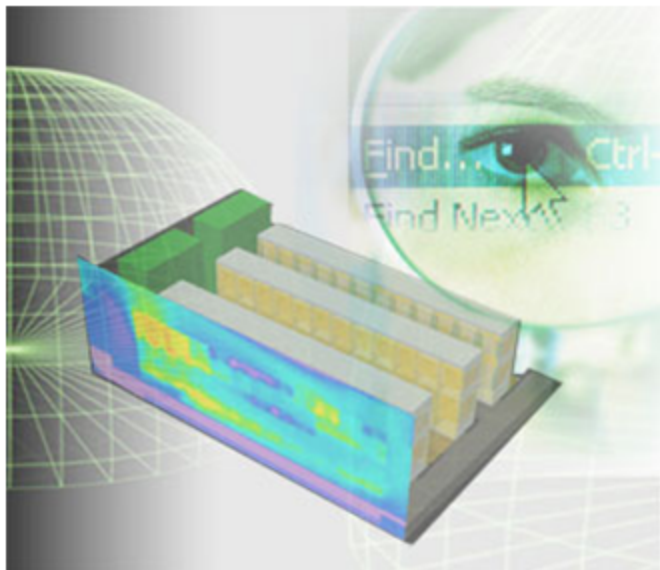


Welcome to Technical Activities

This lesson will help you understand the role of the LCL with regards to various technical activities used to define supportability objectives. During the pre-Materiel Solution Analysis phase you must begin assessing a system's supportability objectives and capabilities. This is integral to the success of any project because it begins to frame the boundaries, constraints and parameters of the eventual product support strategy and plan.



Objectives

Upon completion of this lesson you should be able to:

- Recognize potential maintenance concepts.
- Identify Service logistics policies.
- Recognize Statutory or Regulatory guidance.
- Define Reliability and Maintainability parameters.
- Define Operations and Support costs.
- Define Readiness objectives.

This lesson will provide you with information regarding the LCL's role in various technical activities, associated with defining supportability objectives.

Maintenance Concepts

Maintenance is a critical element in the readiness and sustainability of a weapon system. The maintenance concept is a general description of the maintenance environment and tasks required in support of a given system or equipment and the designation of the maintenance level for performing each task. The maintenance concept is eventually implemented through a Life Cycle Sustainment Plan. In your role as the LCL you need to understand the potential maintenance concepts that may be selected by the program manager.

DoD (organic) maintenance is accomplished by two different components — depot-level and field-level maintenance activities. The two components are distinguished largely by their relative capabilities, flexibility, agility, and capacity.

- Depot level - the most complex and extensive work
- Field Level - comprised of Intermediate and Organizational levels
 - Intermediate - less complex maintenance performed in operating unit back - shops, base-wide activities, or in consolidated regional facilities
 - Organizational level - more time-sensitive work performed in the field, on the flight line, or at the equipment site

Contractor maintenance - DoD contractually tasks the contractor to provide the necessary support resources. Click on the image to see more information.

**Organic
vs
Contractor Support**

Popup Text

Organic vs. Contractor Support

When a system/equipment item is to be supported in-house (organically), the government bears the responsibility of developing, producing, and fielding the needed logistics support resources. However, when a system/equipment item is contractor-maintained, the Government will contractually task the contractor to provide the necessary logistics support resources. A program should employ the best mix of government and contractor logistics support that is consistent with DoD and Service policies and direction.

Service Logistics Policies

While DoD establishes the overarching logistics policies each of the Services have implemented their own policies as well. This course is not intended to be a primer on each Service's logistics policies. However, at this point in the process, the LCL must be aware of Service specific boundaries, constraints or parameters resulting from a Service specific policy. You need to identify, review and understand all logistics policies that may impact the product support strategy and plan.

An example of differences in Service policies related to available levels of repair. The Air Force espouses a two-level repair process while the Navy utilizes three levels of repair. Available levels of repair will be a major driver in the overall maintenance concept and resulting maintenance plan. Links to DAU and Service logistics resources are available below.

- [Army](#)
- [Air Force](#)
- [Dept of the Navy](#)
- [DoD Policy and Guidance](#)

Another comprehensive logistics resource is the US Air Force [Air War College "Gateway to Logistics" website](#).



Statutory or Regulatory Guidance

The dynamics of today's changing political environment, organizational restructuring, and the variety of acquisition and logistics support initiatives require the LCL stay current on the laws and policies that can affect the way we design and support our systems.

The statutory/regulatory environment provides the LCL with the framework to develop and implement a supportability strategy. Capabilities development is embodied in the JCIDS. Chairman of the Joint Chiefs of Staff Instruction ([CJCSI](#)) [3170.01G](#) establishes policy and procedures for the JCIDS. Implementation guidelines and procedures are found in the JCIDS Manual.

Financial Management is embodied in the PPBE process. This process is implemented through Department of Defense Directive ([DoDD](#)) [7045.14](#), The Planning, Programming, and Budgeting System (PPBS).

