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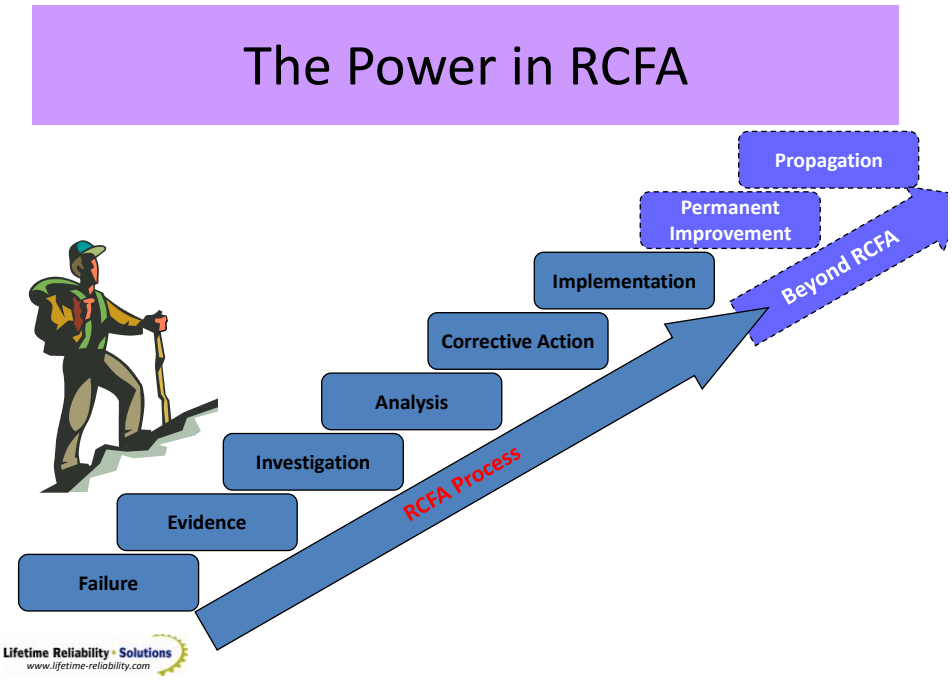
Mastering Root Cause Failure Analysis Training Course

Many companies adopt RCFA and then drop it. They use it for while and miss the benefit. RCFA is often ineffective when used to solve individual problems. But when used to find systematic causes of problems and improve business systems, it provides grand payback for the effort.



The world-leading companies don't accept things going wrong. They proactively focus on finding and stopping problems from entering their business. They set control mechanisms and checkpoints in place to spot and stop the defects that turn into future failures. They look for what can go wrong before it does and prevent it happening. They learn from their problems and proactively act to prevent them. If your operation is having equipment and production problems you need to discover what they do and how to do it too!

To solve problems fast you need to draw together relevant information and knowledge. The vast majority of production problems are the same ones repeated over and over again by different people using the same equipment in different plants or at different times. You should only need to solve a problem once, then let everyone else in your business know the answer.

Many companies train their key people on Root Cause Failure Analysis (RCFA). It starts life with a rush and then dies from insufficient time and resources. RCFA is a powerful concept to be used all the time. As an enabling tool for solving problems it is best used continuously 'on the shopfloor'. If it is reserved for major failures to be used by engineers then its use will die-off quickly. Learn how to make RCFA live every day in your operation and on the shopfloor!

Progress and development is an evolutionary process, not a revolutionary process. Those companies that evolve fastest will be more successful in future than those that wait for change to be forced on them. If you want rapid evolution in your operation then help the people there to develop RFCA skills and knowledge. Teach those who work with the problems to find the best solutions for them.

Day 1 – Successful Root Cause Failure Analysis (RCFA) Programs

- **Why RCFA Programs Fail**
  - Problem Driven not Improvement Driven
  - Seen to be for the Elite
  - Poor Introduction Change Management
  - Focus on Catastrophe instead of Defects
  - Time and Resource Hungry
  - Lack of Corporate Endorsed Process
  - Poorly Understood Process Steps
  - Lack of Process Ownership
- **The Facilitator**
  - Role of the Facilitator
  - Team Mix and Knowledge Mix
  - Running the RCFA Meeting
  - Cooperation Techniques
  - Using the Six Hats for New Perspectives
  - Facilitation Technique
- **Root Cause Failure Analysis Process Tools**
  - Collecting Evidence
    - At Failure Site
    - Historical Records
    - Operating Records
    - Interviews
  - The 7 Standard Tools for Data Analysis
  - Investigation and Understanding
    - Process Mapping
    - Creative Disassembly
    - Fishbone Diagram
    - *Activity 1* – Develop a Fishbone
    - Timeline Plots
    - Distribution Histogram
    - Failure Modes and Effects Analysis (FMEA)
    - FMEA at System Level and Component Level
    - *Activity 2* – Apply FMEA at Component Level
  - Analysis and Identification
    - 'Is-Is Not' Table
    - Fault Tree Analysis (Why Tree)
    - *Activity 3* – Develop a Simple Why Tree
    - '5 Whys' Method
    - *Activity 4* – Case Study – 5 Why Example
  - Corrective Action
    - Evaluation Table
    - Affinity Diagrams
    - Relationship Digraph
- **Case Study Example**
  - Review a Successful RCFA and the Process and Methods Applied
- **Guided RCFA Practice Example**
  - *Activity 5* -– Compete an RCFA under guidance

***Day 2* – Improving Plant and Equipment Reliability with RCFA**

- **Change Management of RCFA in an Organisation**
  - Recognition and Cost of a Problem and its Impact
  - Create a Reliability Improvement Process that Involves Everyone
  - The Change Management Process
    - Senior Management Support and Management Champion
    - Force-Field Analysis
    - Involving and Getting Buy-in from the Right People
  - Solution Implementation
    - Developing Corrective Actions
    - Implementation, Resourcing and Time Plan
    - Project Management Methodology
  - Propagation
    - Business System Improvements
- **Taking Reliability Improvements Company-Wide**
  - Permanently Capturing Improvements into Corporate Intelligence
  - Improving Business Processes and Standard Operating Procedures
  - Precision Operating Procedures – Including the 3Ts of Failure Prevention
  - The Importance of Training People to Specific Quality Requirements
  - *Activity 6* – Develop an Accuracy Controlled 3T Procedure
- **Practice Example 1**
  - *Activity 7* – Perform an RCFA Applying Appropriate Methods from the Course
    – Develop an Implementation Plan for the Corrective Actions
- **Practice Example 2**
  - *Activity 8* – Develop a Plan to Perform an RCFA and Conduct the RCFA
- **Open Discussion and Questions**
- **Close-out and Finish**

Learning Outcomes

After this training you will be able to:

- Apply RCFA, 5 Why and FMEA methodologies in failure investigation
- Think through the possibilities of physical root causes of a failure that go beyond a quick fix
- Recognise the presence of event chains leading to a failure and analyse causes behind the causes
- Verify or disprove contributing causes
- Identify actions or recommendations that will avoid a repetition of the failure or problem investigated
- Create a fault tree of an incident
- Look for relevant evidence in a failure investigation or accident
- Trace and identify the causes of equipment failures and industrial accidents
- Spot high-risk situations and act to prevent problems
- Understand the typical human factors involved in failures and accidents