

# Level 3 Incident Investigation Report

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## *Collision*

### *Alexandrina Road Goolwa*

### *RLX0144 'S Bend' Level Crossing*

*28<sup>th</sup> April 2018*



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## Table of Contents

1.	Executive Sign Off .....	5
2.	Incident .....	7
3.	Incident Type .....	7
4.	Incident description .....	8
5.	Description of damage.....	8
6.	Description of Injuries.....	9
7.	Notifications.....	9
8.	Findings .....	10
9.	Observations .....	11
10.	Proposed safety actions.....	12
11.	Investigation details.....	12
12.	Reports.....	13
	Train Control Report .....	13
	Guard's Report .....	14
	Drivers Report .....	15
	Photographs.....	18
	.....	18

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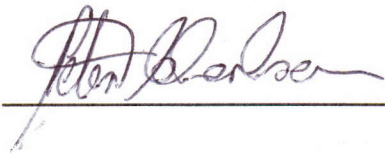
## 1. Executive Sign Off

**Incident ARHS-NO-07-18**

**Collision between train 7930 Brill Railcar 60 and a road vehicle at  
Alexandrina Road Level Crossing RLX0144 'S Bend' Goolwa  
28<sup>th</sup> April 2018**

This report on incident ARHS-NO-07-18 is approved for release.

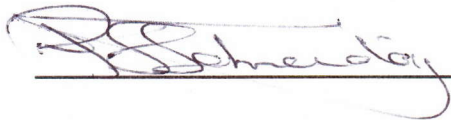
President



Date 19/6/2019

Rail Safety Manager

Secretary ARHS.



Date 19/6/2019



*Report into collision between train 7930 Brill Railcar 60 and a road vehicle 28/ 04/ 2018*

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## **2. Incident**

### *Date*

28<sup>th</sup> April 2018

### *Time*

10:45 Hrs

### *Incident location.*

Alexandrina Road 'S Bend' level crossing RLX0144 Goolwa

### *Section*

Goolwa Depot – Currency Creek

### *Kilometre*

110.200

### *Incident number*

ARHS-NO-07-18

### *Train number*

Train 7930

### *Railcar*

Brill 60

### *Load*

Single unit

### *Conditions*

Slight cloud, Sunny and dry with clear visibility

## **3. Incident Type**

### *Collision*

On 28 / 04 / 2018 at 10:45 hrs train 7930 Brill Railcar 60 collided with a Mitsubishi 380 registration number XES975 on Alexandrina Road (S Bend) level crossing (RLX0144) between Goolwa and Currency Creek.

## **4. Incident description**

On the 28<sup>th</sup> April 2018 at 10:45 Brill Railcar 60 train 7930 collided with a road vehicle at the level crossing known as the “S” bend between Goolwa and Currency Creek. The train was travelling South to North and the road vehicle was travelling from North to South. The Rail Car was disabled and the motor vehicle sustained significant damage.

The railcar crew called for Emergency Services assistance and advised Train Control. The Operations, Mechanical Services and Safety Managers were advised of the incident. The Police, Ambulance and CFS attended the scene.

The train service was cancelled. The Motorman was conveyed by road back to Goolwa Depot to bring railcar 412 to site arriving at 12:20 and took passengers back to Goolwa by 12:40. Rufus Bus services at Strathalbyn were contacted and two buses were dispatched to Goolwa station. The buses arrived at Goolwa station at approx. 12:45 and took passengers back to Victor Harbor arriving at 13:20.

The crew of 7930 were requested by ONRSR to remain at Goolwa Depot and wait for MedVet to arrive for drug and alcohol testing. MedVet completed testing by 14:55 and crew then conveyed by road to the disabled Brill railcar. After a mechanical assessment of the railcar Train Authority 12 was issued for the railcar to push back to Goolwa Depot and stable arriving at the depot at 16:10.

Authority 4 issued originally for passage of 7930 was cancelled.

Minor delays to Trains 7555 and 7558 for track clearance.

Human Relations Mgr. arranged counselling for crew of 7930.

## **5. Description of damage**

### **Track**

- There was nil damage to the track.

