LCS
Mission Modules Program
Training Strategy
Brief for
Training and Simulation Industry Symposium (TSIS)

15 June 2011

Robin Kime, PMS 420L
robin.kime@navy.mil

Agenda

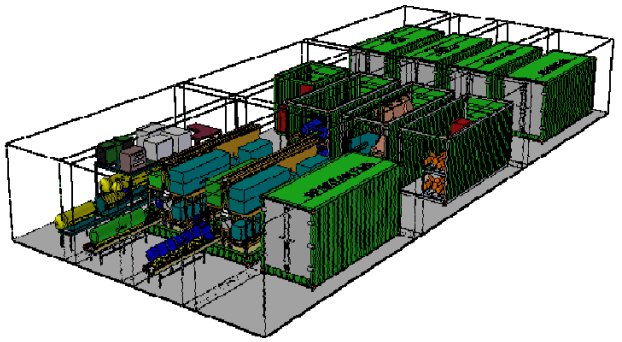
- Objectives
- LCS Mission Modules Program
- Sustainment Approach
- Training Approach
- Data Management Approach

LCS Mission Package Requirements

- Warfighting Capability Gaps have been identified in JROC approved ICDs
  - Assured Maritime Access in the Littorals ICD
  - Joint Undersea Superiority Capabilities Based Assessment / MCM ICD
- Mine Warfare
  - Shortfall of needed MCM capability to meet operational timelines
- Surface Warfare
  - Moderate capability against small boats with a layered defense approach
- Anti-submarine Warfare
  - Insufficient capability to support chokepoint/barrier operations, area search, and transit protection in high threat areas
- JROC validated and approved the LCS Flight 0 CDD in May 2004
- JROC approved LCS Flight 0+ CDD in June 2008 (included Spiral Alpha Mission Package annexes)

Littoral Combat Ship

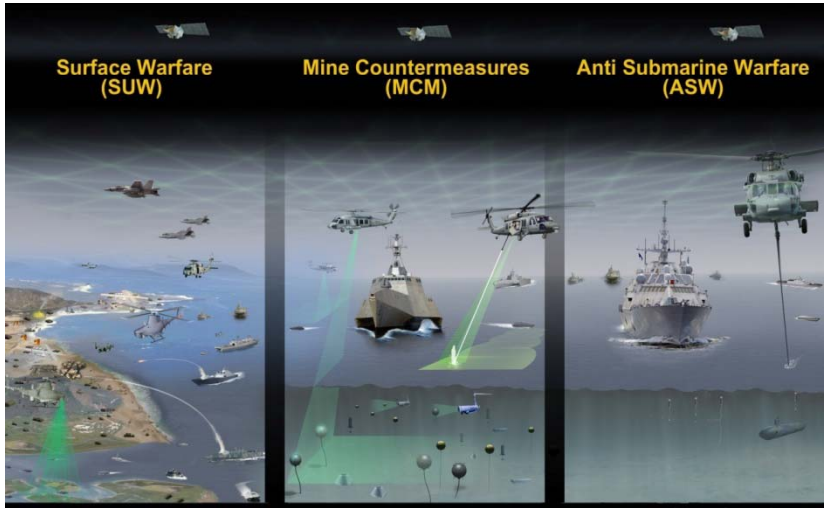
- Optimized for warfighting in the littoral
  - Unique designs for unique environment
  - Fast, maneuverable, shallow draft
- Targeted at critical capability gaps
  - Reconfigurable single-mission focus
  - Mines; small fast surface craft; diesel submarines
- Modular open systems architecture
  - Flexible system for dynamic battlespace
  - Advanced unmanned air, surface, and underwater vehicles
  - Onboard sensors, weapons, command and control
- Naval and Joint Force multiplier
  - Operational flexibility for sea superiority and assured access
  - Integral member of future surface combatant family of ships
  - Fully netted with the battle force
- Analysis validated small, fast delivery vehicle with integrated focused mission package



LCS Mission Modules System Description

Mission:

Mission: The LCS MPs will provide the Combatant Commanders a modular, focused mission capability to provide assured access against littoral mine, submarine and surface threats. Mission Systems are incrementally added to the Mission Package (MP) as they reach a level of maturity necessary for fielding. These systems provide a warfighting capability that will be continuously improved through an evolutionary acquisition development process.



