



EVENT OF THE MONTH

Bengkel Menyemak Dan Menggubal Semula *Standard Specification For Road Works (JKR/SPJ/1988)*

Oleh: Mohd Shahneezam bin Abd Rahman

Pada 15-17 Julai 2008 bertempat di Dewan 4, Pusat Konvensyen Antarabangsa Putrajaya (PICC), **Bengkel Menyemak Dan Menggubal Semula *Standard Specification For Road Works (JKR/SPJ/1988)*** telah berlangsung dengan jayanya dan telah dirasmikan oleh Timbalan Ketua Pengarah Kerja Raya III, Ir. Selvanayagam a/l P.Nagalingam. Bengkel ini telah dianjurkan oleh **Unit Keselamatan Jalan, Cawangan Kejuruteraan Jalan dan Geoteknik, Ibu Pejabat JKR Malaysia** selaku **Urusetia** bagi Jawatankuasa Induk Menyemak Dan Menggubal Semula *Standard Specification For Road Works (JKR/SPJ/1988)*. *Standard Specification For Road Works (JKR/SPJ/1988)* ini telah diterbitkan pada tahun 1988 dan masih digunakan oleh JKR Malaysia sehingga kini. Oleh yang demikian, *standard specification* ini telah disemak dan digubal semula sejajar dengan perkembangan semasa. Setiap seksyen yang terkandung dalam *standard specification* ini telah disemak dan digubal semula oleh jawatankuasa-jawatankuasa kecil yang telah dilantik.

Tujuan bengkel ini dianjurkan adalah untuk mendapatkan maklumbalas mengenai deraf akhir empat spesifikasi yang telah digubal dan disemak semula kandungannya sebelum diterbitkan dan digunakan.

Setelah maklumbalas diperolehi, penambahbaikan ke atas deraf ini akan dilaksanakan seterusnya diterbitkan.

Pada sesi bengkel selama tiga hari ini, sebanyak empat seksyen dari *standard specification* telah berjaya dibentangkan iaitu:

Tajuk Pembentangan	Pengerusi Jawatankuasa	Pengerusi Sesi Pembentangan
<i>Section 1: General</i>	Ir. Kamil Puat bin Nil	Ir. Cheng Chin Tai
<i>Section 3: Drainage Works</i>	Pn. Hjh. Dang Anom bte Md Zain	Pn. Hjh. Dang Anom bte Md Zain
<i>Section 8: Traffic Signal</i>	Ir. Hj. Abdul Rahman bin Baharuddin	Ir. Hj. Abdul Rahman bin Baharuddin
<i>Section 10: Piling Works</i>	Ir. Dr. Ismail bin Mohamed Taib	Tn. Hj. Ahameed Tarmizi bin Ramli

Seramai hampir 100 orang pegawai-pegawai kanan JKR Malaysia yang terdiri daripada Jurutera-Jurutera Daerah, Jurutera-Jurutera Elektrik dan pegawai Kumpulan Pengurusan & Professional Gred J44 ke atas telah hadir dalam sesi bengkel pada kali ini.

EVENT OF THE MONTH

Sweden-Malaysia International Road Safety Seminar "Towards Vision Zero"

Oleh: Azrena Suria bte Abdul Wahid

Pada 18 dan 19 Ogos 2008 bertempat di Impiana KLCC Hotel & Spa Kuala Lumpur telah diadakan Seminar Keselamatan Jalan Raya Antarabangsa Sweden-Malaysia. Seminar ini dianjurkan oleh pihak Jabatan Keselamatan Jalan Raya (JKJR) dan Malaysian Institute Research of Road Safety (MIROS) dengan kerjasama Kedutaan Sweden di Malaysia.

Wakil dari Unit Keselamatan Jalan, Cawangan Kejuruteraan Jalan & Geoteknik yang telah hadir ke seminar ini adalah Ir. Aishah Othman (KPPK UKJ), Azrena Suria Abdul Wahid, Safinas Saroji dan Muhairan Musa.

