# Building a modern framework for railway investigations

**RIS-3119-TOM Issue 4**

Accident and incident investigation

and

**RS103 Issue 1**

Investigation handbook



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# The challenge

Industry feedback identified:

- Large and **complex** RIS
- **Guidance spread** across multiple sections
- Desire for greater **consistency**
- Growing focus on **fair culture** and learning
- Need for **stronger support** for investigators



# The challenge

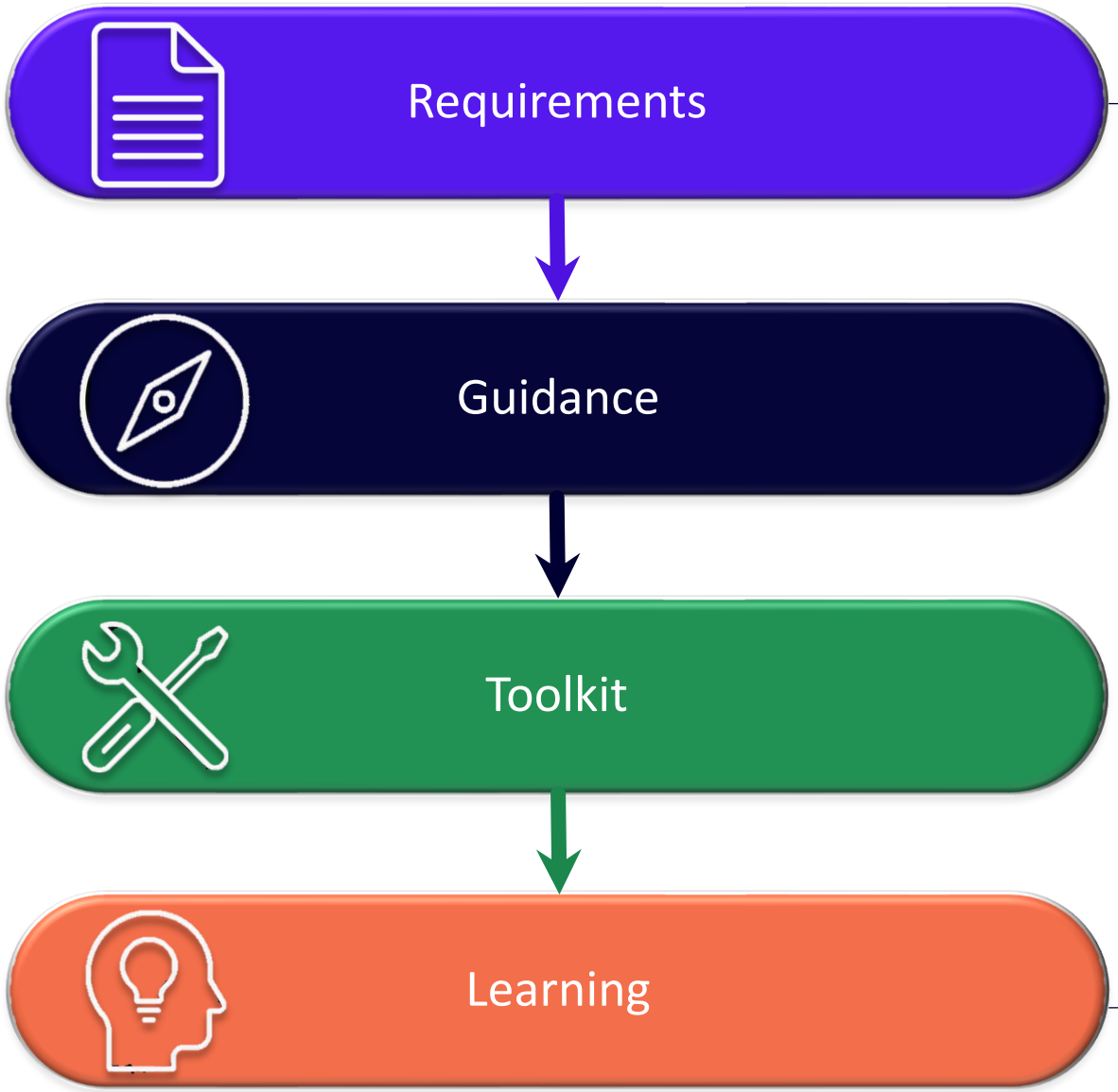


From complexity…

….. to clarity

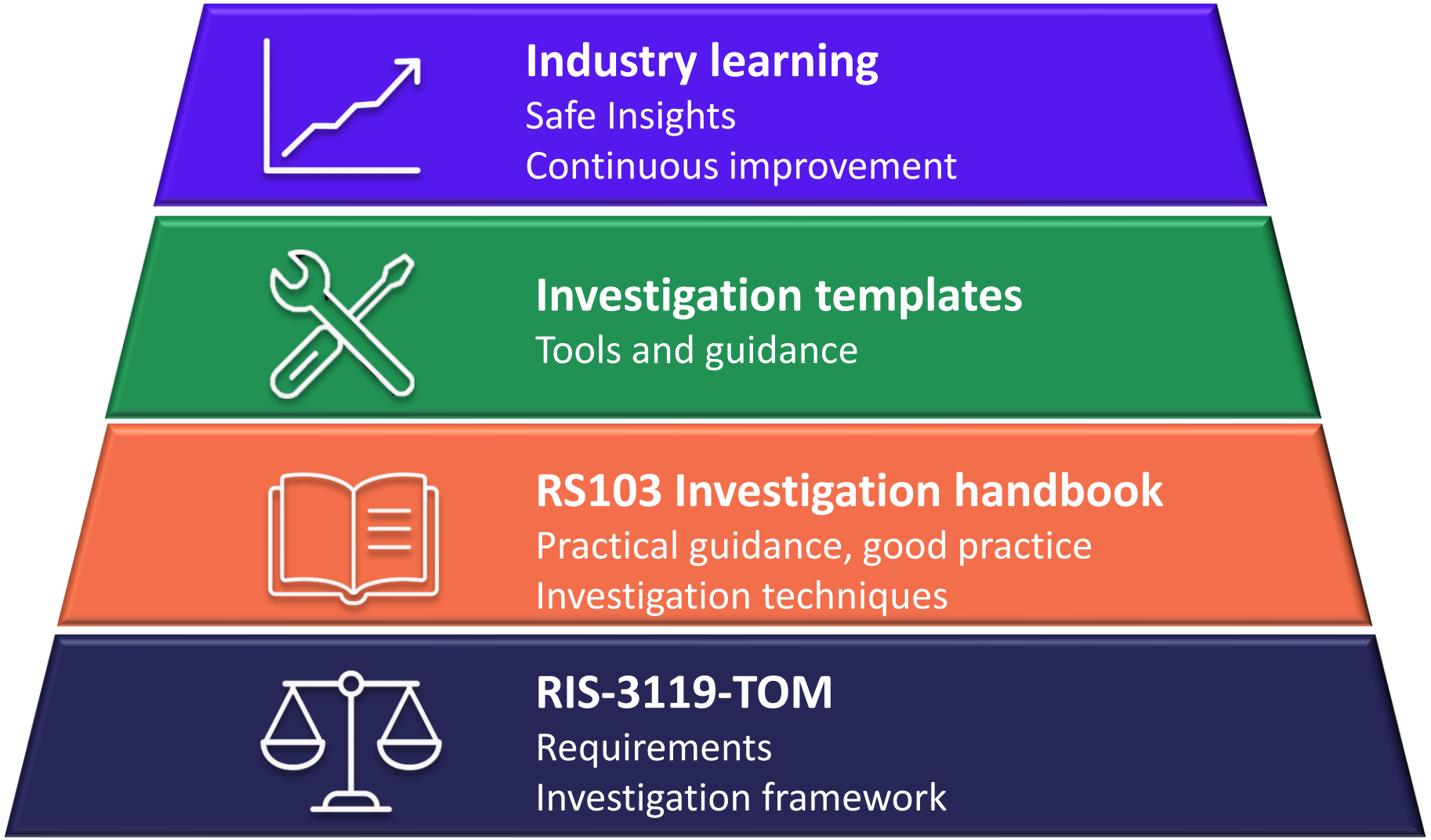


# What does good investigation look like?

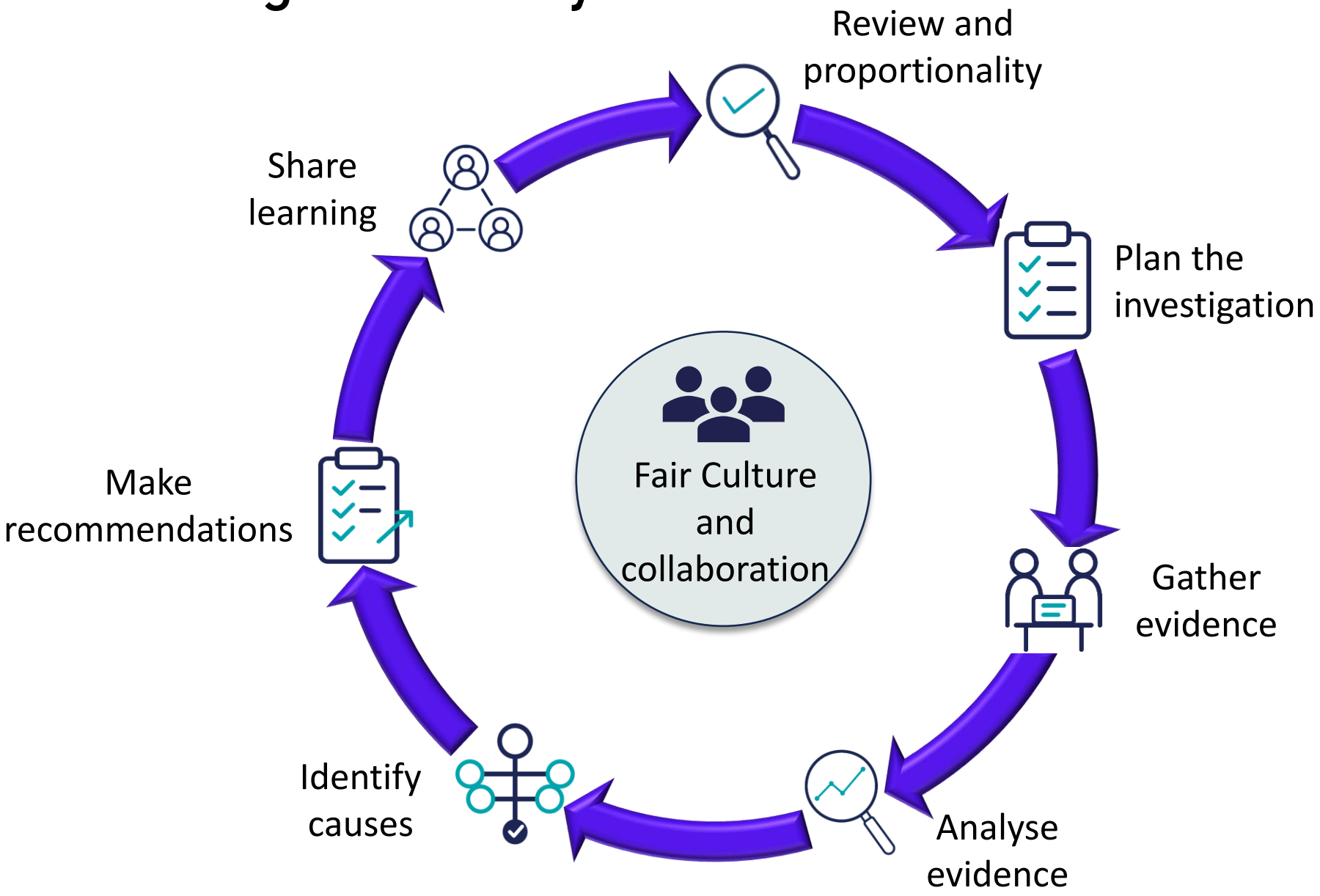



Working together to deliver better safety outcomes

# The new investigation framework



# The investigation lifecycle



# A worked example: using the proportionate response model (PRM)

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**The facts** | Stage 1 Credible worst outcome | Stage 2 Barriers | Stage 3 Wider factors | What the framework says

## What we know

A SPAD has occurred.

