

GUIDE SIGNS FOR APPROACH ROADS TO UMP

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ABSTRACT

This study intended to examine guide sign to UMP by inventory survey and questionnaire survey method. Throughout the whole site inventory survey, it was found that there was numerous of signage leading to UMP that were not following the standard of Arahan Teknik Jalan of JKR. This project intended to check JKR requirements which include the distance from edge junction, visibility, availability, height of the guide sign and so on. Mostly criteria can be achieved by visibility survey. Questionnaire survey was also conducted as to gain drivers perception particularly new comers to UMP. With all required data in hands, proper recommendation were made as guide for authorities like JKR when upgrading signage for approach roads to UMP in Gambang.

ABSTRAK

Project ini adalah untuk memeriksa papan jalan raya UMP dengan cara penyelidikan papan jalan raya di tapak dan soal selidik. Melalui sepanjang penyelidikan di tapak ditentukan, didapati banyak papan jalan raya UMP tidak mengikuti Arahan Teknik Jalan yang dikeluarkan daripada JKR. Projek ini adalah untuk menyemak keperluan JKR merangkumi jarak daripada tepi simpang, kelihatan, ketinggian dan sebagainya. Kebanyakan keperluan boleh dicapai dengan penglihatan di tapak. Soal selidik dijalankan untuk mendapat pandangan pemandu daripada pendatang baru UMP. Dengan semua data yang diperlu dalam tangan, cadangan yang sesuai dapat dijadikan panduan untuk jabatan kerajaan seperti JKR semasa pembaikan papan jalan raya untuk jalan menuju UMP di Gambang.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Nowadays, road development change fast in Malaysia. A lot of improvements occur especially in road pavement and road facility since the technology become more practical. According to the M. Shneier (2005), Road Sign Detection and Recognition, has stated that guide sign is important to robotic vehicle that drives on road. Therefore there is needed to have guide signs changes according to the development of road. Nevertheless, there are many incomplete guide signs and not all updated guide sign existing in Malaysia. Not updated guide sign might influence driving behavior and resulted in traffic accident as the consequences. Therefore, standard of the guide sign follow the rules of JKR is very important.

Guide signs also defined as the third type of signs commonly used on highways and roads because it is important but is not as important as the regulatory or warning signs. It is same function as regulatory and warning sign also for giving information. Through uncyclopedia.wikia.com/wiki/Road_sign, (2009), guide signs are usually used to help a driver get to a particular location. Without guide sign particularly a sign in a series of signs, can confuse a driver. Confused drivers will easily get involved in accidents because they are not focused on driving. Additionally, confused drivers often make erratic maneuvers, such as slowing or stopping in the roadway, backing down ramps, or making abrupt turns. Common guide signs include exit (for a location), rest, area, street names and airport. Guide signs are signs placed along roads which tell road user how to behave. They usually consist of a piece of sheet metal with very sharp edges, and more solid steel pipes.

There are many kinds of guide signs which responsible to different functions. A guide sign is a sign by the side of the road giving directions or instructions and a stationary object that helps road users going a place. Others than that, a location within a zone such as a small village or settlement is also marked by a guide sign. Other guide signs might be directional sign, informing the road users which path to follow to reach a certain location according to GW-Fyren. Guide signs provide drivers with very valuable information about the road, in order to make journey safer and easier according to A.D.L. Escalera, L. E. Moreno, M.A. Salichs, J.M. Armingol, (1997).

In fact, guide signs use shapes, colors, words, and symbols to give message to drivers. Without guide signs, the movement of traffic would be disorderly and might resulted accident. This can imposed unsafe driving condition to drivers. During night time, due to the invisibility of the guide signs, all traffic signs use retro reflective sheeting in order to see the guide sign. This technology reduced many accidents happening. Others than that, use of specific color and shape can attracts the attention of the road users especially those who driving fast on the road. There are many variations of the guide signs which are regulatory signs, warning signs and guide signs according to the Arahan Teknik Jalan 2B/85. Regulatory signs, such as

speed limit signs, are usually rectangular and use a white background. Stop signs, on the other hand, have a distinct octagonal shape and a red background in order to attract the attention from the drivers based on Bridget Hall, (1994).