Description:

A MP consists of Mission Modules (MM) with Mission Crew and Support Aircraft. MMs combine Mission Systems (vehicles, sensors, weapons) and support equipment that install into the Seaframe via standard interfaces. Mission Systems = vehicles, sensors, or weapons. Mission Module = Mission Systems + Support equipment + Standard interfaces. Mission Package = Mission Modules + Mission Crew + Supporting Aircraft.

Platform:

Littoral Combat Ship

Employment:

LCS Mission Packages provide sufficient flexibility for the at-sea commander to successfully achieve assured access mission requirements.

Mission Package Defined

MISSION MODULE
LCS MM Program - PMS 420

Mission Systems + Support Equipment

Vehicles
- RMMV
- USV

Weapons
- 30MM Gun
- AMNS
- SSMM

Sensors
- ALMDS
- AQS-20A
- COBRA

Support Containers
Support Equipment
Standard Interfaces

MPCE/MVCS Software

MPCE/MVCS Hardware

\+ CREW & SUPPORT AIRCRAFT

VTUAV

Crew Detachments
- Mission Modules
- Aviation

MH-60S

= MISSION PACKAGE

MP

Ship Hardware

Overall LCS MM Program Status




- **MCM Mission Package**
  - **MCM DT on track to begin in Q3 FY11**
  - **MCM OT on track to begin Q4 FY12**
  - **MCM MP IOC FY13**
- **SUW Mission Package**
  - **SUW DT on track to begin in Q3 FY12**
  - **SUW OT on track to begin Q4 FY12**
  - **SUW MP IOC FY13**
- **Anti-Submarine Warfare (ASW) Mission Package**
  - **ASW Increment I development suspended with MP #1**
  - **ASW Increment II planning begins in FY12**
  - **ASW Increment II development begins in FY13**
  - **ASW MP IOC FY16**




IOC for the LCS Mission Modules is defined as:
1) Operational Testing is complete
2) Infrastructure, logistics and a trained crew are available
3) First ship with embarked MCM MP is a deployable asset and assigned to an Operational Commander

LCS MM Sustainment

- PEO LMW / PMS 420 cradle to grave LCS MM responsibility to Surface Warfare Enterprise (SWE) for:
  - POM for all resources
    - Initial Outfitting, Interim Support and MM Maintenance OPTAR (“O”), “I” & “D” maintenance, training
  - Maintenance execution
  - Tech refresh
  - Metrics – Readiness Reporting
  - Integrated team training equipment, software and crew training pipeline management
- Mission Package Support Facility (MPSF), Naval Base Ventura County
  - Mission Module lifecycle management & sustainment hub
  - Organizationally reports to LCSRON via the MPSF OIC
  - MPSF provides reach-back capability and has cognizance over all Sources of Support and associated maintenance activities
  - Fly away team support until Mission Module Readiness Centers on-line (East Coast / OCONUS)

MPSF
2009 DoD Value Engineering Project of the Year

Mission…

- O,I&D level maintenance management
- Distance Support for deployed MMs
- Configure certified Deployable Assets
- Troubleshooting and repair
- System Operability Tests
- Inventory management / visibility
- Validate ready-for-use status of MP
- Packaging, Handling, Storage and Transportation
- Shelf life material
- Authorized spares are on-board
- Replenish spares and consumables
- Expedite parts requests as required
- Arrange Transportation of MMs
- Arrange Embark and Debark services

Employment Concept

Preparation: Mission Modules checkout at MPSF - Weapon Pwr Panel and diesel cooling system

Loading the Mission System in Support Container

Preparing Mission Module Support Container for land transportation

-or-

Mission Module Support Container loaded on C5 for air transportation

Mission Modules embarked aboard Seaframe (30mm GMM shown)

