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SPEED STUDIES ON MALAYSIA EAST COAST EXPRESSWAY

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LIST OF SYMBOLS

L	Maximum length (m)
V	Design speed (km/h)
e	Predisposition of maximum value
f	Lateral friction factor
c	Exchange rate of radial acceleration (m/s^3)
g	Acceleration due to gravity, $9.81m/s^2$
R	Radius of circular curve (m)
x	Mean
s	Standard deviation
R min	Actual minimum radius
S	Average speed
n	frequency

LIST OF ABBREVIATIONS

ECE 1	East coast expressway phase 1
ECE 2	East coast expressway phase 2
KM	Kilometre
PDRM	Royal Malaysian police
POL27	Police accident investigate form
WHO	World health organization
ITE	Institute of transportation
RSD	Department of road safety
RTD	Department of Road Transport
AES	Automatic camera enforcement system
TRL	Transport safety
PWD	Public work department
AASHTO	American association of state highway and transportation officials
REAM	Road engineering association of malaysia

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ABSTRAK

Kemalangan jalan raya merupakan isu yang serius. Ini dapat dilihat dimana saban tahun jumlah kemalangan yang berlaku sentiasa meningkat walaupun pelbagai usaha telah dilakukan untuk mengurangkan kadar kemalangan. Kelajuan dilihat sebagai salah satu faktor penyumbang utama berlakunya kemalangan jalan raya selain beberapa faktor lain. Tujuan kajian ini dijalankan adalah untuk mendapatkan kelajuan setempat kenderaan pada suatu titik disatu bahagian jalan yang lurus. Selain itu, tahap kepatuhan pemandu terhadap had laju yang ditetapkan juga akan dinilai. Kajian ini dijalankan dengan menggunakan radar tempat bagi mendapatkan data kelajuan setempat dilokasi kajian. Lokasi kajian yang dipilih ialah di Lebuhraya Pantai Timur fasa 1 KM164.4 iaitu 500 meter sebelum tanda amaran dan di KM163.6 iaitu selepas 500 meter tanda amaran, manakala di Lebuhraya Pantai Timur fasa 2 KM273 dimana berdasarkan daripada statistik laporan kemalangan yang diperolehi daripada pihak polis, bilangan kemalangan yang berlaku dilaluan tersebut adalah tinggi. Keputusan data cerapan kelajuan setempat dianalisis menggunakan kaedah statistik graf taburan histogram, taburan kelajuan setempat dan graf taburan kekerapan bertokok. Keputusan kajian ini mendapati bahawa tahap kepatuhan pemandu terhadap had laju yang ditetapkan adalah sangat rendah dengan peratusan pemandu yang memandu melebihi had laju adalah sangat tinggi.

ABSTRACT

Road accidents is one of a serious issue. Every year the number of accidents that occur was increase relatively despite variety of efforts have been made to reduce accidents. Speeding might be one of the greatest contributor factor of road accident compared to the other factors. The purpose of this study was conducted is to obtain vehicle speed at a point along a straight road. Besides that, the level of compliance of the driver to the speed limit will also be evaluated. The study was conducted using a radar gun to obtain the local speed data for the selected location. The selected location is on east coast expressway phase 1 KM164.6 which is 500meter before the warning sign and KM163.6 which is 500meter after the warning sign, while the east coast expressway phase 2 is at KM273 where from the police report statistic, the number of accident are higher for that road. The observation results of the spot speed data was analysed using statistical graph of the distribution histogram, the distribution of local speed and distribution graphs of frequent incremental. The results of this study found that the level of compliance of drivers to the speed limit is very low with the percentage of drivers who drive exceeding the speed limit is very high.

CHAPTER 1

INTRODUCTION

1.1 Background Information

The east coast expressway is an expressway in Malaysia. It is an extension of Kuala Lumpur-Karak Expressway E8/FT2, which starts from Kuala Lumpur to Karak. It provides a link from the West Coast of Peninsular Malaysia to the East Coast of Peninsular Malaysia. It features a closed toll system like the North-South Expressway. The expressway links many major cities and towns in east coast Peninsular Malaysia, acting as the 'backbone' of the central of peninsula. This expressway passes through three states on the peninsula: Selangor, Pahang and Terengganu. It provides a more faster alternative to the old Kuala Lumpur-Kuantan Road FT2 and the Jerangau-Jabor Highway FT14, thus reducing travelling time between various towns and cities. The expressway is part of the Asian Highway Network of route AH141 (Karak - Jabur section) and the speed limit for the expressway is 110 km/h (68 mph). There were 1,657 accidents recorded in East Coast Expressway Phase 2 (LPT 2), which connects Jabor, Kemaman to Gemuruh, Kuala Terengganu, which is operational since August 2011. Besides, the total of 50 fatal accidents involve 58 deaths were recorded. In a 184-kilometer route, Hulu Terengganu was recorded the highest number of accidents that are 31 cases, followed by Dungun (12 cases) and Kemaman (7 cases).

