

IBM Maximo Asset Management V7.5

Understanding Maximo Asset Management inventory reorder calculations



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In this training module you will learn about the Maximo® Asset Management version 7.5 inventory reorder calculation process.

Objectives

When you complete this training module, you are able to perform these tasks:

- Define the inventory reorder calculations terms
- Set a safety stock level
- Create a Reorder Point (ROPs) for a stocked item
- Set an Economic Order Quantity (EOQ) for a stocked item
- Calculate inventory reorders for store room stocked items

When you complete this training module, you are able to perform these tasks:

- Understand and define the terms related to inventory reorder calculations
- Determine and set an items safety stock level
- Determine an items Reorder Point (ROP)
- Set an items Economic Order Quantity (EOQ)
- Make inventory reorder calculations for storeroom items

Reorder calculation process

- The reorder calculation process involves these stages:
 - Setting inventory item Safety Stock level
 - Setting inventory item Reorder Point (ROP)
 - Determining Economic Order Quantity (EOQ)
 - Making reorder calculations

Reorder calculations are accomplished in process stages setting the inventory item's Safety Stock level, setting the inventory item's Reorder Point (ROP), determining the inventory item's Economic Order Quantity (EOQ), and making the actual reorder calculations.

Defining reorder calculation terms (1 of 2)

- **Reorder Order Point (ROP):**
 - Balance level where you want inventory item reordered
 - Requires calculation and is based on demand for item over lead time and establishment of safety stock
- **Safety Stock:**
 - Minimum stock balance to have on hand for an item at all times
 - Based on how critical the item is to your operation
- **Economic Order Quantity (EOQ):**
 - Optimum ordering quantity to keep inventory investments to a minimum
 - Smaller EOQ quantities keep the inventory down, but generate higher shipping and stocking costs
 - Larger EOQ quantities keep costs down, but increase cost of keeping items in stock

The reorder point is the balance level at which you want your inventory reorder to take place for the given item.

It is used to trigger the reorder process. The reorder point requires a calculation based on demand for the item over lead time and an establishment of the safety stock level.

The safety stock is the minimum stock balance that you want to have on hand for an item at all times. It's actual value is heavily based on how critical the item is to your operation.

The economic order quantity is the quantity of an item that is reordered once reorder process is underway. This refers to the optimum ordering quantity to keep inventory investments to a minimum.

Smaller economic order quantities keep the inventory down, but generate higher shipping and warehouse stocking costs.

Larger economic order quantities keep shipping and warehouse stocking costs down, but increase cost of keeping items in stock.

Defining reorder calculation terms (2 of 2)

- **Current Balance (CurBal)** : Available quantity on the shelf
- **Reserved Quantity**: Sum quantity on approved work orders quantity minus the expired stock quantity
- **Expired Stock**: Sum on hand of expired items
- **Stock on Order**: Sum quantity of items on all Purchase Requests (PRs) and Purchase Orders (POs) for that item number at a specific storeroom the PO or PR status of stock on order items cannot be listed as closed or cancelled

A Current Balance is the available item quantity currently on the storeroom shelf. A Reserved Quantity is the quantity amount on all approved work orders referencing that item in the storeroom minus expired stock. Expired Stock is the quantity on hand of expired lotted items for a specific storeroom stock item number. Stock on Order is a sum quantity of items on all PR's and PO's for that item. Stock on Order items are at a specific storeroom and the PR or PO status is not listed as closed or cancelled.

Determining safety stock level

- The safety stock level is determined by determining these factors:
 - Important of storeroom item company operations
 - Difficulty in replenishing stock
 - Quantity typically used over a period of time
- Use safety stock level to help determine the Reorder Point (ROP)

The safety stock level is determined by determining these factors. How critically important the storeroom item is to company operations. How difficult it is to replenish stock of the storeroom item. How many of the items are pulled from stock for use over a period of time. Once the safety stock level is determined you can use it to help determine the Reorder Point (ROP).

Determining reorder point

- The ROP level is determined these factors:
 - Demand or consumption of stock for a storeroom item
 - Safety stock level quantity set
 - Lead time demand
- Use the ROP level of the item to determine the EOQ

The **Reorder Point** (ROP) level is determined by demand or consumption of stock, the set safety stock level, and the **Lead Time Demand** for an item.

