

UNIVERSITI TEKNOLOGI MARA

**STUDY ON RELATIONSHIP
BETWEEN DOUBLE-DECKER BUS
DRIVER'S PERCEPTION-REACTION
TIMES, DECELERATION RATES AND
TRAFFIC CONFLICT
TIME-TO-COLLISION FROM
ON-BOARD VIDEO RECORDING**

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ABSTRACT

Recently, the number of double-decker bus accident along FT08 increased every year and becoming alarming issue in Malaysia. Even though the number of DDB accident per year is lower than any type of vehicles, it still involved with the large number of fatalities and severe injuries. Through statistic data from Royal Malaysian Police (RMP), the numbers of DDB accident along FT08 is higher and because this route has many accident-prone locations. At the same time, there are many factors contributed to an accident such as traffic conflict which leading to near-accident and accident events. Due to this reason, the study was conducted in order to study the relationship of PRT and deceleration rates along FT08 for the DDB drivers when encountered a traffic conflict by using on-board video recording along FT08. The GPX data obtained such as speed, distance, acceleration and deceleration rates values performed by each driver when driving along this route. Thus, the PRT and deceleration rates taken for each of the drivers when facing with traffic conflict and time-to-collision were taken into a consideration. The outcome of this study, an analysis would be able to study the relationship between the drivers and the correlation of PRT and deceleration rates of DDB drivers when encountered a traffic conflict to avoid a collision along FT08 route. Furthermore, through this study some approaches and improvement can be proposed by traffic engineers to reduce the numbers of accident so that FT08 route can be safer roads in future.

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CHAPTER ONE

INTRODUCTION

1.1 Research Background

In developing countries, the road accident had shown the increment of numbers of an accident over the last ten years and becomes major problems to the worldwide. Besides, the main factors that led the contribution to a road accident in Malaysia involved with the bus transportation. When bus transportation involved in an accident, it involved with the large number of fatalities and casualties might occurred. Based on facts from the World Health Organization, WHO (2017) almost 1.2 million people die from a road accident. About 90% of the road accident occurred in low to middle-income countries although these countries have only 54% of the total world's vehicles. According to the study conducted by Transportation Research Institute, University of Michigan using the statistical data from WHO (2008) shows that Malaysia has ranked as 17th most dangerous countries for road users. It also stated that the 30 fatalities per 100,000 individuals and have been ranked in 25 most dangerous countries for a road accident. Moreover, if this problem still not encountered, it will be the seventh leading causes by dead in 2030.

Currently, the major issue in Malaysia for bus transportation involved with the double-decker bus (DDB) accident as main types of bus transportation due to many cases of accident and increased from year to another year. The impacts of the accident are major because it involved the large number of passengers although it has a small percentage compared to others vehicle. Furthermore, double-decker bus accident often occurred during festive seasons and school holidays in Malaysia. In fact, the bus driver also led to a contribution to an accident been the main consideration as human errors in most of the bus accident and mostly, human errors contributed about 34% of an accident on roadways as stated by Lum & Reagen (1995).

According to the Ministry of Transportation in Malaysia, the DDB accident always occurred due to the design criteria of its height which has more than 4.0 meter and have issues with the stability directly. Therefore, the government of Malaysia are looking at this issue as a serious matter and still developed better solutions to avoid this number to be increased every year.