

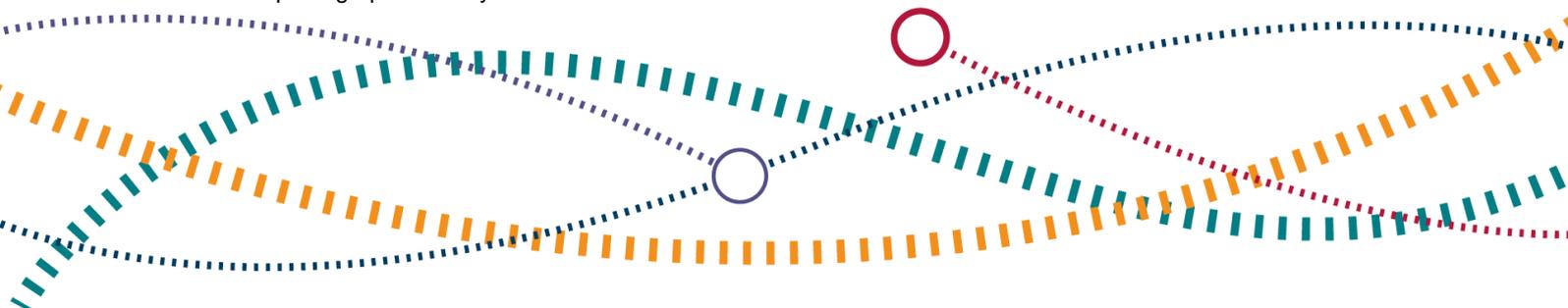
Safety Management Systems

Guidance for Minor and Heritage Railways

01 August 2023



Front cover photograph courtesy of Robin Coombes



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Foreword

Using this guidance

This guidance has been produced for minor and heritage railways who are required to have in place a Safety Management System (SMS) because the Railways and Other Guided Transport Systems (Safety) Regulations 2006 (ROGS) applies to their activities.

This guidance is broken down into chapters that consider specific ROGS requirements and how they might be apply to a minor or heritage railway.

Chapter one introduces safety management systems, why and where they are necessary, and key requirements. Chapter two then offers advice on where to start, possible SMS structure, and overarching principles.

Chapter three is further broken down into sections. Each section has the same format. They each:

- say what the ROGS duty is;
- describe what the person responsible for carrying out that duty (we call them 'duty holders') must do; and
- provide some practical advice or examples for meeting the duties.

The information in plain text provides context and background information.

The red shaded boxes show the specific ROGS requirements and what duty holders must do.

The blue shaded boxes offer guidance, examples or practical help.

The orange shaded boxes explain where to get more information.

What is the purpose of this guidance?

This guidance has been produced to help the most diverse sector of the rail industry in the UK to interpret and apply the specific requirement of ROGS to have in place a proportionate safety management system. Due to the considerable variation found

amongst the different duty holders it is not possible nor appropriate to prescribe a “one size fits all” approach.

This guidance provides a summary of ROGS requirements for safety management systems and how duty holders may apply these requirements to their own railway.

You may find it useful to read this guidance along with the regulations. The regulations are available to view on the legislation.gov.uk website.

Who is this guidance for?

This guidance is aimed at any person with responsibility for the design, implementation, management and review of safety management systems in use by minor and heritage railways. We have prepared this guidance with the following groups of people in mind;

- Leadership teams at minor and heritage railways;
- Health and safety managers at minor and heritage railways;
- Other managers with responsibility for all or part of their railway’s SMS;
- Staff (including volunteers) on the railway;
- Other persons who may be involved in the development, implementation, management and review of an SMS such as consultants; and
- As appropriate, trade union or staff representatives.

The requirement for an SMS is just one part of ROGS. [Our website](#) has guidance and information on other aspects of ROGS and what you need to do to meet those requirements.

Please note that ROGS has been subject to several amendments since the original issue in 2006. The legislation.gov.uk website does not automatically show the effect of the amendments. ORR’s [website](#) does have an unofficial consolidated version of ROGS that aims to capture the effects of all the amending legislation.

Where appropriate this guidance refers to guidance produced by both ORR and HSE on safety management systems.

You can ask us any questions about the guidance by sending an email to: rogs@orr.gov.uk.

Transport undertakings and infrastructure managers

Minor and heritage railways can be transport undertakings, infrastructure managers or both. Transport undertakings and infrastructure managers are defined in ROGS as follows:

Transport undertaking means any person who operates a vehicle in relation to any infrastructure but shall not include a person who operates a vehicle solely within an engineering possession.

Infrastructure manager means the person who:

- (a) For a station, the person who is responsible for managing and operating that station, and for all other infrastructure it is the person responsible for developing and maintaining that infrastructure, but it does not include anyone who only carries out activities such as the construction, maintenance, repair or alteration of infrastructure or a station; and
- (b) manages and uses that infrastructure or station, or permits it to be used, for the operation of a vehicle.

NB: please check the text of ROGS on legislation.gov.uk for the definitive text.

Most minor and heritage railways are responsible for all of the infrastructure upon which their trains operate. Transport undertakings who operate their trains on their own network are known as being vertically integrated as they have control of both the trains and track.

Some minor and heritage railways operate onto other networks, and some allow other transport undertakings onto their networks. Care should be taken where this occurs particularly where train speeds are greater than 25mph (40km/h) as you may require a safety certificate or safety authorisation and must also comply with the requirements of [The Railway Safety Regulations 1999](#) (S.I.1999/2244) (RSR 1999).

1. Introduction

The Railways and Other Guided Transport Systems (Safety) Regulations 2006 (ROGS) place a legal requirement on most minor and heritage railways to have in place an SMS. This guidance has been written to assist in the interpretation of ROGS and to ensure that the SMS in use by a minor or heritage railway is proportionate to the nature and extent of the activities undertaken by the minor or heritage railway.

Most minor and heritage railways operate solely on their own infrastructure at speeds up to 25mph (40km/h). However, some may wish to operate at higher speeds. If your organisation is the infrastructure manager for a railway that wants to operate at speeds greater than 25mph (40km/h) then you will require a safety authorisation or an exemption.

The transport undertaking operating the trains on the railway which has a maximum permitted speed greater than 25mph (40km/h) will also require a safety certificate or an exemption. Further information is available in our 'Guide to ROGS' document found on our [website](#).

NB: when considering speed, it is the line speed that is the determining factor for ROGS and not the speed the train travels at. For example, if you wanted to operate a heritage train onto the mainline network for a short distance at no more than 25mph (40km/h), but the line speed is 85mph (137km/h), you would still require safety certificate for that activity.

You can sub-contract operation of services to another transport undertaking who holds a safety certificate for operations where the line speed is greater than 25mph (40km/h), but your SMS must still outline arrangements for the control of the risks involved.

If your minor or heritage railway runs parallel to other railway infrastructure where no boundary fence exists, or alternatively connects with or crosses on the level other railway infrastructure your SMS will need to identify the risks arising from these interfaces.

Specific [guidance](#) has been produced for railways that require safety certificates or safety authorisations. If you hold a safety certificate or safety authorisation you will still require an SMS.

In addition to the requirements of ROGS, if you intend to operate at speeds above 25mph (40km/h) you must consider the requirements of the Railway Safety Regulations 1999. Further information is available on our [website](#).

The nature of minor and heritage railways can be very diverse, with some only using volunteers, others using employees only and most a blend of the two. However, all minor and heritage railways have a duty of care to workers, passengers and the public and this will be in both civil and criminal health and safety law. That means they should have in

place appropriate controls to minimise risks to health and safety of those affected by the activities of the railway.

The Health and Safety Executive website provides [guidance on the use of volunteers](#) and the application of health and safety law for voluntary organisations. We have also produced [guidance on wholly volunteer run railways](#).

Having established an SMS, the railway needs to consider the ongoing ability to successfully manage risk and identify areas for improvement. We have developed the [Risk Management Maturity Model \(RM3\)](#) to help railways consider the effectiveness of their systems and processes.

For minor and heritage railways we have developed this further and created [RM3 Topic Set 1 Heritage Railways](#) to help your railway consider the capability of their SMS and to identify areas for development.

Further guidance and information can be found within:

- [Health and Safety at Work Act 1974](#)
- [Management of Health and Safety at Work Regulations 1999](#)
- [ISO45001 Occupational Health and Safety Management Systems](#)
- [HSG65 Managing for Health and Safety](#)
- [HSE Guidance on Volunteering: How to manage the risks](#)
- [Assessment criteria for non-mainline safety certificate and safety authorisation applications](#)
- [Management Systems for addressing health and safety - HSE](#)
- [Wholly volunteer run railways and the law, June 2021](#)
- [RM3 Topic Set 1 Heritage Railways](#)

What does ROGS require?

ROGS is broken down into 5 main parts, supplemented by a number of schedules.

- Part 1 covers the introductory text and interpretation of the regulations.
- Part 2 covers safety management, certification and authorisation.
- Part 3 covers general duties such as risk assessment.

- Part 4 covers safety critical work.
- Part 5 covers various miscellaneous elements such as exemptions and offences.

This guidance focuses on part 2 of ROGS, however other parts of ROGS will be included as appropriate.

Does my railway need an SMS?

Not all railways in the UK are required by law to have in place an SMS. Likewise, not all railways in the UK are required to comply with ROGS requirements in full. Duty holders must consider the extent to which the regulations apply to their railway and apply these as required.

In general terms if the gauge of your railway is greater than 350mm and has vehicles carried on flanged wheels then you will need an SMS. If the gauge of your railway is less than 350mm but you cross a public carriageway (whether or not on the same level) then you will need an SMS.

There are some premises such as factories, ports, and dedicated freight terminals that are excluded from the scope of ROGS. Railways that operate only in these types of areas are not required to maintain a ROGS SMS. There is more information on this in Annex B and in the main ORR [Guide to ROGS](#) under 'What transport systems are not included in ROGS?'.

If ROGS requirements do not apply to your railway you may still consider implementing an SMS. An SMS is an effective means of managing and controlling health and safety risks. An SMS will normally use a recognised model such as [Plan, Do, Check, Act](#) as a means of driving continuous improvement. Remember, even if ROGS does not apply to your undertaking, the law requires suitable arrangements to manage health and safety are in place. The Management of Health and Safety at Work Regulations 1999 require employers to put in place arrangements to control health and safety risks.

For railways with a gauge less than 350mm the Passenger Carrying Miniature Railway Safety Group (PCMRSG) has created guidance for the safe operation of passenger carrying miniature railways. The guidance called [HS2020](#) has been fully endorsed by the HSE. This guidance advocates the use of a health and safety management system and the use of Plan, Do, Check, Act.

Self-employed people whose work activities pose a risk to health and safety of others must comply with health and safety law.

Most health and safety law apply to organisations that employ at least one person. Employers should have systems and controls in place to minimise any health and safety

risks to their employees and other persons such as volunteers and members of the public. If your railway does not have any employees you will likely have duties under health and safety law as most minor and heritage railways are located at nondomestic premises or are likely to manage or control construction work from time to time.

We have produced [guidance](#) on wholly volunteer run railways and the application of the law.

Annex B sets out a series of case studies on different railway and organisation types and how the ROGS requirement for an SMS might apply to them.

