



Office of Transport Safety Investigations

RAIL SAFETY INVESTIGATION REPORT

**TRAIN SERVICES OPERATED THROUGH BUSHFIRE AFFECTED
SECTION OF TRACK, LOCALITY OF HOLSWORTHY, NSW**

14 APRIL 2018



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EXECUTIVE SUMMARY

On 13 April 2018, a Sydney Trains driver reported a grassfire near Casula station. This fire affected the South Sydney Freight Line (SSFL) which ran adjacent to the Sydney Trains railway corridor. The Australian Rail Track Corporation (ARTC), as the track manager of the SSFL, halted train operations until the track could be inspected and determined safe for operation. Fire and Rescue NSW (FRNSW) extinguished the fire by the early morning of 14 April 2018.

At 14:05 on 14 April 2018, a Sydney Trains driver reported a grassfire in a similar location near Casula station. The fire affected the SSFL and ARTC halted train operations on that line for the second time.

Due to winds on the day, the fire progressed in a south-easterly direction towards the Sydney Trains T8 line between Glenfield and Holsworthy. The first report to Sydney Trains Train Control of the fire on the T8 line was made at 14:56 by the driver of passenger service 66-L. Another train (93-L) was already in the section and one other train (75-P) operated through the bushfire affected T8 line while Train Control processed an instruction by FRNSW to stop train operations on the line.

OTSI determined that:

- During natural disasters (such as the bushfire on 14 April 2018), rail transport operators rely on the information and expertise of emergency services to make informed decisions.
- Rail transport operators must verify that track sections are clear of rail traffic before communicating that they are clear to internal and external stakeholders

In light of the incident, it is recommended that rail transport operators ensure emergency services are aware of the importance their information plays in making safe decisions and establish if and when two-way communications with emergency services are required to understand reasons for stopping trains.

PART 1 FACTUAL INFORMATION

Introduction

- 1.1 On 14 April 2018, three Sydney Trains passenger services operated through the bushfire affected T8 line between Holsworthy and Glenfield.

Location

- 1.2 The fire started on the country end of Casula train station in NSW and moved south-east towards the T8 Airport and South line between Holsworthy and Glenfield (See Figure 1).

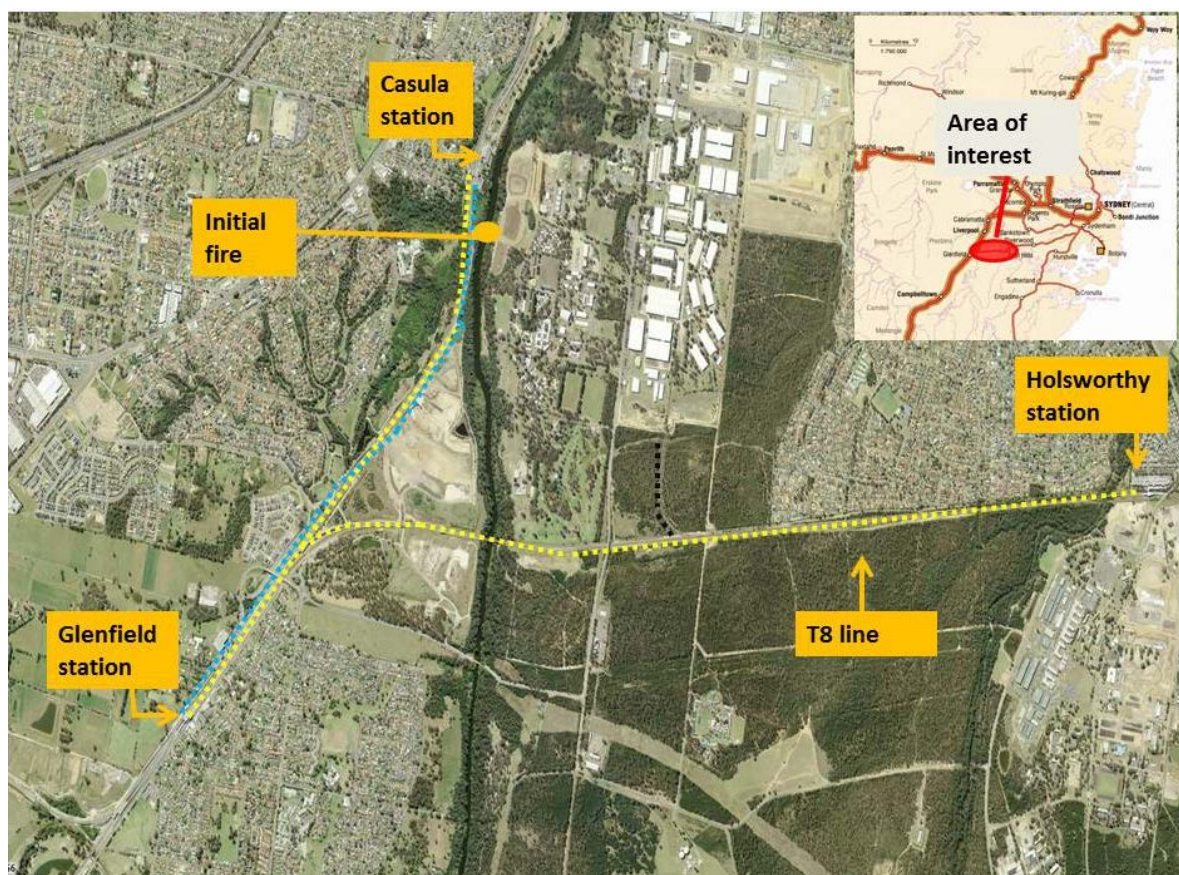


Figure 1: Aerial View of the area of interest: yellow line shows Sydney Trains network; blue line shows the ARTC's SSFL

Source: Google Maps and Geoscience Australia, annotated by OTSI

Lines affected due to the fires

- 1.3 On the night of 13 April 2018, a bushfire affected the ARTC's SSFL on the country end of Casula station. FRNSW attended and extinguished the fire by early morning on 14 April 2018. ARTC stopped services until the track was inspected and determined safe for operations.
- 1.4 On the afternoon of 14 April 2018, the bushfire reignited and further affected ARTC's SSFL on the country end of Casula station and spread to the Sydney Trains T8¹ line (See Figure 2).
- 1.5 The T8 line section between Holsworthy and Glenfield affected by the bushfire is within an automatic section with controlled signals at East Hills and Glenfield station.

