

# World Class Maintenance Management – The 12 Disciplines

March 21 to 23, 2012, El Cielito Inn, Sta. Rosa, Laguna. Philippines



### Training Package Includes:

- Morning / Afternoon meals and Lunch
- Complete Handouts on WCM course
- Selected Articles on WCM
- Exercises and Handouts on WCM
- CD Softcopy of WCM Training in powerpoint
- Certificate of Attendance
- World Class Maintenance Book – 314 pages

### Who Should Attend:

- Maintenance Managers
- Facilities and Utilities Managers
- Preventive Maintenance Group
- Predictive Maintenance Groups
- Reliability Engineers and Managers
- Operations and Production Managers
- Management and Decision Makers
- Continuous Improvement Groups
- People in charge of their assets
- CMMS and Spare Parts Group
- People in charge of lubrication
- Maintenance Planners
- CMMS Groups



### WCM Course Overview:

• Being World Class means the ability to compete any where in the world. World Class Maintenance Management simply means the art and science of managing maintenance resources performed by best in class industries from around the world. But in most industries, the question is often raised, is it really possible to control maintenance or the pressure over maintenance is controlling us? This 3 days training and workshop will outline the 12 Disciplines in order to improve equipment reliability. These Discipline are categorized into three stages, the basics, Strategies and Advance Disciplines. Learn what these disciplines are that most World Class Companies perform. All World Class Maintenance industries were not born World Class, they all started on being reactive themselves. Achieving World Class Maintenance needs much more than this, find out what World Class Maintenance is all about.



WCM Master Class. Abishek, Trident India, February 2011

**ENROLL NOW !**



**049-837-07-64**



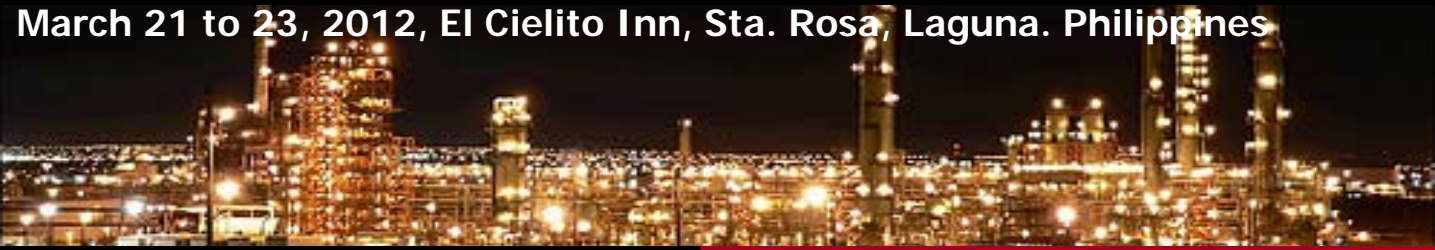
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### WCM Course Objective:

- Understand the need for an effective and World Class Maintenance Management structure in our plant
- Understand the importance of establishing the basics of maintenance before adopting any improvement strategy
- Understand when to effectively use each of the different maintenance strategies in order to fully improve the equipment reliability
- Develop a Corporate Strategy for maintenance function
- Provide a basic understanding on the 12 Disciplines of Maintenance Management and understand the real focus of a true and meaningful Maintenance Structure
- Understand the real focus of a true and meaningful maintenance structure
- Learn what it takes to achieve a World Class Maintenance stage in your industry

**This is not only a technical book about reliability and maintenance, it is a book that makes each maintenance feel proud they belong to the maintenance function**

