

Learning event following Ironmen runaway

Requirements for the session

- Laptop
- Projector
- Speakers
- Screen
- Post-it notes/pens
- Flipcharts/pens
- Safety Vision poster

Overview of the session

Timings	Activity	Instructions	What will you need?
5 minutes	Introduction to the ironmen runaway	Read the briefing script – this will set the scene for the animation	Script Presentation slides
15 minutes	Animated reconstruction	Play all elements of the reconstruction, navigating through the Exploring barriers section which will encourage safety conversations to begin	Reconstruction Flip-charts
20 minutes	Safety conversations	Using the stages of the animation that explore barriers and the question prompts provided, further discuss now that the reconstruction has been shown. Always link back to the Safety Vision and how upholding the commitments can keep us safe	Guide to areas to focus on and questions to ask Flip-charts Presentation slides Safety Vision poster
5 minutes	Your commitments	Must be recorded and provide to the Safety Communications team to evaluate the learnings of the event Everyone should take their commitment away with them	Post-it notes Presentation slides

Why are we holding learning events?

In November 2014, a pair of ironmen was involved in a runaway after workers were unable to stop the equipment when travelling on a gradient. The incident had the potential to cause serious injury, although no-one was seriously injured on this occasion

Network Rail are committed to 'Everyone Home Safe Every Day' and we need to learn from incidents to prevent them happening again

It is not about the use of ironmen specifically. Our teams use all kinds of equipment that can pose a risk.

It is important to recognise that decisions made throughout both planning and delivery can have an impact on the outcome of works. Many of the causes of the incident were put in motion weeks and even years prior to the night.

What are the intended outcomes?

- To reinforce personal understanding and ownership of the commitments in the safety vision
- To increase business wide awareness of the circumstances that led up this incident and to enable reflection and learning for all.
- Local teams taking ownership and action to help prevent a repeat incident.
- To understand the systemic nature of safety risks in the business; how any decision can effect safety at front-line

Introduction to the Ironmen runaway

On 1st November 2014, during night works, a pair of ironmen carrying a length of rail ran away on a section of track with a downhill gradient in Gwaun-Cae-Gurwen (GCG), Wales

The Ironmen passed over 11 vehicle and 3 pedestrian level crossings, including one where work was taking place, before being brought to a stop

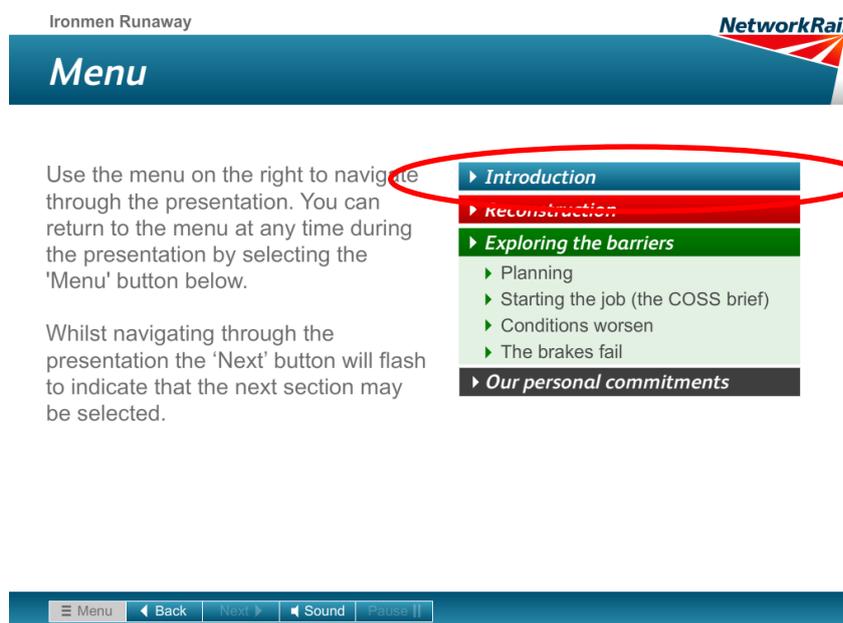
It was fortunate that nobody was seriously injured during this incident – in different circumstances the outcome could have been very different and we could be discussing fatalities – public or workforce, rather than a near miss

Talking about this incident, and the factors that led to it, can help us plan for the future and ensure that we can keep ourselves and each other safe

Setting up the animated reconstruction



- Double click on the ironman.exe file
- Click 'Menu' on the navigation bar. A Menu will then display on the screen, click on 'Introduction' when ready to play. This will begin playing the animation from the beginning



- After each section has finished it will stop until you press 'Next' on the bottom navigation toolbar
- Clicking through 'Next' will take you through all elements of the reconstruction, including exploring the barriers.

