

Sasiprapa Limpakarn 2013: Multiple Items Economic Production Quantity with Raw Materials and Components Inventory Management Consideration. Master of Engineering (Industrial Engineering), Major Field: Industrial Engineering, Department of Industrial Engineering. Thesis Advisor: Assistant Professor Wisut Supithak, Ph.D. 98 pages.

Although the Multiple Items Economic Production Quantities model (Multi-EPQ) is extensively used in the determination of optimal production lot size of each item in the continuous demand system, this technique does not consider those costs associated with the inventory management of raw materials and components consumed in the production. The purpose of this research is to determine the optimal production lot size of each product in order to minimize the total cost of system including ordering costs, set up costs, and holding costs of raw materials and finished products. For solving the problem, the mathematical model of system total cost is developed and derived in order to determine the optimal number of production cycle per year which can lead to the determination of optimal production lot size of each product. From the study result, it has been found that the percentage of deviation between the total cost yielded from the proposed model and the total cost yielded from the traditional Multi-EPQ model is emphasized when the number of common raw materials is increased.

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Thesis Advisor's signature