Lead Time Demand is the amount of stock expected to be used between the time of reorder and receipt of the new shipment.

Once the item's ROP is determined you can use it to help determine the **Economic Order Quantity** (EOQ).

Determining economic order quantity

- Obtain the EOQ level with these factors:
 - Demand or consumption of stock for a storeroom item over a time period
 - Cost of ordering and stocking large quantity of item
 - Cost of frequently ordering a small quantity of item

The EOQ level is determined by demand or consumption over a period of time and the cost of ordering and stocking large quantities of an item versus the cost of frequently ordering small quantities of an item.

Using the inventory application

List	Inventory	Reorder Details	Rotating Assets	Where Used
Item	10112	Fire Extinguisher Fluid- Ansulex		
Storeroom	PKG	Packaging Dept. Storeroom		
Lot Type	NOLOT			
Stock Category	STK			

Balance Summary	
Current Balance	12.00
Quantity Currently Reserved	0.00
Expired Quantity in Stock	0.00
Quantity Available	12.00
Quantity in Holding Location	0.00

Reorder Details	
Reorder Point	5.00
Lead Time (Days)	30
Safety Stock	2.00
Economic Order Quantity	5.00
Order Unit	EACH

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Look at the **Inventory** screen. The screen shows an ample storeroom stock quantity of fire extinguishers. The **Balance Summary** shows twelve fire extinguishers in stock. The **Reorder Details** menu shows that the ROP is set to five and that the **Safety Stock** level is set to keep two fire extinguishers in stock at all times. Once stock of the item depletes to only five in stock the order is put in to request five more fire extinguishers. Five extinguishers is the amount to reorder and is determined by the **Economic Order Quantity** amount set in **Reorder Details**. The **Balance Summary** screen shows fields in the inventory application that are used to calculate whether an item is due to be reordered. **Current Balance** equals twelve in stock. **Quantity Currently Reserved** equals zero. Expired Quantity in Stock equals zero, which means that all twelve fire extinguishers are in good working order. Quantity Available equals twelve, since you have twelve and all twelve are in good working order. **Quantity in Holding Location** equals zero, which means you are not holding any fire extinguishers at another location. In **Reorder Details** the **Safety Stock** quantity is set to two. Usage of seven of the fire extinguishers in stock needs to occur before you reached the **Reorder Point** of only five left in stock. When the inventory item stock level falls to five then you order five more as shown in the **Economic Order Quantity** field.

Example reorder calculation

<u>Item</u>	<u>CurBal</u>	<u>Res Qty</u>	<u>ROP</u>	<u>Qty on Order (open PO/receipts)</u>	<u>Issue Unit</u>
30087	6.0	0	2.00	19	ea
<u>Order Unit</u>		<u>EOQ (orderqty)</u>			
NULL		3.00			

Reorder calculation:

- Order Quantity = [(ROP + 1) - Quantity on Order - CurBal]
- [(2+1) - 19 - 6] = [(3) - 19 - 6]
 - Order Quantity = (negative) 22
 - Item is not due for reorder until it reaches a quantity of two left in the storeroom

In this reorder calculation the first step is to add one to the **Reorder Point (ROP)**. The **ROP** for this item is two. Adding one to the **ROP** gives you a value of three to plug into your equation. Next, subtract the current **Quantity on Order** which is nineteen. This gives a calculation value of minus sixteen. Finally, subtract the available balance which is the **CurBal** for the item. The **CurBal** is six. Subtracting the current balance gives an order quantity of negative twenty-two. There is no need to reorder **Item 30087** because there is an adequate quantity of the item in stock (six) and on order (nineteen).

Summary

Now that you finished this training module, you can perform these tasks:

- Understand inventory reorder calculation terms
- Set a safety stock level
- Determine Reorder Point (ROP) for a stock item
- Set Economic Order Quantity (EOQ) for a stock item
- Calculate inventory reorders for the stock items

Now that you have completed this training module, you can perform these tasks:

- Understand and define the terms related to inventory reorder calculations
- Determine and set an items safety stock level
- Determine an items Reorder Point (ROP)
- Set an items Economic Order Quantity (EOQ)
- And make inventory reorder calculations for storeroom items

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