Other than that, shape chosen also is a requirement for designing guide sign. Extract edges and look for circular or triangle region is a skill for catch the guide sign easily. In foreign country, a redness measure is used to locate stop, yield and do not enter sign. This step is followed by edge detection and shape analysis to identify the guide sign. Color matching then follows with the corner detection in specific relationship that corresponds to triangular, rectangular or circular signs. In conclusion, color, size, location of boundaries of the sign and shapes of the guide sign will affect information transfer to drivers (M. Shneier, 2005).

1.2 PROBLEM STATEMENT

According to the M. Shneier, (2005), has stated that guide sign is important to robotic vehicle that drives on road. Guide signs play an important role to guide drivers to have a safe journey. Guide sign is important to tell road users destination. A good guide sign may be give influential information to driver to have enough time to break, to turn or even straight. For guide sign, there is many factors may be affected such as sizes of text guide signs, distance from the junction to show the guide signs, color of the text and each other will affect the information transfer to the driver. These criteria are made it important to have an effective guide sign. Some guide sign even not fulfill the requirement of the standard which may caused the traveler lost their way. Therefore, standard existing of the guide sign can ensure the visibility of the drivers.

UMP is a new campus to the public, many of new coming students' parents and other new visitors facing the problem to find the correct location of UMP especially from far distance. Use of guide sign play role as guider in this condition. When drivers are nearer to the location, guide sign provided should be enough in numbers to show the direction. Sometimes, they drive over the location and do not realize which means that UMP guide sign is not enough clear. Specific distance should start putting the guide sign to give awareness to the drivers for ready to search location of UMP. Besides that, quality also should be considered including height of the guide sign, color guide sign and shape of the guide sign. These kinds of criteria will enable drivers to find the location easily.

If the driver obtained a correct guide sign it will ensure a safer journey to the destination. Therefore in this problem, determination of the availability and suitability of guide sign of UMP should be carried out at Gambang including the cross intersection of Jalan Kuantan – Gambang / Gambang – Muadzam and Gambang Toll Plaza as to check the adequacy of guide sign to ump.

1.3 PROJECT OBJECTIVES

There are three objectives as follows:

- 1.3.1 To conduct inventory for guide sign availability;
- 1.3.2 To check existing guide sign compliance to JKR standard; and
- 1.3.3 If not appropriate, proposed additional or new guide sign.

1.4 SCOPE OF STUDY

The study area comprises all approach roads leading to UMP Campus at Gombang including the cross intersection of Jalan Kuantan – Gombang / Gombang – Muadzam and Gombang Toll Plaza as shown in Figure 1.1.

