

Welcome



**OPERATING AND SUPPORT COST ESTIMATING  
FOR THE PRODUCT SUPPORT MANAGER:  
MODULE SUMMARY**

## Introduction

Congratulations! You have completed the Operating and Support Cost Estimating for the Product Support Manager continuous learning module.

As the PSM, you found out that there are many considerations when calculating and estimating costs for personnel, equipment and supplies.

It's important to have a good understanding of the methodologies that have been applied as well as the necessary equations so that you can have a relatively accurate financial projection for your unit or group.

Let's take a moment to review.



## The PSM and O&S Cost

In this lesson you reviewed the following about the PSM and O&S Cost:

As a Product Support Manager (PSM), your role is essential in applying O&S cost information to the program decision-making process, particularly as it relates to the development of a product support strategy.

While the PSM must ensure O&S costs related to product support are accurately reflected at every stage of O&S, the most significant impact occurs early in the program life cycle.

The November 2009 DoD Weapon System Acquisition Reform Product Support Assessment (WSAR-PSA) report identified Operating and Support (O&S) Cost Management as a recommendation area that should be addressed to drive product support towards the report's vision of aligning the acquisition, sustainment, and operational communities in order to provide affordable and required Warfighter outcomes.

There are four life cycle cost categories:

1. Research and Development
2. Investment Cost
3. Operating and Support Costs
4. Disposal Costs

Operating and Support (O&S) Costs are funded primarily with the O&M and Military Personnel appropriations. However, Research Development Test and Evaluation (RDT&E), Procurement, and/or Military Construction (MILCON) appropriations may also be used, as appropriate, based on the nature of the effort, after the weapon system has been deployed.

## The PSM and O&S Cost, Cont.

**Types** of O&S costs include:

- Fixed and Variable
- Direct and Indirect
- Labor and Non-Labor

The key **Players** in O&S cost include:

- Program Manager (PM)
- Product Support Manager (PSM)
- Program and Component Cost Analyst
- Product Support Integrators (PSIs)
- Product Support Providers (PSPs)



The key **Stakeholders** in O&S cost include:

- Industry Partners
- Resource Sponsors
- Operational Communities/Warfighters
- Comptroller (DoD)
- Cost Analysis and Program Evaluation (CAPE)

As a PSM, it is your responsibility to know where to locate O&S cost data, understand the appropriate basic O&S questions to ask about programs, and to know what key resources and tools to use when determining O&S costs.



## The PSM and Affordability

To summarize, in this lesson you learned the following:

- The program manager and the PSM play a major part in determining and achieving affordability in that he or she defines the infrastructure that will drive the Operating and Support (O&S) costs and in operating that infrastructure once the system is delivered to the warfighter.
- Life Cycle costs are made up of several KSAs that include Research and Development Cost, Operating and Support (O&S) Cost, Production/Deployment Cost, and Disposal Cost.
  - The O&S cost are those resources required to operate and support a system, subsystem, or a major component during its useful life in the operational inventory.



### The PSM and Affordability, Cont.

- PSMs can measure affordability, and more specifically O&S cost to provide short term pain for long term gain, through Acquisition Program reviews using tools such as the Sustainment Quad chart and understanding the "Better Buying Power" initiatives.
- The PSM will be tasked to evaluate cost estimates and must understand, and when necessary, challenge them. In order to do that effectively, the PSM must understand what are the cost drivers. For example, caustic cost drivers, pervasive influences that drive O&S, and relative cost drivers.
- Each of the IPS elements has associated Operating and Support (O&S) costs but the principal drivers of O&S include Design Interface, Maintenance, and Supply Support.



## O&S and Design Interface

Our objectives in this lesson were to explore the various aspects of Design Interface such as Reliability and Maintainability (R&M) to see how they affect O&S cost. We also looked at Availability and how R&M play in calculating the various types of Availability. Remember that there is an Availability Key Performance Parameter and Key System Attributes for Reliability and O&S cost, so all these concepts are closely related and all are driven by the design of the system.





## O&S and Depot Maintenance

In determining the O&S costs for Maintenance, the major cost driver is Labor Costs. In this lesson, we looked at types of labor costs and the different methods of estimating them.

The three traditional levels of maintenance include Organizational Level (O-Level), Intermediate Level (I-Level), and Depot Level (D-Level). The key driver in labor costs is the number of hours expended in both unscheduled and scheduled maintenance, primarily at the organizational and intermediate levels of maintenance.

