Primary Cause Incident Factors Guide

This guide gives an explanation behind each Primary Cause Incident Factor heading, and provides some examples of the types of causal factors that may result in a Close Call Event. It may be useful to have a copy of this to hand when creating a close call record.

1.1 Communications

This is concerned with how we relay information to each other in the context of safety critical information. Typically this includes people not communicating information at all or not reaching a clear understanding when they are communicating.

Sub-Categories

- Failure to apply communications protocols to reach a clear understanding
- Misinterpretation of communications
- Inappropriate volume of communications
- Inappropriate communication method
- Inaccurate or missing information communicated
- Inadequate handovers

1.2 Practices and Processes

This refers to the rules, standards, processes and methods of working which guide and structure how certain activities are undertaken on the railway. It includes the operational rules in the Rule Book and also technical standards which dictate how activities should be undertaken. It also includes the safe systems of work that are set up to protect people in safety critical and other railway environments. It is concerned with finding out primarily why the work practice or process followed has not been in accordance with the accepted or authorised way of working.

Sub-Categories

- Availability

Not available/in existence

- Applicability

Difficult to follow
Impractical/not appropriate
Not comprehensive
Inaccurate

- Planning work processes

Based on inaccurate information
Based on inappropriate job knowledge
Lack of geographical knowledge
Inappropriate resource allocation

- Delivery

Poor task assignment
Inadequate resources
Inadequate opportunity for rest breaks

1.3 Information

Information is used to support an activity. Railway examples include: the information track workers receive about the hazards on the track and their safe system of work, train running information, timetable simplifiers, late notices, special train notices, weekly/periodic operating notices, pre-job information, electrification/isolation diagrams and signage. It also includes information about changes to technical and operational standards.

Sub-Categories

- Information content

Inaccurate
Not available
Out of date
Not comprehensive
Not relevant
Contradictory

- Information presentation

Over complex
Inappropriately structured
Lacks clarity
Appropriateness of format

- In sufficient dissemination of information

Unaware of briefing responsibilities
No process for undertaking staff briefings
Time constraints

1.4 Workload

Workload is about understanding the demand created by particular activities.

If the workload is in excess of acceptable limits it will be stressful, fatiguing, de-motivating for the individual which will make their performance slower and less accurate. It will also affect an individual's ability to maintain awareness of what is going on around them (situational awareness).

Reducing workload is not always the solution as this too can affect performance. Reduced workload or workload involving simple, repetitive tasks over extended periods can increase boredom and increase difficulty for individual's to maintain vigilance.

Sub-Categories

- Task – the number and combinations of tasks they have to complete

- Context – how and where they have to complete them and the urgency or accuracy necessary to ensure safety and organisational performance targets are met

- Individual – their skill, experience and perception of their work
- Conflicting activities that require excessive demands on attention (i.e. trying to monitor two physically separate parts of a signalling panel)
- Time pressure
- Productivity pressure
- Emergency/non-routine circumstances
- Poor job design
- Inappropriate resource allocation
- Additional activities over and above the norm

1.5 Equipment

This refers to any equipment that is used to undertake or support an activity and can be a factor if it is not being used as intended, if it is faulty, if its design is not compatible with its use or if the layout is not in the order in which it is used. Different types of incident involve different types of equipment.

Sub-Categories

- Design

Equipment not compatible for its intended use
Important displays/information clearly visible and provide information at the right time
Inadequate alarm arrangements
No correction of known flaws
Arrangements for ensuring competence in use of
Positioning and layout

- Use/operation

Deliberate misuse
Inadequate arrangements for ensuring competence in use of equipment
Right equipment not available
Equipment unreliable

- Maintenance

Inadequate maintenance
Inappropriate maintenance specification
Faults incorrectly reported

- Storage of equipment and material

poor housekeeping
poor security arrangements
poor storage arrangements

1.6 Knowledge, skills and experience

Knowledge, skills and experience can be a factor in an incident if the individual(s) involved did not have the appropriate knowledge to perform safely or if they were not familiar with the circumstances in which they found themselves.

Sub-Categories

- Training

Relevant
Comprehensive (i.e. did the training cover both the knowledge and the skills need to perform that activity, where there sufficient opportunities for practice)
Accurate

- Assessment

Sufficiently frequent
Adequate (i.e. did it include assessment of both knowledge and application)
Appropriateness of support and follow up arrangements

- Experience

Relevant (did the operator's work experiences match the task being performed at the time of the incident)
Inexperience

1.7 Supervision and Management

Supervisors and managers can be an underlying reason for an accident or close call because of the decisions they make about resources, budgets, work allocation and planning. They can also have a more direct impact through the example they set and the monitoring and assessment processes they have responsibilities for which are aimed and detecting and managing errors or the potential for errors.

This factor covers a wide range of supervision and management activities from directly supervising worksites to the way in which people are managed. It includes how we manage our contractors too.

Sub-Categories

- Monitoring and correction

Failure to correct errors/inappropriate behaviour
Failure to undertake safety checks
Inadequate feedback systems
Inadequate escalation processes
Failure to correct known problems
Failure to initiate corrective action

- Resource Management

Inappropriate cost cutting
Inadequate budget
Inadequate resources (people and equipment)
Inappropriate resource allocation

- People Management

Not accessible to staff
Inappropriate performance management processes
Inadequate mentoring arrangements
Inappropriate behaviours and attitudes (of supervisor/managers)
Failure to provide job related/professional guidance/support

- Inadequate supervisory/management skills

Over-worked supervisor manager
Inadequately trainer supervisor/manager
Perceived lack of authority

1.8 Work Environment

The working environment contains environmental stressors such as lighting levels, noise, temperature and vibrations. These can lead to feelings of discomfort or act as distractions, impacting on an individual's performance.

Weather conditions
Noise
Lighting
Temperature
Vibrations
Space

1.9 Personal

This factor refers to a collection or influences arising from the individual themselves. They are concerned with fatigue, physical and mental well-being and attitudes.

Sub-Categories

- Work related fatigue

Poor shift and roster design
Excessive working hours
Inadequate rest breaks during work
Excessive travelling time to and from work

- Home-life related fatigue

- Physical well being

Influenced by drugs or alcohol
Ill health
Influenced by medication
Failure to comply with medical standards

- State of attention

Pre-occupation/distraction
Complacency
Mind set
Expectation
Confused
Stress

- Work-related attitudes

Low morale
Confidence
Propensity for risk taking
Over accommodating

1.10 Teamwork

This is concerned with how we work together and coordinate to achieve safe performance. There are certain factors that will influence the likelihood of team errors including the number of people in the team, team structure, team stability and team leadership

Inappropriate number of people in team
Lack of team's "shared" understanding
Failure to notice or respond to another's errors
Inappropriately influencing the actions or decisions others
Inadequate team cooperation
Inappropriate level of team trust (i.e. too much/too little)
Ineffective delegation of team duties and responsibilities
Appropriateness of communications between different levels/parts of the organisation