Objektif utama seminar ini adalah untuk meningkatkan kesedaran dan kefahaman berhubung keselamatan jalan raya dengan moto "Towards Vision Zero" disamping berkongsi maklumat, idea dan pengetahuan berkenaan keselamatan jalan raya dari pakar-pakar keselamatan



Dari kiri: Pn. Ir. Aishah Othman, Muhairan Musa, Safinas Saroji dan Azrena Suria Abdul Wahid

jalan raya Sweden. Aktiviti seminar ini **termasuk** dalam pembentangan kertas kerja dari pakar keselamatan jalan raya dari Sweden, bengkel dan forum awam yang terdiri daripada panel-panel dari dalam dan luar negara. Sebanyak

tiga kertas kerja dibentangkan dalam seminar ini. Kertas-kertas kerja tersebut seperti tertera dalam jadual di mukasurat sebelah.

Seminar ini turut diperhebatkan dengan Mini Pameran dari syarikat-syarikat antarabangsa seperti Scania, Sensys dan Volvo manakala JKJR juga turut menyertai pameran sebagai wakil dari kerajaan Malaysia. Majlis telah dirasmikan oleh Y.B. Datuk Ong Tee Keat, Menteri Pengangkutan Malaysia dan Duta Sweden di Malaysia H.E. Helena Sangeland. Bersambung....

Dengan menghadiri seminar ini adalah diharapkan dapat meningkatkan lagi kefahaman tentang keselamatan jalan raya disamping mendapat pengetahuan dari pakar-pakar negara maju.



Booth JKJR



Booth Scania



Booth Volvo

Bil	Tajuk	Pembentang
1.	A Shared Responsibility for Road Safety – Legislation and Supervision of System Designers	Mr. Lars Bergfalk, Road Traffic Inspectorate
2.	Speed Management in Sweden	Ms. Anna Vadeby, Swedish National Road and Transport Research Institute
3.	Swedish Practice in Urban Planning for Safety	Mr. Roger Johansson, National Road Administration Sweden

EVENT OF THE MONTH

Seminar On Road Safety Audit And Traffic Management During Construction (For JKR Officer)

Oleh: Mukhzani bin Abd Latif

Sejak kebelakang ini kita sering dikejutkan dengan berita kecelakaan jalan raya yang berlaku di lokasi-lokasi pembinaan. Malahan orang ramai dan media cetak mahupun media elektronik akan menunding jari ke arah agensi-agensi pelaksana jika berlakunya kejadian seperti itu dan Jabatan Kerja Raya tidak terkecuali .

Sehubungan itu, sebagai langkah untuk meningkatkan kesedaran dan kefahaman berhubung keselamatan jalan raya sewaktu pembinaan, Unit Keselamatan Jalan, Cawangan Kejuruteraan Jalan & Geoteknik telah menganjurkan satu seminar bertajuk *Road Safety Audit And Traffic Management During Construction* pada 9 Julai 2008 bertempat di Putrajaya International Convention Centre (PICC). Seminar sehari ini telah mendapat sambutan yang menggalakkan dan menerima seramai lebih kurang 220 orang peserta yang terdiri dari kakitangan JKR yang menyelia projek jalan seperti jurutera, pembantu teknik dan juruteknik.

Majlis perasmian telah dilakukan oleh Timbalan Ketua Pengarah Kerja Raya III (Sektor Pakar), Y. Dihormati Ir. P.N Selvanayagam. Ia turut dimeriahkan dengan kehadiran Y. Bhg. Dato’ Ir. Annies bin Md. Ariff (Pengarah Kanan, Sektor Kejuruteraan Senggara), Ir. Kamil Puat bin Nil (Pengarah



(Wakil Pengarah Cawangan Kejuruteraan Awam, Struktur & Jambatan).

