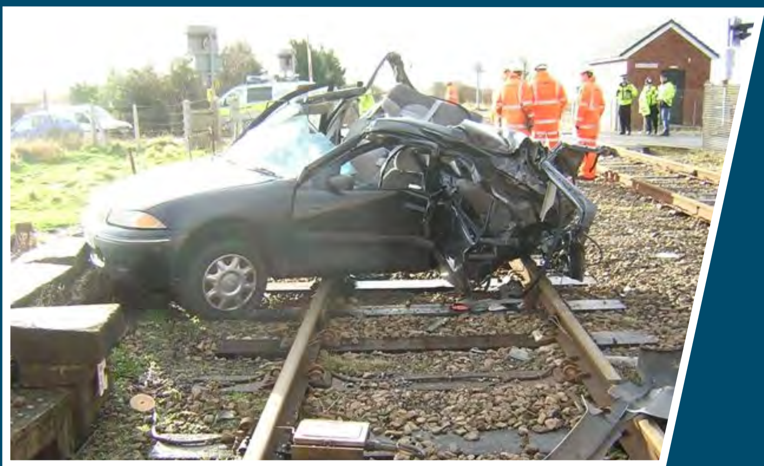
Investigators' Handbook

Part 3 – The investigation report

Part 3A



This Part 3A includes the following sections:

- General report writing skills
- Template hints and tips
- Writing recommendations and local actions

Part 3 – The investigation report

Part 3A

Contents

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General report writing skills

Contents

The report's purpose and target audience

In order to be effective, the investigation report must document the investigation and present the findings in such a way that the reader can understand:

a) exactly what occurred;

b) the immediate and underlying causes (and any 'other safety related issues) and how these were determined;

c) what further actions are necessary to prevent recurrence or mitigate the potential consequences.

The report must be suitable for its purpose, and the expected target audience.

The purpose of an investigation report

The report should be written to:

a) *document* the investigation;

b) *record* the facts;

c) *discuss* and *explain* the relevant issues;

d) *set out* and *justify* the conclusions;

e) *identify* what actions are required;

f) *provide a basis for* further investigation or research (as appropriate).

The highlighted words describe a different action that requires a particular style of communication.

Each of these actions will require a different style of writing:

a) Descriptions and sequences of events need to be written in a purely factual and narrative style.

b) Discussions and justifications need to use clear, logical reasoning, and need to be based on the evidence presented in earlier sections of the report.

Where opinion is expressed, it should be clearly indicated who is expressing the opinion, and on what basis the opinion has been formed.

The target audience

The investigation report needs to balance the varying knowledge and requirements of the target audience in a way that does not compromise readability or understanding.

An investigation report will be written for most and, in some cases, all of the following:

a) the investigation team;

b) local/senior management;

c) other involved organisations;

d) those who evaluate the report's recommendations/local actions (i.e. RRP/NRRP);

e) those who have to implement the recommendations/local actions;

f) regulatory bodies (e.g. RAIB, ORR, etc.);

g) those who may subsequently investigate similar events.

The audience will dictate the level of detail and explanation required within the report because different individuals will have:

a) a different perspective;

b) a different level of understanding;

c) differing needs/requirements.

Formal investigations are the highest level of investigation undertaken by the rail industry.

Formal investigation reports and, in many cases, local investigation reports will be circulated to and reviewed by the senior management both within Network Rail and other organisations. Additionally, they are often supplied to, and reviewed by, regulatory bodies.

It is important, therefore, that the reports are accurate and of a good standard.

Writing styles

An investigation report should normally be written in a formal style, avoiding jargon or colloquialisms.

> Formal style: using a precise, factual, style of writing that respects the protocols and conventions of written communication e.g. as in a formal or business letter.

A slightly less formal style may be used when writing the 'Factors discussed'.

Here a slightly more relaxed style, such as a conversation between writer and reader, is more appropriate. However, the overall guidelines of report writing should still be respected, i.e. avoid the use of colloquialisms, vague statements, generalisms, etc.

Passive or Active voice?

Traditionally reports have been written in a 'passive voice', for example:

"It was decided that..."

The 'passive voice' can give the impression of things being detached from reality or direct action, that the event occurred without any positive action. However, when describing events, it is necessary to make it clear who has performed an action, and why (accidents and incidents do not happen on their own – the why is caused by the who).

In such cases the 'active voice' should be used, for example:

"The COSS decided that..."

It is important to note that specifying the individuals involved in this manner does not apportion blame; it simply helps to understand the actions of individuals and the reasons behind their actions.

Jargon and colloquial language

Avoid the use of jargon and colloquial language, e.g. slang, conversational or everyday language.

If it is necessary to use colloquialisms for the purposes of understanding, or when describing statements made by individuals, these should be placed in quotation marks.

Generalisms and assertions

Do not make comments or statements that are not supported by the evidence collected/obtained.

Unless the evidence supports them, avoid the use of:

Generalisms	Sweeping statements that a situation regularly occurs, or is prevalent over a large part of an organisation or affects large numbers of people, e.g. "Drivers never follow this particular rule."
Assertions	Something presented as a basic fact, without any evidence to support it.

Report structure

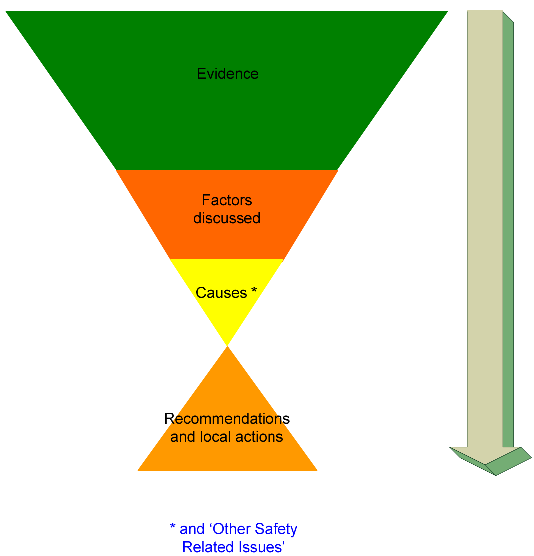
The report should be structured in such a way that:

a) the 'Factors discussed' section is based upon the factual information and evidence presented in the preceding sections (i.e. 'Details', 'Sequence of Events' and, for Formal Investigations, the 'Summary of Evidence');

b) the 'Causes' (and any 'Other safety related issues') are based upon – and supported by – the issues discussed in the 'Factors discussed' section;

c) the 'Recommendations and local actions' address the issues shown only in the 'Causes' (and any 'Other safety related issues'), ***except*** where action (to address 'Causes' and any 'Other safety related issues') has already been taken or implemented before the report is published.

The diagram below represents this structured 'flow' of information in the report – its funnel shape reflecting how the 'Factors discussed' should be used to filter (or funnel) the evidence in order to produce the 'Causes' (and any 'Other safety related issues'). The 'Causes' (and any 'Other safety related issues') are then used to determine what 'Recommendations and local actions' need to be made.



Cross-referencing

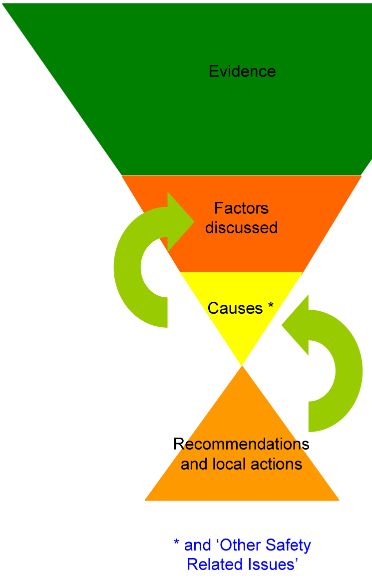
See the guidance on cross-referencing in the Template hints and tips section of this Part 3A of the handbook.

