

## 2 OBLIGATIONS AND LIABILITIES

The main purpose of the Yellow Book is to help you set up a process that protects you and others from mistakes and gives documented evidence (the engineering safety case) that risk is at an acceptable level. The Yellow Book also helps you to keep within the law and relevant standards.

This section describes some of the obligations that the Yellow Book helps you to carry out. It also describes some of the legal liabilities that you face and some ways of reducing them.

We discuss UK law, but the discussion is no substitute for detailed legal advice.

### 2.1 UK law

The Government reviewed the arrangements for regulating railway safety before privatising the British main line railway. It followed recommendations in the report '*Ensuring Safety on Britain's Railways*' and confirmed that the Health and Safety Executive (HSE) would be the safety regulator for the whole railway network. In fact HMRI, which is part of HSE, does the regulating.

More generally, the '*Health and Safety at Work etc Act 1974*' places duties on employers and employees. Employers must ensure, 'so far as is reasonably practicable', the health, safety and welfare of their employees and of other people they affect. In the case of railways, this includes passengers and other members of the public. Section 2.3 discusses the phrase, 'so far as is reasonably practicable'.

The act applies to those who supply products, such as trains and signalling systems, as well as those who run and maintain the railways. These responsibilities can be shared under a contract but cannot be completely transferred.

The act contains powers to make regulations. Regulations made under the act have the force of law. HSE publishes guidance notes on regulations, which you should read if they are relevant to you.

The '*Management of Health and Safety at Work Regulations 1992*' says employers must assess the risk to employees and others affected by their work. Employers who share a workplace must also co-operate to achieve safety and share safety information.

The '*Construction (Design and Management) Regulations 1994*' place duties on those involved in some construction projects. They must plan, co-operate, share information and keep certain records. This will control the risk to the health and safety of people affected by the project. The people involved must be able to show HSE that they have done this.

The '*Railways (Safety Critical Work) Regulations 1994*' place a duty on those who employ people doing defined 'safety-critical' work on the railway to assess that they are competent and fit to do the work. The assessment must be recorded.

The '*Railways (Safety Case) Regulations 1994*' say that train and station operators and railway infrastructure controllers must prepare a railway safety case. The railway safety case must be accepted before they start operations and they must follow it. We discuss railway safety cases in the next section.

As well as the railway's own acceptance processes, statutory approval is needed for new and changed railways. The '*Railways and Other Transport Systems (Approval of Works, Plant and Equipment) Regulations 1994*', made under the '*Transport and Works Act 1992*', confirm the powers given to HMRI by earlier laws. They also extend them, in particular, to include the general power to approve trains.

HMRI publishes guidance on how the regulations apply and how to get approval. The approval process is similar to the railway's own acceptance process. In many cases, the work done to get railway acceptance will help to get HMRI approval as well.

There are other relevant acts and regulations, which we do not discuss.

## 2.2 Railways (Safety Case) Regulations

Any train or station operator must write a railway safety case and have it accepted before starting operations. The operator must then follow their safety case.

HSE accepts railway safety cases from the infrastructure controller, who owns and runs the infrastructure. The infrastructure controller may accept railway safety cases from train and station operators.

The Railway Group is made up of us and those organisations whose railway safety cases we accept.

Among other things, the railway safety case must describe:

- the operator's safety policy and arrangements for safety management;
- the operator's assessment of the risk;
- how it will monitor safety;
- how it organises itself to carry out its safety policy; and
- how it makes sure that its staff are competent to do safety-related work.

A railway safety case must also show a systematic approach to managing technical change in general. An engineering safety case shows a systematic approach to managing the safety of one change to the railway. The two are different but related and an engineering safety case can support a railway safety case.

## 2.3 'Reasonable practicability'

We have seen that the '*Health and Safety at Work etc Act 1974*' places duties on employers to ensure health, safety and welfare 'so far as is reasonably practicable'. This section gives more guidance on this test. We have taken account of the HSE discussion document, '*Reducing Risks, Protecting People*'.

If you are working on a change to the railway, you should first identify the hazards associated with the change. You should make sure that you have precautions in place against each hazard within your control (unless you can show that the risk arising from the hazard is so small that it is not worth considering).

