



OFFICE OF **RAIL REGULATION**

THE RAILWAYS AND OTHER GUIDED
TRANSPORT SYSTEMS (SAFETY)
REGULATIONS 2006 (ROGS)

**A GUIDE TO SAFETY VERIFICATION FOR
HERITAGE RAILWAYS**

OCTOBER 2008

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Foreword

What is the purpose of this guide?

This guide provides advice on the safety verification requirements of the Railways and Other Guided Transport Systems (Safety) Regulations 2006 (ROGS). It builds on our Crystal Mark guide to ROGS explaining what the regulations require, which can be found at: http://www.rail-reg.gov.uk/upload/pdf/342-ROGS_gdnce_nov07.pdf

This guide explains:

- why safety verification has been introduced;
- the main changes that safety verification introduces;
- when safety verification is required and when it is not;
- how an independent competent person can help;
- the practical steps operators can take to meet their responsibilities; and
- ORR's role

Operators may find it helpful to read the guide alongside a copy of the regulations. The full text of the regulations is available from the Office of Public Sector Information website at www.opsi.gov.uk.

Who is this guide for?

This guide is for operators of heritage railways.

Persons or organisations who provide advice to heritage operators on the safe introduction of rolling stock or infrastructure may find the section on 'Roles and responsibilities of the independent competent person' useful.

This guide concentrates on the requirements in ROGS for introducing new or altered rolling stock or infrastructure. Further guidance on ROGS and other legislation is available from the 'Rail health and safety section' of the ORR website at:

www.rail-reg.gov.uk

ORR has also published guidance about safety verification for tramways. It is recommended that operators of heritage tramways refer principally to the tramways guide.

Operators can ask us any questions about the guidance at:

rogs.guidance@orr.gsi.gov.uk

Note on the text

Each chapter has the same format. They each:

- say what specific regulations apply;
- explain who the duties apply to;
- describe what the person responsible for carrying out that duty **must** do;
- provide some practical advice or examples for meeting the duties; and
- explain where to get more information or detailed process manuals.

The information in plain text explains what the regulations say and what operators must do.

The text in shaded boxes is meant to offer guidance, examples or practical help.

The small boxes in the left-hand margin show which specific part of ROGS the text alongside it is explaining.

- 'Reg' refers to a regulation of ROGS, or part of one.
- 'Sch' refers to a schedule to ROGS, or part of one.

The Office of Rail Regulation (ORR) has issued this guidance. Following the guidance is not compulsory and operators are free to take other action. The guide aims to help people who may be affected by the regulations to understand their responsibilities under the regulations.

This guide is regularly updated. The version on the ORR website shows the date of the latest update. If users have any suggestions for improvements, please contact rogs.guidance@orr.gsi.gov.uk. Where major changes are proposed, we will consult before formally updating this guide.

1. Glossary of terms

Reg 2

- 1.1 Regulation 2 of ROGS gives the full legal definition of most of the terms used in the regulations. This guide gives a simple explanation of terms when they are first used. These explanations do not replace the full legal definitions in the regulations.
- 1.2 **‘Competent person’** (or ‘independent competent person’) means a person who:
- has sufficient skills, knowledge, experience and resources to undertake the safety verification in relation to which he is appointed; and
 - is able to look at the project objectively.
- 1.3 **‘Heritage railway’** or **‘heritage tramway’** means a railway or tramway, which is operated to:
- preserve, re-create or simulate railways or tramways of the past; or
 - demonstrate or operate historical or special types of motive power or rolling stock; and
 - is exclusively or primarily used for tourist, educational or recreational purposes.
- 1.4 **‘Infrastructure’** means fixed assets used for running a transport system, including:
- the permanent way or any other method of guiding or supporting vehicles;
 - any station;
 - equipment used for signalling; and
 - equipment used only for supplying electricity to run the transport system.
- 1.5 **‘New’** in relation to regulation 6 of ROGS (concerning safety management on other transport systems, such as heritage railways) means new to the transport system in question.

- 1.6 **'Railway'** means a system of transport using parallel rails which:
- is not a tramway
 - provide support and guidance for vehicles carried on flanged wheels; and
 - form a track which has a gauge of at least 350 millimetres **or** crosses a carriageway (whether or not it is on the same level)
- 1.7 **'Significant safety risk'** means, in relation to ROGS and safety verification (SV), new or altered infrastructure or a new or altered vehicle, the design or construction of which incorporates significant changes compared to any infrastructure or vehicle already in use on the transport system. And these changes have the capability of significantly increasing an existing safety risk or creating a significant safety risk to:
- passengers on the transport system in question; or
 - members of the public
- 1.8 **Staff** includes employees and volunteer workers
- 1.9 **'Tramway'** means a system of transport:
- which is used completely or mainly to carry passengers;
 - where the maximum speed allows the driver to stop a vehicle in the distance he can see to be clear ahead; and
 - which uses parallel rails which:
 - provide support and guidance for vehicles carried on flanged wheels; and
 - are laid completely or partly along a road or in any other place to which the public has access (including a place where the public has access only after making a payment).
- 1.10 **'Transport system'** mainly means a railway (mainline or non-mainline), a tramway, or any other guided transport system used completely or mainly to carry passengers. The exceptions to this are listed in regulation 2 of ROGS.
- 1.11 **'Vehicle'** includes a mobile traction unit. In this guidance it is also used to include 'rolling stock', which means any carriage, wagon or other vehicle used on track and including locomotives. 'Vehicle' also refers to anything which, whether or not it is built or adapted to carry any person or load, is built or adapted to run on flanged wheels over or along track.

Who has duties under ROGS?

1.12 A **'transport undertaking'** is any person or organisation that operates a vehicle in relation to any infrastructure. Persons or organisations that only carry out work in 'engineering possessions' (this means sections of track that are closed to normal traffic for maintenance work) are not included in the term 'transport undertaking'. So although some of the duties in ROGS (eg on safety critical work) apply to them, the requirement for safety verification would not normally do so.

1.13 An **'infrastructure manager'**; is any person or organisation that is:

- responsible for developing and maintaining infrastructure (not including a station) or for managing and operating a station; and
- manages or uses that infrastructure or station or allows it to be used for operating a vehicle.

1.14 A **'transport operator'**; means any transport undertaking or infrastructure manager. In this guide, the term is sometimes shortened to 'operator'.

Most heritage railways will be both 'transport undertakings' and 'infrastructure managers' (and by extension 'transport operators').

Reg
6(6)

1.15 In the absence of a transport operator a **'responsible person'** will be required to meet the duties of the transport operator. A 'responsible person' means any person or organisation who:

- has contracted another person or organisation to make or build vehicles or infrastructure; or
- makes or builds vehicles or infrastructure for his own use or for sale to or for the use by another person or organisation.

An example of a 'responsible person' might be a local authority who had acquired a disused railway and were contracting in a firm of engineers to restore it to operating condition for tourist purposes.

