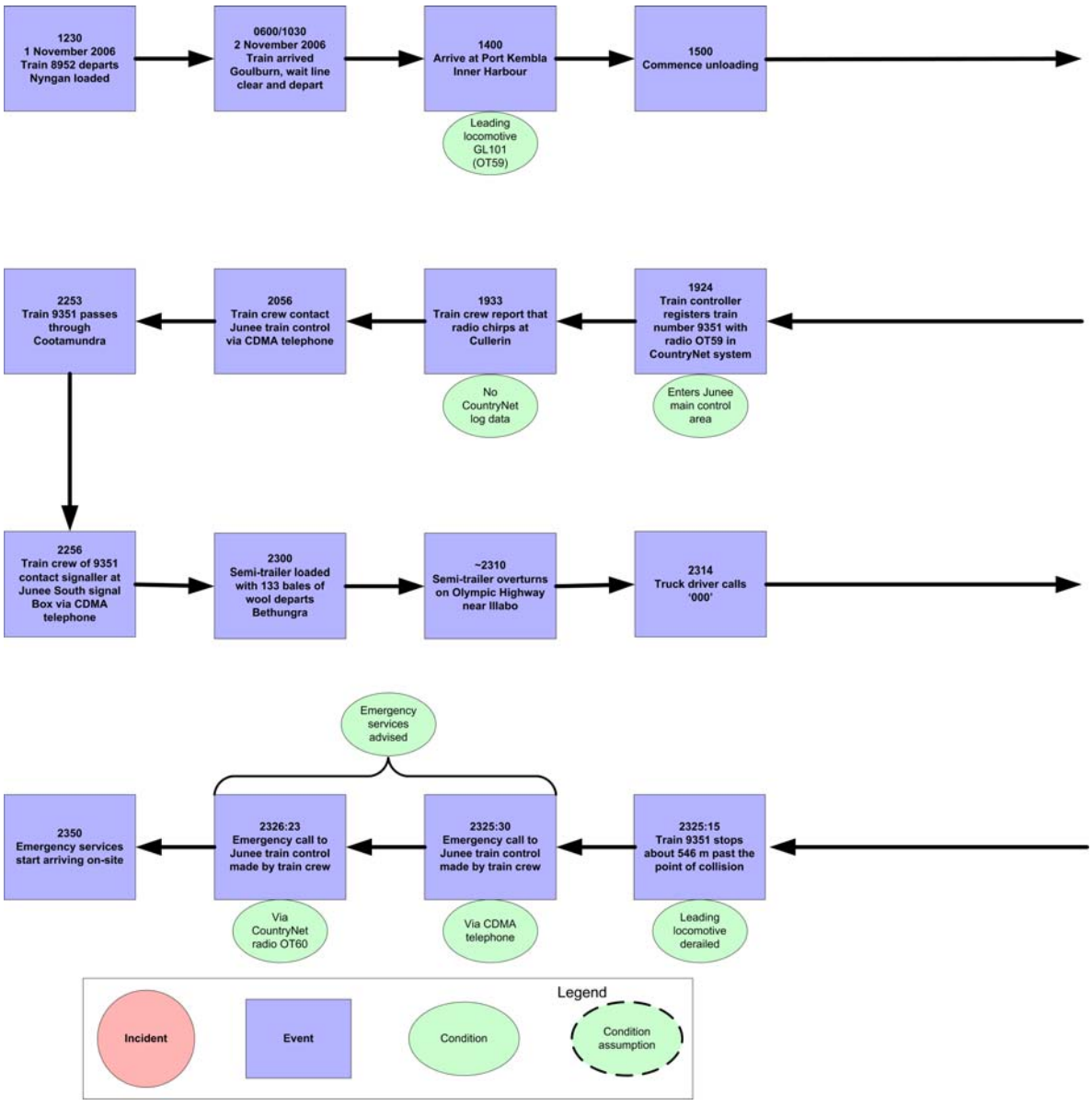
(d) be fitted with an emergency button that enables an emergency call from the train to be given priority over all other calls and that enables direct communication between the train and the network control officer responsible for the area in which the train is operating, and

(e) be capable of transmitting an emergency communication in a form that will allow any network control officer responsible for the area in which the train is operating to transmit the communication to other trains in that area.

