

LEGISLATIVE COUNCIL PANEL ON TRANSPORT

Speed Limit in Hong Kong

PURPOSE

This paper presents -

- (a) the structure of speed limit categorisation and the criteria of setting speed limits on roads in Hong Kong;
- (b) the review of speed limits in Hong Kong; and
- (c) the relationship between traffic accidents and speed limit.

BACKGROUND

2. On 17 December 1999, the Administration presented to the LegCo Panel on Transport a proposal to increase the fixed penalty and Driving-Offence Points for serious speeding offences as measures to combat speeding. At the meeting, Members expressed reservations over the appropriateness of the structure of our existing speed limit categorisation and asked the Administration to provide further information on the subject.

SPEED LIMIT STRUCTURE IN HONG KONG

Speed limit categorisation

3. In Hong Kong, speed limits are imposed primarily to promote road safety. At present, our speed limit structure comprises the following 3 main categories:-

- | | |
|-------------|---|
| Low band | - 50 km/h for urban or new town built-up areas |
| Middle band | - 70/80 km/h for areas outside urban or new town built-up areas |
| High band | - 100 km/h for high standard expressways, North Lantau Highway being the one exception (110/km/h) |

4. In general, 50 km/h is the standard speed limit on roads in the built-up areas, whether they are in Hong Kong, Kowloon or the New Territories. For areas outside the built-up areas in Hong Kong and Kowloon, the speed limit is 70 km/h. For areas outside the built-up areas in the New Territories, the speed limit is 70/80 km/h. For high standard expressways, the speed limit is 100 km/h¹.

5. Under the existing legislation, the maximum speed limit for medium/heavy goods vehicles and buses shall remain at 70 km/h when they are travelling on roads with speed limits over 70 km/h.

Study on Hong Kong's Speed Limit Structure

6. During the review of speed limits in 1999, the Administration commissioned the Transport Research Laboratory (TRL) in the U.K., an independent leading transport research establishment in the world, to carry out a Study on the Speed Limits in Hong Kong. The purpose of the consultancy study is to research into the latest overseas practices of major countries for reviewing Hong Kong's current speed limit standards/practices and to ascertain whether the speed limit structure as stated in paragraph 3 above is best fitted for Hong Kong.

7. It is an international practice that different speed limits are set for different types of roads. Most European countries (as well as Japan, Canada and Australia) adopt a four-tier or even five-tier speed limit structure (usually stepwise increase of 10-20 km/h). A comparison of the speed limits adopted for different types of roads in Europe is at **Annex A**.

8. For built-up or urban areas, it is noted that 50 km/h is commonly adopted by many countries as the general speed limit. On fast urban roads, the speed limits are mainly set in the region of 60 to 80 km/h. These roads may, or may not, be dual carriageways but will have controlled junctions, pedestrian separation and limited frontage access. These generally correspond with Hong Kong's rural and urban trunk roads and primary distributor roads whose standard speed limits and design speeds are 70 km/h.

9. On motor roads, the speed limits commonly adopted are in the range of 90 to 100 km/h for light vehicles. These roads generally correspond to Hong Kong's urban expressways and older rural dual-carriageways, such as the Tuen Mun Road and other highways built to difficult geometry. In Hong Kong, the speed limits for these roads are 70 or 80 km/h. Whilst these limits may appear low as compared with international standards, the study showed that

Note 1 : There is an exception of adopting a speed limit of 110 km/h on North Lantau Highway which is a longer distance road, engineered to higher design speeds, and with minimal interference from slip roads, etc.

the traffic mix and difficult geometry of many Hong Kong roads would make a lower speed limit more appropriate.

10. On motorways, which are usually dual carriageway roads with limited access and with grade-separated junctions, the international practice generally sets speed limits in the range of 100-130 km/h. International practice is also that the design speeds of such motorways will at least equal the speed limit. There are views that a speed limit of 100/110 km/h for motorways in Hong Kong may be conservative. However, the design speeds for Hong Kong's new motorways are usually set at 100 km/h. The adoption of a higher speed limit requires a more stringent [design standard on requirements such as the minimum radius of horizontal and vertical curves, sight distances, signing, etc.](#) Raising the design speed of existing and new roads to these standards would have significant implications on cost and land take. Also, the limited lengths of such highway in Hong Kong would make any savings in journey time minimal.

11. The study concludes that the speed limit structure adopted in Hong Kong generally accords with international practice, and TRL recommends that our present speed limit structure is suitable and that no changes should be made.

