



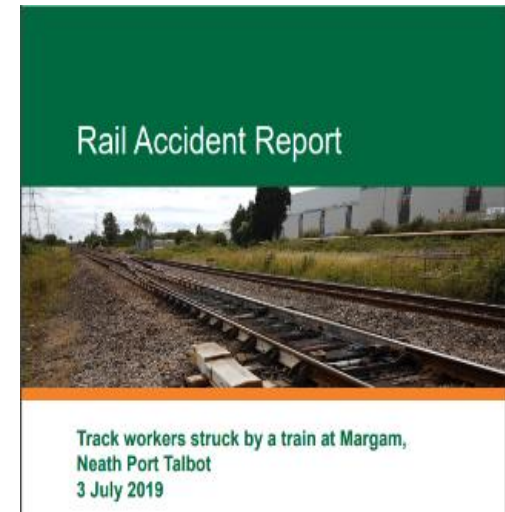
Rail Accident Investigation Branch



# Track workers struck by a train at Margam

## The accident and its causes

*Simon Kay*



[raib.gov.uk](http://raib.gov.uk)

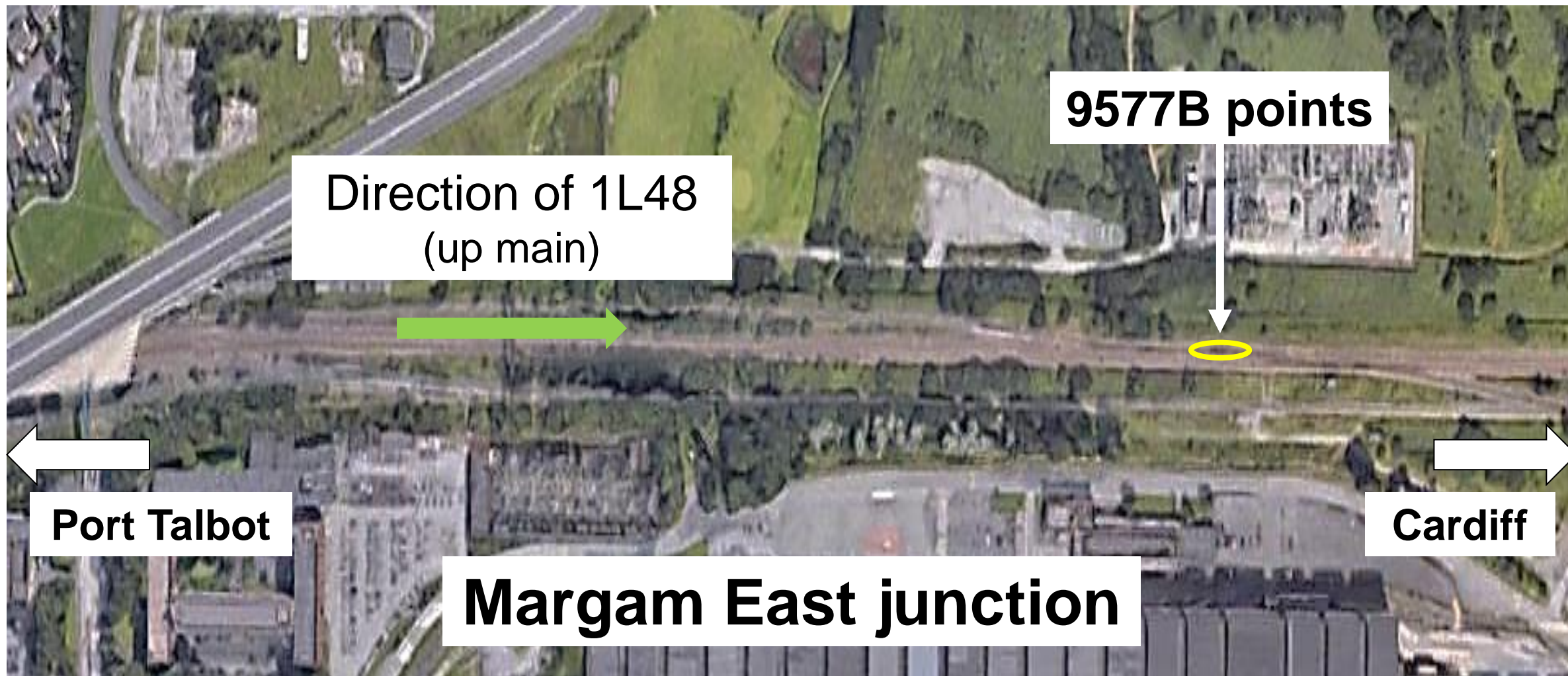
# Summary of the accident

- Wednesday 3 July 2019, Margam East junction, Neath Port Talbot.
- Two track workers working on points were struck and fatally injured.
  - a third came very close to being struck.
- They were part of a group of six carrying out maintenance work.
- The train driver sounded the horn and applied the emergency brake on the approach.
- The train struck them travelling at around 50 mph (80 km/h).

