

# LEGISLATIVE COUNCIL PANEL ON TRANSPORT

## **Measures to Enhance Safety of Passengers on Public Light Buses**

### **INTRODUCTION**

This paper presents the findings of the Administration's review of measures to enhance safety of passengers on public light buses (PLBs).

### **BACKGROUND**

2. A number of fatal accidents involving PLBs occurred earlier in 2000 giving rise to public concern over speeding activities of PLBs. In April 2000, the Administration informed Members of the measures adopted and the proposals made in tackling speeding activities by PLBs as well as proposals to enhance passenger safety on PLBs in general.
3. The Police has been taking, and will continue to take, necessary enforcement against speeding, including operations specifically conducted to target at overnight PLBs. Separately, six locations in the Territory have been selected to install red light cameras to monitor potential speeding activities of PLBs and other types of vehicles. The installation of these red light cameras is expected to be completed in phases between October 2001 and September 2002.
4. Separately, the Transport Department conducted three safe driving workshops with the Police for PLB operators and drivers in August 2000. To enhance the regulation of PLB drivers, driver's name and TCU hotline are now displayed on all overnight green minibuses (GMBs) after consultation with GMB operators concerned. In addition, a new licensing condition has been imposed on new GMB routes requiring the drivers to be employed by licence holders to enhance management of their drivers. For existing operators, such a requirement would be introduced as a passenger service licence condition when their licences are up for renewal.
5. Apart from the above, the Administration has conducted a review to explore other proposals to further enhance passenger safety. These could be grouped into the following two categories –
  - (a) measures to better protect passengers on PLBs in case of accidents, e.g. installing seat belts and other passenger protection equipment; and

- (b) measures to help reduce the accident rates of PLBs, e.g. imposing a maximum speed limit on PLBs, and installing speed monitoring device.

## **REVIEW FINDINGS**

### **Passenger Protection Equipment**

6. An analysis of the accident rates by class of vehicles in the past five years shows that the accident rate per 1,000 licensed vehicles for PLBs are the highest among all classes of vehicles (**Annex A**). A more detailed analysis of the accidents in 1999 also indicates that PLBs have a high accident involvement rate per million veh-km and accidents involving PLBs have the highest number of casualties per 1,000 licensed vehicles (**Annex B**). To protect passengers in case of accidents and enhance passenger safety, there is a need to install passenger protection equipment in PLBs.

#### Passenger seat belts

7. At present the compulsory fitting and wearing of seat belts applies to front seats and driver's seat of private cars, taxis, light buses, goods vehicles and buses. It also applies to rear seats of private cars and taxis. The seat belt legislation has not yet applied to the rear seat passengers of other vehicle types. In the light of the analysis in paragraph 6 above, the Administration proposes to require all passenger seats on PLBs to be fitted with seat belts.

8. Depending on the design, the addition of passenger seat belts may require a new design of the internal layout of public light buses, which could result in an increase in weight, length and cost of vehicle. It is estimated that the development cost together with the facilities would increase the vehicle price by about 5 – 10% and 15 – 20% for 2-point and 3-point seat belts respectively. According to the vehicle manufacturers, at least one year lead time is needed to develop and prepare the production of 2-point lap belts and it could take as long as five years for 3-point seat belts because of the need to substantially alter the vehicle design.

9. As 2-point lap belt has proved to be an effective passenger protection device, it would be appropriate to require PLBs, as an initial step, to fit 2-point lap belts in all passenger seats of PLBs to enhance passenger safety. This has the advantage of quicker implementation, relatively smaller increase in capital cost, avoiding the need for a major redesign of vehicles, and easy wearing for most of the passengers.

10. All private car and taxi passengers are required to wear seat belts under existing legislation. To be in line with this practice, we propose that wearing of seat belts by PLB passengers should be made compulsory. This would also send a strong signal to the public on promoting the use of seat belts.