1.16 In this document, **'operator'** means any 'transport operator' or 'responsible person'.

2. Introduction

Background to ROGS

- 2.1 ROGS were introduced to put some of the requirements of the 2004 European Railway Safety Directive into practice on the mainline railway. ROGS do not apply the requirements of the Directive to heritage railways. However, ORR used ROGS as a regulatory framework for safety on guided transport systems, including heritage railways. This includes a safety verification process for some projects that introduce new or altered rolling stock and infrastructure to heritage railways.
- 2.2 ROGS came into force in 2006 and replaced several sets of railway safety regulations, including the Railways and Other Transport Systems (Approval of Works, Plant and Equipment) Regulations 1994 (ROTS). ROGS also replaced the Railways (Safety Case) Regulations 2000 and the Railways (Safety Critical Work) Regulations 1994, the implications of which are discussed in ORR's main 'Guide to ROGS' found on ORR's website at <http://www.rail-reg.gov.uk/upload/pdf/283.pdf>.
- 2.3 A significant change that ROGS brings about is that the safety regulator no longer has a role in approving new or altered infrastructure or vehicles on heritage railways, except where such approvals are required by specific enabling Acts and Orders.
- 2.4 Operators are responsible for making sure that new or altered vehicles or infrastructure are introduced safely. Safety verification provides a flexible process to help make sure those projects that could significantly increase risk are safe, so far as is reasonably practicable. This is achieved by appointing an 'independent competent person'. This person can come from inside or outside the organisation.

What do ROGS require?

- 2.5 ROGS change some of the requirements for operators when introducing new or altered rolling stock or infrastructure. However, it is important to understand that many key principles are unchanged:

- operators remain responsible for safely introducing and operating new or altered rolling stock or infrastructure;
- ORR, through advice and inspections, helps ensure that operators have adequate arrangements for safely introducing and operating new or altered rolling stock or infrastructure; and
- not every change operators make to their transport system requires safety verification.

2.6 The key new requirements of this aspect of ROGS for operators are:

1. deciding when safety verification is required;

and, if it is:

2. appointing a suitable independent competent person at an early stage;
3. preparing a written safety verification scheme, with the help of the independent competent person;
4. ensuring that the independent competent person undertakes the safety verification; and;
5. making and keeping a record of the scheme, its findings and any action taken as a result.

Reg
6(4)(a)
Reg
6(4)(b)

2.7 The table below summarises the changes that ROGS introduces to the process of introducing new or altered rolling stock and infrastructure safely.

Task	Who is responsible?	
	Under ROTS	Under ROGS
Deciding if introduction of new/altered rolling stock or infrastructure requires approval or verification	The operator	The operator
Ensuring new/altered rolling stock or infrastructure is placed into service safely	The operator	The operator
Ensuring safe operation of new/altered rolling stock or infrastructure	The operator	The operator
Providing advice to help	ORR	ORR and independent

operator meet regulatory requirements and make decisions		competent person
Inspecting operators' arrangements	ORR	ORR
Approval of new/altered rolling stock or infrastructure	ORR	No approval required under ROGS. Enabling Acts and Orders may include approval requirements; these continue to have effect.

Is other legislation affected?

- 2.8 Operators must still comply with other relevant safety legislation, such as the Health & Safety at Work etc. Act 1974; the Pressure Systems (Safety) Regulations 2000; and the Construction (Design and Management) Regulations 2007.

3. Deciding if safety verification is needed

When is safety verification required?

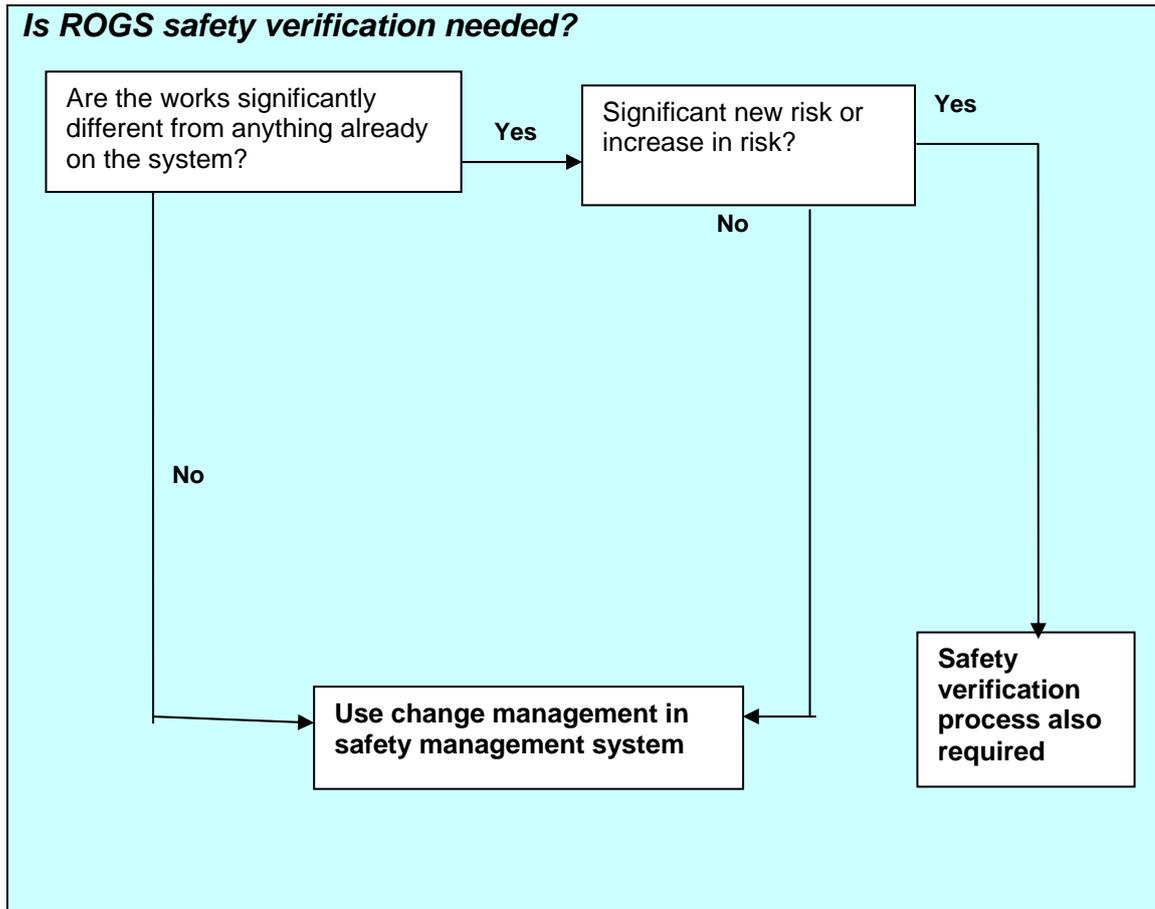
- 3.1 Formal safety verification (SV) will not be required for every change operators make to their transport system. In most cases, the change management arrangements that operators are required to have in their safety management system (described in the blue box below) should be capable of ensuring safety.

Change management in a safety management system

The aim of a change-management process is to properly control new risks. The process should:

- identify any new or increased risk resulting from a project;
- identify appropriate measures to control these risks and make sure they do not affect safety performance;
- make sure the level of assessment is suitable for the type of risk identified;
- make sure staff and managers have the skills and resources to carry out their safety responsibilities (a training plan could be useful);
- make sure changes are only made once any safety risks have been assessed;
- make sure staff and their representatives have been properly involved, briefed and consulted on the changes;
- make sure any relevant standards are met;
- make sure a written record of any concerns or issues raised and any decisions made to deal with them is kept;
- make sure the effects of the change are monitored once it has been put in place; and
- clearly define who is responsible for carrying out all of the above before, during and after the change.

