CHAPTER 2

Transport and Housing Bureau
Transport Department
Hong Kong Police Force
Information Services Department

Administration of road safety measures

Audit Commission
Hong Kong
28 March 2013

This audit review was carried out under a set of guidelines tabled in the Provisional Legislative Council by the Chairman of the Public Accounts Committee on 11 February 1998. The guidelines were agreed between the Public Accounts Committee and the Director of Audit and accepted by the Government of the Hong Kong Special Administrative Region.

Report No. 60 of the Director of Audit contains 8 Chapters which are available on our website at http://www.aud.gov.hk

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ADMINISTRATION OF ROAD SAFETY MEASURES

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Executive Summary

1. Road traffic accidents can have a devastating impact on the victims and their families. While Hong Kong's traffic fatality rate has declined in recent years and is one of the lowest in the world, there were 15,894 traffic accidents in 2012, resulting in 120 deaths and 20,090 injuries. In recent years, the Transport and Housing Bureau, with the assistance of the Transport Department (TD) and the Hong Kong Police Force (Police), has introduced a number of new measures to tackle improper driving behaviours and promote safer vehicle operation. The Audit Commission (Audit) has conducted a review of the administration of these road safety measures.

Measures to tackle drink driving

2. ***Implementation of random breath tests.*** Alcohol affects the central nervous system, blunting perception and coordination and impairing one's ability to detect risk. Studies have shown that drivers who have consumed alcohol have a much higher risk of involvement in accidents than those who have not consumed alcohol. In 2008, the Road Traffic Ordinance was amended to empower the Police to conduct random breath tests on drivers without the need for reasonable suspicion that they have consumed alcohol, with effect from February 2009. Audit examination revealed that from February 2009 to December 2012, 42% of the Police's random breath tests were conducted during the daytime, with an average arrest rate per test of 0.11% which was significantly lower than the 0.75% during the nighttime. In Audit's view, a risk-based tasking of the tests is important to ensure the cost-effective use of the limited enforcement resources. Given that the tests would also cause inconvenience to the motorists, there is a need to administer the tests judiciously (paras. 2.2, 2.4, 2.5, 2.8, 2.9 and 2.11).

3. ***Enforcement of the three-tier penalty legislation.*** According to medical evidence, the risk of causing an accident increases with the increase of blood alcohol

level in a driver. In December 2010, the law was amended to provide a three-tier penalty system in proportion to drivers' alcohol concentration levels. A driver will be charged with a drink driving offence if he fails both a screening breath test conducted at roadside and an evidential breath test at a police station. From January to October 2012, 744 drivers were arrested for failing the screening breath tests. However, 182 of them were released and 215 were charged with a lighter offence as their alcohol concentrations had dropped to lower levels by the time the evidential breath tests were taken. Audit sample check revealed that additional travelling time was incurred for conducting the evidential breath tests because some police stations for reporting arrests were not equipped with test devices and there were breakdowns of the test devices in some cases (paras. 2.15, 2.16 and 2.18 to 2.20).

Measures to tackle speeding and red light jumping

4. Speeding and red light jumping are common traffic offences in Hong Kong that could result in grave consequences. In 2012, there were 266,250 and 55,815 prosecutions relating to speeding and red light jumping offences respectively. With their 24-hour surveillance functions, the speed enforcement camera system and red light camera system are the key enforcement tools (paras. 3.2 and 3.8).

5. ***Operation of enforcement camera systems.*** The deterrent effect of the present speed enforcement camera system is localised as some drivers may increase speed after passing the system. In 2007, the Administration commenced studying the feasibility of using an average speed camera system to influence driver behaviour over a greater distance, like on highways. The system has been used in other countries since 1999. However, as of February 2013, the Administration only planned to launch a trial of the system in 2013-14. As regards the red light camera system, Audit noted that of the 22,871 red light jumping cases detected from October to December 2012, 2,109 (9%) could not be pursued because the images of the offending vehicles were blocked by other vehicles. Moreover, for both enforcement camera systems, the photographs taken only showed the offending vehicles' identity but not that of the offending drivers. There were cases that the registered owners of the vehicles failed to identify the offending drivers. As the effectiveness of both enforcement camera systems as enforcement tools depends on the prosecution evidence they can provide, there is a need to find measures to further improve the systems, drawing on overseas experience where appropriate (paras. 3.9 to 3.14 and 3.17).