11. As regards the legal responsibility for not wearing seat belt on PLBs, we propose that similar to the arrangement for taxis, the responsibility should rest with the passengers because it would not be possible for a PLB driver to monitor and ensure that all passengers on his vehicle have properly securely fastened their seat belts.

### High seatbacks

12. Apart from the installation of seat belts on all passenger seats, the Administration has also examined the provision of high seatback as a supplementary device to minimize injuries to passengers during collisions. The high seatback is normally one of the requirements for interior impact protection in overseas countries. It should be so padded as to absorb the energy of the impact between the head and the seatback. It could also be used in case of a rear impact of the vehicle as a head restraint, thus helping to reduce or even eliminate the whiplash injury of the neck. Standards of high seatback are currently available in Japanese, Australia, USA and European Regulations.

13. We propose that high seatbacks should be introduced jointly with the lap belts as a package.

### Implementation and Consultation

14. In line with the existing practice, the new requirements would only apply to new PLBs. The Administration has been in discussion with the PLB trade on the proposal and there has not been any in principle objection to the new requirement. As the PLB manufacturers would need to have at least one-year's lead time for developing new model with passenger seat belts and high seatback, the implementation of the new requirement is expected to be in 2002.

### **Measures to help reduce accident rates of PLBs**

15. Installation of passenger protection equipment alone could only minimize the chance of injuries in case of traffic accidents. To enhance passenger safety, we also need to tackle the problem at source so that the accident rates of PLBs could be reduced.

### Maximum speed limit on light buses

16. One of the suggestions is to impose a maximum speed limit for light buses.

17. An analysis of accident statistics on PLBs for the past five years (**Annex C**) shows that on average only 11 accidents or 1% occurred each year on roads with speed limit above 70 km/h. This is partly because red minibuses (RMBs) are not allowed to travel on expressways and only a small proportion of GMBs (about 224 vehicles or 9.5% out of the GMB fleet of 2,355) are allowed to travel on limited stretches of expressways where the speed limits are set at 80 km/h or above.

18. From the above analysis, there is no clear evidence that imposing a maximum speed limit of 70 km/h could help reduce the accident rates of PLBs. However, the public is very concerned about the driving behaviour of PLB drivers. In view of the larger carrying capacity of PLBs than taxis and private cars, we would further consult the PLB trade on the option of imposing a maximum speed limit on all light buses and assess its impacts on the operation of the trade before making any recommendation.

### Speed warning/display device

19. Another suggestion is to install speed warning/display device on PLBs so that passengers could better monitor the behaviour of drivers.

20. At present, speed warning devices are installed on over 100 GMBs. They will give a visual or audible alert to the driver only when the vehicle's speed exceeds a pre-set level. This device is less flexible as it is only capable of checking the speed of a vehicle against a single pre-set speed limit.

21. To facilitate better monitoring by on board passengers, we have identified a device, which can display the prevailing speed of a vehicle in motion. This digital display unit showing the travelling speed of a PLB is intended to help passengers on board to monitor the driving behaviour of the driver (**Annex D**). A trial to test the performance of this device has recently been launched. The trial will last for 3-6 months. Subject to a satisfactory result of the trial, we would ask the operators to install the device on all overnight GMBs first, which are more prone to speeding problems, with a view to extending the installation to all PLBs in future.

**ADVICE SOUGHT**

22. Members are invited to comment on the proposed measures to enhance safety of passengers on PLBs.

Transport Bureau  
Government Secretariat  
TRAN 3/9/13 Pt 15  
TRAN 3/9/21 Pt 8  
12 January 2001

**Accident involvement rate**

<b>Class of vehicle</b>	<b>Accident involvement rate (per 1,000 licensed vehicles)</b>				
	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000*</b>
Private Car	25.3	24.6	22.4	22.8	22.5
Taxi	186.9	187.7	176.9	172.0	180.1
Light goods vehicle	42.4	44.4	39.5	41.7	43.5
Medium & heavy goods vehicle	34.3	34.7	30.8	31.5	29.0
Public light bus	236.6	226.6	213.4	241.5	240.1
Public bus	168.1	167.4	158.4	196.4	191.3
All motor vehicles	45.2	44.3	40.1	41.7	41.6