- 3.2 The diagram below summarises the decisions operators will need to make in deciding whether SV involving an independent competent person is also required.



3.3 SV is **only** required when an operator wishes to place into service new or altered vehicles or infrastructure the design, construction, or testing of which:

Reg
6(1)(c) (iii)

- incorporates significant changes compared to any vehicle or infrastructure already in use on the transport system; **and**
- is capable of significantly increasing an existing risk or creating a significant new safety risk.

3.4 A project that would have previously required ORR approval under ROTS will not necessarily require SV under ROGS. The test of whether a project requires a SV process has two stages:

- Difference test: is the vehicle or infrastructure new to the transport system in question?

and

- Risk test: will there be a significant new safety risk or a significant increase in risk as a result?

Examples of projects requiring SV

- Changing to a signalling system that is new to the system operator;
- Construction of a viaduct;
- Placing into service a vehicle that was significantly different from others being used on that railway; and
- Running a new locomotive with a significant weight difference from those currently in use on the system.

Examples of projects not requiring SV (these projects would still require attention under the operator's change management arrangements)

- Repositioning a signal to improve sighting;
- Like-for-like repairs to bridges and tunnels;
- Placing into service similar vehicles to those already used on that railway;
- Modification of under-seat heaters in passenger carriages; and
- Running an additional locomotive with the same characteristics as those currently in use on the system.

3.5 Annex 3 lists some items that did not require a formal approval by ORR under ROTS, together with a commentary explaining why not. These examples could be used by operators to determine whether a particular project requires SV under ROGS.

3.6 The first step is for the operator to compare the project with this guidance and the Regulations. If safety verification is required, the next step is to appoint an independent competent person (ICP).

Safety verification and change management

3.7 The principles behind safely introducing new or altered vehicles or infrastructure are the same, whether operators use SV, the change management arrangements from their safety management system. The main difference is that the SV process uses an independent competent person to help operators ensure the risks are managed by carrying out an independent verification. The requirements of change management arrangements are described in chapter 1 of 'A Guide to ROGS' found on ORR's website at:

http://www.rail-reg.gov.uk/upload/pdf/342-ROGS_gdnce_nov07.pdf

Further advice

3.8 ORR's inspectors can provide advice to help operators decide whether a specific project includes risks that are significant and if it requires SV.

4. The independent competent person

Who can be an independent competent person?

4.1 An independent competent person (ICP) can be an individual or an organisation who can meet the criteria for competence and independence (as described below in the section on 'Selecting an ICP'). More than one ICP may be required to cover the different aspects of some projects.

What is the role of the ICP?

4.2 The ICP does not 'approve' vehicles or infrastructure for placing into service. Nor do they have a legal duty to "sign off" projects.

4.3 The ICP's task is to help operators devise and carry out an effective safety verification, mainly by checking the operator's arrangements, based on information provided by the operator.

4.4 The operator of the transport system, not the ICP, is responsible for ensuring new or altered rolling stock or infrastructure is introduced and operated safely. The operator must consider the views or recommendations of the ICP, but may challenge them and ultimately reject them if they wish. ORR expects operators to work with ICP's to overcome any differences of view but ORR can provide advice if necessary.

When do operators need to appoint the ICP?

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4.5 The ICP must be involved in:

- the design selection process;
- identifying or setting standards and conditions for the verification process; and
- setting out the inspection and assessment plan.

4.6 The foundation of a safety verification scheme is the timely appointment of an ICP. For example, operators must draw up the scheme taking into consideration the advice of the competent person. The competent person should be involved in the establishment of the verification criteria and the selection of standards. Failure to appoint a competent person early on in the

process will make this involvement difficult and undermine the effectiveness and suitability of the scheme.

Selecting an ICP

4.7 There are three important things to consider when appointing an ICP.

Competence

Reg
2

- a. They must have the skills and knowledge needed to carry out the SV.

Operators may wish to gather and keep evidence of this. This evidence could include:

- experience in the industry or the type of work and workplace;
- direct knowledge of the specific process they are overseeing, such as making sure vehicles are acceptable or replacing signal systems;
- experience of the regulatory process, in terms of setting standards and gathering evidence appropriately;
- written qualifications that can be checked;
- being aware of current best practice; and
- being aware of the limits of their skills and experience.

Impartiality

- b. They must not have been responsible for any of the things they will have to assess because that might cause them to be biased in their assessment

Independence

- c. They must not be part of the line management team that is responsible for the project

For example:

- they should not benefit personally from the project being completed successfully and quickly;
- they should not profit (other than any remuneration for acting as the independent competent person) from the project being introduced, such as if they run or own shares in a company which makes parts being used in the project;
- they should not verify the suitability of a product or component that they designed or built;
- an ICP should report direct to senior management and not be responsible for designing the project; and
- they must have the authority to ask for information, carry out examinations and make recommendations.

4.8 The decisions operators need to make when choosing an ICP are summarised in **Annex 1**.

Where can I find an ICP?

4.9 The main sources of ICPs in the heritage sector are likely to be:

- in-house experts (see box below);
- other operators;
- consultants; and
- individuals acting independently.

In-house ICPs

A competent person does not have to be employed by another organisation (a 'third party') to be independent. It is perfectly acceptable for SV to be done in-house. The most important thing is to show that the ICP is independent enough from the project to give an objective (unbiased) assessment.

It is important that the ICP has appropriate levels of impartiality and independence from pressures, especially of a financial or operational nature, which could affect sound judgment.

They should not verify their own work, and their management lines should be separate from those people whose work they are checking. For instance, it is acceptable in principle for an operator's in-house team or chief engineer to check work done elsewhere in the same organisation. However, it would influence objectivity if that team or individual's management chain included the manager responsible for meeting targets that might be adversely affected by the findings of the verification process.

4.10 Where a group of individuals are fulfilling the ICP role, the transport operator, or responsible person should make arrangements to ensure that tasks such as record keeping are carried out consistently. Decisions on verification standards are for the transport operator or responsible person to take. If ICPs have differing views, the transport operator or responsible person will need to make an informed decision on how to proceed.

Should an ICP be insured?

4.11 ROGS does not give the ICP any statutory duties in addition to those under the Health & Safety at Work etc. Act 1974. It would be prudent for anyone providing technical advice (including as an ICP under ROGS) on which others

rely to discharge their legal responsibilities to insure themselves against possible actions for negligence.

Specialist insurers have advised ORR that, for the main types of competent persons in the heritage sector:

- heritage railway operators are already responsible for safely managing the introduction of rolling stock and infrastructure. In-house verification of this work would not count as an additional activity that would require further insurance;
- operators carrying out SV for other operators may be able to extend their existing insurance;
- large consultancy organisations will already hold their own professional indemnity insurance; and
- individuals wishing to operate independently as freelance ICPs will require cover, which may be available through their professional body.