Sidings and depots

The terms 'sidings' and 'depots' can have a very wide meaning in minor and heritage railways. ROGS will apply if the sidings or depots are part of the transport system – see our 'Guide to ROGS' for further information. Even if the siding or depot is not itself part of the transport system, controllers of safety critical work still have duties under ROGS to manage safety critical tasks that are carried out on vehicles in sidings and depots that are being used on the transport system.

General health and safety legislation still requires that you ensure the health, safety and welfare of people who work for you, including employees and volunteers that work in sidings and depots. ORR advice is that, in practical terms this means that your SMS should include the health, safety & welfare of people who work on the railway, including in depots and sidings.

What is a Safety Management System?

You should organise and manage your railway to meet your legal duties to identify, eliminate or reduce so far as is reasonably practicable, the risks that your railway's activities create.

An SMS is more than just written policy and procedures: it is the railway's underpinning philosophy of how it safely delivers its objectives and how it ensures that it has sufficient resources to ensure it achieves those objectives effectively. The SMS should focus on ensuring the physical, managerial, procedural and cultural elements of the railway are managed to deliver effective and efficient risk control.

The use of an SMS is not unique to ROGS or railways, and many industries use SMSs to effectively manage and control risk within their operations. The SMS should be proportionate to the types of risks you are trying to control.

Things you should consider when determining what is proportionate include:

- The complexity of your operation;

A standard gauge railway using the one train on line principle operating on 80 days of the year is going to need a less comprehensive system than a larger heritage railway operating up to 300 days of the year with multiple trains running on the railway.

- The complexity of the measures in place to control the hazards of your railway;

If you only have one footpath style level crossing, the controls needed to ensure the safety of users is going to be far simpler than a railway with multiple crossings of varying types.

- The number of people you manage;

If you only have 10 drivers and firemen, the maintenance of their competence and effective record keeping should be far simpler than a railway that has more than 150 volunteer drivers and firemen.

- The numbers and types of equipment and assets you control;

The features present on your railway will significantly impact on your risk profile. Remember embankments, cuttings and drains need maintaining and should be considered as assets that you are responsible for. If you have bridges, both overline and underline, make sure you are aware of who is responsible for their maintenance. In most instances if your railway crosses a road on the level you are responsible for the maintenance of the road in the environs of the crossing.

- The numbers of contractors you use and their impact on safety on your railway; and

Some railways may use contractors to undertake certain tasks such as carriage cleaning and maintenance of the track. Contractors have a responsibility for safety, however where your railway uses contractors you have a duty to have in place arrangements and procedures to control risk arising from their activities. Remember, they are working on your behalf, so you are likely to be ultimately responsible for their actions. You also have a duty for monitoring the effectiveness of their risk control arrangements. HSE have produced a brief [guide to using contractors](#).

- Your visitor profile.

What type of visitor do you get to your railway? How many visitors do you get on a day or across a year? What are their needs? How do they interact with

your infrastructure and navigate your sites? Have you considered how they board or alight from your trains? Remember not every disability is obvious and you should consider visual, audio, neurodiverse and physical needs.

Most SMSs follow a recognised model. The model ORR and HSE recommend is Plan, Do, Check, Act. More information on this model can be found in [Managing for Health and Safety \(HSG65\)](#) available from the HSE website.

The four-stage plan, do, check, act model is based around the following four principles:

- Plan – determine your policy and plan for implementation,
- Do – assess risks and implement your plan,
- Check – measure performance,
- Act – review performance and act on lessons learned.

The key to this model is continuous improvement. An effective SMS drives continuous improvement and Plan, Do, Check, Act should be applied as a cycle on a regular basis to ensure that new issues are identified, or new control strategies are brought into use. This is a key element of ROGS and a key requirement of an SMS.

Further information on Plan, Do Check, Act is in section 3 of this document in the guidance on ROGS regulations 6(1)

Some of the benefits of a railway implementing an SMS are:

- **Strengthened safety culture** – when the management make a commitment that safety is a priority, it is then received and understood by its staff, and becomes part of their normal day to day work.
- **Process based approach to safety** – establishing a clear and documented approach to achieving safe operations that is clear and understood by all within the railway.
- **Early identification of hazards** – improving the railway’s ability to identify early emerging hazards and evaluating the risk to prevent accidents and incidents.
- **Safety data decision making** – analysis of the safety data will allow a railway to strategically determine the information to make informed future decisions.
- **Improved safety communications** – providing a common language throughout the railway to enable the development and implementation of the

safety strategy and policy. This will also inform, develop and define the railway's safety objectives and performance indicators (SPI's) resulting in improved understanding of the safety performance in the railway by its people, as well as how they contribute to the success of the railway.

- **Financial savings** – having a robust and mature SMS can reduce costs resulting from accidents and incidents. By the railway having a proactive approach to risk management, the cost resulting from accidents and incidents can be reduced or avoided. These costs can be injury costs/compensation, repair costs to equipment, legal costs, loss of business etc. Some insurance providers may also offer reduced premiums based on a railway's safety performance.

The HSE produce statistical data on [the costs of accidents and ill health](#).

What is the purpose of an SMS?

ROGS Regulation 6 and Schedule 1 describes the requirements for an SMS for other transport operators. Nearly all minor and heritage railways are considered as other transport operators for the purposes of regulation 6.

The following guidance sets out the specific requirements of ROGS and how this might be applied on your minor or heritage railway.

Remember the purpose of the SMS is to control risks to prevent harm. An SMS should help to structure and document the actual processes and practices of a railway and should not generate additional material that is not used or relevant to the operations. A good SMS should document “the way we do things around here”.

Minor and heritage railways, like any business, have the potential for accidents and injuries. The characteristics of minor and heritage rail operations mean that there are some risks that are unique to these types of railways.

The SMS should show how it identifies the potential hazards of the railway, how the degree of risk is determined, and how controls are identified to eliminate or mitigate the outcomes of potential incidents to a level that is as low as is reasonably practicable.

The SMS should also show how the railway will prioritise actions to concentrate on the control of higher risk issues first before moving on to lower risk events.

A properly structured SMS that is robustly and demonstrably applied is good way of complying with the duties in the law and can give assurance to the ORR that risks are being properly controlled.

The system should be proportionate to the level of risk you are trying to control.

This page is included for your notes.

2. Starting Points

All minor and heritage railways are likely to have some elements of an SMS in place already. Most have already put together an SMS setting out how risks are controlled and who is responsible.

The starting point for any minor and heritage railway is to collate all existing elements that make up the system and completing a gap analysis to identify elements that are in place, which elements need additional work and what is missing from the system.

The gap analysis should seek to identify not only the regulatory requirements but the railways specific needs as well.

Some railways may already have in place other management systems such as a quality management system. Where these are in place railways should consider the relationships between these systems. An effective SMS can enhance other management systems.

You can use the guidance in Chapter three to assist you with preparation of the gap analysis.

When starting out, it is not important that all of the existing elements of the SMS are in a single format. As documents that make up the system are due for review railways should update these into the standard format for the SMS in use by the minor or heritage railway.

When the railway has identified the areas that need additional work, an implementation plan should be prepared and agreed internally. This may be at Board level to ensure sufficient resources are made available and that accountabilities are understood for the implementation plan. The missing areas and areas for development need to be documented in the railway's implementation plan setting out:

- What is required;
- when; and
- who will do it.

The implementation plan should prioritise the areas for development on a risk-based approach. Railways may consider a red, amber, green (RAG) score for each element of the SMS for development to aid prioritisation.

The railway should also consider what a reasonable timescale looks like for the development and implementation of an SMS. Implementing over a short period of time can be a challenge and can result in a less effective SMS.

Such implementation plans should align with your change management arrangements.

Implementing an effective SMS requires a commitment from the senior leadership team of the railway. The Board or other such leadership team may nominate, appoint or employ an individual to manage the review and implementation of a proportionate SMS, but the senior management team maintains responsibility for the SMS. They must make sure that the documents reflect the tasks as they are actually completed, and that control of risk is suitable and sufficient.

Useful guidance includes:

- HSE guidance: [Leading health and safety at work](#)
- Institute of Directors: [leading health and safety at work](#)
- RM3 Topic Set 1 Heritage Railways: [Appendix 1: The 12 Tablets of Governance](#)

Structure of an SMS

The SMS is more than a single document titled “Safety Management System”. An effective SMS contains a combination of policies, standards, procedures and processes that control a railway’s activities.

The extent of an SMS will vary considerably and is dependent on numerous factors including such things as the number of people involved in managing the railway and the complexity of operations and the infrastructure.

Many railways start with a single document titled “Safety Management System”. This should be a high-level explanation of how the railway complies with the requirements of ROGS. This document shouldn’t contain lots of detail or specific information on what can be found on the minor or heritage railway and how specific risks are controlled. This detail should be contained in separate policies and procedures that are referenced in this higher-level document.

Mainline railways and holders of safety certificates or safety authorisations are required to *describe the type and extent of their operation*. This description is crucial to demonstrate how the SMS will ensure compliance with relevant health and safety law and is appropriate to the size and nature of the railway infrastructure or operation. This description sets in context the activities from which hazards are most likely to arise, and the potential scale of the resulting risks.

Minor and heritage railways are not required by ROGS to provide this description; however the SMS must be adapted in nature to the level of risk that the SMS is trying to control. We would therefore recommend that your SMS *describes the type and extent of your operation* in order to determine what is proportionate for your railway.

This introductory section should explain the organisational structure. This is particularly important where more than one organisation is involved in the ownership, management or operation of the railway.

When writing this top-level document avoid providing too much detail. It is appropriate to state that your minor or heritage railway is a standard gauge railway. It is not appropriate in this top-level document to explain the type of rail in use, the permitted gauge widening, the weight of the rail and the number of sleepers provided in each length. All of this detail should be provided in dedicated standards relating to the infrastructure.

Depending on the size of your railway you may have policies and procedures that relate to all of the railway or just to sections of it. These can be grouped into railway wide policies and procedure or policies and procedures that may relate to a specific department.

For example, the railway may have a procedure for writing a risk assessment and a specific instruction on maintaining a diesel shunting locomotive. Only those responsible for maintaining the diesel shunting locomotive need access to this instruction whereas more people within the railway will need access to the procedure for completing risk assessment.

Some minor and heritage railways take a tiered approach to their SMS, as illustrated in figure 1.

Quite often at the top of the system they have a single document titled “Safety Management System”. Often this document describes:

- The type and extent of the railway’s activities;
- the distribution and flow of responsibilities throughout the railway, including an organisation chart;
- the structure of the system and any model that’s followed such as plan, do, check, act;
- how risk is controlled;
- how safety critical work is controlled;
- how the operations and infrastructure are maintained, controlled and managed; and
- the process for review of the system.

This top-level document then “points” to other parts of the system.

Depending on the size and complexity of the railway there may be one or more further tiers.

Larger and more complex railways should consider at least two further tiers to aid clarity and understanding for users of the system. The first of these additional tiers should cover policies and procedures that are applicable to multiple areas of the railway, such as control of contractors for example. Responsibility for review and implementation of policies and procedures in this tier should sit with the senior leadership team. This may be delegated to a health and safety manager or team.

The third tier in this system should cover departmental specific procedures such as maintenance instructions for locomotives. These procedures can be grouped by department and should be the responsibility of the person responsible for overseeing and where appropriate completing the task. This would typically be a department manager.