C a w a n g a n Kejuruteraan Jalan & Geoteknik), Ir. Dr Abdul Aziz bin Hj Arshad (Pengarah Cawangan Jalan) & Ir Ahameed Tarmizi bin Ramli

Sebanyak 4 kertas kerja telah dibentangkan dalam di seminar ini antaranya *Road Safety Audit & Traffic Management: The JKR Way, Roles and Responsibility of Key Players, Traffic Management During Construction* dan *Traffic Management During Construction: From Contractual Perspective*. Sesi pembentangan kertas kerja ini telah dipengerusikan oleh Pn. Ir. Aishah bte Othman, KPPK UKJ. Antara panel bagi sesi ini adalah Ir. Mohd Shahrom bin Ahmad Saman, Ir. Hj. Che Ali bin Che Hitam, Ir. Mohamed Shafii bin Mustafa dan Pn. Norshimah bte Meon.

Dengan adanya seminar ini adalah diharapkan ianya dapat meningkatkan lagi kefahaman tentang Audit Keselamatan Jalanraya dan Pengurusan Trafik Sewaktu Pembinaan dan seterusnya memastikan keselamatan jalan raya sewaktu pembinaan berada di tahap yang terbaik.

ROAD SAFETY AUDIT

The 4 Steps In Managing Road Safety Audit - Do, Decide, Document & Correct

By: Ir. Mohd Shahrom bin Ahmad Saman

Road Safety Audit in JKR projects started as early as 1997 and is being carried out in stages – planning & feasibility, preliminary design, detailed design, construction and operation. It should be looked upon as a value added process to the design and construction of a road rather than just another process. The auditing work is more than checking standards i.e. checking for 'compliance', a road safety audit is 'checking fitness for a purpose' on the road with regards to road safety. Therefore, there must be proper management of road safety audit and this can be achieved through the following four steps :

- i. Do the audit report
- ii. Decide through completion meeting
- iii. Documenting the decisions
- iv. Corrective action

i. Do The Audit Report

A road safety audit report can only be prepared and submitted by an accredited Road Safety Auditor who is registered with Road Safety Unit, Road Engineering & Geotechnical Branch, JKR Malaysia Headquarters. The report need to be prepared in accordance to *JKR Guidelines For Road Safety Audit of Roads And Road Project In Malaysia* and *Nota Teknik 25/07 – Guidelines On The Contents Of A Road Safety Audit Report*.

ii. Decide Through Completion Meeting

Upon receiving the road safety audit report, the designer or contractor (depending on the stage of audit) is required to prepare a Response Report indicating whether the auditor's comment/recommendations can be complied. This is to facilitate the decision making during the road safety audit completion meeting. The meeting should be looked upon as an opportunity for the audit report to be discussed by all parties affected and decisions to be made taking account the constrains of the project.

iii. Documenting The Decisions

Decisions made in the completion meeting must be documented. It is not anticipated that every finding or every recommendation of an audit should be immediately be accepted. If any of the finding/recommendation is not accepted, it is important to document both the decision not to accept it and the reasons that led to the decisions against it completely, modifying it or not immediately implementing the recommended course of action. Formats for recording decisions made in the Completion Meeting is available in the *Nota Teknik 25/07 – Guidelines On The Contents Of A Road Safety Audit Report*.

iv. Corrective Action

Once decisions are made and documented, this should be followed by a review on the design or corrective action on the construction works appropriate to the stage of audit. However, it is important to note that it is not the responsibility of the road safety auditor to do the final checking/verification of whether the corrective action is in accordance to standards/specifications or not. It is the duty of the person responsible for the design or construction works.

In conclusion, managing road safety audit requires us to ensure that road safety audit report is done, decisions are made through road safety audit completion meeting, documentation of the decisions and followed by corrective actions.

DOs & DON'Ts

Papan Tanda Sementara di Tapak Pembinaan

Oleh: Mohd Shahneezam bin Abd Rahman



Jalan yang sedang dalam pembinaan perlu mempunyai papan tanda sementara yang mencukupi bagi membantu pengguna jalan ketika menggunakan

jalan tersebut. Jika tidak, ia boleh mengundang bahaya dan menyulitkan pengguna jalan raya terutama ketika waktu malam atau hujan. Contoh seperti gambar diatas menunjukkan papan tanda sementara yang tidak men

cukupi dan tidak mematuhi pelan penguurusan trafik di tapak pembinaan.