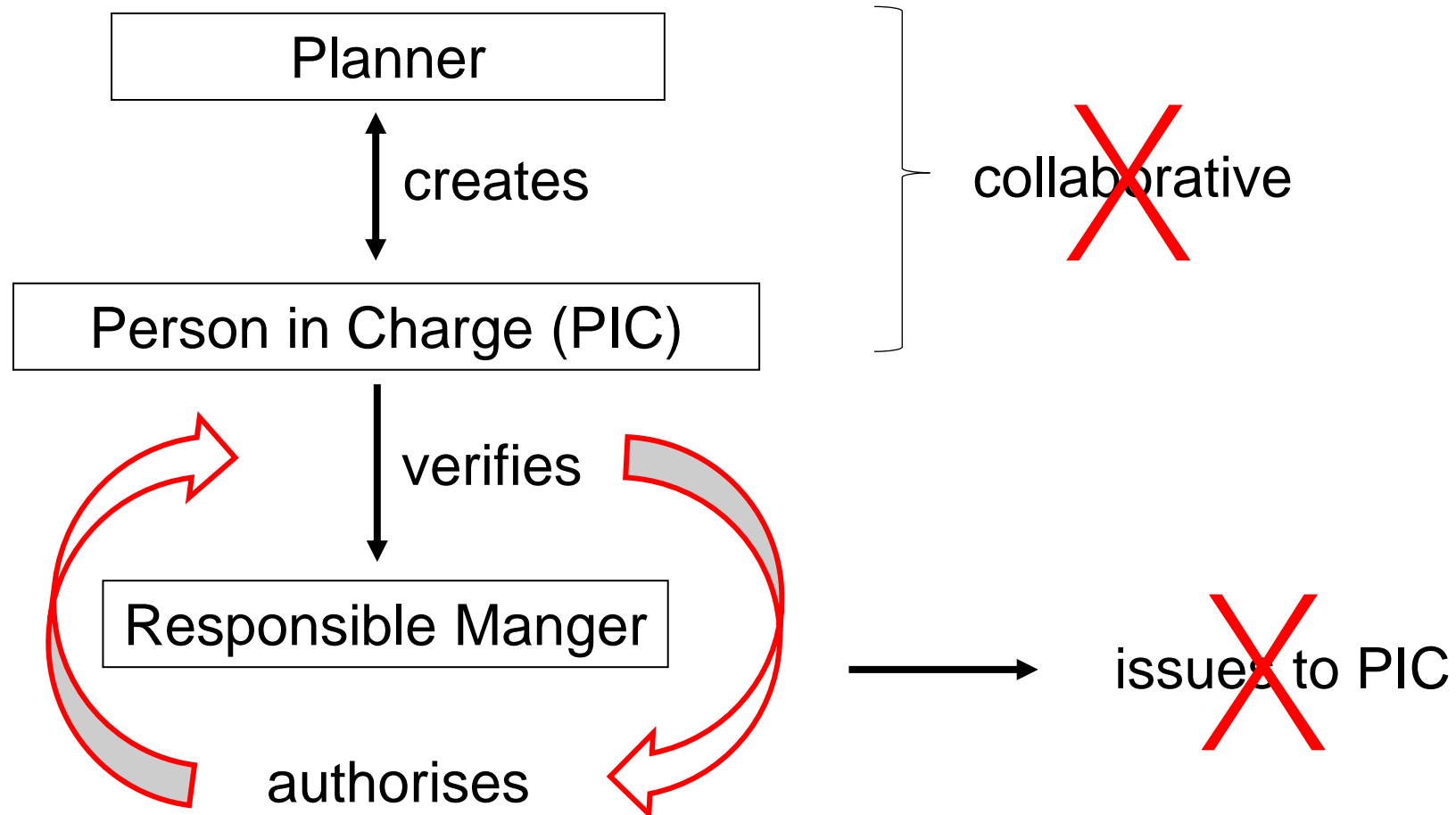


# The accident

# The location



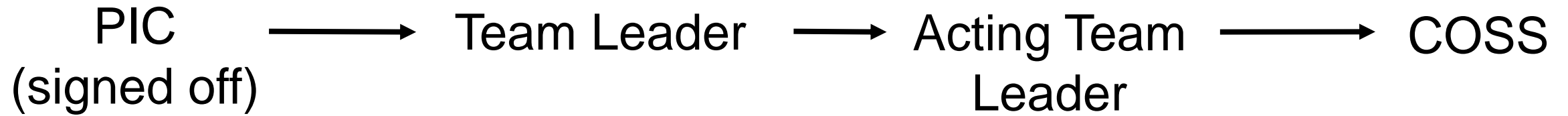
# Safe work planning (Safety on or near the line – Standard 019)



The image shows a sample of a Record of Work Arrangements and Briefing Form (SWP). The form is titled "Record of Work Arrangements and Briefing Form 419" and includes fields for Plan ref no., Plan title, Date, and Location of Safe Systems. It also contains sections for "SAFE SYSTEMS", "WORKING CONDITIONS", and "SAFETY PREPARATION". The form is a complex document with many fields and checkboxes, used for detailed safety planning.

A safe work pack (SWP) had been created for the work to be done that day

# Depot briefing on the day



Record of Work Arrangements and Briefing Form 1588-001	
Section 1: Details of the Work Arrangement	
Work Arrangement No.	1
Date of Arrangement	2010-01-01
Location	1
Time of Arrangement	08:00 - 16:00
Section 2: Details of the Work Arrangement	
Work Arrangement Description	1
Work Arrangement Justification	1
Work Arrangement Approval	1
Section 3: Details of the Briefing	
Briefing Date	2010-01-01
Briefing Time	08:00 - 16:00
Briefing Location	1
Briefing Attendees	1
Briefing Content	1
Briefing Outcome	1

