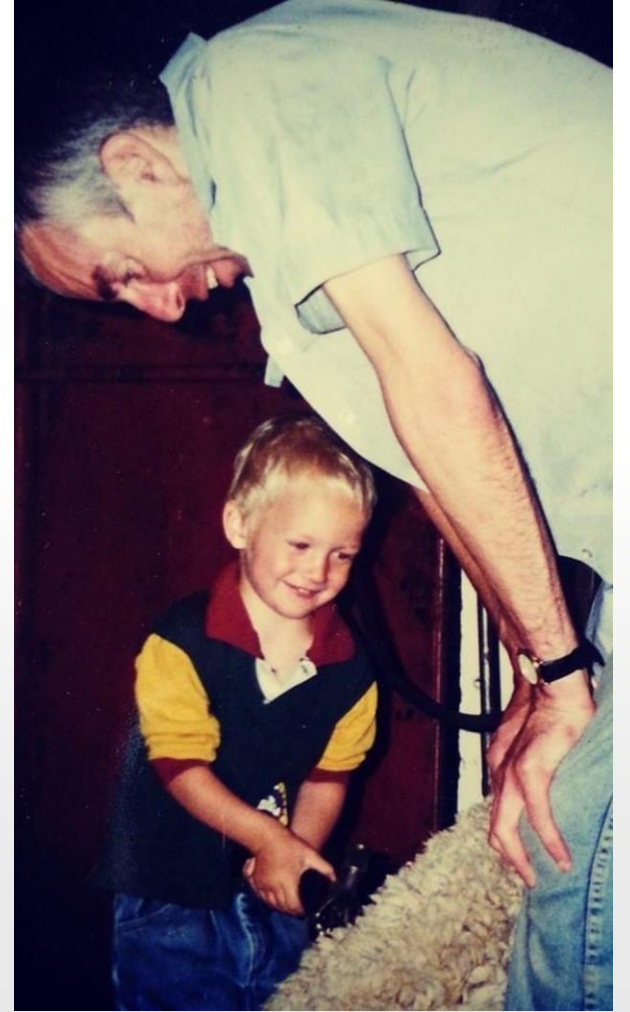




IMPROVING SAFETY AT PASSIVE LEVEL CROSSINGS

By Madeline Emily Bott

#OneTrackAtATime





Ethan's accident site



Current situation:

- 24 000 level crossings in Australia
- 80% of them are passive, only protecting the motorist with a stop or give way sign
- 2700 levels crossings in NSW, only 840 with active controls
- Majority of passive level crossings are in regional areas



Doctor Eric Wigglesworth



- “Why are so many of our crossing’s passive? The answer is simple. The Australian Community has not demanded the same standards of safety at level crossings as in other parts of the transport system”.
- Stop signs place legal liability on road vehicle drivers, even at crossings where geometric and other characteristics make it high risk.
- A B-Double (say 23 metres long) travels a passive level crossing with no stop sign at 18km/hr. in 9.6 seconds it has cleared the line with a 5 second safety margin. If the B double stops at the stop sign, the Australian traffic engineering manual mandates a time of 18.6 seconds for that same vehicle to clear the line from rest. If we then introduce a train at say 126km/hr 35 metres a second the truck driver needs a distance of $18.6 \text{ seconds} \times 35 \text{ metres}$ for safety. Faster trains and longer vehicles are likely to be developed so that the approach time of the train from the available sight of distance may exceed the clearance time required by the truck.
- Stop signs should be used rarely and only as a weapon of last resort.
- Education programs are strongly advocated by railway companies. It is perhaps cynical to point out that a) the “create awareness” approach would result in no financial cost to the railway companies and B) someone else would have to do the work.

Is improving rail safety too expensive?

- The cost of 12 level crossing accidents between April 2006 and December 2007 was estimated to be more than \$100 million. This is approximately \$8.3million per accident.
- Costs includes clean up, damages, use of emergency services and first responders and the rail line closes for up to 24 hours.
- ONSR reported there was 84 fatalities and 152 serious injuries on Australian Rail in 2019-2020.

How much is a life worth?

Tapprel road crossing



ALCAM assessment –

Last completed 23rd April 2018 identified the following:

- Restricted emergency access
- Panel surface condition poor
- Estimated road traffic in a quiet time of year for farms
- It was partly obstructed and poorly aligned
- A safe distance from advance warning to crossing DOES NOT exist
- Visual impediments which may affect the visibility of an oncoming train.

Form XEP01 Form one was completed 21st February 2021:

* Stated the rail top was NOT ok.



The Inland Rail

- The Tapprel road crossing is a part of the 1700km Inland rail project.
- Currently the Stockinbingal to Parkes line has 40 passive level crossings. Only 1 level crossing in Forbes is being upgraded. We were told at ARTC community engagement meetings that level crossing upgrades were not within their scope.
- 40 passive level crossings with a further 14 double stacked trains in a 24 hour period in addition to the 8-12 trains currently travelling the rail line are now on completion.
- Because of this there are legitimate safety concerns at every passive level crossing along the inland rail line.
- We can also see from this map there is new track being built- how many passive level crossings will be built?