Ini amat merbahaya kepada pengguna jalan raya lebih-lebih pengguna yang bukan orang tempatan.

Pemasangan papan tanda sementara yang mencukupi di kawasan pembinaan boleh membuatkan pengguna jalan raya berjaga-jaga ketika menggunakan jalan tersebut. Ia juga dapat memudahkan pengguna jalan raya mengikut laluan yang betul dan mematuhi arahan seperti yang terdapat pada papan tanda sementara. (Seperti gambar diatas)

TRAFFIC CONTROL DEVICES

Location of Signal Faces

By: Noor Aziah bte Tarmizi

As far as practicable, signal faces shall be located as specified or recommended in AS 1742.14-1996 (Standards Australia 1996). Consistency in the location of signals is highly desirable to meet road users' expectations as to how signals are displayed and hence assist them to observe the signals correctly.

Designation of Signal Faces

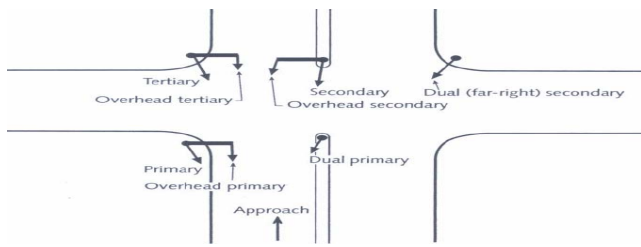


Figure 1: Signal face designations for four-way intersections

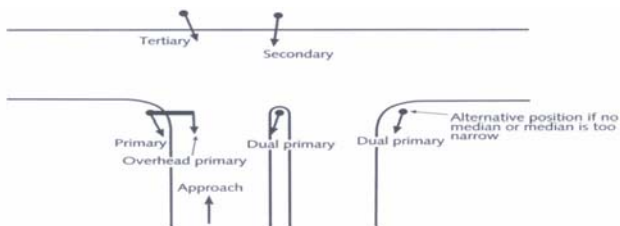


Figure 2: Signal face designations for T-intersections

Signal Face Functions

Location of Signal Face	Main Functions Performed			
	Warning	Stopping	Starting	Manoeuvring
Primary	Yes	Yes	No	No
Secondary	‡	‡	Yes	Yes
Tertiary	‡	‡	Yes	Yes
Dual Primary	Yes	Yes	No	No
Overhead Primary	Yes	Yes	No	No
Overhead Secondary	‡	‡	Yes	‡
Overhead Tertiary	‡	‡	Yes	‡

‡ These functions may also be provided depending on site geometry, topography and other conditions.

Warning Display: To alert the approaching drivers to the presence of traffic control signal control.

Stopping Display: To inform approaching drivers sufficiently in advance of the stop line that they are required to stop.

Starting Display: To inform drivers stopped at the stop line when they may proceed.

Manoeuvring Display: To inform drivers about to enter the intersection, or within the intersection, of any priority or restriction allocated to them.

Recommended Minimum Number of Signal Faces

- a) The minimum number of signal faces for a given approach is **three**. An approach with a primary, a secondary and a tertiary signal face satisfactorily provides for all essential signal face functions while still providing a limited degree of safety in case of individual lamp failure.
- b) The minimum number of signal faces for **each left-turn movement is two**. They should be located in the primary and tertiary locations. Where the road left turning vehicles are turning into has a median or island, the tertiary signal face may be located on that median or island if a suitable post is provided.
- c) The minimum number of signal faces for **each right-turn movement is two**. They should be located as follows:-
 - i) On a divided road with medians of sufficient width, in the dual primary and secondary locations
 - ii) Otherwise, preferably in the overhead primary and secondary locations, or
 - iii) As a last choice, in the primary and secondary locations

Furthermore, if both the secondary and overhead secondary are provided, right turn aspects should be placed on both.

