



SAFETY TASK FORCE

Permanent Way Institution

Eur Ing **Nick Millington** B Eng (Hons) CEng FICE FPWI ChPP MAPM

December 2020





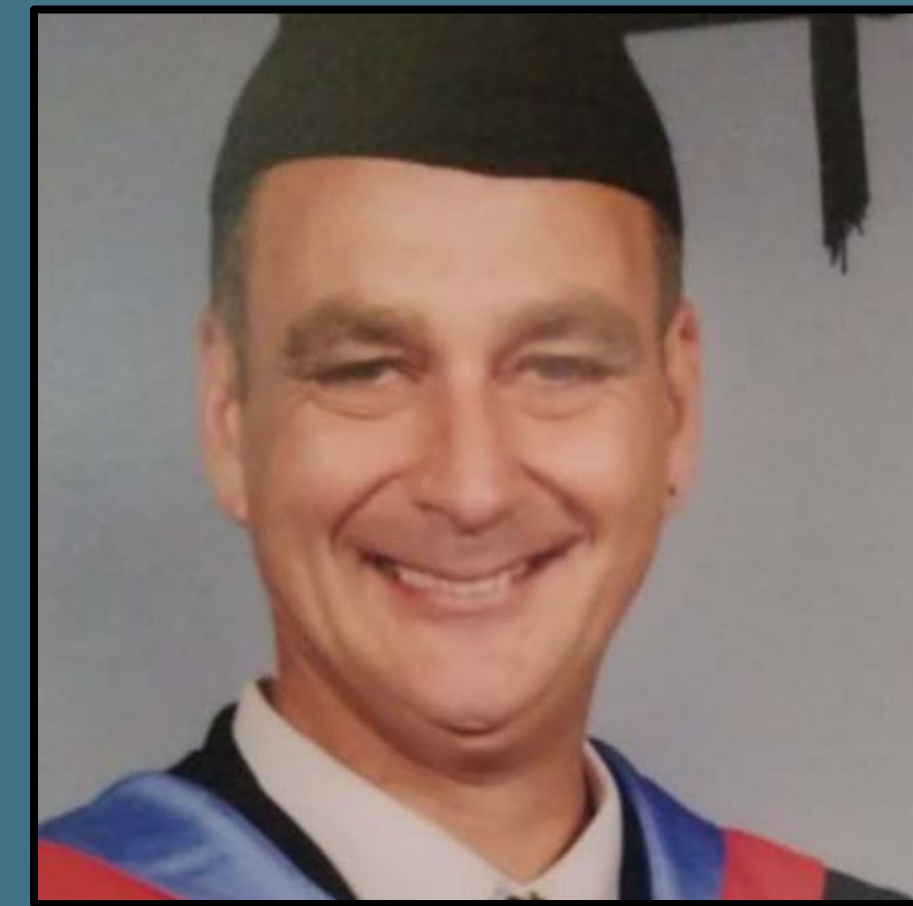
SAFETY TASK FORCE FORMED IN SEPTEMBER 2019 TO TRANSFORM TRACK WORKER SAFETY



On 3 July 2019, at 09:52 the driver of a Great Western Railway train from Swansea to London Paddington reported that the train had struck three people working on the South Wales Main Line track. Our colleagues Gareth Delbridge and Spike Lewis were fatally injured. Another colleague escaped by inches.



Aden Ashurst was killed on 8 April 2020 at Roade Northamptonshire. An AmcoGriffen employee, Aden stepped walked onto the track and was struck and fatally injured.





NETWORK RAIL MUST COMPLY WITH **ORR** **IMPROVEMENT NOTICES** BY JULY 2022



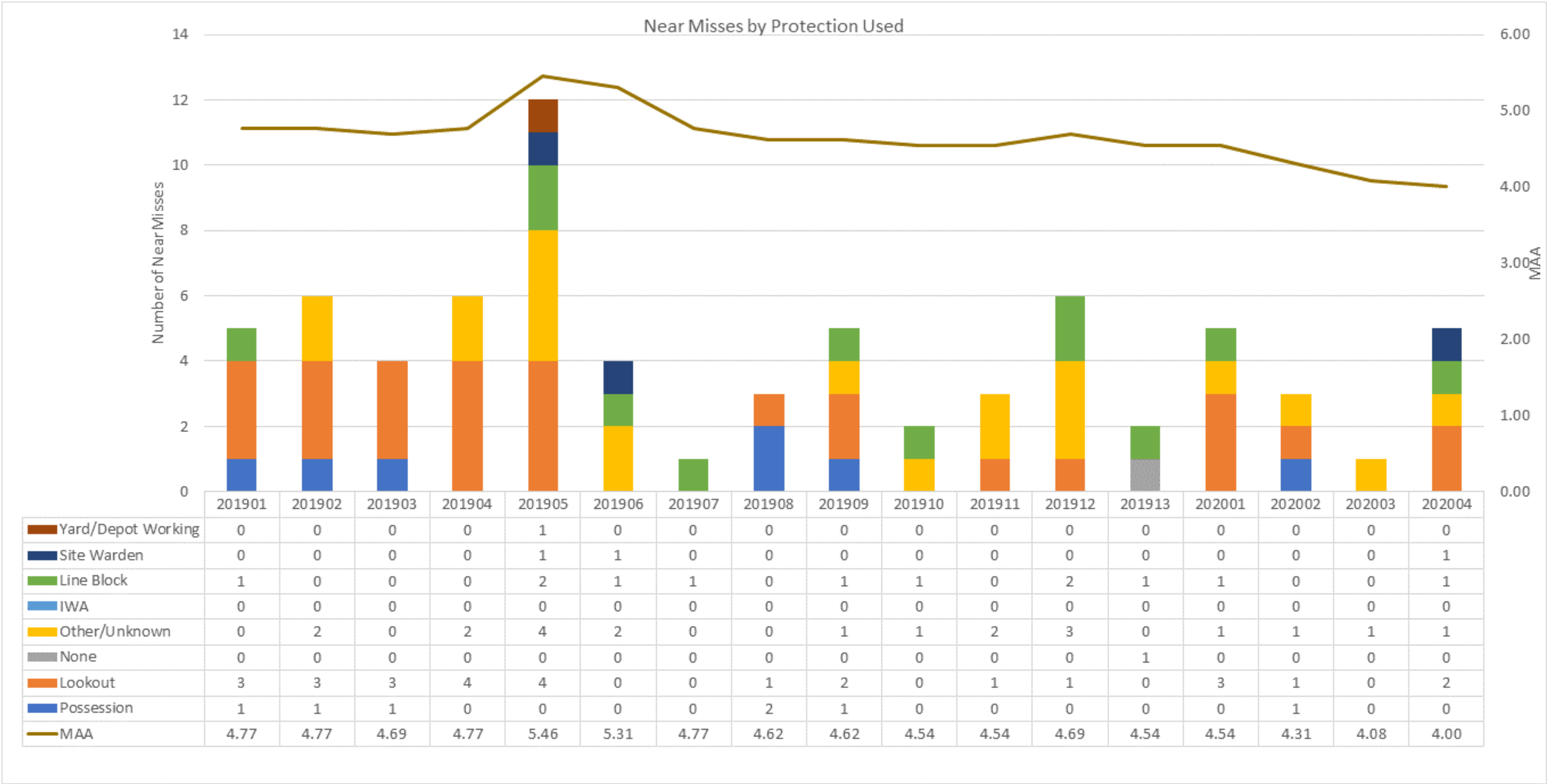
- *Collaborative discussion with all routes;*
- *12 specific compliance criteria agreed;*
- *Timescale defined*



Network Rail Infrastructure Limited IN/TW/2019/07/08/2	This notice was served as NRIL are not ensuring the safety of their employees and contractors working on or near the line so far as is reasonably practicable, and are not implementing preventive and protective measures necessary for the protection of workers on or near the line, in that their current arrangements do not adequately consider adapting to technical progress, and they have not ensured that appropriate procedures are in place and suitable equipment is provided for preventing a person working on the transport system from being struck by a moving train.	08 July 2019	31 July 2022
Network Rail Infrastructure Limited IN/TW/2019/07/08/1	This notice was served as NRIL are not ensuring the safety of their employees and contractors working on or near the line so far as is reasonably practicable, and are not implementing preventive and protective measures necessary for the protection of workers on or near the line, in that their current arrangements do not adequately consider avoiding risks.	08 July 2019	31 July 2022



The importance of data





POTENTIAL FATALITIES: JANUARY 2020



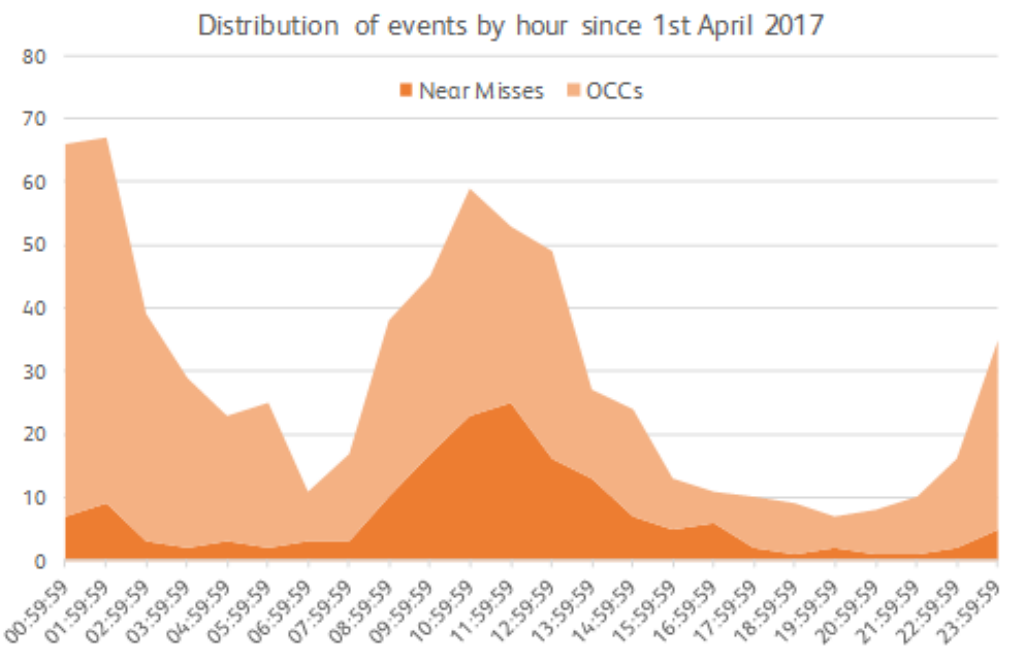
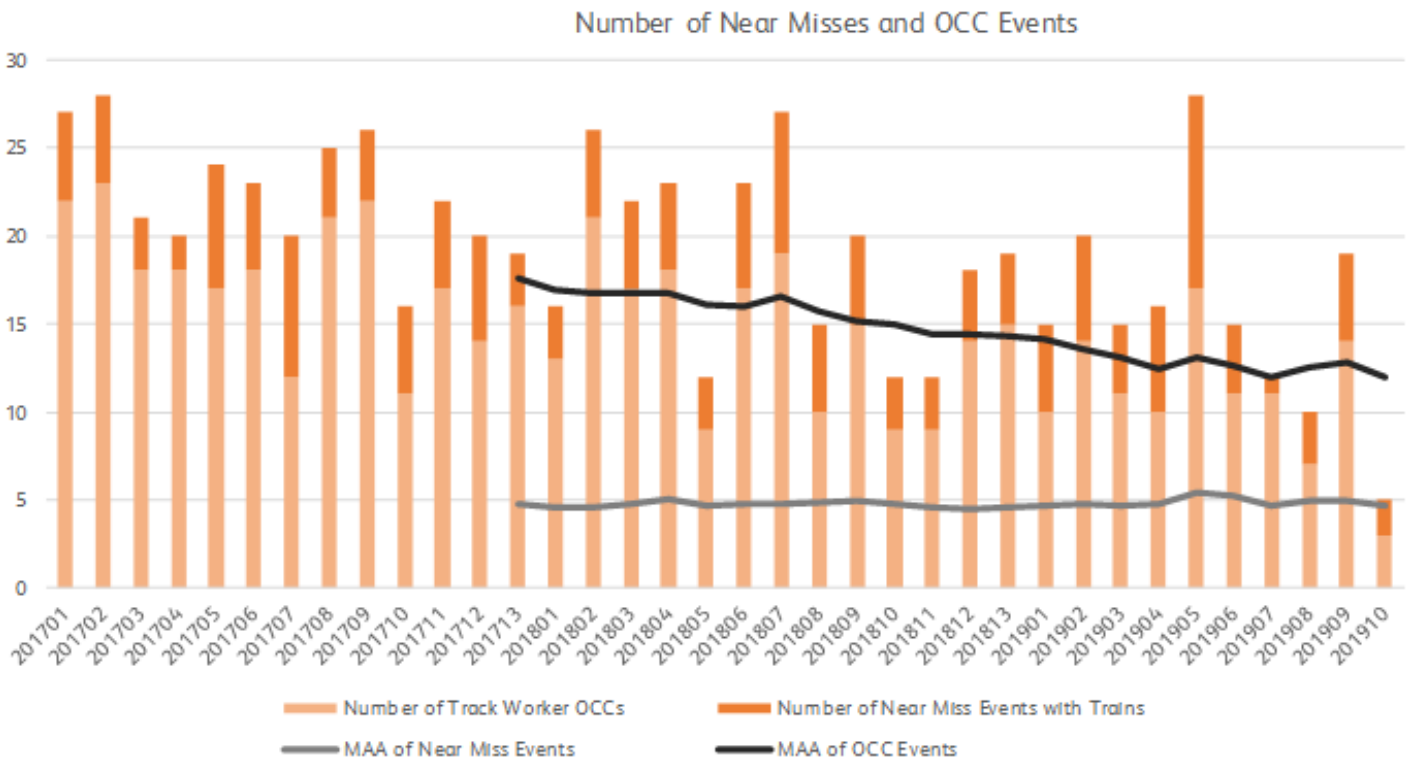
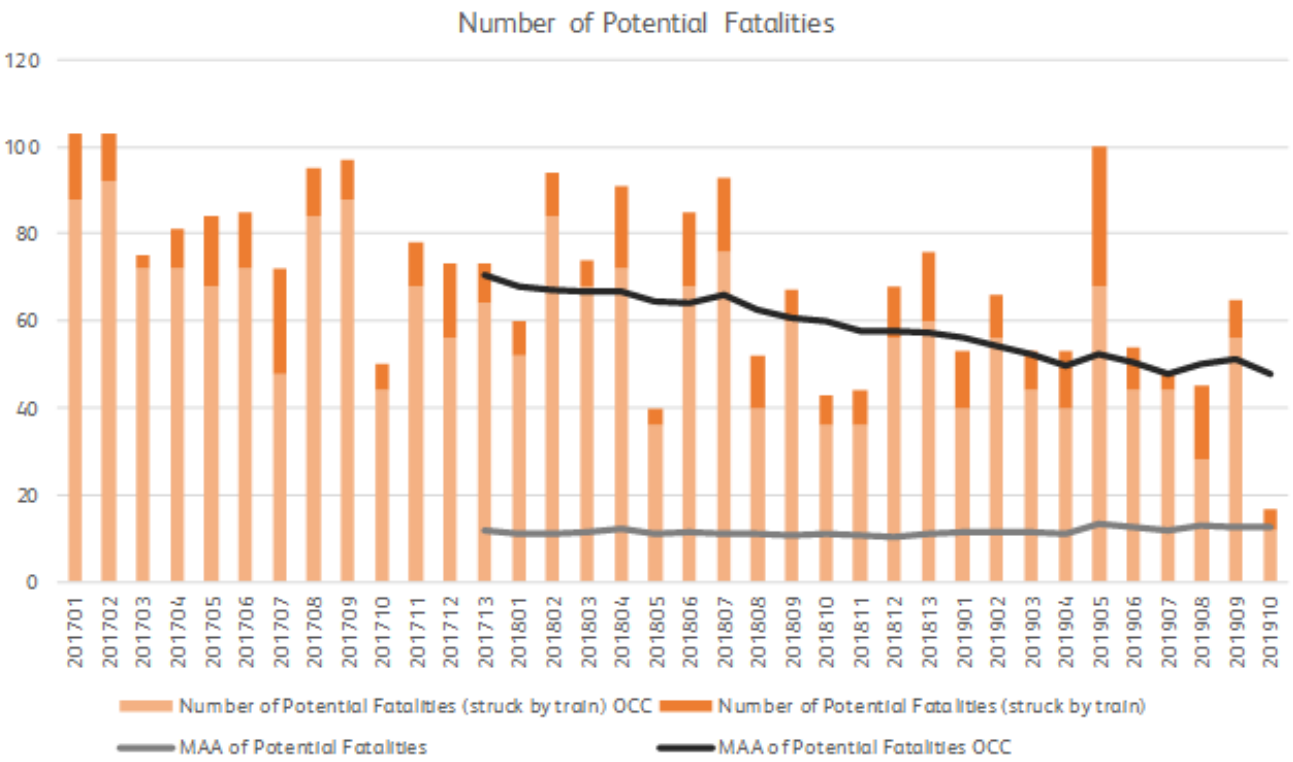
Potential Fatality KPI Dashboard - Period 10 2019/20



