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PRACTICAL IMPLICATIONS OF THE RISK ASSESSMENT TECHNIQUE

Addendum 2

Transmitted by the Government of the United Kingdom

Please note that the distribution of documentation for the Working Party on Rail Transport (SC.2) is no longer "restricted". Accordingly, the secretariat has adopted a new numbering system whereby all working documents other than Reports and Agendas will be numbered as follows: TRANS/SC.2/year/serial number. Reports, Agendas, resolutions and major publications will retain their previous numbering system (i.e. TRANS/SC.2/189).

RISK ASSESSMENT

Background

All operators have a responsibility to identify and assess the risks created by their activities. When considering what measures should be taken to reduce a risk, companies apply the principle of reasonable practicability. Decisions are now made within a safety case framework, which pays greater attention to the level of risks and arrangements for risk management. The Health and Safety at Work etc Act 1974 requires that all reasonably practicable measures are taken to control risks and ensure safety. The Health and Safety Executive (HSE), the single safety regulatory body, has issued guidance on criteria which provides a framework to the industry in this area.

The railway uses this guidance to define upper and lower levels of risk tolerability, which applies to individual employees, passengers and members of the public affected by its activities. Between these boundaries lies a region of risk tolerability known as **"ALARP" (As Low As Reasonably Practicable)**. When risk levels lie in this region (as most of railway risk does) there is an obligation to seek ways to reduce the risk further as long as the cost of doing so is not grossly disproportionate to the benefits gained. Cost-benefit analysis (CBA) used in conjunction with risk assessment can be used to inform the decision making process.

Railtrack's Railway Safety Case contains risk criteria adopted by the industry, defining the ALARP boundaries for passengers, the workforce and the general public. Individual company safety cases are expected to demonstrate that their safety policies conform to these overall criteria.

Railtrack's approach combines an evaluation of safety benefits offered by the safety improvement scheme with a cost of its implementation, to give a cost of saving an "equivalent life" (a weighted average of injuries and fatalities avoided). A basic "Value of Preventing a Fatality (VPF)" of £0.95m (June 1998 value as calculated by using the DETR (Department of the Environment, Transport and the Regions formula for road safety expenditure) is used for guiding decisions for schemes designed to protect against accidents. VPFs in the region of £2.65m are considered where schemes address risks that are near the "upper limit of tolerability" or which reduce the potential for accidents involving many fatalities. In some cases VPFs in excess of this figure may be appropriate.

The use of these criteria can, when sensibly applied, facilitate the prioritisation of schemes to enable resources to be used to the best effect. However, it should not be used to prevent the adoption of measures which are recognised as good practice, or to justify inaction where there are significant uncertainties in costs or benefits. The key is that CBA is used to inform sensible decision making, not to constrain it.

Selecting actions to improve safety

There are three key stages in deciding on actions to maintain or improve safety:

- (i) the identification of hazards and the means for reducing their likelihood and severity.
- (ii) the creation of a risk control strategy for reducing risks as low as reasonably practicable.
- (iii) the review/modification of the risk control strategy in the light of performance/experience.

Advantages of CBA

In addition to the benefit of enabling expenditure on safety to be targeted more effectively, the systematic risk assessment approach to safety has other benefits. It can demonstrate in quantified terms that the cost of a particular safety measure may be out of proportion to the benefits, and that less costly measures may be available.
