

INVENTORY CONTROL MODEL FOR THE TYPICAL RAILWAYS COMPANY WITH CONSTRAINTS

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One of the most important problems for any railways enterprise is to maintain the rolling stock in working condition [1]. The given report deals with the inventory control of spare parts for the railway companies.

It is a frequent situation when a customer has constraints in stock volumes and (or) sum of money, which is possible to assign for one purchase, as well as there exists a range of other constraints. In this paper a multiproduct model of inventory control management with constraints is considered. In the proposed model are known as follows: demands of goods, unit holding cost per time unit (month) and ordering cost per order. It is assumed that demand for items is constant, holding costs are proportional to quantity of the stored goods and cost of one ordering does not depend on the order volume. At the same time, the situation of deficit, when demand exceeds available quantity of goods, is excluded, i.e. it is considered that losses due to deficit are respectable (large values).

To decrease costs, associated with the possible shortage, we could create some safety stock of goods. On the other hand the supplementary stock increases the holding costs. We have to take into account that the sum of costs for goods' ordering, holding and losses from deficit should be minimal [2; 3].

Principal aim of calculations is to define the exact amount of the orders of each product with constraints to achieve the minimum expenses for goods storage, ordering and losses from deficit and at the same time saving the warehouse space and capital assigned as well.

In this paper the calculation algorithm and practical example illustrating the given algorithm are presented

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