Certain sections of the report need to be cross-referenced as follows:

a) Each section within the ‘Causes’ (and any ‘Other safety related issues’) needs to be cross-referenced to the relevant section(s) of the ‘Factors discussed’ that support it.

b) Each recommendation and/or local action needs to be cross-referenced to the relevant section(s) of the ‘Causes’ (and any ‘Other safety related issues’) that it addresses.

   Note that a recommendation or local action does not need to be made (i.e. included in the ‘Event Summary’ section of the report) if, before the report is completed, action has already been taken to address a cause (or any ‘Other safety related issue’).



It is not necessary to cross-reference the following:

- ‘Factors discussed’ to the preceding sections, or vice versa.
- The recommendations or local actions to the ‘Factors discussed’, or vice versa.

In addition, there needs to be some discussion within the ‘Factors discussed’ section to support and explain why a recommendation or local action is being made.

An inability to cross-reference a particular section will indicate that something is missing from the report.

Separating ideas and issues

Separating ideas and issues will improve the report’s readability and understanding.

Evidence

Local investigation	A list of the evidence reviewed by the investigation team is all that is needed
Formal investigation	Each item of evidence should be presented under its own sub-heading, e.g. Driver’s report, signaller’s report, OTDR analysis, etc. This can be done using the ‘Heading 2’ formatting style within the report templates by creating sub-headings to separate items so that they can be read and understood more easily. Where a witness is interviewed the sub-heading may be modified to be inclusive of all evidence related to that witness, e.g. Driver of 1T29; this will enable the evidence from both the driver’s report and any interview to be included under the same sub-heading.

Factors discussed

Where several different points are being made about a particular issue, you can improve the readability of the report by placing each point under a separate sub- or subject heading.

Specific subject headings

It is difficult to provide precise guidance on the sub-headings to include – even with events of a similar type the issues that may need to be addressed can be different.

However, it will be necessary to sub-divide the 'Factors discussed' section to cover specific issues or topics relevant to the event, and the following is a guide to what may need to be included for example event types:

Possession/protection related event

Heading	To include:
The planning of the activity/work	The possession/protection planning and general work planning, including the allocation of personnel to undertake particular roles.
The implementation of any safe system of work/method of working	How the possession/protection was actually implemented 'on the ground', and whether this was adequate and reflected the planned arrangements. If late changes were made on site, were these adequately assessed, implemented and, where necessary, authorised and recorded.
Briefings to those involved	PICOP and/or COSS briefings; attendance of relevant personnel at PICOP meetings.
Competencies and training of the staff implicated/involved	Review of experience in the role and knowledge (general and location specific); review of recent competency assessments and any issues raised/addressed; adequacy of training provided/received, where appropriate.
Human factor issues	To address any of the 10 Incident Factors not already covered.
Similarities with previous events	Consideration of similarities with any previous events, including events of a similar type or cause(s).

Heading	To include:
Audit/assurance activity	To consider whether any prior audit/assurance activity provided any indication of potential problems/issues and whether this was acted upon.

Category A SPAD investigation

Heading	To include:
Reason the signal was at danger	Self-explanatory; why was the signal at danger?
Driver's action of approach to the signal	Discussion of whether the driver's driving technique, speed and control of the train on the approach to the signal, reaction to AWS, etc. warnings was appropriate and the driver's reaction when the signal was observed to be at danger.
Train condition and maintenance	Discussion of any faults of maintenance issues with the train/vehicles that may have contributed to the cause of the event. If there were not, this should be stated in the report.
Operation of signalling equipment	Discussion of whether the signalling had been operated correctly for the train's approach or of any unusual signalling arrangements or methods of working at the location. It may also be appropriate to include discussion of any faults found during post-incident testing or, for example, where the event is disputed the results of any wrong side failure testing.
Signal	Discussion of: • SSC findings, where one was held, or reasons why an SSC was not held; • previous SPADs at the signal, where relevant; • any proposal to recategorise the event's SPAD category.

Heading	To include:
SPAD Risk	Discussion of: • the SPAD Risk Ranking results and any changes requested by the investigation team; • the SAT score for the signal, where relevant.
The driver and/or other staff implicated	Discussion of the driver's (or other staff member's) competency and any human factor issues, including the 10 Incident Factors.
Similarities with previous events	Discussion of similarities with previous events at this signal or, where appropriate, previous events at other similar signals.

An alternative option – for a Category A SPAD investigation might be something along the lines of the following, with each sub-heading addressing specific issues:

Signal: general
Signal: positioning and visibility
Signal: operation
Signal: SPAD risk ranking
Signal: SPAD risk and mitigation
Driver: history and competence
Driver: previous safety of the line incidents
Driver: fitness
Driver: route knowledge
Driver: fatigue
Driver: train control
Driver: distraction/preoccupation
Driver: anticipation
Route-related factors
Train
Similarities with previous incidents
Event categorisation

Using the remit's specific objectives as a guide

There are some obvious advantages of using the remit's specific objectives as sub-section headings within the 'Factors discussed', i.e. it helps to provide a simple check that the investigation report has addressed the specific objectives and little effort is required to decide which subject headings to include.

However, their use as subject headings present several disadvantages as explained below, and their use as subject headings is not encouraged.

The general objectives	These will also need to be considered, and subject headings included where necessary to address, for example, audit/assurance activity.
Very few specific objectives included in the remit	If observed rigorously, these may provide a limited number of subject headings with which to address all issues identified during the investigation.
Fragmented or repetitive discussion	Some issues or topics may need to be repeated under different headings, and some related issues may be covered under separate headings.
Lack of clarity	It may not be clear what exactly are the key issues and factors involved in the event.

Templates

The following templates are available on Connect:

a) Local Investigation remit;

b) Formal Investigation remit;

c) Local Investigation report;

d) Formal Investigation report;

e) Names document.

Always download a new template.

Remove all old templates from C:\ and H:\ drives.

The templates may be revised from time to time and problems have been encountered where users have kept older versions of templates on their hard drive – the formatting may change in unexpected ways.

Format and layout

The templates are designed to provide consistency of content, layout and style.

Do not alter the formatting or layout.

Do not use multiple returns (i.e. use of the 'Enter' or ↵key on the keyboard) to provide a new page – this can cause problems when printing – use explicit page breaks ('Ctrl' + 'Enter') to give a new page where required.

The templates' in-built 'Styles' are used to provide consistency and numbering throughout the report.

See the Template hints and tips section of this Part 3A of the handbook for guidance on how to use the templates.

Names

Do not include within the report the names of the individuals involved.
Exercise care when including reports or statements, etc. as appendices.

The names of the individuals involved need to be recorded separately in a Names document (template available on *Connect*) that should be confidential to the investigation team, with a copy included with the investigation file.

See Part 3B of the handbook for guidance on what to include in the report.

Document control

See the Template hints and tips section of this Part 3A of the handbook for guidance on how to use the templates.

Footer

The footer needs to contain a brief description of the event in the following format:

Location : Brief description of event : Date (in DD/MM/YY format)

This must be kept to a single line of text.

Status

The version of the report must also be indicated in the footer. For example, whilst drafting the report use 'Draft A', 'Draft B', etc. until the report is about to be published, then use 'Issue 1'.

Do not use 'FINAL' or 'Final report'. This has, in the past, caused confusion where reports have been re-issued using the same status; at review meetings, people have had different versions of the same 'Final' report!

Do not use 'Final' in the footer.

