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**ENHANCED AVAILABILITY**  
**OF MECHANICAL TRANSPORT**  
**IN SRI LANKA AIR FORCE**

BY

P.P.T.O.A. PERIES

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## ABSTRACT

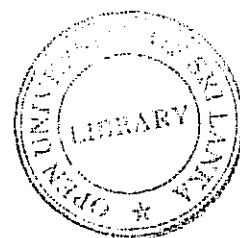
Over the past three decades, Sri Lanka has been in the throes of an intense civil war. Although traditionally the Sri Lanka Air Force's mission has been the protection of the skies, due to the intensity of the conflict, it has had to take a more active ground role, both in support of its air operations as well as to supplement the role of the Army. The vehicle fleet of the Air Force has had to be adapted to this new role. The fleet had to expand rapidly to meet the new role. However, the Air Force's maintenance facilities and infrastructure has not kept up with the rapid expansion of the fleet. As a result, the fleet breakdowns increased and the recovery time in turn increased. Consequently, the utilisation came down to as low as 66%.

The objective of this study is two folds: the first is to determine the causes of the low utilisation; the second, is to recommend possible remedial measures to increase utilisation and to develop an effective preventive maintenance system.

The author has ample firsthand experience of the chronic low availability of the vehicle fleet. In comparison, the other two armed services had relatively better utilisation. This prompted a study into the relevant issue.

Proven Availability and Failure theories have been amalgamated to design a Low Utilisation Model to determine the reasons for the prevailing situation. Human factor analysis is also used to look into other possibilities that could have resulted in the foregoing.

The survey method was used and the users, operators and the maintenance staff were interviewed on their opinions. It was found that the majority of the breakdowns were of the Land Rover Defenders and the TATA Heavy Vehicles. Further, all findings indicated that the staff were desirous of seeing greater reliability in the fleet, and that they would willingly participate in any efforts to bring this about.



It was revealed that of the total of 32,116 vehicle-days (1036 vehicles x 31 days) 10,772 Vehicle-days were lost due to ten primary causes, the dominant two being Facilities Failure and Suppliers Failure. It was also seen that human factors had very little impact on the utilisation of the fleet. The results confirmed that the majority of the breakdowns were indeed on the TATA Heavy Vehicles and Land Rover Defenders.

In order to achieve the optimum utilisation, this study offered two options: the first is the induction of 701 new vehicles into the fleet; the second is the introduction of preventive maintenance practices. Of the two, it is recommended the latter option as the most effective and economical, especially given the attitude and the honest desire on the part of the users' willingness to improve reliability.

Hence to achieve enhanced availability of Mechanical Transport facility in SLAF, it is suggested to implement an effective Preventive Maintenance System. Also the value of proper spare part, management system is discussed to have the correct spare at the correct time at the correct price.

A proto type effective system is being implemented only for Land Rower Defender as well as for TATA 7 Tonner vehicles.

No doubt, this can be the turning point as well as the base stone for future development of maintenance activities in relation to Mechanical Transport in SLAF.