

The Siburg Company, LLC

Inventory Management Understanding the Basics

By

William E. Siburg, CPIM

What is Inventory?

- Those stocks or items used to support production, supporting activities (maintenance, repair, and operating supplies), and customer service (finished goods and spare parts).
- Any material required to create a saleable product or to run the business.

Types of Inventory

- Raw Materials/Purchased Parts
- Work-in-Process
- Finished Goods (to include spare parts)
- Maintenance, Repair, and Operating Supplies (MRO)

Is Inventory “Good or Bad”?

- It depends!
- Metrics are required to determine current levels of performance, define goals, and measure improvement over time.

Key Metrics

- Level of Service
 - Numerous ways to measure
 - Business dependent
- Inventory Turnover
 - A measure of resource usage or inventory “velocity”

Inventory Turnover Defined

- The number of times that an inventory cycles, or “turns over”, during the year.

☑ Average Inventory \$ On-Hand

Annual Cost of Sales

☑ Total Quantity On-Hand

Annual Usage

The ABCs of Inventory

- The ABC principle states that effort and resources should be applied based on the dollar-volume of inventory in question.

<u>Class</u>	<u>% of Items</u>	<u>% of \$ Volume</u>
A	10 - 20%	60 - 80%
B	20 - 30%	20 - 30%
C	50 - 70%	10 - 20%
D	<5%	N/A

The Economic Order Quantity

- A type of fixed-order-quantity model that determines the amount of an item to be purchased or manufactured at one time.
- The intent is to minimize the combined costs of acquiring and carrying inventory.

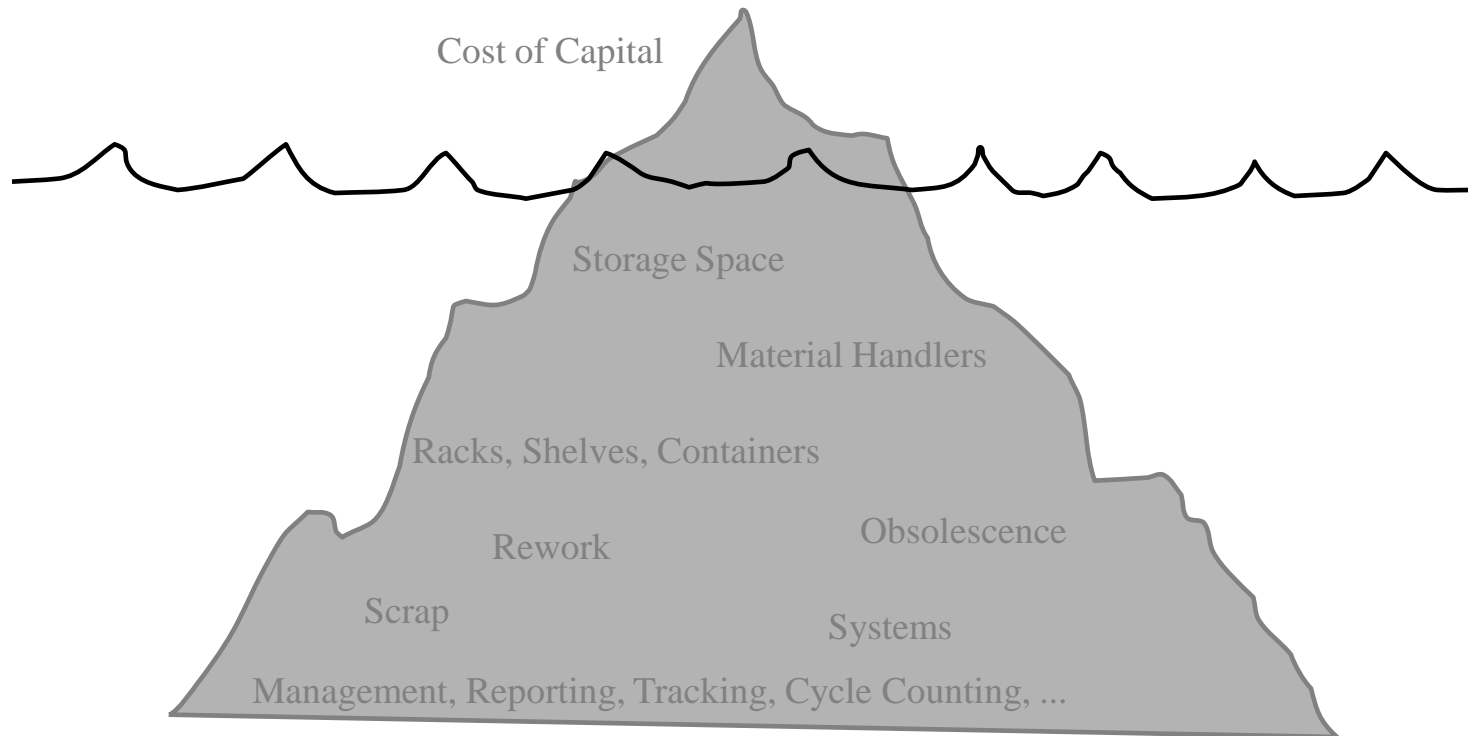
The EOQ Calculation

$$\sqrt{\frac{2 \times (\text{annual demand}) \times (\text{avg order cost})}{(\text{annual carrying cost \%}) \times (\text{unit cost})}}$$