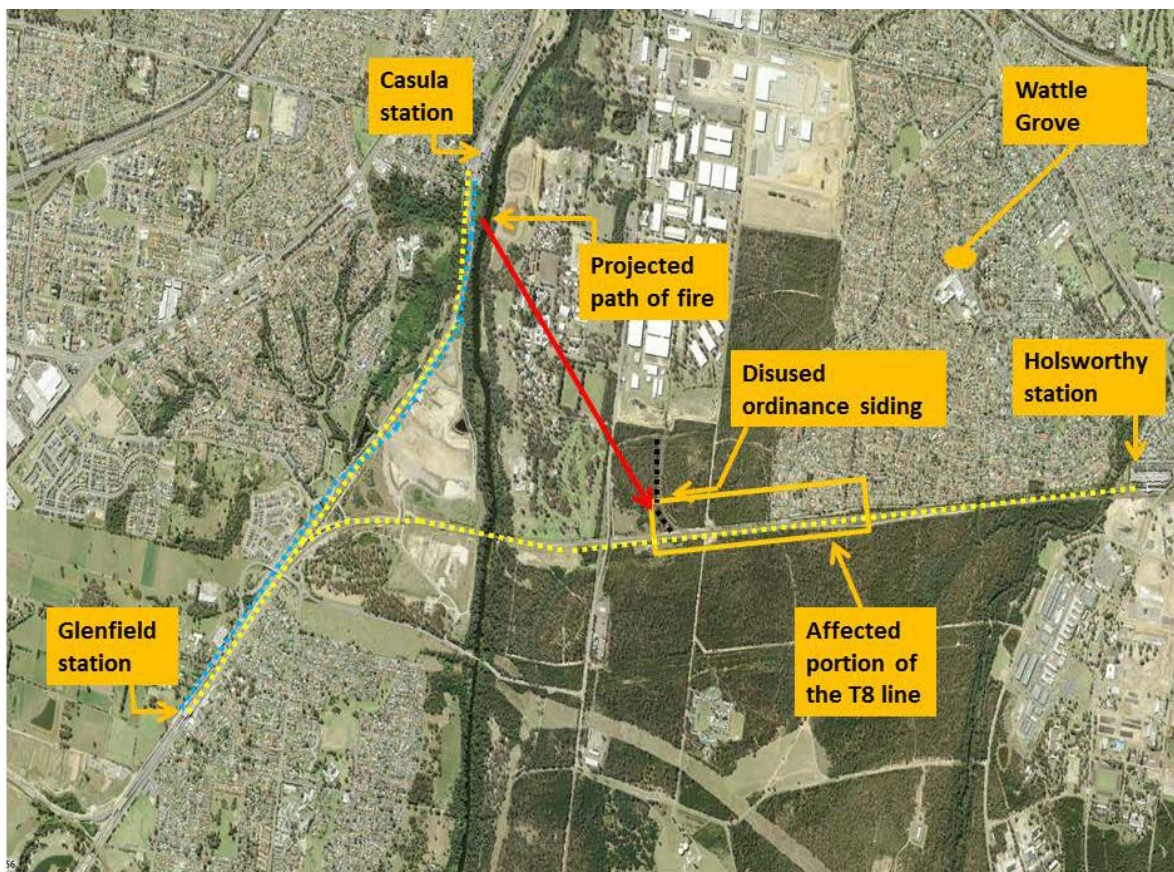


Figure 2: Second Aerial View of the area of interest: blue line shows the SSFL, yellow lines show the Sydney Trains rail network and black line shows the disused ordinance siding. The red arrow indicates the path of the fire. Yellow Box is the bushfire affected section of the T8 line.

Source: Geoscience Australia, annotated by OTSI

¹ Sydney Trains T8 line operates between Central and Macarthur stations

Environmental conditions

- 1.6 On 14 April 2018, the minimum and maximum temperatures recorded near Holsworthy were 21.8°C and 31.2°C respectively.
- 1.7 A maximum wind speed of 65km/h was recorded at 14:05 blowing from a north-westerly direction.

Trains that pathed through the bushfire affected T8 line

- 1.8 Sydney Trains passenger service 66-L in the Down direction. This train departed Holsworthy station at 14:53:48 and arrived at Glenfield station at 14:58:21.
- 1.9 Sydney Trains passenger service 93-L travelling in the Up direction. This train departed Glenfield station at 15:04:23 and arrived at Holsworthy station at 15:08:26.
- 1.10 Sydney Trains passenger service 75-P travelling in the Down direction. This train departed Holsworthy station at 15:08:55 and arrived at Glenfield station at 15:13:30.

Those involved in safety critical communications

Sydney Trains signal boxes

- 1.11 Sydney Trains signal boxes are located at different locations within the Sydney Trains network. The signal boxes are operated by signallers who work to rostered shifts. A signal box functions included but were not limited to:
 - Communicating with train drivers about hazards within its respective area of control within the Sydney Trains network.
 - Managing train movements in real time by:
 - Controlling signal aspects to stop or slow trains.
 - Controlling turnout positions to redirect trains where required.
 - Providing verbal instruction to train drivers.
 - Communicating with the Rail Management Centre (RMC) regarding incidents on the network and general train movements.

Sydney Trains RMC train control facility

1.12 The RMC train control facility was located within Central Station in Sydney, NSW. The RMC contains a number of operational staff including train controllers and security. The RMC functions included but were not limited to:

- Planning and monitoring train movements on the Sydney Trains network.
- Managing on time running by communicating with signal boxes and train drivers when required.
- Accessing CCTV cameras on the network to review incidents.
- Managing incidents and emergencies on the network.

Sydney Trains Security

1.13 Sydney Trains Security is a team based within the RMC facility. Its function was to actively manage incidents and emergencies on the network by:

- Communicating with emergency services such as the Police, Fire and Ambulance services.
- Relaying information to operational staff within the RMC for decision making regarding any incidents on the network.

ARTC train controllers

1.14 ARTC train controllers are located within control facilities at different locations around Australia. A control facility's functions included but was not limited to:

- Communicating with train drivers about hazards within its respective area of control on the ARTC network.
- Planning train movements within its respective area of control on the ARTC network.
- Managing on time running of trains within its respective area of control on the ARTC network.
- Managing emergencies and incidents within its respective area of control on the ARTC network.

Bushfire management

- 1.15 In NSW, the fire services comprises of FRNSW and the RFS.
- 1.16 FRNSW have jurisdiction in suburban areas, while the RFS has jurisdiction within rural areas in NSW.
- 1.17 The condition of the bushfire was 'Not yet known' between 14:30 and 15:15
- 1.18 The bushfire alert level was deemed 'Watch and Act' between 15:15 and 15:42
- 1.19 The bushfire alert level changed to 'Emergency Warning' at 15:57 and remained at that category until 17:01 on 16 April 2018 where the the bushfire was deemed 'Being controlled'.
- 1.20 The bushfire alert levels are used to provide the public with an indication of the level of threat from a fire (See *Figure 3*).