TPWS intervenes and the train stops about 60 m beyond the signal.

Nobody is injured and nothing is damaged.

# What could have happened?

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✓ The facts | **Stage 1** Credible worst outcome | Stage 2 Barriers | Stage 3 Wider factors | What the framework says

## What we know

A SPAD has occurred. TPWS intervenes and it stops about 60 m beyond the signal. Nobody is hurt and nothing is damaged.

NEW **It stopped on the junction beyond the signal, past the conflict point. A conflicting passenger train crossed that junction two minutes earlier.**

# How well did the barriers work?

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✓ The facts | ✓ Stage 1 Credible worst outcome | **Stage 2 Barriers** | Stage 3 Wider factors | What the framework says

**What we know**

A SPAD has occurred. TPWS intervenes and it stops about 60 m beyond the signal. Nobody is hurt and nothing is damaged.

It stopped on the junction beyond the signal, past the conflict point. A conflicting passenger train crossed that junction two minutes earlier.

NEW **The driver acknowledged the AWS warning but did not brake. TPWS intervened, but the train still ran onto the junction.**

# What else do we know?

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✓ The facts | ✓ Stage 1 Credible worst outcome | ✓ Stage 2 Barriers | **Stage 3 Wider factors** | What the framework says

**What we know**

A SPAD occurred. TPWS intervenes and it stops about 60 m beyond the signal. Nobody is hurt and nothing is damaged.

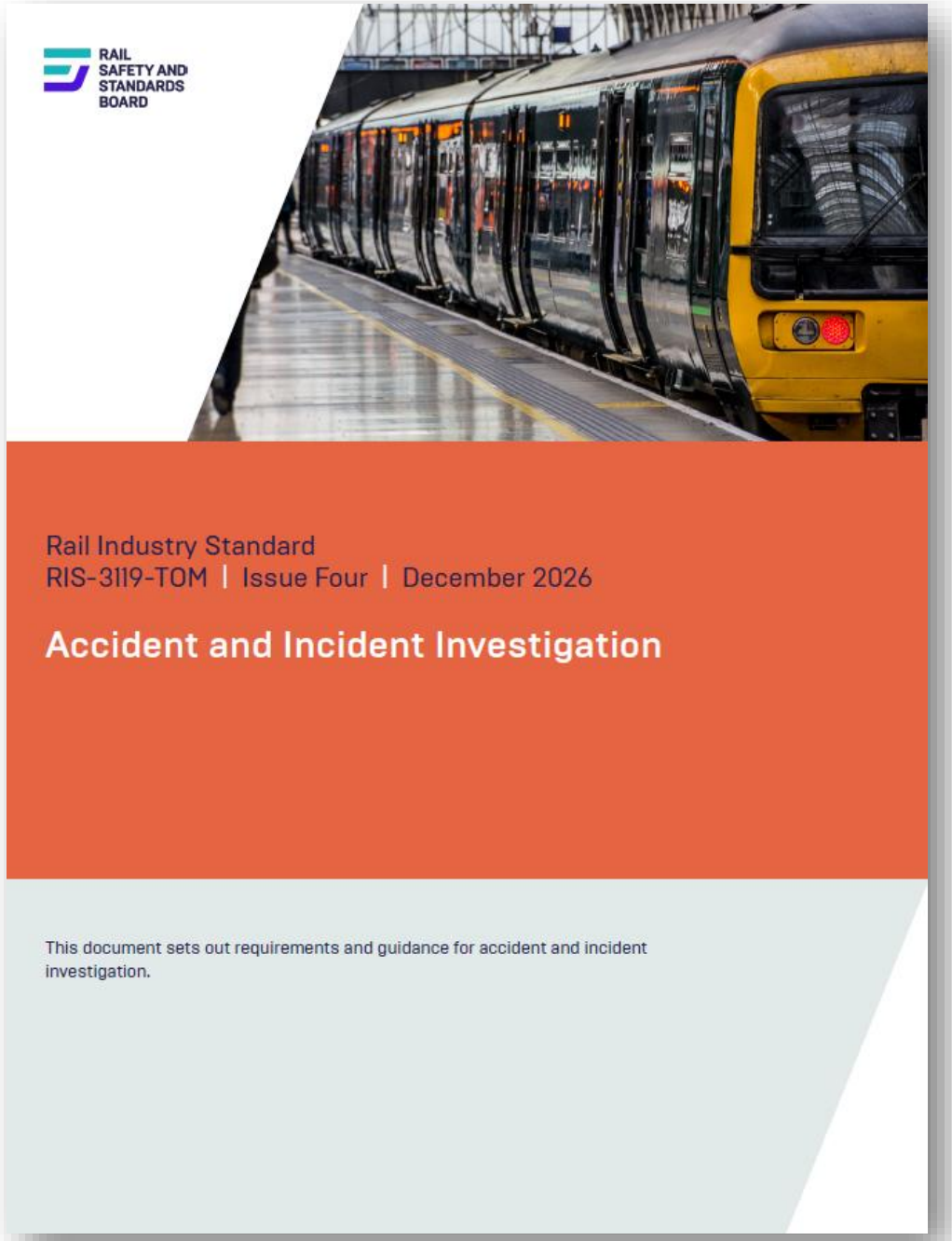
It stopped on the junction beyond the signal, past the conflict point. A conflicting passenger train crossed that junction two minutes earlier.

