UNIVERSITI PUTRA MALAYSIA

FIRE APPLIANCES REPLACEMENT SYSTEM AT THE FIRE AND RESCUE DEPARTMENT MALAYSIA

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BY

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ABSTRACT

FIRE APPLIANCES REPLACEMENT SYSTEM AT THE FIRE AND RESCUE DEPARTMENT MALAYSIA

The Fire and Rescue Department Malaysia are expending its fire fighting and rescue operations in the air with the purchasing of 2 helicopters units in 1998. But as far as fire appliances are concerned, they are lagging far behind because more than 50 % the water tenders in service are too old and inadequate for the increasing workloads at busy fire stations throughout the country. Managements are faced with budget constraints to replace the appliances that are exceeding 10 years of service according to the adopted replacement system and also to provide additional appliances with the opening of new fire stations. Due to the shortage of the water tenders, units that are not reliable are still press in service and kept as front line fighting appliances by the Department.

The results shows that Nissan water tenders which are relatively new are capable of meeting the demands of busy fire stations in terms of high annual mileage, low maintenance costs and high availability performance. In contrast, Bedford water tenders that are more than 15 years in service are for limited usage, unreliable and costly to maintain and as a results greatly affected the capability of the fire fighting and rescue works carried out by the Department.

The adoption of the fire appliances replacement system created a commitment of future capital spendings and offered the prospect of a modern fleet that are equipped with the latest improvements in safety, efficiency and performance.

DEFINITIONS

This definitions are taken from Manual of
Firemanship (1993) Book 5 : Ladders and Appliances

1. Appliance

   Any Fire Service operational vehicle.

2. Command unit

   A mobile administrative and communications centre for the officer in charge of an incident.

3. Foam Tender

   A special appliance carrying bulk foam concentrate and usually equipped to pump prepared foam onto an incident.

4. G.V.W.

   Gross vehicle weight.

5. Hazmat incident unit

   An appliance specially equipped for dealing with a hazadous material incident and carrying out contamination.

6. Hydraulic Platform

   An appliance conveying, mounted on a turntable, a set of hydraulically elevated booms at the uttermost end of which is a cage.

7. J.C.D.D.

   Joint Committee on Design and Development of Appliances and Equipment
   (a committee of the central Fire Brigades Advisory Council, United Kingdom).

8. Power take-off

   A device to divert engine power from running the appliances to running equipment on it, such as a build-in pump.

9. Pumping appliance

   Any Fire service vehicle carrying a pump.

10. Special Appliance

    Any fire service vehicle other than an ordinary pumping appliance.

11. Tender

    A vehicle used to carry special equipment for particular situation or particular purpose e.g. a foam tender, a rescue tender, a water tender,

12. Turntable ladder

    An appliance carrying a self-supporting and power-operated extension ladder mounted on turntable.

13. Water tender

    A pumping appliance carrying an increased amount of water, a built-in pump, a light portable pump, and an extension ladder or escape.

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Government departments and its agencies have the tendency to operate their vehicles beyond its useful life. Normally the vehicles are used until they can no longer be repaired due to unavaibility of spare parts or very high repair costs. In such situation, the vehicles are used for as long as possible which far exceeded their wear-out life or obsolescence. There are cases in which new vehicles are purchased for replacement of old vehicles, but the latter are still being used and not replaced as intended. As a result the fleet becomes larger, older and more costly to maintain.

The Fire & Rescue Department Malaysia (FRDM) are among the govertment departments that maintain a large fleet of vehicles which are more than 15 years. Earlier fire fighting appliances at the FRDM were purchased during the 1978-1985 period. These vehicles follow the Joint Committee on Design and Development of Appliances and Equipments of the Central fire Brigades Advisory Council, United Kingdom (J.C.C.D.) specification. The J.C.C.D specified recommendations for the Fire Brigades in Britain. The majority of the Fire Brigades in Britain have a set useful life for fire appliances at not more than 12 years (Fire June 1991).

1.2 CURRENT TREND

Recent fire vehicles can be said to be in a different class altogether due to the mechanical changes that has taken place. We now have power steering, power braking, anti-skid devices, automatic transmission and traction control. We can have turbocharged diesel engines and a wider choice of chassis, transmission and engine configuration than before. We have the possibility of carrying more weight, from 13 tons to 18 tons, more bulk and of a wider range of power sources, pneumatic system, hydraulic system and electrical assisted system build-in.

We can have built-in safety cabs and the overall combination of performance, durability, road holding and handling of recent fire vehicles are extremely better. All these have become available and indeed standard in the market.

The fire appliances purchased in the seventies and early eighties are by now obsolete diesel engines, they have unfashional manual crash gearbox and non-power assisted steering. Their handling is difficult and braking ability is relatively poor. The fire pump in service is now considered as the low pressure type. The crew are subjected to high noise levels (over 85 decibels) and exposed to heat transmitted from engine due to poor insulation of the cab like Bedford TK 1260 water tenders.

1.3 OBJECTIVE

The main objective of this report is to find out the the performances of the the type of fire appliances or water tenders of different age using the following criteria:

i) annual usage (mileage)

ii) maintenance and repair costs

iii) unavailability performance

1.4 SCOPE

The scope of this report is limited to the fire appliances operating at the fire stations around Kuala Lumpur, Selangor and Negeri Sembilan.

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