File name

- Use a unique file name for each report.
- The file name can be used to provide a brief description of the event.
- Indicate the version of the report in the file name.

Example:

W312 SPAD 2009-08-23 Draft A

This will help to distinguish similar reports in the future, especially when reports are 'stored' electronically or when e-mailing reports to other people for review.

Completed reports

When sending the report for publication, make sure to indicate that this is the completed report. **Do not use 'Final'!**

When returning the files to the nominated point (see the 'Once the investigation is completed' section in Part 2B of the handbook for details), it is courteous to include a cover note confirming that the investigation has been concluded. The following is a suggested form of words for a covering letter or e-mail:

"Please find attached the completed report (issue 1) of the formal investigation into [description of event]."

Using the correct terms

It is not appropriate to use colloquial terms or words that are not to be found in the dictionary. In particular, reports should not use informal railway terminology or names, some of which are shown below. Many such terms have regional variations.

Term	Correct Term
Dummy or dolly	Ground position light signal
Bobby	Signaller
Give him the road	Clear a signal for a train to proceed

If it is necessary to use colloquialisms for the purposes of understanding, or when describing statements made by individuals, these should be placed in quotation marks.

Use the terms and definitions included in the Rule Book, etc. to avoid confusion.

Acronyms and abbreviations

There are numerous acronyms – words formed of the initial letters of a group of words or a phrase – in use in the rail industry. These are used in place of repeating the whole phrase.

Generally, acronyms should be avoided in an investigation remit or report unless absolutely necessary.

If an acronym – or an abbreviation – is used, spell out the phrase in full the first time it is used and put the acronym – or abbreviation – in brackets after it, for example:

- Train Protection and Warning System (TPWS)
- Controller of site safety (COSS)

The acronym – or abbreviation – can then be used (without the brackets!) in the subsequent text where necessary.

Do not assume every reader knows what you are referring to.

Spell it out the first time it is used.

Any abbreviations not in common use outside the industry need to be explained or defined in full when first used e.g. "automatic warning system (AWS)". The acronym/abbreviation can then be used throughout the rest of the report.

Do not abbreviate Network Rail to "NR" or "NWR". ***Always*** spell out the company name in full.

If a phrase is only used once in a remit or report, there is no need to show the acronym or abbreviation.

Use acronyms and abbreviations consistently. For example, do not start by using 'SPAD (Cat A)' then use 'Category A SPAD' later.

When using the plural form of an acronym or abbreviation, use a lower case 's', for example TOCs not TOCS. Only use an apostrophe before the 's', i.e. TOC's, when you mean 'belonging to the TOC'.

In a few instances, an abbreviation is so well known there is no need to spell it out first. For example BBC, MP, and EU.

Only add a full stop after an acronym or abbreviation when the last letter of the acronym or abbreviation is not the same as that of the full word. For example:

- Dr *for* Doctor, St *for* Saint or street, Ltd *for* limited; but
- etc. *for* et cetera, Co. *for* company, No. *for* number.

Dates

Dates should be written Date – Month – Year, with no commas. Do not use 23rd or the 2nd.

15 February 2006	✓
15th Feb 2006	X
15/02/06	X
15th February 2006	X
the 15th February 2006	X

Date ranges

These should be shown as "between 17 February and 29 March" or "from 18 July to 6 August" as appropriate.

Decades

These should be written as the 1960s, 1990s, 2000s, etc. with no apostrophe before the 's'.

Periods of time

Use:	*Do not use:*
1994-98	1994-8 or 1994/98
2000, 2005	00 or 05 – especially where this is the second date of a period, e.g. 1998-2000
1999-2000 and 2000-2006 or, alternatively, 2000-06	1999-00 or 2000-6

Time

Times should be shown in 24 hour format and should be shown as indicated below:

12.45	✓	*Whatever format is used, apply it consistently*
12:45	✓	
1245	X	
12.45hrs	X	
12:45 hours	X	

Where times include hours, minutes and seconds they should be shown as follows:

12:45:35

Be consistent with the style of presentation of times.

Time-based evidence

For most reports the exact timing is not important and it is not necessary to spend too much effort trying to establish precise timings. It is often more important to understand the relative timings between events.

When presenting time-based evidence from more than one source, it is important to remember that some times may need to be adjusted because:

Some data recorders work to GMT all year which means recorded times are one hour out during the summer when BST is in operation.	If necessary, times should be corrected to GMT or BST with a note added to indicate what has been done.
The clock on a data recorder may not have been set accurately.	Where an error is discovered the relevant timings from the data source should be adjusted in the report with a note added to indicate what has been done.

Timings obtained from more than one source may contain timing differences.	For example, a telephone call from a signaller to a controller may have been recorded on voice recorders at the signal box and in the control office and these may show slightly different times. Any differences discovered should be reconciled with a note added to indicate how this was done.

Synchronising time-based evidence

Adjusting times so they are correct in relation to each other becomes more important when timing of events becomes key to understanding what occurred and why.

Where possible, timings obtained from different systems should be synchronised, i.e. adjusted, so that the report reflects a common timing sequence.

However, such synchronisation may not be possible where the systems or sources of the time-based evidence do not have a common event from which adjustments can be made.

Measurement units

It should be clear to the reader what unit of measurement is being used. For example:

Distances – metres or yards?

Weights – kilograms or pounds?

Metric units should generally be used in preference to imperial units.
If measurements are provided in imperial units (e.g. yards, miles, etc.) show the metric equivalent.

Be consistent with the units of measurement used.

Avoid mixing metric and imperial measurements within a report.

Do not show, for example, "The train passed the signal by 75 yards and the signal had an overlap of 70 metres." The measurements should be all in metric units (preferred), or all imperial. If necessary to explain things show both units, for example, "70 metres (77 yards)".

Abbreviations for units of measurement

There should be a space between the figure and the abbreviation.
For example, 75 m not 75m.

Use the correct abbreviation for the units including, where appropriate, correct capitalisation. For example, 25 kV not 25 KV.

This may sound trivial, but it can make a significant difference in some cases. For example:

8 MB/sec is 8 megabytes per second (a rate of data transfer).

8 Mb/sec is 8 megabits per second (a rate of signalling along a phone line).

The first is 8 times greater than the second!

Converting measurements

Click here to access a set of conversion tables available from the Investigators' Handbook page on *Connect*. The tables provide for the following:

Length, area, volume, weight and liquid measurements	Imperial to metric and vice versa
Speed	
Temperature	°C to °F/°F to °C
Standard length units (SLUs)	SLUs to feet/yards/metres and vice versa

The report must always be accurate! Be careful to understand the difference between accuracy and precision. Unless the nature of the investigation requires it, extreme precision is not necessary.

If using a quote from a specific source be careful how you convert it. For example, if a driver states that he stopped about ¼ mile from a bridge then it is wrong to state "¼ mile (404 metres)" – it could be 398, 406, 410 metres, etc.

Quotation/speech marks

Quotation marks should be used for words, phrases and sentences used from a clearly defined source, e.g. another report, a company standard, etc.

Double quote marks (" ")

Use around reported speech. For example, the driver said, "The signaller advised me to . . . ".

Single quote marks (' ')

Use sparingly and use within quotes to highlight unusual words or phrases or where someone has referred to a term in an unfamiliar way.

Punctuation for quotes

Place inside the quote marks if it is part of the quotation.

Place outside the quote marks if the quote is part of a longer sentence.

When a quote extends over more than one paragraph, use opening quote marks at the beginning of the quote and at the beginning of each subsequent paragraph. Use closing quote marks at the end of the complete quotation.

Quoted text should start with a capital letter when it follows a colon.

