

Case Study: Network rail level crossing safety



Improving Safety with Network Rail

The tragic accidents and casualties related to pedestrians and vehicles ignoring train level crossing warnings have been well documented in the UK press. Responding to this Network Rail identified that a significant percentage of all safety incidents at level crossings occur when a second train is approaching. In the past, there was no particular method to advise or alert anyone nearby that another train was coming and why the barriers were not opening immediately after the first train had passed.

E2S Warning Signals, working with engineers at Network Rail, designed and developed a solution using an alarm horn sounder from the Appello range for use on automatic level crossing sites.

Customised Voice Recording Technology from E2S

E2S were pioneers in the use of digitally stored voice recording technology. The Appello range offers unparalleled reproduction clarity and output, combining user recordable content with a choice of alarm tones and automatic synchronisation on multiple unit installations.

Existing level crossing audible signalling devices only provided an alarm tone warning as the first train approached the

crossing. The system provided by E2S added a voice message to the alarm tone to alert anyone present at the crossing of the imminent arrival of a train.

Alarm tone followed by “Warning, more than one train may be approaching. Warning, more than one train may be approaching”

[Listen to the warning here – or visit case study when online.](#)

Crucially, the multi stage capability of the Appello unit allowed a second voice message and alarm tone to be activated should it be necessary to wait for a second train to pass through before it becomes safe for members of the public to use the crossing.

Alarm tone followed by “Warning, another train is approaching. Warning, another train is approaching.”

Different alarm tones and message content was trialled before arriving at the most concise and effective wording. E2S were also happy to create the voice recordings for Network Rail.

A challenging aspect of the project related to the potential impact the new audible warnings would have on residents of property near to level crossings. The distance at which the Appello unit could be heard increased dramatically at night so custom electronics were designed by

E2S to enable the Appello unit to have a remotely selectable day and night time function that reduced the sound level output automatically. During installation the Network Rail engineers are able to set the day and night time volume levels that are appropriate for that site.

To provide the control interface, E2S also designed and manufacture custom voltage regulator modules that are mounted in the track side cabinet.

Network Rail believes that the notification of additional trains approaching the crossing will significantly improve overall crossing safety.

The Network Rail acceptance certificate number is PA05/04380.

For videos for safe use of level crossings, [please visit the Network Rail Website – Level Crossings section.](#)

For additional information about user recordable sounders, please click here:

- [E2S user recordable sounders - Appello X products](#)