Acquisition management is embodied in the Defense Acquisition System. [DoDD 5000.01](#) establishes principles, policies, and procedures for managing all DoD acquisition programs. [DoDI 5000.02](#) is the implementing instruction for DoDD 5000.01 and establishes a management framework for turning the Warfighter's needs into acquisition programs. As the LCL, you must ensure product support strategies provide for long-term sustainment of your weapon system or equipment item.

Title 10 United States Code (USC) and the Federal Acquisition Regulation ([FAR](#)) also are key facets of acquisition management. LCLs must recognize applicable laws and regulations when developing their product support plans. One area in particular with which the LCL should be familiar is depot maintenance capability requirements.

Statutory or Regulatory Guidance, Cont.

As the LCL you play an integral role in determining the workload allocation strategy for depot level maintenance and repair. The workload allocation strategy must be consistent with the overall Maintenance Concept, the individual maintenance plans for depot level repairables, and public law. While the maintenance concept and/or individual maintenance plans may be changed by the PM, public law may only be changed by the Congress. The provisions of public law that provide boundaries and constraints for the LCL when developing a depot workload allocation strategy are contained in various sections of Title 10 USC. Key sections are identified below:

Section	Title
2460	Definition of depot level maintenance & repair
2464	Core logistics capability
2466	Limitations on the performance of depot level maintenance of material
2469	Contracts to perform workloads previously performed by depot level activities of the DoD: requirement of competition
2474	Centers of Industrial and Technical Excellence (CITE): designation; public-private partnerships
2563	Sales of Articles and Services; teaming

Popup Text

Section: 2460

Title: Definition of depot level maintenance and repair

Description:

- Defines depot level maintenance and repair (regardless of source of funds or location at which performed) as maintenance, repair and overhaul, upgrades, rebuild, testing and reclamation
- Defines DoD "Core Logistics Capability" as depot artisan touch labor only Contractor support that includes depot level maintenance & repair are fully classified as depot level maintenance and repair

Section: 2464

Title: Core Logistics Capability

Description:

- Commonly referred to as "Core"
- Requires DoD to retain "Core Logistics Capability" to maintain and to repair 'essential systems' to meet national defense mobilization, contingency, and other emergency requirements
 - Core logistics capability identified by the SECDEF in terms of necessary depot level workload using Government-owned/ Government-operated facilities and equipment performed by federal workers
 - Essential systems identified by the SECDEF/JCS as essential to national security (number and type specified in war plans)
- Items determined to be commercial are exempt from Core requirements

Section: 2466

Title: Limitations on the performance of depot level maintenance of material

Description:

- Maximum of 50% of funding made available in a year for depot level maintenance and repair may

be used to contract for non-federal worker performance

- Calculated at the Service level
- Includes all depot level maintenance and repair (not Core dependent)
- Includes all sources of funds

Section: 2469

Title: Contracts to perform workloads previously performed by depot level activities of the DoD: requirement of competition

Description:

- Requires competition before moving depot workload greater than \$3M from a DoD depot
 - Cost includes labor and material
 - Applies to depot level maintenance and repair only
 - Includes transfer to another DoD depot or commercial activity

Section: 2474

Title: Centers Of Industrial and Technical Excellence (CITE); designation; public-private partnerships

Description:

- Requires adoption of best-business practices at all depots
- Authorizes and encourages Public Private Partnerships (PPP) that enables:
 - Private sector use of excess depot capacity
 - Lease of excess depot equipment to private sector partners
 - Depots to retain monies received to fund improvements and operations

Section: 2563

Title: Sales of Articles and Services; teaming

Description:

- Permits the SECDEF to designate DoD industrial facilities to sell articles or services to non-DoD customers
- Authorizes teaming

- Cooperative arrangement where the depot sells goods and services to the private sector
- Goods and services sold must not be readily available from US commercial sources
- May result in a public depot being a subcontractor

Reliability and Maintainability Parameters

Warfighter needs are the basis for development of materiel systems. Usually these needs are framed by the combat developer as a capability required to perform a mission. The program manager then translates the combat requirements into specific Availability, Materiel Reliability, and Ownership Cost metrics. (These metrics will be addressed in more detail in the next section).

Reliability is the ability of a system to perform as designed in an operational environment. Maintainability is the ability of a system to be repaired and restored to service when maintenance is conducted by personnel using specified skill levels and prescribed procedures and resources.

Reliability and maintainability parameters affect readiness, mission success, manpower and maintenance costs, and other logistics support costs. As the LCL you need to understand what the Warfighter needs and expects. Your understanding of the reliability and maintainability needs of the Warfighter combined with your knowledge of constraints such as logistics footprint and affordability will facilitate your ability to develop an effective support strategy and plan.

Reliability and Maintainability Parameters, Cont.