Bushfire Alert	Description
Advice	A fire has started. There is no immediate danger. Stay up to date in case the situation changes.
Watch and Act	There is heightened level of threat. Conditions are changing and you need to start taking action now to protect you and your family.
Emergency Warning	An Emergency warning is the highest level of bushfire alert. You may be in danger and need to take action immediately. Any delay puts life at risk.

Figure 3: Bushfire Alert Levels

Source: RFS

Events leading up to the incident

- 1.21 At 22:13² on 13 April 2018, the driver of Sydney Trains passenger service 23H contacted Glenfield signal box. The driver reported grassfires near the country end of Casula Station towards the SSFL.
- 1.22 At 22:18, Sydney Trains notified ARTC's Junee control of the grassfires. Sydney Trains advised that the fires reported were towards the SSFL.
- 1.23 At 22:23, Junee control notified FRNSW of the grassfires. FRNSW confirmed that it was already aware of the fires and had dispatched units to Casula.
- 1.24 Soon after contacting FRNSW, ARTC requested civil representatives to make their way to Casula to inspect the reported fires.
- 1.25 At 22:50, Junee control contacted the driver of train 2198 travelling in the Up direction towards Casula on the SSFL. Junee control advised the driver about the reported fires and instructed the driver to stop the train at Glenfield until further information was provided.
- 1.26 At 22:55, Junee control contacted the driver of train 3142N travelling in the Up direction and advised of fires in the railway corridor near Casula. The driver was instructed to hold the train at signal GE52 near Menangle Park until further information about the fires was provided.
- 1.27 At 23:32, ARTC civil representatives contacted Junee and advised that they had arrived at Casula and were preparing to inspect the track. The civil representatives advised that they did not require protection as they were carrying out their inspections outside of the railway corridor.
- 1.28 At 23:42, ARTC's civil representatives contacted Junee and advised that the fire was closer to the Georges River and clear of the SSFL at Casula.
- 1.29 At 23:43, ARTC resumed train operations after confirming that the fire was not affecting the SSFL.
- 1.30 The civil representatives remained on site and assisted FRNSW until the fire was determined under control in the early morning of 14 April 2018.

² Times in this report are in 24-hour clock form in Australian Eastern Standard Time.

- 1.31 At 14:05, on 14 April 2018, the driver of the Sydney Trains passenger service 730H reported grassfires near the section of track from the country end of Casula station to the Glenfield signal box. The driver reported that the fire was towards the SSFL and was not affecting the Sydney Trains network.
- 1.32 At 14:06, the driver of Sydney Trains passenger service 149K also reported the grassfires on the country end of Casula station to the Glenfield signal box.
- 1.33 At 14:07, Glenfield signal box contacted the RMC and advised of the reported grassfires on the country end of Casula station. The RMC requested Glenfield signal box to obtain more information about the severity of the fire and report back.
- 1.34 At 14:08, the RMC notified ARTC's Junee control of the grassfires. The RMC advised that the reports received indicated that the fires were moving towards the SSFL.
- 1.35 At 14:09, Glenfield signal box contacted the driver of train 149K and requested information on the severity of the fire. The driver advised that a few trees were on fire and that fire services were required. The driver also added that the fire was clear of the overhead wires and was between the Sydney Trains Down mainline and the SSFL.
- 1.36 At 14:10, Glenfield signal box relayed the information provided by 149K to the RMC.
- 1.37 At 14:11, the RMC advised Security that fire services were required at the country end of Casula station. Sydney Trains Security confirmed and advised that they would call fire services.
- 1.38 At the same time, the driver of freight train 4P6 travelling in the Up direction contacted Junee control and advised of grassfires near Casula. The driver advised that he had proceeded through Glenfield loop, but was not comfortable proceeding to the signal due to fires being close to the railway corridor. The driver advised that he observed fire near the Down side of the SSFL and the river bank.
- 1.39 At 14:12, Glenfield signal box contacted the driver of the Sydney Trains passenger service 726G who had travelled through Casula and requested

information on the severity of the fire. The driver advised that the fire was quite large with three trees on fire and smoke was impairing visibility near the SSFL.

- 1.40 At 14:14, Sydney Trains contacted ARTC and recommended that they stop trains going through the area. ARTC confirmed that they were holding train 4P6 in Glenfield loop (approximately 32.00 rail km).
- 1.41 At 14:15, the RMC shift manager contacted the Incident Rail Commander (IRC) on duty and advised of the grassfires near Casula. The IRC confirmed and that he would deploy to the location.
- 1.42 At 14:16, Sydney Trains Security attempted to contact FRNSW and could not get through. Security then contacted NSW Police and reported the fire. NSW Police despatched two units and said they would report to FRNSW.
- 1.43 At 14:21, FRNSW dispatched units to attend.
- 1.44 At 14:34, the first FRNSW unit attended the fires near Casula. It was also reported that two Rural Fire Service (RFS) units were also in attendance at that time.
- 1.45 At 14:42, NSW Police sent out communication to other emergency services that there were numerous fires around Moorebank Ave up to Cambridge Ave and that they were going to close the roads.

The incident

- 1.46 At 14:55, Sydney Trains Security contacted NSW Police who were on site. NSW Police advised that the fire had progressed across Moorebank Ave. NSW Police advised that the wind was blowing strongly and they expected the condition of the fire to worsen.
- 1.47 At 14:56, the driver of passenger service 66-L travelling in the Down direction between Glenfield and Holsworthy on the T8 line contacted Glenfield signal box. The driver reported observing grassfires on both sides of the railway corridor near the disused ordinance rail siding. The driver advised that due to the wind, he believed that the fires were going to become 'much worse very quickly'. The driver also advised that his main concern was poor visibility going through the area.

