



ORR effluent position paper.

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Introduction

The discharge of effluent from passenger train toilets onto railway tracks has been an ongoing issue for many years. The scale of the problem has significantly reduced in recent years as more modern train fleets have been introduced which are fitted with retention tanks that are emptied in train depots. Nonetheless there are still a small number of train fleets, which are continuing to be used beyond their expected operational life, where the fitting of retention tanks would be both technically difficult and expensive. It is an issue that continues to be raised both at public and political level, as is shown by the recent Early Day Motion in the Scottish Parliament.

Current policy

1. ORR's current policy line is that the discharge of effluent onto railway tracks is highly unpleasant but low risk. It is not risk-ranked particularly highly on our infrastructure worker priorities, nor is it on ORR's strategic risk priority scorecard. This has been influenced by RSSB research in 2008 (see below). ORR did carry out a review in 2008 and put a paper to the ORR Board. It was seen at the time as a diminishing issue but over-estimated for some parts of the network when replacement stock with retention tanks would be brought into service.
2. The issue has recently been raised again by Labour MPs in the Scottish Parliament because of an on-going campaign by the RMT 'No sewage on tracks in Scotland'. The Scottish Government agreed with the RMT on 29 June 2015 that the timescales for the fitting of retention tanks will be brought forward. 40% of ScotRail's fleet will have tanks fitted by April 2016 and the remainder by December 2017.
3. Our policy position **is to ensure the industry seeks opportunities proactively, such as rolling stock maintenance overhauls and refurbishments, or indeed during operator's franchise renewals, to seek the retro-fitment of toilet discharge retention tanks to older rolling stock**; most post-1990s rolling stock already have them fitted. However, we think it would not be appropriate to impose a requirement to retro-fit toilet retention tanks to older stock because the costs associated would be grossly disproportionate (around £10-20K per toilet) to the risks involved. There would also need to be additional ground facilities required and it also impacts upon servicing time / logistics as these units will then have to be 'tanked' adding further complications. Whilst such rolling stock is phased out, we proactively seek to ensure that the remaining residual risks to those who work on or near the track, or in depots to maintain rolling stock, are managed effectively. While it can be unpleasant the risk to passengers is extremely low/negligible
4. ORR's policy position is aligned with employers' duties under the Control of Substances Hazardous to Health, 2002 (COSHH). The current line to take is at Annex A. ORR continues to press railway companies for improvements wherever it is appropriate to do so, and train / station operators are expected to have procedures in place to ensure prompt removal and proper disposal of any accumulations of toilet waste.
5. ORR's Occupational Health Programme Board has re-considered the position during 2015 and is proposing a number of enabling enquires, as are set out in Chapter 4.

Where the rail industry is now and our expectations.

6. The Control of Substances Hazardous to Health Regulations 2002 (COSHH) requires employers to control the risk to health, so far as is reasonably practicable. The move to a fleet made up only of trains fitted with controlled emission toilets will see the risk eliminated. Until that time ORR expects Network Rail and its contractors to identify and assess the risks and implement controls to control exposure through established risk assessment and work planning processes. In addition, employees should use suitable personal protective equipment and follow good hygiene practices while on track.
7. Routine train stopping locations, such as stations, often lead to higher levels of toilet discharge and associated increase in risks. These should be controlled by the provision of local signage to warn workers, use of personal protective equipment, additional care around the work environment, such as frequent hand-washing and the careful separation between the worksite and areas for smoking, drinking and eating to avoid the risk of unintended contamination.
8. We expect station operators to have procedures in place to ensure the prompt removal of any accumulations of toilet discharge on railway lines at stations. Of course there are other potential track-based infection, such as leptospirosis which is caused by contact with animal urine, that can pose serious health risks to those on our around railway tracks which is why we expect duty holder to ensure employees follow basic health hygiene controls.
9. Some ScotRail rolling stock, whilst not fitted with retention tanks, is able to control where effluent is discharged using GPS technology. The software can be programmed to prevent discharges within station areas and areas where railway workers are more likely to be carrying out “hands on” activities such as switches and crossings work, but will allow discharges where worker activity is often limited to walking (i.e. plain line). It is a control measure which, whilst not ideal, does help to reduce risk and might be more widely used where reasonably practical.
10. In recent years Network Rail has offered to fund the fitment of toilet retention tanks to rolling stock; Part E of the Network Code enables Network Rail to claim environmental damage costs from operators who knowingly allow toilet effluent to discharge on to the track. However, recovery of such monies from train operators proved difficult because operators claim historical contamination is not their responsibility. Deep cleaning of station toilet discharge hot-spots is available from Network Rail’s Safety and Environment Fund.
11. We are aware of a few cases where workers cleaning retention tanks have not been given the appropriate protective equipment. One case at First Great Western

Railway's Bristol Depot resulted in an improvement notice in 2010 and another resulted in a complaint about cess tank cleaning at Southern Railway's Brighton Depot in May 2015.

12. Investment is also needed in facilities to empty tanks, and planning to get the trains to those points regularly, which is not necessarily straightforward in remote areas.