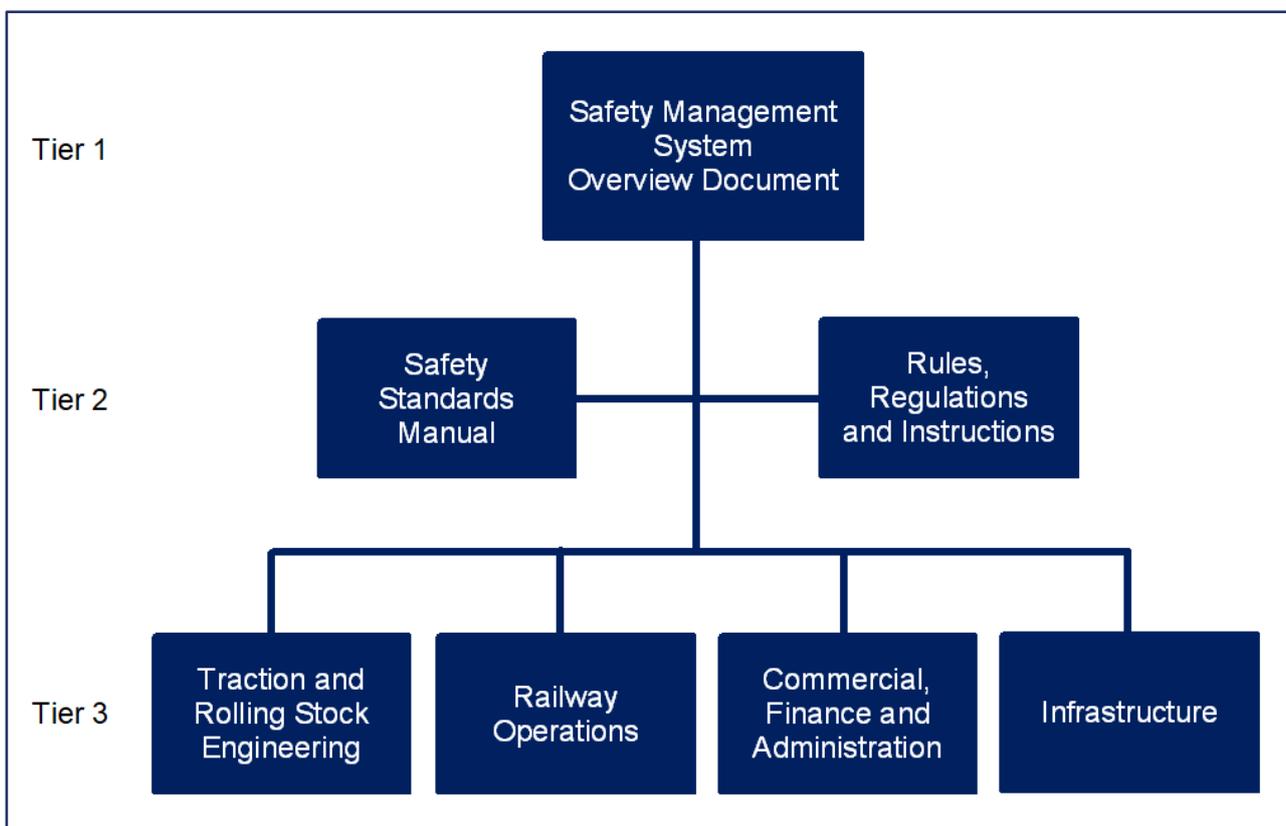


Figure 1: Example of a tiered approach to a safety management system

(Source: ORR)

For smaller or less complex minor and heritage railways these departmental procedures may sit within the second tier.

The railway should apply the following principles for all documents that make up the SMS:

- say what you do, and do what you say;
- consider the appropriateness and risk of what you do now and whether the existing control measures sufficiently control those risks;
- be concise, the more complex your system is, the less likely you are to be able to comply with it;
- apply a form of document control that gives each document a unique reference within the system and provides an implementation date and issue number as a minimum.
- empowering individuals within the railway to write their own standards will drive buy in to the system and improve the overall effectiveness of the system. Where individuals are empowered to develop their own standards, this must be within a defined framework that ensures changes are properly controlled and implemented.

When your railway is designing and building the SMS, the following steps may assist you with scoping out what and how your own SMS will support your railway.

- Identify what the SMS will cover - What is the scope of operations? The SMS must be fit for purpose and ensure that it will support your railway in the management of health and safety, whilst also satisfying the legal requirements.
- Governance – ensure that there is the commitment to safety and leadership across the railway, with the appropriate governance and oversight programmes. Ensure that there are sufficient resources for the design, development and implementation of the SMS.
- Safety Policy – the content of the safety policy is discussed in more detail elsewhere in this document.
- Procedures and Processes - establish procedures and processes to ensure that your staff are able to report safety occurrences and near misses. Promote a culture that enables staff to freely report.
- Risk Management Procedures – the key to any SMS is to ensure that the railway will be able to ensure a safe working environment. The railway must have processes in place to identify hazards, and to undertake a comprehensive and systematic assessment of the identified risks. These safety risks must be associated with the railway's operations.

- Risk Management - undertake risk assessment activities to identify the risks associated with your railway's operations.
- Assurance - how will you measure the performance of your SMS, ensuring that it is performing as expected.



Figure 2: Principal components of a safety management system;
(Source ORR)

The components of the framework of the SMS are shown in figure 2 as separate areas; they are all interrelated and form the basis of an effective SMS.

The top-level SMS document would typically contain the following content, depending on the size and complexity of the railway:

- (1) Scope of the SMS;
- (2) Safety policy and objectives;
- (3) Safety accountabilities;
- (4) Key safety personnel;
- (5) Documentation control procedures;
- (6) Hazard identification reporting;
- (7) Risk management schemes;
- (8) Management of contractors;
- (9) Safety performance monitoring;
- (10) Incident investigation and reporting
- (11) Emergency response planning;
- (12) Management of change processes;
- (13) Safety promotion and communication; and
- (14) Safety/just culture policy and supporting processes.

The documentation should also address how the SMS is kept under review, developed, and improved.

This page is included for your notes.

3. ROGS Requirements

The need for SMS, distribution of responsibilities and continuous improvement

The SMS is the basis for making sure a transport system runs safely and in line with ROGS requirements. The SMS must be written down and describe your arrangements for managing safety risks. The main factor in deciding how detailed and complicated the SMS needs to be is the size and nature (or type and extent) of your railway.

Minor and heritage railways are known as “Other Transport Operators” and are defined in Part 1 of ROGS. They are required by regulation 4 to establish and maintain an SMS that meets the requirements of regulation 6. ORR publishes an [approved list of railways excluded from the mainline railway requirements](#). Most minor and heritage railways are excluded and are hence classed as Other Transport Operators. If you intend to operate a non-mainline railway that is not already on the approved list, you need to apply to ORR to make a determination. More information about how to apply is on ORR’s [website](#).

Schedule 1 of ROGS sets out the requirements and basic elements of the safety management system. This chapter unpicks schedule 1 and for each requirement and element offers guidance to assist the railway meet the requirements and support developing an SMS that contains the required elements.

The coloured boxes that contain text follow the convention described in the Forward of this guidance.

ROGS requirements

Safety Management System for other transport operators

Regulation 6.- (1) The requirements of for a safety management system referred to in regulation 4(1)(a) and 4(2)(a) are that -

- (a) It is adequate to ensure that the relevant statutory provisions which make provision in relation to safety will be complied with in relation to the operation in question;
- (b) subject to paragraph (7), it meets the requirements and contains the elements set out in Schedule 1, adapted to the character, extent and other characteristics of the operation in question;
- (e) all parts of it are documented

Schedule 1. Safety Management System

1. The Safety Management System shall-

- a) describe the distribution of responsibilities, within the operation, for the safety management system;
- b) show how control of the safety management system by the management on different levels is secured;
- c) show how persons carrying out work or voluntary work directly in relation to the operation and their representatives on all levels are involved with the safety management system; and
- d) show how continuous improvement of the safety management system is ensured

Guidance

This regulation and the following requirements set out what the SMS is there to achieve.

Remember the SMS is more than just a single document. However, the majority of these requirements can be outlined in a top-level pointer document.

Minor and heritage railways should take note of the requirement to adapt the SMS to the character, extent, and other characteristics of the operation in question. If your operation is relatively simple your SMS should be proportionate to reflect your railway's risk profile and the amount of resource that you have available.

Describe the distribution of responsibilities

The most senior person in the railway should:

- ensure the necessary resourcing to include finances and staffing levels;
- have responsibility for the conduct of the railway's affairs;
- have full authority over the railway's operation; and
- have full and final accountability for the safety of the railway.

Senior management within the railway should have the following responsibilities documented in the SMS:

- Continuously develop the safety policy which is endorsed and supported by the most senior person;
- Active promotion of the SMS to all staff and ensuring that they comply with the processes and procedures;
- Ensure that appropriate resources both human and financial are available to support the SMS objectives;
- Establish safety objectives and performance measures; and
- Continuously monitor their area of responsibility as detailed within the system.

The active involvement of senior management in the SMS is very important. It is an integral part of the railway, and this level of commitment is vital to the overall effectiveness of the SMS.

Managers should lead by example, and engage with staff on a regular basis on matters of health and safety, and visibly demonstrate their commitment by their actions, for example wearing correct Personal Protection Equipment (PPE), following the safety rules etc.

The SMS should describe individual accountabilities and responsibilities at all levels within the railway. In addition to senior management the SMS should clearly define the safety responsibilities and behaviours expected of the railway's key personnel. An expectation should exist whereby leaders set the railway's safety culture and without their commitment and leadership the SMS will not be effective.

Access to Competent Safety Advice

To support the SMS, the railway should have access to competent safety advice (as required by MHSWR - [A competent person \(hse.gov.uk\)](https://www.hse.gov.uk)). In railways, this is often defined as the role of a Safety Manager and should be the main contact and responsible for the development, maintenance and the promotion of the SMS. They should report directly to the most senior person / accountable manager and have the necessary authority and status when dealing with safety related matters. Depending on the railway's size and complexity, the competent safety advice may need to be accessed on a full-time basis, however in smaller less complex railways it may be a part time role, or a role shared with other responsibilities.

The person responsible for providing safety advice is someone who has sufficient training and experience or knowledge to allow them to assist the railway. They should have detailed knowledge of safety management principles and practices. They should also have an operational knowledge and experience in the functions of the railway and the supporting systems.

The competent safety advice role's responsibilities should be, but not limited to:

- Manage the SMS Implementation plan on behalf of the senior person.
- Monitoring the safety performance to include corrective actions and their effectiveness.
- Maintain the safety documentation.
- Ensure staff are trained and informed on their safety responsibilities.
- Provide advice and guidance on safety related issues.
- Provide support and where relevant participate in safety investigations.
- To liaise with external bodies and regulators.

Where information is collected as part of these functions this should be summarised and reported back to the management of the railway to consider and take appropriate actions, for example on safety performance data or the findings of incident investigations.

Show how control of the SMS by the management on different levels is secured

Responsibilities are not assigned completely to individuals and railways should consider the introduction of safety committees. The purpose of a safety committee is to support the development and implementation of the SMS and to monitor for effectiveness.