Rolly Angeles



### What They Say About WCM:

- **No doubt, Mr. Rolly is an expert in maintenance field. I never came across such a beautiful learning ever.** Thanks to Mr. Rolly and my company BPCL. His thrust on lubrication, RCFA and RCM gave us another dimension to our thought process. From MP Agrawal DY Maintenance Manager, Bharat Petroleum, India
- **Presentation was very good. Knowledge & experience on the subject matter is excellent. Makes participants enjoyed the workshop.** Very useful at work place. The knowledge can be directly be used at our place of work. Pattern of course has been kept simple & understandable. Knowledge sharing is excellent. From Anant Kumar Gupta Senior Officer Maintenance / Electrical / Bhart Petroleum
- **The good point was that I came to know all about the recent development in the field of maintenance related equipment that will help me to know the consequences of failure of my equipment.** And also I came to know about the lubrication and its aspects and importance in the case of maintaining our equipments so lots of thanks to Mr. Rolly Angeles. From Pararnath M. Gosh Officer Mechanical Maintenance, Bharat Petroleum



WCM Class, Energy Development Corporation, Dumaguete, May 2011

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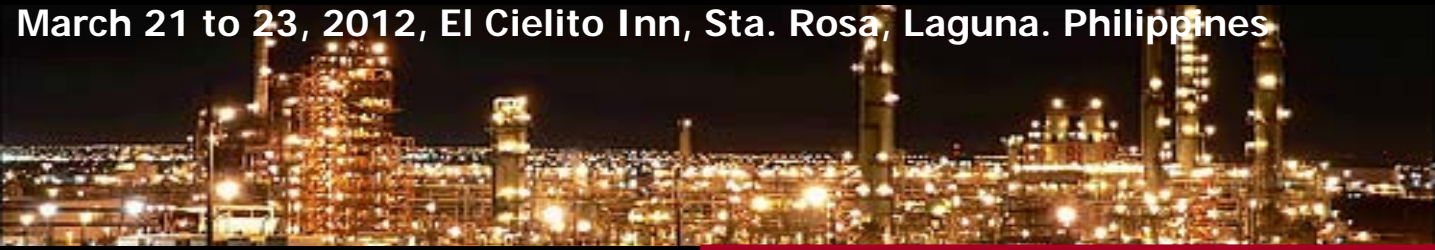
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## What To Expect on this Training

- **Understand** the importance of performing the basic disciplines before advancing on any continuous improvement efforts and maintenance strategies
- **Learn** the diversity of failures and how it occurs and that not all parts will eventually wear out as most maintenance professionals assumed
- **Discover** how World Class Maintenance people think and what are their priorities and know the most important lessons to be learned from each of these 12 Maintenance Disciplines
- **Understand** the importance of Autonomous Maintenance and why these people are important in the overall maintenance strategy of the plant
- **Unfold** the secrets of lubrication and discover the ways and means to lengthen the life of your lubricant and parts
- **Learn** why Preventive Maintenance cannot capture all equipment failures and what maintenance can do about this.

And much, much more . . .



## About the Resource Speaker

**Rolly**, is a seasoned international reliability and maintenance consultant with 23 yrs of solid experience in the field. He had been invited in different countries and have conducted reliability and maintenance trainings in United Arab Emirates, India, Malaysia, Indonesia, Nigeria and Bangladesh. His portfolio of maintenance trainings include Maintenance Management courses on TPM, Lubrication, Tribology, Condition-Based Maintenance, RCM, RCFA, Planned Maintenance, World Class Maintenance Management, The 12 Disciplines, Oil Contamination Control, Maintenance Indices and KPI's, Maintenance Management Strategies and much more. Rolly previously worked with Amkor Technology Philippines, as a TPM Senior Engineer, an industry engaged in the manufacture of Integrated Circuit products and spearheaded their Planned Maintenance organization com-pose of maintenance managers and engineers. He was also responsible for the dramatic reduction of unplanned breakdowns in their TPM Journey as well as RCM implementation on their Facilities AHU units and as well as their substation equipment. Rolly is currently working as an independent reliability and maintenance consultant. Rolly had released his first book on World Class Maintenance Management - The Twelve Disciplines.