Health effects and research

13. While there are microbiological hazards such as coliform bacteria, protozoa such as cryptosporidium and viruses such as hepatitis, associated with effluent on the track, any risk assessment must consider the potential route of transmission. Research by the London School of Hygiene has shown that although it is unpleasant, the transmission of infection from effluent on the track would require the ingestion of pathogens in a sufficient dose high enough to cause disease. It is highly unlikely that a sufficient amount of faecal matter would be ingested.
14. This view was confirmed by research done by the Rail Safety and Standards Board (RSSB), which concluded that while discharge from toilet waste on to the track is unsightly, the risk to passengers and employees from pathogen infection was low – For further information please see research number T051 at: <https://www.rssb.co.uk/pages/research-catalogue/t051.aspx>. However there is some doubt whether the research was robust because of where on the tracks measurements were made of the risks. RSSB also carried out research in 2008 on environmentally friendly toilet systems that cleaned and recycled water (T692) <http://www.rssb.co.uk/pages/research-catalogue/t692.aspx>.
15. HSE have issued guidance for those working with sewage. The HSE guide for employees is at <http://www.hse.gov.uk/pubns/indg197.pdf> and HSE guidance for employers at <http://www.hse.gov.uk/pubns/indg198.pdf>. The key recommended requirements are:
 - Ensure that employees and line management understand the risks through proper instruction, training and supervision.
 - Provide suitable personal protective equipment that may include waterproof/abrasion-resistant gloves, footwear, eye and respiratory protection. Face visors are particularly effective against splashes.
 - Provide adequate welfare facilities, including clean water, soap, nailbrushes, disposable paper towels, and where heavy contamination is foreseeable, showers. For remote locations portable welfare facilities should be provided.
16. ORR has recently been informed of one case where it is alleged that the track worker's ill health may have been caused by exposure to effluent discharge but the link has not been proven.

Future actions

17. Any future action would need to be proportionate to the risk. The range of options below has been considered. The Occupational Health Programme Board and DMM agreed that options a), b), c), d) and e) should be given the priority and that the results of Option c) would determine if option f) should be actioned.

- a) Confirming with the Train Operators which fleets of trains in operation do not contain retention tanks and what plans there are to replace them over what timescales to understand how quickly the risks may be eliminated.
- b) Work with DfT and Transport Scotland to ensure refranchising reduces number of trains without retention tanks.
- c) Seek an independent view of the health risks from our health advice consultants.
- d) Examine Network Rail's risk assessments and controls they require their track workers to use for toilet waste when carrying out track maintenance work.
- e) Find out from Network Rail whether their grants for cleaning hot spots of the track are being requested, by whom and how often.
- f) Ask RSSB to commission further research with some clear guidelines on measurements being undertaken in hot spots.
- g) Look to establish a collaborative approach to this issue through a meeting with DfT, Network Rail and ATOC to agree a proactive approach to tackling this problem.

Annex A Line to Take

The Office of Rail and Road (ORR) is aware that the presence of toilet waste on the track is a concern, but the extent of health and safety risk to railway workers will depend on the particular circumstances. We have sought medical advice on the risks to health that might arise from the discharge of toilet waste on the railway and have been repeatedly assured that the practice does not give rise to any significant health risks, provided appropriate hygiene precautions are taken by people who could become exposed to such risks, for example track workers.

Modern rolling stock designers consider methods of human waste disposal in their designs, including the fitting of waste disposal tanks. Such tanks are then taken to the depot where the waste is removed. The problem of sewage on the tracks should gradually disappear with the introduction of 'next generation' coaches to rail passenger services. Unfortunately, it would not be practical or cost effective to install retention tanks on fleets of older rolling stock.

The Control of Substances Hazardous to Health Regulations 2002 (COSHH) requires employers to control the risk to health, so far as is reasonably practicable. Network Rail and its contractors should identify and assess the risks and implement controls to prevent exposure through established risk assessment and work planning processes. In addition,

employees should use normal personal protective equipment and follow good hygiene practices while on track.

While there are microbiological hazards such as coliform bacteria, protozoa such as cryptosporidium and viruses such as hepatitis, associated with effluent on the track, any risk assessment must consider the potential route of transmission. Research by the London School of Hygiene has shown that although it is unpleasant, the transmission of infection from effluent on the track would require the ingestion of pathogens in a sufficient dose high enough to cause disease.

This view was confirmed by research done by the Rail Safety and Standards Board, which concluded that while discharge from toilet waste on to the track is unsightly, the risk to passengers and employees from pathogen infection was low – For further information please see research number T051 at:
<http://www.rssb.co.uk/pages/researchcatalogue/t501.aspx>.

ORR is reviewing the scale of the risks by confirming the numbers of trains still operating without retention tanks and also seeking an independent view of the medical risks.

ORR continues to press railway companies for improvements wherever it is appropriate to do so. Network Rail, train and station operators, are expected to have procedures in place to ensure prompt removal and proper disposal of any accumulations of toilet waste.



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