Intro;

Who am I etc

Brief intro on field Team in Scotland – the team is responsible for the day-to-day inspection and investigation work over the rail network in Scotland including offering guidance and support to Network Rail and other duty holders in the rail industry.

I would like to talk about level crossings and give you a brief overview of a few Level crossing incidents that we have recently been investigated in Scotland.

Level Crossings currently present the largest source of train accident risk. – They present conditions for conflict between road and rail traffic and any collision has the potential to cause a derailment resulting in a major train accident.

8100 Level crossings in the UK

700+ in Scotland

- Public Crossings
  - AHB
  - Full Barrier
  - Open crossings
- Private Crossings
  - Majority are user worked

Figures are for Network Rail – (1000 Heritage etc)

363 Level crossing incidents reported in Scotland last year

- Misuse by the user – 133 (37%)
- Incidents of T&V - 89 (26%)
- Failure of the equipment - 74 (21%)
- Near misses - 45 (13%)
- RTA - 8 (2%)
- Signalman Error - 1 (0.2%)

Over the last year there have been 363 incidents reported to HMRI involving level crossings in Scotland, the majority of these are minor irregularities or incidents and many more similar incidents will be taking place that go unreported.

Of these incidents 16 (< 5%) were reportable under RIDDOR

This figures are made up of information supplied by various sources however they do highlight general areas of concern.

•Misuse by the user 37% - for example going through red lights, leaving gates open.

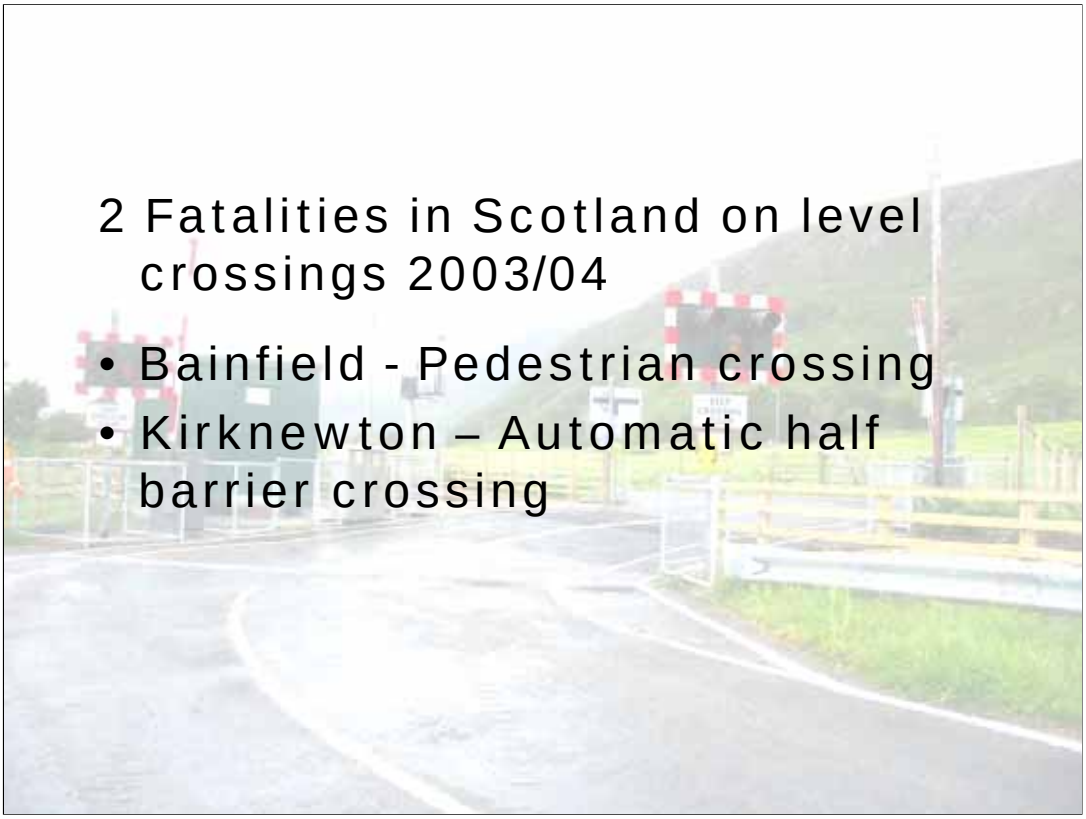
•Incidents of T&V at Level crossings 26%

•Failure of the level crossing equipment 21% - (all of these are failure to safety)

•Near misses 13% (eg. majority are judgements made by driver eg. passing infront of slow moving trains at open xings or pedestrians crossing infront of trains.)

