EMPOWERING THE EFFICIENCY OF TRANSPORTATION MANAGEMENT: A CASE STUDY ON ROYAL MALAYSIAN AIR FORCE (RMAF) VEHICLE

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A CASE STUDY ON ROYAL MALAYSIAN AIR FORCE (RMAF)
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ABSTRACT

RMAF Vehicle Fleet is basically meant to provide support services for critical functions to protect national sovereignty, integrity and national interests. The performance of transportation management of RMAF Vehicle Fleet relies on sustainability to operate during operations. Nowadays, the challenges faced by the RMAF Vehicle Fleet is not only providing excellent services to the users, but also to maintain the performance of transportation and at the same time functions effectively to support all operation. Thus, it is intended in this study to explore the empowerment for transportation management at RMAF Vehicle Fleet. For this reasons, the objectives are set to analyse the human factor affecting the RMAF Vehicle Fleet management's efficiency in performing all tasks given within the Armed Forces perimeter, to identify the challenges that were faced by RMAF Vehicle Fleet transportation management regarding Casting Policy and vehicle maintenance management and to provide suggestion on managing future management in the RMAF Vehicle Fleet. To achieve these objectives, RMAF Vehicle Fleet was chosen as the case study location. This study was designed to adopt method using semi-structured interview. The data gathered was analysed using content analysis. It was found that the human factors affecting the RMAF Vehicle Fleet management's efficiency in performing all tasks given within the Armed Forces perimeter are fatigue, incompetence, speeding, reckless driving, complacent and attitude. The review also found other humans factor which is microsleep, taking drugs and not planning properly movement before performing task. It is also found that issues and challenges that were faced by RMAF Vehicle Fleet transportation management regarding Casting Policy and vehicle maintenance management is mostly due to budget constraints, high cost of repair and spare acquisition problem due to ageing factor of the the vehicle that still being used in the service and process of repair approval that takes a long period of time. After a various observation and analysis, it is recommended that to made privatisation contract like SPANCO for domestic vehicle (other than staff car) to ensure increasing benefit period of vehicle, management can runs smoothly, vehicles can only be used for four years before being replaced with a new vehicle and it can improve the serviceability of transport.

ABSTRAK

Fleet Kenderaan TUDM pada dasarnya bertujuan untuk menyediakan perkhidmatan sokongan untuk fungsi penting, untuk melindungi kedaulatan negara, integriti dan kepentingan nasional. Prestasi pengurusan kenderaan Fleet Kenderaan TUDM bergantung pada kemampuan untuk beroperasi semasa operasi. Pada masa kini, cabaran yang dihadapi Fleet Kenderaan TUDM bukan sahaja untuk memberikan perkhidmatan terbaik kepada pengguna, tetapi juga untuk mengekalkan prestasi kenderaan dan pada masa yang sama berfungsi dengan berkesan untuk menyokong semua operasi. Oleh itu, kajian ini bertujuan untuk meneroka pemerkasaan pengurusan kenderaan di Fleet Kenderaan TUDM. Atas sebab ini, objektif telah ditetapkan untuk menganalisis faktor manusia yang mempengaruhi kecekapan pengurusan Fleet Kenderaan TUDM dalam melaksanakan semua tugas yang diberikan dalam perimeter Angkatan Tentera Malaysia, untuk mengenal pasti cabaran yang dihadapi oleh pengurusan kenderaan Fleet Kenderaan TUDM mengenai Polisi Kasting dan pengurusan penyelenggaraan kenderaan, dan memberi cadangan untuk menguruskan pengurusan masa depan dalam Fleet Kenderaan TUDM. Untuk mencapai objektif ini, Fleet Kenderaan TUDM telah dipilih sebagai lokasi kajian kes. Kajian ini menggunakan kaedah temu ramah separa berstruktur. Data yang dikumpulkan dianalisis menggunakan analisis kandungan. Didapati bahawa faktor manusia yang mempengaruhi kecekapan pengurusan Fleet Kenderaan TUDM dalam melaksanakan semua tugas yang diberikan dalam perimeter Angkatan Tentera Malaysia adalah keletihan, ketidakcekapan, pemanduan melebihi had laju, pemanduan sembrono, leka dan factor sikap. Kajian ini juga mendapati faktor manusia lain adalah terlelap semasa memandu, mengambil dadah dan tidak merancang pergerakan dengan teliti sebelum melakukan tugas. Juga didapati bahawa masalah dan cabaran yang dihadapi oleh pengurusan pengangkutan Fleet Kenderaan TUDM mengenai Polisi Kasting dan pengurusan penyelenggaraan kenderaan kebanyakannya disebabkan oleh kekangan kewangan, kos pembaikan yang tinggi dan masalah perolehan alat ganti kerana faktor usia kenderaan yang uzur dan masih digunakan dalam perkhidmatan dan proses kelulusan pembaikan yang mengambil jangka masa yang panjang. Setelah melalui pelbagai pemerhatian dan analisis, hasil kajian menyarankan untuk membuat kontrak penswastaan seperti SPANCO untuk kenderaan domestik (selain daripada kereta kakitangan) untuk memastikan manfaat kenderaan meningkat, pengurusan dapat berjalan dengan lancar, kenderaan hanya dapat digunakan selama empat tahun sebelum diganti dengan kenderaan baru dan dapat meningkatkan kadar kebolehgunaan kenderaan.

