Incident Review:
Immediate & Basic Cause Resource

Purpose of Incident Review

Incident review is a structured way of going over what happened by tracing through the undesired event to the immediate causes that led to it and the basic/root causes, with the aim of identifying corrective actions to implement to prevent a recurrence of the event.

IMMEDIATE CAUSES

Purpose of Immediate Causes

Immediate causes are the direct actions or work environment conditions that led to an incident. This is typically the action of the involved person or behaviour that deviates from the accepted safe practice, safe operating procedure, rules, or expectations, and that directly increases the risk of an incident.

These are *what occurred (or didn't occur) just before an event, leading into the event incident*.

In the SCAT model, immediate causes are symptoms and not root causes. They help us understand what went wrong just before the incident, forming the basis for corrective actions and further analysis into the underlying root causes.

Immediate causes are categorized into two:

Substandard Conditions:

A substandard condition is any physical or environmental state that is unsafe, creating a situation in which an incident is more likely to occur if left uncorrected. These are failures in the work environment, and/or equipment that increase the likelihood of an incident occurring or directly contribute to the incident occurring. Examples are defective tools, inadequate guarding, inadequate lighting, slippery surfaces, etc.

The categories of substandard conditions include:

1. Inadequate Condition of Floor/Surface
2. Defective Tool/Equipment
3. Incorrect/Inadequate Tool/Equipment
4. Failure to Detect/Measure
5. Improper Measurement/Signal Conversion
6. Incorrect Material
7. Incorrect Composition of Material/Gas

8. Inadequate Guard/Barrier
9. Inadequate/Improper Personal Protective Equipment (PPE)
10. Congestion/Restricted Space for Action
11. Inadequate Warning System
12. Presence of Flammable/Explosive Atmosphere
13. Unauthorized Presence of Hazardous Materials
14. Poor Housekeeping/Order
15. Noise Level Over Threshold
16. Radiation Hazard Over Threshold
17. Insufficient/Excessive Illumination
18. Vibration Over Threshold
19. Exposure to High Temperature
20. Exposure to Low Temperature
21. Pressure Outside Limits
22. Inadequate Ventilation
23. Inadequate Information
24. Exposure to Adverse Weather Conditions

Substandard Act:

A substandard act is any human behaviour or action that deviates from accepted safe practices, procedures, or rules and directly increases the risk of an incident occurring. These are the choices people make intentionally or unintentionally that bypass safety measures. Examples are lack of training, failing to use PPE properly, complacency, etc.

The categories of substandard acts include:

1. Operating Equipment without Authority
2. Failure to Inform/Warn
3. Failure to Secure
4. Operating at Improper Speed

5. Making Critical HSEQ Devices Inoperative
6. Using Defective Tool/Equipment/Machinery/Device
7. Improper Operation of Tool/Equipment/Machinery/Device
8. Inadequate Servicing of Equipment/Machinery in Operation
9. Using Incorrect/Improper Material
10. Failing to Use Personal Protective Equipment (PPE)
11. Improper Loading
12. Improper Placement
13. Improper Lifting
14. Improper Position for Task
15. Improper/Inappropriate Behaviour
16. Under the Influence of Medicine/Alcohol/Drugs
17. Failure to Follow Procedure/Instruction
18. Failure to Identify Hazard
19. Substandard Act by External Party (Not Under Own Control)
20. Failure to Identify Customer/Stakeholder Requirements
21. Failure to Comply with Customers/Stakeholders' Requirements
22. Civil Disturbance (Riot, Unrest, Warfare)
23. Criminal Activities

BASIC CAUSES

Purpose of Basic Causes

Basic causes are underlying or systemic issues that give rise to immediate causes. Identifying these will help lead to corrective actions that will more accurately reduce the risk of the incident recurring.

Basic causes are categorized into job factors and personal factors:

Job Factors:

These are task-related causes and refer to deficiencies in the work environment, task design, and work systems. Example includes inadequate supervision/poor oversight or direction, inadequate work standards/missing or incomplete details in safe operating procedures, inadequate maintenance/ lack of inspections, or inadequate communication/failing to share important safety information, etc.