You should make sure that your precautions reflect good practice, as set out in the law, government guidance and standards. If the risk is low and completely covered by good practice, published by a recognised authority, showing that you have followed this good practice may be enough to show that the risk is acceptable. For instance the electrical safety of ordinary office equipment is normally shown by certifying it against electrical standards. However, before you decide that just referring to standards is enough, make sure that:

- the equipment is being used as intended;
- all of the risk is covered by the standards; and
- the standards cover your situation.

We discuss good practice further in the next section.

If following good practice is not enough to show that the risk is acceptable, you should also assess the total risk that will be produced by the part of the railway being changed. You then need to compare it with two extreme regions.

- An intolerable region where risk can never be accepted.
- A broadly acceptable region where risk can always be accepted.

To decide whether or not to accept a risk:

- 1 check if the risk is in the intolerable region – if it is, do not accept it;
- 2 check if the risk is in the broadly acceptable region – if it is, you will not need to reduce it further, unless you can do so at reasonable cost, but you must monitor it to make sure that it stays in that region; and
- 3 if the risk lies between these two regions, accept it only after you have taken all 'reasonably practicable' steps to reduce the risk.

You should consider ways of making the change less likely to contribute to an accident. You should also consider ways of making the change more likely to prevent an accident. You do not have to consider steps that are outside your control.

You will generally expect the risk to be lower after the change than it was beforehand. If it is higher, it is unlikely that you have reduced the risk as low as reasonably practicable.

If you are not certain about the risk, you should choose to be cautious – uncertainty does not justify not taking action.

To decide whether a step that would reduce risk is reasonably practicable, you must balance the reduction in risk against other factors. These include cost and any increase in complexity.

In *'Reducing Risks, Protecting People'*, HSE suggest that you can use a figure of slightly under £1 million (at 1998 prices) as a 'benchmark' – an indication of what it is reasonably practicable to spend to reduce risk by one fatality. However, you should use a higher figure for risks for which there is high public concern. As risks of major railway accidents fall into this category, the benchmarks used in railway decision making are often higher.

All benchmarks are only rough reflections of the values held by society. If there is significant public concern about a hazard, you should take this into account in your decision making and it may justify precautions that would not be justified otherwise.

Following this guidance will help you make objective decisions and show how you reach those decisions. It also helps you make sure that you are using limited resources in the best way.

## 2.4 Good practice

The main reason for using good practice is to reduce risk. However, if you face a civil action for damages after an accident, you may want to show that you used good practice and met relevant standards. This could help your defence against a charge of negligence and reduce other legal liabilities.

The standards that are relevant to you will depend upon what you are doing but the following generally apply.

Our Safety and Standards Directorate maintains a series of *'Railway Group Standards'*, which cover aspects of the UK main line railway and members of the Railway Group must meet these.

HMRI's '*Railway Safety Principles and Guidance*' (the 'Blue Book') gives advice on designing, constructing and altering works, plant and equipment, while maintaining railway safety. It sets out safety principles and the factors affecting how to put them into practice. It also gives advice on detailed aspects of railway construction. It deals with the end result of design and construction rather than the processes themselves.

The Engineering Council's '*Guidelines on Risk Issues*' give practical and ethical guidance to engineers and managers on how to meet their social responsibilities by controlling risk. They discuss:

- the legal and professional restrictions on the engineer;
- the concepts behind managing risk; and
- implications for education and public awareness.

The Hazard Forum's document '*Safety-related Systems – Guidance for Engineers*' gives professional engineers an overview of the professional, practical and legal aspects of working on safety-related systems. It applies particularly to computer-based systems.

Also, if your work involves electronic systems then the following will generally apply:

- IEC Standard 61508, '*Functional safety of electrical/electronic/programmable electronic safety-related systems*'. This is an international standard that applies to all sectors of industry. It describes a general safety lifecycle, which includes analysing hazards and risks, and setting safety requirements.
- CENELEC have published European standards for railway applications and are working on others.

The Yellow Book is generally in line with these standards and following the Yellow Book guidance will help you meet these other standards. However the Yellow Book takes a wide view of good practice and does not say that you have to follow any one standard.