Source: AS 1742.14-1996 & Austroads Part 7-Traffic Signals

GARISPANDUAN BERKAITAN JALAN

Kerja-Kerja Lanskap Di Jalan-Jalan Persekutuan

Oleh: Ir. Mohd Faizul bin Mohd Ali Hanapih



Ketinggian landskap di pembahagi jalan perlu diambil perhatian supaya tidak menghalang jarak pandangan pengguna jalanraya



Renghadang jalan sekurang-kurang jenis TL3 akan dipasang sekiranya terdapat kekangan di lokasi

Bagi kerja kerja lanskap di jalan jalan persekutuan telah terdapat Garispanduan Nota Teknik (Jalan) – *Intermediate Guideline To Road Reserve Landscaping*. Garispanduan ini memberi penekanan kepada aspek keselamatan jalan, isu alam sekitar, kecantikan dan *practicality*.

Semasa merencanakan jalan, Jabatan Kerja Raya akan menggunakan kaedah penyediaan *clear zone* untuk menyediakan ruang bagi kenderaan kembali semula ke laluan asal sekiranya terbabas. Piawaian yang diguna pakai iaitu *Guidelines On Design and Selection of Longitudinal Traffic Safety Barrier* dan *Intermediate Guidelines To Road Reserve Landscaping* telah menetapkan bahawa lebar *clear zone* dari tepi laluan utama kenderaan adalah diantara 6 – 9 m untuk jalan-jalan di luar bandar dan 4 m untuk jalan di dalam bandar. Oleh yang demikian, pokok-pokok yang melebihi 100 mm diameter tidak dibenarkan di tanam dalam kawasan ini.

Sekiranya terdapat halangan dimana *clear zone* tidak dapat dicapai, penghadang jalan yang sesuai akan dipasang. Bagi *medians*, *roundabout* dan lain-lain kawasan pula, hanya pokok-pokok renek dibenarkan dan hendaklah di tanam dan di jaga supaya tiada sebarang bahagian pokok-pokok ini akan memasuki jalanraya.



Kawasan yang mempunyai *clear zone* yang mencukupi juga dapat mengatasi masalah jarak pandangan terhad

An Except from 'Human Error in Road Accidents'

by Marc Green, Ph.D. and John W. Senders, Ph.D.

A comprehensive study of road safety (Treat et al., 1977) found that human error was the sole cause in 57% of all accidents and was a contributing factor in over 90%. In contrast, only 2.4% were due solely to mechanical fault and only 4.7% were caused only by environmental factors.

Why do humans make so many driving errors? The answer to this question lies in the inherent limitations of human information processing. In sum, humans must rely on three fallible mental functions: perception, attention and memory. This brief overview looks at the "first-principles" approach to accident investigation because it draws on knowledge of basic human psychological processes. Instead of looking at the driver from the outside, we try to understand his/her mental processing and how it interacts with the environment.

People driving down a highway are bombarded with a steady flow of information. Most of the information is visual input, the road itself, other vehicles, pedestrians, signs, the passing scenery, etc. Moreover, the driver may be processing other information sources such as auditory input (listening to the radio, talking on a cell phone, carrying on a conversation with another passenger), or internal input (remembering directions or planning what to make for dinner). If the visual information flow is low, there may be enough mental resource to carry on all tasks simultaneously. But attentional demands may exceed supply when:

- ◆ the flow becomes a torrent (driving fast)
- ◆ the information is low quality (poor visibility)
- ◆ resources must be focused on a particular subset of information (a car close ahead)
- ◆ the driver's capacity is lowered by age, drugs, alcohol or fatigue.

There may not be enough mental resource for all tasks. The driver then "attends" only a subset of the available information, which is used to make decisions and to respond. All other information goes unnoticed or slips from memory.

In sum, information processing works like this: the information from the visual and possibly auditory environment is detected by the senses ("pre-attentive" stage) while other information may be recalled from memory. If there is too much to process, the driver attends an information subset and the rest is ignored ("attentive stage"). Lastly, the driver makes a decision and possibly a responses based on the attended information.

