TRAIN NOISE IN THE ADELAIDE HILLS

FACT SHEET

We know that living alongside a section of the national rail network can be noisy. That's why we've put together this overview of what causes noise, who is responsible, and what we're doing about it.

WHO IS RESPONSIBLE FOR NOISE FROM TRAINS IN SOUTH AUSTRALIA?

In South Australia, both the ARTC (as the track access provider) and each individual rail operator holds licences with the South Australian Environment Protection Authority (EPA).

As part of these separate licences, each has responsibilities when it comes to noise. As track access provider, ARTC is responsible for maintaining the track and associated infrastructure, while rail operators are responsible for the maintenance and operation of trains.

Each rail operator also has a general environmental duty to ensure all reasonable and practicable measures are taken into consideration to prevent excessive noise. ARTC has no oversight of the noise management activities of rail operators.

TRAIN LENGTH AND NUMBERS

Are heavier, longer trains operating through the Adelaide Hills?

The average length of trains on this section of track has remained reasonably steady for some time. The number and length of trains changes from month to month due to factors including seasonal demand, track construction or maintenance, consumer demand for goods and industry demand for raw materials.

Where longer trains are used, fewer trains are required to move the same amount of freight on the network, and conversely, when trains are shorter, more trains are required.

Are there more trains operating through the Adelaide Hills?

Not currently. There are fewer trains operating throughout the Adelaide Hills compared to previous years.

NOISE

Why are some trains noisier than others?

There are two main types of wheel noise that can be heard as trains travel around curves in the Adelaide Hills. The first noise is called flanging. Flanging occurs when the flange of the wheel rubs against the face of the rail head. The noise that can be heard is often intermittent, and can range across a broad frequency and vary in intensity. The second type of noise is wheel squeal. Wheel squeal occurs from wheels sticking and slipping laterally on the rail head causing vibration. This is clearly distinguishable from flanging, as it is usually higher pitched and more sustained. A combination of nearly 60 factors can affect wheel squeal.

Would a drop in train speeds reduce the noise?

Extensive research from rail operators has found no strong link between wheel squeal and train speed, and our own monitoring of trains and noise through the Adelaide Hills supports this.

Slowing trains could actually make the problem worse, because significant reduction in train speed is also accompanied by an increase in braking noise and locomotive noise.

ARTC

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Why can't you just straighten the curves?

Straightening the curves would essentially require the rebuilding of the entire rail corridor through the Adelaide Hills, due to the geography and limited availability of land in the existing rail corridor.

Why can't you apply a curfew for trains?

The Adelaide Hills forms a section of the National Interstate railway line – a key national freight corridor between Melbourne, Adelaide and Perth. Given the requirement to deliver freight to the distribution centre, between major capitals and to meet export timetables, freight must be able to be transported on a 24 hour basis in order to meet national (intrastate and interstate) and international freight demands. This is likely to be only a more pressing requirement as the national freight task grows. A curfew on trains would only shift the freight onto the road network which operates on a 24 hour a day, 7 day a week basis.

WHAT IS ARTC DOING ABOUT RAIL NOISE?

As the track owner, the work we are doing is focused on how we can address the role that the rail plays in wheel squeal and flanging, so we're using devices and lubricators that have been shown to reduce the friction between the rail and the wheel of the train (known as a bogie).

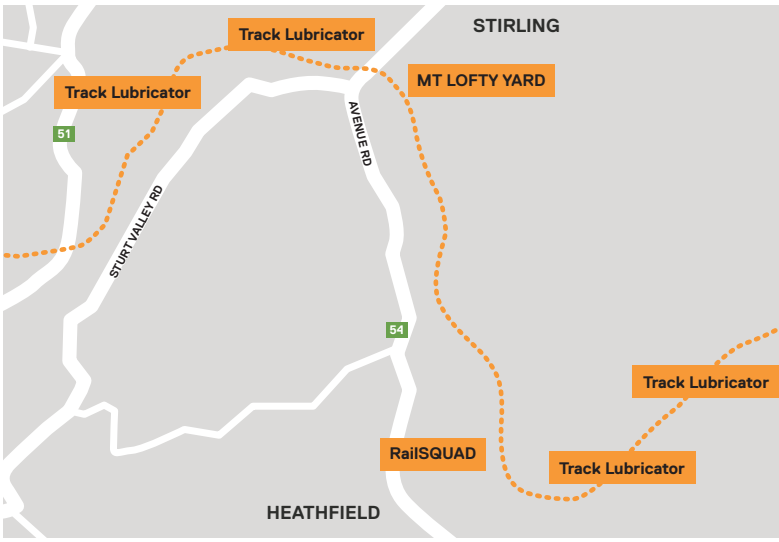
We've also installed a monitoring system at Heathfield that detects trains that are creating more noise than others, and this information is provided directly to train operators so that they can take action on a specific wagon or bogie that might be at fault. We also provide this information every quarter to the EPA.

All up, we've invested around $1 million in the Adelaide Hills as part of our work to understand the problem more and implement systems to reduce it.

What is the track lubricator system and is it working?

A TORFM (Top of Rail Friction Modifier) is a track mounted system that applies a friction modifier product to the rails to reduce friction. Passing trains then spread the friction modifier along the top of the rail, reducing the curving resistance and enabling rail vehicles to negotiate curves more easily. This research has cumulated in trials of a TORFM in Heathfield, and more recently, another TORFM situated at Mt Lofty. The trials of the TORFM produced large reductions in wheel flanging noise and a noticeable reduction in the number of wheel squeal events in this location (in the order of a 50 per cent reduction across the rolling average for total number of wheel squeal events).

While the results have been very positive, it does not represent a total removal of the 'wheel squeal' issue. The use of TORFM has, however, greatly lowered the total noise levels of what have historically been the worst sections of track. These trial installations are now fully operational and permanent, and will provide indefinite noise reduction in the Mt Lofty – Heathfield corridor.



Are you going to roll out devices to address wheel squeal anywhere else in the Adelaide Hills?

Any future TORFM locations would be assessed against various criteria, such as confirmed noise causes and levels, and operating conditions (for example: the ability for trains to safely climb grades). In the interim, there are ongoing improvements being made to normal grease lubrication throughout the entire Adelaide Hills, which has already demonstrated a reduction in overall noise. In parallel, Australian-wide noise research on wagon design is showing promising signs of reducing wheel squeal on all trains, at all locations, regardless of TORFM use. Train operators are investigating methods of feasible wagon-based solutions to wheel squeal. Modifications to wagons require time and budget, so while improvement will not occur rapidly, this has the potential to be the largest single improvement action in wheel squeal noise reduction for all locations in SA.

FEEDBACK

You can provide feedback on any aspect of our operations by phoning 1300 550 402, or by sending an email to: enviroline@artc.com.au

How does your feedback line work?

Our feedback line is a telephone message bank and email inbox that we monitor regularly so we can investigate and respond to your questions and concerns. Please provide as much information as possible, as this will help us investigate particular issues or incidents thoroughly, particularly if it relates to the operation of a third party such as a train operator.