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In the name of Allah, the Most Merciful, the Most Kind

ACKNOWLEDGEMENT RECEIPT FOR FINAL PROJECT PAPER

This final project paper titled, "**Empowering The Efficiency Of Transportation Management: A Case Study On Royal Malaysian Air Force (RMAF) Vehicle**" produced by **Major Monarizzal bin Mokhtar RMAF** Matric No **3201310** has been accepted as having fulfilled the partial requirements for the Master of Business Administration (Supply Chain and Logistics).

…………………………………..
(Signature of Supervisor)
Cdr Ts Dr. Haliza binti Mohd Zahari RMN

Date:

DECLARATION

I have read and understood the rules on cheating, plagiarism and appropriate referencing as outlined in my handbook and I declare that the work contained in this paper is my own, unless otherwise acknowledged. No substantial part of the work submitted here has also been submitted by me in other assessments for this or previous degree courses, and I acknowledge that if this has been done an appropriate reduction in the mark I might otherwise have received will be made.

Signed candidate:

You are required to justify your submitted Project Paper against the degree definition for which you are registered.

Project definition for my degree:

The project should normally be related to supply chain and logistics environment. It could address many different aspects such as business, administration, and management issues. My project relates to this definition in the following way:

1. The project is centered on **TRANSPORTATION MANAGEMENT IN THE ROYAL MALAYSIAN AIR FORCE (RMAF) VEHICLE**.

2. This project addresses the aspect of **EMPOWERING THE EFFICIENCY OF TRANSPORTATION MANAGEMENT: A CASE STUDY ON ROYAL MALAYSIAN AIR FORCE (RMAF) VEHICLE.**

3. The intention of the project is to assist **ROYAL MALAYSIAN AIR FORCE – MATERIEL DEPARTMENT (RMAF) VEHICLE.**

4. The recommended improvements in this project are based on **CONCLUSION AND RECOMMENDATION STATED IN CHAPTER 5 OF THIS PROJECT PAPER**.

The above shows the relevance of the work to the degree for which it is submitted.

	Signed	Agree (√)	Disagree (√)
Supervisor: **CDR Ts Dr. HALIZA BINTI MOHD ZAHARI RMN**			

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ABBREVIATION

AKS Materiel   -   Asisten Ketua Staf Materiel

AOG   -   Aircraft On Ground

BAT J 7   -   Armed Forces Form for Working Ticket

BAT M 60   -   Armed Forces Form for Monthly Vehicle
                           Inspection

BAT M 61   -   Armed Forces Form for Vehicle Technical
                           Inspection Type B

BAT M 100   -   Armed Forces Form for Daily State and
                             Inspection Chart for the Vehicle

