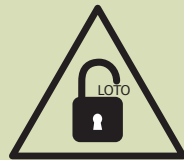


Root Cause Analysis Questions

This crash investigation model provides a guide for uncovering all potential causes of a crash, and reduces the likelihood of looking at facts in isolation. When this model is used, possible causes should be investigated in each of the 5 Crash Cause Categories.

5 Road Crash Cause Categories

The underlying causes behind a crash can be categorised in 5 areas:



1 Task

Task explores the work procedure used at the time of the crash. ▶



2 Material

Material seeks to identify causes resulting from the equipment and/ or materials used. ▶



3 Work Environment

Work environment relates to factors in the physical working environment, particularly sudden changes to that environment. The situation at the time of the crash is key, not what the "usual" conditions were. ▶



4 Personnel

Personnel explores the physical and mental condition of the individuals directly involved in the crash and the psychosocial environment in which they were working. Some of these factors will remain constant while others might vary from day to day. ▶



5 Management

Management explores organisational factors, such as the role of management and the presence of management systems. ▶

Cause analysis questions

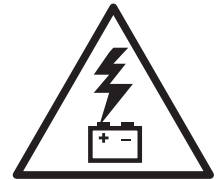
1 ► Task

- Was a safe work procedure used?
- Had conditions changed to make the normal procedure unsafe?
- Were the appropriate tools and materials available?
- Were they used?
- Were safety devices working properly?



2 ► Material

- Was there an equipment failure?
- What caused it to fail?
- Was the machinery poorly designed?
- Were hazardous products involved?
- Were they clearly identified?
- Was a less hazardous alternative product possible and available?
- Was the machinery or material substandard in some way?
- Should personal protective equipment (PPE) have been used?
- Was PPE used?
- Were users of PPE properly educated and trained?



3 ► Work Environment

- What were the weather conditions?
- Was it too hot or too cold?
- Was noise a problem?
- Was there adequate vision?
- Was there adequate light?



4 ► Personnel

- Did the worker follow safe operating procedures?
- Were workers experienced in the work being done?
- Were they adequately educated and trained?
- Can they physically do the work?
- What was the status of their health?
- Were they tired?
- Was fatigue or shift work an issue?
- Were they under work or personal stress?
- Was there pressure to complete tasks under a deadline, or to by-pass safety procedures?
- Were there opportunities for the workers to stop the unsafe situation at any given point?



5 ► Management

Management holds legal responsibility for the safety of the workplace.

- Were written procedures and orientation available?
- Were the safe work procedures being enforced?
- Was there adequate supervision?
- Were workers educated and trained to do the work?
- Were hazards and risks previously identified and assessed?
- Had procedures been developed to eliminate the hazards or control the risks?
- Were regular safety inspections carried out?
- Had the condition or concern been reported beforehand?
- Was action taken?



Why or why not

Each time an answer reveals an unsafe condition, the investigator must ask why this situation was allowed to exist. Likewise, a key follow-up question is: "If not, why not?"