Depending on the size and complexity of the railway a single committee headed by the most senior person in the railway may be suitable. More complex or larger railway may

need to take a more hierarchical approach to ensure effectiveness. Regardless of scale the most senior person in the railway should take a leading role in their involvement. Terms of reference for any committee should be defined setting out authorities, expectations and responsibilities.

An example of a structure within a complex railway could be as follows:

Safety Review Board (SRB)

This is usually chaired by the most senior person / accountable executive and comprised of senior managers from across the railway. The railway's safety advisor may be chairing this meeting or attending in an advisory capacity. The SRB would oversee the SMS performance across the railway and would be accountable for making strategic safety decisions. The SRB should be supported by the Safety Action Group (SAG) that report into and take direction from the SRB.

Where the company board has a non-executive director with safety responsibility, they should be included in this group to provide constructive challenge.

Safety Action Group (SAG)

The SAG is usually more operationally focused and is made up of managers and front-line staff, chaired by a designated manager. The SAG would monitor the operational safety performance ensuring that the appropriate safety risk management activities are conducted. The SAG would also review the safety data, management of change, effectiveness of risk controls and any safety events in the last reporting period.

The SAG reports to and takes leadership from the SRB for any identified areas for strategic risk management improvements and reviews the status of the SMS performance within their area.

Continuous improvement

The railway needs to have embedded a culture supported by processes to continuously improve the management of health and safety within their railway. This is supported by all of the safety assurance activities that are undertaken to assure the effectiveness of the SMS.

The railway should consider to continuously improve their safety performance by:

- Day to day operations, procedures and documentation are proactively evaluated through safety audits, inspections and surveys.
- Reactive evaluations to verify the effectiveness of the system and mitigation of risk with the implemented controls, for example near misses, incident, accidents and internal/external safety investigations.

- Ensuring organisational changes are monitored and any changes implemented are measured to ensure they are effective.
- A regular review of the safety performance of the railway, with detailed safety action plans to aid continuous improvement.

The Risk Management Maturity Model also known as RM3 has been developed by ORR. It is a tool for helping railways to successfully manage health and safety risks, and to help identify areas for improvement and provide a benchmark for year-on-year comparison.

ORR has also developed RM3 Topic Set 1 - Heritage Railways. This variant of RM3 has been specifically developed for heritage railways to reflect their specific needs and risk profile. minor and heritage railways can use either the full version of RM3 or Topic set 1.

We recommend that larger minor and heritage railways that also operate on the mainline, or which routinely transfer rail traffic through a mainline interface, consider using the full version of RM3. That said, the Heritage Topic Set 1 – Heritage Railways could form part of the route to achieving this, by first introducing RM3 to such a railway.

To help identify areas for development, RM3 aligns with the railways Safety Management System. It sets out criteria for the key elements of a health and safety management system, and by applying the model a railway can understand which areas they are performing well at, and others where additional work is needed.

This measurement and development is known as continuous improvement which is the ongoing effort the railway makes to improve safety. Processes for continuous improvement are a crucial element of a Safety Management System and critical when implementing or further developing the SMS.

Plan, Do, Check, Act

When designing a Safety Management System, the railway can consider the cyclical approach of Plan-Do-Check-Act (PDCA) as outlined in HSG65.

Plan – Determine your policy and plan for implementation of your SMS.

- When outlining your plan, it is important that consideration is given to:
- Thinking about where you are now and where you need to be?
- Say what you want to achieve and who will be responsible for what. Explain how these will be achieved and measured.
- How will you measure the performance of health and safety management?

- How will the railway deal with emergencies? Who will you need to co-operate with in these events?
- How will the railway plan for changes and identify any specific legal requirements that apply to your operation.

Do – Profile risks, organise for health and safety and implement your plan.

- Identify your risk profile, assessing risks, identifying what could cause harm within your workplaces and who it could harm. How will you manage these risks?
- Decide how you will prioritise the risks.
- Organise your activities to deliver your plan. Involve workers and communicate across the railway to ensure that everyone understands what is needed and can discuss if needed. Ensure you have provided adequate resources, to include competent advice on health and safety.
- Implement the plan. Decide on the controls needed and put them in place. Provide the right tools and equipment, to include training to ensure your staff can do the job safely.

Check – Measure the performance of the SMS.

- Measure the performance of your SMS. Make sure your plan has been implemented, not just from a paperwork/documentation perspective, but what is documented is actually being followed in the workplace.
- Assess how well the control measures for the identified risks are effective, and if you are achieving your aims. Audits can be a good tool for this.

Act – Review the performance of the SMS.

- Review your performance. Learn from any accidents and incidents, lost time injury data, near miss reports and information from other similar railways.
- Revisit your plans, policies, documents and risk assessments to check if they are still current and relevant. Update if needed.
- Act on any lessons learnt from internal and external inspections and audits.

Further information

ORR guidance on [ROGS](#)

ORR guidance on [the Risk Management Maturity Model RM3](#)

RM3 Topic Set 1. [Heritage Railways](#)

HSE's Managing for Health and Safety ([HSG65](#)) – Plan, Do, Check, Act

HSE's [guidance](#) on Leading and Managing for health and safety

Safety Policy Statement

Section 2(3) of the Health and Safety at Work etc. Act 1974 says that every business must have a policy for managing health and safety. ROGS states that this policy forms a basic element of an SMS.

ROGS requirement

Schedule 1. Safety Management System

2. The basic elements of a safety management system are -

(a) a statement of the safety policy which has been approved by the chief executive and communicated to all persons carrying out work or voluntary work in relation to the operation;

Guidance

The law states that every business must have a policy for managing health and safety. The legal requirement to write a policy is included in the Health and Safety at Work etc. Act 1974. The Management of Health and Safety at Work Regulations 1999 explain the steps that a railway must take to manage health and safety.

A health and safety policy sets out the railways commitment to health and safety and explains how the railway will manage health and safety. It should clearly state who does what and how. The policy should be endorsed by the most senior person within the railway.

The Health and Safety at Work etc. Act 1974 is often shortened to HSWA.

The Safety Policy should cover these main areas:

1. Statement of Intent

The railway should set out their general policy on health and safety at work, including their commitment to managing health and safety and the railways aims and how they will comply with their legal obligations, meeting all applicable standards and consider best practice. The safety policy should be signed by the most senior person in the company. The policy should be implemented and understood at all levels of the railway.

2. Responsibilities for health and safety

List the names, positions, and roles of the people in your business who have specific responsibility for health and safety.

3. Arrangements for health and safety

Summarise the details of the practical arrangements that the railway has in place. The policy needs to show how the railway will achieve their health and safety objectives. This can include that the railway will provide appropriate resources, determining that safety is the primary responsibility of all staff.

The policy should also set out the railway's commitment to encourage safety reporting, defining what is acceptable and unacceptable performance and provide a fair and just protection to all staff.

4. Safety reporting procedures

Giving details that staff should report safety occurrences, near misses and safety concerns, defining the types of behaviour that are not acceptable, and the conditions where the reporting person is protected from disciplinary actions.

5. Period of review

The safety policy should be current, and up to date. The SMS will detail how often documents to include the safety policy are to be reviewed and updated. The safety policy should contain version control and issue date.

Further information

HSE [guidance](#) on how to prepare a safety policy statement

[Health and Safety at Work Act 1974](#)

[Guidance](#) on the Health and Safety at Work Act 1974

[Management of Health and Safety at Work Regulations 1999](#)

[Guidance](#) on the Management of Health and Safety at Work Regulations 1999

Targets

ROGS SMS requirement

Schedule 1. Safety Management System

2. The basic elements of a safety management system are -

(b) qualitative and quantitative targets for the maintenance and enhancement of safety and plans and procedures for reaching those targets;

Guidance

The railway should have specific safety objectives. The most effective safety objectives are those that provide a call to action and develop commitment and engagement from all the staff. The safety objectives that any railway should consider are to establish specific safety goals or targets for the appropriate aspects of your railway's safety vision, management commitment, safety milestones and outcome/results.

The objectives should be specific, clear and reviewed on a regular basis. A good technique a railway may wish to consider when drawing up safety objectives is to use the "SMART" technique. Following this technique, the objectives will be:

S Specific

M Measurable

A Achievable

R Relevant

T Timely (or Time bound)

The creation of Safety Performance Indicators (SPIs) and performance targets will help a railway to monitor the progress and achievement of the objectives, and form part of a railway's Safety Assurance programme.

Examples of performance indicators could include such things as:

1. Critical risk controls functioning correctly

- percentage of track patrols completed versus your target

- percentage of wheelset exams completed versus your target

2. Numbers and types of injuries sustained to all persons
3. Numbers and types of safety events such as a signal passed at danger without authority
4. Numbers of competence checks completed

Staff should be informed on the progress of the railway against the SPIs and the safety objectives. The process should determine a communication plan for the dissemination of the information across the business. The means of communication should be detailed within the railway's SMS.

Safety Performance Indicators

The railway needs to ensure that the SMS is working and is effective and have a proactive and systematic approach for measuring performance, whilst always looking out for opportunities for continuous improvement. The development of SPIs should be linked to the railway's safety objectives and based on the analysis of data and information available or obtainable. The SPIs should be monitored to help the railway identify any abnormal changes in safety performance and to verify the effectiveness of safety risk controls.

When looking to establish the SPIs it is important to consider:

- Are you measuring the right areas? Which SPIs will help your railway to track and achieve its safety objectives?
- Availability of data and information. Is the data needed already available within your railway or are additional data collection sources needed?
- Reliability of the data and information. Is the data being used to report on with your SPI's reliable and complete?
- Common industry SPI's. It can also be useful to measure your safety performance with common SPI's used across the same industry. This can help the railway when developing your SPI's initially but also to allow comparisons between similar railways.
- Percentage of planned maintenance completed on time
- Percentage of driver competency examinations passed
- Audit findings results
- Lost time injury rate.
- Number of Signals Passed at Danger (SPADS).

Procedures

ROGS requirement

Schedule 1. Safety Management System

2. The basic elements of a safety management system are -

(c) procedures -

(i) to meet relevant technical specifications; and

(ii) relating to operations and maintenance,

Insofar as they relate to the safety of persons, and procedures for ensuring that the procedures in sub-paragraphs (i) and (ii) are followed throughout the life-cycle of any relevant equipment or operation.

NOTE. This paragraph is amended from that shown in Schedule 1 of ROGS by Regulation 6(7) and the above wording is as applicable to other transport operators.

Guidance

Procedures and technical specifications are documents that aim to ensure that premises and infrastructure, equipment and operations are safe and reliable, and that staff are competent. Such documents should reflect the requirements of legislation, mandatory standards, and take account of information contained in non-mandatory standards. Non-mandatory standards are documents produced by (for example) industry, standards setting bodies, committees, and associations.

A railway's use of information in non-mandatory standards can be an important part of ensuring they carefully consider the safety hazards and eliminate or controlled safety risks so far as reasonably practicable. A railway should be able to justify by means of a detailed, but proportionate risk assessment should they choose an alternative way to control risk.

Particular care should be taken in the direct adoption of standards or operating rules of other railways such as Network Rail, British Rail, those of the big four such as the Southern Railway and their constituent companies. The technical capabilities and legal requirements have almost certainly changed from when they were written, or the level of resource required to implement them is significantly greater than what you may be able to provide.

Operating rules and the underlying safety philosophies found in older standards are not likely to sit well with modern expectations, and most minor and heritage railways will be considerably simpler than the operating rules were written to manage. These older standards may form a basis for your standards, but they should be critically assessed for their suitability against current expectations.