BOI   -   Board of Inquiry

DI   -   Daily Inspection

GPS   -   Global Positioning System

GSM   -   Global System for Mobile Communication

HQ   -   Headquarters

IGTU   -   Inspektorat General Tentera Udara

INSMAT   -   Institut Latihan Pengurusan Materiel

INSPRA   -   Institut Latihan Pengurusan Ruang Angkasa

JNCO   -   Junior Non-Commissioned Officer

KEWPA 10   -   Complaint Form for Damage of Movable Asset

MAF   -   Malaysian Armed Forces

MPBU   -   Markas Pemerintahan Bantuan Udara

MPOU   -   Markas Pemerintahan Operasi Udara

MPPLU   -   Markas Pemerintahan Pendidikan dan Latihan
                           Udara

MTU   -   Markas Tentera Udara

MTU - BANOP	-	Markas Tentera Udara - Bantuan Operasi
MTU - BSM	-	Markas Tentera Udara – Bahagian Sumber Manusia
MTU - SISMAT	-	Markas Tentera Udara - Sistem Materiel
MTO	-	Motorized Transport Officer
OJT	-	On Job Training
PATM	-	Peraturan Angkatan Tentera Malaysia
PMR	-	Penilaian Menengah Rendah
PU 4305	-	Publikasi Udara 4305
PU Butterworth	-	Pangkalan Udara Butterworth
PU Gong Kedak	-	Pangkalan Udara Gong Kedak
PU Kuala Lumpur	-	Pangkalan Udara Kuala Lumpur
PU Kuantan	-	Pangkalan Udara Kuantan
PU Kuching	-	Pangkalan Udara Kuching
PU Labuan	-	Pangkalan Udara Labuan
RMAF	-	Royal Malaysian Air Force
SAR	-	Search and Rescue
SCAF	-	Stock Control Accounting Flait
SNCO	-	Senior Non-Commissioned Officer
SOP	-	Standard Of Procedure
SPANCO	-	Sistem Pengurusan Angkatan Nasional Company
SPM	-	Sijil Pelajaran Malaysia
TCI	-	Training Competency Instruction

CHAPTER 1

INTRODUCTION

1.1 Introduction

As the national defence force, Malaysian Armed Forces (MAF) bound to guaranteeing to prevent Malaysia from any outside intimidations, whether on-air, sea and land. Another task of the MAF is also supporting government authorities in administering domestic threats to the nation. To ensure that responsibility is always safeguarded, especially from the air's threats, the Royal Malaysian Airforce (RMAF) as one of the MAF branches must remain in readiness. RMAF, which adheres to the vision "Maintaining National Sovereignty and Its Importance through Effective Use of Air Force" will continue to ensure the country's safety and security, in particular, to ensure the country's political, economic and social viability to bring Malaysia towards a prosperous and peaceful developed nation. Thus, as an organization that has existed for the past 62 years (1958 - 2020), the RMAF has undergone various developments in human development, organisational structure, and equipment and defence equipment in line with the concept outlined. RMAF is always aware of current developments in equipment and technology, so the development of RMAF is inevitably in line with current technological advancements. The technology introduced is about weaponry system technology and domestic vehicles that impact the daily movement of material and human in RMAF.

RMAF has an extensive transport fleet to provide support services for critical functions, namely, to protect national sovereignty, integrity and national interest. Every vehicle acquired by the RMAF was distributed according to the function of each establishment. As of March 2020, the RMAF has 1274 vehicles comprising 1005 domestic vehicles and 269 vehicles under Sistem Pengurusan Angkatan Nasional Company (SPANCO) rental contracts. Domestic vehicles are identified as Common vehicles and public transport such as passenger cars, truck 1/4 ton, truck 3 ton, truck 5 ton, and so on. Fire tenders, Ambulance, and the like are also classified as joint vehicles *Organisasi & Kenderaan*, (1987). Meanwhile, SPANCO vehicles are identified as official, and department saloon cars previously purchased by the Ministry will be leased from the *Sistem Pengurusan Angkatan Nasional Company* (SPANCO Sdn Bhd) for 25 years. All the saloon cars in the Malaysian Armed Forces (MAF) will be sold to the SPANCO Sendirian Berhad and renewed or rented according to the age category (Pelaksanaan et al., n.d.).

