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Road-rail level crossings are notoriously dangerous; however the cost of replacing all level crossings in Australia and New Zealand with under or over passes would be prohibitive. Distance, terrain and population density make it inevitable that the level crossing will be with us for the foreseeable future.

But that does not mean we should do nothing. Recent additions to research by the Australasian Centre for Rail Innovation (ACRI) into the causes of crashes at level crossings are pointing to ways that safety can be improved – especially in rural and regional settings, which are often used by heavy vehicles and where installation of over or under passes would be out of the question, due to relatively low usage of the crossings and the high cost of grade separation.

Often research findings are counter-intuitive by nature, and in these situations, the value of detailed research becomes clear.

An example of this can be demonstrated by research emerging from the ACRI Level Crossing Working Group, which identified that a drivers' ability to judge the speed of an approaching train is very poor. This might be expected when thinking in kilometers-per-hour, as this can be challenging to estimate, however a related outcome from the same trials has demonstrated that the drivers' estimate of train speed does not improve as the train approaches and gets closer to the crossing. This finding can be of interest when considering the underlying causes of incidents at rail level crossings as it would be easy to assume that speed estimates improve as distance decreases and the train closer to the driver.

Another counter-intuitive finding has emerged from ACRI's observation and analysis of the Moree crash of 2013. A brightly painted blue-and-yellow train should be conspicuous one might think. However, ACRI has observed that in relation to the locomotive involved in the Moree crash,

“The upper blue parts of the train may have merged with a blue sky, while the lower yellow parts may have been similar in colour to the terrain. Furthermore, the best way to camouflage an object is to break up its recognisable outline, which is effectively what the two colours achieved.”

The picture shows the point quite clearly. Who would have thought?