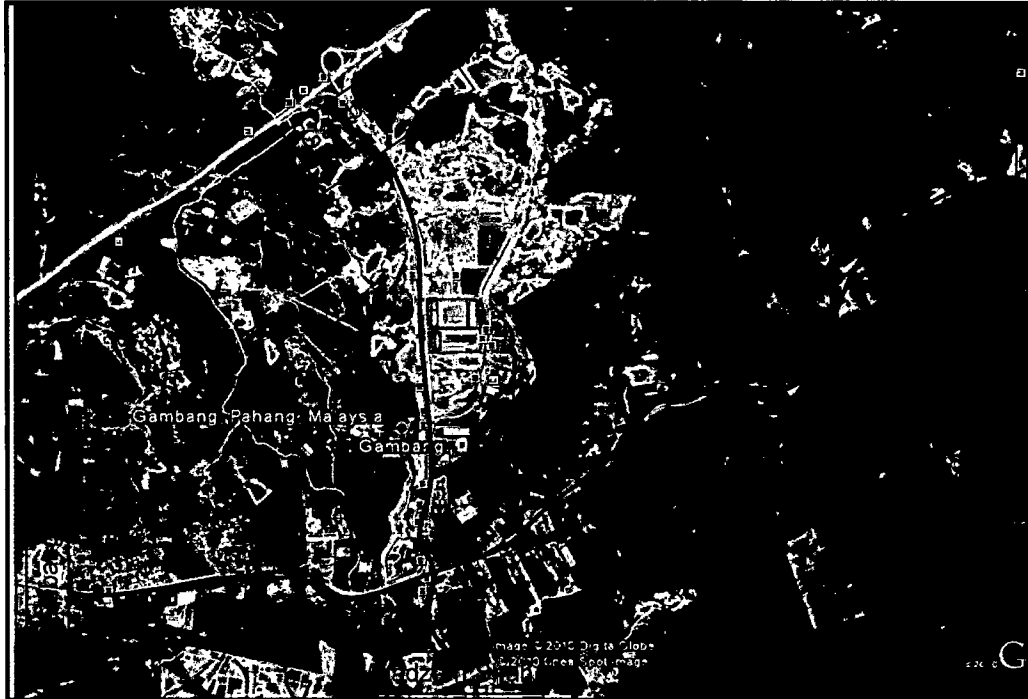


Figure 1.1 Intersection of Jalan Kuantan – Gombang / Gombang – Muadzam and Gombang Toll Plaza

1.5 SIGNIFICANT OF STUDY

This study will be benefit to new coming students, visitors, outsiders, staffs, interviewers, and those who do not know the location of UMP since there is many of number of them to visit UMP everyday due to popularity of the university. Guide sign will help a lot in the information location if they do not have the details about the location. Therefore there is a need to provide a standard UMP guide sign. Adequate guide sign helps to find out the location of UMP easily and time will be saved.

UMP is a new upgrade local university from College University. Appropriate location of guide sign putting will increase the popularity of UMP to traveler also. Traveler pass by the guide sign of UMP will know the real location of UMP. If they visit UMP and gain good served from UMP, UMP might be gain a good valuation among the public. Students might be interested to enter UMP as choice too.

Others than that, it also help to check whether the UMP guide sign is up to date and adequate in accordance to the standard of Arahan Teknik Jalan in order to give best information transfer to the road users. Efficient time and numbers of guide sign to decide to turn lane might be reduce accidents too.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

According to the Arahan Teknik Jalan 2B/85, purpose of guide sign is to guide road users along highway to direct them to towns, villages, or other important destination. Guide sign may help road users for gaining information that will help them along their way in the most simple. Guide sign always erected as frequently as practical. Comparison with guide sign for highway is larger to the normal road also.

2.2 CLASSIFICATION OF TRAFFIC SIGN

There are different types of road sign which is shown as below:

- i. Regulatory Signs
- ii. Warning Signs
- iii. Temporary Signs
- iv. Guide Signs
 - (a) Destination Signs
 - (b) Directional Signs
 - (c) Distance Signs
 - (d) Information Signs
 - (e) Route Number Markers
 - (f) Kilometer Posts
- v. Other Signs

Arahan Teknik Jalan, 2E/87 dictate standard for other sign. These included the design and application of guide signs.

2.3 GENERAL ON GUIDE SIGNS

- a) Guide sign used to guide road users along highway to direct them to towns, villages, other important destination and interesting routes.
- b) Guide sign erected as frequently as practicable. Nevertheless, it is stated that any one guide sign should not exceed three destinations for avoid confusion.
- c) Guide sign for highway must be large in order can read from moving vehicles at high or low speed. Road users depend on the guide sign when choosing the proper roadways (Arahan Teknik Jalan 2B/85).

2.4 REQUIREMENTS OF GUIDE SIGNS

Requirements below show the criteria considered based on Arahan Teknik Jalan 2B/85.

