

Asset Management Improvement Best Practice Series

PROBLEM SOLVING WITH ROOT CAUSE ANALYSIS

What is it all about?

Identifying problem areas compromising business performance, and either eliminating these business risks, or if unavoidable, managing these risks through the application of cost effective solutions, is a requirement for continuous improvement. Problem Solving is a dedicated process whereby weaknesses and threats are addressed in a systematic manner - not always waiting for the eventual failure to occur.

Problems, failures and deviations manifest in various forms and failure progression happens in different ways, requiring an effective arsenal of problem solving tools. Further, through the understanding of failure characteristics, it also enables the safe and cost effective management of these business risks.

Who should attend?

This course is structured for teams and individuals responsible for decision making and corrective action identification in support of improving performance of assets.

These roles would typically include management (both production and engineering), team leaders, supervisors and risk and quality practitioners.



Course formats

- Public Training - scheduled at all major cities across Southern Africa
- On-site Training - anyplace, anywhere

COURSE OUTLINE

Modules covered in this 2 day intervention:

Introduction to problem solving

Understanding the impact of performance deviations and failures on business performance; How to identify these deviations as soon as possible; How to assess the consequences of these failures; Turning problems into opportunities through understanding failure behaviour and the identification of root causes

Managing the consequences of business risks

Identifying Problems, and through Root Cause Analysis, identifying cost effective and safe solutions to manage the consequences of these business risks.

Conducting Failure Analyses through the application of a formal and systematic process, addressing the following critical phases:

1. Identification of deviations and potential risks
2. Defining the problem
3. Analysing the problem - identifying the Root Cause and establish the behaviour of the failure to allow effective solution selections such as CBM, UBM, RTF and DIM depending on hidden/evident, random failures and PF intervals
4. Identification and selection of safe, environmental friendly and cost-effective solutions
5. Implementing solutions
6. Evaluating the success of implemented solutions

Tools and methodologies trained in support of root cause

identification and corrective action identification

- The 5WHY Analysis
- Brainstorming
- Mind-Mapping and variations (Fishbone diagrams, 6M's, Cause and Effect Diagrams, Failure Tree Analysis)
- The Missed Opportunity Matrix
- Event and Control Barrier Analysis
- FFMECA and variations (FMEA, FMECA)
- OMM, RCM/MSG3
- Qualitative (Weighted Ranking), and Quantitative evaluation tools (LCC, NPV, Payback, ROI)

Sustainability

Requirements to enable delegates to establish routine practices to ensure that problem solving is supported on a continuous basis

The course will enable the delegate to effectively select and apply the most applicable problem solving tools such as 5Why, mind mapping, 6M's, OMM, RCM and various others.

Many real life examples and practical work sessions are executed to illustrate concepts and to establish competence in using these tools and methodologies.

The incorporation of problem solving into normal and routine operations is addressed, defining the required infrastructure and responsibilities. The establishment and the continuous optimisation of the maintenance program, which in turn manages the consequences of equipment failures, is addressed in detail, based on risk based maintenance methodologies.

What are the outcomes?

PRAGMA's root cause failure analysis training will enable delegates not only to execute effective problem solving, but also to establish effective problem solving processes within their own businesses.

The importance of effective information management in support of root cause identification and failure behaviour establishment during failure analysis is communicated.

Still, the most important aspect that remains is the involvement of all stakeholders in the problem solving process, improving asset productivity.

Problem solving toolkits are provided to enable delegates to apply these methodologies when returning to their own business environments.

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