5. The safety verification process

- 5.1 Safety verification (SV) is essentially an independent check of an operator's arrangements for safely managing a project to introduce new or altered rolling stock or infrastructure.
- 5.2 The ICP undertakes the SV by advising, assessing and monitoring the proposed scheme from design, build and test through to documentation. They are responsible for examining (either on paper or by physical inspection) the information provided to them by the operator and reporting back on the adequacy of their arrangements.
- 5.3 However, the operator is responsible for developing and managing the SV scheme and for responding to the ICP's recommendations. The ICP cannot impose requirements or stipulate the use of certain equipment. The final decisions on a project rest with the operator.

What does the SV scheme need to include?

- 5.4 A written SV scheme allows the ICP to assess and monitor:
- the methods the project uses and the project design;
 - whether tests are being carried out safely, and in line with agreed standards and conditions; and
 - whether the project is being installed and brought into service safely.
- 5.5 The written scheme would include arrangements for all the following information:

Appointment of the ICP at an early stage

Sch 4
1(1)
(a)

- 5.6 Operators will need to show that they applied an appropriate process for deciding whether or not safety verification is required and for identifying and selecting an ICP at the right time. If operators describe these arrangements in their safety management system, it would suffice for specific schemes to simply include a reference to them.

The decision about whether to use SV should be based around 'risk' and

‘difference’ testing as described earlier in the section ‘Deciding if safety verification is required’.

The selection criteria for an ICP should be based around the criteria described in the section ‘The independent competent person’.

If in doubt, ORR can provide advice on a case-by-case basis. However, ORR will not select, recommend or provide an ICP for operators.

Sch 4
1(1)(b)
and
(2)(b)

Involvement of the ICP in establishing verification criteria and standards

- 5.7 The actual standards and criteria against which the project in question is being verified should be agreed with the ICP and recorded to give transparency to the process and provide an audit trail.
- 5.8 Operators will need to show that they have agreed and used appropriate standards and criteria and good practice, which may include the need to meet requirements of other legislation. The transport operator should consult the ICP in developing safety standards and processes to meet them.

How can heritage operators develop standards?

Railway Group Standards are available to heritage railways (though not all will be appropriate, particularly when the gauge is not the same or railway specific equipment has been constructed). Network Rail operating rules are not always available or indeed appropriate to heritage railways. ORR’s view is that operators should put suitable controls into their own individual safety management systems as company standards or requirements.

Any existing Railway Group Standard that is withdrawn is placed into the withdrawn section of the Railway Group Standards catalogue. These are available for reference purposes, but are not updated. Operators are able to access and download these from the Railway Group Standards website at www.rgsonline.co.uk. There is nothing to prevent a heritage railway developing its own company standards, which could be based on the content of the withdrawn standards, if these were relevant.

Heritage operators should also find ORR’s recently updated safety guidance on ‘Minor Railways’ (Railway Safety Publication #005) and ‘The management of steam locomotive boilers’ (Railway Safety Publication #006) useful for understanding the minimum requirements. Both are available from the ‘Rail health & safety’ section of ORR’s website at www.rail-reg.gov.uk.

Some standards and guidance may also be available from the Heritage Railway Association.

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1(1)
(c)

Arrangements for communicating information to the ICP

5.9 The operator will need to show that they have provided the ICP with all the relevant information and documents they need to be able to carry out a satisfactory assessment.

This would usually include:

- documents used in designing and setting out a specification for the project;
- certificates of conformity for materials used;
- any other risk assessment and safety analysis reports;
- evidence that the project meets the relevant standards, and an explanation of how risk will be managed where the project does not meet the standards; and
- evidence of working with other relevant duty holders to ensure related projects work together.

Sch
4
1(2)

Arrangements for controlling risks arising during testing

5.10 The operator will need to develop suitable testing proposals to ensure that the tests can demonstrate that the system functions as designed and that risks are reduced to as low as is reasonably practicable. The operator will need to involve the competent person in the planning of the tests. The advice of the ICP should help to ensure that all aspects of the system with safety implications are assessed. They should also be able to offer advice on the relevant tests to be made and the appropriate records to be kept.

5.11 In many cases the testing process itself has the potential to introduce risk onto the transport system. It is important that the SV scheme takes account of such risks and ensures that controls are in place to mitigate them.

Operators do not require consent from ORR to begin testing. Before testing commences, operators should agree with the ICP:

- the scope of the test;
- the success criteria; and
- the operating arrangements for the test.

Sch
4
1(3)

Arrangements for review and revision of the scheme by the ICP

5.12 The operator is responsible for preparing the written SV scheme, but the ICP should be involved in checking and refining it as the project progresses.

Sch
4
1(4)

Arrangements for keeping records

- 5.13 The operator must make sure that the method of assessment and its findings – including any action the ICP has recommended the operator take – are recorded and communicated to the appropriate managers.
- 5.14 The operator must also keep a record of any action they carry out as a result of the assessment. The operator does not have to act on the recommendations made by the ICP. However, where the operator does not do so, they should document the reasons.
- 5.15 If the operator cannot ensure that safety risks are being managed so far as is reasonably practicable (irrespective of whether or not the ICP’s recommendations are implemented), then they should not proceed with placing the project into service. ORR inspectors can provide advice to operators where there is uncertainty about how best to proceed.

Sch
4
1(5)

Arrangements for sharing the scheme with senior management

- 5.16 To ensure effective governance of the SV process, the scheme and important information and decisions arising from it should be communicated to senior managers. The appropriate level of communication is for the operator to decide. However, it is likely to involve those with sufficient authority to ensure that any action required in relation to the SV is taken.

The ICP’s assessment

- 5.17 As the table below shows, the ICP’s assessment is not a one-off examination or check which takes place at the end of the project. Rather, the ICP should be involved throughout the project – assessing the adequacy of the operator’s arrangements for ensuring safety from the design stage onwards and recommending any necessary action.
- 5.18 The ICP is also there to check that the operator has carried out the examination and testing described in the SV scheme (but not to undertake the actual examination or testing).
- 5.19 The verification assessment should be proportionate to the size, complexity or risk involved in a project, but would usually involve physically examining, or reviewing documents relating to, things such as:

- project specifications;
- designs;
- certificates;
- compliance of products with relevant safety law (such as CE marking); and
- how contractors have been used in the project.

5.20 The ICP is not responsible for checking every safety critical part, but they should check that the operator has taken steps to ensure that:

- the design of the project meets relevant standards;
- any safety-critical parts are suitably designed and built;
- the project has been built, installed and tested properly; and
- arrangements are in place for the project to be run and maintained safely.

5.21 The table below sets out the assessment arrangements in a typical safety verification (SV) process:

Stage	Transport operator	Independent competent person (ICP)
Initial concept	Decides SV applies Appoints ICP Develops project scope Sets out ongoing communication arrangements throughout course of scheme	Receives information on project scope, interfaces, and how risks will be identified and controlled. Advises on compliance with best practice, suitability of proposed standards and gaps where company standards could be required.