- 1.48 At 14:57, Glenfield signal box contacted the RMC and relayed the information provided by 66-L. The RMC confirmed that it would advise the IRC about the fires on the T8 line.
- 1.49 At 14:58, FRNSW in discussion with RFS over radio decided that it would request Sydney Trains to stop train services between Holsworthy and Glenfield.
- 1.50 At 15:02, a fire officer from Sydney Trains who was observing FRNSW and RFS communications contacted Sydney Trains Security. The fire officer advised that the fire had progressed in an easterly direction towards the suburb of Wattle Grove which was adjacent to the T8 line. The fire officer also advised that FRNSW had discussed with RFS that they were going to request that trains be stopped between Holsworthy and Glenfield. Sydney Trains Security confirmed and advised that it would wait until FRNSW made a request to stop the trains before taking any action.
- 1.51 At 15:06, FRNSW contacted Sydney Trains Security and requested it stop all of its train services between Holsworthy and Glenfield.
- 1.52 At the same time, Glenfield signal box contacted the driver of Sydney Trains passenger service 93-L travelling in the Up direction between Glenfield and Holsworthy on the T8 line. Glenfield signal box requested the driver to provide details on the severity of the fire. The driver advised that visibility was poor the bushfire was on the boundary line and very close to but not inside the railway corridor.
- 1.53 At 15:07, Sydney Trains Security contacted the RMC and advised that FRNSW had requested that all train operations be stopped between Holsworthy and Glenfield. The RMC advised that the requested section was an automatic controlled section and that trains could only be stopped at East Hills and Glenfield using (manually) controlled signals.
- 1.54 At 15:08, Sydney Trains Security contacted FRNSW and advised that they were in the process of stopping trains between Holsworthy and Glenfield.
- 1.55 At the same time, the RMC contacted Glenfield signal box and requested that trains be stopped between Holsworthy and Glenfield. The RMC advised that the last train to go through in the Up and Down direction would be train 93-L

and 75-P respectively. The Glenfield signaller advised that 93-L had already passed through the area.

- 1.56 At 15:11, the driver of passenger service 75-P contacted Glenfield panel. The driver reported fires between Holsworthy and Glenfield. Glenfield signal box acknowledged that it was aware and advised that 75-P would be the last train through the section.
- 1.57 At 15:12, Sydney Trains Security contacted FRNSW. The phone call was connected to FRNSW at 15:13:20 and Security advised FRNSW that it had stopped all train operations between Glenfield and East Hills as of 15:12.

Events following the incident

- 1.58 After train operations between East Hills and Glenfield stations were halted, Sydney Trains made arrangements for bus transportation between the two stations.
- 1.59 At 15:49, Sydney Trains de-energised the power supply to the overhead wires between Holsworthy and Glenfield (Sections 171-2 and 172-2). This was done to ensure the fire services could safely discharge water into the railway corridor.

PART 2 ANALYSIS

Introduction

- 2.1 The investigation focussed on the factors that contributed to three trains operating through a bushfire affected section of the network, safety critical communications and the management of safety risk. It also focussed on possible improvements to further mitigate risk in the future.

Bushfire progression

- 2.2 The fire services first received notification of the fires on the afternoon of 14 April 2018 at 14:16 by a member of the public.
- 2.3 The fire was likely due to a re-ignition of the fire which was determined to be contained earlier that morning. The wind on the day likely contributed to this re-ignition.
- 2.4 Based on analysis of recorded communication, the initial location of the fire was likely within bushland between the Georges River and the ARTC's SSFL.
- 2.5 Due to the proximity of the fire to the SSFL, train operations were halted by ARTC in an effort to manage the safety risk.
- 2.6 The Sydney Trains T2 and T5 lines (between Glenfield and Casula) were unaffected by the fires and therefore train operations continued normally.
- 2.7 The fire spread in a south-easterly direction which was likely due to the wind blowing in that direction (*See Figure 2*).
- 2.8 The first report of the fire on the T8 line between Holsworthy and Glenfield was made at 14:56 by the driver of train 66-L. At this time, the Sydney Trains signaller at Glenfield was unaware that this was the same fire which had progressed from Casula.
- 2.9 During an interview with the driver of train 66-L, the driver advised that there was a large bushfire on the boundary line of the Sydney Trains T8 line near the disused ordinance siding (*See Figure 4 and 5*). The driver added that there were also smaller spot fires in the railway corridor.

- 2.10 An additional two trains operated through the section of track between Holsworthy and Glenfield (93-L and 75-P). When the drivers were interviewed they provided similar descriptions of the fire to that of the driver of 66-L.

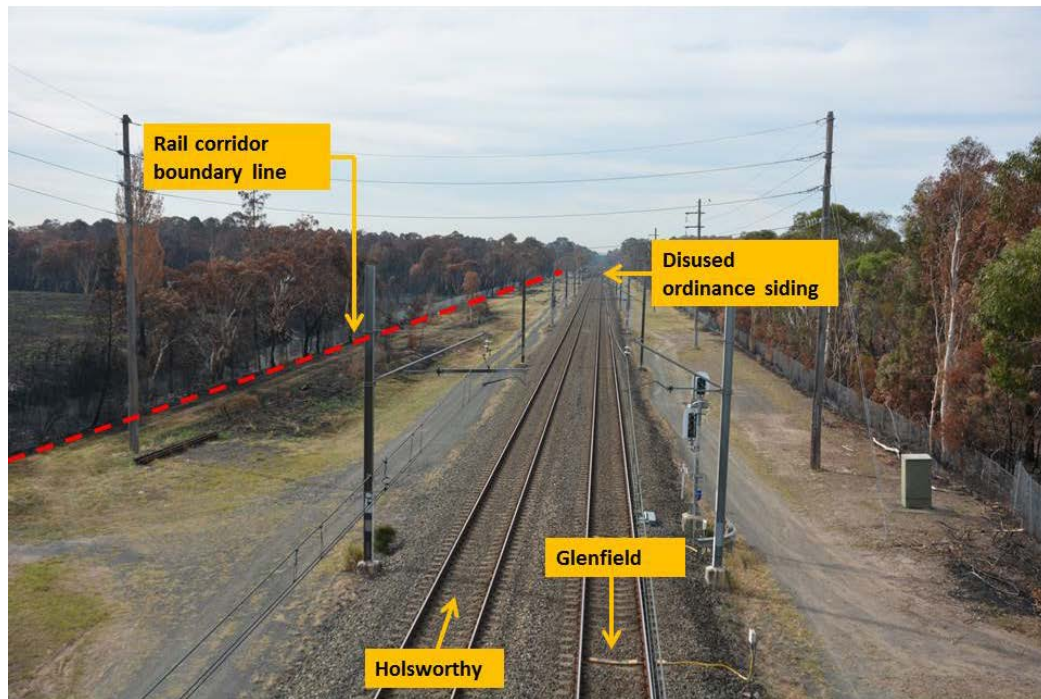


Figure 4: Rail corridor boundary line

Source: OTSI

- 2.11 Examination of the front of train camera records for train 66-L shows spot fires near the railway corridor. Visibility was also reduced because of smoke, however when interviewed, the driver advised that the track signals were visible (*See Figure 5*).