Minor and heritage railways should refer to legislation as appropriate to ensure their processes are compliant. For example lifting operations are covered by the Lifting Operations and Lifting equipment Regulations 1998 (LOLER)

Railways may need to comply with Rail Industry Standards where their equipment is used on Network Rail infrastructure.

Railways should develop clear procedures for the maintenance and operation of their railways.

The size and complexity of the railway will determine the SMS documentation that is needed.

The SMS top level document should set out the railways approach to safety and point the reader to the detailed standards.

Standards should be developed that suitably cover all of the activities undertaken by the railway with regards to the operation and maintenance of the railway, the infrastructure and the traction and rolling stock in use.

The SMS containing these procedures can be presented as either a traditional manual, a series of individual documents/procedures that form part of the overall manual, or a variety of both.

The maintenance and control of the documentation needs to ensure that updates and revisions are reviewed, validated, and approved following an agreed, documented process. This will ensure the currency and accuracy of the documentation content. Any documents need to be version controlled, with issue dates and numbering. Any distribution of new or updated documentation versions needs to be communicated, and the railway needs to take reasonable steps to ensure previous versions are taken out of circulation.

The management and control of the documentation needs to ensure the accuracy and currency of the content is reviewed at an agreed period of time, ensuring that controls are in place for that review and subsequent approval. During the changes of any content, the railways should ensure that feedback is received from respective users and or Subject Matter Experts (SME) to make sure that any changes do not introduce new risks or increase the current risks, in which case a risk assessment may need to be considered.

The section of this document on Safety Related Information has further advice on document control.

Most minor and heritage railways operate to their own rule book or operating instructions. These documents form part of the SMS. Procedures should exist for the review, implementation, distribution and control of these documents in the same way as other standards within the SMS.

Railways should also consider mechanisms for communicating authorised temporary non-compliances and permanent alterations to the Rule Book or operating instructions.

Railways should avoid wholesale adoption of standards and procedures from other railways. It is very unlikely that minor and heritage railways can draw on the same level of resource as Network Rail for track maintenance for example. When selecting standards and procedures railways should consider the appropriateness and their suitability given the complexity and nature of operations on the minor or heritage railway.

Further information

Examples of legislation that may apply to the railway for the maintenance or operation.

[Lifting Operations and Lifting equipment Regulations 1998](#)

[Work at Height Regulations 2005](#)

[The Provision and Use of Work Equipment Regulations 1998](#)

[Control of Substances Hazardous to Health Regulations 2002](#)

[The Workplace \(Health, Safety and Welfare\) Regulations 1992](#)

[The Manual Handling Operations Regulations 1992](#)

Risk Assessment

ROGS requirement

Safety Management System for other transport operators

Regulation 6

6(1)(d) the safety management system "...takes into account, where appropriate and reasonable, the risks arising as a result of activities carried on by other persons.

Risk Assessment

Regulation 19

19.— (1) A transport operator shall—

(a) make a suitable and sufficient assessment of the risks to the safety of any persons for the purpose of identifying the measures he needs to take to ensure safe operation of the transport system in question insofar as this is affected by his operation; and

(b) implement the measures referred to in sub-paragraph (a).

(2) - *omitted as this applies to the mainline railway.*

(3) Any assessment under paragraph (1) shall be reviewed by the transport operator who made it if —

(a) there is a reason to suspect that it is no longer valid; or

(b) there has been a significant change in the matters to which it relates and whereas a result of any such review changes to an assessment are required,

the transport operator concerned shall make them, and implement any changes to the measures identified pursuant to paragraph (1) as a result of the review.

(4) The transport operator shall record in relation to any assessment or review under this regulation —

(a) the assessment process undertaken, the methods of any calculation used and any assumptions made; and

(b) the significant findings of the risk assessment including the measures in place and any further measures the transport operator intends to take to ensure safe operation of the transport system in relation to his operation.

(5) Every transport operator shall make and give effect to such arrangements as are appropriate, having regard to the nature of his activities and the extent of the undertaking, for the effective planning, organisation, control, monitoring and review of the measures identified pursuant to paragraph (1) or (3) and shall record such arrangements.

The Management of Health and Safety at Work Regulations 1999.

Aside from ROGS there are complementary requirements to undertake risk assessment in MHSW 1999:

Risk assessment

3.— (1) Every employer shall make a suitable and sufficient assessment of—

(a) the risks to the health and safety of his employees to which they are exposed whilst they are at work; and

(b) the risks to the health and safety of persons not in his employment arising out of or in connection with the conduct by him of his undertaking,

for the purpose of identifying the measures he needs to take to comply with the requirements and prohibitions imposed upon him by or under the relevant statutory provisions

(2) *[refers to the self-employed, not reproduced here]*

(3) Any assessment such as is referred to in paragraph (1) or (2) shall be reviewed by the employer or relevant self-employed person who made it if—

(a) there is reason to suspect that it is no longer valid; or

(b) there has been a significant change in the matters to which it relates;

and where as a result of any such review changes to an assessment are required, the employer or relevant self-employed person concerned shall make them.

(4) An employer shall not employ a young person unless he has, in relation to risks to the health and safety of young persons, made or reviewed an assessment in accordance with paragraphs (1) and (5).

(5) *[refers to specific issues for risk to young people – not reproduced here]*

(5) In making or reviewing the assessment, an employer who employs or is to employ a young person shall take particular account of—

(a) the inexperience, lack of awareness of risks and immaturity of young persons;

- (b) the fitting-out and layout of the workplace and the workstation;
 - (c) the nature, degree and duration of exposure to physical, biological and chemical agents;
 - (d) the form, range, and use of work equipment and the way in which it is handled;
 - (e) the organisation of processes and activities;
 - (f) the extent of the health and safety training provided or to be provided to young persons; and
 - (g) risks from agents, processes and work listed in the Annex to Council Directive [94/33/EC](#) on the protection of young people at work.
- (6) Where the employer employs five or more employees, he shall record—
- (a) the significant findings of the assessment; and
 - (b) any group of his employees identified by it as being especially at risk.

Principles of prevention to be applied

4. Where an employer implements any preventive and protective measures he shall do so on the basis of the principles specified in Schedule 1 to these Regulations.

SCHEDULE 1 GENERAL PRINCIPLES OF PREVENTION

- (a) avoiding risks;
- (b) evaluating the risks which cannot be avoided;
- (c) combating the risks at source;
- (d) adapting the work to the individual, especially as regards the design of workplaces, the choice of work equipment and the choice of working and production methods, with a view, in particular, to alleviating monotonous work and work at a predetermined work-rate and to reducing their effect on health;
- (e) adapting to technical progress;
- (f) replacing the dangerous by the non-dangerous or the less dangerous;

(g) developing a coherent overall prevention policy which covers technology, organisation of work, working conditions, social relationships and the influence of factors relating to the working environment;

(h) giving collective protective measures priority over individual protective measures; and

(i) giving appropriate instructions to employees.

Guidance

Safety risk management is the identification, analysis and elimination or mitigation to an acceptable or tolerable level of the hazards and their subsequent risks.

Before an SMS can be built or improved, a railway should identify the safety hazards and ensure that there are controls implemented to manage the risk.

As an employer, you are required by law to protect your employees, and others from harm. Under the Management of Health and Safety at Work Regulations 1999, the minimum you must do is:

- Identify what could cause harm or illness in your railway (hazard)
- Decide how likely it is that someone could be harmed and how seriously (the risk)
- Take action to eliminate the hazard, if this is not possible, control the risk by reducing it to as low as reasonably practicable.

Assessing risk is just one part of the overall process used to control risks in the railway.

Risk management is a critical activity, and the SMS supports the management of risk to ensure that risks are identified, assessed, eliminated or controlled.

It is important that the railway applies a common, consistent standard for risk assessment and control, which should be clearly documented within the railway's SMS. The railway should ensure that those undertaking risk assessments are competent by undergoing appropriate training and having a clear understanding on how to deliver the consistent approach to risk management.

The SMS risk management procedures that a railway looks to implement should ensure that:

- Comprehensive systematic assessment of safety risks arising from the railway's operations to include risk identification, analysis and evaluation.

- The procedure should ensure consistent application in the evaluation of risk, to include likelihood and severity risk levels. This will support the prioritisation of risk evaluation, and treatment activities.
- Monitoring and following up on risk treatment / risk controls from implementation to closure. There should also be ongoing oversight with the monitoring and regular review of the identified risks and control measures to ensure they remain effective.
- The railway should evaluate the risks against the applicable legal standards, determine which of those risks meet the standards and where they do not, identify the additional work to reduce the risk to an acceptable level. To avoid accidents and incidents, railways should consider implementing multiple layers of controls or defences to help reduce the likelihood of the risk.
- Procedures for identifying which risks are to be reported to appropriate internal stakeholders and external stakeholders, such as governing bodies.
- Arrangements in place for consultation with relevant stakeholders and Subject Matter Experts, ensuring they are involved at all stages of the risk management process. Consultation could include discussion groups with employees and volunteers to collectively identify hazards and risk. Involvement is a good way to encourage individuals becoming more active in establishing or continuously improving the railway's SMS.

Consultation with the employees and volunteers closest to hazards is essential to properly understand those issues and will generate better understanding and risk controls as a result. Where there are employees then there are legal duties to consult them on health and safety issues; [HSE has produced information on this](#).

Annex C contains further information on risk assessment.

Change Management

ROGS requirement

Safety Management System for other transport operators

Regulation 6

(1) The requirements for a safety management system referred to in regulation 4(1)(a) and 4(2)(a) are that –

(c) subject to paragraph (2), it ensures the control of all categories of risk associated with the operation in question which, without prejudice to the generality of the foregoing, shall include such risks relating to the —

(i) supply of maintenance and material;

(iii) placing in service of new or altered vehicles or infrastructure the design or construction of which incorporates significant changes compared to any vehicles or infrastructure already in use on the transport system and which changes would be capable of significantly increasing an existing risk or creating a significant safety risk;

(4) In paragraph (1)(c)(iii) where such new or altered vehicles or infrastructure are intended to be placed in service, then before that placing in service the transport operator shall ensure that he —

(a) has an established written safety verification scheme which meets the requirements and contains the elements set out in Schedule 4; and

(b) has appointed a competent person to undertake that safety verification and the competent person has undertaken that safety verification in relation to the new or altered vehicle or infrastructure.

(6) In this regulation the requirements of paragraph (4) shall apply in the absence of a transport operator to a responsible person as they would apply to a transport operator.

Schedule 1. Safety Management System

2. The basic elements of a safety management system are-

(d) procedures and methods for carrying out risk evaluation and implementing risk control measures when –

(i) there is a change in the way in which the operation is carried out; or

(ii) new material is used in the operation in question,

Which gives rise to new risks in relation to any infrastructure or operation being carried out;

Guidance

This requirement builds on ROGS Regulation 19 Risk Assessment and specifically looks at change management.

The rail industry and the heritage sector is constantly undergoing periods of change and these changes can expose your railway to new risks or new ways of working. The railway needs to be able to identify the changes and mitigate the new risks in a structured manner. Further changes may be a result of business demands on your own railway, and these changes also need to be managed effectively to ensure that the changes are implemented safely.