The driver acknowledged the AWS warning but did not brake. TPWS intervened, but the train still ran onto the junction.

NEW **This is the third SPAD at this signal in four years, involving drivers from two different operators.**

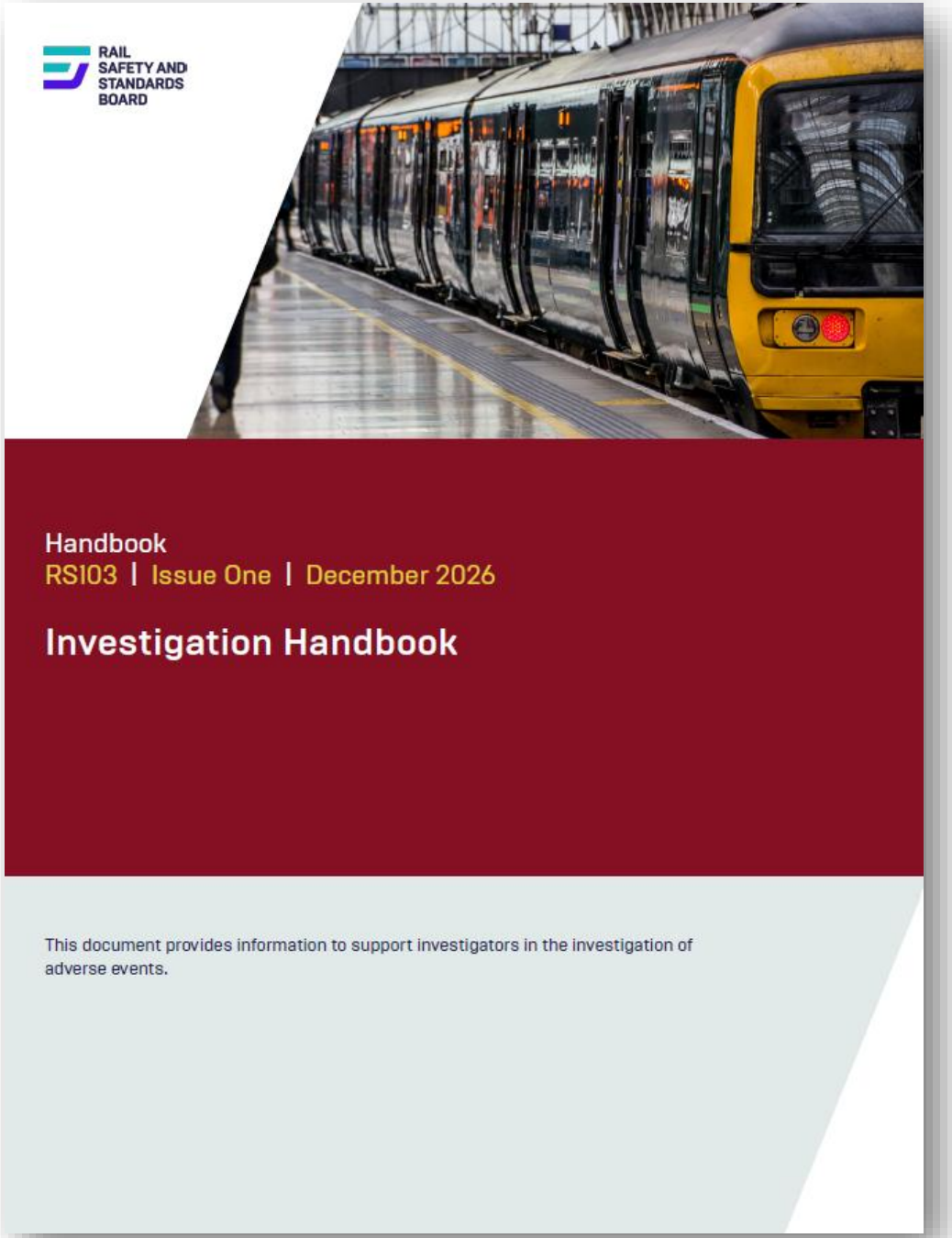
# What's new in the RIS?