Figure 5: Front of train camera footage for train 66-L showing spot fires and smoke

Source: Sydney Trains, annotated by OTSI

2.12 Examination of the front of train camera records for train 93-L showed spot fires near the railway corridor. At the time 93-L passed through the affected area, driver visibility appeared to have reduced due to an increased density of smoke (See Figure 6). The driver however advised that the track signals were visible.



Figure 6: Front of train camera footage for train 93-L

Source: Sydney Trains, annotated by OTSI

2.13 The analysis of the front of train camera records for train 75-P identified spot fires near the railway corridor on both sides of the track. It was also observed that the smoke density had increased after the previous trains had passed through (See Figure 7). When interviewed, the driver advised that the poor visibility was for a short period of time as the train passed by the disused ordinance siding. The driver also advised that the visibility observed on the front of train camera footage appeared worse than what he observed on the day.

- 2.14 After 75-P passed through the section between Holsworthy and Glenfield, all train operations were stopped between East Hills and Glenfield.

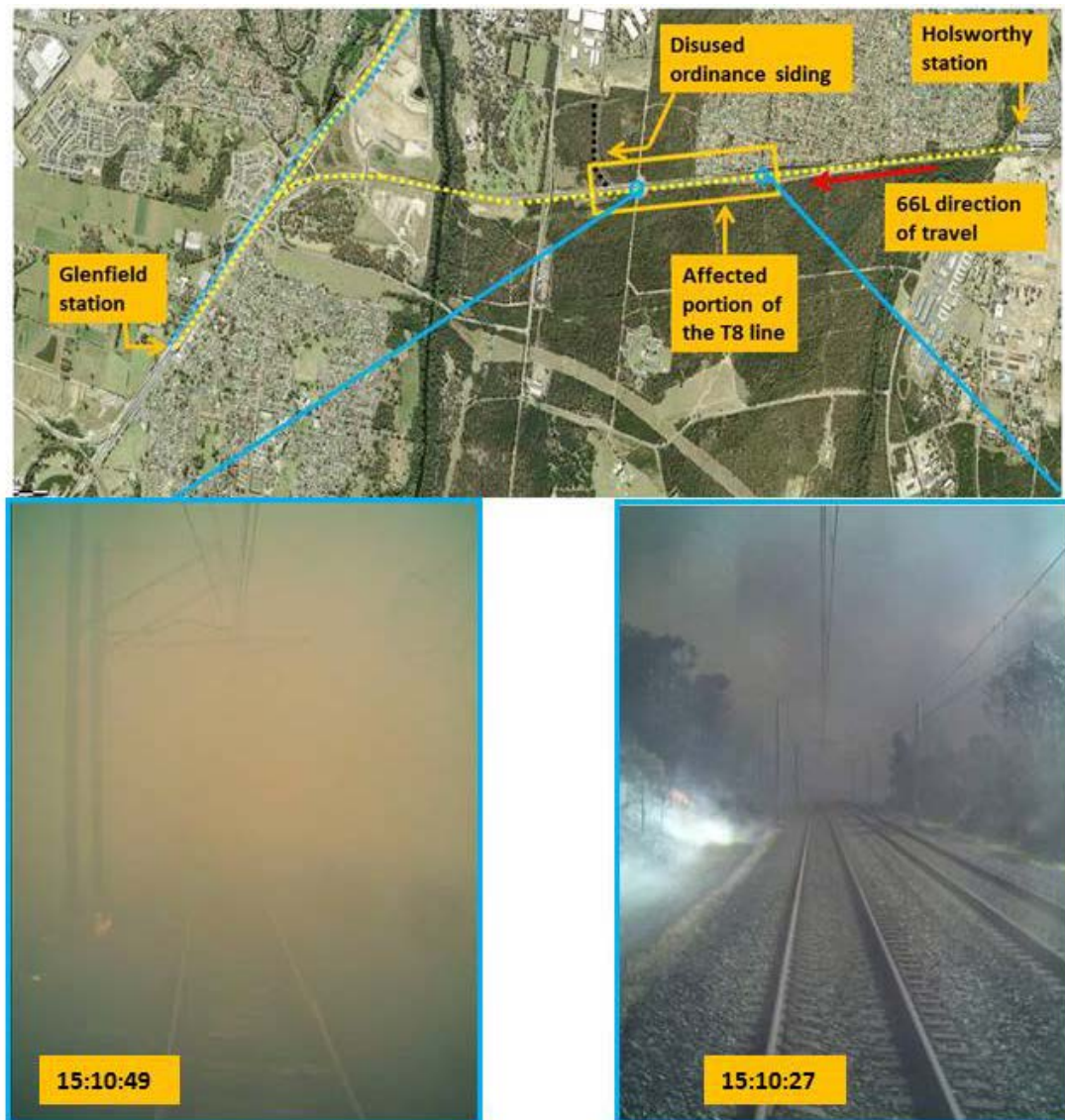


Figure 7: Front of train camera footage of train 75-P

Source: Sydney Trains, annotated by OTSI

- 2.15 The fire then continued to progress in a south-easterly direction due to the north-westerly winds on the day. The fire also affected the suburb of Wattle Grove, which was adjacent to the affected T8 line (See Figures 8 and 9).