The categories of substandard conditions include:

1. Unclear Organizational Structure

This organizational factor applies when the structure, roles, or lines of authority are not clearly defined or communicated, leading to confusion or misalignment in how work is planned, assigned, or executed. It addresses circumstances in which individuals or teams were unsure of who was responsible, accountable, or authorized to perform specific tasks or make decisions.

This category should be selected as the basic cause when the incident occurred because unclear or conflicting organizational arrangements contributed to errors, omissions, delays, or unsafe actions. Such conditions may result in tasks not being performed, being duplicated, or being performed without proper oversight, coordination, or ownership, despite reasonable effort by those involved.

The options within this category identify specific structural deficiencies, including unclear or conflicting reporting relationships, roles, responsibilities, or task accountability that impair effective communication and coordination.

For example, a role with two directions of authority. The supervisor gave an instruction, while the out-of-scope manager gave another.

2. Inadequate Leadership

This organizational factor applies when leadership actions, decisions, or omissions fail to provide clear direction, effective oversight, or appropriate support for safe and compliant operations. It addresses situations in which leaders did not adequately establish, communicate, or reinforce expectations regarding safety, performance, and conduct.

This category should be selected as the basic cause when the incident occurred because deficiencies in leadership contributed to unsafe conditions, behaviours, or decisions. Such deficiencies may include inadequate strategy, planning, delegation, communication, or follow-through, as well as the tolerance or condoning of deviations from established standards, procedures, or acceptable behaviour.

The options within this category identify specific leadership shortcomings, including gaps in strategy, standards, policy implementation, supervision, information flow, monitoring, and accountability that undermine effective control and continuous improvement.

Some considerations include:

- Inadequate leadership development, delegation, standards, or communication/implementation of policy/procedures/practices (e.g., assuming an employee knows how to complete a task safely)
- Conflicting policy/procedure/practice
- Inadequate work/process planning/programming (e.g., no Safe Standard Operating Procedure (SSOP) was written to outline the steps of a task)
- Condone deviation from policy/procedure/practice, misuse of equipment/tool, or improper/inappropriate behaviour (e.g., no feedback when procedures aren’t followed)

3. Inadequate Supervision/Coaching

This organizational factor applies when supervision or coaching was insufficient to ensure individuals were properly prepared, supported, and guided to perform their tasks safely and effectively. It addresses circumstances in which supervisors or managers did not provide adequate instruction, oversight, feedback, or development necessary for competent job performance.

This category should be selected as the basic cause when the incident occurred because deficiencies in supervision or coaching contributed to errors, unsafe actions, or improper task execution. Such deficiencies may involve inadequate training or orientation, insufficient job knowledge, poor alignment between qualifications and task requirements, or ineffective performance monitoring and feedback.

The options within this category identify specific supervisory and coaching shortcomings, including gaps in instruction, documentation, competency alignment, performance evaluation, and ongoing feedback that impair safe and effective work practices.

Some considerations include:

- Inadequate instruction/orientation/training (e.g., task was assigned before training completed)
- Lack of supervisory/management job knowledge
- Inadequate match between qualifications & job/task
- Inadequate performance feedback

4. Inadequate Management of Change

This organizational factor applies when changes to systems, processes, equipment, design, or operations are not effectively identified, assessed, communicated, or controlled. It addresses circumstances in which modifications, whether technical, operational, or organizational, are introduced without a sufficient evaluation of the associated risks and impacts.

This category should be selected as the basic cause when the incident occurred because the change management process failed to adequately identify hazards, assess risks, or ensure readiness before, during, or after the change was implemented. Such failures may occur during design, construction, commissioning, handover, or initial operation, and may involve insufficient consideration of legal, technical, human, or stakeholder requirements.

The options within this category identify specific deficiencies in change planning, design review, risk assessment, implementation, monitoring, and verification that can lead to unintended consequences and increased exposure to risk.

Some considerations include:

- Inadequate/missing technical standard or specifications (e.g., not having manufacturer specifications available)

- Inadequate review of project risks
- Inadequate monitoring of construction/fabrication/ assembly & assessment of operational readiness
- Inadequate handover process/monitoring of initial operation

5. Inadequate Supply Chain Management

This organizational factor applies when deficiencies in planning, procurement, handling, or oversight of materials, equipment, tools, or services contributed to the incident. It covers failures across the supply chain lifecycle, from specification and purchasing through delivery, storage, use, and disposal, that negatively affect safety, quality, or operational performance.