### **Brill railcar 60**

- The railcar had sustained significant damage to its cow catcher and one of the main supporting rods had been snapped from its anchor point.
- One of the 6 driveline V belts had been cut and one of the other belts although sustaining some damage was still functional.
- The rail vehicle was in no condition to continue the journey to Mount Barker but after appraisal was cleared to reverse back to Goolwa Depot.

### **Motor Vehicle**

- Impact occurred to front left hand side causing extensive damage to the front of the vehicle.



## **6. Description of Injuries**

- There were no injuries to train staff.
- One passenger allegedly sustained a minor “bump “to her arm.
- The motor vehicle driver was able to exit the vehicle unassisted but complained of a sore chest from impact with the steering wheel. He was attended to by the Ambulance crew who attended the site.

## **7. Notifications**

### ***Train Control***

Train Control was notified at 10:45 hrs.

### ***Track Manager***

The Track Manager was in attendance (Guard on train).

### ***Mechanical Services Manager***

The Mech. Services Manager was advised.

### ***Rail Safety Manager***

The Rail Safety Manager was advised.

### ***Occurrence Number***

ARHS-NO-07-18

### ***Executive notified***

Members of the Executive notified by phone

### ***Regulatory Authorities notified***

Both the ATSB and ONRSR notified

### ***Breath testing***

The railcar driver was breath tested at the incident site by the attending Police with negative results. The crew were requested by ONRSR to remain at Goolwa Depot for MedVet to conduct drug and alcohol testing some two and a half hours later.

## **8. Findings**

The speed recording chart from the railcar was examined for track speed and train handling. The train was being operated within the permitted parameters at the time of the incident. The train speed before the crossing was 25kph and less than the track speed of 50kph.

**Speed was not considered a contributing factor.**

The Rail car head lamp and flashing light were in operation. The Rail car warning device was functional.

**Visibility of the train and audibility of the warning device was not considered a contributing factor.**

The weather was fine and visibility very good. No moisture on the rails and the road crossing was dry.

**The weather was not considered a contributing factor.**

The railway crossing was protected by Railway crossing give-way assembly (RX-1) both which were in place, clearly visible and were of good condition.

**Signage was not considered a contributing factor.**

The presence of foliage on the road side outside of the rail corridor may have been a contributing factor to the incident. The trees on the left-hand side of the approach to the crossing in the direction the vehicle was travelling would have made it difficult to observe the approach of the railcar. However, given that the speed of the approaching railcar was 25 kph approaching the crossing it is highly likely that if the road vehicle driver was paying adequate attention, he would have had adequate time to stop clear of the crossing.

It is also noted that the driver was a local who lived in Goolwa. It is considered that the "close to home" effect and "'inattention blindness' where the driver was less attuned to hazards on familiar routes" \* was also a contributing factor in the driver's failure to give way to the oncoming train.

**The cause of the incident was due to the failure of the road vehicle driver to observe the requirements of the give way sign and slow down and be prepared to stop and give way to any train on entering or approaching the crossing.**

\* University of Waikato May 2017.

Analysis showed that on average, drivers were indeed more likely to crash close to home. Roads within 11 km (6.8 miles) of home accounted for half of all travel and 62% of all crashes. The 'close to home' effect held for male and female drivers. The researchers suggest a few possible reasons for the phenomenon, including 'inattention blindness' where we're less attuned to hazards on familiar routes.

## 9. Observations

- The time passengers were kept on the train waiting for a decision from SteamRanger to either provide a Bus or rescue train while not overly excessive in this case needs examination.
- The perceived requirement of the railcar driver to not leave the incident site needs clarification as in this case he was required to be the relief train driver. Ideally the crew should have been stood down and a relief crew provided however it is noted that a relief crew would have taken longer to assemble if one was available.
- Clarification from the Office of the Rail Safety Regulator needs to be sought concerning the requirements of SAPOL vrs ONRSR in moving rail vehicles. SteamRanger needs to know how to handle incidents such as this one if requested by SAPOL to move a rail vehicle when ONRSR want the incident site preserved for them to conduct an investigation.
- The time the crew were kept waiting for MedVet to arrive to conduct drug and alcohol testing at the request of ONRSR requires further discussion with ONRSR to prevent future excessive waiting times.