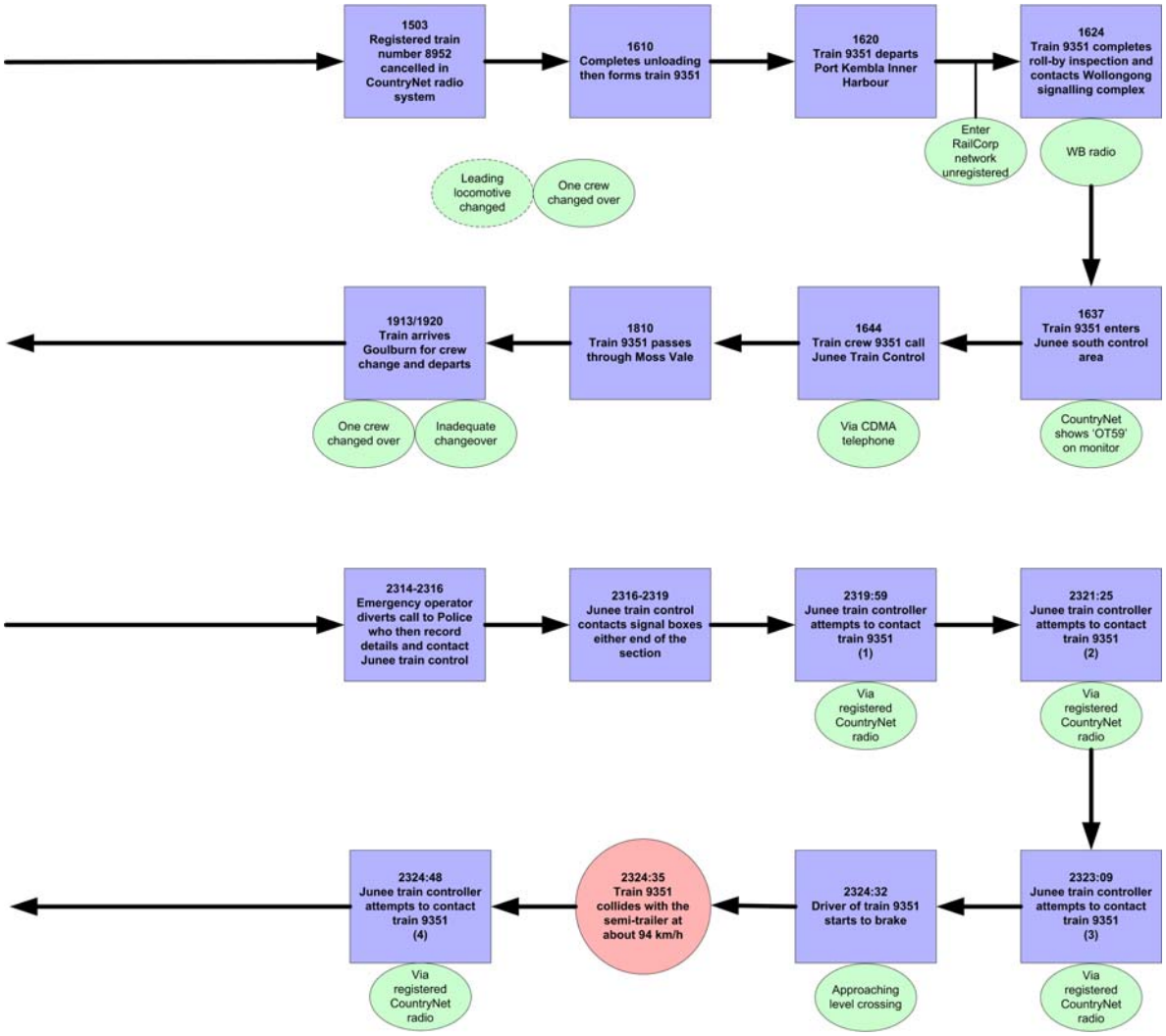
A back up means of communication for a train must consist of either or both of the following:

(a) a "without brakevan (WB) radio", being a radio that operates at a frequency of 450.050 MHz,

(b) a mobile phone that is able to be used anywhere in the area in which the train is operating.


