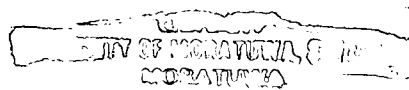


**IMPROVING BAGGAGE HANDLING SYSTEM
INFRASTRUCTURE AT BANDARANAIKE
INTERNATIONAL AIRPORT**

By



S. H. Mallikarachchi

The Dissertation submitted to the Department of Civil Engineering of the University of Moratuwa in partial fulfillment of the requirement for the Degree of Master of Business Administration.

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Abstract

The Report is the outcome of a Research carried out on the Improving Baggage Handling System (BHS) Infrastructure at Bandaranaike International Airport (BIA) in Sri Lanka. The main objective of the study was to find ways and to make recommendations to improve the efficiency and effectiveness of the Baggage Handling System. The Data used in the analysis were the capacity of available baggage belts, passenger capacity and the corresponding baggage capacity of different types of aircrafts operating to BIA at present and types, which may operate in future. The Resource Allocation Model called 'knapsack / fly-away kit model' available in Dynamic Programming under the broad subject of Operations Research was used to model the problem and to find the optimum solutions. The solutions so derived show that there can be many ways of utilizing the available Baggage Belts to accommodate different types of aircrafts so that the Total Return will be maximum.

A sensitivity Analysis has been done to study the behaviour of 'Total Return' with the change in the ratio between 'Baggage unloading rate (D)' and the 'Baggage Loading rate (a)'. The analysis revealed that that by increasing the (D/a) ratio would increase the 'Effective Capacity' of Baggage Belts. Different options available to increase the (D/a) ratio have been described in the report. The study also highlights the importance of ensuring and maintaining the Level of Service (LOS) to passengers when meeting the expected demand created by the operation of New Large Aircraft (NLA) such as Airbus – A 380. The report critically reviews the trends in Baggage Handling and various technologies available for use at present and in future. It also covers the subject of mishandled / lost baggage, which is a critical issue in Baggage Handling operation, and gives recommendations on how to minimize the issue. The outcome of the research will be equally useful in the planning and development of Baggage Handling System Infrastructure and Baggage Handling System operations, to both the Airport Operator and the Ground Handling Agent alike.

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