•RTA 2%

•Signalman Error 0.2%

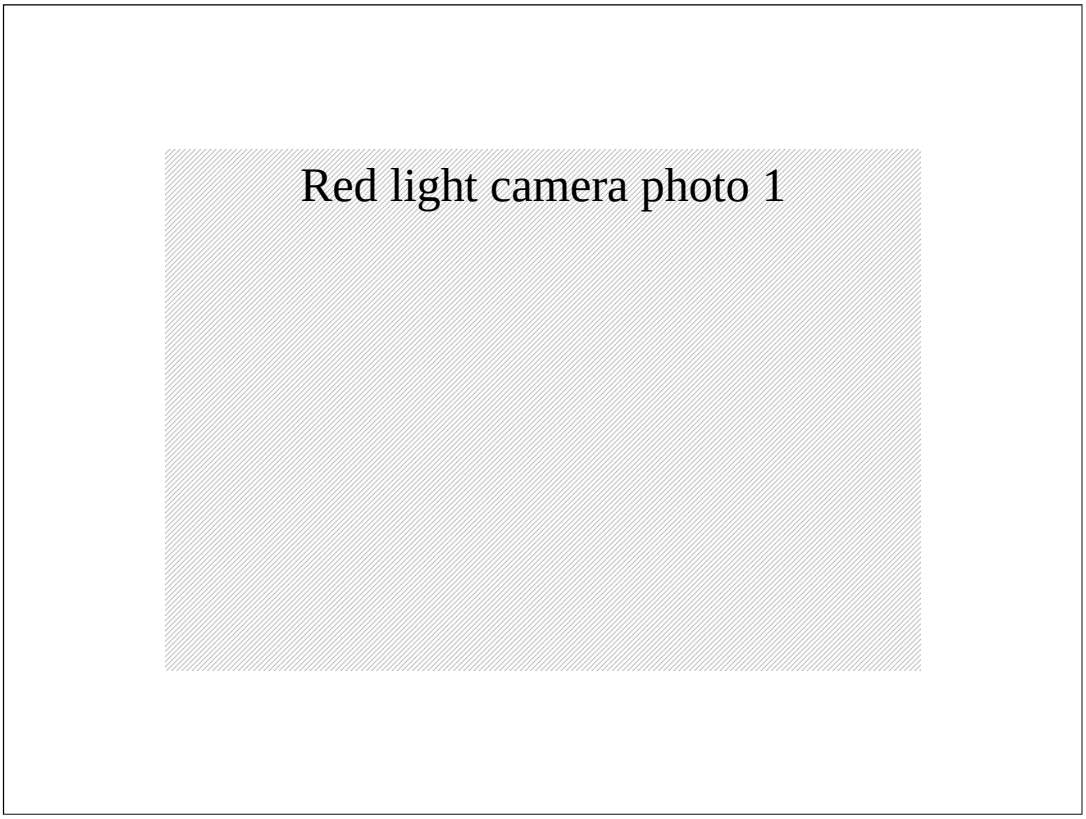


The number of fatalities at level crossings in the UK rose last year; sadly there were 17 deaths resulting from level crossing collisions – over half of these were pedestrians.

Figures in Scotland compare favourably with two fatalities;

•Bainfield – May 2003 pedestrian using a footpath

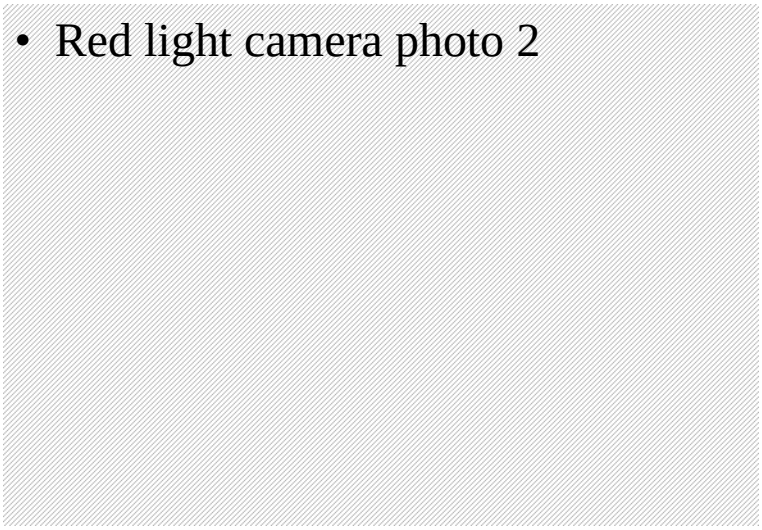
•Kirknewton – Feb 2004 car driver using a public AHB crossing



Slide 4 5,6,7

A recent collision on an automatic open crossing in the North of Scotland resulted in minor injuries to the car driver but it could have been much worse. The incident was captured by the red light cameras. The driver claimed not to have seen the red flashing lights.

- Red light camera photo 2



Problems of ‘open crossings’ in the North of Scotland

Locations where there are only a few trains a day – car drivers expect the crossing to be clear.

The majority of incidents of this type occur to local people familiar with the crossing.


KEEP
CROSSING
CLEAR

Work is continuing on raising the awareness of users through better signage and roadmarkings and the involvement of human factors engineering.

The example of enhanced signage and count-down markers at a level crossing in Aviemore is a good example of what can be done, but each crossing has different problems and what is good for one may not necessarily be the best solution for another.

Other risks include traffic backing up over the crossing and drivers ignoring yellow box markings – these risks are assessed by Network Rail on a regular basis and any remedial action taken as necessary.