- a) Color and Shapes
- b) Size
- c) Lettering
- d) Border
- e) Directional Symbols

2.4.1 Color and Shape

- a) Shape must all in rectangular. Color generally is white letter and border blue background.
- b) For local streets, the lettering and arrow must be in yellow color.

2.4.2 Size

- a) Size must be legible to road users approach them. Route markers should be in fixed standard sizes. For other guide signs, the legend is variable in size for legibility.
- b) The size of the guide sign is not always depends on the word message in the guide sign. Sometimes, it is depends on the length to the width of the lane. For overhead signs, the vertical dimensions is depends on the roadway clearance and visibility requirements.
- c) It is recommended that the size of the guide sign follow the standard size in fractions and multiples. This is to reduce the wastage and unsightly joint marks.

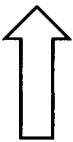

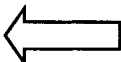
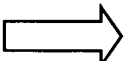

2.4.3 Border

- a) Use of narrow border improves the appearance of sign. The border should be same color as the word message. Dark color should be set in from the edge while the light color should be extended to the edge of the plate.
- b) 750mm sign with light background normally use 15 to 20mm width and set in 10mm from the edge. For highway, guide sign which exceed 2 meters by 3 meters in size, the border should be about 50mm and on usually large signs about 70mm.
- c) The corners of the guide sign shall be rounded. Rounded shaped improved the appearance of the sign. Rounded should be on a radius approximately 1/18 of the lesser side dimension.
- d) Border line used when different directions on a destination signboard indicated.

2.4.4 Directional Symbols

- a) Arrows are used to show directions. Right angle intersections a horizontal arrow is appropriate. For a straight through movement should be pointed vertically upwards. For turn, the arrow should be 45 degree angle related to the sharpness of the turn. If there is more than one arrow in on guide sign, the arrangement of these arrows must be in anti-clockwise direction as table below.

Table 2.1 Arrangement of Directional Arrows in Descending Order

Arrangement of Directional Arrows In Descending Order	
	Should located on the upper left hand side to show is straight movement.
	Should be located on left hand side to show there is sharp turning movement on the left.
	Should be located on the lower left hand side of the guide sign to show the right angle turning
	Should be located on the lower right hand side of the guide sign to show right angle turning
	Should be located on the right hand side of the sign to show right sharp turning movement.

- b) Arrow should be placed on side of the word message. The width across the barbs of the arrow (between 65° and 90°) should be at least equal to the height of the largest sign.

2.5 DESTINATION SIGN

This is based on the Arahan Teknik Jalan 2B/85.

- a) Destination sign is the name of towns villages or others objectives and directional arrows. Distance will be shown also. If there are several destinations, then few panels will occur.
- b) Size of guide sign must to be legible to road users approaching them. The legend is so variable that size must be fixed in terms of the length of word messages and the size lettering and spacing should have proper legibility.
- c) Arrow putting at the right location always considered well. The location of the arrow is put in the Table 2.
- d) Nearest town will be put in the road sign if there is too lot of city or destination at that road.
- e) If preferred, the names of the major destination should be in larger letters than the minor destination on a same group.

- f) Destination sign should be located at a distance between 100-150m intervals. It has sufficient time for road users to react to go into proper lane.

- g) Three destination signs will be put at a diverging roadway. The first advance destination sign shall be located one kilometer away from the junction. The second signage is in 500 meters interval. Continuously, the third signage is located 100-150 interval. Then a warning sign is placed on 50m for urban area and 80m for rural area.

2.6 DISTANCE SIGN

- a) Shall be in horizontal rectangular, carrying the name not more than three towns and distance. Usually the top must be the major destination in which the greater portion and the second name is the next town. The bottom usually is depends on the length of the destination.

- b) Distance sign used on important routes leaving municipalities, intersections in rural district and intervals approximately 20km along the route. Normally, this kind of sign does not used on minor roads.

- c) Distance sign placing on the left of the road. Location placing is as figure below.