International research has found that up to 16 per cent of drivers who experience Incidents involving a “person-under-train-event” such as a motor vehicle vrs train at a level crossing can cause drivers to develop post-traumatic stress disorder including depression and anxiety.

To quote one driver; “In a car, if you see someone, you can try to swerve . . . but it's the inevitability of what's going to happen - you're looking at them and they're looking at you. "And what can you do? There is nothing else you can do except wait for it to happen. And then you have to deal with the process after it.”

The refusal by ONRSR to accept a Breath test by SAPOL personnel on site as evidence only heightens the anxiety and stress levels experienced by crews as they are required to wait long periods for ONRSR’s agents to arrive and conduct drug and alcohol tests. To the crews it appears that they are being penalised for the actions of errant motor vehicle drivers who disobey the road rules.

- The response by SteamRanger’s HR manager to provide some post incident counselling and support to the crew by the end of their shift is noted.

## **10. Proposed safety actions**

Discussions to implement a safety interface agreement for Public Road crossings with the DPTI have been completed.

Funding has since been obtained to upgrade the level of crossing protection to active control by

- Installation of railway crossing flashing signal assembly's (RX-5)
- Installation of active advance warning assembly's (RX-11)

Alexandrina Council and DPTI have been approached to reduce the roadside vegetation leading up to the crossing to improve the sighting distances. (some foliage since removed by Council)

## **11. Investigation details**

The investigation was carried out by SteamRanger's Rail Safety Manager in accordance with Australian Standard AS 4292.

Written reports were sought from all personnel directly involved in the incident.

The speed recording chart from the railcar was examined for track speed and train handling.

## 12. Reports

### Train Control Report

#### **Collision between Car and train at level Crossing 110.200km On 28/04/2018**

At 10:45 today the Guard working train 7930 between Victor Harbor and Mt Barker advised that their train had collided with a road vehicle at the level crossing known as the "S" bend between Goolwa and Currency Creek. The vehicle was apparently travelling from North to South and the Motorman advised that the Rail Car was disabled.

Operations Manager and Safety Manager advised and crew called for Emergency Services assistance.

After assessing the situation and contacting the Operations Manager it was decided to cancel the train and obtain transport for the passengers back to Goolwa. Goolwa Bus contacted but were unable to assist. Rufus Bus at Strathalbyn contacted and two buses dispatched to Goolwa to convey passengers back to Victor Harbor. In meantime the Motorman was conveyed by road back to Goolwa Depot to bring railcar 412 to site to take passengers back to Goolwa. Arrived at site at 12:20 and took passengers back to Goolwa by 12:40.

Buses arrived Goolwa at approx. 12:45 and took passengers back to Victor Harbor arriving at 13:20. In mean time crew of 7930 remained at Goolwa Depot waiting for MedVet to arrive for Drug and Alcohol testing. MedVet completed testing by 14:55 and crew then conveyed by road to disabled car. After assessment Train Authority 12 was issued for railcar to push back to Goolwa Depot and stable arriving at the depot at 1610.

Authority 4 issued originally for passage of 7930 was cancelled.

Minor delays to Trains 7555 and 7558 for track clearance.

Human Relations Mgr. arranging counselling for crew of 7930.