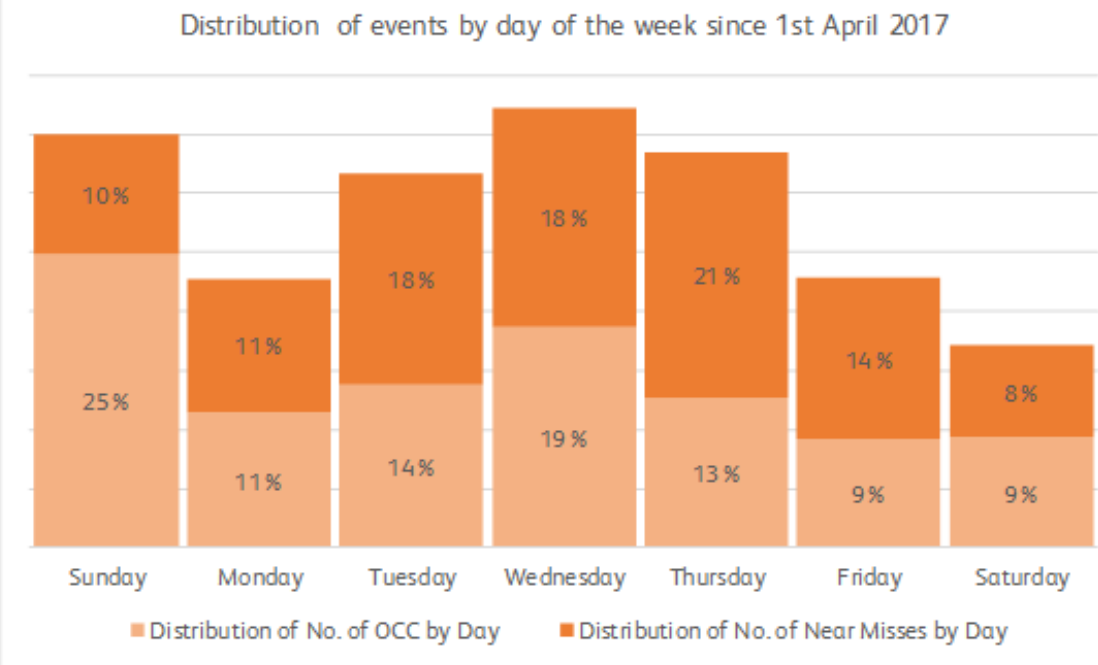
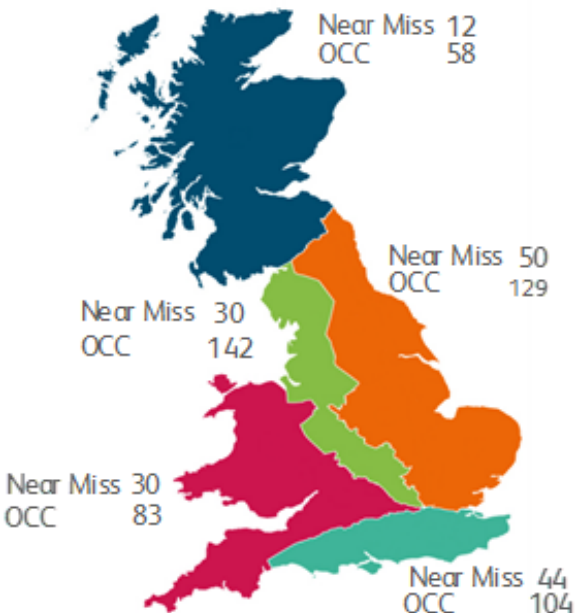
* This dashboard measures the number of track worker operational close calls (OCCs) and near misses with trains *

In the last 13 periods the number of people involved in near misses totals: **158**
MAA movement in last 13 periods: **15%**
In the last 13 periods the number of track workers involved in OCCs totals: **584**
MAA movement in last 13 periods: **-21%**

In the last 13 periods the number of near misses totals: **58**
MAA movement in last 13 periods: **-2%**
In the last 13 periods the number of track worker OCCs totals: **146**
MAA movement in last 13 periods: **-21%**



Regional Distribution since 1st April 2017

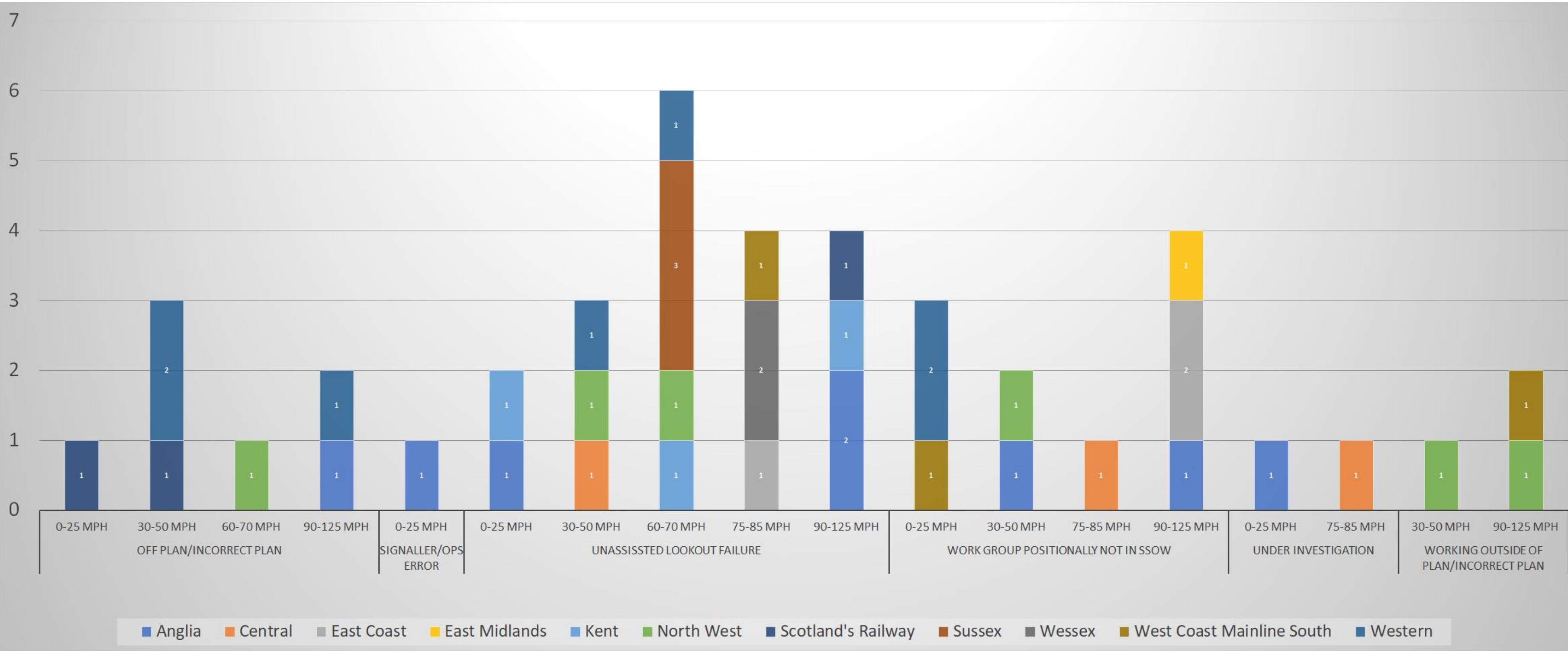


For information:

1. We have engaged with RSSB to carry out further analysis to better define this risk;
2. The Task Force would like endorsement to increase the level of information captured during the Level 1 investigation process. Also, to publish an overdue investigation KPI.



The importance of data





WE ARE TREATING FUNDAMENTAL, LONG-STANDING BARRIERS TO TRACK WORKER SAFETY



‘PLANNING’

WORKBANK REVIEWS AND SAFE ACCESS

- Working with front line teams to review 28 million+ annual maintenance standard tasks to keep people off track wherever possible.
- Extend modern maintenance methods/Intelligent infrastructure across network
- Negotiate improved safe access to track with TOCs and FOCs
- Plan maintenance standard tasks into possessions, line blockages.



MAXIMISE SIGNALLER CAPACITY

- All signaller workstations have completed workload assessments to highlight ‘hot spots’ and quiet times
- Route teams now following up to explore potential for better scheduling of maintenance activity – using quieter times, longer line blockages and other efficient working practices



IMPROVE LINE BLOCKAGE DATA

- Previously, no understanding of how many line blockages were used, what for, whether track safety equipment used to protect line blockages
- 90% of signaller workstations now providing accurate data about use of line blockages
- Improved understanding of potential capacity for maintenance
- Accurate understanding of additional protection
- Explore extending EPR



IMPROVE SAFE PLANNING AND WORKING

- 019 principles introduced to help colleagues understand the Standard 019
- Significant improvement in safety information for all frontline managers – down to section level
- Introducing new RailHub system for safe work planning and line blockages from April 2021
- Next steps are to simplify Standard 019, introduce a single Person in Charge competence, improve non-technical skills



‘TECHNOLOGY’

TRACK SAFETY EQUIPMENT

- We are introducing new equipment for additional protection
- Making better use of existing technology – sometimes installed and unused
- Design in track worker safety technology for future
- 500 Track Circuit Operating Devices now deployed (of 700+ this year)
- SATWAS trials underway in various routes





What is it we need to do?



		OFFICIAL	
Ref:	STF/AD/001		
Revision:	3.0		
Date:	15 th September 2020		
Compliance	31 July 2022		

Assurance Directive

Delivering 'safe and effective' railway maintenance.

