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INFORMATION ON DEVELOPMENTS IN VARIOUS RAILWAY FIELDS

Addendum

Transmitted by the Government of the United Kingdom*

(a) Environmental questions related to railway operations

Benchmarking and improving rail's environmental performance

1. A number of initiatives are under way to improve our understanding of the environmental impacts of train operations and to reduce those impacts:

- The Association of Train Operating Companies (ATOC) has undertaken a detailed energy measurement exercise to understand better how the railway uses energy – both diesel and electricity. This will report in autumn 2006.

* The UNECE Transport Division has submitted the present document after the official document deadline due to resource constraints.

- ATOC is also trialling low sulphur fuels on a number of passenger services to understand better their environmental benefits and operational implications. This exercise will inform the development of a broader rail fuel strategy.
- A research project sponsored by the Rail Safety and Standards Board is benchmarking rail's sustainability performance against other modes and against rail in other countries. This will help both the UK Government and the industry in identifying rail's strengths and weaknesses.
- As part of a study being led by the Rail Safety and Standards Board to consider the economic case for further electrification, the Department is reviewing the environmental benefits of electric trains versus diesel.
- Within the Department for Transport we are extending our rail appraisal methodology to reflect the environmental impacts of train operation.
- Network Rail is taking forward a programme to enable the use of regenerative braking on electric trains. This system is a way of slowing an electrically powered train by using the motors as brakes. Instead of the surplus energy of the vehicle being wasted as unwanted heat, the motors act as generators and return it as electricity into the supply rail or overhead wire. Trains making frequent stops could save around 20% in energy consumption.
- The Department is leading a cross-industry programme to specify a successor to the UK's High Speed Trains (Intercity 125s) that are now nearing the end of their operational lives. One of the key success criteria for the new train is that it is as environmentally sustainable as possible. Particular emphasis is being placed within the project on reducing weight in order both to reduce fuel consumption and track damage.

Noise Mapping

2. Directive 2002/49/EC¹ relating to the assessment and management of environmental noise is often referred to as the Environmental Noise Directive (END).

3. The aim of the END is to define a common approach across the European Union with the intention of avoiding, preventing or reducing on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise. This will involve:

- informing the public about environmental noise and its effects;
- the preparation of strategic noise maps for: large urban areas, major roads, major railways and major airports; and

¹ http://europa.eu.int/eur-lex/pri/en/oj/dat/2002/l_189/l_18920020718en00120025.pdf.

- preparing action plans based on the results of the noise mapping exercise. Such plans will aim to manage and reduce environmental noise where necessary, and preserve environmental noise quality where it is good.

4. The noise mapping and action planning process is to be taken forward on a five-yearly rolling programme. The first round of mapping and action planning applies to the largest of the agglomerations (including the industries and ports within them), the busiest major roads and railways and all major airports. Maps must be produced by 30 June 2007, with the action plans following a year later in 2008. During the second round (2012-13) and in subsequent rounds, all agglomerations, major roads, major railways and major airports as defined by the END will be mapped and then action plans will be developed for them.

5. The Department of the Environment and Rural Affairs has overall responsibility for implementation of the Directive. Network Rail is working closely with Defra to develop noise maps of the Railway in Great Britain.

(b) Safety in railway transport

Train Protection & Warning System (TPWS)

6. December 2003 marked the successful completion of the fitting of the Train Protection and Warning System (TPWS) to all trains and across the entire national railway network. TPWS automatically applies the brakes of any train that has passed a red signal or that is travelling too fast on the approach to a red signal, speed restriction or buffer stop. TPWS has proved effective at significantly reducing the risk in relation to signals passed at danger (SPADs), resulting in a continued downward trend in the number of SPADs over the last two years.

Identification of Broken Rails

7. Network Rail has implemented and sustained a programme of broken rail identification and expanded its track replacement programme. This has resulted in significant reductions to the number of broken rails across the national railway network, which currently stands at the lowest level on record.

European Rail Traffic Management System (ERTMS)

8. The European Rail Traffic Management System (ERTMS) is an advanced form of train protection system which will automatically stop trains passing red signals and which, in the form being developed for the UK, has the potential to increase capacity.

9. Network Rail has taken over leadership of the UK's cross industry ERTMS programme and is on schedule to complete implementation of ERTMS on the Cambrian line in Wales by the end of 2008. Work is also continuing on a case for increased implementation of ERTMS through cost reduction activities and engagement in the wider European product development and specification, to ensure the demands of the UK railway are met in an economically justifiable way.