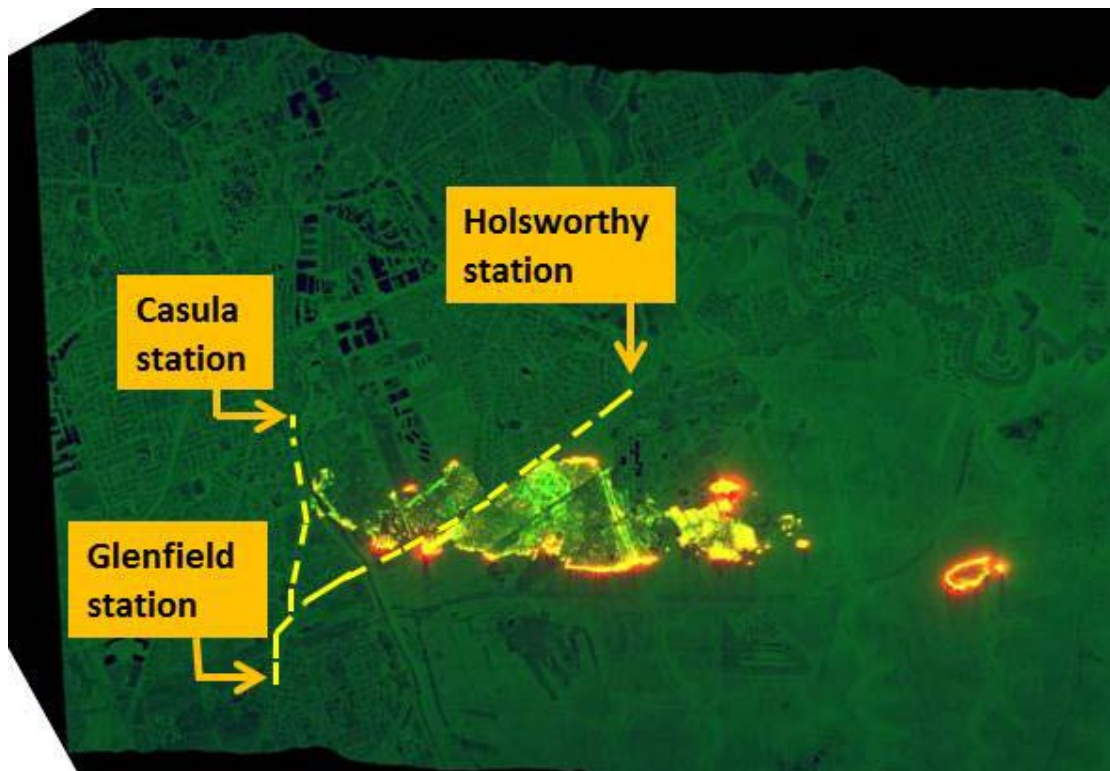


Figure 8: Line scan image of fire progression at 17:58

Source: RFS, annotated by OTSI

2.16 Based on the available evidence, the following has been determined regarding the progression of the fire:

1. The fire progressed from the country end of Casula station to the disused ordinance siding adjacent to the T8 line between 14:16 and 14:51.
2. The fire likely crossed the railway corridor due to embers from wind blowing in a south-easterly direction between 14:51 and 15:10.
3. The fire progressed into bushland in a south and south-easterly direction after 15:10 (See Figure 8).

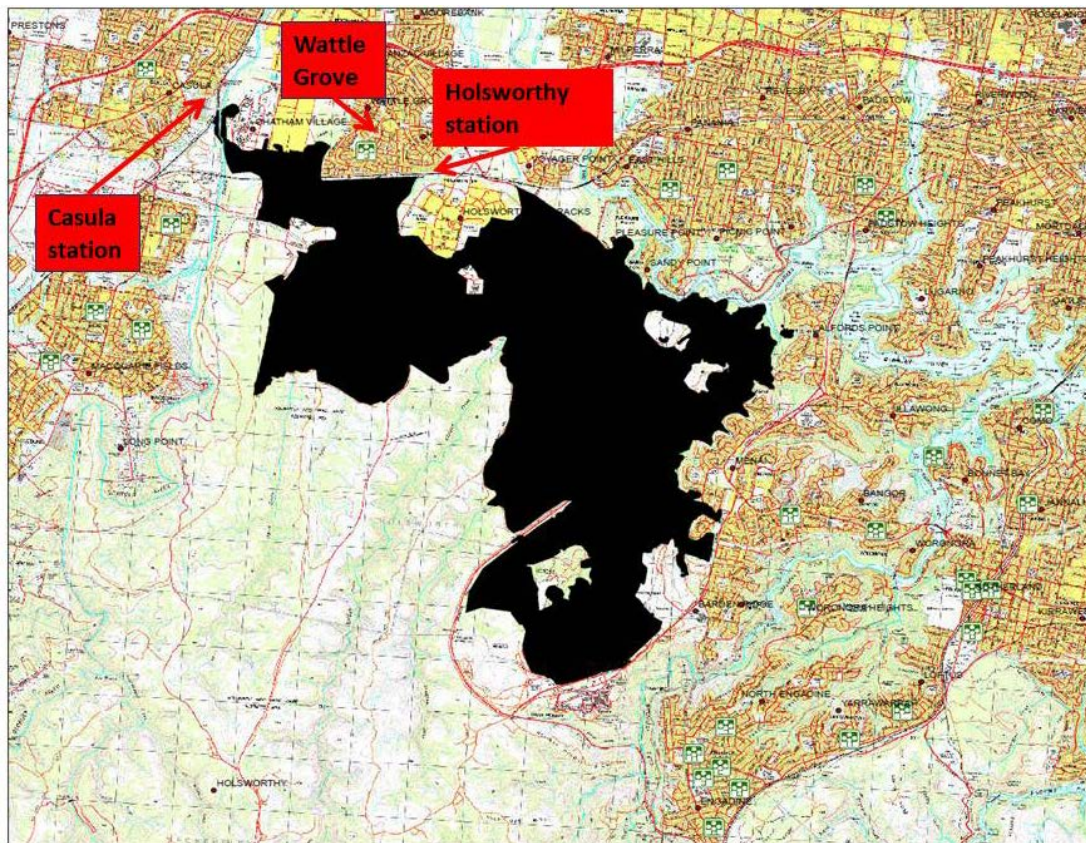


Figure 9: Final burn area

Source: RFS, annotated by OTSI

Train operation through the bushfire affected T8 line

2.17 A total of three Sydney Trains passenger services pathed through the bushfire affected section before the T8 line was closed.

2.18 The line speed between Glenfield and Holsworthy stations was 115 km/h.

Train 66-L operation between Glenfield and Holsworthy stations

2.19 66-L departed Holsworthy station at 14:53:48

2.20 66-L entered the bushfire affected portion in the Down direction at 14:55:13

2.21 66-L left the bushfire affected portion of the line at 14:55:44

2.22 66-L arrived at Glenfield at 14:58:21

Train 93-L operation between Glenfield and Holsworthy stations

2.23 93-L left Glenfield station at 15:04:23

- 2.24 93-L entered the bushfire affected portion of the T8 line in the Up direction at 15:07:26
- 2.25 93-L left the affected portion of the line at 15:08:26
- 2.26 93-L arrived at Holsworthy station at 15:10:08
- 2.27 Train 93-L slowed its speed to 37 km/h as it travelled through the bushfire affected portion on the T8 line. This was determined from its on-board event recorder (See Figure 10).