<p>Check of design and integrity</p>	<p>Provides information on project design selection process, proposed standards and verification criteria</p> <p>Drafts written SV scheme</p>	<p>Checks and reports back on suitability and robustness of SV scheme. May recommend improvements.</p> <p>Develops the verification plan with operator.</p>
<p>Manufacture, design and installation</p>	<p>Provides information on manufacture and design of component(s) and assemblies</p> <p>Sets out strategy for installation and ensuring compatibility</p>	<p>Checks and reports back on design, manufacture and compatibility arrangements. May recommend alternatives or remedial action.</p>
<p>Testing</p>	<p>Provides information on plans for testing, on the results of the testing and on recommendations for and performance of any resulting remedial action</p>	<p>Checks and reports back on testing arrangements. May recommend improvements.</p>
<p>Bringing into service</p>	<p>Provides information on arrangements for safe bringing into service.</p> <p>Provides report of SV scheme to appropriate management.</p>	<p>Checks and reports back on arrangements. May recommend improvements.</p> <p>Involvement ends.</p>
<p>Operation (post-project completion)</p>	<p>Operates under safety management system.</p> <p>Retains records of information provided to ICP, and ICP's reports/ recommendations.</p>	<p>May wish to retain records of reports and recommendations for their portfolio.</p>

Reg
6(4)
(b)

5.22 ROGS requires operators to ensure that the ICP carries out the SV. One way of doing this is for operators to include the tasks the ICP(s) needs to carry out in any contractual arrangements with the person they appoint.

What records should the operator keep?

Project-specific

5.23 Record keeping is not a bureaucratic task to be undertaken at the end of the project. The process of providing information, carrying out checks and agreeing action between the operator and the ICP enables the operator to build up a file about the project. This could include records of:

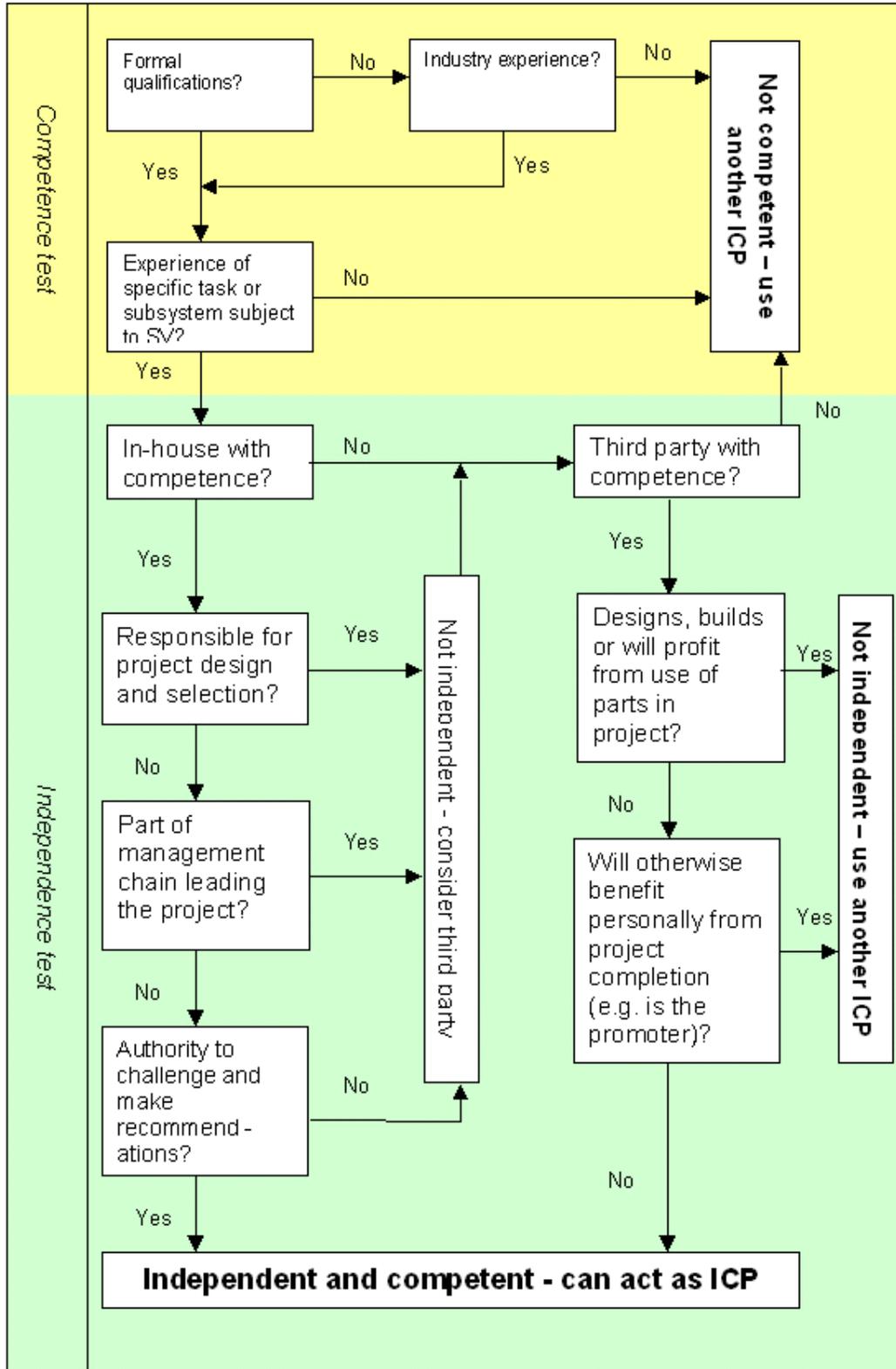
- the specific written scheme for the project;
- the information the operator provides to the ICP;
- the ICP's assessments and recommendations; and
- the action the operator takes.

5.24 The operator may wish to retain these records for the lifetime of the rolling stock or infrastructure introduced by the project.

It should be noted that while there is no obligation in ROGS for an ICP to retain records of their work, ORR recommends that they do so. This is something operators may want to stipulate in their contract with the ICP.

5.25 If some of these records are generated by other processes (e.g. the health and safety file for a project carried out under the Construction (Design & Management) Regulations) then there is no need to duplicate the information. However, its location should be cross-referenced in the written safety verification scheme.

Annex 1: Decision chart for selecting an independent competent person



Annex 2: Case studies

Case study 1 (Rolling stock): A heritage railway purchases a steam locomotive which it wishes to refurbish and then place into service.

Is safety verification required?

1. The operator knows from the specification of the new locomotive that it uses a braking system that is not in use on his transport system, though he is personally familiar with it.

2. There are two tests for applying SV:

(a) Is the locomotive different from anything else on the particular railway system?

In this case yes; it has a different form of braking to all the other locomotives. There could be issues with physical compatibility requiring modifications. There could also be issues with having staff and equipment capable of undertaking the refurbishment properly (as well as operating and maintaining it in future).

The test here must focus on the piece of equipment and its compatibility/similarity with the rest of the railway system and not focus on the personal knowledge of the individual who owns it.

The first test is met.

(b) Does the locomotive present a significant safety risk?

The key factor here is the braking system. This is a safety critical system for any railway vehicle and as such problems with the braking system would present a significant safety risk.

The second test is also met.

3. On the basis of the two tests it would be likely that this type of work, where a locomotive with a difference in a safety critical aspect from all other locomotives on a railway was being introduced, would require a safety verification process to be followed.

