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**ECONOMIC COMMISSION FOR EUROPE**

**INLAND TRANSPORT COMMITTEE**

**Working Party on Rail Transport**

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**INFORMATION ON DEVELOPMENTS IN VARIOUS RAILWAY FIELDS**

**Transmitted by the Governments of Ireland, Portugal,  
Turkey and the United Kingdom**

**IRELAND**

**Railway Safety**

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**Legislative change**

- A Railway Safety Bill is presently before the Irish Parliament.
- Once enacted, the Railway Safety Bill 2001 will put in place a modern regulatory framework for railway safety in Ireland.
- The Bill is expected to be enacted in 2004.

### Main features of the Railway Safety Bill

- The Bill applies to all railway undertakings, including Iarnród Éireann (national railway company), LUAS (Dublin light rail system), heritage railways and the metro system proposed for Dublin.
- The principal feature of the Bill is the establishment of a safety regulator, the Railway Safety Commission.
- The Railway Safety Commission will have wide-ranging powers to monitor and inspect railway infrastructure and take enforcement action where it perceives that unacceptable risks exist on the railway.
- The Bill will also establish an independent Accident Investigation Unit within the Commission, which will investigate all serious railway accidents.
- A primary duty of care will be placed on railway companies to ensure the safety of their operation.
- Railway companies will be required to implement formal safety management systems and submit a safety case to the Railway Safety Commission.
- A railway company will not be permitted to operate unless the Commission is satisfied with its safety case and is satisfied that it is capable of fulfilling its duty of care.
- The Bill provides for the testing of safety critical railway workers for alcohol and drugs and provides for criminal offences in this area.

### Railway safety investment

- A Railway Safety Investment Programme ran from 1999-2003.
- By the end of 2003, over €660m had been invested under the Programme in infrastructural safety improvements and development of safety management systems within Iarnród Éireann (national railway company).
- A new 5-year programme to begin in 2004 is expected to be confirmed shortly.

### Integrated Ticketing

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In Ireland, the Railway Procurement Agency (RPA) has been given statutory responsibility for the implementation of an integrated ticketing system based on contactless smartcard technologies for initial deployment in the Dublin area. The application will be multi-modal and multi-operator based with a target date of the end of 2005. An important step will be the launch later this year by the RPA of smartcards on the new Light Rail 'Luas' services.

In the meantime, integrated tickets, based on magnetic strip technology, are available for travel on Irish Rail and Dublin Bus services and the RPA will soon conclude a similar arrangement with both companies in respect of the light rail 'Luas' services.

## **PORTUGAL**

### **(a) Environmental questions related to railway operations**

#### Railway Network Electrification

Within the railway network's electrification plan during 2004, the works on the South Line should be stressed which now enable electrical traction on transport services between Lisboa and Faro, thus reducing emissions associated with diesel traction. Two other train paths integrated in the Oporto transport system should also be enhanced due to its transport volume: Braga and Guimarães lines.

Electrification interventions are usually associated with upgrading of infrastructure and signalling systems and, therefore, globally enable time/speed ratio improvements as well as a better performance of the traffic management system.

#### Rolling stock renewal

National operator CP renewed its rolling stock with trains equipped with electrical traction, which promotes the benefits associated to upgrading and electrification of the rail infrastructure. These investments on national operator CP rolling stock are part of CP's Investment Planning for the period 2000-2006.

#### Executive Authorities for Lisbon and Oporto's Urban Transport Areas

Decree-Law No. 268/2003, dated 28 October, created the Executive Authorities for Lisbon and Oporto's Urban Transport Areas (Autoridades Metropolitanas de Transportes – AMT). AMT is responsible for, *inter alia*, “transport services and network planning, weather, road, rail or inland waterways, including localization of interfaces and terminals, assuring coordinated exploitation and integration between the different modes and establishing limits to private car use.” The aim, which supports the creation of AMT, is to promote modal shift in favour of public transport and limiting car use, which once achieved, is expected to bring irrefutable benefits from an environmental point of view.

#### Interoperability Technical Specifications (ITS) on conventional rail network for noise reduction

Development of ITS regarding the conventional rail network following the 2001/16/CE Directive was nationally brought into force through Decree-Law No. 75/2003, dated 16 April. From a safety and environmental point of view, the expected approval by the end of 2004 of ITS referring to noise, signalling and control command as well as exploitation and traffic management should be pointed out.

### **(b) Safety in railway transport**

During 2003, the implementation of the so-called 1st Rail Package composed of 2001/12/CE, 2001/13/CE and 2001/14 CE Directives was brought into force and therefore safety issues were consolidated into a new legal framework which establishes and develops rules on

certification and obtaining safety licences, including the circumstances in which licences can be suspended, revoked or amended. Safety certificates are issued by the rail regulator according to the many technical and operational requirements of the network on which the railway undertaking operates.