## **Guard's Report**

I was Guard train Number 7930 Brill 60 travelling from Victor Harbor to Mount Barker. We left Goolwa Station at 10.35am as we approached the S Bend, I proceeded to the Drivers Compartment of the Brill. I watched a pushbike go across the track and out of the corner of my eye I saw a car travelling at an excessive speed I thought at the time that the car was going to stop but there was no sign of heavy braking and we caught the front of the car on the right hand side and spun it around where it ended up in the ditch I then got on the Mike to the Passengers and asked them to stay on the Train I then said to the driver I am going to ring Train Control he then said I am calling the Ambulance I then alighted from the Railcar another Passenger said that he had First Aid and offered to come with me which I accepted, I then approached the vehicle which was badly damaged in the front, the Driver was standing beside the Car and I asked him if he was OK he answered I have a sore chest from the Steering Wheel, the Ambulance then arrived and took over the treatment a minute or 2 later a Sargent Darren Parrish arrived from Goolwa Police and took over the Accident Site, he asked me what happened I explained that a Car had failed to Give Away he then proceeded to the Ambulance and spoke to the Driver I then got back onto the Railcar and spoke to the Passengers again at the same time I tried to ring our Safety Officer and got a Leave a Message reply. I then rang Train Control again and asked that buses be organised to pick up Passengers then [REDACTED] and I decided that the best way would be to bring a Red Hen to take the Passengers off because we were on High Ballast and some would have trouble alighting meanwhile more Police and the SES arrived. The Traffic officer wanted to move the car I said no I had to wait to get permission from the Rail Regulator he directed me to contact then because he did not want to have another accident with people slowing down to have a look, he then said that he was accepting responsibility to have the car removed. The Police took the driver to the Goolwa Depot to get a Red Hen out so that we could get the Passengers off the Rail Car, the Red Hen pulled up to the rear of the Brill and we unloaded them onto the Red Hen and transported them to Goolwa Station, TC had arranged for buses to pick up Passengers from Goolwa and take them back to Victor Harbor, a few waited for the last Cockle Train in the mean time we supplied them with Bottles of Water and then the driver and myself proceeded back to Goolwa Depot with the Railcar we then waited for 2 1/2 hours for Medi Vac to arrive, after they did their tests they took the driver and myself back to RC 60 where a decision was made to reverse the railcar back to Goolwa Depot. I then rang Sargent Parrish he then came down to stop the Traffic while we reversed back across the S Bend Road.

The Collision happened at approximately 10.45 am I believe the train was travelling at 20 to 25 kph the emergency brake was applied and we stopped at 10 metres from the Crossing. The motor vehicle drivers details are Neil Carlile 46 Gullview Road Goolwa his phone no. 0409097053 Rego XES 975.

Regards

## Drivers Report

### **Collision between Train number 7930 Brill RC60 and Mitsubishi 380, Rego No XES975**

**Date and time** of Incident 28-04-2018 at 10:45 hours.

#### **Conditions.**

The weather was fine and visibility very good. No moisture on the rails and the road crossing was dry.

As the driver of train 7930 we were on an up movement heading towards Mount Barker when our train was struck by a vehicle coming from a north-easterly direction at 10:45 AM. The collision took place on the crossing known as the "S" Bend.

I approached the crossing at a speed much lower than the recommended road speed, which according to SteamRanger's TSR's is 50kph. I did this for a number of reasons. On the lead up to the approach onto the crossing I observed several vehicles heading north toward the crossing. The rail corridor runs alongside the main road and is visible to the motorist. I used the train whistle on numerous occasions to catch the attention of the motorists travelling north that there was a train in the corridor. One vehicle in particular was causing me a great deal of concern. It was a white Holden Commodore station wagon and clearly it had not heard my warning approach whistle. So, by washing off some speed and bringing the movement down to around about 25 km/h I was hopeful that the car would pass across the railway crossing before we arrived on it.

Approximately 100 m before the crossing I observed a cyclist go across in front of me in a south-westerly direction. Shortly after that the white Holden crossed my path travelling in a north-easterly direction.

As the train came closer to the crossing, I spotted a dark coloured Mitsubishi approaching me from my right-hand side. The vehicle was travelling in a southerly direction at great speed. I tried to catch the driver's attention by hanging onto the whistle. It was clear the vehicle was going to collide with us so I placed the railcar into emergency. The driver of the Mitsubishi caught sight of the train at the very last moment. I estimate that he was approximately 40 m away from the crossing when he locked up his brakes. There was a significant amount of "blue smoke" coming from the tyres of the vehicle. From where I was sitting, I was able to see the drivers face. He was looking straight ahead and did not bother to look for trains.

The vehicle collided with the front left-hand corner of the railcar and was then flicked by the momentum to its resting spot some 20 m off the road. The collision took out a road warning sign.

