

A 2-day program on

ROOT CAUSE FAILURE ANALYSIS FOR MAINTENANCE

14-15 October 2009 | CROWNE PLAZA MUTIARA HOTEL, KUALA LUMPUR

FOCUSING ON

- Understand What Causes Failure
- 7 Steps To Analyze Failure
- Root Cause Failure Analysis Tools
- Using RCM's "Decision Diagram" Methodology
- Mechanical & Electrical Component Failures
- Steps to Prevent Pneumatic Failures
- Draft Proactive Maintenance Strategy
- Use of Proactive Tools To Overcome Failures

WHY YOU CAN MISS THIS...

A **failure** is resolved immediately after a replacement is made. All the inconvenience and difficulties are forgotten the moment the equipment starts operating again. The “defective part” has no significance and lands in the rubbish bin. This goes on until the same failure returns or a related failure appears and the cycle continues.

This is a waste of time, effort and resources. We are posed with critical questions such as

- **Is our maintenance still reactive?**
- **Have we eliminated the problem of reoccurrence?**
- **What have we learnt from past failures?**
- **How do we proactively ensure that such reoccurrence is reduced or stopped?**

This program looks into these questions as well as gives an insight on failure causes and ways to overcome them through proven industrial tools and techniques.

DAY 1 Wednesday, 14 October 2009

9:00 AUTONOMY OF FAILURES

- Why Equipments Fail
- Types Of Equipment Failures
- Why Failure Matters
- Life Cycle Failure Characteristics
- Current Maintenance Cultures

10:30 Morning Coffee

10:45 ROOT CAUSE ANALYSIS

- Definition Of Root Cause Analysis
- Why Root Cause Analysis
- Advantages Of Root Cause Analysis
- Seven Step Root Cause Analysis Procedure

1:00 Lunch

2:00 PREPARATION FOR ROOT CAUSE ANALYSIS

- Current Emphasis On Efficiency
- Inadequate Data Collection
- Visiting The Failure Scene
- Step 1. Determine What Happened
- Step 2. Make Preliminary Investigation
- Step 3. Gather Background Data
- Developing An Investigation Checklist

3:30 Afternoon Tea

3:45 ESTABLISH WHAT FAILED

- Analyzing The Initial Evidence
- Identifying The Four Components Of A Failure
- What Is The Effect

- What Is The Symptom
- What Is The Cause
- What Is The Root Cause
- Step 4. Determine What Failed
- Why Mechanical Components Fail
- Why Electrical Components Fail

5:00 End of Day 1

DAY 2 Thursday, 15 October 2009

9:00 ANALYZE THE CAUSES OF A FAILURE

- Current Analysis Short Fall
- Lack Of Techniques
- Step 5. Analyze The Root Cause Of Failures
 - Cause And Effect Analysis
 - Fault Tree Analysis
 - Why, Why Analysis
 - Pareto Analysis

10:30 Morning Coffee

10:45 ESTABLISH THE FAILURE CAUSES

- Step 6. Determine The Failure Type And The Forces That Caused It
- Human Non-Adherence
- Procedural Violations
- Machine Malfunction
- Physical Environment
- Causes For Mechanical Failures
- Causes For Electrical Failures

1:00 Lunch

2:00 **DETERMINE THE ROOT CAUSE**

- Step 7. Establish The Root Cause
- Eliminating Electrical Failures
- Eliminating Mechanical Failures
- Eliminating Pneumatic Or Hydraulic Failures
- Application Of Proactive Maintenance
 - Establish Good Planned Maintenance
 - Apply Predictive Maintenance Where Applicable
 - Eliminate Human Error Through Poka Yoke
 - Develop Fmea
 - Apply Schedule Discard For Service Life Products

5:00 Afternoon Tea & End of Program

THIS PROGRAM WILL BENEFIT

- Engineers
- Maintenance Managers
- Equipment Maintenance Managers
- Building Maintenance Managers
- Facility Managers
- Facility Engineers
- Maintenance Supervisors & Superintendents
- Equipment Personnel
- Maintenance Coordinators

FACILITATOR

Mr. P. Balachandran brings to this program more than 17 years of solid industrial experience in the manufacturing sector as well as 12 years in maintenance manufacturing training and consultancy.

His experience includes that of Equipment Engineer, Section Head of Production, Production Manager and Training & Education Manager with well know corporations such as Motorola, Thomson Audio Electronics and Samsung Electron Devices.

Mr. Bala then became involved in management consultancy and trained full time in specific areas of manufacturing and maintenance training. His natural leadership style coupled with his vast

industrial experience makes him a valuable partner and resource in developing the workforce of the manufacturing sector and in troubleshooting.

Mr. Bala has trained more than 3000 professionals and some of the companies that have benefited from his expertise include Komag Malaysia, Minolta, Silitek, Sony Malaysia, Robert Bosch, TDK Malaysia, Swedish Motor Assembly, Western Digital, Dell Computers, Texas Instruments, TNB, Genting Sanyen, PROTON, TeckSee Plastics, Hicom, Philips Semiconductor, Airod, B Braun, Carsem, Dynacraft, Seagate Industires, Mattel, Perodua, Johnson & Johnson and Malaysian Airlines System.

KEY BENEFITS OF ATTENDING THIS PROGRAM

- Being better able to perform your own root cause analysis for breakdowns
- Understanding the forces behind each failure
- Learning the relationship between effect, symptom, cause and root cause
- Being better able to develop proactive measures to prevent breakdowns
- Knowing how to perform failure scene investigations
- Working on a parallel strategy both on reactive and proactive maintenance

METHODOLOGY

Interactive lectures, explanations, case studies & learning discussions, group sessions, Q & A

ROOT CAUSE FAILURE ANALYSIS FOR MAINTENANCE

14-15 OCTOBER 2009 | KUALA LUMPUR

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COSO Internal Control Framework & Enterprise Risk Management

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HOW TO REGISTER

ONLINE: www.cmtevents.com
EMAIL: adminkl@cmtp.com.sg
FAX: (603) 2162 6393
TEL: (603) 2162 7322
POST TO: Lot 7.03, 7th Floor, North Block,
The Ampwalk, 218 Jalan Ampang,
50450 Kuala Lumpur

FEES

The full Registration Fee includes cost of all sessions, luncheon, coffee/tea & documentation.

1 Person	Group fee per person for 3 or more* (from the same company)
RM2295	RM1995 (MIN SAVINGS OF RM900)

* Terms and conditions apply.

Cancellations, Refunds & Transfers: A full refund will be promptly made for all written cancellations 3 weeks before the meeting. Thereafter, cancellations are not refundable. A substitute may be made at any time.

PAYMENT

By Telegraphic Transfer

ACCOUNT NAME:

Centre for Management Technology Sdn Bhd

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TT must include additional RM10 for Beneficiary's Bank charges. Delegates must bear all bank charges and local taxes (if applicable). Fees must be NETT of ALL charges.

CHEQUES: Crossed & payable to

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CERTIFICATE OF COMPLETION

A Certificate of Completion will be awarded upon successful completion of each course. This serves as evidence of your personal and professional commitment to your career.

COURSE TIMING

Registration: 8.30 am, Course Begins: 9.00 am,

Morning Coffee: 10.30 am,

Lunch: 1.00 pm to 2.00 pm,

Tea Break: 3:30 pm, Course Ends: 5.00 pm

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