If it is necessary to put into a report what a person has said in his own words, then this should be put into speech marks to show this. For example:

> The driver said, "He gave me the road".

Use of colour

The report must be produced in black and white but colour may be used in the following circumstances (but note the black and white alternatives):

Colour may be used	Black and white alternative
To highlight specific text	Bold text, or underlining
Where diagrams and photographs, etc. are included	N/A
Where text is copied from another document into the report	Italics and quote marks

> If colour is used, check that the relevant text, diagrams and photographs are readable when the report is printed in black and white.

Quality control

The aim of an investigation report is to communicate the findings of the investigation team, not to show how technically clever the writer is.

Clarity is the most important aspect of writing an investigation report - the report must be both easy to read and easy to understand.

It is not necessary to include long or impressive words. These can often make a report less clear.

Formal investigations are the highest level of investigation undertaken by the rail industry but both formal and local investigation reports will be circulated to and reviewed by senior managements and regulatory bodies.

Investigation reports therefore need to be completed to the highest standards, and it is important to check the following:

The report meets the requirements for content and layout	Parts 3A and 3B of the handbook provide guidance on what needs to be included in the report.
Spelling and grammar are correct	Use Microsoft Word's spelling and grammar checking tool – this will identify most errors, but is not foolproof; the report should be carefully proof read before publication – if possible by more than one person. Even minor errors will diminish the credibility both of the report and the investigation it documents.
All relevant facts are included	As explained in Part 3B of the handbook, the report's causes need to be supported by the relevant facts and discussion.
All arguments are logically set out, and support the conclusions	

All recommendations and local actions address the causes and any 'other safety related issues'	As explained in Part 3B of the handbook, the recommendations and local actions need to address the report's causes.
The signatures of the DCP and all members of the team are included	As explained in Part 3B of the handbook, the signatures or agreement of the investigation team to the completed report – and the DCP's signature – need to be included in the report when it is issued.
All feedback from consultation has been included and recorded	As explained in Part 3B of the handbook, where a report has undergone 10-day consultation, the feedback/comments will need to be included.

The DCP is required to check the above points before signing off the report and authorising its issue.

An Investigation Report Checklist is provided on the Investigators' Handbook page of *Connect* to assist lead investigators and DCPs in checking the completeness of the investigation report.

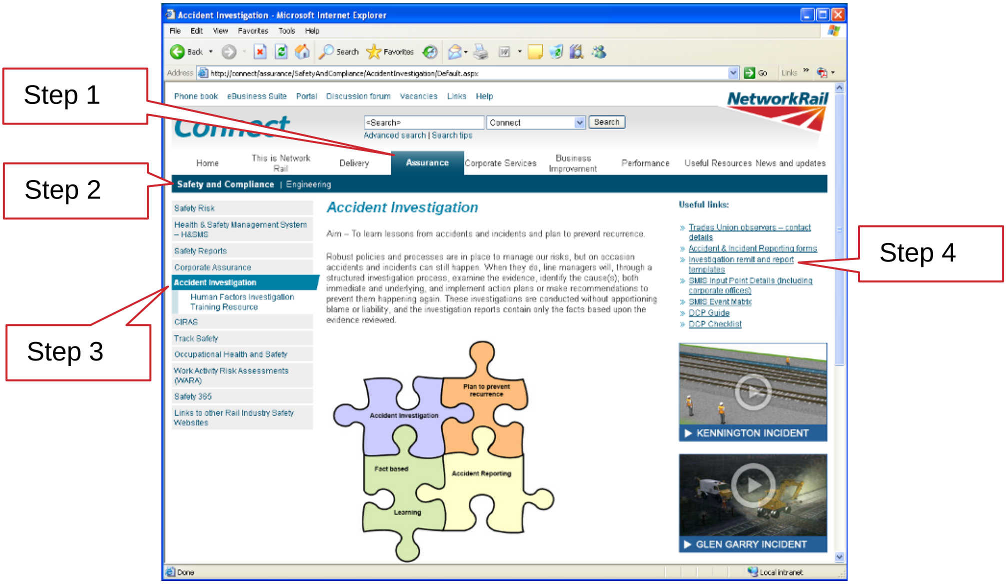
Template hints and tips

Contents

Templates for remits, reports and names documents

Templates for remits reports and names documents have been developed for use within Network Rail to achieve consistency of content, layout and style.

The templates can be obtained from Connect – go to 'Assurance', then 'Safety and Compliance', and then 'Accident Investigation'; just follow the link on the right hand side of the 'Accident Investigation' page.



Download a new template from *Connect* before starting to write a new remit, report or names document.

The formatting and layout of the template should not be changed.

Always download a new template before starting to write a new remit, report or names document.

Do not keep copies of the templates on local or network drives – the templates may change over time.

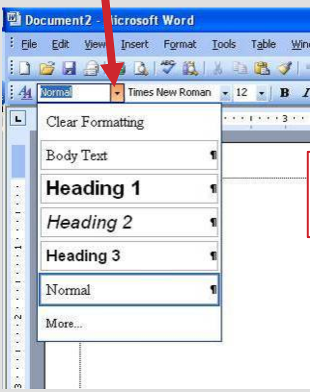
Font

The font used in the remits and reports is Arial, a standard and widely available font.

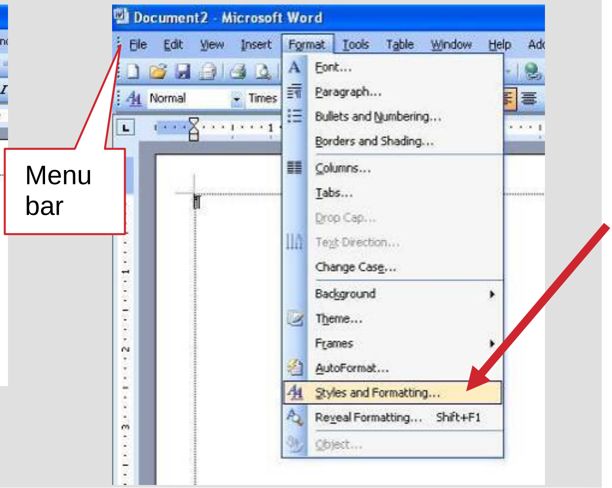
Template styles

To give consistency and numbering throughout the report, pre-defined formatting 'Styles' are used in the templates. Each combination of text size, typeface, and numbering is given its own 'Style' name.

Styles can be selected from the 'Style' box on the formatting toolbar:



Or by opening the 'Styles and Formatting' option from 'Format' on the menu bar:



These styles must not be changed and must be used correctly in order for the report's numbering system to work. If the automatic numbering of the headings/paragraphs is 'lost' when drafting a remit/report, re-apply the appropriate style ***but do not manually number paragraphs within the report***.

> The numbering system in the templates ***may not*** work if the styles are changed. ***It will not work*** if numbering of paragraphs undertaken manually.

Each level of heading is provided by a separate style:

- main heading is 'Heading 1' style (use this shortcut: Ctrl+Alt+1);
- sub-heading is 'Heading 2 style' (use this shortcut: Ctrl+Alt+2).

The numbered paragraphs are provided by the 'Section 1' style; sub-paragraphs are provided by the 'Section 2' and 'Section 3' styles.

A particular style may be selected using the drop-down box in the formatting toolbar. All styles in the template may be displayed using the menu command 'Format: Styles and Formatting'.

Moving from one style to another

There are several ways in which the format style can be changed.