Mission Bay preparation to deploy system for operations

Mission System mounted on Vehicle

Mission Vehicle launched from Seaframe

Mission Operations

On-board maintenance

Packing up, preparing for debarkation at the end of deployment

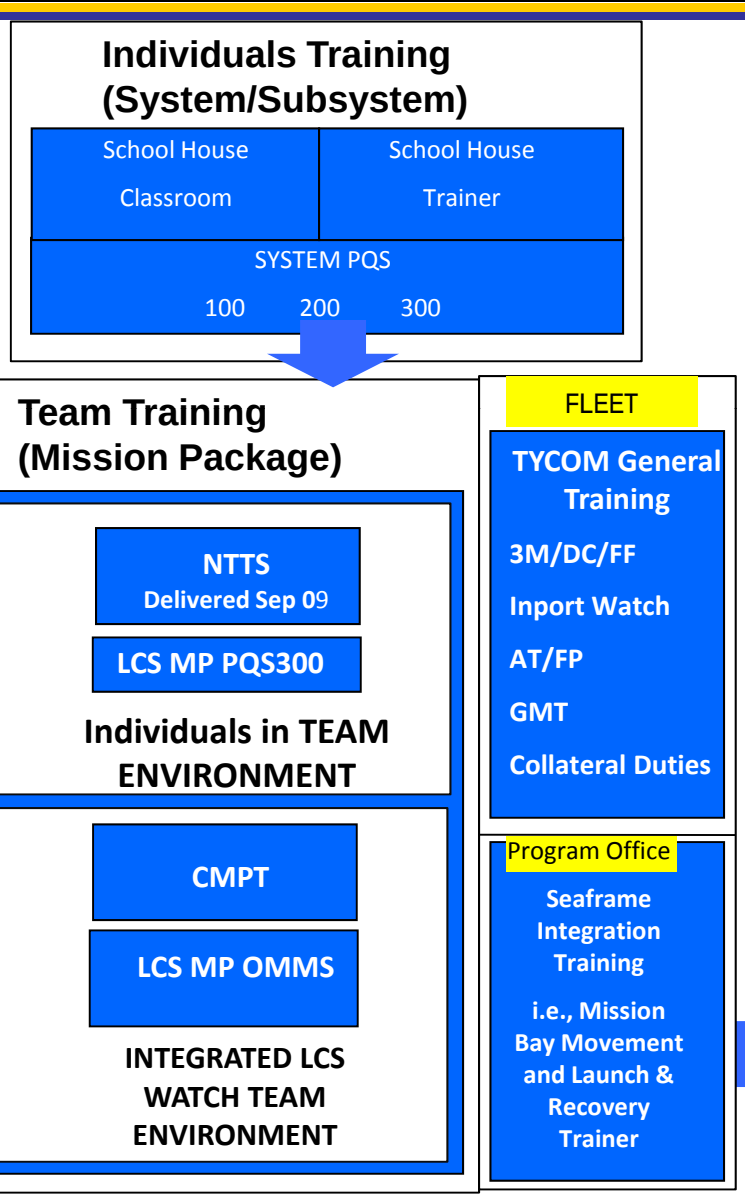
Return to MPSF for required maintenance / modernization