**WCM Master Class, Hawaiian Phils. Inc., September 2011, Bacolod, Philippines, Sept. 2011**

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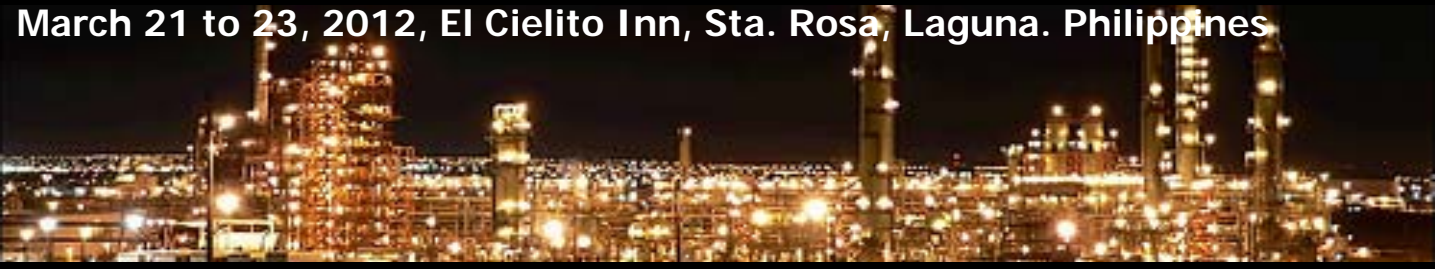
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## WCM Program Day 1 : Morning Session

### Module 1: Understanding Equipment Failures

- The Truth About Machinery and Equipment
- Is It Really Possible to Eliminate Failures and Breakdowns on our Equipment
- What Maintenance is All About
- Common Belief on Maintenance – Does All Parts Eventually Wear Out
- What Stanley Nowlan and Howard Heap Discovered about Maintenance
- Limitations of Preventive Maintenance
- Understanding What Maintenance Can and Cannot Do
- Understanding Infant Mortality, Random and Age-Related Failures
- 6 Types of Failure Patterns
- Classification of Failures – Hidden and Evident Failures
- Types of Failures – Function Loss and Function Reduction Failures
- Occurrences of Failures – Sporadic and Chronic Failures

Registration Start : 8:15 to 8:30 am  
 Start of Training : 8:30 am  
 Morning Break : 10:15 to 10:30 am  
 Lunch Break : 12:00 to 1:00 pm  
 Afternoon Break : 3:15 to 3:30 pm  
 End of Day 1 : 5:00 pm

World Class Maintenance well defined and an eye opener for maintenance staff whom are so caught up with daily job routine and pressure. Thanks to the instructor. Mr. Rolly who is very passionate on maintenance and brings out the value of maintenance. At least this course had enable me to be focused and know where to stand for my maintenance team. That is where basic discipline has been very applicable and beneficial. CD in powerpoint makes life easy for me to train my staff. Mr. Rolly leaves behind few moral stories and illustrations through videos which makes the class interesting. **From Calvin Chan, Service Manager, IT Services, Malaysia**

## WCM Program Day 1 : Afternoon Session

### Module 2 : Changing The Culture from Reactive to Proactive

- Reactive and Proactive Maintenance Explained
- Flowchart of a Reactive Maintenance Environment
- Learning the Correct Paradigm on Maintenance


### Module 3 : Understanding World Class Maintenance Management


- World Class Maintenance Management Explained
- 12 Disciplines of Maintenance - Basics, Intermediate and Advance Discipline


### Module 4 : Basic Discipline

- Discipline 1 : The Need for Training and Skills on Maintenance
  - Training and Skills Assessment
  - Steps to improve your current training needs
  - Reflections and Learning's from the first discipline
- Discipline 2 : Measurements and Maintenance KPI's
  - Most Common Mean Time Indicators
  - Understanding Mean Time Between Failure (MTBF)
  - Understanding Mean Time to Failure (MTTF)
  - Setting Maintenance Goals and KPI's
  - Reflections and Learning's from the 2<sup>nd</sup> Discipline

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## WCM Program Day 2 : Morning Session