- Clearer structure and flow
- Stronger fair culture principles
- Greater emphasis on proportionality
- Alignment with industry learning



# What's in the new handbook

- Proportionate investigations (PRM)
- Human Performance factors, 10 Incident Factors and Non-technical skills (NTS)
- Evidence gathering and analysis
- Guidance for investigating SPADS
- Monitoring progress
- Writing effective recommendations
- Structuring records of an investigation
- Learning from investigations



# Reword it

1. *“The driver failed to observe the signal.”*

2. *“The immediate cause was an unsafe act by the shunter.”*

3. *“As this was clearly driver error, a lower-level investigation is appropriate.”*

**Hint: what does each sentence assume before the investigation has started?**

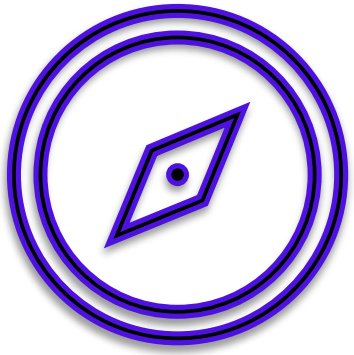
# One way to say it

Describe what happened, then ask why it made sense at the time

| Instead of… | Try… | Why |
| --- | --- | --- |
| *"The driver failed to observe the signal."* | **The train passed signal X displaying a stop aspect. The driver did not check the aspect because their attention was drawn to…** | For people, use 'did not' with the reason. 'Failure' is for equipment and systems. |
| *"The immediate cause was an unsafe act by the shunter."* | **The immediate cause was the shunter coupling to the wrong vehicle.** | The new definition is neutral. 'Unsafe act' implies the person knew the act was unsafe before they did it. |
| *"As this was clearly driver error, a lower-level investigation is appropriate."* | **The level of investigation reflects the actual and potential consequences and the likelihood of recurrence.** | Level is set by risk, not by an early view of who erred |

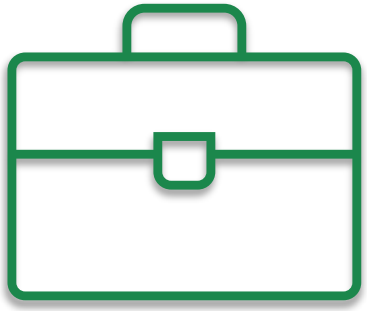
# Why the handbook matters

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**Consistency**

Common language, methods and approach across the industry



**Capability**

Practical support for new and experienced investigators



**Learning**

Higher quality findings and recommendations that drive improvement

# Investigation templates

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**F3119-F1**
**Investigation template**
Word template for recording adverse events

**F3119-F2**
**Overspeed**
Guidance on completing F1 for overspeed events

**F3119-F3**
**Road traffic collision**
Guidance on completing F1 for RTCs

**F3119-F4**
**SPAD**
Guidance on completing F1 for SPAD events

## How to use the forms

1. **Delete what isn't relevant**
   Remove HPF and 10IF rows that don't apply. Keep it proportionate.