Specified Training Requirement

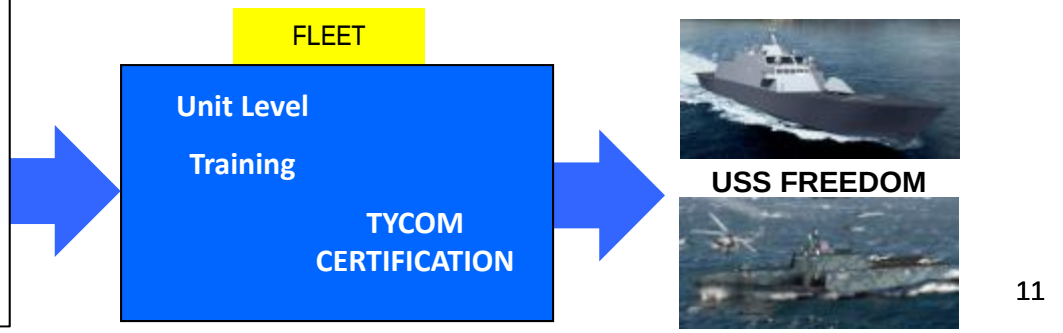
Capability Development Document (CDD) for LCS Flight 0+	
Train to Qualify (T2Q)	**Train to Certify (T2C)**
Process of training, in an off-ship training environment, an individual in the knowledge, skills, and abilities required to competently perform tasks, at a basic level associated with a designated (specific) shipboard watch station or position.	**Process of training, in an off-ship training environment, a watch team in the knowledge, skills, and abilities required to competently perform tasks, at an advanced level associated with a designated (specific) shipboard watch stations or positions.**

CDD Requirement	Threshold	Objective
Mission Modules Crew	**T2C**	

Training Strategy



- Sailor Ordered to TYCOM via pipeline training.
  - "Individual Training" for assigned watch station/billet. Includes:
    - System Operations and Maintenance
    - "Tool" operation (i.e., MEDAL and NALCOMIS)
  - Schoolhouse training must support T2C (PQS 100, 200, & 300 series) and T2Q (Outcomes, Measures, Metrics, & Standards {OMMS}).
- Sailor Reports to TYCOM for LCS MMs Training.
  - Individuals training placed in LCS Context using emulation products and T2Q training achieved.
  - Training in Integrated Watch Team environment using Tactical Hardware/Software with Sim/Stim and T2C training achieved.
- LCS ACADEMY rounds out remaining required training normally received while onboard.
- Specialized Seaframe Integration Training required to ensure safe operation at sea.
- Unit Level Training ashore integrates new sailors into LCS team
- ISIC conducts 'Certification' events.



USS FREEDOM

USS INDEPENDENCE

Course of Instruction Mapping

SYSTEM OPERATIONS & MAINTENANCE TRAINING

TEAM & TACTICAL TRAINING

LCS Mission Package Introduction

4-5 weeks shore side(66% lab / 33% class)
Training Goals
LCS Environment (COTS Emulation)

- ICC2/MCC
  - MPCE
  - Electronic Tools
    - Mission Planning
  - Watchstation(s)
    - Console Proficiency
- Mission Bay
  - Support Containers
    - System Maintenance
    - Spares & Special Tools
  - System Movement
  - Launch & Recovery
- Weapon Zone
- Mission Area Tracks
  - MCM
  - SUW
  - ASW

LCS CAPSTONE (T2Q achieved)

4-5 weeks shore side (66% lab / 33% classroom)
Training Goals (Scenario based training)

- MP Team Integration
- MP/Seaframe Integration
- Tactical Stand Alone & Integrated Trainer

LCS MCM Specific Tactics & Mission

3 Weeks Shoreside
Training Goals

- Minefield Theory, Practice & Tactics
- Environment
  - Acoustic
  - Optical
  - Bottom & Clutter
  - Mine Location & Condition
  - Unique Situation
- MCM System Capabilities & Limitations
- Planning Considerations
- Tools (MEDAL/BSMT)
- Scenarios (Practical Exercises)