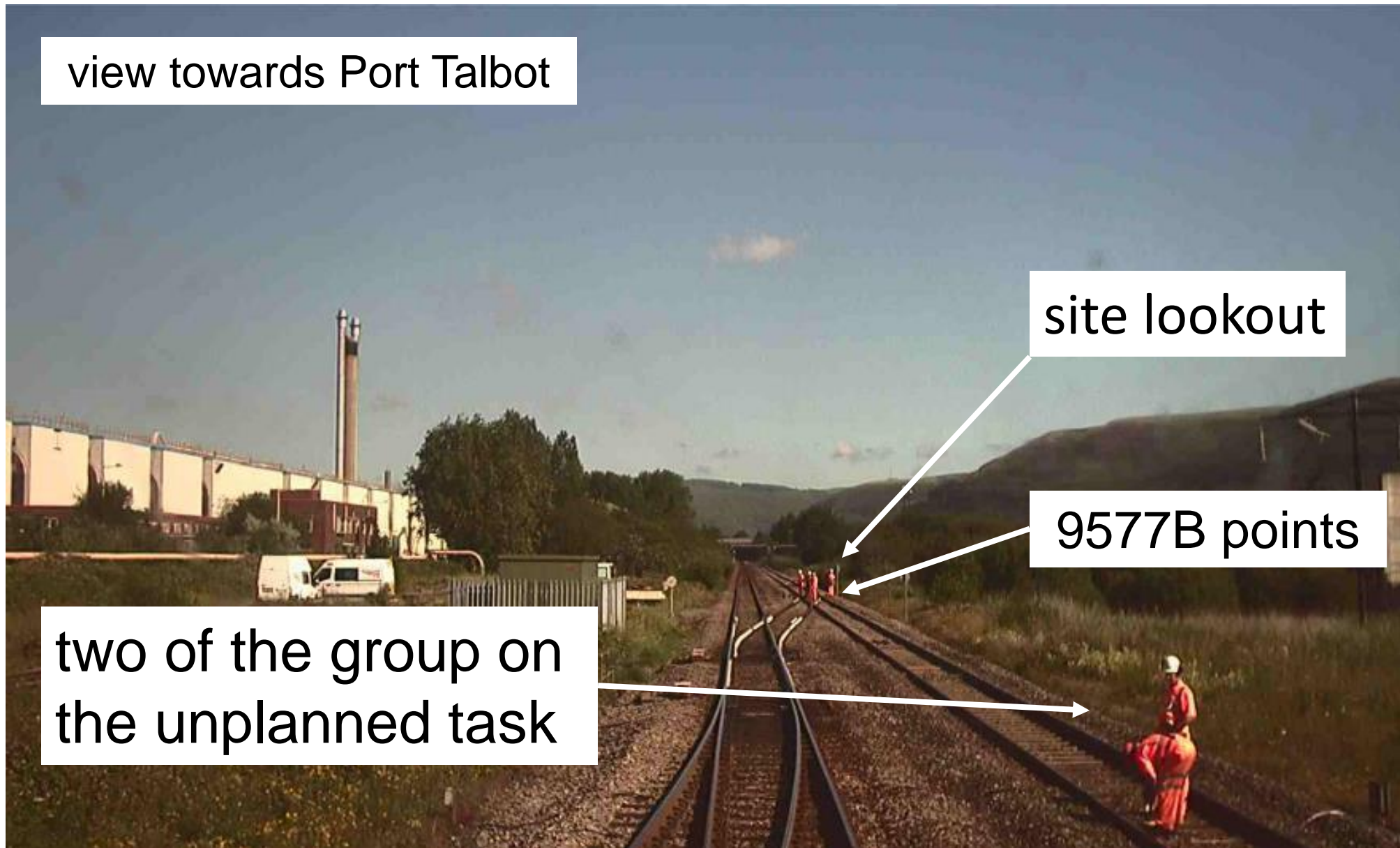
- The SWP had two safe systems:
  - morning: lines open to traffic, afternoon: line block
- There was no definition of which system to use for the different tasks
- An additional unplanned work task was briefed verbally that morning

# 08:00 to 08:50 hrs – Margam East Junction



- The COSS planned to protect them from moving trains on the up main line
- A decision was later made, and accepted by all, not to use a distant lookout