Research has shown that accidents occur for one of three principle reasons. The first is perceptual error. Sometimes critical information was below the threshold for seeing - the light was too dim, the driver was blinded by glare, or the pedestrian's clothes had low contrast. In other cases, the driver made a perceptual misjudgment (a curve's radius or another car's speed or distance). The second, and far more common cause, is that the critical information was detectable but that the driver failed to attend/notice because his mental resources were focused elsewhere. Often times, a driver will claim that s/he did not "see" a plainly visible pedestrian or car. This is entirely possible because much of our information processing occurs outside of awareness. Studies have amazingly shown that we may be *less* likely to perceive an object if we are looking directly at it than if it falls outside the center of the visual field. This "inattention blindness" phenomenon is doubtless the cause of many accidents.

Last, accidents sometimes occur because drivers accurately perceive and interpret information but fail to respond appropriately because they make the wrong decision or because they make the right decision but perform the wrong response.

Conclusion

An accident was probably caused by a large number of factors working in concert: the driver's hurry, age, attention being shared across several inputs (radio, road and recall), moderate blood alcohol level, uncertainty about the directions and unfamiliarity with the street. Factors such as headlight glare and optical correction may have also played a role.

General overview of how human information processing can be used to determine accident causes. However, somewhat different analyses might be performed in other accident types. Drivers often misjudge road curvature, the speed of their own or another vehicle, distance, etc. Knowledge of human perceptual processes can also be used to analyze accidents in such misjudgments.

POOR PRACTICES IN ROAD DESIGN AND HOW TO PUT IT RIGHT

Part 1: Safety of Vulnerable Road Users

Oleh: Ir. Hj Abdul Rahman Baharuddin

PEDESTRIANS

Understanding of the needs and characteristics of pedestrians and factors that affect their travel and safety is important when designing pedestrian facilities. This brief note identifies some of the road safety deficiencies generally encountered during the audit of new road projects and existing roads with respect to the safety of pedestrians and disabled persons.

Definition: a pedestrian is any person who is afoot or who is using a wheelchair or a means of conveyance propelled by human power other than a bicycle (*Washington State Law*)

Every trip begins and ends as a pedestrian trip.

What the law says,

Every foot-passenger on the carriageway within the limits of an uncontrolled crossing shall have precedence within those limits over any vehicle and (*Clause 37, Malaysia Road Transport Rules*)

Where a pedestrian crossing, footbridge or subway is provided on any road, no person shall cross such road within 100 yards on either side of such crossing, footbridge or subway (*Clause 45, Malaysia Road Transport Rules*).

Pedestrian Crossings -

1. Site of crossing should be located on or close to pedestrian desired path. Poorly located crossings may discourage pedestrian from using these facilities.
2. Differentiate between signalized and unsignalised pedestrian crossing. Use yellow stripes for signalized and white strips for unsignalised crossing
3. Ensure drivers have good forward visibility at the site of the crossing. Check for dazzle that may be caused by early morning or late evening sun.
4. Introduce traffic calming measures to approaching vehicles to reduce speed. Crossings at high speed roads should consider the installation of road humps.
5. Provide push button (on demand) signalised crossing at signalised intersection. This is usually required when the intersection is located at business-active neighbourhood.
6. Signalised crossing should also be equipped with an audible warning system for the blind.



Walkways/Footpaths -

1. Provide adequate width of walkways. The widths can vary, but typically minimum dimension is around 1.5m wide.
2. Ensure continuity and connectivity of walkways. Continuous connectivity to common public places and public transport facilities.
3. Path must lead to safe crossing locations.
4. Do not locate street furniture, signs and landscaping plants/trees in the path,
5. Where possible use tactile paving to provide guidance for disabled persons. Ensure this is of the correct type and colour, laid to adequate widths.
6. Do not locate street furniture, traffic controller panels or inspection covers within an area of tactile paving or the walkways.
7. Use dropped kerbs/pedestrian ramps (1:12). Ensure these are adequate to provide wheelchair users with a continuous network of routes - with no disruption by full height kerbs especially at crossings.
8. Other facilities for the disabled - obtain advise from local disabled group.



Guardrails/ Railings -

1. Use high transparency guard rail/railings to ensure visibility of pedestrian.
2. Ensure they are sufficiently long to guide people to the proper crossing.
3. Avoid long lengths of guardrail/railing with no crossing - invites people to climb over.

..... To be continued