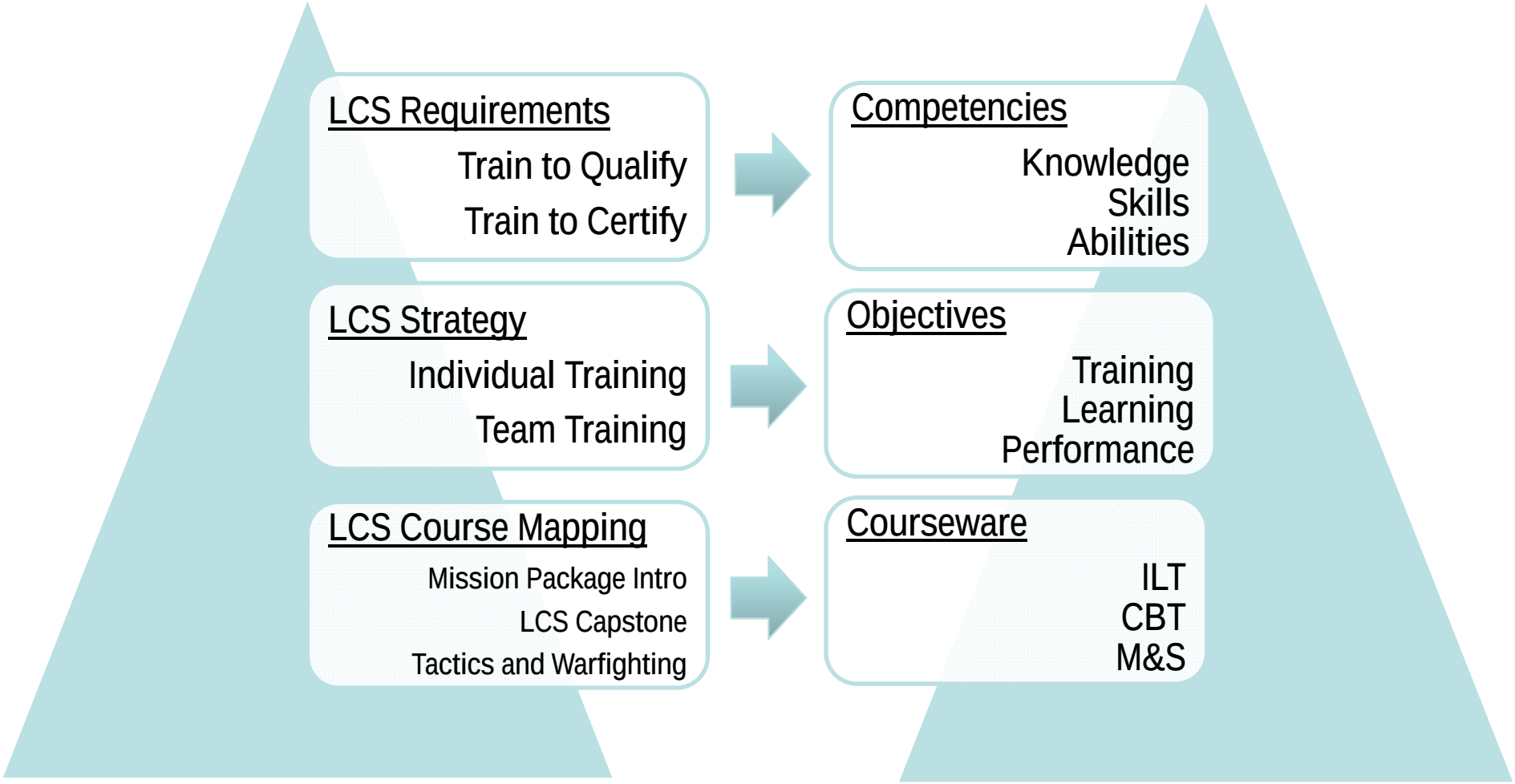
ASSIGNMENT TO SPECIFIC DETACHMENT

ULT: DETACHMENT TRAINING AND CERTIFICATION

NUMBERED FLEET CERTIFICATION FOR DEPLOYMENT

SEAFRAME / MP / AV EMBARK INTEGRATION ACTIVITIES

Requirements, Strategies & Mapping



Data Requires Life Cycle Management

Summary

- Link approach to life cycle sustainment and training courseware management.
  - (*Principle of modularity – Use of standards*)
- Link approach to LCS equipment design and courseware design.
  - (*Courseware as a Life Cycle item – Use of S1000D*)
- Use acquisition to reach modular data strategy.
  - (*Acquisition as key to courseware configuration – Know your requirements*)