# By 09:30 hrs the group had split





09:45 hrs – the group met up and then split again

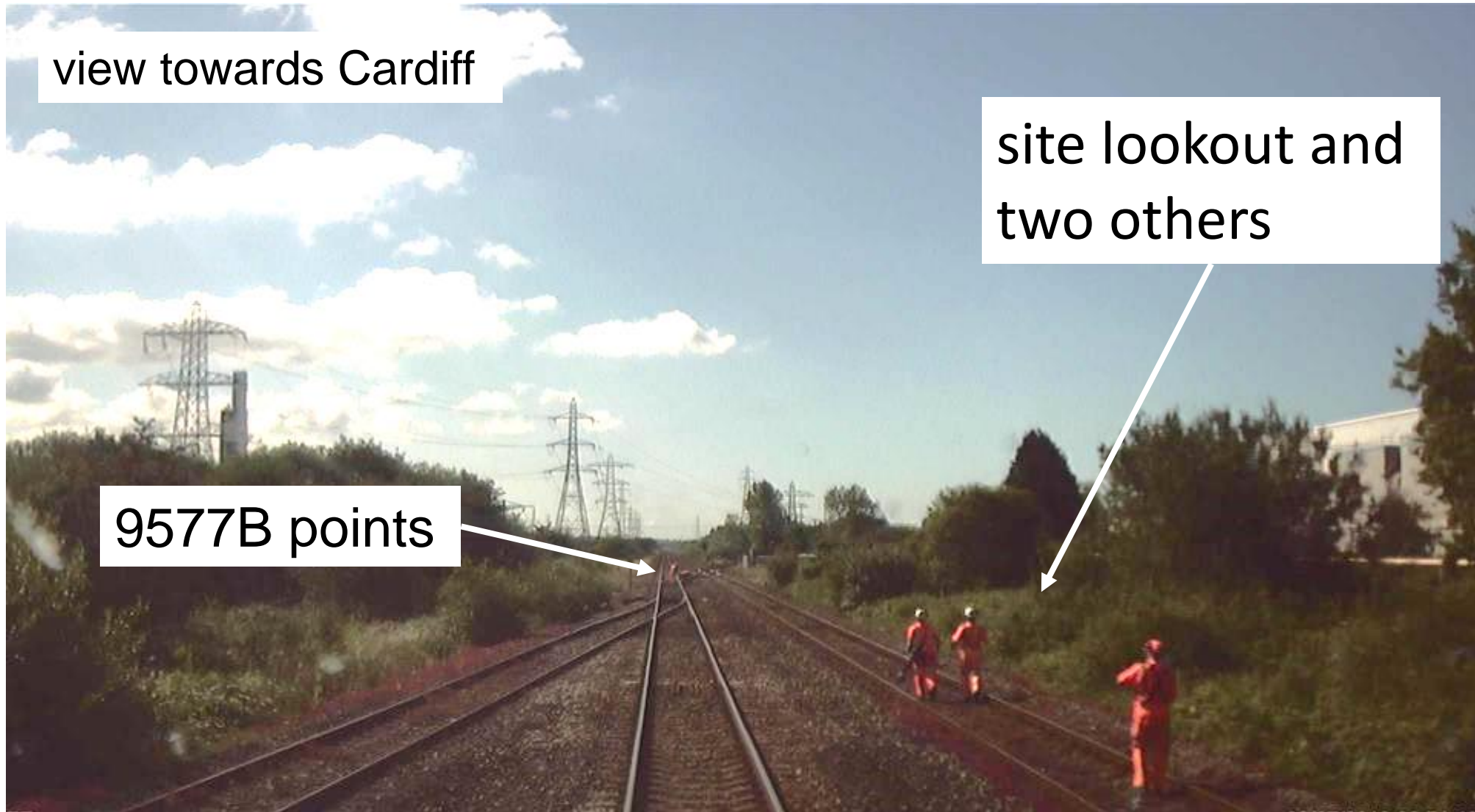


view towards Port Talbot

9577B points

site lookout and  
two others

# 09:52 hrs – the approach of the train



view towards Cardiff

site lookout and  
two others

9577B points

# 09:52 hrs – the arrival of the train

view towards Cardiff





# The causes of the accident

## Immediate cause

**The three were all unaware of the approaching train until it was too late to move clear.**

## Causal factor 1

**The three were on an open line while carrying out an unnecessary maintenance activity.**

# Causal factor 1

1.1

1.2

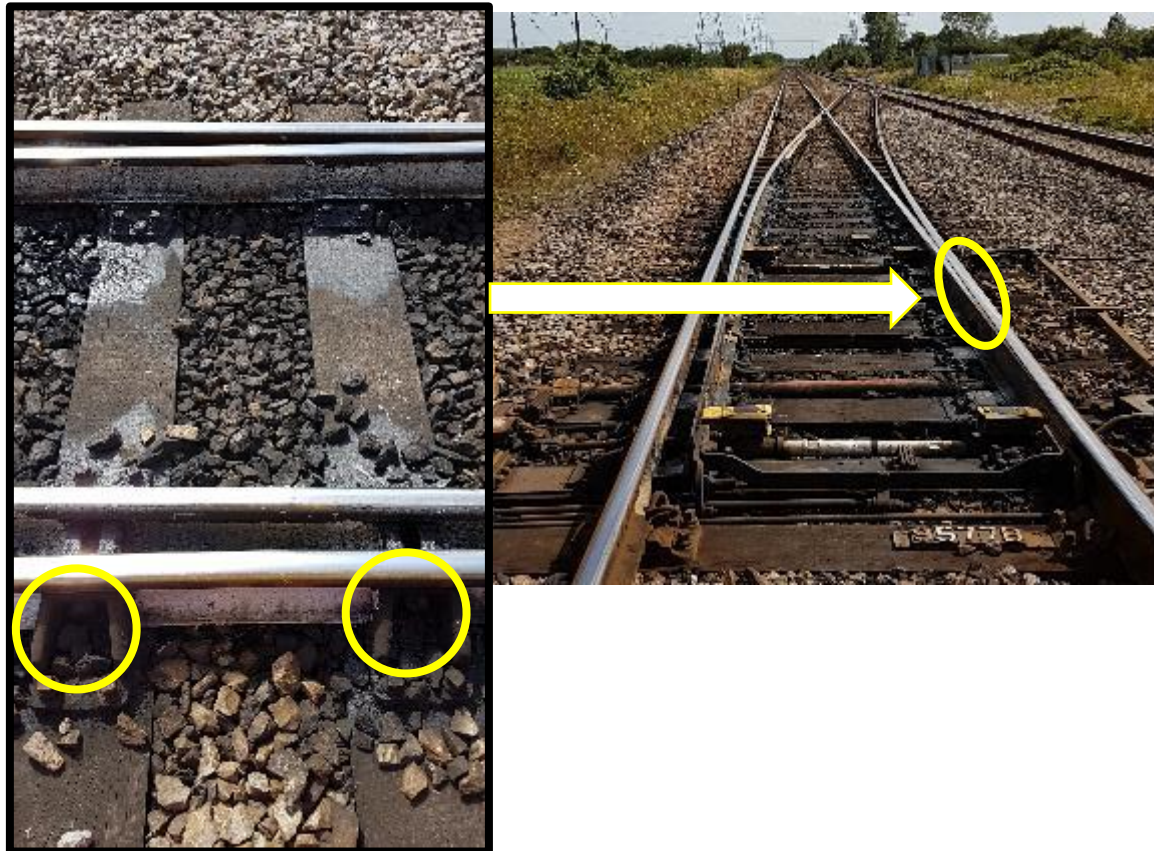
1.3

1.4

1.5

# Causal factor 1

1.1 The work being undertaken at the time of the accident.



‘unnecessary’



# Causal factor 1

1.1 The work being undertaken at the time of the accident.

1.2

1.3

1.4

The safe work planning process



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checks

monitoring

supervision

reviews



audits

SMS

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assurance

# Causal factor 1

1.1 The work being undertaken at the time of the accident.

1.2

1.3

1.4



The safe work planning process

1.5 Familiarity of working on lines open to traffic.

Familiarity / experience

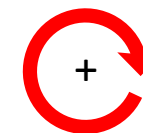
$$40 + 40 + 40 + 30 + 20 + 15 = \underline{185}$$

## Causal factor 2 – the way of working

COSS



Lookout



Operative

**The group of three track workers were working without formally appointed lookouts to warn them of approaching trains.**