Management of change within a railway's SMS relates to hazard identification and risk assessment related to the safety of the railway's operations. This includes how you implement new or changed control measures you have identified from your risk assessments.

The railway should consider implementing a documented process that can identify internal and external change that may affect their operation and have the potential to impact both internal and external stakeholders. Any changes need to be managed effectively, ensuring that the railways operations can be operated in safe and effective manner.

ROGS requires change management to apply not just to technical or engineering change but also to change in organisation, operating methods, or in changes to the railway.

The railway's process should define the types of changes that would require a formal assessment. The process should utilise the current risk management process to identify any existing or new hazards that could impact the safety.

The railway should consider when documenting a process to include the following steps:

Step 1 – Understand the change. At this stage, you need to identify and understand what is changing and why. Is it due to internal or external factors and could be a combination of both. What is the objective or outcome for the change?

Step 2 – Understand who and what the change will affect. This could be individuals within your railway, external organisations or a combination of both. Any changes could also include or impact equipment, systems and processes. A review of the impact to what systems and interfaces the change interfaces with may be needed to fully understand who and what may be affected.

Step 3 – Identify hazards and risk assessment. The process for this should link in directly with a railway's documented risk management process. This is explained further within Chapter 5 "Safety Risk Management" of this guidance.

Step 4- Action Plan. This will help the railway understand what needs to be done, by whom and when to ensure that the change is implemented in such a manner that is maintains or improves safety. The action plan needs to incorporate the risk assessment conducted within the previous step, by extracting the risk treatment controls identified and listing them within the action plan to have oversight of their implementation and by whom.

Step 5 – Disposition. Where organisational changes have been made or responsibilities altered, a process should be undertaken to ensure that all safety responsibilities have been allocated to a post. Where activities have been reduced or stopped the railway must ensure that any residual responsibilities are identified, and risk assessed prior to removing them.

Step 6 – Sign off and implementation of change. Once it is safe to go ahead with the change and all previous steps have been completed to a satisfactory standard, the railway needs to determine who has the accountability and or responsibility and authority to sign off the change plan for implementation.

The railway may wish to consider a sign off stage for each step of their management of change process.

This will ensure that the appropriate staff are included in the appropriate stage and allows an element of oversight and governance for this step. This step is critical, and the railway may wish to consider providing guidance on what the final sign off stage involves, such as ensuring that all steps have been completed, communication plan for internal cascade with staff and reviewing the progress and performance ensuring that the risk treatments listed have been implemented and complete.

Step 7 – Assurance and monitoring. The railway should consider how the measurement of the effectiveness of the change to include any risk treatment plans are monitored. This should also include a review of any follow up actions that have been identified as needed in previous steps, and how the change will be communicated and implemented. Such activities that can support the assurance and monitoring of the change could be audits and or post implementation review.

Safety Verification

The purpose of safety verification is to provide a flexible process to make sure projects that could significantly increase risk are safe. This is achieved by appointing a competent person. Often this person is known as an 'independent competent person' (ICP) this person can come from inside or outside the railway but should not be in the management chain of the department or function involved in the change.

ORR has published [guidance](#) for non-mainline operators on safety verification.

A competent person:

- Has the skills, knowledge, experience and resources to carry out the safety verification they are appointed for; and
- is able to look at the project objectively (that is, in an unbiased way).
- is not responsible for the delivery of the project.

Railways need to have in their SMS a process to decide at an early stage whether safety verification is required when they are developing plans for making changes, and where it is required, that it is carried out correctly. The procedure for applying safety verification is described in ROGS.

Safety verification is needed if:

- (a) the risk arising from the project is new, or is new to the transport system and
- (b) there will be a new significant safety risk or a significant increase in risk.

An example of a minor or heritage railway where safety verification is needed would be where a coal fired boiler is converted to burn liquid fuel where the heritage railway has only ever used coal fired boilers.

Another example would be where a minor or heritage railway converts all of its vehicles from vacuum braking to air braking.

If the project does not meet these requirements then it should be dealt with through the change management procedure to ensure all risks are controlled.

Further Information

Guidance on Safety verification can be found in ORR's guide to [ROGS](#)

[Guidance on Safety verification \(for non-mainline transport operators\)](#)

[Safety Verification – A guide for Tramways](#)

[Safety Verification - A guide for heritage railways](#)

Training and competence

The Health and Safety at Work etc. Act and Management of Health and Safety at Work Regulations place specific duties to provide training for their employees. ROGS is specific in Part 4 with regards to the training, competence and fitness requirements for safety critical workers.

ROGS requirement

Competence and fitness

24(1) Every controller of safety critical work shall, so far as is reasonably practicable, ensure that a person under his management, supervision or control, with the exception of where that person is receiving practical training in a safety critical task, only carries out safety critical work where—

- (a) that person has been assessed as being competent and fit to carry out that work following an assessment by an assessor;
- (b) there is an accurate and up to date record in writing of that person's competence and fitness which references any criteria for determining competence and fitness against which that assessment of competence was made;
- (c) the record, or an accurate summary of the record referred to in sub-paragraph (b) is available for inspection, on reasonable request, by any other controller of safety critical work or any operator who may be affected by any safety critical work carried out or to be carried out by that person, for the purposes of establishing that person's competence and fitness to carry out safety critical work; and
- (d) there are in place arrangements for monitoring the competence and fitness of that person.

(2) Every controller of safety critical work shall without unreasonable delay review any person's competence or fitness assessment where—

- (a) they have reason to doubt the competence or fitness of a person to carry out that safety critical work; or
 - (b) there has been a significant change in the matters to which the assessment relates,
- and where, as a result of any such review a reassessment of competence or fitness is required, that reassessment of competence or fitness shall be carried out to ensure that the requirements of paragraph (1) are met.

(3) Where a reassessment of competence or fitness under paragraph (2) is required, the controller of safety critical work shall, so far as is reasonably practicable ensure that, as a result, the health and safety of persons on a transport system is not prejudiced.

Fatigue

25(1) Every controller of safety critical work shall have in place arrangements to ensure, so far as is reasonably practicable, that a safety critical worker under his management, supervision or control does not carry out safety critical work in circumstances where he is so fatigued or where he would be liable to become so fatigued that his health or safety or the health or safety of other persons on a transport system could be significantly affected.

(2) The arrangements in paragraph (1) shall be reviewed by the controller of safety critical work where he has reason to doubt the effectiveness of those arrangements.

Co-operation requirements for safety critical work

26(1) Every controller of safety critical work to whom this Part applies shall co-operate as far as is necessary with any other controller of safety critical work or any operator to enable that other controller of safety critical work to comply with the provisions of this Part.

(2) Every person carrying out safety critical work shall, as regards any requirement imposed on any controller of safety critical work under this Part, co-operate with that controller of safety critical work so far as is necessary to enable that requirement to be performed or complied with.

Schedule 1. Safety Management System

2. The basic elements of a safety management system are-

(e)provision of programmes for training of persons carrying out work or voluntary work directly in relation to the operation and systems to ensure that the competence of such persons is maintained and that they carry out tasks accordingly;

Guidance

Regulation 23 provides interpretation to part 4 of ROGS that covers safety critical work. ORR has produced [guidance](#) on the identification of safety critical workers and their respective heritage titles.

ORR has also produced guidance on the development of competence management systems.

Depending on the complexity of the railway the SMS should contain one or more competence management systems setting out how the requirements of Part 4 of ROGS are achieved.

Safety Training

All staff within the railway need to understand their roles and responsibilities in relation to working and operating safely. They should have a good working knowledge of the SMS and how their roles relate.

A railway needs to consider:

- The competence requirements for each role, training needs of their staff, appropriate for their roles.
- The necessary competence of workers that affects or can affect its safety performance.
- To ensure workers are competent (to include ability to identify hazards) on the basis of appropriate training, education or experience.
- To ensure documented information as evidence of competence is retained. The output of any training and competency program should result in:
- Operational staff understanding the railways safety policy, the principles and the processes of the SMS.
- Managers and supervisors understanding the safety processes, hazard identification, risk management and the management of change.
- Senior managers understanding organisational safety standards, assurance and regulatory requirements.
- The most senior person should have an awareness of the SMS roles and responsibilities, safety policy, safety culture, SMS standards and assurance.

Minor and heritage railways should where possible adopt a consistent approach to the management of competence across the railway. However due to the nature and frequency of the tasks being completed it may be appropriate to have a set of competence management principles that separates engineering competence management from operations competence management. The process regardless of how formed is known as a Competence Management System (CMS)

The CMS should provide a process that ensures only trained and competent persons with a complete record of their current competence are used.

The CMS should detail:

- recruitment and selection requirements
- fitness requirements including a link to any medical fitness requirements. Remember fitness comprises cognitive, physical and medical fitness.
- process for determining what to train an individual and how competence is to be assessed.
- initial induction and training requirements
- initial assessment methods and provision of support
- ongoing competence management
- processes for personnel joining with experiences from elsewhere
- processes for personnel whose medical fitness or competence has changed or for personnel returning from a period of absence
- processes for supporting staff who have been involved in safety events or where they require additional support as a result of an event on or off the railway.
- processes for verification of the CMS.

Fatigue

The minor or heritage railway should also develop a fatigue management policy. Where volunteers are used it is often difficult to manage and monitor their fatigue in line with industry requirements so railways should apply the principles of prevention by developing duties that are not likely to increase fatigue.

Principles can include:

- limiting turn duration. Defining and maximum turn duration, shorter turns limit fatigue further.
- planning the work to avoid underload or overload
- taking into consideration the impact of then weather
- limiting the number of evening turns and monitoring for the impact of change as staff move over from evening into day turns so as to ensure sufficient rest.
- limiting the number of consecutive turns
- avoiding long turns that start early or finish late.

- understanding how far volunteers and employees have to travel to and from the railway and putting controls in place to ensure their journey time doesn't increase the risk profile. This can include lodging nearby or shorter turns.
- Taking into consideration the rest and work that a volunteer might have undertaken in their work outside the minor and heritage railway.

Minor and heritage railways should also understand the requirements of the working time regulations for employees to ensure they have sufficient rest.

Minor and heritage railways should develop a set of rostering principles that assist with the prevention of a member of staff becoming so fatigued that their performance could compromise safety.

Minor and heritage railways should consider actions in the event of an exceedance and how controls are applied to prevent a safety event.

Further information

[Developing and maintaining staff competence RSP 1](#)

[Safety critical tasks – clarification of ROGS regulations requirements RSP 4](#)

[HSE fatigue](#)

[ORR Guide to ROGS](#)

Safety related information

Provision of safety related information, procedures for formatting of safety information and procedures to control the layout, of and changes to safety information

ROGS requirement

Schedule 1. Safety Management System

2. The basic elements of a safety management system are-

- (f) arrangements for the provision of sufficient information relevant to safety—
 - (i) within the operation in question; and
 - (ii) between the operator in question and any other transport operator or an applicant for a safety certificate or a safety authorisation who carries out or who intends to carry out operations on the same infrastructure;
- (g) procedures and formats for the documentation of safety information;
- (h) procedures to control the lay out of, and changes to, vital safety information;

Guidance

Your railways SMS could be produced in an ISO format, this is particularly important for railways that want to apply for ISO accreditation, however this is not mandatory and other formats are acceptable. Your SMS must be proportionate to the level of risk you are trying to control.