Approved for publication by:

Nick Millington
Network Rail Safety Task Force Programme Director
Date: 15th September 2020
Date of next review: March 2021

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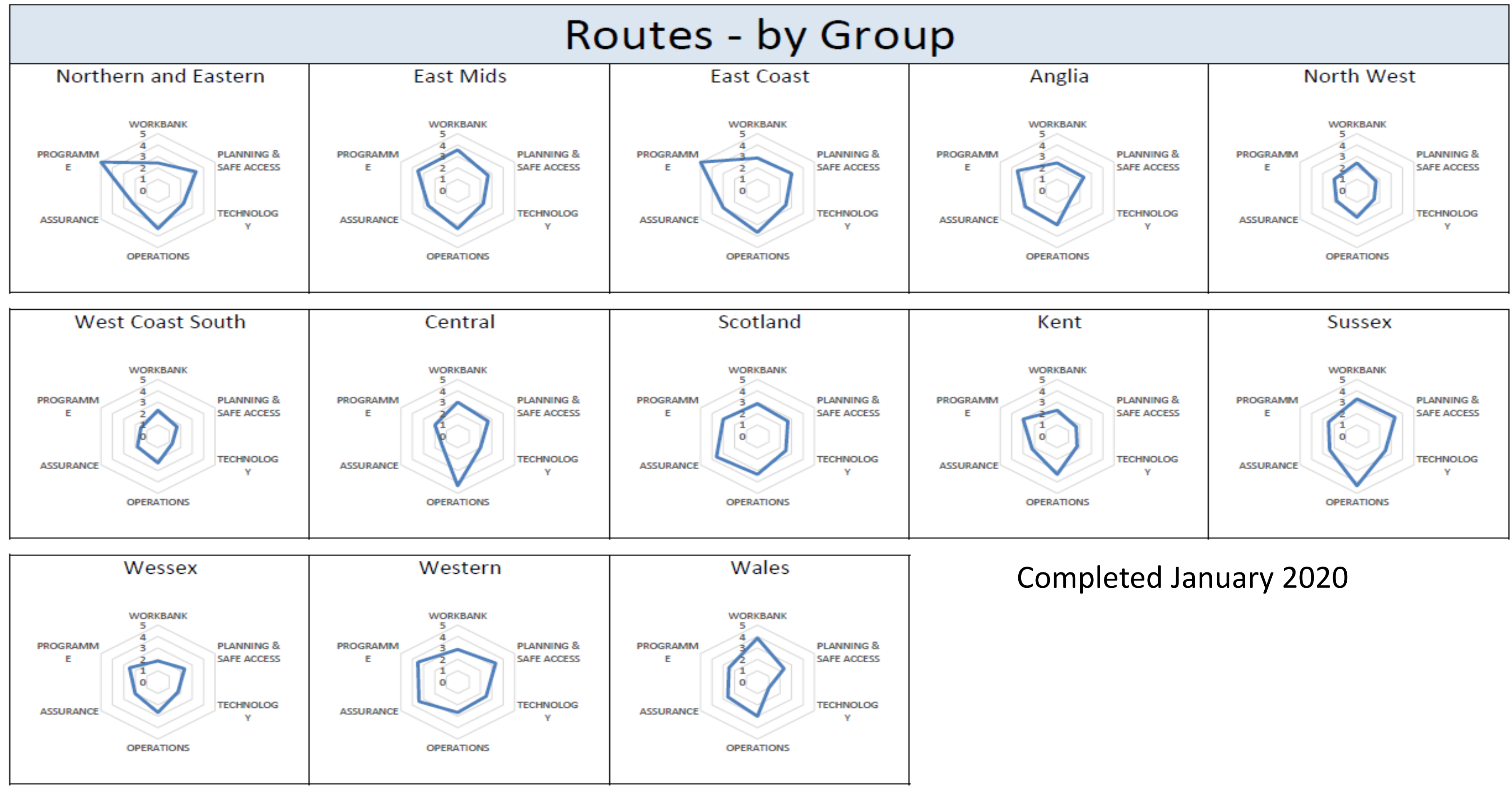
3rd Version published

43 pages

**All route stakeholders
signed up**



13 Teams, detailed programmes developed.



Completed January 2020



PROTECTING TRACK WORKERS – BIGGEST OPPORTUNITIES



NO MORE 'LOOKOUTS'



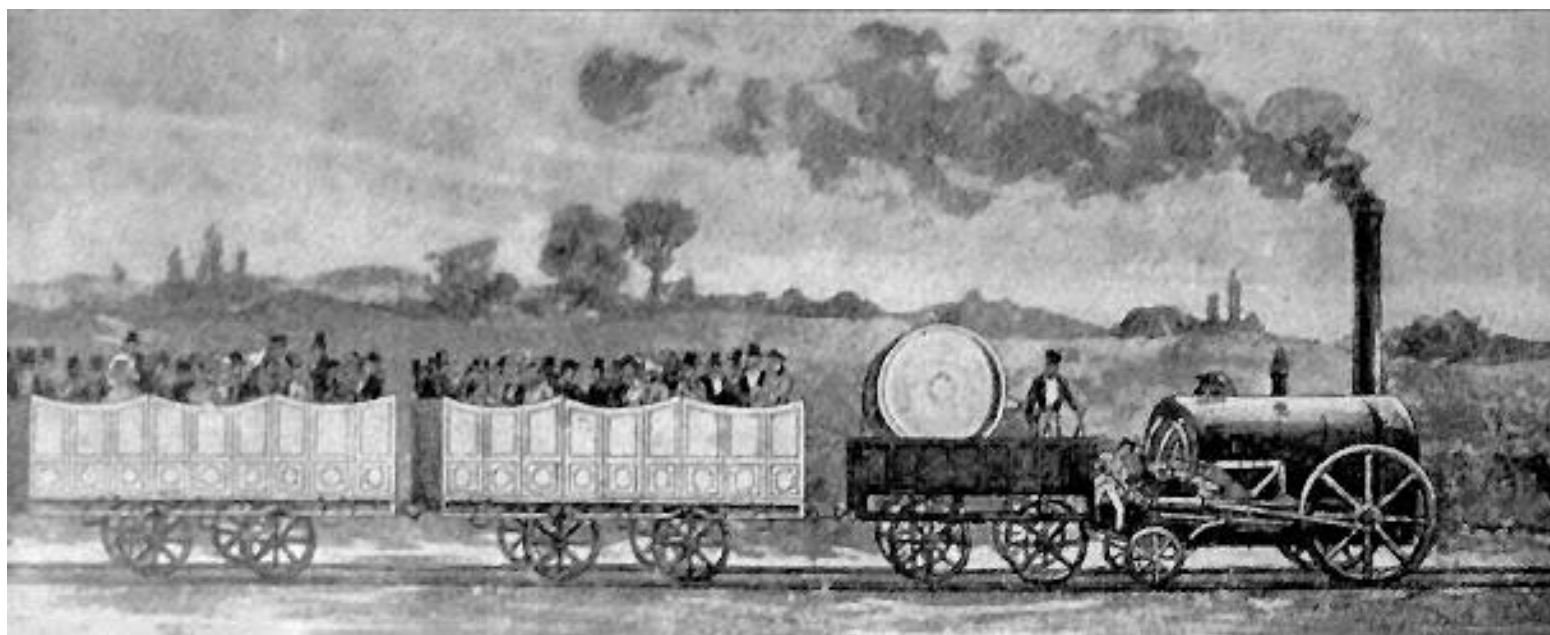
NO MORE OPEN LINE WORKING (WITHOUT 100% ADDITIONAL PROTECTION)



100% COMPLIANCE WITH 019 SAFE WORKING PRACTICES



NUMBER ONE TARGET: ELIMINATE LOOKOUT



1825
15 mph

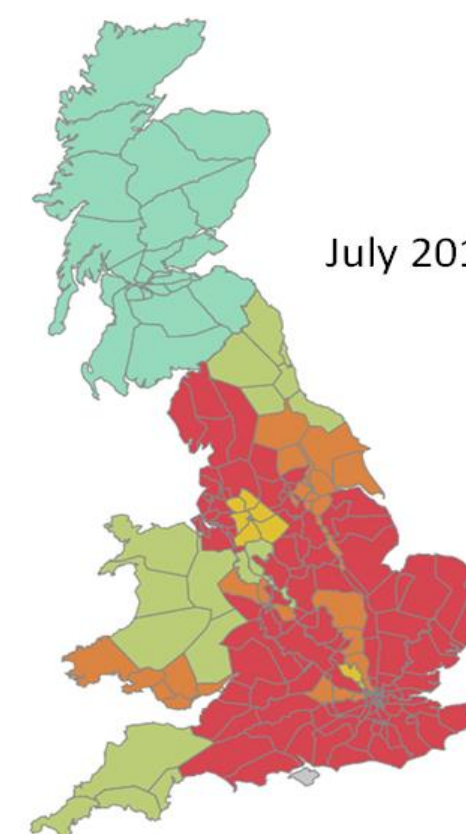


1920
80 mph

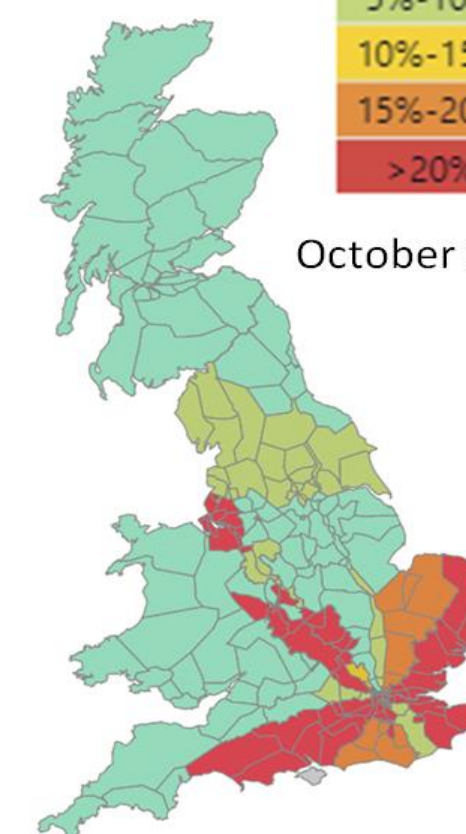


2020
125 mph

- Unassisted lookout working has reduced by 50% since July 2019.

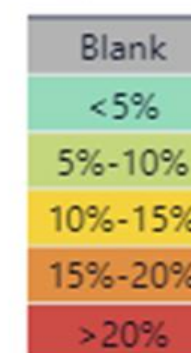


July 2019



October 2020

Key



Despite a 50% reduction, there are still 850,000 work orders per year using a lookout