Keyboard strokes

When completing a line or paragraph of text, using the return key on the keyboard will cause:

- format styles ‘Heading 1’ or ‘Heading 2’ to automatically change to the format style of the next level, e.g. ‘Heading 1’ will automatically change to ‘Heading 2’ on the next line;
- format styles ‘Section 1’, ‘Section 2’ and ‘Section 3’ to remain unchanged.

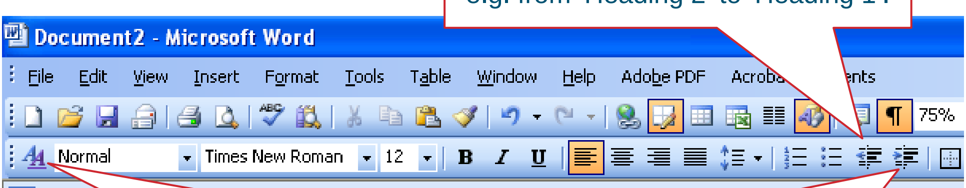
Place the cursor at the commencement (i.e. to the left of the 1st character) of the 1st line of a paragraph and press the Tab key on the keyboard to select the lower style of formatting, or the Backspace key to select the higher style of formatting.

Toolbar options

(a) Text may also be promoted/demoted to the previous/next style level using the ‘Increase/Decrease Indent’ buttons on the formatting toolbar (this also works in print layout view).

(b) With the cursor within the line or paragraph, select the appropriate style from the ‘Styles and Formatting’ option on the toolbar.

Promoting text (decreasing the indent) raises it a higher style level, e.g. from ‘Heading 2’ to ‘Heading 1’.



With the cursor within the line or paragraph, select the appropriate style from the ‘Styles and Formatting’ option on the toolbar.

Demoting text (increasing the indent) reduces it to a lower style level, e.g. from ‘Heading 2’ to ‘Section 1’.

Menu bar option

The available styles and formatting for the remit or report can be viewed alongside the document by selecting the 'Format' option from the menu bar and then selecting the 'Styles and Formatting' option.

Text markers and italicised text in the templates

Text markers

The templates include markers, i.e. represented by the '#' symbol where text should be added to a remit, report or names document.

The templates indicate what should be added (with brackets removed) and are self-explanatory. For example: "# (Insert job title)".

The # markers should be removed before the report is completed.

Italicised text

The report templates also include italicised text in square brackets. For example:

[This should be a list of all the evidence/information obtained and reviewed by the investigation team].

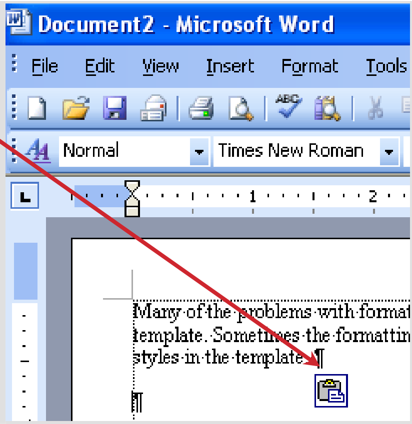
Such italicised text is provided only as guidance for the lead investigator when writing the report and should be deleted before the report is published.

Copying text from other documents

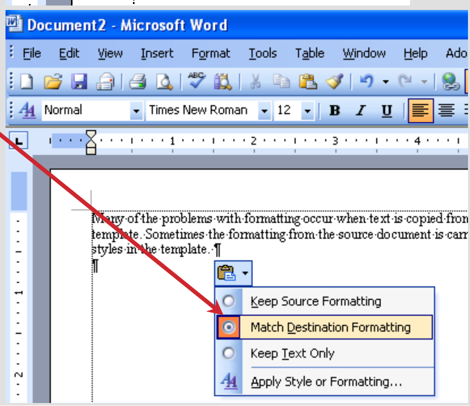
Problems with formatting may occur when text is copied from other documents and pasted into a remit or report template; sometimes the formatting and styles from the source document is included with the text and may corrupt the formatting and styles within the template.

This can be avoided by specifying that the incoming text is formatted in the style of the template (the 'destination' document) as follows:

Microsoft Word provides a small icon for this – it pops up when text is pasted into a document.



Clicking on the icon opens a menu of options; select the one shown.



When copying text from other documents containing different or unknown styles or formatting it may be better to paste in text as unformatted text, or "use destination formatting".

> It may often be better to paste in text as unformatted text, or "match destination formatting" from the pop-up box.

Go to 'Edit' on the menu bar and select 'Paste Special', then 'Unformatted text'. Where the text copied includes numbering or bullet points, these will need to be deleted.

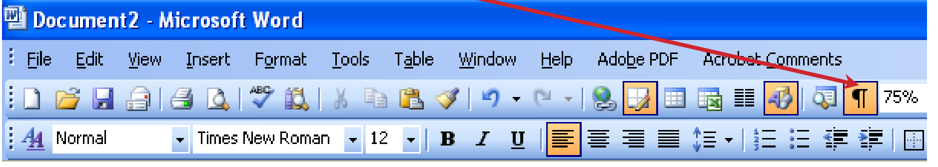
> Care should be exercised when copying and pasting in text from another document – the original document's formatting and styles may affect the template's formatting and styles.

Paragraph and formatting marks

Viewing paragraph and formatting marks

Formatting problems may occur by adding unnecessary lines or page breaks.

View paragraph marks, line breaks, etc. in the document by clicking on the ‘Show/Hide’ formatting button:



The templates’ formatting and styles:

- ***Will not*** allow the text of a paragraph to be split over two pages.
- ‘Heading 1’ and ‘Heading 2’ styles ***will always*** be ‘attached’ to the 1st paragraph of the following text in ‘Section 1’ style.
- ‘Heading 1’ style ***will always*** start on a new page for formal investigation reports.

Adding page breaks

Where required, use explicit page breaks (use the shortcut: Ctrl + Enter) to create a new page.

Do not use multiple returns (i.e. use of the ‘Enter’ or ↵key on the keyboard) to provide a new page as this can cause problems when printing.

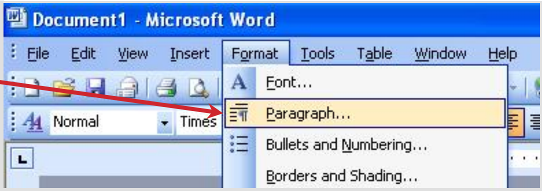
Keeping text, paragraphs and sub-paragraphs together

A paragraph may become 'separated' from the preceding paragraph text and commence on a new page, even when there appears to be room for them to appear together.

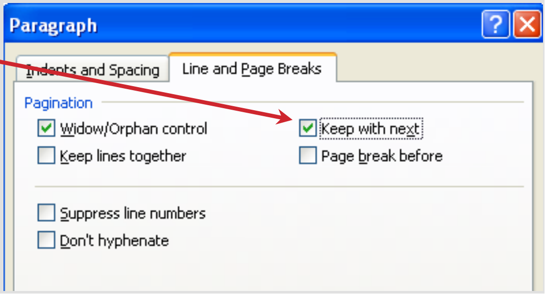
It may be desirable, however, to keep the two paragraphs together.

This can be achieved as follows:

With the cursor in the first paragraph, select 'Format' from the menu bar, then 'Paragraph'.



On the 'Line and Page Breaks' tab, select the 'Keep with next' option.



Cross-referencing

See the Cross-referencing guidance in the General report writing skills section of this Part 3A of the handbook.

The 'Causes' (and 'Other safety related issues') of a report need to be cross-referenced to the relevant section(s) of the 'Factors discussed' section of the report.

And each recommendation and local action must be cross-referenced to the cause (or 'Other safety related issue') that it addresses.

Cross-references may also be added within the 'Factors discussed' section to avoid repeating text, but do not cross-reference to the 'causes' or the recommendations and local actions.

