

# Asset Management Education & Training

<b>Course ref</b>	AM20
<b>Course title</b>	Root Cause Analysis (RCA)
<b>Duration</b>	2 days
<b>Class Size</b>	16
<b>Overview</b>	Root Cause Analysis is largely a reactive technique to stop the recurrence of problems. This course is aimed particularly at asset failures. Remedies for root causes could include planned maintenance remedies, as well as improvements in quality control, materials of construction, human error by improving methods and procedures, as well as counter-measures for environmental factors etc.
<b>Objective</b>	To enable staff to understand and implement investigation techniques to identify the root causes of asset failures in order to find remedies to stop recurrence.
<b>Content</b>	<p><b>Introduction to Root Cause Analysis and Problem Solving</b></p> <ul style="list-style-type: none"><li>• An introduction to the root causes of asset failures</li><li>• Setting RCA objectives and goals</li><li>• The differentiation between Planned Maintenance and RCA remedies</li><li>• Key Performance Indicators to motivate and measure RCA effectiveness</li></ul> <p><b>Team Building and Motivation</b></p> <ul style="list-style-type: none"><li>• The traditional theory of H.W.Heinrich into the basic causes of asset failures</li><li>• Improving <i>attitudes, knowledge and ability</i> to improve teamwork</li></ul> <p><b>Management Factors</b></p> <ul style="list-style-type: none"><li>• The economics of management (the Pareto principle)</li><li>• Managing internal politics and communication</li><li>• Leadership and management roles in Root Cause Analysis</li></ul> <p><b>Root Cause Analysis, Problem Solving and Decision Making</b></p> <ul style="list-style-type: none"><li>• Introduction: facts, causes and remedies to stop failure recurrence</li><li>• Subjectivity and objectivity</li><li>• Notes on organising effective investigations</li><li>• Symptoms, causes and root causes</li><li>• The investigation (post mortem) report</li><li>• Solutions, remedies and counter-measures</li><li>• Summary</li></ul> <p><b>Eyeball RCA Information Systems</b></p> <ul style="list-style-type: none"><li>• Four general types of damage control matrices to pin point frequent and recurring failures</li><li>• Reliability analysis and building the bath tub curve with failure data analysis</li></ul> <p><b>General Cause Programmes</b></p> <ul style="list-style-type: none"><li>• Fatigue</li><li>• Corrosion</li><li>• Tribology</li><li>• Summary</li></ul>



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WOODHOUSE PARTNERSHIP

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**Content contd****Engineering Risk Assessment and Control**

- Identification of major possible asset failures
- Risk assessment
- Probability of the 'worst big event' and the Heinrich triangle
- High level failure modes, causes and effects analysis
- Risk treatment, remedies and risk control

**Benefit**

The student will be able to run RCA teams or participate in RCA teams investigating and identifying the underlying problems for correction of failures in processes, systems, machinery, accidents and incidents.

**Audience**

This course is applicable to:

- Team leaders
- Operators and production engineers
- Maintenance staff

**Pre-requisites**

Although no pre-qualification is required, a degree-level or HND qualification is recommended

**Cross references**

See TWPL course AM17 and AM18.