Eliminating Lookout Working



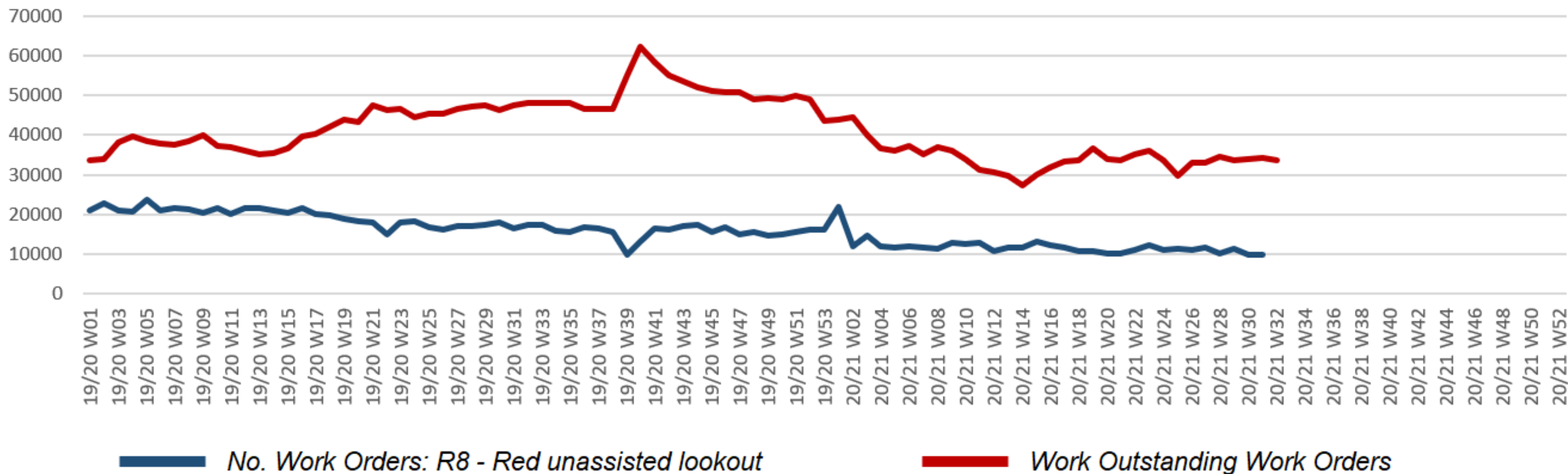
Protection Type v Work Outstanding

R8 - Red unassisted lookout

No. Work Orders

For some Routes, Work Outstanding data is only available from 19/20 W38 onwards

National





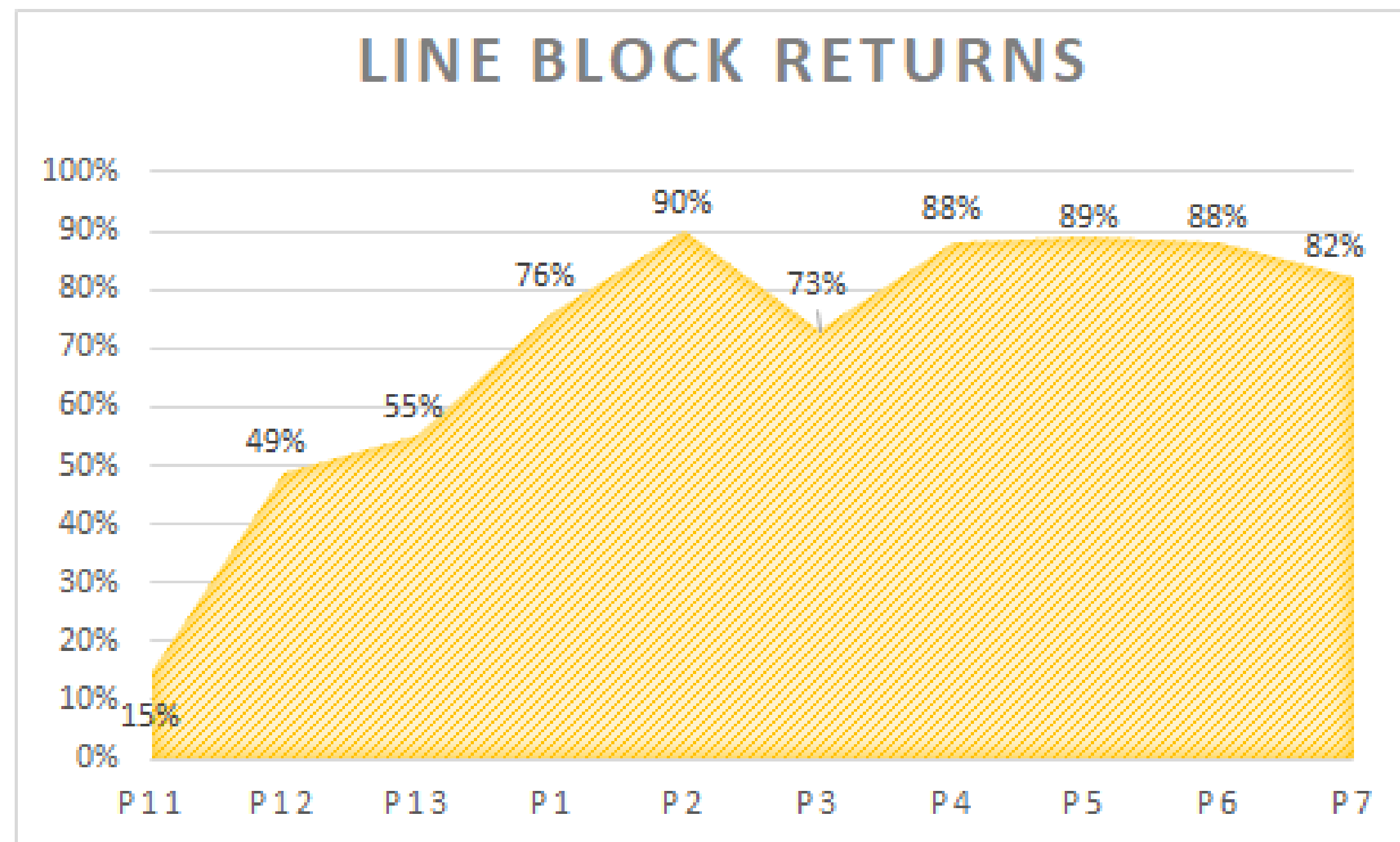
Signaller Workload and Line Block Returns



Line Block returns (695 possible, 674 open today, 683 if COVID closures open):

The story so far:

- Steady increase, leap forward in understanding line blocks, how they are used, who plans them, how much additional protection is implemented.
- Only 9 locations have never submitted returns and 29 have provided rolled up data.
- Slight drop under 85% in Period 7 however dashboards and line block data now available to all signalling locations and this is expected to improve engagement.



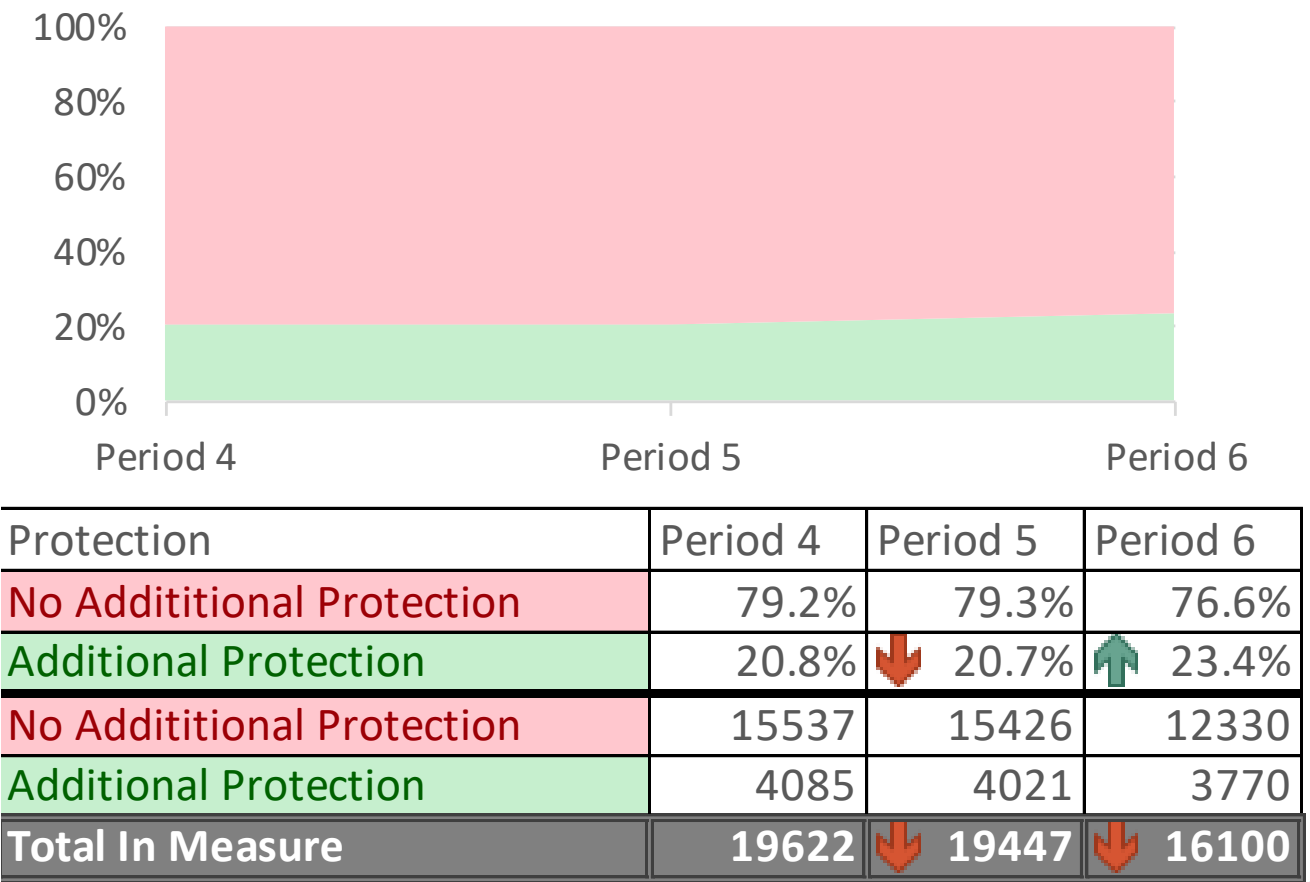


Signaller Workload and Line Block Returns



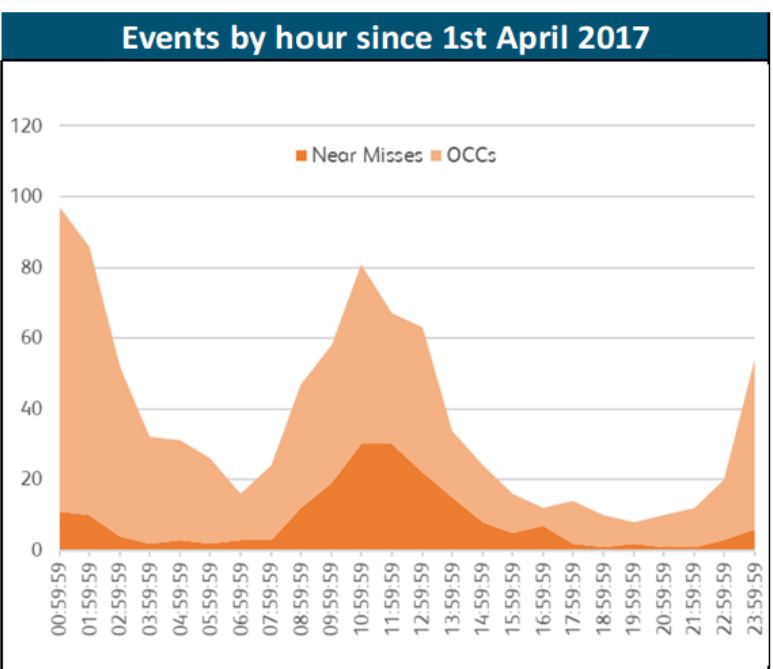
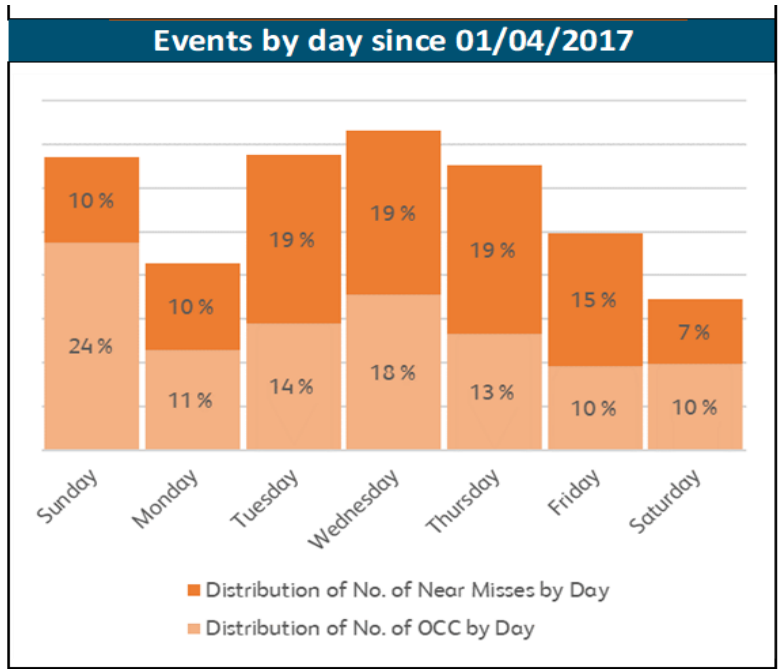
- 86% of locations are providing line block returns which achieves a Level 1 milestone.
- Over 75% of line blocks are taken without additional protection.
- Returns indicate the majority of line blocks are being taken between the hours of 09:00 – 11:00 Monday to Thursday, which aligns with Near Miss profile.

% of Lineblocks Using Additional Protection

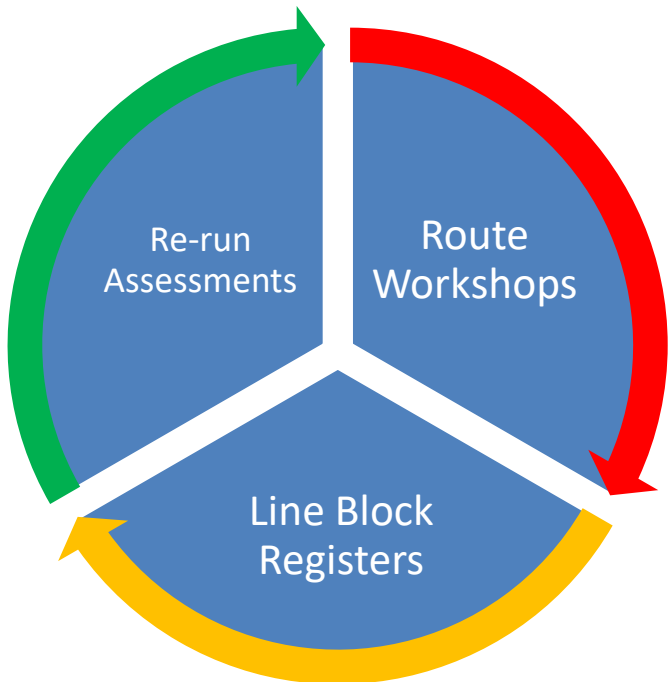


Line Block Heat Map - Periodic average of when LB's are Taken and Handed Back

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	00:00
Saturday	86	32	22	0	10	16	42	50	82	94	60	16	24	20	16	6	6	4	2	8	4	8	28	24
Sunday	50	17	10	2	0	4	34	110	136	162	110	58	30	30	16	8	8	8	8	16	14	12	32	88
Monday	120	56	14	10	6	10	32	56	264	262	218	140	84	70	58	36	18	12	6	10	12	22	62	136
Tuesday	108	34	30	6	6	4	18	112	266	320	226	154	98	60	40	34	26	12	4	6	6	20	76	176
Wednesday	156	36	16	16	0	14	24	102	318	320	194	166	110	50	58	22	20	26	16	14	12	42	76	134
Thursday	132	33	32	2	2	6	26	112	268	336	178	136	96	36	44	42	12	10	18	8	10	28	76	180
Friday	144	27	20	8	10	14	38	94	190	222	116	78	42	32	18	30	18	10	10	4	8	10	44	116



Next Steps:-





TRACK SAFETY EQUIPMENT PROTECTS THOSE WORKING IN LINE BLOCKAGES



- Safety Task Force is providing track safety equipment and training
- ZKL Track Circuit Operating Devices (TCODs) break the track circuit, preventing trains entering a section
- 500 TCODs deployed so far. 700+ will be deployed in 20/21