The size, nature and complexity of a railway will determine the SMS documentation that is needed. It is usually comprised of:

- SMS records, such as risk assessments, hazard logs, safety committee meeting minutes etc
- Records and documentation management
- Safe Systems of Work (including the railways Rule Book)
- SMS Manual

Once created and implemented, all documentation contained within the SMS needs to be maintained and controlled. Documentation on health and safety should be functional, concise with the emphasis on its effectiveness rather than its volume.

The maintenance and control of the documentation needs to ensure that updates and revisions are reviewed, validated, and approved following an agreed, documented process. This will ensure the currency and accuracy of the documentation content. Any documents need to be version controlled, with issue dates and numbering. Any distribution of new or updated documentation versions needs to be communicated, and the railway needs to take reasonable steps to ensure previous versions are taken out of circulation.

The management and control of the documentation needs to ensure the accuracy and currency of the content is reviewed at an agreed period of time, ensuring controls in place for that review and subsequent approval. During the changes of any content, the railways should ensure that feedback is received from respective users and or Subject Matter Experts (SME) to make sure that any changes do not introduce new risks or increase the current risks, in which case a risk assessment may need to be considered.

The control needs to ensure that those who need to have access to the documentation do so, and the access is user controlled. Processes need to be managed to register new or revised documentation within the SMS.

As with any documentation management system, the storage and retention of key documents is essential in ensuring overall control of the SMS. The railway needs to ensure that all documentation is stored in a safe and secure manner and be available for internal or external audit/inspection for compliance or investigative purposes.

The SMS needs to define the agreed period for retention and disposal of documentation, ensuring it is also compliant to any regulatory requirements. The law requires suitable records to be maintained, for example records of risk assessments under the Management of Health and Safety at Work Regulations 1999.

Safety Communication

Safety communication is essential for the railway to have the ability to disseminate safety critical information to its staff. It is important that a railway establishes communication processes to provide for the gathering, updating and dissemination of information. It should ensure that the information is relevant, received and understandable to all workers and interested parties.

There are many types of safety communication that a railway may wish to consider within their processes to include:

- Safety policies and procedures.

- Newsletters, safety notices and bulletins.
- Presentations
- Websites and email information.
- Formal and informal workplace meetings between staff and their managers / senior managers.

It is recommended that a railway's process for safety communication includes:

- The dissemination of information to relevant people.
- Distribute relevant SMS content to new users and new interfacing organisations.
- Notify changes of SMS content to relevant users and people affected.
- Process for reporting risks to safety by staff.
- Priority given to safety critical information such as safety alerts and safety notices.
- A process to check the measurement of understanding of the information disseminated.

Where a railway has an interface with another railway or transport system then there should be equally clear rules around the information to be shared with those partners, including the content, format, methods of transmission, and frequency.

Incidents and accidents

Reporting, investigation and analysis of incidents, accidents, near misses and dangerous occurrences

ROGS requirement

Schedule 1. Safety Management System

2. The basic elements of a safety management system are-

(i) procedures to ensure that accidents, incidents, near misses and other dangerous occurrences are reported, investigated and analysed and that necessary preventative measures are taken;

Guidance

Accidents, incidents, near misses and dangerous goods

An accident is an unplanned, uncontrolled event that leads to injury, damage or loss of process.

An incident is an unplanned, uncontrolled event which under different circumstances would have been an accident.

A Near Miss is an event that has the potential to cause injury or damage. This can also be called a Close Call. The mainline considers that near misses happen to trains and close calls happen to people.

An Operational Incident is an event that has the potential to affect the safe operation of the railway and could be an accident, incident, near miss or close call.

It's unlikely that minor and heritage railways would encounter dangerous goods traffic. If you convey dangerous goods on your railway you should consider any additional requirements.

Safety Reporting

If a person is involved in an incident or an accident, has a concern about the risk controls that are in place, or where they observe non-compliance with the railway's policies and procedures they should have the confidence to report this, and have the appropriate process to do so.

Information can come from incident reports, investigations or from staff. Information from people working within the railway is a key data source.

Any information received needs to be treated in a confidential manner. Safety reporting should always be proactively encouraged as a means of identifying hazards, reporting safety incidents or near misses / close calls so that any evidence can quickly be collected, and additional controls put in place where required.

Leaders need to enable and nurture a safety culture that encourages reporting in a fair and just manner. Information needs to be considered and acted upon and feedback provided in a reasonable timeframe. Staff will increasingly have confidence in the reporting process and that the information they submit will be acted upon. This will help ensure staff remain engaged and encourages them to keep reporting.

Some incidents will need reporting to statutory bodies such as the RAIB, ORR, or the Environment Agency for example. Reporting might be timebound and railways should ensure they are aware of the reporting timescales.

Safety Investigations

When an accident or incident has occurred, it is important to understand why it happened, and how further occurrences can be prevented. Depending on the size and complexity of the railway, it may not be possible to investigate all incidents and accidents.

The railway may wish to consider a process for assessing which incident or accident undergo a full safety investigation where more in-depth analysis of system failures can be explored.

Investigating safety events can bring many advantages to a railway to include:

- Getting a better understanding of the events that contributed to the safety event.
- To identify any human, technical and organisational factors that contributed to the safety event.
- To identify areas to reduce or eliminate any unacceptable risks with recommendations.
- To learn from the safety event, ensuring actions are taken to reduce the likelihood of a similar safety event from happening in the future, sharing across the railway and if necessary, the broader industry.

The overall purpose of a safety investigation is not to apportion blame to a person or railway, but to identify any systemic causes, and take preventative actions to prevent re-occurrence. This will support the principles of a positive safety culture (just culture).

Any safety investigations should be conducted by a competent person. The railway's SMS should define what training is required for a member of staff to be a competent safety investigator, whilst also detailing how they maintain their competency.

An example of a safety investigation process that a railway may wish to consider is further explained below.

Step 1 – Assess whether or not the safety occurrence needs to be investigated.

Step 2 – Safety occurrence data collection. Identify the events and underlying factors. Reconstruct the logical timeline of the events, analysing the facts and reviewing the findings and underlying factors and hazards.

Step 3 – Risk assessment process. Is there already a risk assessment that covers the safety occurrence. If so, check existing controls/defences, and identify any missing controls, fix, replace or strengthen them. If there is no risk assessment, ensure the internal risk assessment process is followed.

Step 4 – Risk control analysis. Identify and evaluate the risk control options.

Step 5 – Safety communication. Share the findings from the investigation with staff and appropriate external stakeholders.

External organisations such as the RAIB or ORR may also investigate some incidents or accidents on a railway. Where reports or recommendation are produced then these should also be included alongside the railways own assessment to identify actions.

Further Information

[HSG245 Investigating accidents and incidents](#) produced by the HSE

[A quick guide to notifying accidents and incidents on UK railways](#)

[Reporting RIDDOR incidents to ORR](#)

[Rail Accident Investigation Branch Website](#)

Emergency Planning

ROGS requirement

Schedule 1. Safety Management System

2. The basic elements of a safety management system are-

(j) provision of plans for action, alerts and information in the case of an emergency which are to be agreed with any public body, including the emergency services, that may be involved in such an emergency;

Guidance

Emergency Response Planning

A critical component of an SMS is the proactive planning for potential matters that could cause disruption because of an accident/incident or a combination of either or both internal / external influences.

The purpose of an Emergency Response Plan (ERP) is to ensure that the railway knows what to do in the event of an emergency and importantly how to return to normal operations. The ERP should address those emergency situations that are foreseeable which have been identified through the SMS. They should include any mitigating actions, processes, and controls to manage the emergencies and minimise the consequences of the emergency.

A railway should consider when drafting ERP procedures that they capture:

- An orderly and efficient transition from normal to emergency operations.
- Delegation of emergency authority.
- Roles and responsibilities during the emergency to include contractors, third parties and emergency services.
- Co-ordination between internal and external stakeholders to handle the emergency.
- Safe continuation of operations whilst the emergency is handled and return to normal operations as soon as possible.

An emergency event could include the involvement of both internal and external stakeholders, such as:

- Providers of Emergency Services, for example Police, Fire and or Ambulance. Any other railway organisation to include infrastructure managers.
- Providers of utilities such as water, sewage, gas, electricity.
- Any other public transportation providers (non-railway).

Any ERP should also be regularly tested and practiced ensuring that all staff likely to be involved should an emergency arise, be aware of their roles and responsibilities, in addition to ensuring that the ERP is robust and effective. To ensure that an ERP is effective, a railway should consider:

- Adequate training and competency for staff involved.
- Easily accessible and understood procedures.
- Clear understanding of roles and responsibilities in emergency situations.
- Practice the processes in a desk top environment to be prepared.

Review the performance of any exercise and ensure key learnings are captured and communicated.

All ERP processes and procedures should be documented within the SMS. For larger complex railways, they may choose to have a separate ERP manual. However the railway chooses to document the ERP procedures, it is important that all those staff that have defined roles and responsibilities know where to locate the information.

Further information

HSE guidance on [Emergency Procedures](#)

Auditing

ROGS requirement

Schedule 1. Safety Management System

2. The basic elements of a safety management system are-

(k) provisions for recurrent internal auditing of the safety management system.

Guidance

It is important that the SMS is kept under review to ensure not only that it covers the appropriate range of topics and activities, but also that the SMS in place is being followed.

Periodic Review of the SMS

The SMS needs to ensure that it is relevant to the railway, and that the contents are up to date and current. The railway needs to ensure that there is a documented process to conduct a review of the SMS with an agreed time between each review cycle.

A mature railway will ensure that key stakeholders are involved in the review, providing feedback and opinions. Those stakeholders could be internal and external stakeholders, staff representation groups, and where needed the regulator.

When there are changes to the SMS, appropriate consultation and communication with staff should be undertaken prior to any implementation. A training needs analysis of any proposed changes should be undertaken along with ensuring that the changes do not introduce new risks or increase the current risks, in which case a risk assessment may need to be considered.

Considerations when conducting an SMS review should also be:

- The effectiveness of any changes made during the previous SMS review.
- The SMS continues to meet its core safety objectives.
- The SMS reviews are risk based, with an agreed frequency and schedule.
- Involvement of key stakeholders, both internal and external.
- Incidents and accidents form part of the SMS review.

- Corrective and preventative actions from incidents, inspections and audits are reviewed to measure their effectiveness and currency. These should be reflected within the SMS documentation.

Safety Audits

A railway's internal safety audit program is a key component of their safety assurance and is used to assess the effectiveness of the SMS and identify areas that can be improved upon. This is also an opportunity for the railway to assess if safety risk controls are effectively implemented and being monitored.

It is sensible and recommended that periodically railways undertake an external audit. This involves bringing in a third party to undertake a critical assessment of your railways systems and processes to check the controls are effective and being implemented.

The focus of any safety audit program is to ensure that the processes and procedures are controlling or mitigating the identified risks.

A railway may wish to consider different departments auditing each other. This can make the audit program more effective as the auditors are independent from the functions or departments in scope. This may be more difficult for smaller, less complex railways but may wish to look at other methods to maintain independence and objectivity such as dedicated procedures and protocols.

A railway should consider as part of their SMS, setting out on a regular basis an audit program, assigning those departments or functions in scope and assigning the appropriate auditor. The SMS should document the procedure and process around internal safety audits, frequency and communication program around findings. A railway may want to consider a process around the escalation of different / high severity findings along with a process on closing out any audit findings.