The term "accident" according to the Oxford Dictionary refers to the sequence of events that occur accidentally and unplanned, often accidentally or necessary. It usually occurs through a combination of several causes (unsafe acts or unsafe conditions) and cause adverse effects such as physical harm to people, property damage, the incident almost and losses, which could be avoided if the circumstances leading to the accident can be identified and take action before it happens. Road

accident is a tragedy that involves everyone, whether as a driver, passengers, or pedestrians.

Road accidents have been identified as a major killer in our country. According to a statement issued by the Federal Territory Health Department, a total of 20 to 30 people were killed in road accidents every day. This figure will increase especially during the festive season when the roads and highways are flooded with various types of vehicles. There is no doubt that the accident rates in Malaysia increase every day. This increase we can see through a report published in newspapers. In fact, this issue has become a hot topic of discussion among the public. We are aware that the accidents happen every day, anytime and anywhere. We also know that the impacts of serious accidents such as injury, death and loss of property. If this is allowed to be continued, of course it would be detrimental to the country.

Accidents and deaths on the road have become a national problem that haunt us every day. Many road accidents occur especially during the festive season not only will bring harm to the victim's family, but the loss of human capital to the country. Each loss in road accidents is a loss to the country because a lot of money and spending on them has been issued for the purposes of schooling, exams, and job training and ultimately cannot contribute to the country as a result of an accident. Many slogans that have been recommended by the government for alerting motorists to be careful while riding, such as "do not let your family wait in tears" and "do not make the roads as a race." However, there was not a lot of road users who really understand the government's call. Currently, Malaysia has been listed as one of the countries which recorded the highest number of deaths due to road accidents.

Given the problem of road accidents has increased substantially in our country, scientific research should be set up to investigate the relationship between the attitude of road users and their relationship with road accidents in finding the problem and the issues that arise and suggest the best blueprint to overcome various problems identified by the proposed control efforts and the prevention of road accidents in line with the goals and objectives of the State policy.

1.2 Problem Statement

Among the main factors increasing accidents in our country due to the negligence of road users themselves. This is due to the driver being selfish, impatient while on the road and do not comply with the rules of the road. Example of negligence occurs like driving while tired and sleepy. Due to the mindset that they need to rush back to their destinations, hence they are not concerned about their condition although they are in fatigue. As a result, the vehicle is driven in a state of lack of concentration. Indirectly, the driver not only risking his own life but the life of other road users. Drivers who are in this situation should pause to eliminate sleepiness and fatigue that can give full attention to driving. Another common mistake made by motorists are driving over the speed limit and using a mobile phone while driving. Although many speed limit signs were placed along the roads and the traffic was controlled by the authorities, but they still would drive a whim without thinking of the safety of themselves and others. In fact, there is also a race for illegal use of motorcycles on the road as was done by the youth. Therefore, caution on the roads and better late than never would be able to prevent accidents from happening.

The next cause of road accidents is a state highway structures itself. The state of the roads are potholed, narrow and flat undoubtedly pose a danger to motorists. For example, roads crooked, sharp turns will make it easier for the drivers who are not familiar with the streets that are crashed involve in a road accident. Therefore, the government should take the initiative to immediately improve the road structure that may endanger the lives of road users. The road should be a priority in order for the safety of road users is guaranteed.

Vehicle condition is not maintained as well as the causes of road accidents. State maintained vehicles according to a fixed schedule can bring disaster to the driver. Obviously, the vehicle must be maintained before starting a long journey.

The study focused on the analysis of the number of road accidents on a regular basis with the support of the factors that cause a general without referring to the attitude of road users as one of the main contributors to road accidents in the country. With this it was time for a detailed study of the road is among the causes of the accident. The study should be carried out as currently as there is no studies carried out here yet. Researchers refer to the East Coast Expressway Phase 1 from Gombak to Jabor or its

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