### Continuation on Module 4 : Basic Discipline

- Discipline 3 : The Need for Autonomous Maintenance
  - Why Autonomous Maintenance is Important
  - Autonomous Maintenance Basic Concept
  - Maintenance Guidance and Support for Autonomous Maintenance
- Discipline 4 : Addressing Basic Equipment Condition
  - Importance of Going Back to the Basics
  - Cleaning, Proper Lubrication and Tightening of Bolts
  - Role of Operators in Establishing Basic Equipment Condition
- Discipline 5 : Addressing Basic Equipment Condition
  - Preventive Maintenance Definition and Objective
  - What Preventive Maintenance Activities Includes
  - Feasibility of Using Preventive Maintenance for Age-Related Failures
  - Survey of Top 10 Problems on Preventive Maintenance

## WCM Program Day 2 : Afternoon Session

### Module 5 : Maintenance Management Strategies

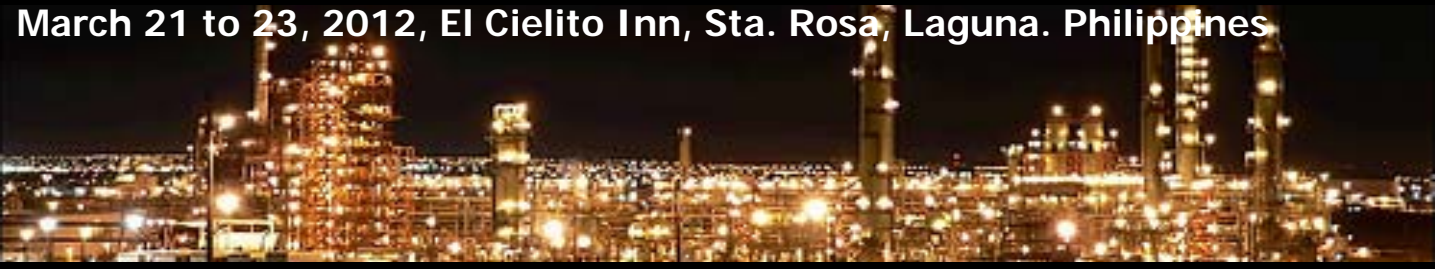
- Discipline 6 : Lubrication Strategy and Management
  - Function of oil and its composition
  - What cause oil to breakdown
  - Understanding how contamination occurs
  - Our Belief on Contamination and Contamination Control Awareness
  - Absolute and Nominal Filtration
  - Filtration Efficiency and Beta Rating of Filters
  - Oil Analysis – Level 1 Testing Oil's Health and Cleanliness
  - How to remove contaminants from oil
- Discipline 7: Understanding Life Cycle Management
  - Concept of Life Cycle Costing
  - Why the study of Life Cycle Costing is important
- Discipline 8: Spare Parts Management
  - Spare Parts Management Explained
  - Importance of Physical Inventory and Systems Inventory
  - Problems and Issues on Spare Parts
  - Importance of having a Spare Parts Management Strategy

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It was very useful to recollect the basics of maintenance. Being a technical program, the way in which the faculty explained the concepts was very good and attractive. More positive insights were given during the presentation. The best part is that we are made aware of the lying human and latent cause behind any physical cause that leads to the failure. The learning materials provided & the case studies presented were very relevant and were very useful to the program. A complete transition/revolution in the maintenance approach attitude can be achieved through this program. The best part is that he used his passion to explain the concepts in such a beautiful way. *From R. Rjalaksham, Associate Manager Sterlite Industries, India*

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## WCM Program Day 3 : Morning Session

### Continuation on Module 5 : Maintenance Management Strategies

- Discipline 9: Root Cause Failure Analysis
  - Root Cause Failure Analysis Defined
  - Evidence – The Lifeblood of any Root Cause Failure Analysis
  - Difference between Failure Analysis RCA and RCFA
  - Levels of Root Cause – Physical Cause, Human Cause and Latent Cause
  - RCFA Case Study – Pump Failures
  - Reflections and learning's from the 9<sup>th</sup> Discipline
- Discipline 10: Reliability Strategies
  - Understanding Reactive, Preventive, Predictive & Proactive Maintenance
  - Concept of Reliability-Centered Maintenance
  - How RCM is being Performed
  - Comparing TPM and RCM and what both of them believes
  - Reflections and learning's from the tenth Discipline