Four common Logistics reliability parameters are:

- [Mean Time Between Demands \(MTBD\)](#)
- [Mean Time Between Maintenance \(MTBM\)](#)
- [Mean Time Between Removal \(MTBR\)](#)
- [Mean Time Between Unscheduled Maintenance \(MTBUM\)](#)

An example of a Mission reliability parameter is:

- [Mean Time Between Operational Mission Failures \(MTBOMF\)](#)

As with reliability, there are many different parameters used to measure maintainability. Examples include:

- [Mean Corrective Maintenance Time for Operational Mission Failures \(MCMTOMF\)](#)
- [Mean Corrective Maintenance Time \(MCMT\)](#)
- [Maximum Corrective Maintenance Time for Operational Mission Failures \(MaxCMTOMF\)](#)
- [Maximum Corrective Maintenance Time \(MaxCMT\)](#)
- [Maintenance Ratio \(MR\)](#)

Popup Text

Mean Time Between Demands (MTBD)

A system reliability parameter related to demand for logistic support. The total number of system life units, divided by the total number of item demands on the supply system during a stated period of time.

Mean Time Between Maintenance (MTBM)

A system reliability parameter related to demand for maintenance manpower. The total number of system life units, divided by the total number of maintenance events (preventive and corrective) during a stated period of time.

Mean Time Between Removal (MTBR)

A system reliability parameter related to demand for logistics support. The total number of system life units, divided by the total number of items removed from that system during a stated period of time. The term is defined to exclude removals performed to facilitate other maintenance and removals for product improvement.

Mean Time Between Unscheduled Maintenance (MTBUM)

A system reliability parameter related to demand for maintenance manpower. The total number of system life units, divided by the total number of unscheduled maintenance events during a stated period of time.

Mean Time Between Operational Mission Failures (MTBOMF)

MTBOMF is a measure of the system reliability parameter related to availability and readiness; it is computed as the total number of system life units, divided by the total number of operational mission failures, during a stated period of time.

Mean Corrective Maintenance Time for Operational Mission Failures (MCMTOMF)

The total number of clock hours of corrective, on-system, active repair time that was used to restore failed systems to mission-capability status after an operational mission failure (OMF) occurred, divided by the total number of OMF's.

Mean Corrective Maintenance Time (MCMT)

The total number of clock hours of corrective, on-system, active repair time due to all corrective maintenance divided by the total number of incidents requiring corrective maintenance.

Maximum Corrective Maintenance Time for Operational Mission Failures (MaxCMTOMF)

The time below which a specified percentage of corrective maintenance tasks are completed to restore the system to operation after an Operational Mission Failure.

Maximum Corrective Maintenance Time (MaxCMT)

The time below which a specified percentage of corrective maintenance tasks are completed.

Maintenance Ratio (MR)

Expresses the maintenance burden associated with the system. It is commonly given in maintenance man-hours per operating hour, but other terms such as miles or rounds may be substituted for hours.

Operating and Support Costs

Operating costs are defined in the DAU Glossary of Defense Acquisition Acronyms and Terms as "Those program costs necessary to operate and maintain the capability. These costs include military personnel and operations and maintenance (O&M) costs."

One of the key roles of the LCL is to develop the most cost-effective method to support the weapon system while allowing best possible performance of the mission. The program manager is required to use a Total Systems approach and consider, among other factors, life cycle costs in making program decisions. You will have an active role in this process. It can be an intimidating challenge and requires the LCL have a thorough understanding of financial constraints and parameters. An example of this is setting initial financial targets (i.e. O&S costs per hour).

Readiness Objectives

Readiness is defined in the DAU Glossary of Defense Acquisition Acronyms and Terms as a "State of preparedness of forces or weapon system or systems to meet a mission or to engage in military operations. Based on adequate and trained personnel, material condition, supplies/reserves of support system and ammunition, numbers of units available, etc."

The LCL needs to know and understand what the Readiness Objectives are in order to effectively develop a product support strategy and plan necessary to meet readiness objectives.

Knowledge Review

Which of these statements best describes the LCL's Technical Activities during the pre-Materiel Solution Analysis phase?

- ☐ The LCL is not responsible for accomplishing Technical Activities.
- ☐ The LCL only has to consider Maintenance Concepts during the pre-Materiel Solution Analysis phase.
- ☒ The LCL begins to frame the boundaries, constraints and parameters of the eventual product support strategy and plan.
- ☐ The LCL does not have to recognize Statutory and Regulatory Guidance when developing a product support strategy and plan.

Check Answer



The LCL's Technical Activities during the pre-Materiel Solution Analysis Phase are best described as:
"The LCL begins to frame the boundaries, constraints and parameters of the eventual product support strategy and plan."

Technical Activities Summary

You have completed Technical Activities and should now be able to:

- Recognize potential maintenance concepts
- Identify Service logistics policies
- Recognize Statutory or Regulatory guidance.
- Define Reliability and Maintainability parameters,
- Define Operations and Support costs
- Define Readiness objectives

Lesson Completion

You have completed the content for this lesson.

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