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A Proven Tool - Now on the Web

Management Resources Group, Inc. provides a proven decision support tool which recommends reorder levels for the MRO spare parts that cannot be managed using statistical demand forecasting models available within most computerized materials management systems (CMMS). These items meet the following criteria: low turnover (used less than once per month) and unpredictable demand. By definition these spares are considered 'Rarely Used'. The vast majority (80% - 90%) of the spares within any storeroom are Rarely Used and therefore require specialized computations for setting optimum reorder levels.

The Logic

In straightforward plain-English concepts, here's how the proven logical calculation works. Starting with historical usage, the likelihood of a demand on the storeroom on any given day is calculated. Multiplying this result by the lead time to replenish a storeroom issue calculates the probability of multiple demands occurring during the lead time to replenish. The final calculation is to factor in the degree to which getting caught short is unacceptable.

The stock level decision evaluation begins with the decision to set the maximum stock to zero (do not stock the item) and only order the item after a demand has occurred. The annual inventory cost for this decision is zero because there never will be any inventory of this item. However, the annual risk costs of backorders may be extremely high. With a decision to stock zero, the duration of a backorder is always equal to the lead time.

The objective is to find the stock level with the lowest annual total risk cost of carrying unused inventory and incurring backorders.

The second evaluation is to consider the consequences of a decision to stock one unit. For stock levels of one or greater, backorder durations are less than a full lead time because one or more units have been ordered already when a prior demand occurred.

As stock levels increase, the likely backorder costs decrease but the inventory carrying costs increase. At some level, the sum of these two risk costs is at a minimum; this is the economically optimum stock level. Above that stock level, the inventory carrying costs are increasing faster than the backorder risk costs are decreasing because almost all risk of getting caught short has been eliminated.