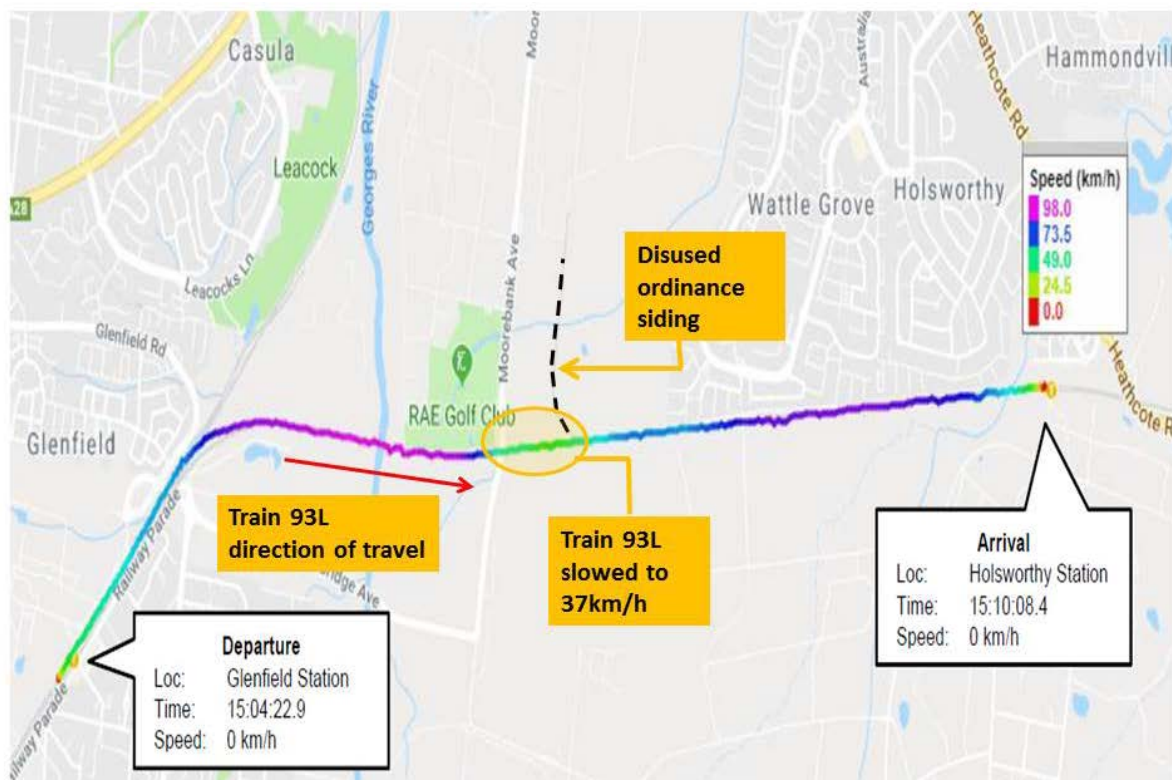


Figure 10: 93-L train speed between Glenfield and Holsworthy stations

Source: Sydney Trains, annotated by OTSI

- 2.28 No Passenger Emergency Intercom (PEI) alerts were made by passengers during train 93-L's journey between Glenfield and Holsworthy station.
- 2.29 Based on the available evidence, FRNSW first contacted Sydney Trains Security to request that it stop trains between Holsworthy and Glenfield at 15:06:24 and the call was ended at 15:07:00. During this time, train 93-L had already left Glenfield and was in the section between Glenfield and Holsworthy.

- 2.30 The request then went through to the RMC controller who then contacted Glenfield signal box. Glenfield signal box received the call from the RMC controller at 15:08:07 and concluded the call at 15:09:39. During this call, the decision was made that train 75-P would be the last train through the section.

Train 75-P operation between Glenfield and Holsworthy stations

- 2.31 75-P departed Holsworthy Station at 15:08:55
- 2.32 75-P entered the bushfire affected portion of the T8 line at 15:10:21
- 2.33 75-P left the affected portion of the line at 15:10:54
- 2.34 75-P arrived at Glenfield station at 15:13:30
- 2.35 The smoke alarms in cars 1,2,3,7 and 8 were activated for a short period of time, likely as they passed through the bushfire affected portion of the line.
- 2.36 Train data logger recordings indicated no PEI alerts were made by passengers between Holsworthy and Glenfield station.
- 2.37 Train 75-P operated at the expected speed between Holsworthy and Glenfield stations. This was determined from its on-board event recorder (*See Figure 11*).

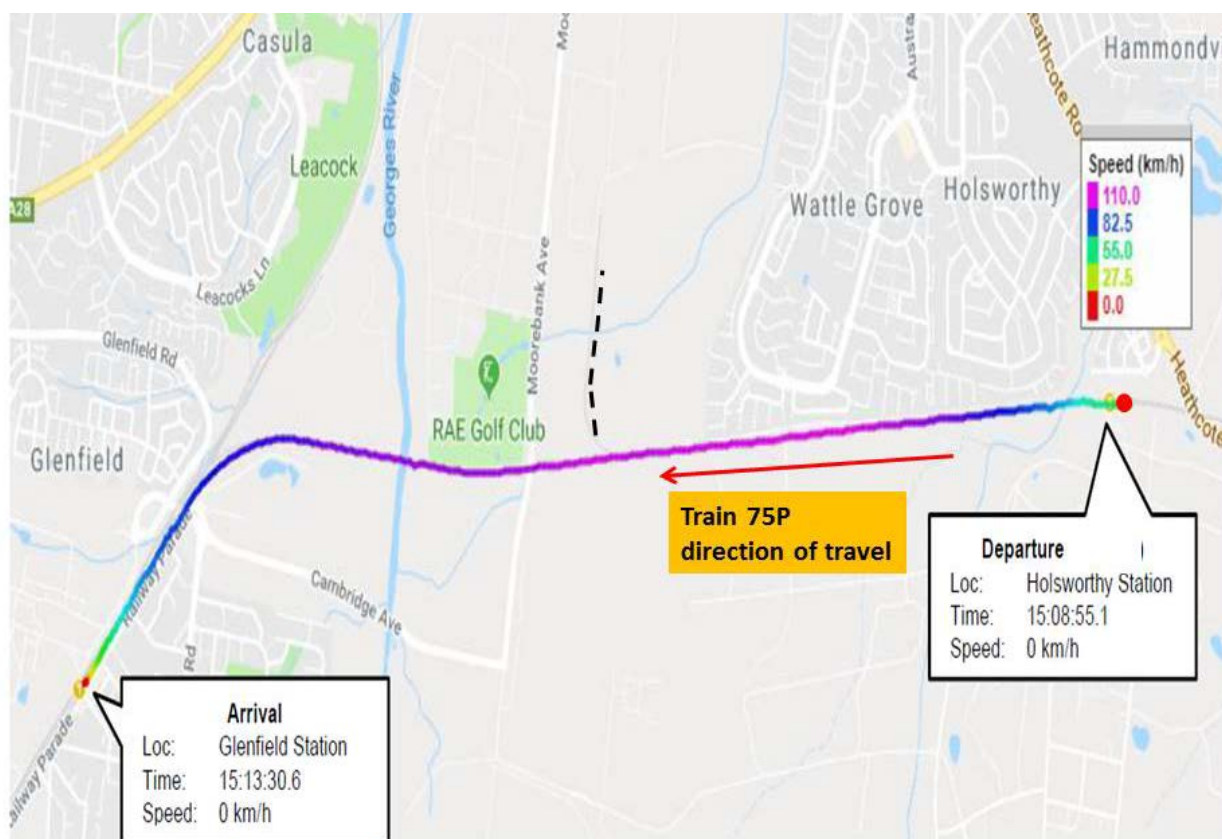


Figure 11: 75-P train speed between Holsworthy stations

Source: Sydney Trains, annotated by OTSI

2.38 By the time the conversation between the RMC Controller and Glenfield signal box was completed train 75-P was already in the affected section of track.