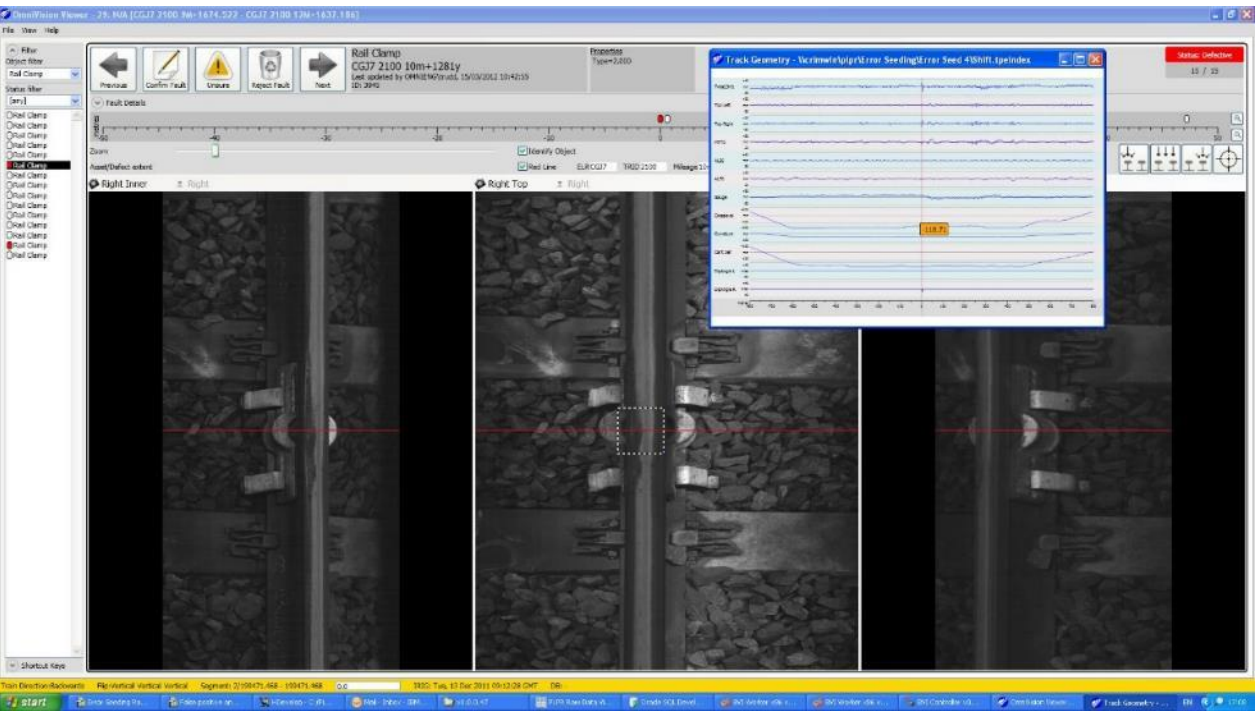
NEW TECHNOLOGY KEEPS BOOTS OFF BALLAST, BETTER SERVICE FOR PASSENGERS



Eddy Current technology in use



Plain Line Pattern Recognition camera



Remote condition monitoring, without the need for track access





LEADING FRONT LINE ENGAGEMENT



Posted in Southern Region

Lipshaw Lisa
Thu at 6:56 AM • @9

2 shares • Seen by 64

Wow, what a great turnout yesterday at our second Track Worker Safety call! Thanks to those who joined us - over 200 of you. We'll be having our final call at 22:00 tonight to catch those of you we've missed.

Special thanks to **West -Beard James** and **Maxwell Douglas** for telling us why maintenance teams must get involved with this once-in-a-generation programme.

Zoom Meeting



Southern Region
Track Worker Safety

Kent Track Worker Safety Update
July 2020 - Issue 1

Providing the safest environment for our track workers

Contents

- Hello from the TWS team
- Spotlight on ZKLs
- What we have completed so far

Meet the team

Hello from the TWS team

Welcome to your first Track Worker Safety (TWS) programme newsletter

The programme will help us provide the safest environment for our track workers by reducing the need for us to go on track. It's also ensuring that, when we do need to, that we're using the safest method by:

- 1 Make it easier to plan work into possessions and line blockages
- 2 Making all warning methods and line blockages safer

We know we must do better to make ourselves safer whilst working on the railway. In the last year alone, we've had over 700 people exposed through operational close calls and near-misses. This is unacceptable and across Network Rail, wide-ranging plans are underway to reduce tragic incidents and near-misses.

This programme is part of those plans with a once in a generation opportunity to plan and deliver our trackside work differently. It's going to be more ambitious than anything we've done before in this area, and we're rising to the challenge with the right team and with your support.

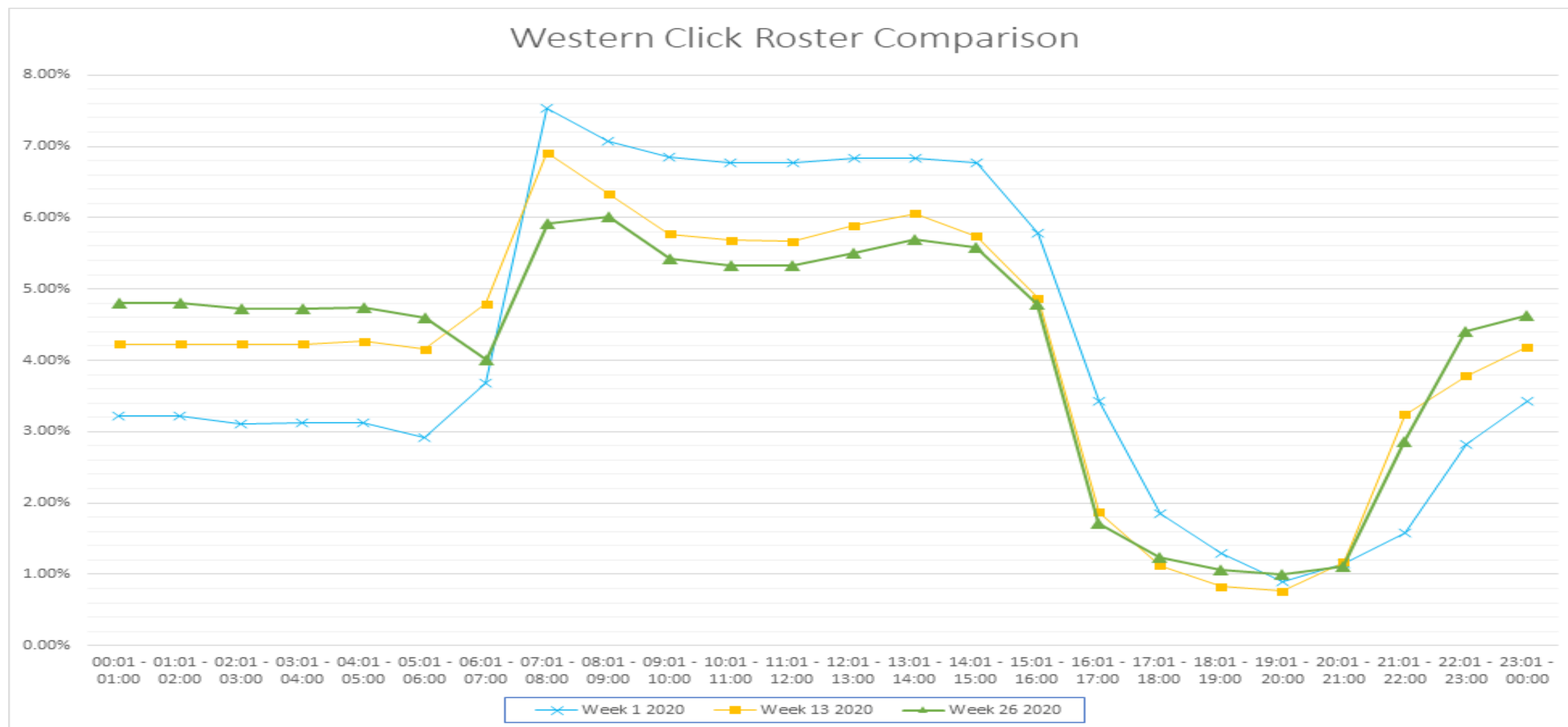
We'll reduce the single point of failure that exists too often in our work - we need to stop relying on one person, whether that's a track worker or a signaller further away. That's why we want to achieve 0% unassisted lookout working. We're going to use the latest technology, such as Plain Line Pattern Recognition (the train-borne track measurement equipment), Remote Condition Monitoring and reliability-centered maintenance of signaling equipment (ROSE) to reduce the number of times we need to go trackside. We'll also be reviewing our workbanks to ensure we have sufficient safe access to deliver our work and in August we're going to request additional access that meets our needs - we're completely overhauling the way we plan our work so more of it can go into possessions and line blockages.

New members will be joining the team shortly





Hearts and Minds – This is hard.



We are moving more tasks to night work than people.....



IMPROVED PLANNING AND SAFE WORKING PRACTICES



Up to the minute safety data for all front line leaders

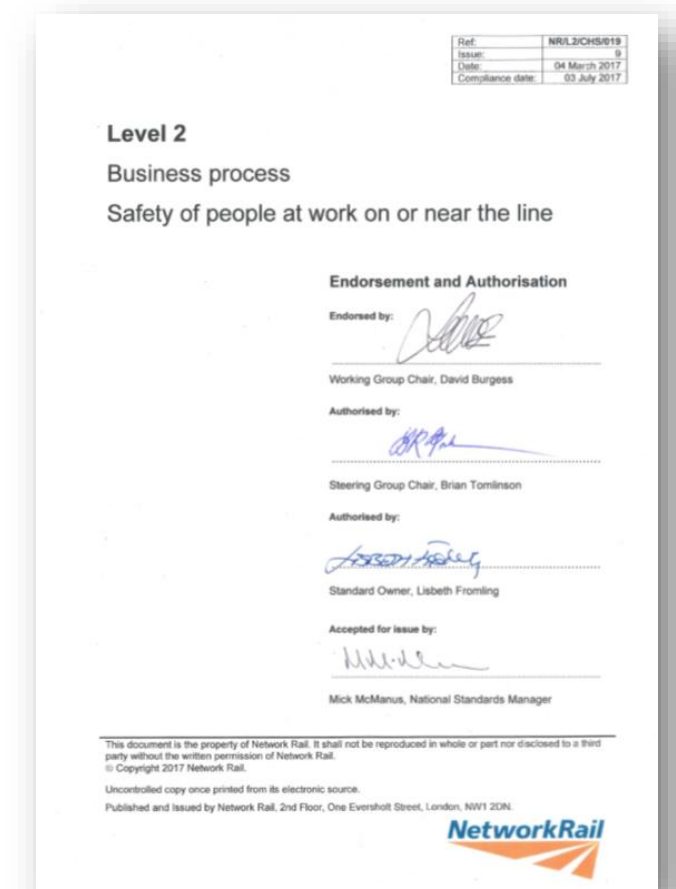
New, intuitive planning and line blockage systems



One safety role - COSS – with competence



Non-technical skills for front line leaders



Simplify Standard 019

The Safety Task Force challenge on a page.

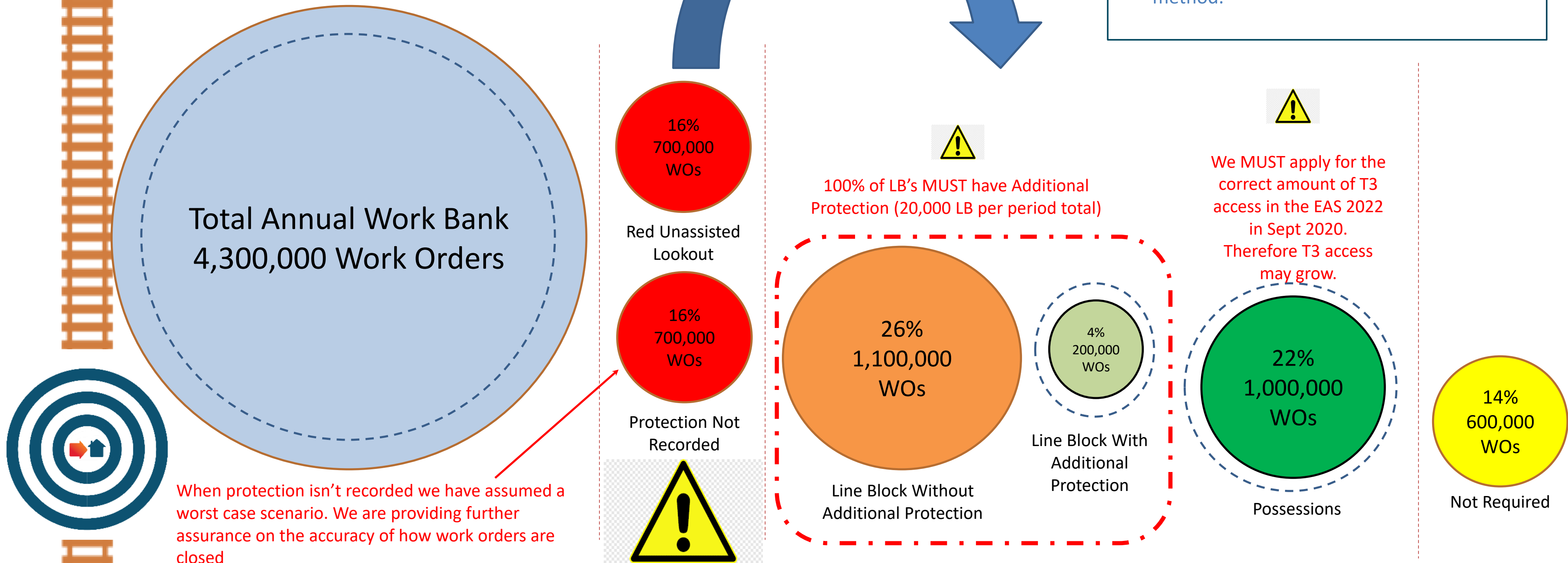
There are opportunities to reduce the overall number of work orders through application on Intelligent Infrastructure, risk-based-maintenance, Ellipse data cleansing and improved 'clustering' of work. The Task Force will drive this but further support is needed via Route Asset Management Teams to drive the correct outcomes.

We MUST eliminate unassisted lookout working.

Some Vital Stats:

The below stats represent the annual work bank:

- Only 26% of work orders are completed in possessions or Line Blocks with Additional protection.
- 16% completed in Red Zone with Unassisted Lookout.
- 16% completed without recording protection method.

