MSC Life Cycle Management

Prepared for Military Sealift Command
by Emprise Corporation

Learning Objectives

- Overarching objective of this module is to introduce you to Military Sealift Command's life cycle management policies and practices
- At the conclusion of this module, you will understand and be able to describe the following:
  - Life cycle management
  - Responsibility for life cycle planning throughout ship's ESL
  - MSC life cycle management policies and procedures
  - Elements of MSC life cycle planning
  - MSC life cycle plans

Life Cycle Management

- **Proactive approach to planning maintenance, alteration, and sustainment activities throughout a ship's expected service life (ESL) that guides decision-making, resource allocation, and risk management**

Life Cycle Management Phases

- **Life cycle planning occurs during each phase of ship's life cycle**
  - **Acquisition (design and construction)**
  - **Operation and maintenance**
  - **Disposal**

Acquisition Phase Life Cycle Planning

- Life cycle planning during acquisition phase focuses on delivering a ship capable of maintaining expected level of material readiness to deliver required mission capabilities throughout its ESL
- Responsibility for life cycle planning during acquisition phase of ship's life cycle resides with:
  - PEO(Ships)
  - NAVSEA Program Manager (PM)
  - NAVSEA Ship Design Manager (SDM)
  - Supervisor of Shipbuilding, Conversion and Repair (SUPSHIP)
- MSC interfaces with PEO(Ships), PM, SDM, SUPSHIP, and shipbuilder

Operation and Maintenance Phase Life Cycle Planning

- Life cycle planning during operation and maintenance phase focuses on maintaining material readiness necessary to deliver expected mission capabilities throughout a ship's ESL
- Responsibility for life cycle planning during operation and maintenance phase resides with MSC

Disposal Phase Life Cycle Planning

- **Life cycle planning during disposal phase focuses on:**
  - **Maintaining inactive ships designated for retention in the highest practicable state of preservation consistent with applicable federal, state, and local environmental laws and regulations, ship's inactive status, higher priority Navy requirements for material as determined by the CNO, and available funds**
  - **Maintaining inactive ships designated for disposal in a fixed state of preservation consistent with applicable federal, state, and local environmental laws and regulations and available funds during storage and preparations for disposal**

  Responsibility for life cycle planning during disposal phase of MSC ship's life cycle resides with Navy Reserve Fleet or Naval Inactive Ship Maintenance Facility

MSC Life Cycle Planning

- **MSC QMS Procedure N0711-101.00-Q, MSC Life Cycle Planning Framework**
  - **Defines framework MSC uses for identifying maintenance and modernization activities necessary to maintain seaworthiness and mission capabilities for ship's ESL**
  - **Implements life cycle management responsibilities outlined in COMSC Instruction 5400, Organization of Military Sealift Command**
  - **Invokes requirement for life cycle plans**

Life Cycle Plan

- Reflects the priorities, resources, and scheduling of the execution of maintenance, alteration, and configuration management activities for maintaining and sustaining an MSC ship throughout its ESL
- Living document, although not a actually a document per se
- Consists of compilation of information maintained in SAMM
  - Planned Maintenance Industrial Assistance
  - TRANSALTs
  - Voyage Repair Request Log
  - Class Standard Items

Elements of MSC Life Cycle Planning

- Developing and maintaining operation and maintenance policies and procedures to prevent premature or repetitive failures
- Planning and executing maintenance
- Regularly scheduled inspections to assess material condition
- Alteration management
- Developing and maintaining policies and procedures to ensure system / equipment sustainability
- Identifying equipment with diminishing manufacturing sources and material shortages
- Engineering studies and analysis

Policies and Procedures

- **Developed and maintained through:**
  - **MSC Maintenance and Repair Management System (MRMS)**
  - **MSC Configuration Data Management Program (CDMP)**
  - **MSC Quality Management System (QMS)**
  - **Safety Management System (SMS)**
- **Codified in:**
  - **COMSC Instructions**
  - **QMS Procedures and Work Instructions**
  - **SMS Policy Manual**
  - **SMS Procedures**
  - **N7 Engineering Process Instructions (EPIs)**
  - **N7 Engineering Work Instructions (EWIs)**