Access to infrastructure by operators now depends on the issuing of the due safety certification requirements according to the national rules and requirements applying to their services, staff and rolling stock as ensured by the safety management system.

A new Working Group and a Project Team, both coordinated by the regulator INTF, were created following a resolution of the Transport Office's Secretary General to develop and establish and implement a new model of safety regulation, clearly assigning each party's competences and responsibilities for safety, and also to review and update to the new railway scene the technical operational safety rules.

In order to monitor the above-mentioned implementation of the new safety measures as well as all measures which might be considered necessary for related improvement, a Joint Representative Permanent Group on safety issues was equally created on 13 October 2003 upon resolution of the Transport Office's Secretary chaired by the Secretary General's Cabinet and also assembling the Presidents of the rail regulator INTF, infrastructure manager REFER and national rail operator CP. Amongst Permanent Group tasks, the rail regulator is responsible for presenting the proposals on periodical meeting agendas.

**(c) Introduction of new transport technologies and application of modern techniques to railway operations, in particular regarding the interface between rail transport and other transport modes**

During 2003, there were no relevant developments in this field to account for at national level.

## **TURKEY**

- **Environmental problems concerned with railway administration**

In respect of eliminating the environmental problems concerned with railway administration, the Revision Studies for the Present Noise and Control Regulation, as well as the Emission Regulation, which have been conducted under the coordination of the Ministry of Environment and Forest and in which the specialists from the Turkish Administration also participated, will be put into practice after they are completed.

In addition, treatment facilities have been constructed for the Sivas concrete sleepers plant, 8 locomotive maintenance and repair warehouses and some 7 ports in order to minimize the damage to the environment. The treatment plants shall be constructed at the locations where they did not already exist by including them in the 5-Year Investment Programme. Furthermore, natural gas shall be preferred to coal as the fuel at the locations where natural gas is accessible in order to reduce the damage to the environment during the heating of the fixed facilities.

Moreover, the Turkish Administration gives priority to the electrification projects in order to further reduce the damage to the environment during transportation.

In parallel to the regulations drawn up by the Ministry of Forest, the necessary studies are being conducted to use composite clog instead of cast clog in the wagons and the supply of an exhaust gas emission measurement device for the locomotives, etc.

The national and international studies are being conducted with respect to the transportation of liquid/solid wastes.

- **Safety/security during railway transportation**

The problem of security is discussed in the Turkish Administration as a priority in railway transportation within the scope of the activities to accelerate train journeys. Necessary investments are made to the infrastructure, rolling stocks and personnel in order to ensure security during railway transportation. In this framework, studies are continuing in respect of materializing an emergency action plan that includes surrounding the railway at trouble sections of the railway network with respect to security and constructing subpassages/overpassages after eliminating the level crossings. Though it is a legal right of way on the level crossings for the Turkish Administration, the appropriations have been allocated and the studies have been initiated in order to make 80 level crossings with automated controls. In addition, studies are continuing to make widespread the ATS system that was initiated in recent years.

All activities shall be evaluated in respect of safety in the Turkish Administration and it is aimed to determine a general strategy for safety and security to include:

- ✓ Completing the present train operation systems;
- ✓ Train operation safety system;
- ✓ Measures to be taken to prevent collisions, overturns, fires and level crossing accidents and the system of preventing train accidents that may occur due to the natural disasters; and
- ✓ Locations where the accidents occur frequently, etc.

For this purpose, a study has been initiated as consulted by the Japanese Railway Technical Service (JARTS) in the field of railway safety.

In addition, internal safety measures are applied to ensure the safety of passengers.

- **Application of new transportation technologies and modern techniques in railway transportation, especially between railway transportation and other transportation modes**

The necessary studies have been initiated in expanding combined transportation, which is a new transportation technology with respect to ensuring integration between the railway transportation and other transportation modes. Within this content, ports have been equipped with modern handling equipment (gantry-crane, transtainer, etc.); a container off-shore terminal has been put into service in Gaziantep; the application projects of the Container Terminals in Denizli and Kayseri have been prepared, and Konya, Balikesir, Kahramanmaras and Ankara

have been included in the Turkish Investment Programmes and these will be materialized at a later stage. Furthermore, studies are continuing uninterrupted to construct a joining line to the workplaces of clients with significant potential for transportation as well as the Organized Industrial Zones. Studies are continuing according to the International Union of Railways (UIC) approved resolutions in respect of “Roadrailer”, which is an important transportation model in combined transportation.

Activities have been initiated to rehabilitate the Ankara–Istanbul line with respect to mainline passenger transportation. The said project has been prepared in view of the new technologies in inclination, curb radius, rail, sleepers, connection fittings, etc. An automatic fee collection system and common smart ticket application have been adopted in the in-city transportation systems and the signalling systems have been upgraded with the technologies that allow train journeys every 3 minutes. In addition, a modern transfer facility has been constructed in Halkapinar for a light rail system, suburban and mainline transportation activities in Izmir.