Person in Charge

COSS

**Safety behaviours  
& leadership**

## Causal factor 3 – the train's approach

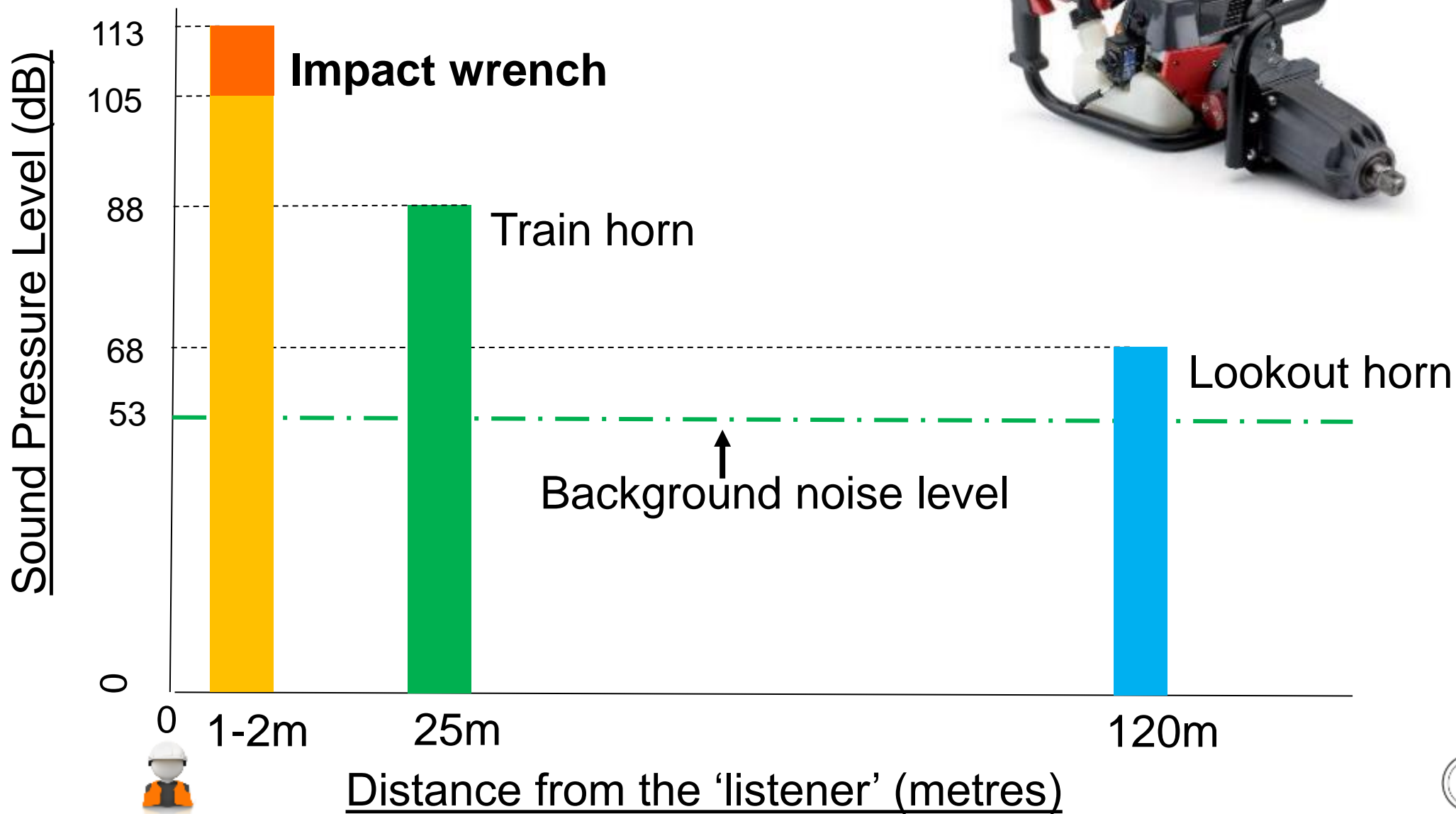
**The group of three track workers did not hear any warning of, or see, the train's approach.**