This category should be selected as the basic cause when the incident occurred because materials, equipment, or services were unsuitable, incorrectly specified, improperly handled, inadequately communicated, or poorly managed due to weaknesses in supply chain processes. Such deficiencies may result in the use of incorrect, defective, degraded, or hazardous items, or in unsafe conditions arising from improper logistics or contractor selection.

The options in this category help identify the specific breakdown within the supply chain, such as insufficient technical specifications, poor vendor communication, inadequate inspection or storage, improper transportation or disposal practices, or ineffective contractor or supplier selection.

Some considerations include:

- Inadequate specifications/research/shipment
- Inadequate communication of information about hazards (e.g., providing chemicals with no PPE information)
- Inadequate receiving inspection/acceptance
- Improper handling/storage/identification/disposal of materials (e.g., disposing of sharps, bio waste, or used needles in the general waste/black bin)
- Inadequate shelf life/validation for reuse (e.g., not checking expiry dates on coffee, tea, or chemicals)
- Inadequate selection of contractor/supplier (e.g., procurement based on cost only, leading to the hire of an inexperienced contractor for the task)

6. Inadequate Maintenance/Inspection

This organizational factor applies when deficiencies in maintenance or inspection activities contributed to the incident. It includes failures to properly assess, plan, perform, communicate, or verify maintenance and inspection requirements for equipment, systems, or facilities, resulting in degraded condition, malfunction, or undetected hazards.

This category should be selected as the basic cause when the incident occurred because equipment or systems were not adequately maintained or inspected, allowing unsafe conditions to develop or persist. Such deficiencies may lead to mechanical failure, loss of integrity, reduced reliability, or missed warning signs that could have prevented the incident.

The options in this category help identify specific maintenance or inspection breakdowns, such as inadequate preventive maintenance, ineffective inspection methods or intervals, poor communication of corrective needs, improper repairs or part replacements, or limitations that prevented the inspection from being carried out.

Some considerations include:

- Inadequate inspection method/interval
- Inadequate assessment/execution of preventative maintenance/cleaning
- Inadequate scheduling & communication of cleaning needs

7. Excessive Wear & Tear

This equipment-related factor applies when deterioration due to use, aging, or loading exceeds acceptable limits and contributes to the incident. It covers conditions in which components, tools, or systems have been worn, degraded, or fatigued beyond their intended service capability, thereby reducing their ability to perform safely or as designed.

This category should be selected as the basic cause when the incident occurred because excessive wear or degradation was not adequately anticipated, monitored, or managed, resulting in failure, malfunction, or unsafe operation. Such conditions may arise from extended service life, improper loading, insufficient inspection, or use outside the intended purpose.

The options in this category help identify the specific contributors to excessive wear or tear, such as poor planning of use, incorrect decisions regarding service-life

extension, inadequate monitoring, excessive or improper loading, or misuse of equipment for tasks beyond its design limits.

Some considerations include:

- Inadequate inspection/monitoring
- Improper planning & rate of use
- Used for the wrong purpose/task/activity

8. Inadequate Tool/Equipment/Machinery/Device

This organizational and technical factor applies when tools, equipment, machinery, or devices used for a task are unsuitable, unavailable, poorly designed, or inadequately maintained, contributing to the incident. It includes deficiencies in selection, specification, availability, condition, or performance that adversely affected safe and effective task execution.

This category should be selected as the basic cause when the incident occurred because the tool, equipment, machinery, or device did not meet operational or safety requirements, leading to errors, unsafe conditions, or equipment failure. Such inadequacies may stem from insufficient risk assessment, poor ergonomic design, incorrect standards or specifications, or ineffective inspection, calibration, or maintenance practices.

The options in this category help identify specific equipment-related deficiencies, such as inadequate assessment of task needs and risks; human factors or ergonomic shortcomings; incorrect measurement or process control; unavailability; poor maintenance or calibration; or failure to remove and replace unsuitable items.