Selecting the independent competent person (ICP):

4. The ICP would need ideally to be a person who has undertaken a similar refurbishment on an identical type of locomotive. If this is not possible then they should at least have experience of the safety critical braking system involved. The ICP should understand both the locomotive and how it is likely to interact with the rest of the railway's stock so that they can agree the work required to ensure that the new locomotive works safely on the railway.
5. Ideally the ICP should be an experienced engineer with formal qualifications. However, it is acceptable for the ICP to have a good record of experience instead of formal qualifications.

Writing the scheme:

6. Standards would be required that specified the physical interface between the locomotive and the brake subsystem, the materials to be used and the tests required to demonstrate that a certain performance is to be achieved.
7. It is quite possible however, that specific formal standards for the work are either non-existent, unobtainable or significantly out of date. This is a key stage where the ICP and those carrying out the refurbishment and modifications must agree what work is required to be done. If standards are absent, they will need to agree the specification that needs to be achieved and what might be an acceptable way to meet that specification.
8. As well as agreeing the standards to which the work will be carried out, the ICP will also need to agree how the locomotive will be tested to confirm that it has achieved the required performance and that the quality of workmanship is appropriate for the application. This will include a range of tests from component level (such as any non-destructive testing required on welds) through to operational performance testing (such as ensuring the locomotive can stop a certain size of train at line speed in a certain distance).

The assessment:

9. At the start of the process, the ICP will be looking to confirm that standards or accepted good practice are being used. The ICP will need to bear in mind not just that the locomotive is being refurbished to a safe operational condition in its own right, but that it must then also interwork safely with the rest of the stock on the railway. In this context they will need to see that some

assessment has been made of compatibility issues and that measures have been put in place to reduce risks.

10. Where the ICP feels that either the design, workmanship, or the results of tests are indicating unsafe conditions then they should bring this to the attention of the management of the railway and also to the owner. These people may choose to ignore the opinion of the ICP if they have good and demonstrable reason to do so. The management team or owner may not accept the opinion of the ICP, if they have good and demonstrable reasons not to do so.

Recording the findings:

11. At the start of the process the ICP should expect that the work is documented to show the initial state of the locomotive, the standards to be applied, the specified performance to be achieved, the minimum qualifications of staff for work such as welding, details of any material testing to be undertaken, and the design of the modifications required.
12. As the refurbishment progresses then records may be generated of actual work done, materials used, test results and so on. A record could also be kept of all the performance testing undertaken, results and any remedial works required as a result.
13. The ICP should be able to follow the locomotive from:
 - its original state;
 - a justification of the modifications to show they should achieve a safe performance;
 - details of the work done to show that has been carried out in a competent manner; and
 - test results that demonstrate that the modification has produced a locomotive that is capable of operating safely on the railway in question.

Case study 2 (Signalling): A heritage railway is expanding its operations from a single line and siding with one locomotive to a longer line with passing loops, more sidings and several locomotives. These changes require the railway to introduce a signalling system to control train movements. For the purposes of the example we will assume the introduction of semaphore signalling, mechanical interlockings and an electric token block arrangement.

Is safety verification (SV) required?

14. The operator's line does not currently have any form of signalling. There are two tests for applying SV:

- (a) Is the signalling proposed different from anything else on the particular railway system?

Since the railway currently does not have any signalling, it is clear that the first test is met.

- (b) Does the signalling system present a significant safety risk?

15. Here we need to decide if the signalling arrangements could represent a significant safety risk. Risks could include incorrect design or poor installation either of which could result in situations such as wrong side failures or signalling of conflicting moves. There are clearly some very serious multiple fatality risks that could arise and so present serious and significant risks.

The second test is also met.

16. On the basis of the two tests it would be almost certain that this type of project, where a signalling arrangement was being introduced which existed nowhere else on the system, would require safety verification under ROGS.

Selecting the independent competent person (ICP):

17. The railway would need to select an ICP who has experience and understanding of the particular signalling equipment that they intend to install.

18. The ICP needs an appropriate level of understanding of the mechanical lockings and the token working methodology, and the risks that can arise from such arrangements..

19. The railway already has access to a retired signalling engineer who is familiar with semaphore signalling and mechanical lever frames, including their design, construction and maintenance. This person has not had any involvement with the development of the expansion proposals so is able to act as a competent person for them. However, the engineer has no experience of the type of electric token block equipment the railway has been able to obtain. The railway negotiates with another heritage railway to use the services of their employed Signalling & Telecommunication engineer who is experienced with the specific token machines to act as competent person in relation to that part of the work.
20. The railway agrees with the two competent persons that they will each focus on their respective areas and not be called on to offer advice outside of the area they have been asked to address. At the interfaces between technical areas the competent persons would be expected to come to a common agreement on standards/best practice and coordinate their advice to the railway. The railway would have to set common arrangements for the work of the two competent persons and also to make decisions on how to proceed if the competent persons had differing views.

Writing the scheme:

21. The standards to be applied could be those set out in the Institution of Railway Signal Engineers (IRSE) 'green booklets' (these represent good practice and principles to be applied in such situations and are re-printed by the IRSE), elements of Railway Group Standards or from ORR's RSP5 'Guidance on Minor Railways'. However these may not be appropriate to all railways and a standard specific to the railway could be used.
22. The ICPs would need to advise the dutyholder to ensure that that the correct design approach had been selected and that the equipment being specified was mutually compatible.
23. In some cases there may not be adequate written standards so it is the role of the ICPs to support the railway in deciding what acceptable standards and specifications should be applied to those parts of the work.
24. The ICPs would also need to advise the railway to help them ensure that the testing regime proposed was suitable and sufficient for the signalling and locking arrangements proposed.

25. The testing and commissioning could conform to current IRSE recommendations, or alternatives. The ICPs should be able to advise the railway on what would be appropriate for their project.

The assessment:

26. It is not the role of the ICPs to select the standards, or check the design work or the quality of the installation; but it would be right for the ICPs to make sample checks to ensure that the various works have been considered by people with relevant qualifications for those safety critical functions.
27. For the signalling work, the ICPs should be able to assess, from evidence obtained by the dutyholder, that the staff conducting the safety critical aspects of the design and installation of the new equipment have appropriate competencies for those tasks.
28. It would also be proper for the ICPs to check that the stages in the testing and commissioning plans for the signalling have been completed and that residual actions identified have been closed out.

Recording the findings:

29. The ICPs may wish to record their observations and findings continuously through their involvement with the scheme; ideally records should not be left to a single report at the end of the scheme.
30. The signalling system records could include the primary records of test as well as the secondary records and the ICPs may be asked to confirm that they have seen these records and that appropriately competent people carried out the testing.
31. The ICPs could provide reports to the railway at suitable points through the process giving their recommendations and opinions. The final report should help identify and advice on any residual recommendations.
32. The ICPs are not responsible for failings in the design or testing but need to ensure that they report any concerns to the railway.

Annex 3: Summary of works, plant and other equipment unlikely to require safety verification

1. This list is intended to illustrate the types of works that would not normally need to go through the safety verification process under a transport undertaking's safety management system.
2. The list is based on the General Notices that were issued in respect of the now repealed Railways and Other Transport Systems (Approval of Works, Plant and Equipment) Regulations 1994. Additional commentary has been given to illustrate why it is suggested the various examples would not meet the tests for safety verification.