Registration Start : 8:15 to 8:30 am  
 Start of Training : 8:30 am  
 Morning Break : 10:15 to 10:30 am  
 Lunch Break : 12:00 to 1:00 pm  
 Afternoon Break : 3:15 to 3:30 pm  
 End of Day 1 : 5:00 pm

It was clearly defined and justified that maintenance is the backbone of any company/industry/business. Any fault or variance from a normal datum means a fault on the system management or process and not on the person. A very systematic approach of maintenance management with respect to maintenance personnel healthy life, ethics and spirit along with all of their co-workers. **From Nomer Ramboyoung, Supervisor, Moog Control Corporation, WCM Master Class, Philippines**

## WCM Program Day 3 : Afternoon Session

### Module 6: Maintenance Management Advance Discipline

- Discipline 11: Understanding Condition Based Maintenance
  - Predictive Maintenance Defined
  - Understanding the P-F Interval
  - Potential and Functional Failure
  - Importance of determining Potential Failures
- Discipline 12: Computerized Maintenance Management Software
  - Purpose of CMMS
  - Application of CMMS
  - Role of CMMS in Maintenance Management
  - Considerations in selecting CMMS


### Module 7: How to Apply the Twelve Disciplines of Maintenance


- Determine where your maintenance is right now
- Understand where you want to go
- Understand how will you go there
- Determine if you have finally arrived

### Module 8: Learning's from the 12 Discipline

- Closing Remarks on World Class Maintenance

**ENROLL NOW !**

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## Training Investment Costs:

Costs includes WCM Book

- 1 Delegate: Php 24,000.00 + 12% VAT
- 2 Delegates: Php 46,000.00 + 12% VAT
- 3 Delegates: Php 65,000.00 + 12% VAT
- 4 Delegates: Php 84,000.00 + 12% VAT
- 5 Delegates: Php 102,500.00 + 12% VAT

• This book is available only through RSA Reliability and Maintenance Consultancy Firm only.

## Payment Procedure and Policy:

- Payment can only be accepted through cash or check basis. For payments in check kindly Pay to RSA Reliability and Maintenance Consultancy Firm. Kindly complete the name of the firm on the check.
- An Official Receipt will be provided after issuance of complete payment for this event.
- Payment should be done during registration, kindly advise the delegates to carry with them the payment for this training. To avoid future problems on our part. No payment, No entry policy would be enforced on this seminar workshop.
- 2% tax will be deducted provided industry joining the event to provide BIR form 2307 together with the payment

## How To Register for this Event:

Step 1: Send us an email on the following:

- Full Name of Delegates: (FN, MI, LN)
- Position or Designation / Department
- Name of Industry
- Type of Industry
- How is payment to be made Cash or Check

Step 2: Once we have confirmed the names of those you will send, we will provide a confirmation email.

## Cancellation, Postponement Policy

- For delegates who will not complete the duration of the training seminar and workshop, RSA Reliability and Maintenance Consultancy Firm will offer no refunds regarding this matter, certificates of attendance will only be provided to those delegates that will complete the three day seminar and workshop
- In the event that the seminar will be cancelled as a result of unforeseen events such as Acts of God or other uncontrolled reasons, RSA Reliability and Maintenance Consultancy Firm shall assume no liability whatsoever in the event this seminar and workshop be cancelled, postponed, move or rescheduled due to this fortuitous and unforeseen event.
- In case of a low turn out of delegates for this event, RSA Reliability and Maintenance Consultancy Firm reserves the right to move or cancel the event. An email will be sent to concerned parties regarding the cancellation or movement.
- In the event you would like to cancel your participation in this seminar, kindly send us an email one week before the event is due. If you have made an advance payment and your delegates did not attend and have not informed us one week before the event, you will be charged with the full amount of the training fee.
- In case the delegate register for this event will not make it on this event, kindly notify us be email the changes in the name of the delegates.

## 100% Money Back Guarantee



- If for any reasons you were not happy or satisfied with the outcome of the training. Our small firm offers you **Unconditional 100% Payment Back** and you keep the WCM Book and all the materials provided during the training provided payment had been received during the registration period.