1.2   Background of Study

Land transport services are one of the essential services of an organisation. This service serves as a medium for delivering resources for organisations such as human and material. Transportation is vital to move people, goods, messages and information. It also needed in case of emergency for rapid movement for troops. It plays the role of connecting processes in the supply chain and determines the supply chain's service quality (Bempong, (2019). According to Haider et al. (2015), Vehicle Fleet holds a firm

ground in the manufacturing and service industry. Fleet management plays a substantial role in an organisation's growth. Organisations can achieve their overall goals and meet the business environment's changing demands if they can effectively manage various organisations (Ampiah, 2018).

Transport Fleet Management can constitute of functions such as vehicle leasing and financing, vehicle maintenance, licensing and compliance, supply chain management, accident management and subrogation, vehicle telematics (tracking and diagnostics), driver management, speed management, fuel management, health and safety management, and vehicle re-marketing. Fleet Management is a function that allows companies that rely on transportation business to remove or minimise the risks associated with vehicle investment, improving efficiency, productivity and reducing their overall transportation and staff costs, providing 100% compliance with government legislation (duty of care) and many more Ampiah, (2018). These functions can be dealt with by either an in-house fleet-management department or an outsourced fleet-management provider.

The performance of transportation management of RMAF Vehicle Fleet relies on the sustainability to operate during operation. The Vehicle Fleet management must be done effectively through the 4M method (Material, Method, Machine and Man). This method, which is named the cause and effect method, represents reasons that affected a particular process's final result. Every factor involved played its role and influenced this study's effect, the efficiency of transportation management of the RMAF Vehicle Fleet.

The Royal Malaysian Air force (RMAF) is no exception to having a large transport fleet to provide support services for crucial function, namely to protect national sovereignty, integrity and national interest. Every vehicle acquired by the RMAF was distributed according to the function of each establishment. This study will discuss how human factor, Casting Policy and vehicle maintenance management affected the efficiency of transportation management of the RMAF Vehicle Fleet. By doing this, RMAF can ensure RMAF Vehicle Fleet's real capability as a whole through data integrity.

Vehicle Fleet is a top service for all personnel should provide convenience, safety accountability, trust, and eventually contributing to optimum operational readiness. It is one of the primary necessities for all personnel. Transportation is an essential requirement in today's society. The need for transportation is increasingly growing due to the high mobility Wirya Sri Utari & Sharif, (2016).

Nowadays, the challenge faced by RMAF Vehicle Fleet is not only providing excellent service to the customers but also to maintain the performance of the transport and at the same time functions effectively to support all operation. To provide efficient transportation management, a Standard of Procedure (SOP) is required to follow. Every process must be done according to the guideline provided. Generally, all personnel involved in the RMAF Vehicle Fleet management are expected to plan and execute the right SOP to empower transportation management efficiency.

1.3   Problem Statement

MAF can be recognised as the most competent and comprehensive organisation. It's comprised the whole spectrum of abilities such as marine, the air, and over the land. The capacities cover trained and equipped forces, competent platform, comprehensive organisation, and extensive networking worldwide. Their abilities are also intensified by a comprehensive medical crew, technical and engineering, qualified aircrews and transportation fleet. RMAF is another branch in MAF that is completely furnished and extremely skilled personal. Transport Fleet has played a significant role and function and incorporated in the RMAF function as a whole. Transportation represents the significant role and most crucial element in logistics because of its considerable cost. A transportation system is an organisation that designs, arranges, sets up, and schedules freight-transportation orders during a given and limited time with technical restrictions at the lowest possible cost. Transportation often accounts for between one-third and two-thirds of total logistics costs, for example between 9% and 10% of the gross national product for the Europe economy and also between 10% and 20% of a product's price, so transportation's importance and a key role is undeniable European Commission et al., (2015). Transportation is essential for moving any shipment in a logistics system such as raw materials from sources to the manufacturer, semi-finished products between plants, and final goods to retailers and customers. With the growth of science and technology, increasing consumption and global commerce highlight transportation in all processes. There is a high level of competition between manufacturers and transportation holders in their customer services quality. Other critical competitive factors are reducing lead times,

delays, and whole transportation costs and increasing efficiency, reliability, safety, and reactivity in their service systems (Khooban, 2011).