	GN in effect	Description of works, plant and equipment	Conditions to which made subject	Commentary
2	5 April 1994	<i>General</i>		
3		1 Works, plant and equipment located away from the path of vehicles using the relevant transport system concerned, but excluding signalling or other control works, plant or equipment necessary for the safe operation of the system, irrespective of location.	The intended location of the works, plant or equipment is to be sufficiently distant from such paths as to ensure that their installation and presence thereafter does not jeopardise the safe operation of the system.	The purpose of railway specific legislation is to control railway risks; the Health and Safety at Work etc. Act exists to control more general risks. So, only works that are directly relevant to the operation of the transport system should normally fall within the railway specific SMS change control process. Normally this will mean locomotives and infrastructure of the line itself, but things such as signalling may of course be remote from the route, but still fall into the need for railway SMS because of their direct affect on the safe operation of the system.

			Description of works, plant and equipment	Conditions to which made subject	Commentary
4	5 April 1994		2 Private sidings and other lines not used for the conveyance of passengers within the curtilage of premises other than those forming part of the undertaking of the relevant transport system concerned, but excluding those crossed by a public right of way (whether or not on the same level).		HMRI has generally taken the view that storage sidings are not part of the operational railway, and if provided with protection such as trap points, can be effectively isolated from the operational railway. Sidings immediately alongside operational lines where trains are held briefly for passing manoeuvres are considered to fall into the operational railway.
5	5 April 1994		3 Minor improvements to works, plant or equipment (other than vehicles), including improved lineside fencing; improved station lighting; and station concourse or platform resurfacing.	The work when carried out is not to result in any reduction of standards of safety.	Generally works such as these, where safety is being improved anyway, are judged to be low risk and would not normally need to attract safety verification.
6	5 April 1994		4 Removal or discontinuance of any works, plant or equipment.	The work when carried out is not to result in any change in the method of using or operating any remaining works, plant or equipment.	If there is redundant equipment on the system that is already out of use and has no effect on the operation of the system then there can be little risk in removing it.
7	5 April 1994		5 Temporary track, signalling or bridge works not in place for more than 6 months and excluding any which are extensive or novel in character.		Such works should not normally result in a significant increase in risk and as such would not normally attract safety verification.
	5 April 1994		<i>Permanent way</i>		

	GN in effect	Description of works, plant and equipment	Conditions to which made subject	Commentary
12	5 April 1994	11 Minor track alterations.	The work when carried out is not to result in any alteration to signalling controls or give rise to need to vary safe braking distances or overlaps.	Such works should not normally result in a significant increase in risk and as such would not normally attract safety verification.
13	5 April 1994	12 The erection of additional signal supporting structures.	The work when carried out is not to result in any alteration to the signalling arrangements and full clearances are to be provided.	Such works should not normally result in a significant increase in risk and as such would not normally attract safety verification.
14	5 April 1994	13 Replacement of any existing signalling equipment with equipment of a different type.	The new equipment must have received type Approval or be of a type which is in general use and which can be demonstrated to be no less safe in operation: provided in either case that no change of operating characteristics is to be involved.	The condition here sets the restriction that the equipment must be of a type already in use on the railway and have no difference in risk. This would mean that neither of the tests for safety verification would be passed.
15	5 April 1994	<i>Stations and other stopping places</i> 14 The erection of simple shelters at stations and other stopping places.		Such works should not normally result in a significant increase in risk and as such would not normally attract safety verification.
16	5 April 1994	15 The provision of station furniture, including seats, ticket machines and similar equipment on platforms or equivalent equipment at other stopping places.	The furniture must not materially prevent or impede the movement of persons.	Such works should not normally result in a significant increase in risk and as such would not normally attract safety verification.
17	5 April 1994	16 The heating, lighting or ventilation of stations, except where such systems are essential for emergency evacuation or to support life.		Such works should not normally result in a significant increase in risk and as such would not normally attract safety verification.
18	5 April 1994	17 The provision of temporary means of access or egress (including by means of a footbridge) and the erection of temporary barriers.	The work is not materially to impair existing safety standards at the location concerned.	Such works should not normally result in a significant increase in risk and as such would not normally attract safety verification.
19	5 April 1994	<i>Bridges</i>		

	GN in effect	Description of works, plant and equipment	Conditions to which made subject	Commentary
20	5 April 1994	18 Minor reconstruction of any part of a bridge, but excluding any reconstruction of a station footbridge.	The work is not to involve any significant change of design or any reduction of structure gauge. All reconstructed parts (including parapets) are to comply with safety standards laid down by any of the bodies specified in regulation 8(1)(a) or (b) of the above-mentioned Regulations and current at the time that the work is carried out.	Such works should not normally result in a significant increase in risk and as such would not normally attract safety verification.
	5 April 1994	<i>Level crossings</i>		
21	5 April 1994	19 Alterations the subject of a statutory order to any level crossing.	The work is not to involve any consequential alterations to track or signalling.	Level crossings subject to Orders are outside the ROGS system.
22	5 April 1994	20 Level crossings for the sole use of employees of the relevant transport system.		Because the crossing is restricted to employee use it is expected that the employees will all have received suitable training in how to use the crossing facility safely. Hence an employee only crossing should present considerably less operational risk than a regular public crossing, and have a level of risk that is not 'significant'.
	5 April 1994	<i>Rail-mounted vehicles</i>		
23	5 April 1994	25 Production models of a vehicle for which type approval of its prototype has been given.	The vehicles are to conform in all significant respects with the prototype and with any relevant operational limitation to which Approval of the prototype has been made subject.	If the undertaking has already successfully produced a particular vehicle then there will be no new risks created by building further vehicles of the same design.

	GN in effect	Description of works, plant and equipment	Conditions to which made subject	Commentary
24	5 April 1994	27 Alterations to vehicles of the following character – decorative changes, other than external front-end colour where this has been made a specific requirement; changes to panelling, upholstery or other materials; changes to interior lighting or to public address equipment; and other minor modifications which do not materially affect safety.	The new panelling or material is to be of a standard no less safe than that which it is to replace. The work when carried out is not to result in any reduction of standards of safety.	Such works should not normally result in a significant increase in risk and as such would not normally attract safety verification.
25	5 April 1994	28 Changes to components or subassemblies forming part of the equipment of a vehicle.	The components or sub-assemblies are to comply with the standards of any of the bodies specified in regulation 8(1)(a) or (b) of the abovementioned Regulations current at the time that the work is carried out and are not to reduce the standard of safety of the system of which the components or subassemblies form part.	This entry is designed to allow an obsolete component to be replaced with a current version. The condition that safety standards are not to be reduced means that there should be no significant safety risks.
26	5 April 1994	<i>Other plant and equipment</i>		
27	5 April 1994	29 Production models of plant or equipment for which type Approval of its prototype has been given.	The plant or equipment is to conform in all significant respects with the prototype and with any relevant operational limitation to which Approval of the prototype has been made subject.	If the undertaking has already successfully produced a particular item of equipment, then there will be no new risks created by building further items of the same design.