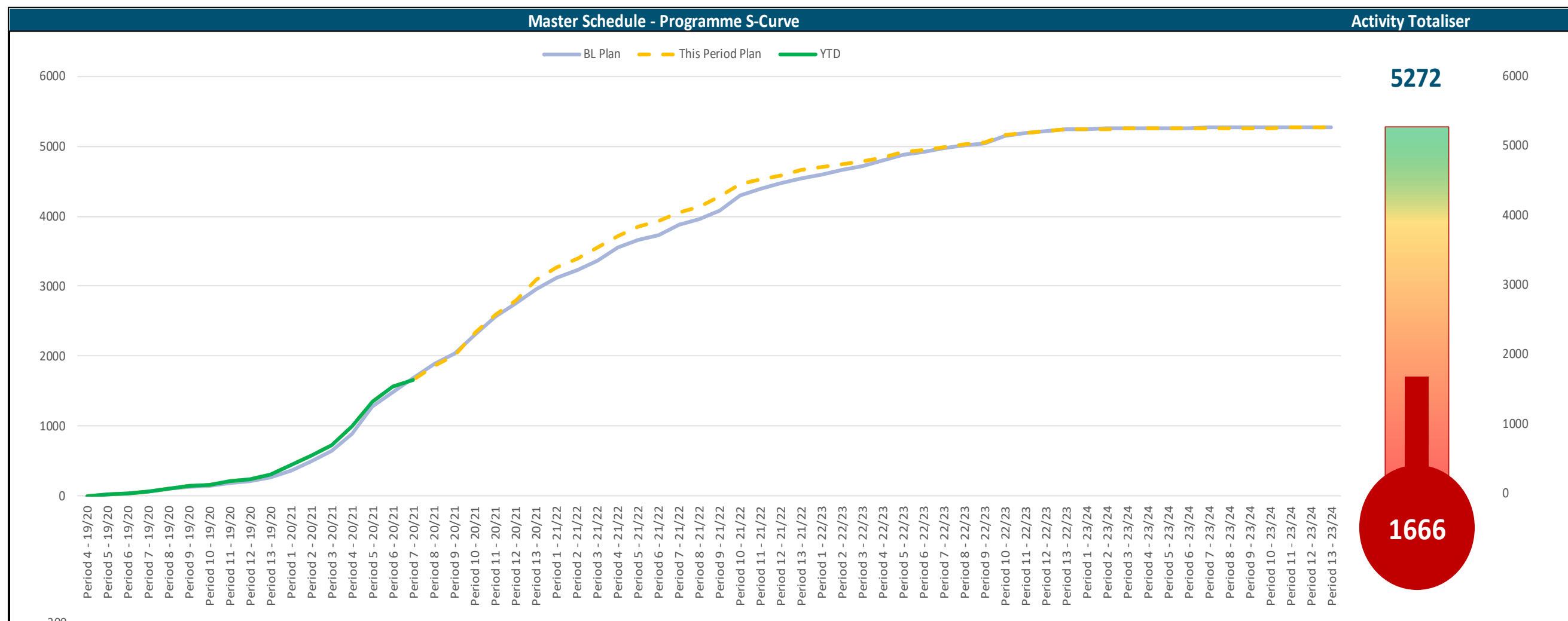




Where are we now?



Where are we now - Safety Task Force Programme

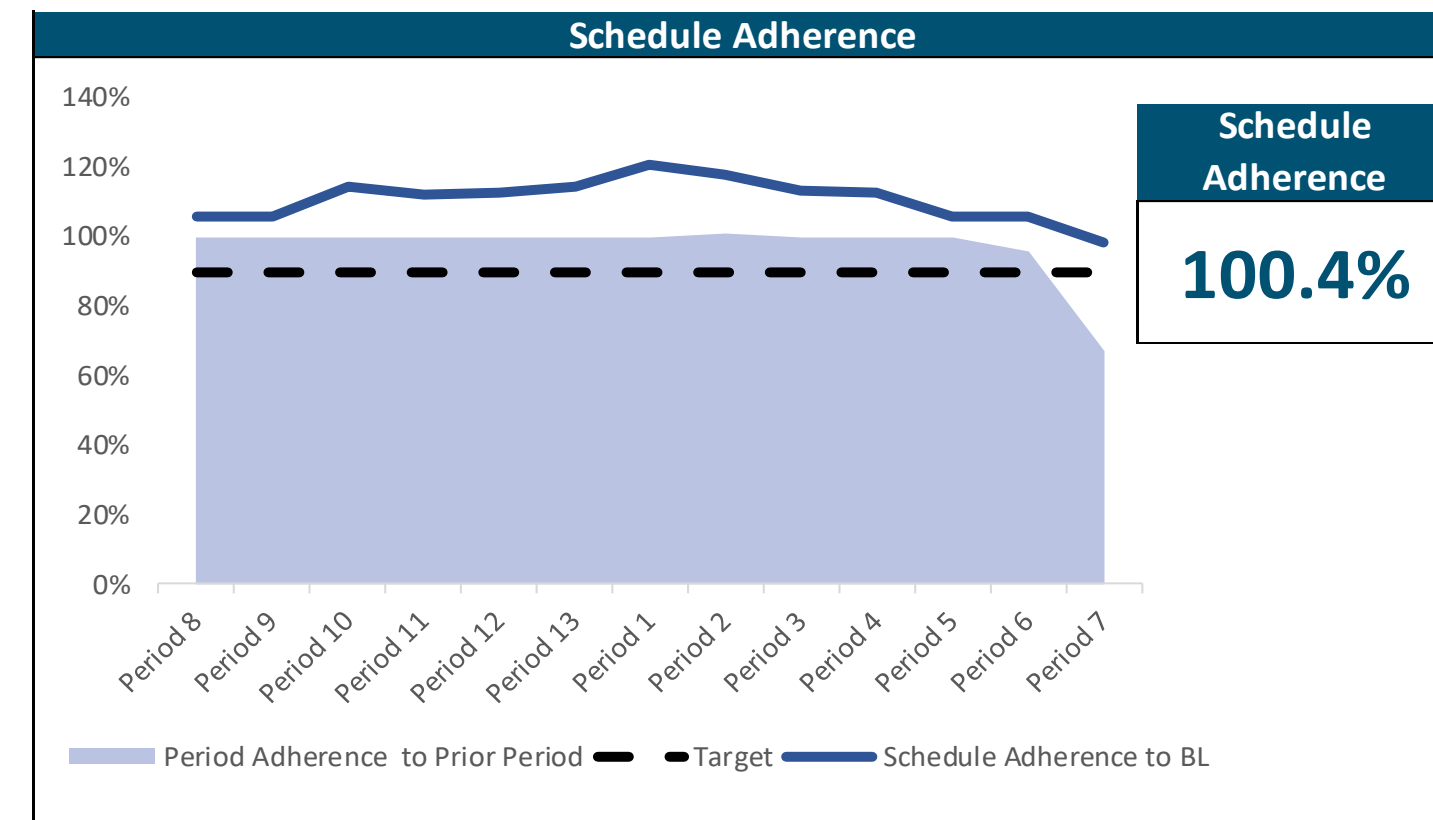


% of Programme Complete

31.6%

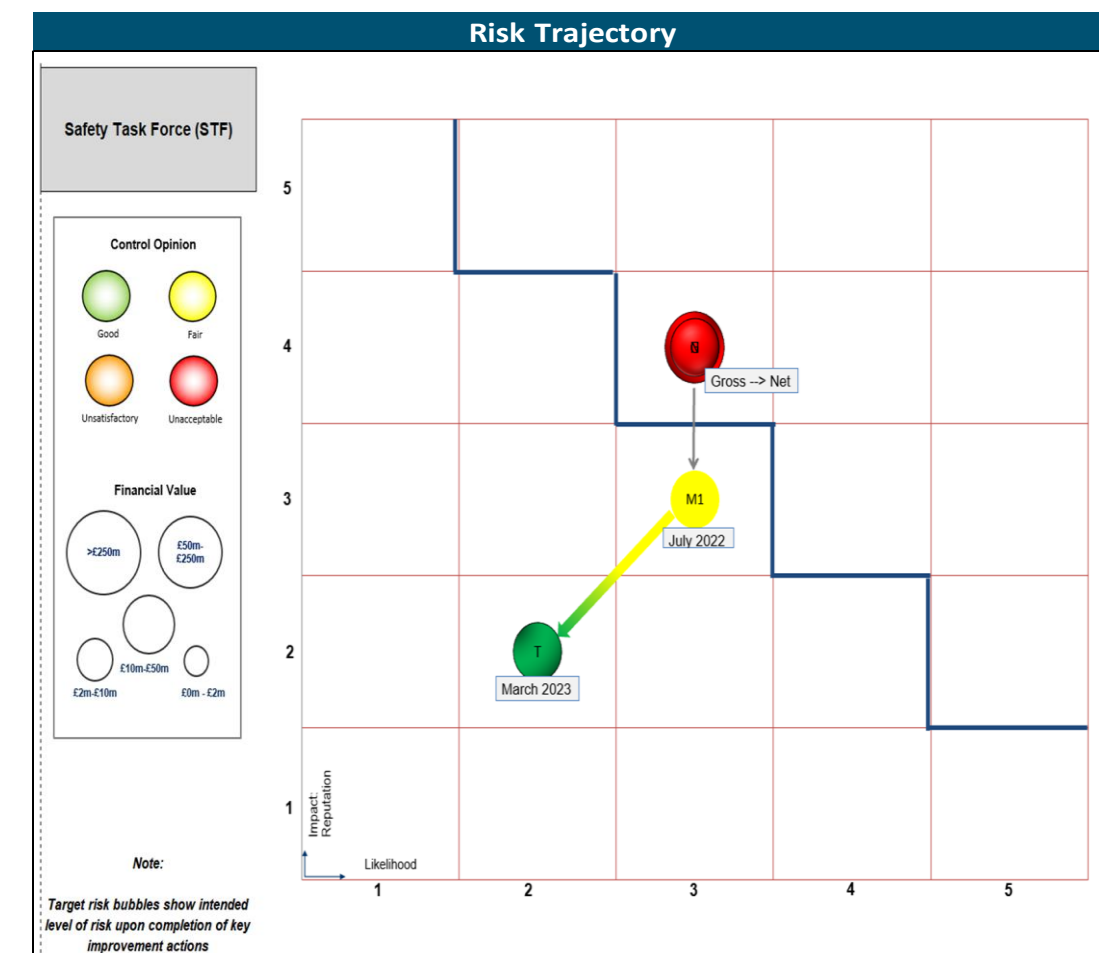
Days remaining untill ORR Compliance

660



Headlines

- Financial Authority granted for all routes - £7.2m cost of work done at the end of Period 7 (a further £2.1m purchase orders currently being processed). ✓
- 1666 milestones complete (31.6%) ✓
- Schedule adherence 100% ✓
- 10% MST second pass reviews to be completed in August 2020 as per L1 Milestone. 25% to be completed by the end of October. ✓
- 600,000 work orders categorised as 'not required' following MST reviews completed so far ✓
- 508 TCODs deployed at end of Period 7. ✓
- Signaller workload tool rolled out in the period with 100% surveys completed at end of P5 – Workload assessments to be completed by November ✓
- Over 85% of signalling locations providing line block returns completing a Level 1 milestone. ✓
- Over 75% of line blocks are still taken without additional protection. ✓