1230
1 November 2006
Train 8952 departs
Nyngan loaded
0600/1030
2 November 2006
Train arrived
Goulburn, wait line
clear and depart
1400
Arrive at Port Kembla
Inner Harbour
Leading
locomotive
GL101
(OT59)
1500
Commence unloading
2253
Train 9351 passes
through
Cootamundra
2056
Train crew contact
Junee train control
via CDMA telephone
1933
Train crew report that
radio chirps at
Cullerin
No
CountryNet
log data
1924
Train controller
registers train
number 9351 with
radio OT59 in
CountryNet system
Enters Junee
main control
area
2256
Train crew of 9351
contact signaller at
Junee South signal
Box via CDMA
telephone
2300
Semi-trailer loaded
with 133 bales of
wool departs
Bethungra
~2310
Semi-trailer overturns
on Olympic Highway
near Illabo
2314
Truck driver calls
'000'
Emergency
services
advised
2350
Emergency services
start arriving on-site
2326:23
Emergency call to
Junee train control
made by train crew
Via
CountryNet
radio OT60
2325:30
Emergency call to
Junee train control
made by train crew
Via CDMA
telephone
2325:15
Train 9351 stops
about 546 m past the
point of collision
Leading
locomotive
derailed
Legend
Incident
Event
Condition
Condition
assumption

APPENDIX B : SEQUENCE OF EVENTS



APPENDIX C : SOURCES AND SUBMISSIONS

Sources of information

RailCorp

Australian Rail Track Corporation

Bethungra Transport

GrainCorp

New South Wales Police Force

Telstra

Optus

References

Rail Safety (General) Regulations 2003 New South Wales, as amended.

Internal GrainCorp investigation report of the occurrence, undated.

Submissions

Under Part 4, Division 2 (Investigation Reports), Section 26 of the Transport Safety Investigation Act 2003, the Executive Director may provide a draft report, on a confidential basis, to any person whom the Executive Director considers appropriate. Section 26 (1) (a) of the Act allows a person receiving a draft report to make submissions to the Executive Director about the draft report.

A draft of this report was provided to RailCorp of New South Wales, the Australian Rail Track Corporation, GrainCorp, the Independent Transport Safety and Reliability Regulator of New South Wales, the Office of Transport Safety Investigations NSW, Bethungra Transport, the truck driver, and both train drivers.

Submissions were received from RailCorp, the Australian Rail Track Corporation, GrainCorp, the Independent Transport Safety and Reliability Regulator of New South Wales, the Office of Transport Safety Investigations NSW, and the truck driver. The comments have been incorporated into the final report.

APPENDIX D : MEDIA RELEASE

Train communication issue led to collision

The ATSB has found that a collision between a GrainCorp freight train and overturned truck occurred because train control could not contact the approaching train in the ten minutes or so before the collision.

The Australian Transport Safety Bureau has today released its final report into the investigation of a collision that occurred at the Olympic Highway level crossing at Illabo in New South Wales on 2 November 2006.

At the time of the collision it was dark and raining. The semi-trailer overturned while negotiating the curve prior to the level crossing. The truck driver called '000' and the message was relayed through to the Junee train control centre.

Unfortunately, the emergency message from train control was routed through to the wrong locomotive on the train. Had the message been received by the train crew the collision would probably not have occurred.

The investigation established that the train drivers and train controllers had failed to ensure that the primary radio communication system in the leading locomotive was switched on and registered on the CountryNet train communications system. The investigation also found that the train company's policies and procedures, train control procedures and network rules failed to ensure that the train's communication system was operative at the time.

In the interest of enhancing future road/rail safety, the ATSB has issued a number of recommendations that address various safety issues including the need to ensure that the primary radio communication system, CountryNet, is operational at all times in the leading locomotive of all trains in New South Wales.

Collision between freight train 9351 and an overturned semi-trailer at Illabo, New South Wales 2 November 2006