

N7 Engineering Academy Syllabus for RCA and RCM Workshop

Course Content

This workshop provides an in-depth examination of the application of Root Cause Analysis (RCA) and Reliability Centered Maintenance (RCM) principles, which are elements of MSC's maintenance philosophy. This workshop includes practical exercises that provide an opportunity to apply RCA and RCM principles and techniques to example maintenance problems. The topics covered in this course include:

- Mechanical failures.
- Using logic analysis to follow failures back to their sources.
- Failure root types: physical and human.
- Sequence of analysis:
 - Component Failure Analysis (CFA)
 - Root Cause Investigation (RCI)
 - Root Cause Analysis (RCA)
- Difference between preventive and reactive analysis.
- Benefits and savings aspects of root cause analysis.
- Different types of logical analysis models.
- What causes decreases in reliability
- RCM principles
- Applying RCM principles - examples
- Using RCM to improve SAMM maintenance requirements
- SAMM audit

Target Audience

The target audience for this course is all new-hire N7 personnel. This course is also appropriate for experienced N7 personnel who want to refresh their proficiency in certain subject matter areas.

Pre-Requisites

Completion of:

- Introduction to Military Sealift Command course
- MSC Regulatory Standards, Inspections, Maintenance Availability Overview, and Engineering Budgets course
- Government Contracting, RCA, RCM, and ENCON course
- MSC Work Item Writing Fundamentals course
- MSC Work Item Estimating Fundamentals course
- Maintenance Availability Planning and Management, Drydocking, and Logistics

- CMEO Ashore Part I – SAMM Planning course
- CMEO Ashore Part II – PENG Execution course

Administration

Enrollment is on a first come, first served basis. You can self-register for this course online at <http://mscn7training.com>. Successful completion of this course requires 100% attendance.

Schedule

This course consists of eight (8) hours of instruction conducted over a period of one (1) day. Classes begin at 8:00 AM and end at 5:00 PM.

Topic Descriptions:

Reliability Centered Maintenance (RCM): This workshop segment introduces participants to the basic concepts associated with Reliability Centered Maintenance; the practice of doing the right maintenance at the right time to reduce costs and downtime, while eliminating unnecessary or ineffective maintenance. This module, together with Root Cause Analysis module, explain how best to identify and justify the need for changes to preventive maintenance requirements when submitting feedback change requests.

Root Cause Analysis (RCA): This workshop segment introduces participants to the basic concepts associated with Root Cause Analysis and its use in differentiating between failures and their underlying causes as an effective way to address, reduce or prevent future failures. Techniques to reduce perceptual blindness and bias, with tools available to assist with determining root causes are discussed along with methods on how to gather reliable information from operators and repair contractors. Proper use of RCA techniques allows users to identify potential issues on other equipment across multiple systems, ships, and ship classes.

Date	Version	Description	Author
10/7/19	0.0	Initial draft	Gary Fields
11/25/19	0.1	Revised Administration section	Gary Fields