SAFETY TASK FORCE – KEY STATS

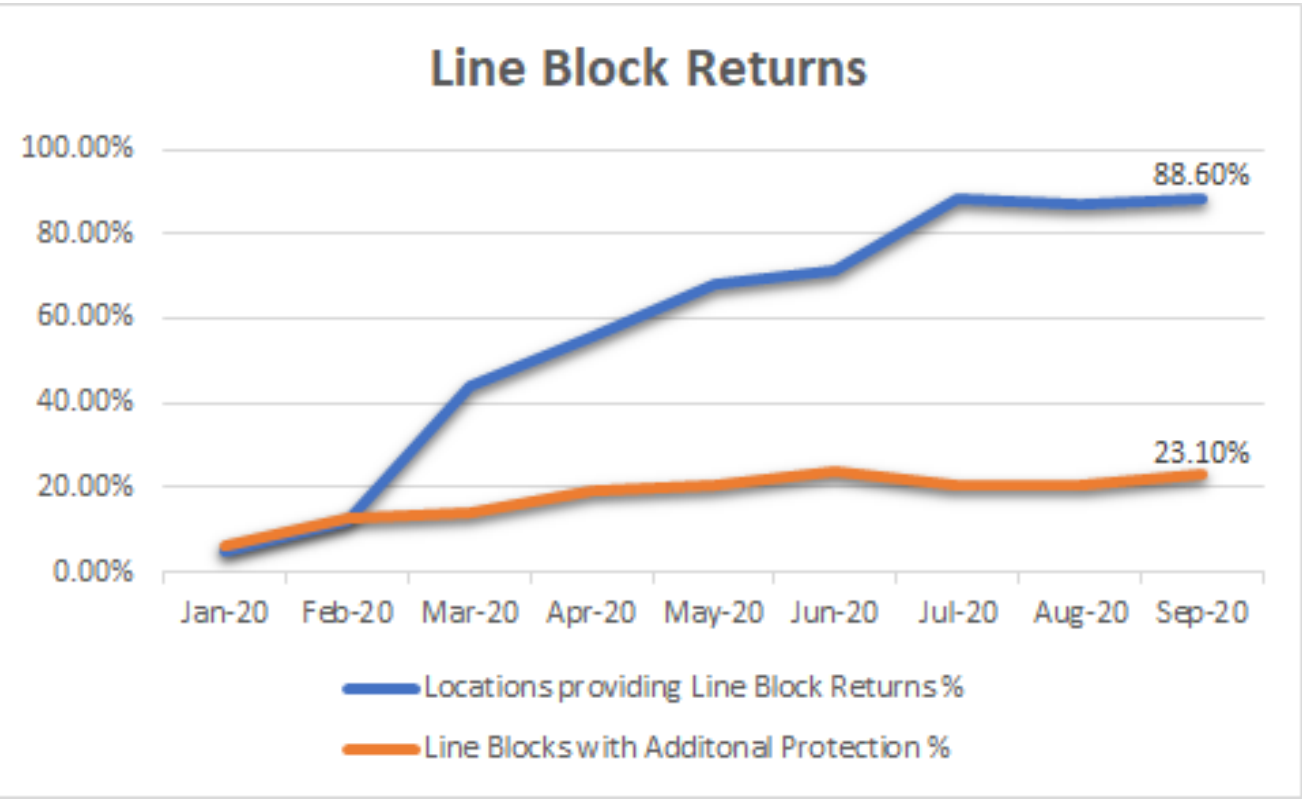


Work Bank Review & Optimisation - Ongoing

1st Pass review of workbank - 90% complete

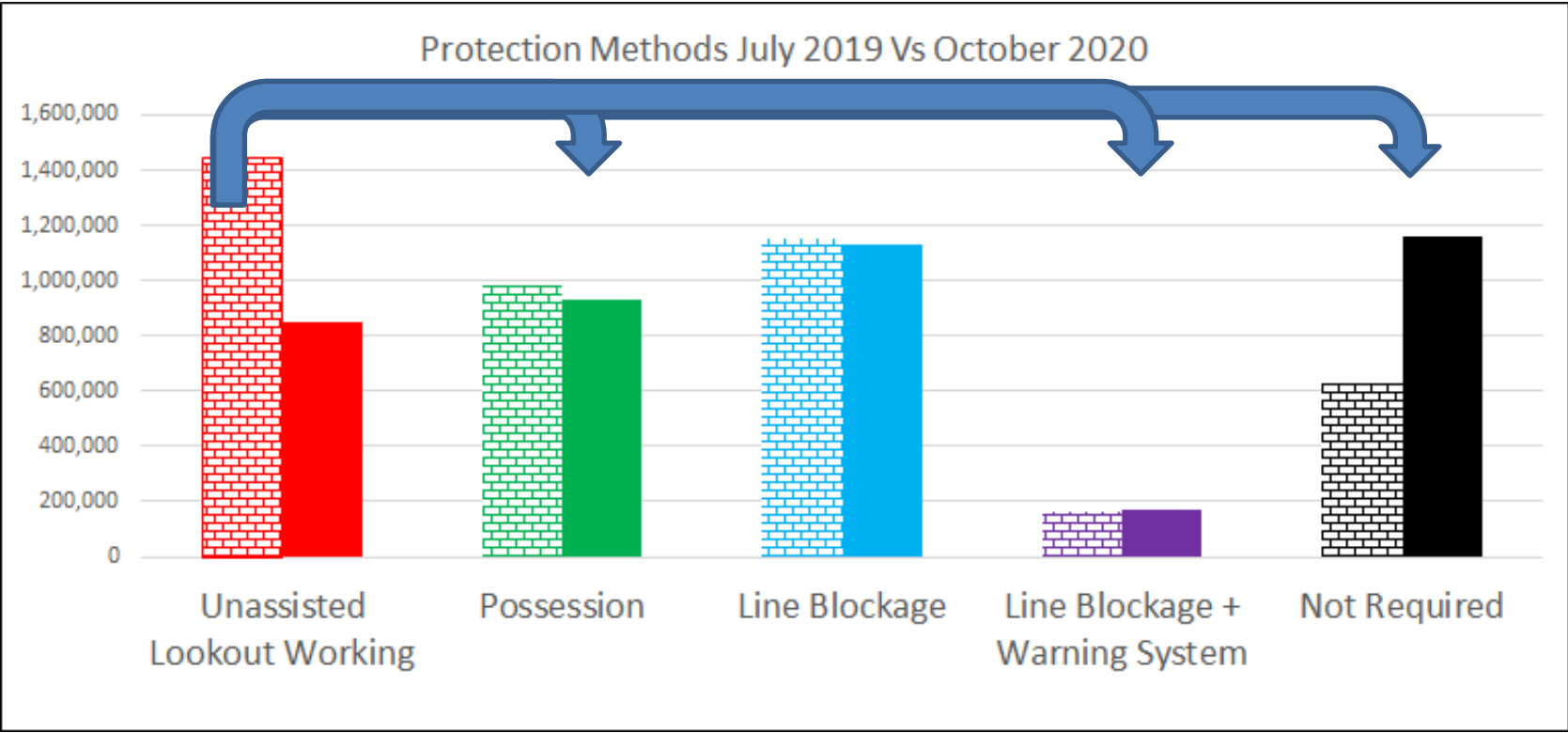


2nd Pass Review of workbank – 25% Complete

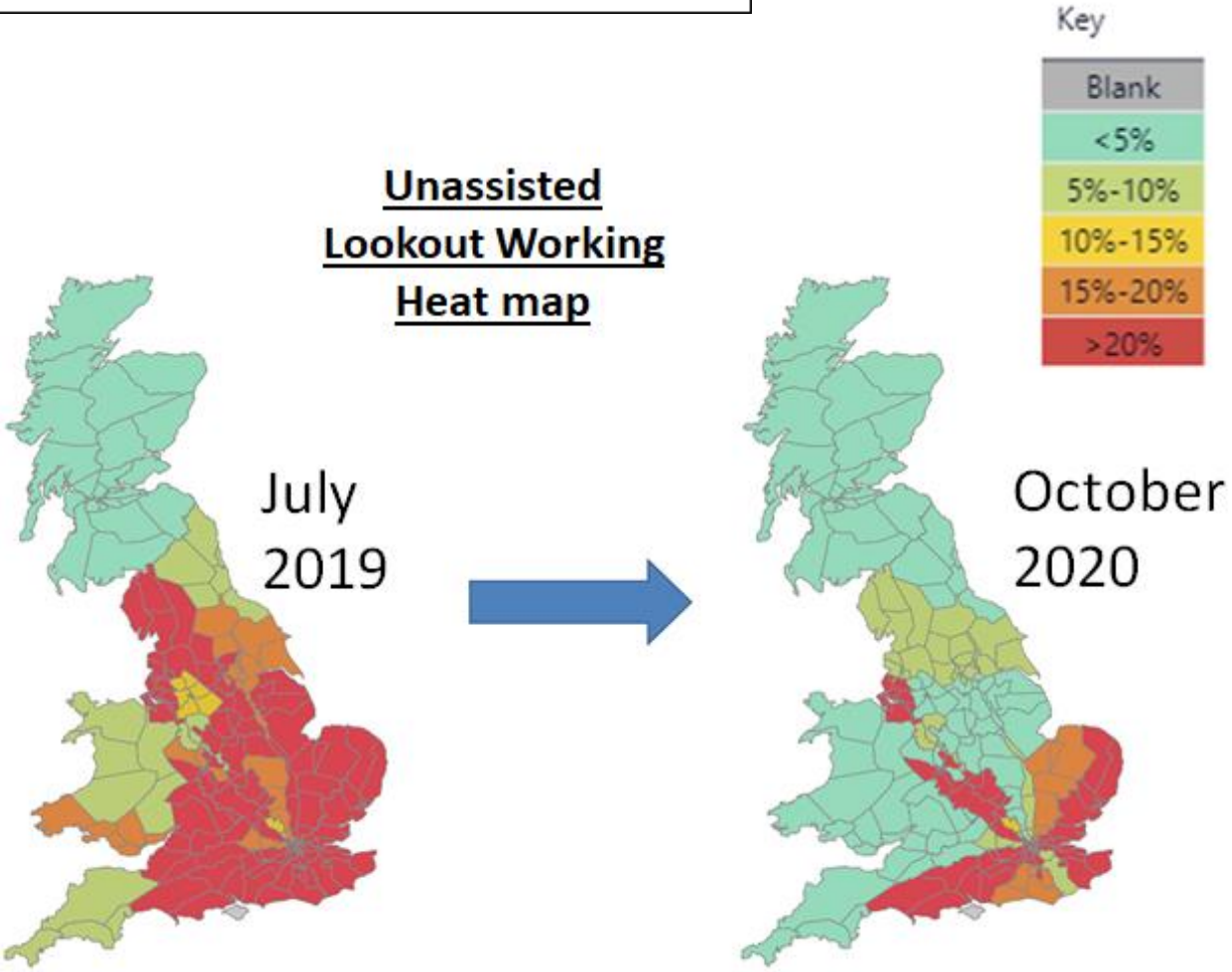
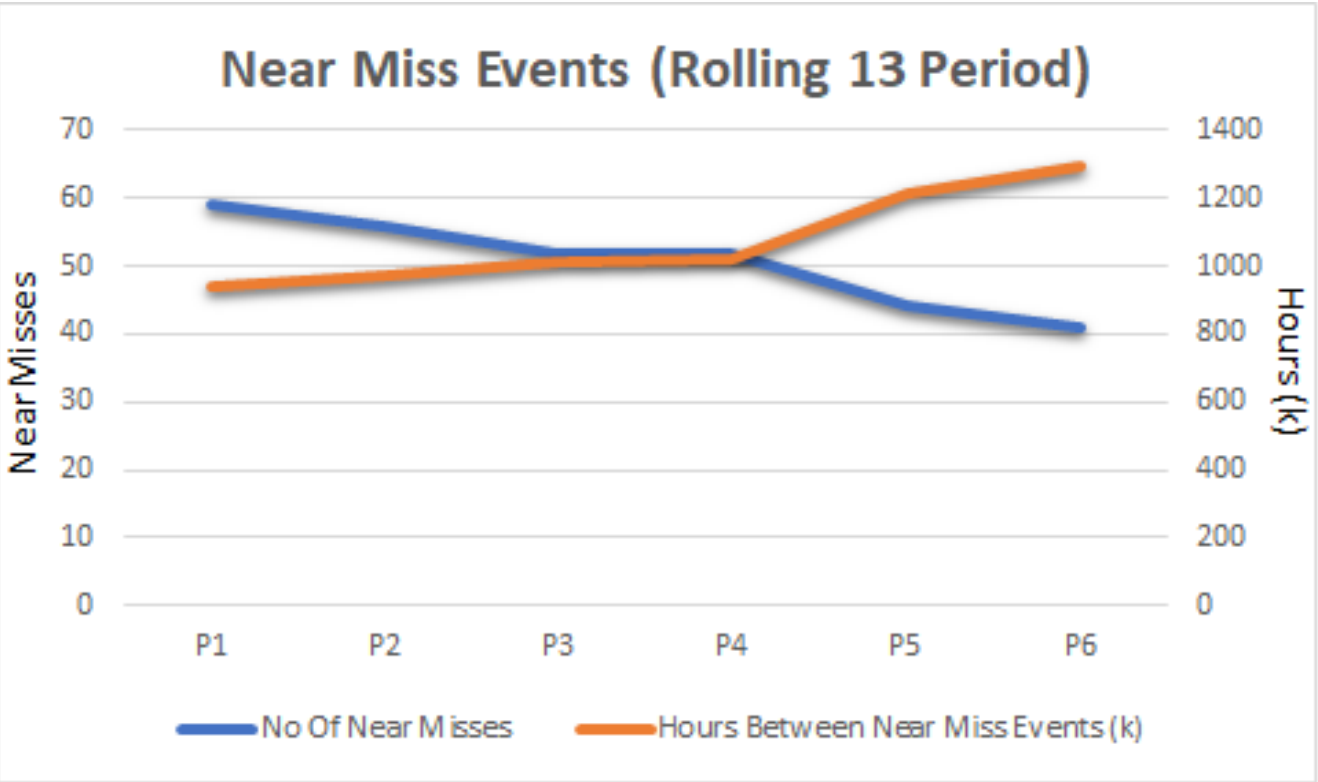


- **88%** of signalling locations are providing line block data compared to **0%** in January 2020.
- Additional protection technology deployed on line blocks has increased from **5% to 23%** since January 2020.

600,000 work orders moved from Unassisted lookout working into safer, more efficient access



- **31%** reduction in near miss events
- **400k** additional working hours between each event
- 53% of Near Misses involve lookouts



• Unassisted lookout working has reduced by **50%** since July 2019.