Despite Malaysian government efforts to provide the best transportation to the RMAF, road accidents involving RMAF transports were reported in the past years. This tragedy occurred because of several reasons and may result to decrease in efficiency of transportation management. If this situation is not adequately addressed, it can affect the whole supply chain process as transportation plays the role of connecting processes in the supply chain and determines the supply chain (Bempong, 2019).

Several reasons are resulting in why transportation management perform poorly in meeting customer's needs and expectation. The leading cause among them is based on the human factor, which is the personnel's attitude. For instance, it does not or rarely perform a daily inspection (DI) as instructed by the higher authority. A thoroughly Daily Inspection (DI) can detect any damage to the vehicle at the early stage from the beginning and prevent and minimise any unfavourable things from happening in the future.

By doing that, if any damage detected and RMAF Vehicle Fleet personnel submitted the report to the Workshop, a meticulous analysation of the damage will be done in detail. When the vehicle is sent to Workshop, the repair processes will be more transparent. When the vehicle has been repaired at the end of the day, there should be no additional damage shortly. These are to avoid interruption of the RMAF Vehicle Fleet operation and longer time is taken from the data of damage until the vehicle is back to a serviceable state.

The flaw in vehicle maintenance management has resulted in excessive demand and fleet availability. A significantly longer time is often taken from the date of damage until the vehicle returns to a serviceable state. Even though the RMAF Vehicle Fleet management has provided guidelines for the vehicle repair process, there is still a probability of expediting the process. This vehicle repair and maintenance process consists of other entities within the RMAF such as Engineering Branch, Materiel Branch and the Workshop. Nevertheless, these whole processes are seen as fleet transport performance and responsibility. Lengthy periods for these vehicles to be in unserviceable status can portray an inadequate transport fleet's low image and reduce the RMAF Vehicle Fleet's effectiveness.

It is common for any vehicle fleet to have to confront problems of road accidents. These are related to the human factor again, which is the attitude towards safety and securities issues. Crashes in transportation involving professionals drivers (road, rail, air or sea) are due to fatigue/sleepiness and that one of the causes is that work and rest are displaced to sub-optimal times due to the need for around-the-clock operations Anund, (2015). Therefore, it is not surprising that one of the vehicle fleet management context is scheduling, road safety performance, a just culture, fatigue risk management (FRM) and safety education evaluation Anund, (2015). All issues needed to be tackled for a better performance of transportation management.

Currently, most of the RMAF Vehicle Fleet vehicle had exceeded the economic age limit required by the Casting Policy stated by the Malaysian Armed

Forces Vehicle Policy. Consideration to implement casting on the Armed Forces vehicles is necessary based on one of the requirements. If the RMAF Vehicle Fleet had exceeded the economic age limit, it has exceeded the economic mileage limit or has exceeded the cost of economic repair cost required by the Casting Policy. If this were not done, it would eventually jeopardise operator and vehicle fleet users' safety, affecting the RMAF Vehicle Fleet's efficiency.

1.4 Research Objectives

This research attempts to explore the efficiency of transportation management of RMAF Vehicle Fleet. The findings of this research will provide useful feedback to guide the RMAF Vehicle Fleet for building a better future operation. The Research Objective can be further detailed as follows:

1.4.1 To analyse the human factor affecting RMAF Vehicle Fleet's transportation management's efficiency in performing all tasks given within the Armed Forces perimeter.

1.4.2 To identify the challenges that were faced by RMAF Vehicle Fleet management regarding Casting Policy and vehicle maintenance management.

1.4.3 To provide the suggestion on managing future management in the RMAF Vehicle Fleet.

1.5   Research Questions

To achieve the above research objectives, the following Research Questions (RQ) are used.

1.5.1   What were the human factors affecting RMAF Vehicle Fleet's transportation management's efficiency in performing all tasks given within the Armed Forces perimeter?

1.5.2   What were the challenges faced by RMAF Vehicle Fleet management in conducting any given mission?

1.5.3   What are the suggestions for the betterment of the future operation?

1.6   Conceptual Framework

The conceptual framework, as shown in **Figure 1.1**, the independent variables identifies the shortcomings faced by the RMAF Fleet Management shall divide into three main factors:

1.6.1   RMAF Vehicle Fleet road accident report for the past four years.

1.6.2   Casting Policy for RMAF vehicles.