Once the railcar came to a stop, I applied the handbrake and shutdown the engine. It was agreed between myself and my Guard that he would call "train control" and I would call 000. I contacted 000 and arranged for an ambulance on site. I then shut down all electrical systems and isolated the batteries on the outside of the car. I then chocked the front wheels of the drive bogie. I re-entered the driver's cabin and made my way back down through the train to make sure that everyone was alright. The passengers were calm and most were concerned about my well-being and not their own.

At approximately 10:49 I left the railcar and checked in with my guard who was now on the ground. I reminded him to collect details from the driver and the police. I walked over to the damaged vehicle and its driver was upright and standing next to it being consoled by some eyewitnesses. One of whom was the cyclist who'd crossed in front of me earlier. I said to driver of the vehicle "I hope that you're not going to ever do that again". His response to me was that he was not speeding and that he had not heard my whistle. The cyclist told everyone at the scene that that was all he heard.

The railcar had sustained significant damage to its cow catcher and one of the main supporting rods had been snapped from its anchor point. One of the 6 V belts had been cut and it was now lying on the ground whilst one of the others had sustained some damage but was still functional. I believe that the support rod that had been ripped off may well have collected one of the V-belt is on its way through when the vehicle hit us. The rail vehicle was in no condition to continue the journey to Mount Barker but would be okay to make its way back to Goolwa Depot.

I was approached by a policeman to accompany him to his vehicle so that he could perform an alcohol breath test. I passed the breath test.

Several of the policemen began asking me when could I get the passengers off the railcar and when can they organise to have the vehicle towed away. I advised them that the railcar must not be moved until we had been given clearance to do so by the ONRSR.

My guard informed me that train control was trying to organise a bus to come out to the incident site to take our passengers away but was not having any luck. However, there was a problem with this strategy. The railcar was standing on high ballast and we had several elderly and disabled people on board. While discussing this problem with the two police officers I came up with a plan to bring a red hen railcar from the depot onto the incident site. The idea was to drive the railcar right up behind the Brill railcar and bring the two coupling packages and foot plates together so that the passengers could walk straight across from one railcar into the other. By using the safety chains we would be able to give the passengers something to hang on to.

At this point in time our passengers had been confined on the railcar for over a half an hour and the more senior of the two police officers instructed me to go ahead with my plan and get the railcar. I explained to them that as the driver of the train involved in the accident, I was most likely not able to leave the crash site until ONRSR had finished with me. Both police officers then claimed control of the accident scene and explained to me that I was to do as they said and go and get railcar for the well-being of the people on board. I was given a ride back to Goolwa Depot by one of the police officers in a police car.

I prepared RC412 for service and uncoupled it from carriage number 824. After getting an authority from train control I passed RX 207 on the southern triangle leg and proceeded to the main line. After turning the road back onto the main I drove RC412 out to the 111 km post where the incident had taken place. The police protected the railway crossing and I brought RC412 in behind RC60 and nudged them together. The safety chains were secured between both rail vehicles which allowed passengers to make a safe exit from RC 60 onto RC 412. RC 412 was given an authority to Goolwa Depot where it would wait to be given a further authority into Goolwa Station.



RC412 was blocking one lane of the rail crossing. The police protected the crossing for us while the transfer of passengers took place.

Once our passengers had disembarked from RC 412 at Goolwa Station, we were instructed to take RC 412 out to Goolwa Depot and stable and report. We were then instructed by the safety manager to stay put at the Depot and wait for MedVet to arrive. They were to conduct a drug and alcohol test on the both of us. MedVet took almost 2 ½ hours to get to Goolwa Depot.

During our wait at Goolwa Depot for the MedVet clinician to arrive I was contacted by [REDACTED] to make sure that I was travelling okay. [REDACTED] went on to explain that both [REDACTED] and [REDACTED] wanted to spend some time with my crew and myself once they had finished their duties on the Cockle train. [REDACTED] explained to me that [REDACTED] is a psychiatric nurse and [REDACTED] is our new HR officer. He explained to me that [REDACTED] would be able to arrange counselling for me if I needed it.

The MedVet clinician kindly gave us a ride out to the incident site.

