



# ME104: Root Cause & Failure Analysis

## Training Description:

This Root Cause & Failure Analysis highly interactive training course addresses a modern approach to problem solving in maintenance management and is based on some of the most recent research in the field. Participants will be enabled to improve the performance of their operation with practical, down-to-earth techniques that are based on first principles.

### The training course will highlight:

- ✓ Logistics of Continuous Performance Improvement
- ✓ Decision Logic and Operational Knowledge Types
- ✓ Maturity Indexing
- ✓ Relationship Development and Analysis
- ✓ Strategic Focus
- ✓ Complexity, Risk, and Variability Models

## Training Objectives:

### By the end of the training, participants will be able to:

- ✓ Develop and implement a sustainable world-class maintenance strategy
- ✓ Perform a systematic Root Cause Failure Analysis
- ✓ Develop an improved understanding of numerous maintenance environment variables, and of the relationships between them
- ✓ Understand, audit and optimize your maintenance process
- ✓ Understand the use and application of generic problem-solving techniques
- ✓ Cascade the principles and benefits of the program to other employees

### Personal Impact:

- ✓ Improved decision-making abilities
- ✓ Clarity of vision
- ✓ Understanding of Consequences (Cause/Effect)
- ✓ Improved Maturity
- ✓ A new sense of certainty and confidence
- ✓ Empowerment and a results driven focus

### Organisational Impact:

- ✓ Improved Performance
- ✓ Informed Decision-making
- ✓ Delegations and Productivity
- ✓ Focused Activities
- ✓ Improved Understanding of the Maintenance Process
- ✓ Elimination of Time-Wasting Activities

## Training Designed for:

This course is intended for Engineering and Technical Professionals and Supervisors from any industry, Maintenance Planners and Coordinators, Operations and Manufacturing Professionals and Supervisors,

Foremen and Team Leaders, Plant Engineers and Maintenance System Professionals, Section Engineers and Planners.

### Training Requirement:

“Hand’s on practical sessions, equipment and software will be applied during the course if required and as per the client’s request.”

Contents can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client’s learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

### Training Program:

#### FIVE DAYS:

- ❖ PRE-TEST
- ❖ Introduction
- ❖ Problem Solving - Basic Principles
  - Problem Identification Session
  - Terminology of RCFA
  - Decision Logic
  - Three Knowledge Types
  - Maintenance Maturity Indexing
  - Six Level Generic Performance Standard
  - Continuous Improvement
- ❖ Exercises
- ❖ Sustainable Maintenance Performance Improvement 1
  - Introduction to Modern Maintenance Practice
  - The SQC Performance Model
  - Reverse Risk Analysis
  - Maintenance / Operations Objectives and Resource Analysis
  - Complexity, Risk, and Variability Models
  - The Maintenance Cost Ratio
  - Solving of Delegate Problems
  - Exercises
- ❖ Sustainable Maintenance Performance Improvement 2
  - Cross Referencing Operational Variables (Group Exercise)
  - “Your Maintenance Costs are too High!”
  - Sigma Sets: The Absolute Decision Standard
  - Data / Knowledge Base
  - Accuracy and Availability of Data / Cost relationship
  - The Four Critical Stages of Data Maturity
  - Logical Critical Thinking vs. Creative Lateral Divergent Thinking
- ❖ Case Studies: Analysis and Exercises
- ❖ Root Cause Analysis
  - Maintenance Strategy Development and Implementation

- Standard Pitfalls for Maintenance Improvement Initiatives
- Generic Problem-Solving Techniques
- Logical Problem-Solving Techniques
- Creative Problem-Solving Techniques
- Other Problem-Solving Techniques
- A Systematic Root Cause Failure Analysis Methodology
- ❖ HART 4-20
- ❖ Exercises
- ❖ Public Network Transport Technologies
  - Analogue Switched (Dial-up)
  - Public Switched Telephone Network (PSTN)
  - Analogue Dedicated (Leased) Alternatives
  - Digital Switched (Dial-up) Alternatives; Switched 56, ISDN-BRI; Frame Relay (SVC); SMDS; ATM
  - Digital Dedicated (Leased) Alternatives: DDS; T-1; T-3; E-1; ISDN-PRI; B-ISDN; X.25; Frame Relay (PVC); SDH/SONET
  - Signaling System #7
  - Services
- ❖ Action Plan Development
  - Introduction to TRIZ Methodology
  - Review of Most Suitable Techniques
  - Development of an “Instant Approach” to Problem Solving
  - Application of “Standard Questions”
  - Individual Delegate Requirements
  - Commercial Programs
  - Logistical Requirements for Practical RCFA Implementation
  - RCFA Exercises (*Analysis of Client Company Specific Problems*)
- ❖ Course Conclusion
- ❖ POST-ASSESSMENT and EVALUATION

### Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Gamification, Software & General Discussions
- Pre and Post Test

### Training Fees:

**TBA as per the course location** - This rate includes participant’s manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01<sup>st</sup> of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

## Training Certificate(s):

CMCT Internationally recognized certificate(s) will be issued to each participant who completed the course.

## Training Timings:

### Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:00	Recess (Prayer Break & Lunch)
13:00 - 14:00	Last Session

### For training registrations or in-house enquiries, please contact:

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