Level crossings require the involvement of the crossing owner – usually Network Rail – the Highway Authority, BT Police, the Civil Police and HMRI, all to work together to maintain and improve the safe operation and use of crossings.

Although the hardware involved with automatic level crossings is very reliable and designed to fail to safety, the simpler forms of protection still rely on human involvement

Many user worked crossings often rely on the user telephoning the signalman to obtain permission to cross – these types of crossing are nearly always crossings for access to private roads on farms or estates.

An incident last year at a user worked level crossing serving a farm, resulted in a near miss. A farmer used the telephone as required to ask for permission to cross the line with his car. The signalman who was new to the signal box gave him permission to cross and seconds later a train passed. The investigation identified failings in the training and competence management systems of the signaller and as a result of this improved training procedures were put in place backed up by an enhanced competence management system.

Signaller Competence

The issue of Signaller competence management is something that we are paying special attention to this year.

We carry out planned inspections based on compliance with the duty holders safety case; one of the topics this year is Signaller competence which will address the training, monitoring and assessment processes used to ensure that signallers are competent and carry out their jobs properly.

An accident early this year when an elderly motorist drove onto a level crossing, on the wrong side of the road and into the side of a train, highlighted the hazardous effects that low sun can have on driving.

Investigation into the incident showed that the crossing was functioning correctly and complied with current standards.

Many crossing locations in Scotland can be affected by low sun, however there are limited measures that can be taken to improve the visibility of crossing signs in such conditions. Backboards to the warning lamps and long hoods can help a little, but ultimately it is up to the road user to ensure that they take extra care in such conditions.

Safety at crossings can sometimes be improved by upgrading the crossing – for example from an open crossing to one fitted with barriers.

£500,000

But the upgrade of crossings can be a very expensive undertaking because the equipment has to be linked into the train signalling systems.

It costs somewhere in the order of half a million £ to upgrade a user worked crossing to one like this.

Network Rail have to prioritise upgrades making best use of the funding they have available.

HMRI work closely with Network Rail in the design and construction of new equipment and upgrading of crossings to ensure that they comply with published safety principals and guidance.

Maintenence

As mentioned previously the majority of LC Incidents result from human error, and currently HMRI is undertaking research work to understand better why people behave at level crossings as they do.

We have mentioned Signaller competence and crossing type, the other important issue is maintenance to ensure crossings are kept in good working order.

It may be a little unfair showing these slides as the vast majority of LC equipment is maintained well. (and the slides are not from Scotland)

Level crossing surfaces are one area which requires constant inspection and maintenance as they can cause hazards especially to pedestrians and cyclists, and if they become loose can cause a derailment hazard to trains.

Of course there is one invention that can transform the safety of level crossings, its been around for centuries but the trouble is it very rarely passes the reasonable practicable test on grounds of cost – SLIDE 15 – the bridge.

Our long term strategy is broadly not to permit new crossings on the infrastructure and to ensure improved safety at existing crossings.

Although fatalities and incidents at level crossings are always traumatic and often avoidable, the number of incidents has to be set in context;

It is estimated that over crossings in the UK each year there are

680 million vehicle traverses;

660 million pedestrian traverses;

And 109 million train traverses

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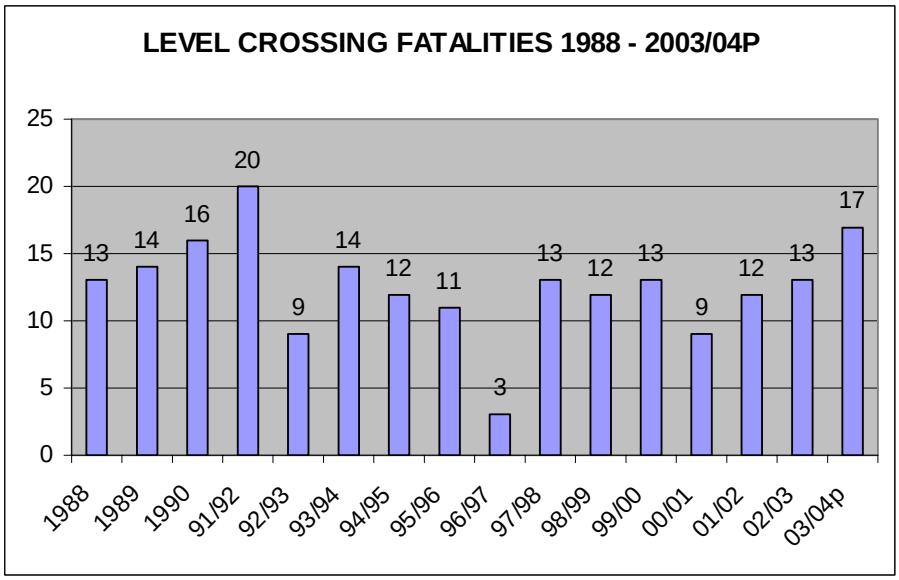

Last years provisional figures (awaiting coroners reports) show the highest figure for over 10 years

For info if required