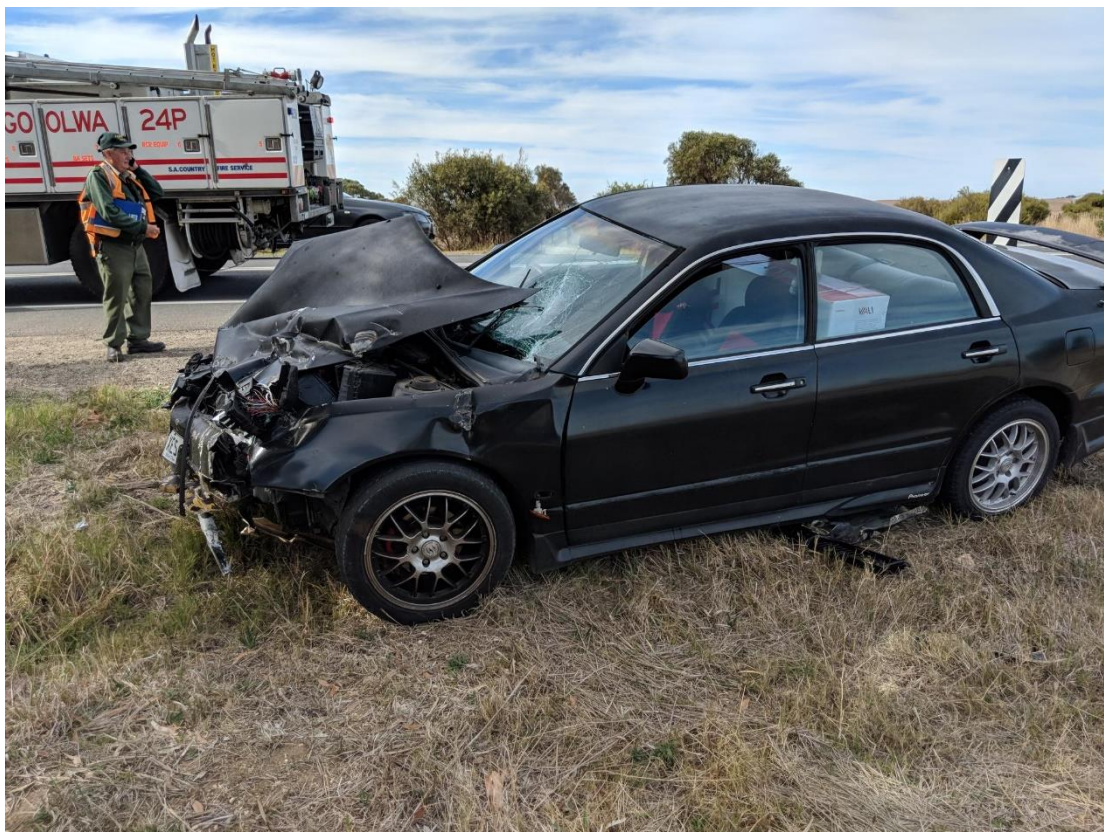
RC60 was restarted and pushed back over the "S Bend crossing. The police protected the crossing for us while this movement took place. Once clear of the crossing we continued to push back to Goolwa Depot. RC 60 was stabled on road three. The Hasler roll is still in the recorder and it will have all the required information on it.

At approximately 1705 I sat down with [REDACTED] and [REDACTED] in the kitchen car and we spoke about items such as post-traumatic stress disorder and some of the feelings that I would experience over the next few weeks as a result of the collision and the accident. I found this incredibly helpful and am pleased to report that Steam Ranger seems to be very well set up to support crew who have suffered a trauma.

The following day I received several phone calls from my fellow train crew making sure that I was okay. I also received a phone call from [REDACTED] as well as an email from [REDACTED].

[REDACTED] Engineman

## Photographs





*Report into collision between train 7930 Brill Railcar 60 and a road vehicle 28/ 04/ 2018*



Crossing active  
warning in  
operation after  
commissioning



*Report into collision between train 7930 Brill Railcar 60 and a road vehicle 28/ 04/ 2018*

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