

## Friends of Long Rock Mexico Crossing - Closing statement

Long Rock is not an affluent village but it has easy access, via the Mexico Crossing, to a magnificent piece of coast which is a source of joy, recreation and health. Closure has devastated the village, and has led to the depth of opposition seen at this inquiry.

In this closing statement :

- we summarise the numerical and narrative data on risk, which is low.
- we show that the risk to users is acceptable in the context of the Health and Safety Executive's tolerability of risk framework.
- we show that closure creates new risks, and the alternative routes impose totally unreasonable costs on the community, damage health, and subject older and disabled people to an appalling loss of recreation and joy.
- we comment on NR's handling of this issue.
- we set out valuable, feasible options for future further reduction in the low risk on the Mexico Crossing.

### Safety

Nationally there are 2,444 extant footpath crossings that have about 5 non-suicide deaths per year. Railway suicides occur at a very much higher rate both on and off crossings.

NR and the RSSB have developed a respected risk model, called ALCRM, that predicts risk at crossings. It uses data on the physical features and the level of pedestrian and train activity at every crossing in the UK, and is tuned to generate a risk estimate that fits the actual number of train strikes that have been recorded nationally. This process of tuning or calibrating the model against real data means that the effect of all the varied, and sometimes almost incredible events that do happen are represented in the output of the model. The occurrence of these events - near misses, groups of people standing on the track etc. - does not indicate that the model is under-representing risk.

The ALCRM estimate for individual risk is one Fatality Weighted Injury per 11.7 million traverses. This individual risk for a regular user, one who makes 500 traverses per year, can be stated in different formats:

- 0.00004 FWI per year
- 1 in 23,500 years
- 1 in 23,500 per year.

NR's online data shows that about 25 million traverses are made per year giving an average of around 5million traverses per death. So, at the Mexico Crossing the individual risk (1 in 11.7million traverses) is below half the average risk for all footpath crossings.

NR estimates that about 145,000 traverses per year are made at the Mexico Crossing. This makes it locally, regionally and nationally, a very heavily used crossing, generating a very high collective benefit. This high level of use of the Mexico Crossing generates a collective risk of 1 FWI every 81 years (= 0.012FWI/year). It occurs high up on lists of collective risk because it is so heavily used.

NR did not give the ALCRM risk estimate, which is favourable, to CC, but told Cornwall Council and others that the individual risk must be high because it was in category C on a scale that runs from A to M. This is disingenuous. Category C covers a wider range of risk than categories D,E,F,G,H,I,J,K,L, and M combined, and includes more than half of all footpath crossings. It seems that many Network Rail staff are misled by this 'C in A to M shows high risk' proposition, as well as people in outside agencies who have no idea how the scale works.

There has been persistent misuse, unintentional or otherwise, by Network Rail of collective risk instead of individual risk, but Mr Cottrell did acknowledge the correct roles for those measures, and the ORR clearly informed us that:

- individual risk should be used to assess safety of users.
- collective risk should be used to focus attention. This is because where collective risk is high greater expenditure can be justified because more users benefit.

NR tries to inflate its own estimate of the risk by claiming that the crossing is used by 'vulnerable users'. Such risk inflation is only justifiable if identifiable groups of users meet all of these conditions:

- a) They are at higher risk of fatal train strike than the average user.
- b) They are over-represented here compared with the average across all crossings.
- c) They are not separately identified as a risk factor in the ALCRM process.

If all those are true then the ALCRM risk estimate here would be to some degree too low. If the identified group has a lower risk and are over-represented then the risk estimate would be too high.

NR has proposed four of these vulnerable user groups. In the case of one, disabled users, the model does allow their supposed higher risk to be included by allowing Network Rail staff to inflate the risk by applying a longer traverse time in the model. This has been done, and the model then applies the longer traverse time to all users and generates an inflated risk estimate. However this inflation is probably wrong because disabled users did not emerge from the T984 study as being at actually increased risk. The explanation is most likely that disabled users know they are disabled and adjust their behaviour accordingly.

NR proposed as a basis for inflating the local risk estimate three other vulnerable groups of users:

1. Visitors. The evidence is that they are **not** at higher risk (T984), and at the time Network Rail proposed this vulnerable group its own advice to staff was also that they were low risk (LXRMTK). So (a) was not true.
2. Children. Again, evidence from the RSSB was that they are low risk, and T984 confirms this. So (a) was not true.
3. The elderly. While the Friends rejected the other supposed vulnerable groups on the basis of the evidence available, we did, and do, accept that this group is vulnerable. However NR's only evidence of the relative level of use (b) is based solely on a single count by the RAIB during a small part of one day, and is not compared with any data on the national prevalence of older users. However, an excess of elderly users also has the effect of increasing the health benefits of the open crossing proposed by the Friends, while their increased risk on the crossing will probably have been largely covered by the upscaling for disabled users.