\* provisional figures

**A summary of accident rates by vehicle types in 1999 and 2000 (Provisional)**

	<b>Motor Cycle</b>	<b>Private Car</b>	<b>Public Light Bus</b>	<b>LGV</b>	<b>M/HGV</b>	<b>Public Bus</b>	<b>Taxi</b>	<b>All Motor Vehicles</b>
No. involved in accidents	2,561 (2,705)	7,227 (7,366)	1,049 (1,042)	3,114 (3,189)	1,235 (1,200)	2,265 (2,264)	3,101 (3,241)	20,842 (21,286)
No. licensed	23,737 (24,683)	317,616 (327,581)	4,343 (4,339)	74,602 (73,285)	39,245 (41,390)	11,533 (11,836)	18,030 (17,997)	499,380 (511,460)
Annual veh-km (in million)	259	4190	357	1,207	2,046	485	2,077	11,040
	N.A. for 2000 (see note)							
Involvement per 1000 vehicles	107.9 (109.6)	22.8 (22.5)	241.5 (240.1)	41.7 (43.5)	31.5 (29.0)	196.4 (191.3)	172.0 (180.1)	41.7 (41.6)
Involvement per million veh-km	0.89	1.72	2.94	2.58	0.60	4.67	1.49	1.89
	N.A. for 2000 (see note)							
No. of casualty	2,457 (2,738)	4,272 (4,313)	875 (873)	1,326 (1,249)	391 (294)	2,309 (2,056)	1,532 (1,679)	13,359 (13,398)
Casualties per 1000 vehicles	103.5 (110.9)	13.5 (13.2)	201.5 (201.2)	17.8 (17.0)	10.0 (7.1)	200.2 (173.7)	85.0 (93.3)	26.8 (26.2)
Casualties of passengers	242 (315)	2,199 (2,209)	743 (745)	640 (573)	137 (75)	2,105 (1,845)	832 (903)	7,062 (6,823)
Passenger Casualties per 1000 vehicles	10.2 (12.8)	6.9 (6.7)	171.1 (171.7)	8.6 (7.8)	3.5 (1.8)	182.5 (155.9)	46.1 (50.2)	14.1 (13.3)
Passenger Casualties per accident	0.096 (0.119)	0.371 (0.369)	0.747 (0.748)	0.228 (0.201)	0.131 (0.074)	0.976 (0.852)	0.295 (0.311)	0.512 (0.491)

- Notes: (i) Figures shown in bracket are 2000 provisional figures  
(ii) Casualties refer to vehicle occupants of the specified vehicle class.

(Note: The figures of vehicle mileage (veh-km) for the year 2000 can only be available in April 2001. It is because the update is not a monthly exercise and HyD has to complete the survey and data compilation on the total road length in Feb 2001 and TD has to complete the subsequent analysis on veh-km sometime in April 2001)

**Number of Traffic Accidents involving  
Public Light Buses (Red + Green) by Speed Limit in 1996 - 2000\***

Speed Limit in km/h	Year				
	1996	1997	1998	1999	2000*
50 or below					
RMB	517	480	450	449	444
GMB	420	424	398	485	496
70					
RMB	24	26	17	25	21
GMB	21	21	22	28	24
80					
RMB	0	0	0	0	1
GMB	2	2	3	7	9
100					
RMB	0	0	2	0	0
GMB	3	2	5	10	7
Total					
RMB	541	506	469	474	466
GMB	446	449	428	530	536

\* Provisional figures



Annex D

**Speed Display Unit Installed in PLB**  
**在小巴上裝設的速度顯示器**