Some considerations include:

- Inadequate assessment of needs/risks/human factors/ergonomics (e.g., not considering ergonomic factors, reach, and location of escape route in case of an emergency)
- Inadequate availability of tools/equipment/machinery/devices
- Inadequate inspection/repair/maintenance
- Inadequate removal/replacement of unsuitable items

9. Inadequate Product/Service Design

This organizational and technical factor applies when tools, equipment, machinery, or devices used for a task are unsuitable, unavailable, poorly designed, or

inadequately maintained, contributing to the incident. It includes deficiencies in selection, specification, availability, condition, or performance that adversely affected safe and effective task execution.

This category should be selected as the basic cause when the incident occurred because the tool, equipment, machinery, or device did not meet operational or safety requirements, leading to errors, unsafe conditions, or equipment failure. Such inadequacies may stem from insufficient risk assessment, poor ergonomic design, incorrect standards or specifications, or ineffective inspection, calibration, or maintenance practices.

The options in this category help identify specific equipment-related deficiencies, such as inadequate assessment of task needs and risks; human factors or ergonomic shortcomings; incorrect measurement or process control; lack of availability; poor maintenance or calibration; or failure to remove and replace unsuitable items.

Some considerations include:

- Inadequate assessment of needs/risks/
- Inadequate product/service standard/specification/ design
- Inadequate product/service planning/design/quality verification

10. Inadequate Work/Production Standards

This organizational factor applies when deficiencies in the development, communication, implementation, or enforcement of standards contributed to the incident. It includes failures to correctly identify regulatory or operational requirements, integrate risk considerations, coordinate with process design, or ensure that standards are clear, accessible, understood, and followed.

This category should be selected as the basic cause when the incident occurred because standards were missing, unclear, conflicting, poorly developed, inadequately communicated, or insufficiently reinforced, leading to inconsistent or unsafe practices. Even when standards exist, weaknesses in training, publication, language, or monitoring can result in non-compliance and increased risk.

The options in this category help identify specific breakdowns in the standards lifecycle, such as inadequate requirement identification, poor risk evaluation, insufficient employee involvement, ineffective communication or training, language issues, or a lack of monitoring and reinforcement of compliance.

Some considerations include:

- Inadequate identification of requirements/risk
- Conflicting standards/improper prioritization of standards
- Inadequate coordination/distribution/translation of the standard
- Inadequate training of standard/SSOP
- Inadequate support of standard with signs/colour codes/job aids/monitoring

11. Inadequate Communication/Information

This organizational factor applies when failures in the creation, clarity, transfer, or management of information contributed to the incident. It includes deficiencies in how information is handled, communicated, stored, or shared within and between organizational units, as well as with external parties such as clients, authorities, suppliers, contractors, or other stakeholders.

This category should be selected as the basic cause when the incident occurred because critical information was missing, unclear, misunderstood, delayed, or not communicated to the appropriate parties in a timely and effective manner. Such communication breakdowns can lead to incorrect assumptions, poor coordination, unsafe decisions, or failure to recognize or control hazards.

The options in this category help identify the specific communication or information-management weakness, such as unclear messaging, ineffective communication structures or methods, poor information transfer across interfaces, or inadequate information systems or databases.

Some considerations include:

- Unclear information
- Inadequate transfer of information between teams/stakeholders/authorities/contractors
- Inadequate communication structure
- Inadequate information storage/databases/ information systems
- Inadequate communication method/technique used

Personal Factors:

This personal factor applies when an individual's physical or mental abilities were not sufficient to safely perform the task at the time of the incident. This may involve limitations in strength, body size, movement, sensory function, breathing capacity, or mental readiness that made the job harder or increased the risk of harm.

This category should be selected as the basic cause when the incident occurred because the individual was unable to meet the physical or psychological demands of the task, despite making a reasonable effort.

The options in this category specify the nature of the limitation, including whether it was temporary or permanent and whether it was related to sensory or physical conditions in the work environment.

1. Inadequate Physical/Physiological Capability for the Task

This personal factor applies when an individual's physical or physiological capabilities are insufficient to safely perform the task, and this limitation contributed to the incident. It includes situations in which the task demands exceed the worker's physical attributes, functional capacity, or sensory abilities.

