Determining Contributing Factors and Root Causes

Root cause analysis is an important part of the investigation process when there is an incident or hazard in your workplace. Use the analysis process to identify contributing factors **and** root causes to tell you what led to the incident or hazard.

Contributing Factor:	Root Cause:
Conditions or actions that, if removed, would likely prevent the incident or hazard from happening, or reduce the severity of its consequences.	The underlying weaknesses ultimately leading to an incident or the existence of a hazard.
EXAMPLE: AN EMPLOYEE MISTAKENLY SKIPPED A STEP IN THE SAFE WORK PROCEDURE, WHICH LED TO AN INCIDENT.	**EXAMPLE:** THE EMPLOYEE HAS NOT RECEIVED FORMAL TRAINING ON THE PROCEDURE BECAUSE THE PROCEDURE WASN'T ADDED TO THE TRAINING CURRICULUM.

This one pager walks you through the steps to perform a root cause analysis. Root cause analysis results can be beneficial to your safety management system, and in preventing the next incident or hazard from occurring in your workplace. Recognizing individual root causes and contributing factors and sharing them with your workforce helps avoid the same events in the future. Use your findings to identify corrective actions directly addressing the causes and factors for accident prevention purposes.

STEP 1: COLLECT INFORMATION

Start your analysis by gathering information related to the incident or hazard.

Interview people who identified the hazard, or who were involved in or witnessed the incident. Don't wait too long to hold interviews – the longer you wait, the more likely your employees are to forget key information. Ask them who, what, when, where, why, and how.

Conduct a visual assessment at the scene of the incident or hazard, if possible. This gives you a better idea about what happened and how it happened. Take pictures for later reference.

Image retrieved from Bing Images.

Review documents related to the work performed when the incident or hazard occurred. Examples of documents to review include training records, workplace procedures and policies, and permits. Gather and review incident or hazard related information too, such as: hazard reports, maintenance records, and incident reports. You may want to look at past inspection findings to see if there was anything previously identified that led to the incident or hazard too.

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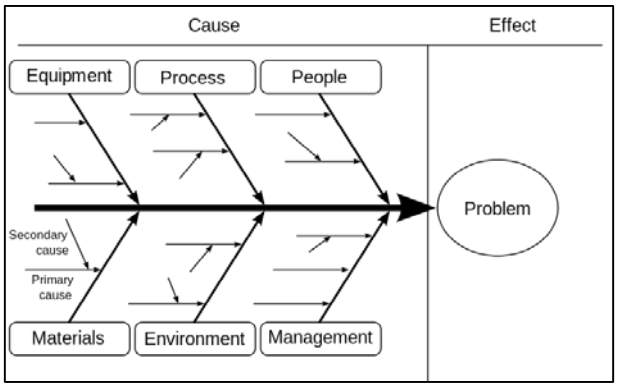
STEP 2: ANALYZE THE INFORMATION FOR CONTRIBUTING FACTORS

Start reviewing the gathered information to determine why the incident or hazard occurred.

Some examples of common root cause analysis methods you can use include:

- Five Whys Analysis
- Fishbone Diagram
- Fault Tree Analysis
- Failure Mode and Effect Analysis
- Flowchart



Fishbone diagram image retrieved from Bing Images.

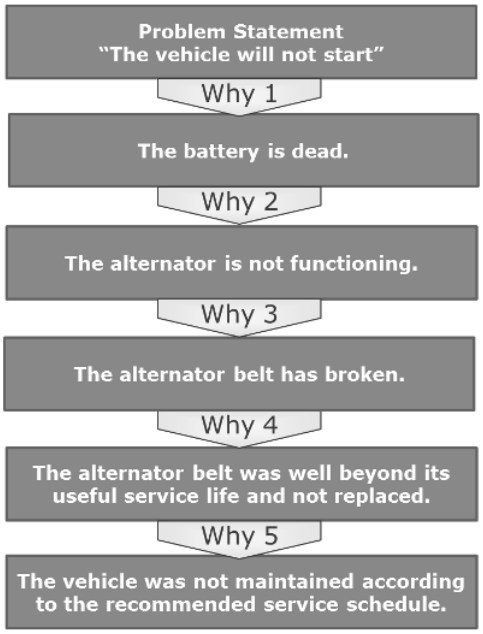
Look for anything contributing to the hazard or incident. Contributing factors can include the equipment, processes, people, materials, environment, or management. List as many contributing factors you can think of – it is beneficial to brainstorm as a group to make your list as comprehensive as possible.

STEP 3: IDENTIFY ROOT CAUSES

Now, use your contributing factors to get to the "why" behind the incident or hazard. Analyze your identified contributing factors thoroughly, thinking about what caused each contributing factor to exist.

For example, say one contributing factor is an employee did not follow procedure. You need to find out "why" the employee did not follow the procedure. There could be several reasons—perhaps the employee did not receive training, had management pressure to rush the task, or a supervisor told employee not to follow the procedure.

In any case, drive down and continue to ask why until "why" can't be answered anymore. This technique leads you to the root cause for your incident or hazard. Keep in mind, an incident or hazard may have more than one root cause!



Five Whys graphic retrieved from Google Images.

STEP 4: RECOMMEND SOLUTIONS

Finally, you need to recommend solutions. The solutions you choose to employ must address the contributing factors and root causes identified – this is how you prevent the next incident or hazard.

Think about what you can do to directly address the root causes. Generally, if you target the root causes, the contributing factors eliminate themselves. For example, suppose you had an employee slip on a wet floor and hit their head. Would you constantly mop up the wet floor, or fix the leaking pipe causing the wet floor? If you fix the pipe, you will not have a wet floor anymore, most likely. Make sure your solutions are feasible for your organization and situation.

For additional information on the SMCX's services, please visit the SMCX-hosted website at: https://www.smscx.org/.

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