Safety communications

Train driver communications with signal box

2.39 Based on communications on the day of the incident, it was found that the train drivers reported the fires to the Glenfield signal box as per Sydney Trains processes.

2.40 With respect to the fires on the country end of Casula station, Glenfield signal box re-contacted the drivers and requested more information regarding the fires. The descriptions provided by the drivers included:

- The location
- The visibility through the section
- The size of the fire and what was burning (trees, grass, etc.)

- The effect of the fire on the Sydney Trains network (overhead wires, stanchions, etc.).

2.41 The driver of train 66-L was the first to report the fires on the T8 line between Holsworthy and Glenfield at 1455. The driver advised Glenfield signal box that:

- There was a grassfire on both sides of the railway corridor
- The location of the fire was near the disused ordinance siding
- The visibility was poor and that it was a concern.

The signaller asked *'how big is it'* and the driver responded by saying *'it's going to get very big very quickly; it's very windy out there'*. The signaller asked if the driver had any concerns and the driver responded by advising that *'visibility was very low'*.

2.42 When interviewed, the driver of train 66-L advised that there were spot fires on both sides of the railway corridor, which was consistent with the report made to Glenfield signal box. However, during the interview, the driver also advised observing a large bushfire behind the boundary line of the Sydney Trains railway corridor. The driver advised that the bushfire was quite large and was coming towards the railway corridor. This was not communicated to Glenfield signal box.

2.43 At approximately 15:06, Glenfield signal box contacted the driver of 93-L who was approaching the affected portion of the T8 line. The signaller requested the driver to provide information on the previously reported fires and concerns of poor visibility. The driver advised the following:

- The fire was on the boundary line
- The fire wasn't in the railway corridor but was very close
- Visibility was low.

2.44 Based on the description provided by train 93-L, it is not clear whether or not Glenfield signal box understood the size of the fire on the boundary line. At this stage however, Sydney Trains were already in the process of stopping trains on the line.

2.45 At approximately 1511, the driver of train 75-P contacted Glenfield signal box and advised of fires on the line. At this stage, Sydney Trains had already

determined that train 75-P would be the last train through the section before the line was closed. This was communicated to the driver.

Signal box communications with the RMC train controllers and shift manager

2.46 Based on the communications on the day of the incident, Glenfield signal box communicated the fires to the RMC as per Sydney Trains processes.

Security communications with the RMC train controllers and shift manager

2.47 Based on the communications on the day of the incident, Sydney Trains Security reported the fires to the RMC as per Sydney Trains processes.

Management of risk

Risk context

2.48 The Sydney Trains rail network intersects bushland and suburban areas through which passenger trains are required to operate. Sydney Trains also operated its trains within underground tunnels and on bridge structures.

2.49 The railway corridor contains a limited source of fuel for a fire. The level of risk of a bushfire affecting the railway corridor is dependent on the severity of the fire, density and the distance of bushland to the railway corridor. Bushland which is closer to the railway corridor increases the risk exposure to trains.

2.50 The section of track between Holsworthy and Glenfield intersected bushland on both sides of the railway corridor. The section of track also intersected bushland and the suburban area of Wattle Grove further in the Up direction (*See Figure 12*).

2.51 Isolated trees were observed approximately 8 m from the railway corridor on both sides, with dense bushland approximately 20 m from the railway corridor on both sides.



Figure 12: Aerial image showing a combination of bushland and the suburb of Wattle Grove surrounding the worst affected section of the T8 line

Source: Geoscience Australia, annotated by OTSI

Sydney Trains management of risk

- 2.52 On the day of the incident, the fires quickly progressed from the country end of Casula station to the T8 line between Holsworthy and Glenfield.
- 2.53 Sydney Trains actioned the risk controls as per its risk register to manage the risk of the bushfire on its operations. The trains which were pathed through the fires were done so prior to the severity of the fire being known.
- 2.54 After train movements were stopped between Holsworthy and Glenfield, Sydney Trains de-energised the overhead wires in the affected section to support fire services and manage electrical risks.

Factors that could have increased risk

- 2.55 The severity of a bushfire and the direction of its progression are dependent on many factors and can change rapidly.
- 2.56 On the day of the incident, the fire services on site were dealing with a rapidly changing environment and making decisions on actions to protect property and the potential for loss of life. Communication recordings revealed that

Sydney Trains were relying on the fire services to provide instruction on stopping trains.

PART 3 FINDINGS

From the evidence available, the following findings are made with respect to the trains which operated through the bushfire affected section of track between Holsworthy and Glenfield.

Key findings

- 3.1 The risks associated with bushfires can escalate in severity rapidly due to a number of factors which are typically outside the control of the rail operator.
- 3.2 During natural disasters (such as the bushfire on 14 April 2018), rail transport operators rely on the information and expertise of emergency services to make informed decisions.

Other findings

- 3.3 Sydney Trains advised FRNSW at 15:13:30 that the section between Holsworthy and Glenfield was clear of rail traffic as of 15:12:00. However, train 75-P was heading towards Glenfield and actually arrived at 15:13:30.

PART 4 RECOMMENDATIONS

- 4.1 In light of the incident, it is recommended that rail transport operators ensure emergency services are aware of the importance their information plays in making safe decisions and establish if and when two-way communications with emergency services are required to understand reasons for stopping trains.
- 4.2 Rail transport operators must verify that track sections are clear of rail traffic before communicating that they are clear to internal and external stakeholders.

PART 5 APPENDICES

Appendix 1: Sources, Submissions and Acknowledgements

Sources of Information

- Sydney Trains
- Australian Rail Track Corporation
- Rural Fire Service
- Fire and Rescue NSW