This category should be selected as the basic cause when the incident occurred because the individual did not have the necessary strength, reach, mobility, endurance, or sensory function required for the task, or when a temporary or permanent physical limitation was present and not adequately considered or controlled. Such mismatches between task requirements and physical capability can result in loss of balance, overexertion, reduced situational awareness, delayed reactions, or inability to detect hazards.

The options in this category help identify the specific physical or physiological limitation involved, including body size or strength mismatches, restricted movement or posture tolerance, sensory impairments, respiratory limitations, or medical conditions that affect task performance.

Some considerations include:

- Inappropriate height/weight/strength/reach, etc. (e.g., additional risk for a shorter person doing a specific task)
- Restricted range of body movement
- Limited ability/inability to sustain body positions (e.g., kneeling in a garden bed)
- Substance sensitivity/allergy

- Sensitivities to sensory extremes (temp/sound/etc.)
- Vision/Hearing/Other sensory deficiency (e.g., not wearing prescription safety glasses)
- Respiratory Incapacity (e.g., inability to smell)
- Temporary or permanent physical disability (e.g., injury, not following WCB return to work guidelines)

2. Inadequate Mental/Psychological Capability for the Task

This personal factor applies when an individual's mental or psychological capability was inadequate to safely perform the task, and this limitation contributed to the incident. It includes conditions or characteristics that affect cognition, emotional stability, perception, coordination, learning, memory, or reaction time.

This category should be selected as the basic cause when the incident occurred because the individual was unable to properly understand, process, remember, or respond to task demands or hazards, or when psychological or cognitive limitations impaired decision-making, coordination, or timely action. These limitations can lead to errors in judgment, incorrect task execution, delayed responses, loss of control, or failure to recognize or manage risks.

The options in this category help identify the specific mental or psychological factor involved, such as emotional distress, fear responses, cognitive limitations, learning or comprehension difficulties, impaired coordination, slow reaction time, or memory lapses.

Some considerations include:

- Fears & phobias
- Emotional disturbance (e.g., death of a family member, divorce, etc.)
- Inability to comprehend (e.g., language barrier)
- Poor coordination or slow reaction time
- Memory failure/lapse (e.g., forgot a step in SSOP)

3. Physical or Physiological Stress

This personal factor applies when physical or physiological stress affects an individual's ability to safely perform the task, and this contributed to the incident. It includes both work-related and personal factors that strain the body or physiological systems, reducing alertness, endurance, coordination, or overall functional capacity.

This category should be selected as the basic cause when the incident occurred because the individual was impaired by stressors such as fatigue, illness, environmental exposure, or physiological imbalance, which reduced their ability to maintain safe performance. These stressors can lead to decreased concentration, slower reaction times, impaired judgment, reduced strength or coordination, and increased susceptibility to error.

The options in this category help identify the specific source of physical or physiological stress, including fatigue, environmental or atmospheric conditions, health-related stressors, movement restrictions, or self-imposed stressors.

Some considerations include:

- Injury or illness
- Fatigue due to task load/duration, lack of rest, or sensory overload
- Exposure to a health hazard or extreme temperature
- Constrained movement (e.g., awkward body posture)
- Blood sugar insufficiency
- Alcohol/drugs/other self-imposed stress

4. Mental or Psychological Stress

This personal factor applies when mental or psychological stress impaired an individual's ability to safely perform the task, and this stress contributed to the incident. It includes conditions that overload cognitive, emotional, or perceptual capacity, affecting attention, judgment, decision-making, and situational awareness.

This category should be selected as the basic cause when the incident occurred because the individual was mentally overloaded, distracted, emotionally strained, or cognitively fatigued, resulting in reduced focus, impaired judgment, delayed responses, or failure to recognize or respond appropriately to hazards. Mental stressors may arise from task complexity, time pressure, conflicting or unclear demands, monotony, or personal concerns.

The options in this category help identify the specific source of mental or psychological stress involved, such as excessive cognitive demands, emotional strain, confusing or conflicting instructions, task monotony, or preoccupation with external problems.