# **Port Talbot Deaths: Workers Killed On Railway Tracks Couldn't Hear Train As Wearing Ear Defenders**

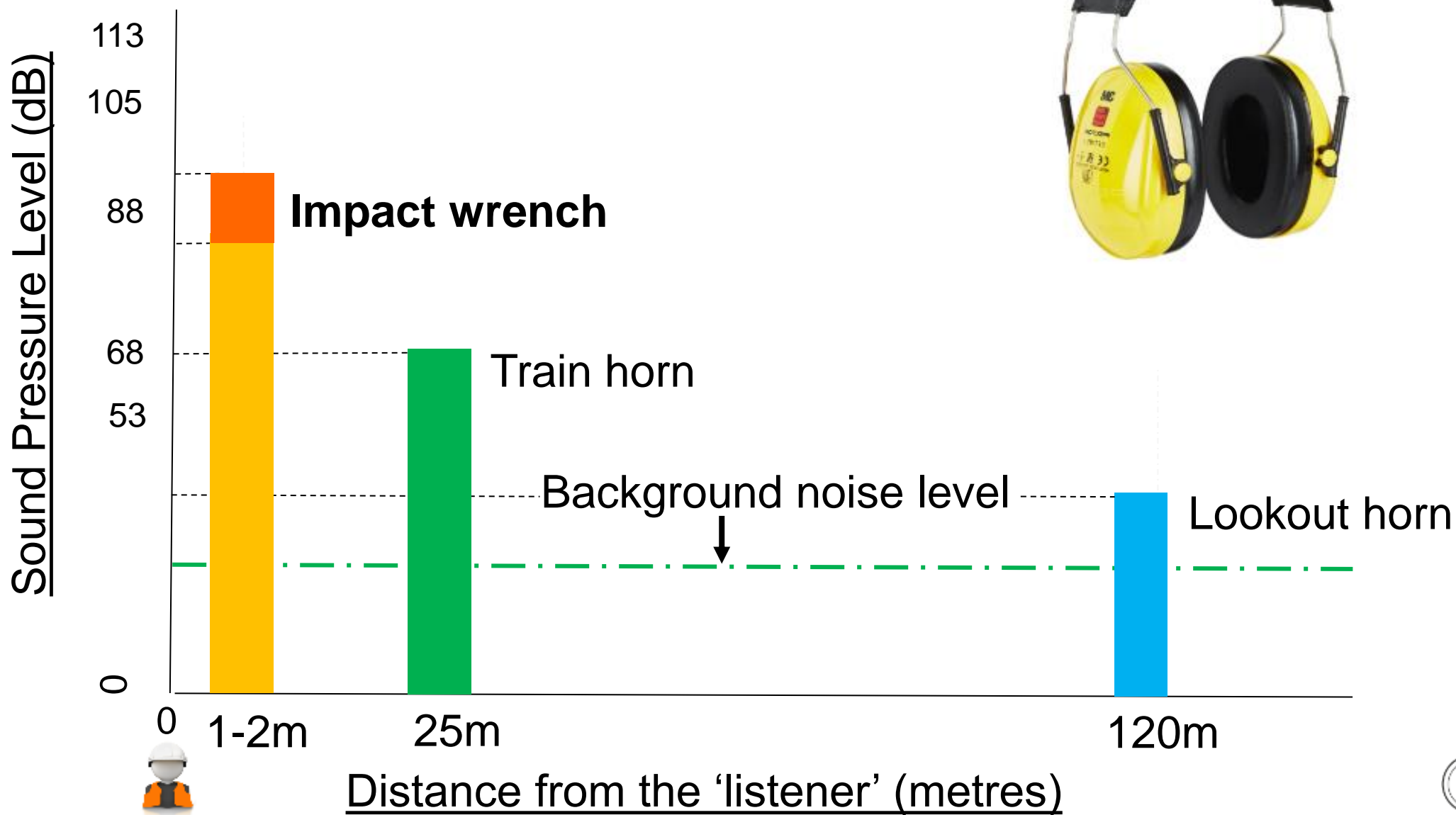
all too simple.....



# Audibility



# Audibility



Sight



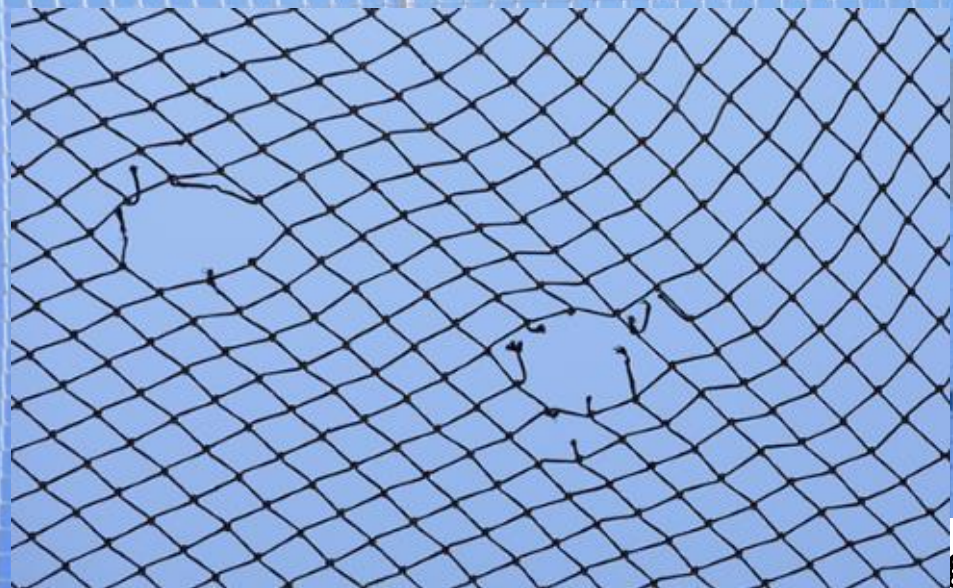
Distraction

## Causal factor 4 – challenge

**Once on site, no one challenged the system of work being used.**

## Causal factor 4 – challenge

- 4.1 The group attached considerable trust in the leadership of the team leader.
  
- 4.2 There had been some conflict concerning the SWP before work started in the morning, which may have affected behaviours during the work.





Thank you