ROUTE PROGRAMME BOARD DASHBOARD



Select a Route		Leading							Lagging				
		Red Zone Unassisted Lookout Working (Rolling 3 Periods)		Line Blocks (in Period)		Plan / Schedule (in Period)		019	Operational Close Calls (Rolling 13 Periods)		Near Misses (Rolling 13 Periods)		Fatalities (Rolling 26 Periods)
		% Workbank Delivered Red Zone Unassisted	Number of hours (k)	% of Returns	% using Additional Protection	Schedule Adherence	% of Schedule Complete		Number of OCC's	Hours between OCC's (k)	Number of Near Misses	Hours between Near Misses (k)	Number of Fatalities
		↑ ↔ ↓	↑ ↔ ↓	↑ ↔ ↓	↑ ↔ ↓	<90%, 90%-100% >100%	↑ ↔ ↓	↑ ↔ ↓	↑ ↔ ↓	↑ ↔ ↓	↑ ↔ ↓	↑ ↔ ↓	↑ ↔ ↓
Anglia	Last Period	23.3%	12.3k	100.0%	11.5%	148.1%	16.1%	0.0%	2	1,349.0k	8	337.3k	0
	This Period	21.7%	11.3k	100.0%	17.4%	101.2%	17.5%		3	907.1k	8	340.1k	0
Central	Last Period	16.8%	2.2k	100.0%	44.3%	105.9%	31.5%	0.0%	3	1,162.6k	2	1,744.0k	0
	This Period	15.6%	2.6k	100.0%	49.4%	98.5%	32.5%		4	873.1k	3	1,164.1k	0
East Midlands	Last Period	4.1%	.8k	79.6%	15.5%	105.0%	41.7%	0.0%	20	284.8k	1	5,695.2k	0
	This Period	4.1%	.9k	83.3%	11.6%	100.9%	42.9%		19	300.3k	1	5,706.1k	0
ECML	Last Period	8.3%	1.2k	100.0%	6.7%	102.8%	38.1%	0.0%	24	162.5k	3	1,299.7k	0
	This Period	7.1%	2.2k	100.0%	4.5%	104.1%	39.7%		30	130.2k	3	1,301.9k	0
Kent	Last Period	27.7%	8.2k	100.0%	17.5%	105.5%	29.2%	0.0%	6	612.9k	3	1,225.8k	0
	This Period	26.9%	8.1k	100.0%	23.5%	104.8%	33.4%		5	737.5k	3	1,229.2k	0
North & East	Last Period	4.3%	1.7k	70.0%	20.7%	87.7%	38.0%	0.0%	10	478.1k	0	#DIV/0!	0
	This Period	3.8%	2.3k	70.0%	22.3%	89.2%	40.7%		10	477.8k	0	#DIV/0!	0
North West	Last Period	19.2%	10.7k	73.8%	15.5%	118.5%	35.4%	0.0%	26	211.2k	6	915.2k	0
	This Period	17.9%	10.0k	75.4%	15.3%	108.3%	36.0%		29	189.9k	6	917.9k	0
Scotland	Last Period	0.0%	.1k	83.3%	32.0%	97.3%	27.4%	0.0%	10	456.2k	3	1,520.8k	0
	This Period	0.0%	.0k	60.3%	34.5%	95.3%	30.1%		11	415.2k	2	2,283.7k	0
Sussex	Last Period	33.1%	5.2k	96.9%	21.3%	165.1%	41.5%	0.0%	6	379.1k	3	758.2k	1
	This Period	32.6%	6.3k	90.6%	18.5%	151.5%	44.5%		6	380.1k	3	760.1k	1
Wales	Last Period	8.7%	1.1k	96.5%	36.7%	108.5%	30.7%	0.0%	22	190.9k	0	#DIV/0!	2
	This Period	8.4%	1.9k	77.2%	36.9%	103.1%	34.1%		23	183.1k	0	#DIV/0!	2
WCMLS	Last Period	19.2%	5.6k	100.0%	52.8%	68.9%	17.8%	0.0%	15	244.9k	3	1,224.7k	1
	This Period	21.1%	6.7k	100.0%	53.6%	58.3%	21.1%		20	184.1k	3	1,227.4k	1
Wessex	Last Period	26.0%	8.7k	100.0%	7.2%	139.1%	21.0%	0.0%	14	205.3k	2	1,436.9k	0
	This Period	25.7%	10.1k	90.3%	7.9%	113.3%	22.3%		15	191.7k	1	2,876.2k	0
Western	Last Period	6.6%	1.4k	100.0%	31.7%	104.7%	29.8%	0.0%	8	739.4k	7	845.1k	0
	This Period	5.1%	1.1k	100.0%	26.6%	98.1%	29.1%		8	742.5k	7	848.6k	0



Compliance Confidence

Region	June - Confidence In Complying With The Notice	Near Miss Frequency (k hours between events)	% Unassisted Lookout	% Additional Protection In Line Blocks	Current Confidence In Complying With The Notice	Target Date for Elimination of Lookouts
Scotland	High	2283.7	0.0%	34.5%	High	Complete
NW&C	Medium	1056.8	18.1%	27.2%	Medium	31 July 2022
Eastern	Medium to High	1425.9	10.3%	12.7%	Medium to High	01 April 2022
Wales & Western	Medium to High	1450.2	6.4%	30.3%	Medium to High	01 December 2021
Southern	Low to Medium	1263.5	28.0%	18.7%	Medium	01 March 2022
National	Medium	1333.9	13.8%	23.2%	Medium	31 July 2022



Safety Task Force – First Year Progress

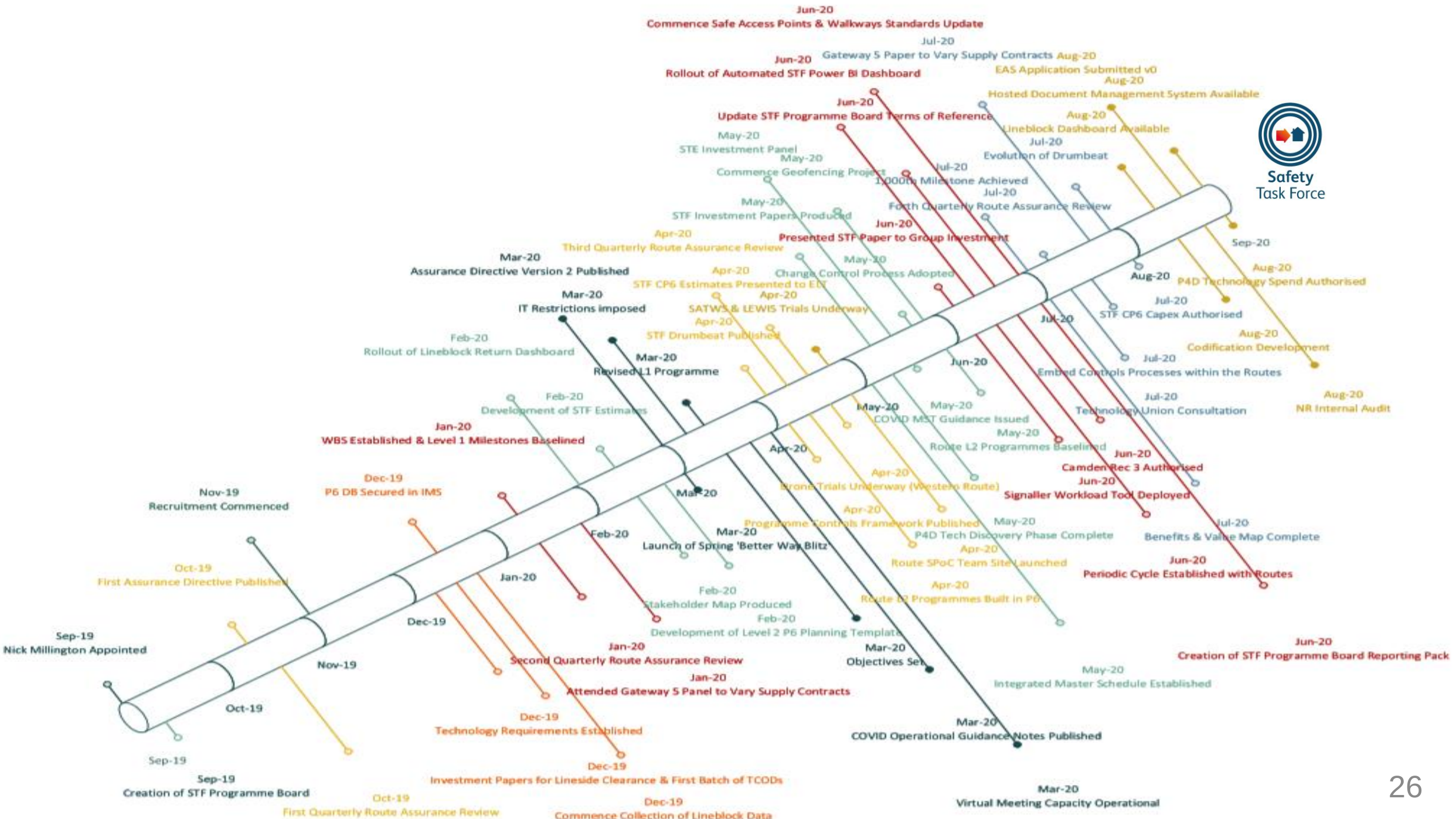


	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
Completed Milestones	No Prog	No Prog	No Prog	158	208	234	304	439	584	733	1007	1358	1530
Schedule Completed %	No Prog	No Prog	No Prog	3%	4%	4%	6%	8%	11%	14%	19%	26%	29%
Schedule Adherence %	No Prog	No Prog	No Prog	101%	102%	103%	104%	101%	101%	102%	102%	103%	104%
CAPEX Budget	No Funding	No Funding	No Funding	£9.6m	£9.6m	£9.6m	£9.6m	£3.2m	£3.2m	£3.2m	£253m	£253.6m	£269.6m
Locations providing Line Block Returns %	Not Recorded	Not Recorded	Not Recorded	Not Recorded	4.60%	11.90%	43.90%	55.80%	68.40%	71.60%	88.40%	87.20%	88.60%
Line Blocks with Additional Protection %	Not Recorded	Not Recorded	Not Recorded	Not Recorded	6.00%	12.60%	13.80%	19.20%	20.80%	23.50%	20.60%	20.80%	21.70%
Open Line Working %	25%	23%	20%	20%	18%	18%	16%	16%	16%	16%	15%	14%	12%
Hours Between NM (k)	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	938.2	970.8	1015.1	1024	1210	1331
Number of NM	68	61	59	58	58	60	58	58	55	53	52	44	40
TCOD Deployment	82	106	125	154	185	210	290	358	376	403	415	426	436

The Safety Task Force Turned 1 year old in September.

One Year on we have:

- Fully approved Assurance Directive
- Fully Populated STF Team
- £270m Budget (incl P4D)
- Baselined programmes at L1, 2 & 3
- Safety Task Force Reporting Suite
- Portfolio Management Framework
- Programme Controls Framework
- Full Route Engagement
- Supply Contracts for Technology





What is next?





Key Focus (Next 6 Months)

Engineering Access Statement
Additional Protection in Line
Blockages
Walkways in 'Ellipse' system
Work bank reviews/optimisation
Roster alignment
Manage signal workload risk
Frontline engagement
CP7 business plan



Rail Accident Report



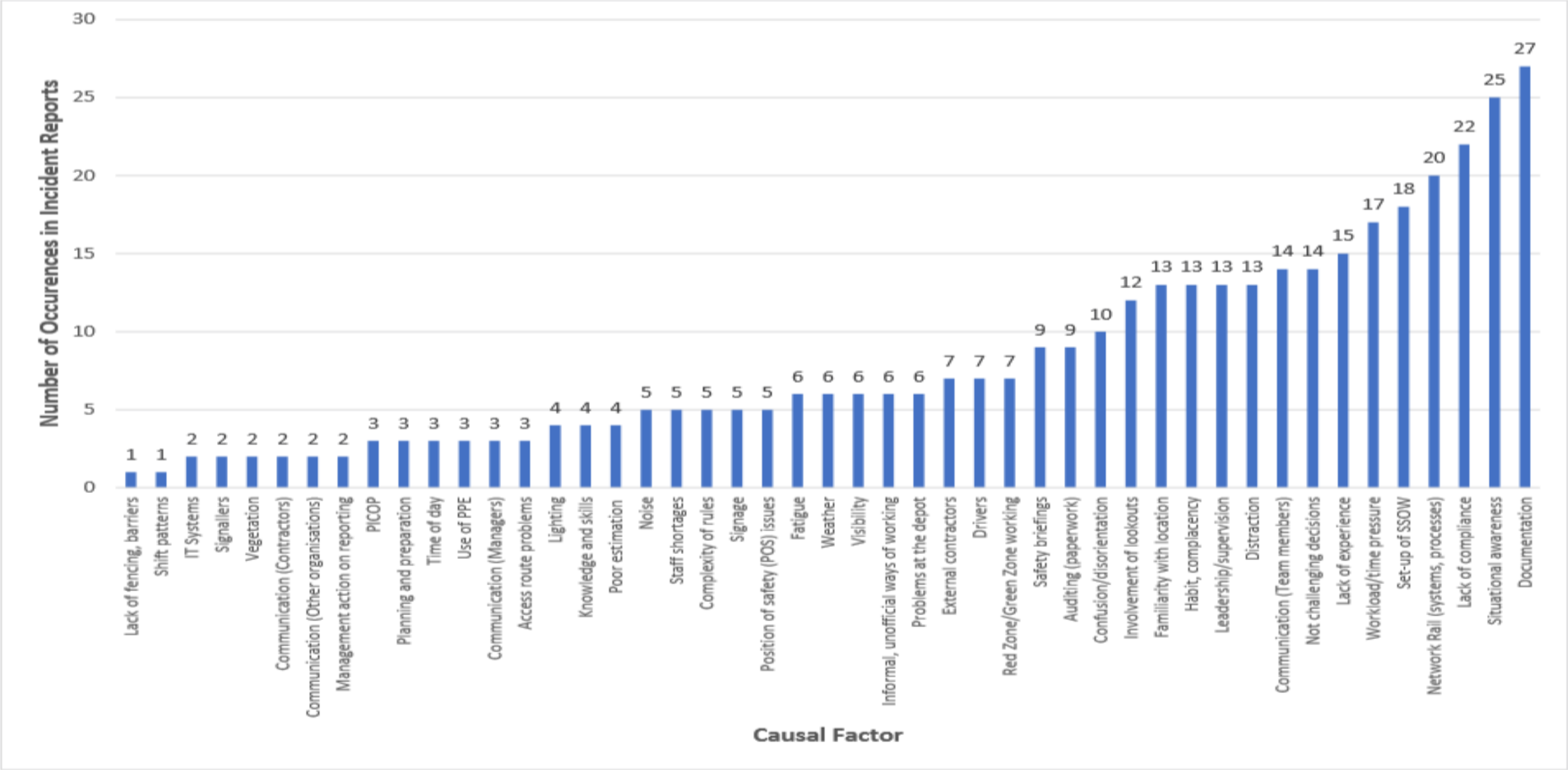
Track workers struck by a train at Margam,
Neath Port Talbot
3 July 2019

Report 11/2020
November 2020

Leaving a legacy.....



Non-technical skills list



NTS Category		NTS Skill
1	Situational awareness	Attention to detail
		Overall awareness
		Maintain concentration
		Retain information (during shift)
		Anticipation of risk
2	Conscientiousness	Systematic and thorough approach
		Checking
		Positive attitude towards rules and procedures
3	Communication	Listening (people not stimuli)
		Clarity
		Assertiveness
		Sharing information
4	Decision making and action	Effective decisions
		Timely decisions
		Diagnosing and solving problems
5	Co-operation and working with others	Considering others' needs
		Supporting others
		Treating others with respect
		Dealing with conflict / aggressive behaviour
6	Workload management	Multi-tasking and selective attention
		Prioritising
		Calm under pressure
7	Self-management	Motivation
		Confidence and initiative
		Maintain and develop skills and knowledge
		Prepared and organised



Questions?