Some considerations include:

- Emotional overload (e.g., working with an upset student)
- Fatigue due to mental task load or speed

- Extreme judgment/decision or concentration/perception demands
- Routine/monotony/boredom/overly routine tasks
- Confusing or conflicting directions/demands
- Preoccupation with problems/distraction by concern
- Frustration (e.g., with significant process changes)

5. Lack of Knowledge of the Task

This personal factor applies when an individual lacks the understanding or awareness to perform the task safely, and that lack of knowledge contributed to the incident. It relates to what the person knew or understood about the task, the hazards, the procedures, or the expected controls.

This category should be selected as the basic cause when the incident occurred because the individual did not know, misunderstood, or was unaware of critical information, such as task requirements, hazards, risks, or safe work procedures. The deficiency may result from inadequate training, orientation, instruction, or information transfer, even if the individual was physically capable of performing the task.

The options in this category help identify specific gaps in information, understanding, instruction, or risk awareness that prevented the individual from recognizing hazards or performing the task safely.

Some considerations include:

- Inadequate experience, orientation, or training related to the task or hazards
- Misunderstood or incomplete instructions or information
- Lack of situational awareness, risk perception, or risk awareness
- Inadequate validation of understanding of instructions, procedures, or permits

6. Lack of Skill for the Task

This personal factor applies when an individual has the necessary knowledge of the task but lacks the practical ability or proficiency to safely perform it, and this lack of skill contributed to the incident. It relates to how well the person can apply their knowledge in practice.

This category should be selected as the basic cause when the incident occurred because the individual was unable to execute the task correctly, consistently, or safely, despite understanding what needed to be done. The deficiency typically results from insufficient hands-on practice, coaching, repetition, or performance-based training.

The options in this category help identify specific gaps in hands-on experience, practice, or skill development that affect task performance.

Some considerations include:

- Inadequate experience or task exposure to develop proficiency
- Inadequate hands-on practice
- Inadequate coaching, mentoring, or supervision during task performance

7. Improper Motivation for the Task

This personal factor applies when an individual's motivation, incentives, or perceived consequences lead them to act in ways that increase the risk of an incident. It addresses cases in which behaviour was driven by inappropriate rewards, pressures, or deterrents rather than by safe and proper performance expectations.

This category should be selected as the basic cause when the incident occurred because the individual was motivated, intentionally or unintentionally, to take unsafe actions, disregard procedures, or prioritize competing objectives (such as speed, comfort, or approval) over safety. These motivations may arise from organizational practices, leadership behaviour, peer influence, or personal emotional responses, shaping how individuals choose to perform tasks.

The options within this category identify specific motivational factors, including improper incentives, inadequate reinforcement or discipline, social or leadership pressures, frustration, aggression, or intentional or unintentional misuse or abuse.

Some considerations include:

- Improper performance/behaviour is tolerated/rewarded (e.g., rewarding fast work leading to shortcuts)
- Proper performance/behaviour is discouraged/punished
- Lack of incentive
- Excessive frustration
- Improper attempt to save time/effort/discomfort (e.g., shortcuts)
- Improper leadership example (e.g., leader not following SSOP)

8. Abuse or Misuse

This personal factor applies when equipment, tools, materials, or systems were used in a manner other than their intended or designed purpose, and this use contributed to the incident. It focuses on how the item was used, rather than assigning blame or intent to the individual.

This category should be selected as the basic cause when the incident occurred because a decision was made to use equipment in a way it was not designed, rated, or approved for, resulting in increased risk, reduced effectiveness of controls, or unexpected failure. Such use may occur due to convenience, perceived efficiency, lack of appropriate equipment, or misunderstanding of limitations.

The options in this category help identify situations in which the improper or unintended use of tools or equipment introduced hazards that would not have existed if the item had been used as designed.

Some considerations include:

- Intentional abuse of equipment (e.g., using a chair instead of a step stool, using a knife as a screwdriver, removing/bypassing tool guards to make a task “faster.”)
- Unintentional misuse of equipment
- Using tools beyond their design limits (e.g., overloading shelves, using pliers as a hammer)
- Using equipment or vehicles for purposes other than intended (e.g., riding on forks, using a forklift to push objects, using ladders horizontally as work platforms or walkways
- Using equipment without the required attachments or accessories installed