Key Variables

- Order Cost
- Carrying Cost

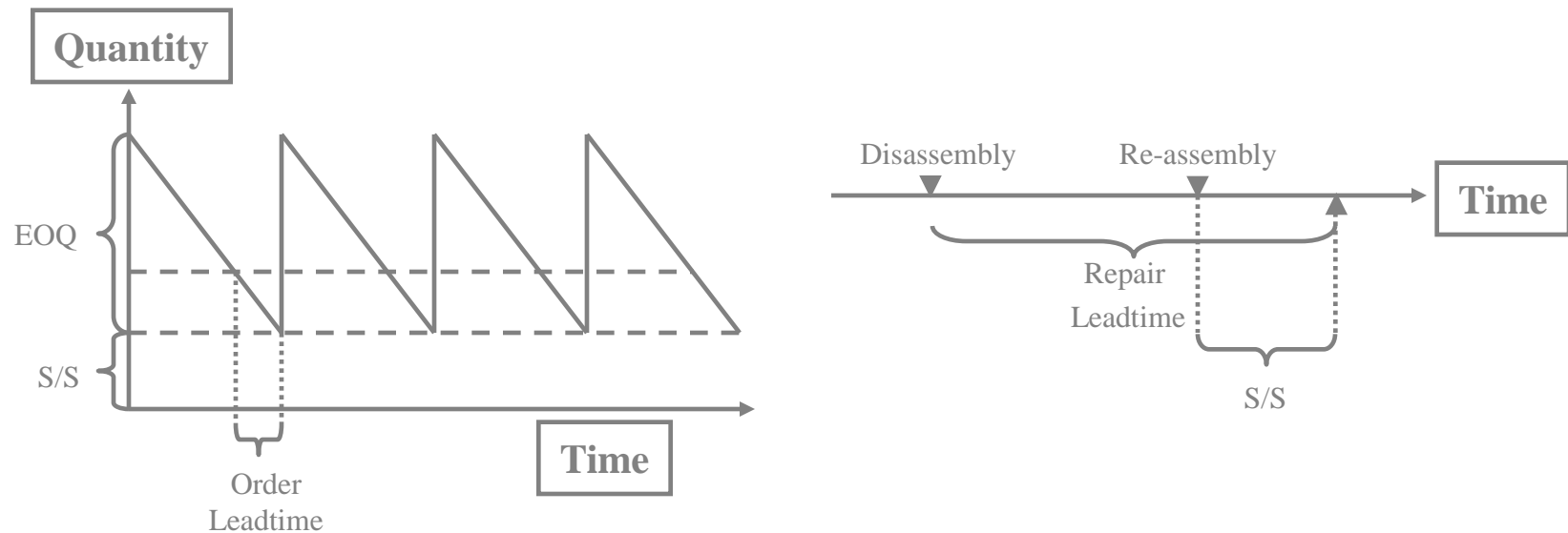
Carrying Cost



- Carrying Cost = 25 - 35%

Safety Stock

- A quantity of stock planned to be in inventory to protect against fluctuations in supply and demand.



Inventory Reduction Strategies

- Raw Material/Purchased Parts
 - Shift to Suppliers
 - Reduce Leadtimes
 - Change Design
- Work-in-Process
 - Reduce Cycle Times
 - Improve or Eliminate Processes
 - Outsource
- Finished Goods/Spare Parts
 - Reduce Leadtimes
 - Make-to-Order
- MRO
 - Shift to Suppliers

Types of Manufacturing Environments

- Make-to-Stock
- Make-to-Order
- Design-to-Order

The Balance Sheet

Assets

Cash

A/R

Inventory

Liabilities

A/P

Shareholders' Equity

Dell - an example of “*negative working capital*”

- 52 inventory turns per year
- Cash-in-hand 8 days before suppliers are paid
- $(A/R + Inventory) < A/P = \text{Negative Working Capital}$

Questions and Comments

Borg Siburg, CPIM

Associate Partner

The Siburg Company, LLC

Phone: 480-502-2800

Fax: 480-502-2804

E-mail: borg.siburg@TheSiburgCompany.com

Website: www.TheSiburgCompany.com