Safety Conversations - Overview of discussion points within the 'Exploring the barriers' section of the animation



The 'Exploring the barriers' section displays four elements of the works during which decisions were made, or could have been made, that ultimately impacted the outcome and the ironmen runaway.

This highlights the fact that errors or omissions can happen at all stages of the works, both in the office and out on track, which can lead to an incident.

This section should be linked back to the Safety Vision, and importance of upholding the values it promotes.

The barriers focus on;

- The planning stage
- The COSS briefing
- The conditions worsen
- The brakes fail
- How does the safety vision help us remain safe?

Barrier 1 - Planning

Ironmen Runaway

NetworkRail

Exploring the barriers

Planning

Menu Back Next Sound Pause

- How do we make decisions regarding the equipment planned to be used for a job?
- Was the plan clear between the planning and delivery teams?
- Was there enough communication between the planning and delivery teams?
- What do you see as the significant risks in this job?
- How has local knowledge helped and also potentially contributed here?
- Where locally might we have similar risks?
- What local information can you refer to, to help you plan for works?
- What planning processes exist to keep us safe on this type of work?
- How effective are they?
- What other options during planning would have made the job safer?

Barrier 2 – The COSS brief

Ironmen Runaway

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Exploring the barriers

Starting the job (the COSS brief)

Please select the 'Next' button below to continue

Menu Back Next Sound Pause

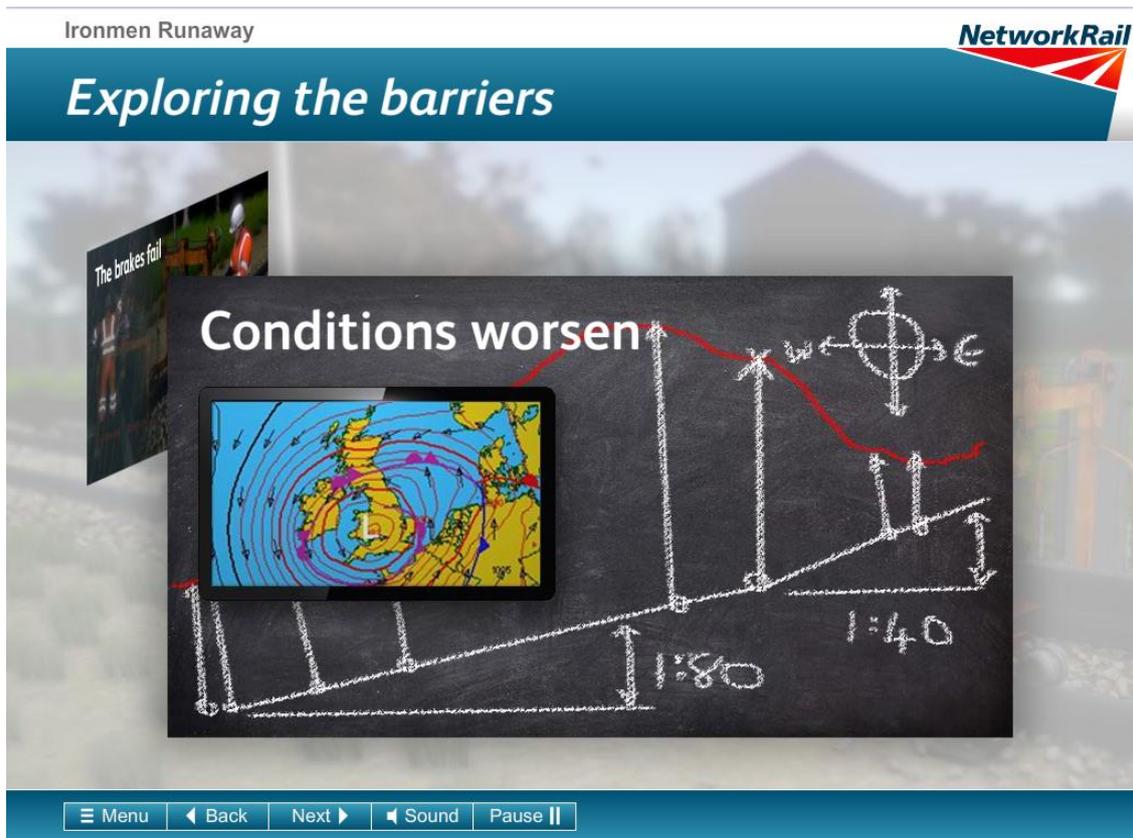
- What differences would it make to you if your team works regularly together or if this is the first time as a team? Would it impact your willingness to challenge?
- How clear and consistent is the guidance in equipment and plant manuals?
- How typical is the briefing shown within the animation?
- How effective was it in preparing the gang for what lay ahead?
- How could it be improved?
- If you were at the briefing, what could you have said/asked?
- Would you have gone ahead with the work?
- Why did the two ironmen travel in tandem, could just one pair have been used due to shortage of staff?
- Did the team recognise the risk of doing the work with two pairs of ironmen and just 5 team members?
- What could you do to increase risk awareness before starting work?
- What would be a good pre-work/COSS brief be like then?