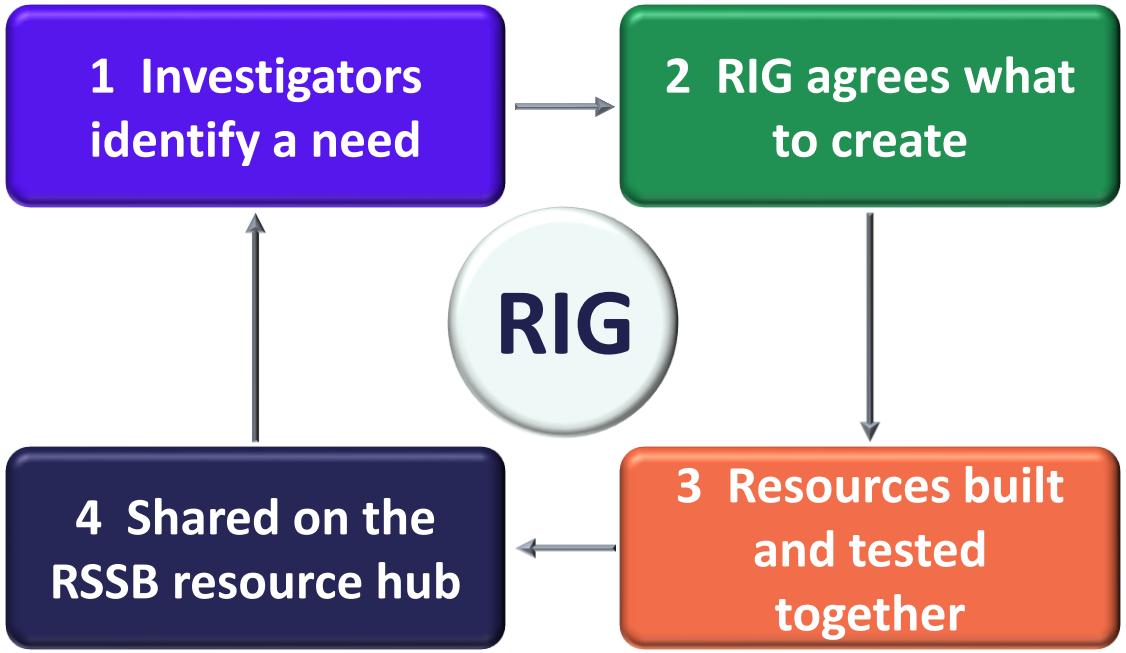
2. **Appendices A and B are optional**
   Only complete them if the findings are going to a Safe Insights inputter.

3. **Make it yours**
   Copy, adapt and reproduce the templates for your own organisation.

4. **Only gather what's needed**
   Relevant, proportionate personal information; focus on impact, not diagnosis.

# The Rail Investigation Group

Investigators across the industry working together to create the resources they need




## What RIG has delivered

- ✓ Investigation proportionality matrix
- ✓ Competence frameworks
- ✓ Fair culture guidance
- ✓ Videos and resources
- ✓ A voice in the new documents
- … In progress: assurance guidance, investigation language

# Where are the gaps?

## What would make your next investigation easier?

Help us shape future versions of
RIS-3119-TOM, RS103 or RIG deliverables

**Where are the gaps?**
What would make your next investigation easier?

**Join RIG: contact Barbara Smith**
barbara.smith@rssb.co.uk

# What success looks like

- Better quality investigations
- More proportionate investigations
- Stronger recommendation management
- More consistent learning across the industry
- Better use of Safe Insights
- A stronger fair culture across the industry

Providing the rail industry with a framework that supports investigators from initial review to learning and improvement.

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# Thank you

**Contact Barbara Smith**
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