	GN in effect	Description of works, plant and equipment	Conditions to which made subject	Commentary
28	1 June 2000	Works, plant and equipment installed for the purpose of bringing into service a train protection system including those required by the Railway Safety Regulations 1999.	<p>i. The works shall be implemented in accordance with a programme approved by the Health and Safety Executive pursuant to regulation 3(2) of the Railway Safety Regulations 1999.</p> <p>ii. Each part of the system which has been brought into service under the programme referred to in sub-paragraph i, is maintained in service.</p> <p>iii. Any equipment forming part of the train protection system referred to in subparagraph i shall be of a type approved by the Health and Safety Executive under regulation 6 (type approval of plant and equipment) of the Regulations.</p> <p>iv. With regard to rolling stock, a certificate of compliance in accordance with Appendix 3 of the Regulations is to be submitted to the Health and Safety Executive for each vehicle type fitted. A certificate of completion for each vehicle type shall also be submitted in due course.</p>	<p>Works to install train protection and warning systems (TPWS) or automatic train protection (ATP) trackside equipment is unlikely to be carried out on heritage or minor railways.</p> <p>Where railways fit TPWS or ATP equipment to locomotives to allow those vehicles to work over the mainline railway then assessment will need to be made against the two criteria. 1) has the railway done it before on that type of vehicle?, 2) does adding the equipment create the potential for a significant risk?</p> <p>Where an automatic warning system is fitted to a railway on a system for the first time this will require safety verification; subsequent fitment should not.</p>
30	22 December 2003	<i>Stations and other stopping places</i>		
31	22 December 2003	1 The lengthening of platforms at an existing station.	The work is not to involve any change in signal sighting, location or controls or give rise to the need to vary safe braking distances or overlaps.	Such works should not normally result in a significant increase in risk and as such would not normally attract safety verification.
	22 December 2003	<i>Bridges</i>		

	GN in effect	Description of works, plant and equipment	Conditions to which made subject	Commentary
32	22 December 2003	5 Minor reconstruction of any part of a footbridge, at a station or elsewhere, excluding those constructed over railways electrified with overhead line equipment.	The work is not to involve any significant change of design or any reduction of structure gauge. All reconstructed parts (including parapets) are to comply with safety standards laid down by any of the bodies specified in regulation 8(1)(a) or (b) of the above-mentioned Regulations and current at the time that the work is carried out.	Such works should not normally result in a significant increase in risk and as such would not normally attract safety verification.
33	22 December 2003	6 Installation of train data recorders or on-train maintenance recorders (OTMR) to existing vehicles.	<ul style="list-style-type: none"> • The OTMR must not compromise any vital train control system. • The installation must not directly or indirectly affect vehicle integrity. • The equipment must not cause distraction to the driver. 	Such works should not normally result in a significant increase in risk and as such would not normally attract safety verification.
	28 February 2005	<i>General</i>		
34	28 February 2005	1. All altered works that can be classed as renewals, to include like for like or replacement with a functionally equivalent alternative (not including altered works specifically covered by the following paragraphs) <i>Infrastructure (including Permanent Way and Bridges)</i>	There must be no change in the safe operation of the works, plant or equipment, or any change to the interface with other systems and/or equipment.	Such works should not normally result in a significant increase in risk and as such would not normally attract safety verification.
	28 February 2005	<i>Infrastructure (including Permanent Way and Bridges)</i>		
35	28 February 2005	2. All minor alterations to track layout, other than the replacement of a double junction with a single-lead junction, or the removal of trap points or reduction of flank protection.		This provision is intended to cover rearrangements of track to improve geometry etc. It is not intended to cover fundamental changes to track work layout hence the references to situations that are not included. Minor alterations should not normally result in a significant increase in risk and as such would not normally attract safety verification.
36	28 February 2005	3. All plain line and crossover renewals that do not use novel track fixings and supports.	The works when carried out should not result in the reduction of current clearances. See 12 below for signalling conditions.	Renewals should not introduce anything new to the railway and would therefore not meet the criteria for safety verification.

	GN in effect	Description of works, plant and equipment	Conditions to which made subject	Commentary
37	28 February 2005	4. Reconstruction and stabilisation of coastal, sea, river and estuarial defences.		These should generally be maintenance and renewal works and unlikely to require safety verification.
38	28 February 2005	5. All line side fencing.		Fencing should not be new to a system and would not normally lead to any significant risks. Safety verification very unlikely to be required.
39	28 February 2005	6. Installation and renewal of trackside walkways.	Structure gauge clearances must be maintained.	Such works should not normally result in a significant increase in risk and as such would not normally attract safety verification.
40	28 February 2005	8. Undertrack crossings having a diameter of less than one metre (any crossing more than one metre will be considered a bridge).		Such works should not normally result in a significant increase in risk and as such would not normally attract safety verification.
41	28 February 2005	9. All drainage schemes.		Such works should not normally result in a significant increase in risk and as such would not normally attract safety verification.
42	28 February 2005	10. Line side signage works except those associated with other works, plant or equipment for which approval is required.		Such works should not normally result in a significant increase in risk and as such would not normally attract safety verification.
	28 February 2005	<i>Signalling (including Telecommunications)</i>		
43	28 February 2005	11. Any signalling work associated with track realignment or relocation of track components.	The overall signalling control arrangements are not to alter and there are to be no changes to braking distances or safe overlaps.	Although the location of the signalling equipment may change the signalling arrangements are not altered and as such there is no change in risk.
44	28 February 2005	12. All signalling alterations associated with renewal/repositioning of switches & crossings but excluding any signalling project which involves remodelling.	Provided there are no material changes to the signalling controls or overrun distance.	Such works give no change in the operation of the railway, and should not present any new infrastructure that the railway does not already have.
	28 February 2005	<i>Stations /Other stopping places</i>		

	GN in effect	Description of works, plant and equipment	Conditions to which made subject	Commentary
45	28 February 2005	15. Construction of new stations of no more than two platform faces, with single storey buildings, no adjacent level crossings and, where overhead line equipment is present, no canopy or footbridge. Excluding sub surface stations or stations with elevated platforms. Does not include works that permanently affect signal sighting or train door operation.	Clearances on footbridges must be maintained or improved. All works on existing stations including the renewal of footbridges, re-gauging or alignment of platforms to meet current boarding and alighting requirements.	Simple stations are widespread and their features are well understood. It would be unlikely that such a basic station would be either unusual to a railway or capable of presenting significant risks. The dutyholder must however analyse the local circumstances to determine if there are additional issues that should be considered; i.e. a level crossing immediately adjacent to the station.
	28 February 2005	<i>Rolling Stock (including Rail-mounted Vehicles)</i>		
46	28 February 2005	18. All renewals and upgrades of vehicle subsystems provided that the interfaces, functionality, and transfer functions of control systems remain the same.	Performance of the subsystem must not be reduced. Performance of the vehicle must not be materially altered and equivalent levels of safety must be maintained.	Where a component is functionally identical to that it is replacing then it is unlikely to meet the requirements for safety verification.
47	28 February 2005	19. All internal cosmetic vehicle refurbishments using modern equivalent materials.	All materials must be to the latest fire specifications.	Such works should not normally result in a significant increase in risk and as such would not normally attract safety verification.