So how will we achieve zero road deaths and serious injuries by 2050?

Improving level crossing safety petition

- In November 2021, a petition calling the NSW Government to improve safety at level crossings was debated in The Cooper Gallery in Sydney. The petition received Bipartisan support.

The petition called for:

- Train activated warning solar panel lights at level crossings
- Improved lighting on trains
- Reduction of speed limits on highways approaching level crossings

We are delighted to announce there has been reduction of speed limits on many highways approaching level crossings.

NSW
PARLIAMENT
DEBATE
LIVESTREAM

**LEVEL
CROSSING
SAFETY**

3.30-5PM
THURSDAY 11
NOVEMBER

GRENFELL
BOWLING CLUB
CROSS STREET,
GRENFELL

PLEASE RSVP FOR CATERING PURPOSES BY 8 NOVEMBER TO 0401494866



Transport for NSW

- 3 policy positions:
 - Avoid new level crossings from being built
 - Level crossings to be closed when practical
 - Speed limits on approach to level crossings controlled by active measures to be set to a maximum speed limit of 80km/hr

Current situation:

- Free gate signs are a part of the 2021 harvest road safety campaign for landowners to warn visitors of live level crossings on farms
- Transport for NSW are currently trialling emerging technologies in regional NSW
- Since February 2021 there have been 3 Federal Transport Ministers and 2 NSW Transport Ministers



#Yarramonylights #onetrackatime #Lightrailup #whichcrossingisnext

We are seeking commitment from every single person and organisation in this room for:

- No new level crossings to be built
- To close existing level crossings

Where this is not possible to:

- Make train activated solar panel warning lights mandatory
- Improve train lighting with rotating beacons and side lighting



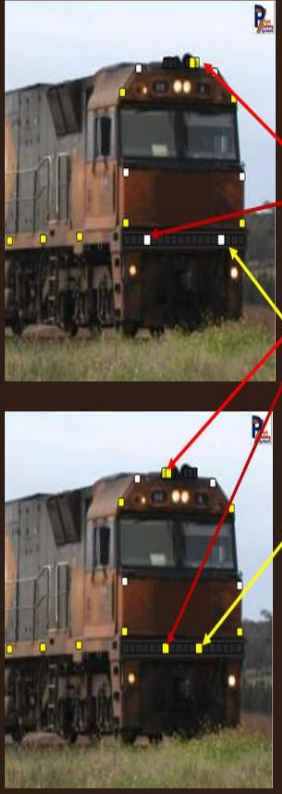
This makes no sense!

- There are 36 lights on a semi trailer.
- It is unacceptable that a vehicle up to 1.8km long has only ditch lighting and 2 small headlights at the front.

Yarramony Lights

- ACRI report describes how locomotive lighting can be improved. These requirements are:
 - More than one colour
 - Flashing lights facing forwards
 - Rotating beacons on the top of locomotives
 - Illumination at all times
 - Contrast with the train sky and other surroundings in all conditions
 - Outline lighting and unique signature

"Yarramony Lights"



- ✓ **Front & side outline**
- ✓ **Dual colour** ensures contrast in all conditions
- ✓ **Flash** side to side (lower) and rotating beacon (top) catches attention
- ✓ **Multiple lights** ensures more than one light at a time or redundancy in failure
- ✓ **Approximates movement** dual side to side flash
- ✓ **Contrast** with black backboard
- ✓ **Unique signature** unlike any other road or rail vehicle or equipment
- ✓ **Side lights and reflectors on wagons**

With kind assistance from and respect to the Broad, Jensen and Smith families © Brett Hughes – P7Safety

- “Over the past 20 years, railways told me that they couldn’t improve the lighting, because it wasn’t proven, it was too expensive, it wasn’t “failsafe” (even though nothing is), it was too large, and it was too heavy. However, over the recent years, almost all these limitations have been dramatically reduced with modern technology especially LED lights, cheaper electronics, advanced batteries and more efficient solar charging. If the limitations of the past were valid then, they are significantly less valid now. The threshold of what is “Reasonably Practicable” has shifted. So, railways must now shift their practice to the current level of what is “reasonably Practicable”.



point of view of making trains more visible from a distance, it is my view that some form of auxiliary lighting should be fitted high up on all locomotives.

I recommend that immediate action be taken to identify which form of external auxiliary lighting device could be fitted relatively high up on locomotives which would provide an effective warning to motor vehicle drivers without causing problems for locomotive drivers and that form of lighting be fitted as soon as practicable to all locomotives. Such lighting should be in addition to, and not as an alternative for, ditch lighting. It would clearly be preferable if some form of flashing light could be used, which could be switched on as locomotives approach railway crossings at the same time when the siren is sounded, as flashing lights are becoming the accepted indicator of a significant hazard on the roads. On the information provided to the Inquest, it appears likely that strobe lights would be most effective for this purpose.