Barrier 3 – The conditions worsen

Ironmen Runaway

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Exploring the barriers



The video player interface includes a navigation bar at the bottom with the following controls: Menu, Back, Next, Sound, and Pause.

- The team reacted how they did because it became an emergency – how might they have reacted differently if it hadn't have been an emergency?
- What was the impact of local conditions that night? (Gradient, weather, darkness)
- How would you have felt if this happened to you?
- Would you have handled the situation in the same way when speed started to increase?
- Why do you think the team accepted the worsening conditions and continued with the job?
- What affect did this have on the incident?

Barrier 4 – The brakes fail

Ironmen Runaway



Exploring the barriers



☰ Menu ◀ Back Next ▶ 🔊 Sound ⏸ Pause ||

- What caused the brakes to fail – before and during the incident?
- How would you ensure that equipment such as this was safe to use?
- Ironmen are basic pieces of kit that the team trusted to be safe, what equipment do you procure, maintain, finance or operate that could have similar issues?

Importance of the Safety Vision

Ironmen Incident

Network Rail

Exploring the barriers

Safety

Our Vision Everyone Home Safe Every Day

Our Belief Outstanding safety performance and outstanding business performance go hand in hand.

Our Personal Commitments Safety is a core value and key to our success. Whether you are an employee, contractor or subcontractor, by delivering on our commitments we will achieve outstanding performance. This is how we will deliver a better railway for a better Britain.

- Safe behaviour is a requirement of working for Network Rail
- We will always comply with our Life Saving Rules.
- We will plan work to ensure that it can be done safely.
- Our work environments will be tidy - and we will leave them tidy when we've finished.
- We will ensure people have the skills and the equipment required to work safely.
- We will stop work if it cannot be done safely.
- We will personally intervene if we feel a situation or behaviour might be unsafe.
- We will use Close Calls to report unsafe behaviours and conditions.
- We will use our Fair Culture principles to investigate incidents and learn lessons to prevent them recurring again.
- We will relentlessly strive to find new ways to keep ourselves, colleagues, passengers and the public safe.
- We will design, construct, inspect, operate and maintain the railway to keep everyone safe.
- Safety leadership is key to how we assess our people's performance and readiness for progression.

Mark Caine
Chief Executive
March 2014

everyone home safe every day

Safety is a core value and key to our success. Whether you are

- If you were investigating this incident, what questions would you ask?
- How would you expect our Fair Culture principles to be applied in a situation like this?
- How often do you think about specific Safety Vision commitments when making decisions or working on a job?
- Which Safety Vision commitments do you think particularly apply to the Ironman incident?
- How will you commit to applying the safety vision commitments in the future?

Key outcomes to be recorded as part of the session

There are three key pieces of information that should be recorded as part of the learning events. These are;

1. Number of attendees
2. Key areas that were discussed
3. Personal commitments made following the learning event – ‘What will you do differently?’

Ironmen runaway safety stand down learning event – Key information
Date:
Location:
Facilitator:
Business Function/Team:
Number of attendees:
Key areas that were discussed <small>[Which barriers did people focus on? Is the Safety Vision a key focus? Do people understand the Safety Vision and the link to this incident? Is there one barrier that people feel has more impact than others?]</small>
Personal Commitments: What will you do differently following this incident and learning event? <small>[This can be recorded in several ways... you could collate and detail below, ask attendees to write on post-it notes, take a photograph – a example provided, and send across for the Safety Comms team to collate or whatever works for you! It is essential the commitments are recorded and sent to safetycommunications@networkrail.co.uk</small>



The key outcomes can be completed using the template above, which has been provided along with the event materials. Alternatively you can record as most suitable for your team. Following the event the key outcomes should be sent to safetycommunications@networkrail.co.uk

The team should take away their personal commitments to remind them of their pledges.