NR and the RSSB assert, and we agree, that most incidents and strikes are due to user factors such as misjudgement, risk taking, not looking etc. and are not due to crossing factors. Document T984, the first in depth study of risk factors on footpaths, entirely supports this, and this explains why the model, which allocates risk mainly on the number of pedestrians and number of trains, works well.

Before the risk model was developed risk assessment was done by 'narrative' and was highly inconsistent and unreliable, so the model was developed and found to be far better in all the in-depth reviews it has had. The model has become a problem for both the ORR and Network Rail as it gives results that don't necessarily support their joint drive to get rid of as many level-crossings as possible. So they have now re-launched narrative assessment as a shiny new adjunct in risk evaluation.

In its narrative assessment Network Rail includes the history of two fatalities in 40 years, as if it implied a risk of 1 in 20 years. However there have only been the same 2 fatalities in 160 years. Network Rail and the ORR justify 2 in 40 years by claiming that trains became quieter when diesel was introduced and that this will have increased risk so the real baseline should be the latter period, although this was 60 years not 40 years. However 160 years includes an earlier period when the crossing was twin track, and death rates were

sometimes much higher, as shown in the Railway Inspectorate Report for 1888-1892 which reported 106 deaths on footpaths, and it ignores the fact that neither death here was due to any lack of awareness of the approaching train. In the first the person who died was desperately aware of the threat of the train to her dog, while the second death was of a person who was never seen to be crossing unawares, but was standing beside the track, looking in the direction of the train and who moved in front of it in the last 1 or 2 seconds of its approach.

NR's narrative assessment cites 6 near-misses and 4 other incidents in their application to Network Rail in the period 2007-2012 inclusive. A further 4 near-misses have been found in BRIMS between 1988 and 2007. To understand if this indicates locally high risk it is essential to 'normalise' the near-miss rate as they must be more likely where there are more users. Network Rail have not normalised the near-miss rate in this way and have given no evidence that it is high. The Friends have calculated it and found that it is low here – there are near-misses, but less than you would expect for such heavily used crossing.

NR's narrative also proposes that sea noise, by obscuring train horns, increases the risk substantially, although it does not impair the view of trains. However, the RSSB study of the value of horns suggested that a complete no-horn policy would increase the strike rate by something as small as 10%, so it is unlikely that sea noise, that is only loud occasionally, can have a much bigger effect.

So NR's own narrative assessments all aim to say the risk is higher than the predicted risk. Network Rail did not consider the narrative factors advanced by the Friends. These are:

The value of the visibility of the vehicle crossing barriers. We submit this reduces the already low risk for a large fraction of users by giving them early warning, and this cannot be dismissed simply because it does not benefit every user, or is not always available, as in the circumstance proposed by Cornwall Council where a visually impaired user at night in driving drizzle has difficulty in seeing the barriers. The barriers are, as a visual warning, 'fail safe' – if you can't see it you suspect danger because you can't see them when they are down.

The use of the crossing by family groups may also give a protective effect. Under 10 year olds are nearly always crossing in family groups and they show by far the lowest risk of any age group. (T984) It is unlikely that risk to family groups can be confined to the older members, so this is good evidence that family groups are unusually safe. This is a testimony to the quality of parental care. There will be near-misses and camera clips of family groups doing risky things, but to use them to construct a narrative of higher risk is illogical and indicates the weakness of the whole narrative approach that Network Rail is now using to try to get over the low risk of the Mexico Crossing.

The other narrative factors set out by the Friends are smaller and we will skip over them here.

NR's barrister introduces a new narrative: that Network Rail has the experts and they have opined that this crossing is much more dangerous than the ALCRM risk. We addressed many points of error in our cross-examination and we note here that NR's witnesses departed from the ideal of an expert making an unbiased appraisal in various ways:

Dr Gallop states 3.9.31 that 'there is no incremental benefit to any of us' that can outweigh safety. He is referring to benefits like convenience and cost. This is an outlandish zero-risk proposition, that is not supported by the Health and Safety Executive, and which would have absurd consequences if widely applied – severely slowing road traffic, removing all staircases from houses etc. etc. Furthermore, in this case the user is the person who both takes the risk and receives the benefit of easy access to a place of beauty. Closure removes our freedom to decide for ourselves if we wish to use this crossing or walk to the vehicle crossing.

Mr Mayo, on risk assessment, gives FWI figures for the Mexico Crossing that are all collective risk estimates, when the relevant figure for this inquiry is the individual risk figure. He claims that the history of near-misses makes the assertion by NR's Western Area manager and the Friends that 'the crossing is safe if used

correctly' untenable. The near miss rate is apparently around or below what would be expected for such a heavily used crossing. So the expert view is again indefensible and again shows the failure of Network Rail staff to use collective and individual risk correctly.