Alastair Hope
STATE CORONER

12 October, 2001



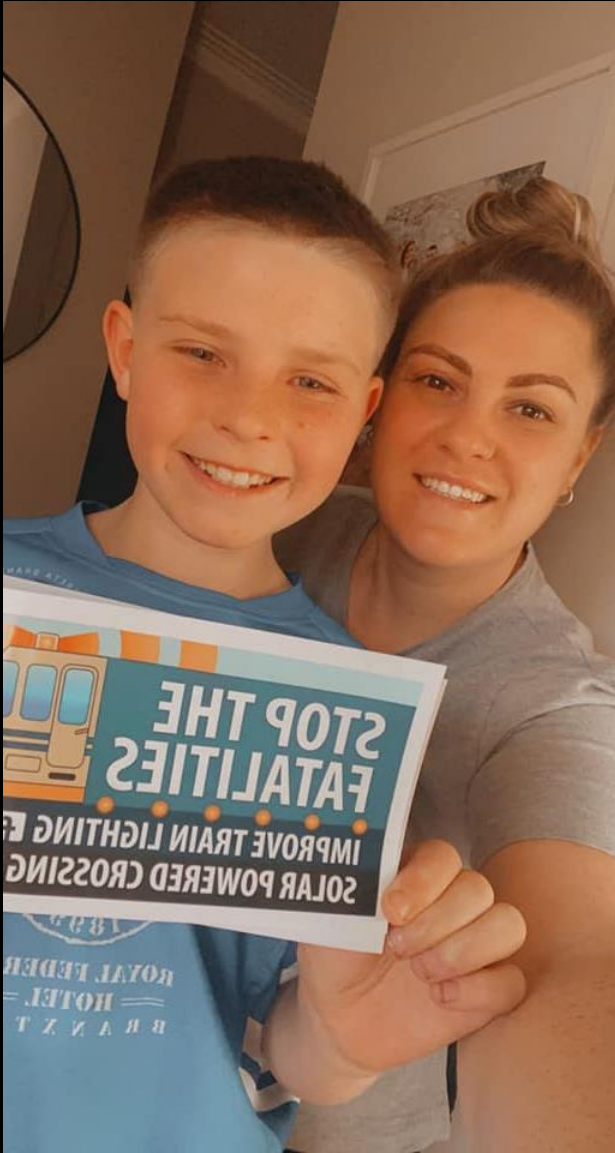
I appreciate that the driver disobeyed the suggestion that the driver had made a gross error in judgment in firstly disobeying the traffic lights and secondly not appreciating the speed of the oncoming train. I also wish to make it very clear, that I am not making that finding, it is only a scenario that regrettably must be given as much credence as the other scenarios presented. And I want to make it very clear that I do not place that scenario and higher than the possibility that the driver did not see the lights and or did not hear the bells for the reasons already stated.

It is perhaps a sad reality that we will never know what happened precisely. We can make informed guesses, but that is all they are. The real tragedy in this matter is not whether the driver made an error of judgment but that in this day and age when we all strive to reap the benefits of new technology, such as computers, advances in medicine, trains that travel at 160 kph and even faster, we still have a 19th century approach to level crossings on the basis that they traversed by horse and cart. I feel that we must have some balance and understand that we live in a vast State and an even larger country. We are have a proud history of our early settlers exploring and opening up the vast parts of the State. With that expansion rural communities were set up often in remote areas. Primarily it was the railroad that provided the links with the larger cities and the means by which transport of people and produce could be achieved. That is a historical fact and perhaps the existence of level crossings in this day and age is as much a legacy of our past but a legacy that needs to be placed in perspective and addressed sooner rather than later. Obviously some priority must be given and appropriate funding made available to address these problems. Certainly it could not be said to be acceptable that a major road traverses a railway line on which a train can travel at 160kph without at least some effective barrier that may eliminate serious accidents due to human error. Other than suicide, no person would drive a vehicle in front of a train unless it is a human error, that error can be more likely if the configuration of the road, the lights etc, plus weather and other conditions play a part.

Before I reach the point of making my formal findings I would like to comment briefly on the recent press release in regard to the 12 million dollar allocation of funds to build an overpass at Gerogery on the Bells Road. I support that announcement and hope for the families of the deceased and the general commuting public that while this proposal has a history going back to 1995 that on this occasion the tender process and implementation is given the utmost priority. I might also add that the announcement itself lends testimony that its a project of concern and priority to the government and the appropriate government departments, it also highlights the obvious anachronism that if it must be fixed then its not good enough as it presently exists, and that will be the subject of my recommendations.



WOULD YOU SEE ME?



HOW TO HELP

- Write letters to State and Federal Politicians
- Write to The Hon Catherine King to ensure rail safety receives \$180million promised from the recent budget
- Do your jobs to the best of your ability
- Display our stickers on your vehicles
 - Follow our Facebook pages: Eurabba heroes & Improve Train Lighting and Passive Level Crossing Safety





#OneTrackAtATime



“Human error is a symptom of a system that needs to be redesigned”

Professor Nancy Leveson

#OneTrackAtATime