The procedures for supplying high speed and comfortable vehicles are continuing within the framework of a high-speed train project that is conducted in the Turkish Administration with respect to the application of new transportation technologies in railway transportation. The rolling stocks are manufactured using modern manufacturing techniques and new technologies and UIC standards are complied with in our subsidiaries. The advancing technology is followed in respect of the rolling stocks and this is taken into account for the new vehicles that will be purchased.

In respect of domestic and international freight transportation, the project studies “Wagon Tracking and Warehouse Procedures, Stock Control and Maintenance, TCDD Network Phase 2” are continuing. With this project that will operate online centrally, both the wagons owned by TCDD and the wagons owned by foreign administrations will be tracked. As to the passenger transportation, the application of “Computerized Ticket Sales and Booking” currently operates in 9 centres and 78 ticket offices centrally and online on the web. Ticket sales, ticket change, ticket return and consultation services are provided via Internet as well. Furthermore, studies are being conducted for the Management Information System (MIS).

## **UNITED KINGDOM**

### **(a) Environmental questions related to railway operations**

#### Railway Noise

The Noise Insulation (Railways and other Guided Transport Systems) Regulations 1996 (SI 1996 No. 428), set out the criteria for eligibility for insulation against noise from new or altered railway lines.

They apply the Technical Memorandum “Calculation of Railway Noise 1995” (Department of Transport 1995), which was prepared by an expert group following the Mitchell Committee report on railway noise published in 1992. Noise limits were set to give parity with existing Noise Insulation Regulations applying to roads.

### Noise Mapping

The proposed EU Directive "Assessment and Management of Environmental Noise" concerns noise from road, rail and air traffic and industry. It focuses on the impacts of noise on individuals, and it complements existing EU legislation, which sets standards for noise emissions from specific sources. It would establish common noise mapping and assessment methods, local action plans, and collection of data by the Commission to inform future Community policy. For rail, (as with roads and aviation) there is a requirement to produce by the end of 2006 strategic noise maps for all areas of the network with more than 60,000 train passages per year.

In subsequent years, this level of frequency is to be reduced to 30,000 train passages per year. To ensure that this work is completed, the Directive requires the Government to designate "competent authorities" to be responsible for noise mapping and for the production of action plans. The Department of Environment and Rural Affairs are taking forward implementation of the Directive and they plan to go out to public consultation shortly.

### Litter on Railway Land

The Railways Act 1993 (Consequential Modifications) Order 1999 applies to Network Rail and train operating companies (TOCs) the Environmental Protection Act 1990 provisions requiring statutory contractors to clear litter and rubbish from their land. Under the Order, Network Rail and the TOCs are required to keep their public land free of litter or face being taken to court by the public or the local authority. The duty has also been extended to some types of land to which the public is not allowed access. In general, the TOCs are responsible for keeping stations free of litter; Network Rail for keeping the track and other railway lands including bridges free of litter.

In June 1999, the Department published a revised Code of Practice on Litter and Refuse (under the Environmental Protection Act 1990). The Code gives practical guidance to local authorities and other bodies subject to litter duties. Network Rail and the TOCs are subject to the code, which sets out how quickly differing types of railway land should be tidied of litter and rubbish to a set standard of cleanliness.

## **(b) Developments on safety in railway transport**

### Train Protection & Warning System (TPWS)

Network Rail and the Association of Train Operating Companies announced in December 2003 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.

### European Rail Traffic Management System (ERTMS)

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, will increase capacity by allowing trains to operate closer together.

The Strategic Rail Authority published a progress report in May 2004 which indicated that the UK's ERTMS programme is funded and on schedule through to the end of the ERTMS trials in mid-Wales due to take place in 2007/08.

**(c) Introduction of new transport technologies and application of modern techniques to railway operations, in particular regarding the interface between rail transport and other transport modes.**

Network Rail's New Measurement Train (NMT) entered service in July 2003 as the first of its kind in Europe. The train increases Network Rail's inspection capacity and provides valuable information to its engineers on asset condition. This increase in asset knowledge will better equip Network Rail's engineers to make decisions necessary to maintain and improve the rail infrastructure.

It will be a key element to the company's objective to replace manual inspection with mechanized measurement.

It is able to travel at up to 125 mph, which allows it to slot in between timetabled trains on the high-speed lines and without disruption to services. The increased data flow obtained from the train will allow Network Rail engineers to shift to a "predict and prevent" mode of work instead of the react and repair situation of the past. As well as producing video recordings of the infrastructure, the NMT provides six-foot gauging data and information on track geometry.

Network Rail has also introduced a new fleet of high output grinding trains into service. These should both extend the service life of mainline trains and enable Network Rail to better control railhead rails defects.

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