Mr. Cottrell, on questioning, acknowledges the role of individual risk. He sets out a range of policy issues but never mentions that NR's national policy on crossing closures has 15 points of which not one requires staff to have due regard to the off-rail risk or the costs to users of closures.

Walking dogs without a lead is a risk that many users of crossings nationally don't recognise. T984 shows that they account for 17% of crossing risk. Unlike Network Rail the Friends correctly identified this high risk factor. It cannot be used to inflate the risk here because there is no evidence that dogs are more numerous here than nationally, but Network Rail should have identified dog walkers as a vulnerable group.

CC produced two other narrative risks. The first was Mr Marsh's subjective speed surprise scale on which the crossing scored high and he inferred that child deaths would be high although he already had evidence from the RSSB that child deaths are low ( that evidence is for children, not up-to-20s). His novel approach to risk assessment was put forward despite his expert witness clearly stating that such subjective assessments are unreliable. The second Cornwall Council narrative was the claim that driving drizzle at night negates the possible benefit being able to see the vehicle crossing barriers. It does not.

So, overall, NR's claims that the risk estimate from the ALCRM model is too low has far less evidential support than the Friend's claims that the risk estimate from the ALCRM model is too high.

## **The risk in context.**

The risk estimate for a user who makes 500 traverses per year is dying once in 23,500 years. That is well inside the lower half of the Health and Safety Executive's Tolerable Zone in which *users accept the risk in return for the benefit*. That's exactly what we do, and more risk averse users are free to walk the extra distance to the vehicle crossing if they prefer.

The upper limit of the Health and Safety Executive's Tolerable zone is a risk of death of 1 in 10,000 years, and Network Rail argued, in their response to the Transport Committee, that it should be less risk averse where the risk is optional.

Average daily accident risk (from all cause of accidents) is far above the Health and Safety Executive's Tolerability limit, while all risks (illness included) are more than 100 times higher.

CC allows staff to motorcycle from Truro to view the crossing, taking a risk that is about 28 times higher than the risk they are saying we should not be allowed to take - going across to the beach.

We heard the evidence of Beryl Gilbert: formerly making maybe 100 traverses a year, with a risk of around 1 in 50,000 years to be set against an age related risk of death from any cause that must be much higher than 1 in 10 years. To reduce her risk by far less than 1% Cornwall Council have deprived her and her husband of a great pleasure, and of healthy exercise, and she has not seen the sea for 2 years, having been brought up and lived here and enjoyed it every year of her life until these closure agencies moved in and deprived her of her right of way, claiming it is for her benefit as a vulnerable user.

People in Long Rock are outraged and disgusted at what has been done, and wrapped up in rhetoric about 'protecting vulnerable elderly people and visitors', and other vulnerable people who turn out, on examination, not to be vulnerable at all. The closure agencies are using the elderly as vulnerable users in a self-serving way. It helps each of the closure agencies in a different way:

- It helps Network Rail get rid of crossings, which are a costly nuisance for it.
- It helps ORR polish its halo as the regulator a very safe railway. Maybe they'll get UK railways to the global safety winner's podium, but they will not have counted the cost they have imposed on the Beryl

Gilberts, on the grandparents of Tracey Lambert's children, and all the others who have been radically disadvantaged, as they don't assess off-rail costs.

- It helps Cornwall Council to pass the decision to others.

The reality is that safety diminishes on closure. The road risks negate part of the supposed benefit and the health impacts far outweigh it. Even modest exercise makes a huge contribution to health, so losing that exercise costs years. For the elderly that is particularly true and exceeds the risk even when it is factored up for their age. We have estimated this, using respected tools, and find that the years lost to reduced health in the community exceed the years lost to train strikes by a large factor that is much greater than any plausible level of error in our surveys that showed the loss of recreational exercise.

## The vehicle crossing as an alternative.

We accept that the vehicle crossing is likely to give a lower rail-strike risk to most users, but, unlike NR, we are concerned by the shifting of risk from the elderly to the young, mainly young men who jump the barriers when they are down. We doubt that this risk has yet been adequately quantified. Mr Marsh's view was that any young male who does such a thing is doing something that should not be condoned and is criminal, and that such a person is unlikely to use the Mexico Crossing safely. We find this facile and frankly offensive. All of us did stupid things in our youth, and some have a nagging regret they didn't do more!