There are five methods that the PSM may rely upon for cost estimating including:

1. Direct
2. Analogy
3. Cost Estimating Relationship (CER)
4. Expert Opinion
5. Combination



The cost of labor at a depot is often included in the total cost of the Depot Level Repairable. The PSM generally has no role in calculating this cost. However, labor costs at the organizational or unit level and at the intermediate level have to be calculated separately.



## O&S Cost and Supply

In this lesson you learned the following:

- Supply is process-driven and that process requires constant assessment and adjustment to ensure that needed spare and repair parts reach the warfighter in the most efficient and cost-effective ways. Supply chain planning and execution is a major part of a PSM's job.
- There are two levels of supply, wholesale and retail. Wholesale Supply is the level of supply support including national inventory control points, depots, terminals, arsenals, central wholesale data banks, plants and factories associated with commodity command activities. Retail supply is stock held in the custody or on the records of a supply organization below the wholesale level. Retail supply helps in calculating cost and in terms of inventory management and its impact on availability.
- Consumables and Repairables are the two main categories of supply materials.



## O&S Cost and Supply, Cont.

- Estimating repair costs is a critical action. In estimating cost for maintenance consumables, the equation for costing will simply be  $Q \times P$ , where  $Q$  is the quantity of consumables of certain price which fail over a specified time period and  $P$  is the standard price for a replacement.
- Depot level repairables are often one of the most significant O&S cost elements of a weapon system. It is important for a PSM to know the cost components as well as how to cost DLRs.
- Depot maintenance estimates may differ when you are referring to DLRs or more specific items such as an entire aircraft. But, there are two areas in which the procedure is similar: estimating frequency and estimating cost per action.
- While depot maintenance helps to avoid "wear out" or critical stage failures, understanding the durability and service life of objects/systems is very important.



## Personnel Costs

In this lesson you learned the following:

- Calculating the cost of personnel is relatively straightforward. But there are subtleties in determining both quantities and *indirect personnel* costs that have to be explored. As a PSM, you need to consider the cost of personnel as well as the quantity.
- The Manpower Estimate Report (MER) is the primary source of manpower quantities for O&S estimates at major decision milestones. MER can usually be found in the Cost Analysis Requirements Description (CARD).
- In estimating personnel costs, we have to abide by a rule that says that we have to estimate for peacetime based on wartime assumptions. We estimate the cost for these personnel using composite rates based upon guidance from the Cost Assessment and Program Evaluation (CAPE). If costs are driven by operating hours, we estimate using peacetime operating hours.





### Personnel Costs, Cont.

- A PSM needs to be aware of the appropriate composite rate for costing military or civilian personnel.
- Indirect personnel and manpower costs such as weapons buildup and maintenance may be difficult to calculate but they must be included.





## Sustaining Environment

In this lesson you learned the following:

- The PSM assumes a principal role in managing O&S costs since many of the costs being incurred will be directly impacted by the design of the support infrastructure
- The PSM must consider and understand many O&S costs including consumable costs, material & support costs, energy & fuel costs in order to properly estimate the costs for each operating unit.
- A PSM is tasked to know the difference between operating support costs and sustaining support costs.
- Support Equipment is an important area of Sustaining Support costs. Using the procurement cost as well as using historical analogies are the two common methods used for estimation.

**Sustaining Environment, Cont.**

- Systems must be continuously upgraded to deal with technology advances and changes to the threat environment. This is referred to as "Continuing System Improvement" and encompasses both hardware and software. A PSM should understand how to properly estimate cost for upgrades and modifications in this category.
- Software driven support falls into three categories: adaptive, corrective and perfective. As with any other cost estimating, there are models we can use to estimate software costs. A key point is to use the same model to estimate O&S software costs as that used for development.

## Learning Objectives

Now that you have completed the Operating and Support Cost Estimating for the Product Support Manager continuous learning module, you should now be able to demonstrate an understanding of the concepts related to the role and importance of Operating and Support (O&S) cost estimating in life cycle product support planning.

We hope that this information is helpful and instructive as you pursue excellence in your program.

## Module Completion

You have completed the content for this lesson.

At this point you should have completed all of the lessons in this module.

Please take the Module Exam and complete the Module Survey so you may receive credit for this course.

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