Safety audits should be performed by suitably competent staff. The railway's SMS should define what training is required for a member of staff to be a competent safety auditor, whilst also detailing how they maintain their competency.

Safety Assurance

Once the railway has decided and published its safety objectives, it now needs to monitor and measure how it is performing against them and whether it is meeting its own targets. This will also provide the railway with feedback on its safety performance which will allow it to assess and make changes where necessary.

This is done by collecting and analysing safety data and information from across a variety of different sources, which depends on the size and complexity of the railway. Having safety data to support the railway's decision making is essential.

A railway can monitor their safety performance using different sources of data to include:

- Hazard and safety reports
- Safety surveys
- Safety audits
- Safety investigations
- Operational performance data.

Safety performance management is an ongoing activity within the SMS, and as the maturity and quality of data improves over time, it is not uncommon that a railway may consider refining the scope of its SPI's to better align with its safety objectives.

Annex A: Glossary

CMS	Competence Management System
ERP	Emergency Response Planning
HRA	Heritage Railway Association
HSE	Health and Safety Executive
HSWA	Health and Safety at Work etc. Act 1974
ISO	International Standards Organisation
MHSWR	Management of Health and Safety at Work Regulations 1999
ORR	Office of Rail and Road
PCMRSG	Passenger Carrying Miniature Railway Safety Group
PDCA	Plan Do Check Act cycle
PPE	Personal Protective Equipment
RAG	Red Amber Green
RM3	Risk Management Maturity Model
ROGS	Railways and other Guided Transport Systems (Safety) Regulations 2006
RSR	Railway Safety Regulations 1999
SAG	Safety Action Group
SPAD	Signal Passed at Danger
SMART	Specific, Measurable, Achievable, Realistic and Time bound
SME	Subject Matter Expert
SMS	Safety Management System
SPI	Safety Performance Indicator
SRB	Safety Review Board

Annex B: Case Studies – Does my Railway need an SMS?

These scenarios are intended to illustrate how the ROGS requirement to have an SMS might apply in a number of different types of railway operation or organisation structure.

Key criteria that bring systems within the scope of the ROGS duties are:

- (a) Does the line meet the definition of a railway or a transport system at all?
- (b) If it is a railway, is the gauge over 350mm?
- (c) Regardless of the gauge does the railway cross with a carriageway (over, under, or on the level)?

To determine (a) the definitions in ROGS must be read carefully. The definition of ‘transport system’ in ROGS regulation 2 is important as it sets out several exclusions from scope. These cover for example systems within harbours, factories, mines, or which are only used for construction of other works.

NB: ROGS refers to ‘carriageways’ and this means, in England and Wales “a way constituting or comprised in a highway, being a way (other than a cycle track) over which the public have a right of way for the passage of vehicles”, and in Scotland “where over a road the public right of passage ... includes such a right by vehicle, other than a right by pedal cycle only, the road is a “carriageway””. So, in both cases the key requirement is that there must be right of passage for vehicles, and cycles are not considered vehicles. By these definitions a public footpath or bridleway would not be a ‘carriageway’ for the purposes of ROGS.

Case Study one

A group of volunteers own a large field and obtain planning permission to build a 2-foot gauge narrow gauge railway. The railway will not cross any public rights of way or carriageways either on the level or otherwise and there is normally no public access except for open days.

The railway is quite extensive and has both single and double track sections with colour light and semaphore signalling. Trains are limited to a maximum speed of 15mph.

The volunteers think that it would be a good idea to open the railway to the public to raise the profile of the railway and to help fund future developments.

In this instance ROGS requirements apply because it is a railway, and the gauge is greater than 350mm. The volunteers will need to develop an SMS that satisfactorily details how

their responsibilities for safety are discharged as both an infrastructure manager and transport undertaking.

ROGS makes no exceptions for railways that are private or do not admit the public. Similarly, there is no distinction made on whether passengers are charged a fare.

Case Study two

A local model engineering club obtains permission to operate a mixed gauge railway around a local park. The gauge of the trains is below 350mm in all instances. No public rights of way are crossed although a level crossing is provided to allow members of the public to gain access to an area in the middle of the railway. The railway controls the crossing.

In this instance ROGS requirements do not apply because the gauge is below the limit set by ROGS and there are no level crossings of public rights of way. The model engineering club should still consider how they organise themselves for health and safety.

Case Study three

A rail freight facility is connected to the mainline via a branch line that the rail freight facility owner is the infrastructure manager for the branch line. The branch line was originally created under the Light Railways Act and has transferred to the present owners. The rail freight facility has the authority to operate trains over the branch line but doesn't have any locomotives of its own. The only trains that use the branch line are those freight trains (operated by others) that are there to service the facility.

In this instance ROGS may apply in part; the running line may be within scope, but the freight facility may not if it meets the ROGS definitions of a factory or goods depot. Health and safety law does apply overall however, and the rail freight facility owner is responsible for ensuring risks are controlled.

Annex C: Risk assessment and management

Railways should adopt the following staged approach to risk management:

1. Determine work activities
2. Identify hazards
3. Evaluate risk
4. Assess risk – is it acceptable?
5. Prepare risk control action plan (if necessary)
6. Review adequacy of action plan

Hazard Identification

The first step is to identify the hazard. The definition of a hazard is any condition that can cause or contribute to an accident or incident. The railway's SMS should set out a clear process on hazard identification that enables the collecting, recording and analysis of hazards that affect the activity of the railway.

There are different sources that of how a railway can gather hazard identification, the two main sources are:

Reactive – This involves the analysis of past or previous outcomes or events. These can be hazards identified during the course of incident or accident investigations, along with staff or people reporting via the prescribed reporting channels from the SMS using the voluntary or confidential reporting.

Proactive – This involves the collecting of safety data of lower consequence events, process performance and analysing the information or frequency of the occurrence to determine if the hazard could lead to an accident or incident. These can be the hazards identified during activity such as audits and or inspections, staff surveys, output from the change management process and safety risk assessments.

It is good practice in a railway that an initial safety hazard identification exercise is carried out, and that over time additional hazards can be added to the risk register. This ensures that hazard identification becomes an ongoing activity. Hazards can also be identified from external sources, such as industry forums, industry working groups and outputs from other railway's safety incident reports, whereby similar hazards have been identified within the railway.

Risk

Risk is the severity and likelihood of the consequences of a hazard occurring. The railway should consider having a process to define how they are assessing the severity. This can either be done by worst case scenario or by the most foreseeable outcome. Any risk assessment that is performed should detail the methodology and decisions made, with appropriate justifications.

Railways should consider setting up discussion groups with staff and management, to collectively identify hazards and risk. This is a good way to encourage staff and management to become more actively involved in establishing or continuously improving the railway's SMS.

Once a hazard has been identified, a risk assessment is conducted to determine the potential for harm or damage.

Risk Assessment

The railway should have a documented risk assessment procedure that determines the acceptability of risk.

The railway needs to ensure that they have documented within their SMS a Risk Assessment process. A step-by-step guide for completing risk assessments could be:

Step 1 – Identify the hazard

Review how the operations could cause harm. This could be achieved by walking around your workplace, observing what is happening and looking for things that could reasonably be expected to cause harm. Consider involving staff as they could have noticed things that have not been obvious to the person doing the walk around. Safety data can also be reviewed as this can highlight hazards that caused an incident or accident to occur. This could be near miss data, safety occurrence reports, or safety incidents from similar railways.

Step 2 – Identify the risk

What might be harmed and how the harm might be caused? This should consider the likelihood of the event occurring to determine whether the risk is acceptable or whether further controls are required.

Step 3 – Evaluating the risk

Once the hazards and the potential risks have been identified, what to do about them needs to be decided. The railway must do what it can to reduce the risk as low as reasonably practicable. Can the risk be eliminated altogether? Usually this cannot be achieved, so the railway should consider what controls can be implemented to control the risk so that harm is unlikely to be reduced further. The railway could also consider if there is

another option that prevents the hazard or reduces the exposure to the hazard. The easiest way to do this is to compare what your railway is doing with good practice.

There are many sources of good practice, such as ORR and HSE's website, and rail sector bodies, professional institution codes of practice, relevant British Standards and other rail industry standards. It's also possible to use standards or codes of practice from other sectors if these can be justified in a railway context.

When evaluating the risk, need to consider how bad the outcome would be (severity) of any consequences arising from the identified hazard, and how likely the hazard might result in the identified potential safety incident (likelihood).

The procedure implemented within your SMS should contain a risk tolerability matrix that is used across the whole railway, accompanied by descriptors for levels of severity or consequence.

Many heritage railways use a 5 by 5 matrix to visually represent a risk assessment with increasing scales of severity and likelihood. Scores are then either added or multiplied to give a figure. This can be used to help identify and prioritise risks that require treatment and necessary controls to reduce as low as reasonably practicable. If the risk is unacceptable the task must stop until suitable controls are implemented so that it is controlled so far as reasonably practicable.

Step 4 – Risk mitigation & treatment

Once the risk levels have been determined, assess the safety defences or controls that are in place to work out how effective they are against the risk. If they are assessed as fully effective, the operation can continue. If they are not fully effective, the railway should consider how to improve the controls or to remove / avoid the hazard entirely.

The risk should be managed to the point of being as low as reasonably practicable. All means of mitigation should be applied until the cost of mitigation is grossly disproportionate to the benefit that the railway would obtain.

It is important to note that if the risk has been assessed as unacceptable, the railway should consider not continuing with the operations until that risk is mitigated to an acceptable level. Be reasonable and realistic with any risk assessment action plans. Your risk assessment should only include what you reasonably expect to know, you are not able or expected to anticipate unforeseeable risks.

When looking at what risk treatment options to control or mitigate the risk, it is important to select the most appropriate risk treatment or control that balances the potential benefits in relation to the safety outcome against the efforts and disadvantages of implementation.

When determining the appropriate controls, you should review and consider how you can apply the principles of prevention specified in Schedule 1 of the Management of Health and Safety at Work Regulations 1999.

The diagram in Figure 3 below showing the hierarchy of controls pyramid might help you visualise those priorities when making the decisions.

Figure 3

(Source: HSE)

If your risk assessment identifies a number of different hazards, you need to prioritise them by putting them in order of importance, addressing the most serious risks first. The greater the hazard the more robust and reliable the controls to reduce the likelihood of the risk need to be.

Step 5 – Record findings and implementation

Once the risks and the mitigations/defences have been put in place, decide how to implement your risk management plan. Record the outcome of your risk assessment and share across the railway. Document what has been done so that it can be reviewed at a later date.

Step 6- Monitoring effectiveness

This is where, as a railway organisation, you need to ensure that what has been agreed has been implemented and is working as expected. If they are not working as expected, they are to be reviewed and reassessed with the performance monitored.

Step 7 – Review the risk assessment and update if needed

It is not uncommon that many railways continue to change on a frequent basis. Therefore, the risk assessments completed need to be regularly reviewed to:

Check if there have been any significant changes since the time of the initial risk assessment or previous review.

Are there still actions or measures needed to be done to reduce the risk to as low as reasonably practicable?

Have you received reports from staff that there is still a problem?

Any learnings from accidents or near misses that need to be incorporated into your risk assessment?

Risk assessments should be conducted by competent person, and as they can be subjective, verified by another competent person or by review at a safety committee.



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