

RELIABILITY-CENTERED MAINTENANCE (RCM2)

**The ultimate
tool for developing
world-class maintenance strategies**

**To be held from:
October 19th to 21st 2010
at
Inn at the Market
Seattle, Washington**

World Class Maintenance starts

..... with a clear understanding of what maintenance needs to be done. Then - and only then - is it possible to specify with confidence what human resources are needed to do it, what spares are needed to support it and what systems are needed to control it.

However, our understanding of "what maintenance needs to be done" is changing dramatically. As equipment takes over more and more of the activities which used to be done by people, the consequences of failure are becoming steadily more severe. The equipment is also much more complex, so their behavior is much less predictable. These two developments mean that great many traditional maintenance practices have become actively counterproductive and often downright dangerous.

To bring this situation under control, the first step is to carry out – in light of modern thinking – a systematic zero-based review of what must be done to ensure that key assets continue to perform as their users want them to perform. (This has always been a fundamental aspect of the management of physical assets, and most managers do it continuously. But the range of options is now so great, new techniques are emerging so rapidly and the consequences of getting it wrong are becoming so catastrophic that it is no longer possible to do it informally.)

The first industry to confront this issue systematically was the international civil aviation industry. On the basis of research which challenges many of our most firmly and widely held beliefs about maintenance, this industry evolved a completely new framework for developing maintenance strategies. This framework is known within aviation as MSG3, and to the outside it is Reliability-centered Maintenance, or RCM.

RCM is fundamental to the practice of physical asset management as double-entry bookkeeping is to financial asset management. No comparable technique exists for identifying the safe minimum of maintenance that must be done to preserve the functions of physical assets. However, it is also becoming apparent that if RCM is to yield the lasting benefits of which it is capable in terms of safety, reliability and maintenance efficiency, it should only be applied rigorously by suitably trained people who have a long-term, personal vested interest in the results of its application.

Since the early 1980's, the Aladon network has helped users to apply RCM in hundreds of industrial locations around the world – work which led to the development of RCM2 for industries other than aviation in 1990. This course condenses our experience into a comprehensive introduction to RCM2 for those who wish to learn what must be done to derive the maximum benefit from this formidable process. It also provides entry-level training for people who might subsequently wish to participate in our more advanced capability development programs for RCM facilitators.

Industries using RCM to secure long-term competitive advantage – safely and cost-effectively – include:

Industries using RCM2 to secure long-term competitive advantages – safely and cost-effectively – include:

- Petrochemicals
- Food manufacturing
- Railways
- Electric utilities
- Pharmaceuticals
- Steel mills
- Mass housing
- Brewing
- Automobile manufacture
- Paper making
- Metalworking
- Offshore oil extraction
- Water distribution
- Nuclear facilities
- Packaging
- Mining
- Consumer electronics
- Cement manufacture
- Armed forces
- Aluminum processing

RELIABILITY-CENTERED MAINTENANCE (RCM2)

A three-day course

INTENDED FOR

Anyone wishing to secure optimum performance from physical assets, from the viewpoint of safety, environmental integrity, output, product quality or customer service.

The course will be of most value to people responsible for:

- **maintenance functions** (engineering managers, chief engineers, plant and works engineers, maintenance managers and supervisors and technical specialists),
- **assets themselves** (production/operations managers), and
- **safety and environmental integrity.**

WHAT PARTICIPANTS WILL LEARN

The course is intended to enable delegates to:

- Learn what Reliability-centered Maintenance (RCM2) is and how it works (*extensive use is made of practical exercises and case studies throughout the course*),
- Gain an understanding of what RCM2 achieves and how it achieves it,
- Gain an appreciation of the kinds of resources needed to apply RCM2 successfully.

COURSE CONTENT

Introduction to Reliability-centered Maintenance

Defining the Problem and Gathering Information

Defining functions and desired performance standards • Defining failure (functional failures) • Establishing the causes of failure (failure modes) • What happens when failures occur (failure effects)

Assessing Failure Consequences

Failures that threaten safety or the environment • Failures that effect production / operations • Failures that only entail the direct cost of repair • Failures that entail the loss of protection

Different Types of Proactive Maintenance & Setting Task Frequencies

Condition-based maintenance • Scheduled restoration tasks • Scheduled discard tasks

What to do if a suitable proactive task cannot be found

When do to failure-finding • When to redesign • When to run to failure

Packaging tasks into maintenance schedules

Applying the RCM2 Process

RCM2 review groups • The RCM2 facilitator • Implementation strategies • Getting started

To be held at:

Inn at the Market
86 Pine Street
Seattle, Washington
(206) 443-3600

October 19th—21st 2010

Course presenter:

Peter Stock is a qualified mining and industrial engineer. He has worked as a consultant in the field of maintenance management for the past thirty years and has specialized exclusively in the industrial application of RCM2 for the last nineteen years in Canada, USA, Europe and South Africa. He played a major role in the development and dissemination of RCM2 methodology. He researched and co-authored part of John Moubray's book on RCM2, specifically Appendix 4, "Condition Monitoring Techniques", from which he developed a two-day course - Condition Based Maintenance in the context of RCM2. He has played a major role in the successful RCM2 initiatives at 45th Space Wing at Cape Canaveral, NASA's Johnson Space Center, Alyeska Pipeline Services Company, BP Alaska, Massachusetts Water Resources Authority, Veolia Water North America, Princess Cruises and many other organizations.

Hosted by ...



Course Enrollment/Registration Form

Course administration and fees

The course starts at 8.00 am and closes at 4.30 pm each day. The course fee includes lunch. Coffee and tea will also be provided before the course starts, at mid-morning and at mid-afternoon. A set of course notes will be provided for each delegate. Delegates also receive the book "Reliability-centered Maintenance" by John M. Moubray. To enroll on the on the course, please complete the form below. The course fee per delegate is **\$1,400.00**.

Checks should be made payable to Sentrtech LLC. If you wish to make a preliminary booking, please phone us at (321) 432-4457 or fax us at (321) 895-0287. Please note that the fee is payable in advance, and that bookings can only be confirmed when the fee has been paid. The fee will be refunded in full if a course should be cancelled.

Please note that the course fee does not include accommodation, and delegates or their employees are requested to make their own arrangements if accommodation is required.

About Sentrtech LLC

Headquartered on Bainbridge Island, Washington, Sentrtech was founded in USA in 2003 (previously operating as REMS in South Africa) specializes in providing training and consulting services in the industrial application of Reliability-centered Maintenance. As a proud member of the Aladon Network, Sentrtech together with Aladon's world-wide network of licensees, have trained more than 70,000 people and helped companies apply RCM on more than 1,200 sites in over 40 countries on five continents in the last 26 years. For more information please visit us at www.sentrtech.com.

Please provide information on each candidate you wish to attend the Reliability-centered Maintenance training course:

NAME		JOB TITLE		
COMPANY				
MAILING ADDRESS				
TELEPHONE NUMBER		FAX NUMBER		FEE ENCLOSED
				\$
AUTHORISED BY	NAME			
	JOB TITLE			
	SIGNATURE			

Please return the completed form (or a copy) to :

Sentrtech LLC.

7384 Stuart Avenue, Melbourne Beach, FL 32951, USA

Tel.: **(321) 432-4457**

Fax : **(321) 895-0287**