

Repeat Inspection Planning Using Dynamic Programming

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Summary

In this paper we propose a dynamic programming approach to the problem of determination of the inspection sequence of multi-characteristic critical components, and the number of repeat inspection for each characteristic. The model presented here considers the case of several classification of a product by an inspector. An inspector could classify a product as non-defective, to be reworked, or to be scrapped, with respect to a certain characteristic. The model accounts as well for possible misclassification by the inspector. The dynamic programming algorithm searches for a solution that minimizes the total cost of inspection per accepted component. The total cost includes the cost of false rejection of good items, the cost due to false acceptance of an item which is either reworkable or to be scrapped, the cost of inspection, and the cost of rework.

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