

60. A Study on the Centralization of Safety Stock and Optimal Second Replenishment Policy in a (1, m)Type Inventory System

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Centralized safety stock in a periodic replenishment system which consists of one central warehouse and m regional warehouse can reduce backorders allocating the centralized safety stocks to regional warehouse in a certain instant of each replenishment cycle. If the central warehouse can not monitoring inventories in the regional warehouse, then we have to predetermine the instant of allocation according to demand distribution and this instant must be same for all different replenishment cycle. However, transition of inventory level in each cycle need not to be same, and therefore different instant of the allocation may results reduced



shortage compare to the predetermined instant of allocation. In this research, we construct a dynamic model based on the assumption of monitoring inventories in the regional warehouse everyday, and develop an algorithm minimize shortage in each replenishment cycle using dynamic programming approach.