The time cost of using the crossing has been mis-represented by Network Rail who constantly refer to 200m and nowhere mention that for most users from the village the extra distance is 293m or 346m. Network Rail says (SoC 11.3) that we assume 'without apparent logic' that users proceed to the exact southern end of the Mexico Crossing. If Network Rail had carried out the stakeholder consultation it claims it would have discovered that we do just that and the logic is:

- For beach goers the beach below the car park can be covered at high tide, so the sand is often wet, it has dogs and dog mess, no wall to lean against, far less protection from north winds, it is overlooked by a car park, and the beach shelves too slowly for most swimmers.
- To the west it gets more pebbly and to the east you have to walk to the Mexico Crossing to get down to the beach.
- For walkers the route east leads to Jordan's café, past the drama of the kite-surfing area, to a children's playground and the charms of Marazion.

So we **do** mostly suffer the added time cost that Cornwall Council estimated as 7-10 minutes per trip. Frequent users could easily be accumulating an individual total additional time cost of **over 200 hours per year**. None of the closure agencies have challenged this, nor our estimate that closure would cost the recreational time of 44 years of life to save one year of life lost to train strikes. These assessments of massive costs to users become even more dramatic when you recognise that there is finite risk on the roads and the ALCRM estimate is probably too high.

Those figures assume that we carried on as before, just using the vehicle crossing instead of the Mexico. It's obvious from the time costs alone that that could not be true, we do not have those extra hours to spend trekking to the vehicle crossing, and we do not know of any former frequent user who has not greatly reduced their trips to the beach or coast. The joy, freedom and health benefit created by easy access have been lost.

NR has tried to argue here that 'health' is not 'safety' so it is not covered by the Act. That is a position, which would imply, for example, that widespread radioactive contamination was not a safety issue.

The alternative road routes are presently in a dangerous state, especially to the east over the Station House road bridge, and CC's expert witness has nowhere said that he is confident that they are safer than the Mexico Crossing, or that he is able to make a direct comparison. The experience of users, and more quantitative studies, suggest that even after improvement of the road routes they will still carry at least a significant fraction of the Mexico Risk making the balance of costs and benefits less favourable than Network Rail has claimed.

## The context of this extinguishment order.

The right of way here preceded the arrival of the railway and the risks were imposed on our forebears. If this were a new line Network Rail would have to provide a grade separated crossing. Instead of doing that here they are trying to cancel our rights by advancing a highly exaggerated and biased assessment of the risk and the benefit of closure. 11 examples of such bad practice are:

1. 'Crossing in C on a scale of A to M are high risk'
2. 'Visitors, children and the disabled are at higher risk on crossings'.
3. 'The history of near-misses tells you that there is a serious problem at the Mexico Crossing'.
4. 'Sea noise is a major issue'.
5. '2 deaths in 40 years tells you the risk is high'.
6. 'The alternative is 200m away'.
7. 'The inconvenience is easily outweighed by the safety gains'.
8. 'The controlled crossing removes all the risk'.
9. Collective risk has been presented as the relevant measure for assessing safety.
10. Only narrative items that would inflate risk have been considered.
11. The risk estimate has been biased up by unsubstantiated claims that there are more disabled users than nationally.

Such a long list of dodgy 'risk-inflators', with no single item that lead to any deflation of the risk clearly indicates a grave level of systematic institutional distortion favouring closure.

Network Rail, supported by the ORR, is pursuing an aggressive program of closing level crossings. 700 have been closed in a few years. We shudder to think how the smaller numbers of users of many other crossings can defend their rights against such relentless bias running through such technical complexity and sitting behind such legal firepower. We suspect that these rights of way are just shunted off the network into the trash can of history.

## Mitigation.

We propose these five measures that can be applied here without new national standards. Two should be applied nationally:

- Replace the faded, low, 'WHISTLE' signs on the track.
- Add a warning sign to dog-walkers that dogs must be on a lead.
- Widen the crossing deck to further reduce risk during the busy periods.
- Confine the yellow area of the deck to the danger area to focus the attention of unfamiliar users.
- Consider a sign stating: A safer crossing is available at the west end of the village.

The following three measures do require new national standards, but offer the prospect of further reducing risk at all level crossings :

- Develop a method of marking the 'decision point' on the crossing deck with arrows pointing right and left and the word '< DANGER >' between them.
- Develop a replacement for the Stop, Look, Listen signs with a more modern, lower, sign.
- Review, nationally, the evidence on the possible value of returning to the dual tone horn.

We consider the crossing should be re-opened as it was, and as many as possible of the mitigations listed above should be introduced, and at some time in the future we hope that Network Rail will initiate real and constructive discussions on installing a warning system with all relevant equipment manufacturers.

Finally: We are being told that we may, like the mythical Sirens, be leading innocent visitors astray, that we are at high risk, and that closure is actually for our benefit. We do not believe any of these. We accept what is

a reasonable and low risk, nearer to zero than to the Health and Safety Executive's intolerable level, and we hope the crossing will be re-opened without delay, taking us off dangerous roads and back on to our right-of-way, which was the reason many of us moved here, and is a great source of freedom and joy for all of us.