Criteria in determining the speed limit of roads in Hong Kong

12. Currently, the standard speed limits applied to new roads in Hong Kong are set out in paragraph 3 above and in detail in the Transport Department's Transport Planning & Design Manual Volume 6. The design speed for highways is generally determined according to the road type, and the speed limit for these highways is usually set at, or slightly below, the design speed for road safety reasons.

REVIEW OF SPEED LIMITS

13. Review of speed limit is an on-going exercise. Relaxation would only be recommended if it would not impair road safety. When carrying out a detailed examination of the concerned road section, the Administration would take into account the following factors -

- (a) the number of changes in speed limit on a stretch of roads should be minimised. For local hazards, consideration should be given to providing appropriate warning rather than lowering the speed limit. The length of road section under consideration should not be less than 1 km;
- (b) the design speed and environment of the road section;

- (c) the accident history of the road section;
- (d) the prevailing speed adopted by the majority of drivers of light vehicles during off-peak periods, i.e. 85th percentile vehicle speed; and
- (e) the road surface characteristics if the speed limit of a road is to be relaxed to 80 km/h or above.

14. Since March last year, a review of speed limits on more than 40 major road sections has been completed and the speed limits on 19 of them (18 already implemented and 1 being circulated for comments prior to implementation) have been relaxed. The speed limits for the remaining road sections are maintained.

Examples of application of review procedures

15. As explained in paragraph 12 above, the design speed of a highway would normally govern its speed limit. For example, the design speed for Island Eastern Corridor (IEC) is 70 km/h which sets constraints on the geometric design of IEC in terms of curvature (radii), super-elevation, sight-line requirement, spacing of junctions and weaving lengths, etc. It is also noted that the junctions along the road are relatively close with high weaving/merging activities. It is considered that any increase in speed limit higher than the design speed of this road as a whole is undesirable. Increase in speed limit over different stretches of the road is also not recommended for reasons of consistency.

16. In reviewing the speed limit of our roads, the Administration has adopted a general principle of avoiding frequent and abrupt changes. We would, as far as possible, adopt a single speed limit for the whole stretch of a road where appropriate. For example, we have raised the speed limit of a short section of West Kowloon Corridor at Cheung Sha Wan (about 1.6 km long) and a short section of Castle Peak Road between Tuen Mun and Yuen Long from 50 km/h to 70 km/h in order to maintain a uniform speed limit throughout all the road sections.

17. On the other hand, the speed limits of North Lantau Highway (about 14 km) and West Kowloon Highway (about 4 km) have been relaxed from 100 to 110 km/h and from 80 to 100 km/h respectively because of good road geometry and environment, good accident records, the prevailing vehicle speed and support from the concerned parties including motoring association and the police.

Different speed limits along different sections of road

18. Different speed limits are normally adopted for different sections of a major road to suit the gradual change of road environment, say from the urban setting to the rural conditions or expressway standards, and vice versa. For instance, Route 3 includes West Kowloon Highway (100 km/h); Tsing Kwai Highway, Cheung Tsing Tunnel, Cheung Tsing Highway, Ting Kau Bridge and Tai Lam Tunnel (80 km/h); and Yuen Long Approach Road (100 km/h).

19. The speed limits of Tsing Kwai Highway, Cheung Tsing Tunnel, Cheung Tsing Highway, Ting Kau Bridge and Tai Lam Tunnel could not be relaxed because of their geometry constraints and/or tunnel/bridge configuration. Their consistent speed limit of 80 km/h is highly desirable. Also, they have a total length of about 15.3 km.

20. On the other hand, Route 3 – Cheung Tsing Highway is connected to Route 9 – Lantau Link at west Tsing Yi. They both have a speed limit of 80 km/h. The speed limit of Lantau Link is not recommended to be relaxed because of bridge configuration without any hard shoulder. It is about 4.5 km long. The speed limit of the toll plaza at the western end has now been relaxed to 80 km/h for the airport bound direction. The speed limit in the Kowloon bound direction is being planned to be relaxed soon. In this way, there would be only one change of speed limits at the toll plaza instead of two changes within a short distance. North Lantau Highway, having a speed limit of 110 km/h, is about 14 km long.

21. Toll plazas are special areas which are required to be treated with caution. Motorists are required to slow down to pay their tolls in passing through the areas. High speed travelling in these areas should be discouraged. In the past, a speed limit of 50 km/h was used to control the vehicle speed. However, to avoid frequent and abrupt changes, it is now recommended that the speed limit at the toll plaza should be the same as that of the adjoining road sections. If there are more than one adjoining roads leading to the toll plaza and they have different speed limits, the lower one should be adopted. We would erect advance warning traffic signs and road markings on the approach to the toll plaza to advise motorists to adjust their speeds.