These commitments will be used to evaluate the learnings from the events. This information will then be shared with the business on completion.

FAQ's

What guidance exists on how to safely operate an ironman?

There are many requirements spread across a number of documents including the OEM Operators manual, NR training material, Risk Control sheets SP07 & SP08, the rule book and the Plant Manual Module P514. Some of the guidance is contradictory such as the limit of use on gradients which is set at 1:27 in one document and 1:50 in another.

How many people should there have been to operate the ironman?

2 per ironman and therefore 4 per pair as stated in the OEM operators manual and risk control sheet SP07. The table and text in Plant manual module P514 states the incorrect number for ironmen.

Was it safe to climb on the ironmen?

Riding on ironmen is not an acceptable behaviour, however when faced with the anti-trespass guards the staff had two choices of unsafe behaviour as demonstrated by the differing actions of the two workgroups. This was common practice so invoking the Worksafe procedure was not in their minds. In the case of climbing on to warn the group at Raven crossing they probably averted serious injury or worse to several off members of track staff.

Was it safe to try and stop the ironmen by trying to dig feet into ballast?

No. This was the action of staff trying to avert a serious accident.

Was it safe to use the ironmen to use on this gradient?

There is contradictory information provided about this. Risk control manual SP08 states not to be used on gradient greater than 1:50 whereas the manufacturer's operators manual states 1:27. Ironmen are currently restricted to gradients less than 1:150 whilst these issues are resolved.

What alternative ways were there to complete this job?

Planning the use of a Road Rail Vehicle for the works or planning to have the new rail delivered to the crossing by road would have been alternatives.

Why did the brakes fail?

There were a combination of factors, primarily incorrectly adjusted brakes and poor maintenance in conjunction with poor operation and planning.

Were the first group able to contact the second group?

No - where they were there was no mobile signal, plus the environment was so bad things happened so quickly they made a judgement that staying on the ironmen was the best option for the four people working in the bottom. Had they have not done what they did there was little chance of those four people getting a communication on time.

Are the ironmen equipment hired in or owned by Network Rail and maintained by the supplier?

The ironmen were owned by network rail and maintained by the contractor

Is the COSS the task supervisor?

No

Was the COSS arrangements found to be an underlying cause to the incident? If there were people who held the COSS competency, why didn't they invoke work safe?

No, this was not the underlying cause of the incident, the animation shows the underlying cause was in the planning.

I was confused by the COSS briefing being a barrier, if the arrangements for Safe system of work were suitable and able to be implemented as per the 019 standard.

The reason COSS briefing was seen as a barrier was because at this point anyone in that team could have put forward risks. However everybody in that team thought they were 100% safe

Was the ironman equipment used before in that area in GCG?

Yes it had been used in the area before however not on that gradient.

If Frances Paonessa is updating the contractors in line with Network Ops where do the contractors send their personal commitments? Safety comms or keep them within their organisation?

We will be asking for contractors to send to Safety Comms to give us the same overview of their commitments that we are asking for internally- we need to learn with them. However we will also be ensuring that they own the commitments and the learning and development of their staff in the same way we are doing internally

When making commitments some people who deal with equipment may want to make commitments around design and maintenance etc. but should they also make personal commitments around behaviour also?

They can make the personal commitment to work on design and maintenance differently- that is a behavioural change from them that will change one of the early barriers for the business

On the web-ex call you said that there was conflicting guidance information about the safe use of ironmen in different documents. Six months after the incident occurred why has this not been resolved?

The Ironman investigation was complex and as a result the remedial action has mainly started after the formal report was published which was approximately 2 months ago. All the documentation regarding Ironmen and related documents were part of the review and are being actioned accordingly. The wider point here is we do not believe this is an isolated case- I would hope that people who use this equipment can help NR to check other information for consistency too.

If any questions are asked that you cannot answer on the day - record the question and a contact email address and forward to safetycommunications@networkrail.co.uk, we can ensure this is answered post event. The question and answer can then be added to the FAQs