Manual cross-referencing

Cross-references can be added manually by simply adding, for example:

(see section G1.1).

But manually added cross-references will require to be ***updated manually*** should the contents of the report change.

If cross-references are added manually, it is advisable that this is done when the drafting of the report is complete.

NetworkRail

Automatic cross-referencing

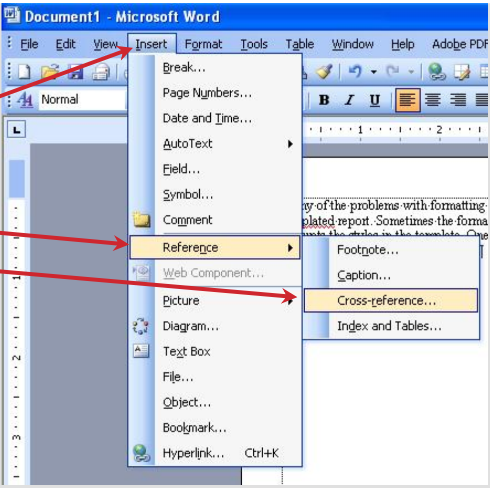
Cross-references can be added automatically by using the facilities available in Microsoft Word.

To inset a cross-reference, place the cursor where the cross-reference needs to be added then:

(a) Select 'Insert' from the menu bar.

(b) Select 'Reference'.

(c) This will open the "Cross-Reference" dialog box (see below).



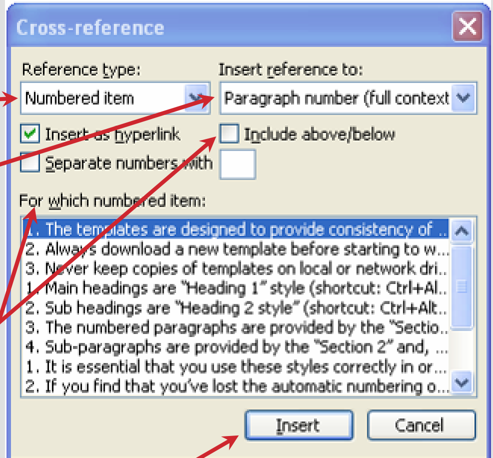
(d) In the 'Reference type' field select the appropriate option – for text within reports this will be 'Numbered item'.

(e) In the 'Insert reference to' field select the 'Paragraph number (full context)' option.

(f) If desired, click on the 'Include above/below' field (if selected this will add 'above' or 'below' after the inserted cross-reference).

(g) In the 'For which numbered item' field scroll down to select the relevant heading, paragraph or sub-paragraph.

(h) Click on 'Insert', then 'Close'.



Move to the cross-referenced text by clicking with the mouse on the cross-reference. Depending on how a desktop/laptop options are set, it may also be necessary to press the CTRL key at the same time.

Should automatic cross-referenced text be moved or its numbering is changed (by the addition of preceding headings or paragraphs), the cross-references can be updated by either:

(a) selecting each cross-reference in turn and then pressing the F9 key; or

(b) selecting 'Edit' from the menu bar then 'Select all' (or using the shortcut key CTRL + A) to highlight all text within the document and then pressing the F9 key.

Where a cross-reference is made to text that is subsequently deleted, the point where the cross-reference was made ***will*** contain an error message. Delete the error message and, if necessary, add a new cross-reference.

Pictures and diagrams

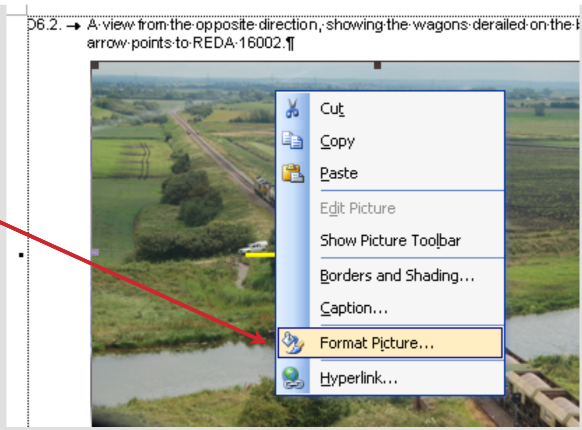
Reducing the file size

It is often useful to include pictures and diagrams in a report, but these can greatly increase the file size.

This can be overcome using a facility provided in Microsoft Word without sacrificing the quality of the image.

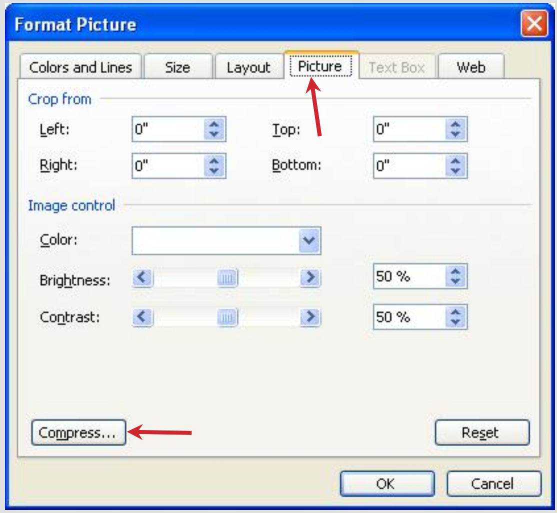
First right-click on the picture/diagram with the mouse and select 'Format Picture' from the pop-up menu.

This will open the 'Format Picture' dialog box.

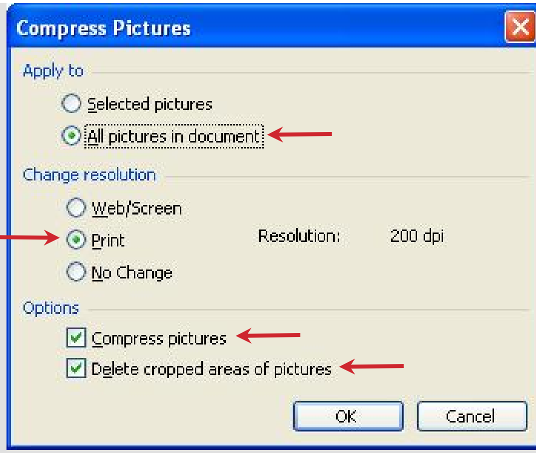


From the 'Format Picture' dialog box, select the 'Picture' tab and click on the button marked 'Compress'.

This will open the 'Compress Pictures' dialog box.



In the ‘Compress Pictures’ dialog box, set the options to those shown in the snapshot on the right, then click OK.



It is not necessary to compress the pictures if you are going to use Adobe Acrobat to create a PDF version of the report for distribution; Adobe Acrobat carries out this compression during the conversion process.

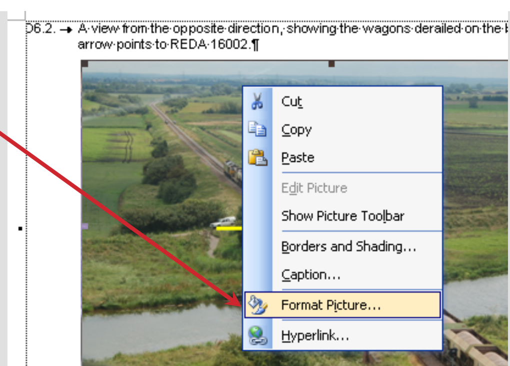
Converting colour pictures to black and white

It may be necessary to convert a colour picture or diagram into ‘greyscale’, which is better for black and white printing.

The ‘Format Picture’ dialog box can also be used for this.