22. As a first step, the speed limits of selected toll plazas, including Lantau Link, would be relaxed. In the light of experience, these arrangements would be extended to other toll plazas.

Feasibility of different speed limits for fast and slow lanes of a highway

23. The standard speed limits are briefly described in paragraph 3. Any review of the existing speed limits including any road sections of merging traffic ahead should be carried out in accordance with the criteria as stated in paragraph 13. We are not aware of any overseas countries which practise different speed limits on different lanes of a highway. We have reservations over this arrangement because it would encourage frequent lane changing and/or overtaking activities which are highly undesirable for safety reasons, especially on high speed roads. In addition, it would be difficult for the Police to take enforcement action.

Installation of warning signs to indicate change of speed limit

24. To provide advance warning to motorists, we have introduced a new traffic sign so that they can have sufficient time to prepare and adjust their speeds for the lowering of 20 km/h or more in speed limit along the mainline. This sign will be erected in pairs at about 100 m ahead of the change and under special circumstance, an additional pair at about 200 m in advance. We do not recommend the erection of warning sign for the lowering of 10 km/h in speed limit as the change is small and drivers can easily comply with it without difficulty. We also do not recommend the erection of warning sign for the lowering of speed limit at exits from the mainline as there is a physical change of the road environment and adequate directional signs have been provided.

25. To improve the readability of the speed limit signs, we would increase the size of the signs including repeater signs, if site condition permits. We have also decided to remove the wording of "km/h" in the sign face as motorists are already accustomed to the metric unit of km/h. This would allow the use of a larger size numeral for 2 or 3 digit speed limit. Implementation of the proposal has already commenced. We expect that all the existing speed limit signs would be replaced with new signs within two years.

RELATIONSHIP BETWEEN ACCIDENTS AND SPEEDING

26. There are a number of overseas studies on the relationship between accidents and speeding. An American study (1990) showed that following a revision of the speed limit of the interstate highways from 88 km/h to 104 km/h, there was an increase of 3 - 6 km/h in the mean rural interstate speed which has resulted in an increase of 19 - 34 % in fatalities in traffic accidents. This suggested that for every 1.6 km/h change in the mean traffic speed, there is an associated change of 8 or 9 % in the number of fatalities. The above findings are broadly in line with an earlier German study (1977) on West German motorways which indicated a 9.7% change in accidents for 1.6 km/h change in mean speed.

27. The study carried out by TRL indicates that there appears to be a strong relationship between the actual traffic speed and accidents. Overseas studies also show that the imposition of a speed limit, or the lowering of an existing speed limit, is usually associated with significant reductions in road accidents and vice versa.

28. The setting of speed limits on our roads depends on a number of factors which include road geometry and conditions, the actual travelling speed, accident records and vehicle flows etc. We found from the review that it is still within the safety margin to relax the speed limits of some road sections to tally with the actual travelling speeds of most drivers on the road. Therefore, we do not expect that our revised speed limits will cause significant increase in vehicle speeds. Also, a preliminary assessment indicates that in the past few months, only two road sections recorded an increase in traffic accidents after relaxation. However, it is too early at this point to carry out any meaningful surveys of the "after" situation these road sections as the traffic patterns have yet to fully stabilised and the traffic accident data available are for a limited period only. We are now monitoring the situation and have requested Police to step up enforcement particularly in the latter two road sections.

BREAKDOWN OF SPEEDING STATISTICS

29. We do not have a breakdown of speeding offences in excess of the speed limit with reference to different speed limits of roads. However, because of our recent installation of speed enforcement cameras, we could provide some speeding statistics on Fanling and Tolo Highways for 1999 (see **Annex B**).

30. From these statistics, we can see that about 9% of the speeding cases occurring on roads with speed limit of either 80 or 100 km/h are of a serious nature (i.e. over 30 km/h). This is in line with the general speeding statistics that about 10% of the cases are in excess of the speed limit by over 30 km/h and would pose a significantly higher potential danger to other road-users. It is also noted that for roads with a higher speed limit of 100 km/h, the majority of the speeding cases (two-third) are in excess of the speed limit by 11 to 15 km/h while for roads with a lower speed limit of 80 km/h, the majority of the speeding cases (70%) are in excess of the speed limit by 16 to 30 km/h.

CONSULTATION WITH MOTORISTS

31. The present structure of speed limit categorisation is developed over the years as our road network continues to expand. Before arriving at the present structure, we have listened to different views from the general public who forwarded their suggestions directly to us or through different channels including the Transport Advisory Committee and the Legislative Council. In addition, we have regular meetings with the transport trade and close contact with the motorists associations and the local universities so that feedback from the users could be obtained from time to time.