Maintenance Planning

- Planned maintenance planning documented in SAMM
  - Preventive maintenance
  - Condition-based maintenance
  - Regulatory requirements
- Corrective maintenance planning activities also documented in SAMM
- SAMM system consolidates multiple tools for planning, execution, documentation, and trending of ship's force and industrial assistance maintenance activities

Regularly Scheduled Inspections

- **MSC's maintenance philosophy and policy requires compliance with third-party inspection for compliance with:**
  - **U.S. and international maritime regulatory requirements**
  - **Navy requirements**
- **MSC also conducts internal inspections:**
  - **Ship Material Assessment and Readiness Test (SMART)**
  - **Onboard Condition Inspection (OCI)**
  - **RITEMOV**

Alteration Management

- Alterations on MSC ships are referred to as Transportation Alterations (TRANSALTS)
- COMSC Instruction 4700.2 “Alteration Management for MSC Ships”
  - Defines an alteration as any change in hull, machinery, equipment, arrangement, or allowance that involves a change in the design, material, quantity, or location of equipment and components
  - Prohibits any alteration without an approved TRANSALT

Sustainability

- COMSC Instruction 4790.3 (series), Equipment Configuration Data Management, Life Cycle and Logistics Support for the Military Sealift Command (MSC)
  - Sound configuration management for configuration worthy systems, equipment, or components is essential for ensuring material readiness of MSC ships throughout their expected service lives
- Supportability begins with documentation of a vessel's configuration and maintaining configuration control over the life of the vessel

Diminishing Sources

- **Diminishing manufacturing sources and material shortages (DMSMS) involve loss, or impending loss, of manufacturer or supplier of critical equipment, parts, or raw materials**
- **Objective is to identify DMSMS issues at equipment or part level, as applicable, identify suitable replacements, and communicate this information to all users of CDMP in timely manner**

Engineering Studies and Analysis

- Intended to identify requirements for maintenance or configuration changes to support to maintaining seaworthiness and mission capabilities for ship's ESL
- Insights gained are incorporated into ship's life cycle plan
- Examples:
  - Hull fatigue studies
  - Out-Year engineering requirements assessments (OERAs)
  - CASREP analysis
  - Root cause analysis (RCA)
  - Post overhaul analysis
  - Maintenance effectiveness reviews

Ship Transfer Considerations

- **Additional life cycle planning considerations unique to USS ships transferred to MSC:**
  - **Review of ship's maintenance and sustainment history**
  - **Special inspections to refine turnover requirements**
  - **Modifications necessary to meet MSC habitability standards**
  - **Automation and other modifications necessary to support reduced MSC manning**
  - **Modifications necessary to meet sponsor mission requirements**

Let's Review

- What is life cycle management?
- Who is responsible for life cycle planning during each phase of a ship's ESL?
- Who is responsible for life cycle management within MSC?
- Who is responsible for developing life cycle plans within MSC?
- Describe the seven elements of MSC life cycle planning.

Summary

- During this module, we have discussed the following:
  - Life cycle management
  - Responsibility for life cycle planning throughout a ship's ESL
  - MSC life cycle management policies and procedures
  - Elements of MSC life cycle planning
  - MSC life cycle plans

Additional Information

- **For additional information, please refer to:**
  - **COMSCINST 3540.7, Engineering Operations and Maintenance Manual (EOMM)**
  - **COMSCINST 4700.1 Military Sealift Command's Technical Authority, Maintenance Philosophy, and Maintenance and Repair Management System (MRMS)**
  - **COMSCINST 4790.4, Military Sealift Command's Ashore Maintenance Management Policy**
  - **COMSCINST 4800.1, Regulatory Standards and Documentation for MSC Ships**
  - **QMS Procedure N0711-101.00-Q, MSC Life Cycle Planning Framework**
  - **QMS Procedure N0750-004.00-AQ, Maintenance Management Responsibilities**

Final Questions

Revision History

Date	Version	Description	Author
4/2/19	0.0	Created draft presentation	Gary Fields
8/7/19	0.1	Verified content is consistent with current COMSC Instructions and QMS and SMS procedures; Added COMSCINST 3540.7, COMSCINST 4700.1, COMSCINST 4790.4, COMSCINST 4800.1, and QMS Procedure N0750-004.00-AQ	Gary Fields