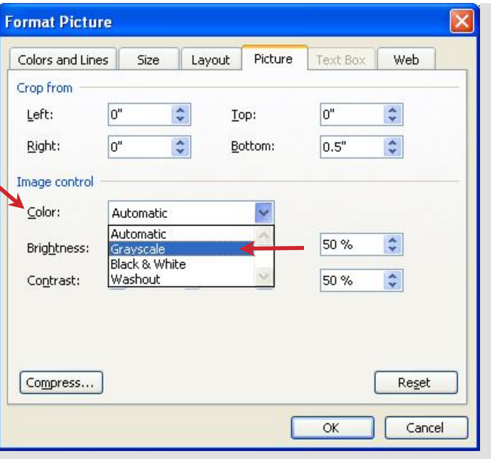
First right-click on the picture/diagram with the mouse and select ‘Format Picture’ from the pop-up menu.

This will open the ‘Format Picture’ dialog box.



Select the 'Picture' tab and select 'Greyscale' from the 'Color' drop-down box. Click OK.

(Note: do not use the 'Black & White' option – this will give a poor picture).



Spelling and grammar

Use the facilities in Microsoft Word to check the spelling and grammar used in the remit/report:

- before the remit/report is reviewed; <u>and</u>
- before the completed report is sent for signature.

Writing recommendations and local actions

Contents

General

Do not invent recommendations and local actions that cannot be justified by the event or the conclusions – they need to address the conclusions (i.e. the immediate and underlying causes and any other safety related issues) and be supported by discussion within the 'Factors discussed'.

Recommendations and local actions should be:

a) cross-referenced to the relevant cause and/or 'Other safety related issue' that it is intended to address;

b) supported by relevant discussion within the 'Factors discussed' section of the report.

A good recommendation or local action must meet the SMART criteria, i.e.:

Specific	A recommendation or local action must be related directly to the event and the causes and/or other safety related issues identified by the investigation.
Measurable/ Measured	A recommendation's or local action's completion can be determined/ A recommendation or local action must be appropriate to the nature of the event.
Achievable	A recommendation or local action must practicable to implement.
Realistic	Although cost is not normally taken into account, a recommendation or local action must be 'realistic', i.e. the cost should not be disproportionate to the benefit – do not exclude purely on commercial grounds.
Timely	A recommendation should be achievable within a reasonable timescale, but the actual timescale must not be specified in the report.

The management of recommendations and local actions will be reviewed at the National Recommendations Review Panel (NRRP) or the relevant route Recommendations Review Panel (RRP), depending on the level of investigation, and tracked in SMIS. See Part 5 of the handbook and NR/L3/INV/0302 for further details of the process.

Disciplinary process

The investigation report should be confined to identifying the causes and the underlying factors. The investigation report must not include mention of disciplinary action taken, being taken or required to be taken.

Recommendations and local actions **must not be made** to require disciplinary action to be taken against any individual involved.

Definitions

Recommendation	A recommendation should be made to: a) propose a change to an existing control measure (e.g. a rule, instruction, standard or process); b) define a new control measure intended to eliminate or mitigate a risk derived from the cause(s) of an event, as identified by the investigation. A recommendation may, however, be made where the investigation identified a systemic failure to comply with an existing, adequate control measure.
Local action	A local action is a response directed at line management due to an existing – and adequate – control measure not being followed or applied. For example, not following a rule, regulation or instruction or applying a process. A local action may also be made to address localised unsafe conditions.

There do not have to be any recommendations if the investigation team considers it unnecessary to make them.

Action already taken

Whilst the investigation may propose recommendations or local actions to address its conclusions (i.e. the immediate and underlying causes and any other safety related issues), a recommendation or local action may have been commenced or implemented before the investigation report has been completed.

In such circumstances, the recommendation or local action should not be made. However, details of the action already taken should be included in the 'Factors discussed' where indicated in the report template.

The scope of a recommendation or local action

The scope of a recommendation or local action should be confined to the area or issue identified during the investigation.

Discussion of why the recommendation or local action is being made must be included in the 'Factors discussed' section – ***Do not*** include such discussion with the recommendation or local action.

If only one event has been investigated involving specific people, a specific activity, a specific location or specific equipment, etc. the recommendation or local action should only be about those people, that location, activity or equipment, etc.

For example, if deficiencies are discovered at a particular location, any recommendation or local action should only relate to that location – there may be no evidence about similar deficiencies at other locations.

If the remit required consideration of other locations, or to obtain evidence of whether similar deficiencies existed at other locations, it would be appropriate – if there is evidence of a deficiency at the other locations – to make a recommendation or local action about those locations, but not about any other locations.

A recommendation may be made about a whole organisation if the investigation has identified deficiencies in the management systems or processes of that organisation, but such recommendation should still be confined to the issue identified during the investigation.

The wording of a recommendation and local action

Keep the wording succinct, i.e. “to the point”.

Do not include discussion of why the recommendation or local action is being made – this needs to be included in the ‘Factors discussed’ section.

Certain words must not be used in the wording of a recommendation or local action:

Do not use	Alternative word or words
ensure	“arrange for” or “put in place” or “seek to”

Legal Services advise that use of this word is inappropriate because:

a) it is often used in a context that makes the objective impossible to achieve;

b) it can have the effect of creating a legal responsibility on a person incorrectly (even if unintentionally)

Other words that should not be used – and for similar reasons – are:

verify	“verify” means “to prove to be true”, “to confirm” or “to substantiate”
check	“check” can also mean “to ensure” or “to verify”

Further information on use of the word “ensure” can be found on the Legal Services page on Connect.

Recommendations

A recommendation should be worded to explain its objective, i.e. what action is required, but not how it should be achieved.

For example, if a specific deficiency in driver training is identified then the recommendation should require that driver training should be amended or reviewed to correct that deficiency but not to explain exactly how this should be done.

A recommendation should also be worded to require the organisation (to which it is addressed) to consider the action that needs to be taken. The organisation will then determine, often with the benefit of information that may not have been available to the investigation team, what action needs to be taken, if any, and, if so, what form of action should be taken.

The following are examples of how a recommendation should be worded:

> *"Network Rail should consider undertaking a review of XYZ."*
>
> *"Network Rail should consider implementing a change to company standard ABC that requires . . .."*
>
> *"Network Rail should consider arranging for DEF."*

Local actions

A local action should be worded to explain what action is required. It may be appropriate to identify how this should be achieved, e.g. re-instructing or re-training in a particular rule, instruction or process.

In some cases, it may be appropriate to require, for example, the development of an action plan with an individual to address the issues identified with the report's causes and/or 'Other safety related issues'.

Where appropriate, specify the rule(s), instruction(s) or standard(s) involved, and what needs to be done and by whom.

DCP sign-off of report

The onus is on the DCP to check, before signing off the report, that any local actions are:

a) appropriate;

b) directed to the correct person (or organisation, if not Network Rail);

c) accepted by that DCP, where they fall within the responsibility of another Network Rail DCP..

When the DCP signs off the investigation report the DCP is indicating that the local actions contained in the report have been accepted. Such actions should then be implemented (if this has not already been done).

Assigning a recommendation or local action

Recommendations and local actions should only be addressed to:

a) the Railway Group member organisation(s) participating in the investigation; and

b) a single organisation.

The 'Railway Group' includes Network Rail and other certificated transport operators operating on Network Rail Managed Infrastructure.

Details of 'other certificated transport operators', i.e. those with a safety certificate, can be found on the Network Rail Portal.

Go to the 'Applications' tab and select 'National' and 'Safety' and under 'References' click on 'ROGs – Safety Certificates/Authorisations'.