Transport Bureau
24 January 2000

General speed limits in build-up areas by vehicle category in km/h

	Vehicle type				
	car	caravan	bus	light truck	heavy truck
Austria	50	50	50	50	50
Denmark	50	50	50	50	50
Finland	50	50	50	50	50
Germany	50	50	50	50	50
Greece	50	50	50	50	50
Netherlands	50	50	50	50	50
Portugal	50	50	50	50	50
Spain	50	50	50	50	50
Sweden	50	50	50	50	50
UK	48 (30 mph)	48 (30 mph)	48 (30 mph)	48 (30 mph)	48 (30 mph)
Hungary	50	50	50	50	50
Iceland	50	50	50	50	50
Israel	50	50	50	50	50
Latvia	50	50	50	50	50
Lithuania	50	50	50	50	50
Norway	50	50	50	50	50
Romania	60	60	40	40	40
Slovakia	60	60	60	60	60
Slovenia	60	60	60	60	60
Switzerland	50	50	50	50	50
Hong Kong	50	50	50	50	50

General speed limits on motor roads by vehicle category in km/h

	Vehicle type				
	car	caravan	bus	light truck	heavy truck
Austria	-	-	-	-	-
Denmark	80	70	80	70	70
Finland	100	80	80/100	80	80
Germany	100	80	80/100	80	80
Greece	110	110	90	80	80
Netherlands	100	80	80	80	80
Portugal	100/90	80	90	80	80
Spain	100	80	90	80	80
Sweden	90/110	70	90	90	90
UK*	96/113	80/96	64/96	80/96	64/80
	(60/70 mph)	(50/60 mph)	(40/60 mph)	(50/60 mph)	(40/50 mph)
Hungary	100	70	70	70	70
Iceland	90	80	90	80	80
Israel	90	90	90	90	90
Latvia	-	-	-	-	-
Lithuania	90	90	70	70	70
Norway	80/90	60/80	80	80	80
Romania	80	80	50	50	50
Slovakia	90	90	90	90	90
Slovenia	100	80	80	80	70
Switzerland	100	80	100	80	80
Hong Kong	70/80	As towing vehicle	70	70/80	70

* In the UK, they do not have a category known as “motor roads”. The speed limits referred to in the table are those for the dual-carriageways or primary distributor roads which generally correspond to the motor roads in other European countries.

General speed limits on motorways by vehicle category in km/h

	Vehicle type				
	car	caravan	bus	light truck	heavy truck
Austria	130	130	100	130	80
Denmark	110	70	80	70	70
Finland	80/100/120	80	80/100	80	80
Germany	no limit	80	100	80	80
Greece	120	120	90	90	80
Netherlands	120	80	80	80	80
Portugal	120/110	90/100	90	90	90
Spain	120	80	100	100	90
Sweden	90/110	70	90	90	90
UK	113	96	113	113/96	96
	(70 mph)	(60 mph)	(70 mph)	(70/60 mph)	(60 mph)
Hungary	120	80	80	80	80
Iceland	-	-	-	-	-
Israel	100	100	100	100	100
Latvia	-	-	-	-	-
Lithuania	110	110	100	100	100
Norway	90	80/60	80	80	80
Romania	80	80	50	50	50
Slovakia	130	80	110	80	80
Slovenia	120	80	80	80	70
Switzerland	120	110	100	100	100
Hong Kong	70/80/100/110	As towing vehicle	70	70/80/100/110	70

Tolo and Fanling Highways - Speed Enforcement Camera 1999
Summary on numbers of vehicles driving over posted speed limit

Locations	Speed Over (km/h)					Total
		11 to 15	16 to 30	31 to 45	46	
Tolo Highway (Posted Speed 80 km/h)	Mar	0	335	28	6	369
	April	265	65	3	1	334
	May	0	181	21	5	207
	June	0	0	0	0	0
	July	0	0	0	0	0
	Aug	89	17	0	0	106
	Sept	0	575	64	17	656
	Total :	354	1173	116	29	1672
	Percentage:	21%	70%	7%	2%	100%
Tolo / Fanling Highway (Posted Speed 100 km/h)	Mar	0	387	55	21	463
	April	568	126	15	8	717
	May	680	165	13	0	858
	June	36	8	34	9	87
	July	429	93	90	20	632
	Aug	549	146	27	7	729
	Sept	378	88	18	7	491
Total:	2640	1013	252	72	3977	
Percentage:	66%	25%	6%	2%	100%	
Grand Total:		2994	2186	368	101	5649
Percentage:		53%	39%	7%	2%	100%