When deciding which Railway Group member organisation a recommendation or local action should be assigned (or addressed) to, consider the following:

a) Which organisation owns the issue, or directly controls the importation of the risk that the recommendation or local action is intended to address? For example, train operators directly control the risks imported by traction and rolling stock.

b) Is the recommendation concerned with the network wide arrangements for safe inter-working, particularly in relation to a Railway Group standard (e.g. the Rule Book)?

   In such circumstances, the recommendation should require the Railway Group member organisation to consider submitting a proposal for a change to the appropriate Railway Group standard.

Recommendation or local action to be implemented by more than one organisation

If the same recommendation or local action is required to be implemented by more than one Railway Group member a separate recommendation or local action should be made for each. This makes for easier management and tracking of the recommendation/local action.

Assigning a recommendation

A recommendation should start with the name of the organisation. For example:

> *"Network Rail should …"*
>
> *"First Great Western should …"*

Where help or co-operation is required from another Railway Group member organisation to implement a recommendation, this may be included in the recommendation or local action, while still making one organisation clearly in the lead. For example:

> *"First ScotRail, with assistance from Network Rail, should …"*

Assigning a recommendation to part of an organisation

Normally, a recommendation should not be addressed to part of an organisation.

> The organisation will decide, through its own recommendation review process, which part of its organisation implements the recommendation or local action.

For Railway Group members the 'organisation' will be the duty holder of the safety certificate. For example:

Use:	***Do not use:***
Network Rail	Network Rail Western or Network Rail Headquarters
Arriva Trains Northern or Arriva Trains Merseyside – since these are separate companies	Arriva Trains

However, if the part of an organisation, e.g. the function or department, which will need to take the proposed action is known with certainty, it is permissible to address a recommendation to that function or department. For example, a recommendation may be addressed to Network Rail Operations & Customer Services if it is known that the function has sole responsibility for a particular activity, process or standard that needs to be reviewed.

Do not make a recommendation against part of an organisation when one (or both) of the following apply:

a) It is not clear which function or department has responsibility for a particular activity, process or standard, or rail vehicle or other item of equipment. In such cases, address the recommendation to, for example, Network Rail, not Network Rail Western or Network Rail Headquarters.

b) The instruction, rule, process or activity to which the recommendation relates applies to or is in use by other parts of the same organisation.

Assigning a local action

For a local action to be undertaken by other than Network Rail, it should start with the name of the organisation (see above).

In the case of a local action to be undertaken by Network Rail, and provided the necessary action has not been commenced or implemented by the time the report is completed, it is appropriate to identify the relevant functional unit (e.g. delivery unit, area/route) best placed to undertake the necessary action.

The relevant RRP will then allocate the relevant lead manager.

Where the organisation is not a Railway Group member

Non-Railway Group member organisations include:

a) contractors;

b) those performing tasks on behalf of other organisations;

c) private siding shunting staff.

Where the investigation identifies action to be undertaken by a non-Railway Group member organisation, the recommendation or local action should be addressed to the Railway Group member responsible for managing the contract or agreement under which work is being undertaken.

When an organisation is operating under another organisation's health and safety management system (HSMS), both organisations should participate in the investigation and any recommendation or local action should be addressed to the owner of the HSMS.

Infrastructure contractors

Where an infrastructure contractor is involved, it is necessary to establish the circumstances under which the infrastructure contractor is working.

If the event occurs whilst the infrastructure contractor is operating on-track plant (i.e. RRVs or RMMMs) under its own safety certification, the infrastructure contractor should be considered to be a Railway Group member and recommendations or local actions may be addressed to it.

If the on-track plant is being operated by the infrastructure contractor under another Railway Group member's HSMS, then the infrastructure contractor should not be considered a Railway Group member and recommendations or local actions should not be addressed to it.

Where a contractor is not a Railway Group member and is undertaking work for Network Rail, then:

a) a recommendation should be addressed to Network Rail for it to require the contractor to implement the recommendation;

b) a local action should be addressed to the Network Rail manager best placed (e.g. a project manager) to make sure that the necessary action is undertaken by the contractor.

Timescales for implementation

A recommendation or local action should not include a timescale for its completion. Within Network Rail, an appropriate timescale will be allocated by NRRP/RRP.

Where the implementation of a recommendation or local action is intended to address a specific time-related problem then it may be necessary to refer to that problem rather than a specific date. For example:

Use:	***Rather than:***
"Network Rail should consider reviewing … before commissioning new signalling at XYZ."	"Network Rail should consider reviewing … by December 20XX."

In the example above, whilst the commissioning may be planned for December 20XX, it is possible the work may be rescheduled, delayed, brought forward, changed in scope, or even cancelled.

In the case of a recommendation, NRRP/RRP will understand the link between them and manage them accordingly.

Intention of a recommendation

The intention of a recommendation should be indicated below the recommendation and should indicate that it is intended to address one (or more) of the following:

a) to prevent recurrence of the accident/incident (or one of the causes);

b) to reduce the likelihood of recurrence of the accident/incident (or one of the causes);

c) to reduce the consequences of a recurrence;

d) to address other matters related to safety.

It is not necessary to add the 'intention' for a local action.

Repeating a recommendation or local action

Do not avoid making a recommendation or local action simply because it has already been made in another report – include all the relevant recommendations or local actions, even if they duplicate, or are similar, to those made elsewhere.

The reasons for this are as follows:

a) If a duplicate local action or recommendation is suppressed then the knowledge that a local action or recommendation is repeated is lost. The resources and timescales allocated may be different for a local action or recommendation made just once, to those allocated for one made repeatedly.

b) If duplicate local actions or recommendations are made over a long period of time (many months, or even years) then it may be that, whatever the problem is, the recommendations are not correcting it and alternative solutions should be sought. Analysis of local actions or recommendations will only draw this out if repeated recommendations are still made.

Where a similar recommendation or local action has been made repeatedly in previous investigation reports, consider if the recommendation or local action is right. Why is it being made repeatedly?

It is either:

a) a good recommendation or local action which is not being implemented properly, in which case it may be correct to make it again;

   or

b) a poor recommendation or local action which does not properly address the problem, in which case the investigation team should consider an alternative solution(s).

Costs of recommendations

A recommendation should not be omitted simply on the grounds of cost. It should, however, have a realistic chance of being cost effective.

The final decision on implementation will rest with the NRRP/RRP and it is vital that this process is given the option to consider recommendations, without being distracted by those with an obviously hopeless case.

Signal sighting committee (SSC) recommendations

Where a signal sighting committee (SSC) makes a recommendation following a Category A SPAD that is related to a signal(s) involved, this should be included within the investigation report providing:

a) the recommendation actually addresses a cause of the event;

b) the investigation team accepts the recommendation is correct.

Where the SSC makes a recommendation that is not related to a cause of the event:

a) it should be recorded in the 'Factors discussed' section of the investigation report but **not** included within the investigation report's recommendations;

b) the lead investigator should obtain an assurance from the Route Asset Manager (Signals & Telecoms) (RAM(S&T)), or his nominated representative, that the recommendation is being tracked via the RAM(S&T)'s own systems.

It should be noted that the RAM(S&T) must approve the recommendation as suitable to address the issues raised by the SSC before signing off the SSC report.

Therefore, the investigation report should not be issued until the SSC report, signed by the (RAM(S&T), is available.

This does not mean that the investigation team cannot comment in the report on whether the SSC recommendation will actually address an issue identified by the investigation team. The SSC may not have the same facts or understanding of the event as the investigation team and may therefore draw different conclusions and make a recommendation that, whilst appropriate for the issues identified by the SSC, may not address the factors and causes identified by the investigation team.

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