Measures to promote safer vehicle operation

6. Public light buses (PLBs), taxis and franchised buses are an integral part of the public transport system. From 2007 to 2011, the accident involvement rates of these vehicles were consistently higher than the average for all motor vehicles (paras. 4.2, 4.37, 4.44 and 4.45).

7. ***Measures for PLBs.*** The Administration has introduced a package of measures to enhance the safety operation of PLBs including the passenger seat belt legislation in 2004 and measures for regulating the travelling speed of PLBs in 2012. For the passenger seat belt requirements, PLBs in use before the 2004 legislation are exempted. As at 31 December 2012, of the 4,350 PLBs, 1,815 (42%) were not fitted with seat belts and 2,535 (58%) were fitted with seat belts. To protect passenger safety and to enable PLB passengers to form consistent habits of wearing seat belts, the TD needs to work towards applying the seat belt requirement to all PLBs. PLB passengers are required by law to wear a seat belt if available. However, as reflected by the number of summonses issued against PLB passenger seat belt offence, there was little improvement in the seat belt wearing rate from 2007 to 2012. There is a need to step up enforcement and publicity efforts on promoting the wearing of passenger seat belts on PLBs (paras. 4.3, 4.4, 4.7, 4.16, 4.19 and 4.32).

8. ***Measures for taxis.*** Besides the passenger seat belt legislation in 2001, in April 2003, the Administration informed the Legislative Council Panel on Transport of a proposal to improve the quality of taxi services. The proposal included a mandatory pre-service training programme to improve safe driving knowledge and attitude of prospective taxi drivers. However, the proposal had not been taken forward thereafter. Audit noted from the Police's enforcement statistics that the total number of speeding offences committed by taxi drivers had increased by 23% from 25,338 in 2007 to 31,258 in 2012. In terms of the number of speeding offences per 1,000 vehicles over the period 2007 to 2012, the speeding problem of taxis was more serious than that of PLBs and franchised buses. The situation calls for additional measures to enhance the safety operation of taxis (paras. 4.38 to 4.41).

9. ***Measures for franchised buses.*** To enhance the safety operation of franchised buses, the maximum speed of a franchised bus is restricted by law to 70 kilometres per hour. On the request of the TD, the franchised bus operators have also enhanced their safety arrangements including requiring their drivers aged

50 or above to undergo annual health checks. Between June and November 2012, there were three serious franchised bus traffic accidents in which the bus drivers concerned were reported to have lost consciousness at the times of the accidents. In November 2012, the Administration undertook to review the arrangements of health check for franchised bus drivers. Based on Internet research, Audit has found that the Mainland and a number of overseas countries have stipulated in their laws more stringent health check requirements for taxi and bus drivers than the existing legislative requirements in Hong Kong which cover all drivers (paras. 4.45 to 4.48 and 4.50).

Accuracy of traffic accident data

10. ***Traffic accident locations.*** The Police is responsible for investigating traffic accidents and inputting accident data into its computerised database which is linked with that of the TD. The TD uses computer sorting of traffic accident data to help compile a list of accident black spots. The traffic accident location is identified using a grid reference system. Due to inaccurate input of grid references, the TD has to spend extra time and resources to rectify the problem. There is also a risk that the timeliness of accident black spot data could be compromised. In Audit's view, prompt and effective measures should be taken to ensure that the grid references for traffic accident locations are correctly input in the first place (paras. 5.2 to 5.4 and 5.13).

11. ***Traffic accident contributory factors.*** The TD relies on the traffic accident contributory factors input by the Police for identifying problems of road environment, road users and driving behaviour, and formulating strategies to tackle specific types of accidents. In a sample check of the accident contributory factors input for 50 traffic accident cases, Audit found that 13% of the input factors were inaccurate and there was no record of supervisory check for the 50 cases. There is a need to tighten management control in this regard (paras. 5.17, 5.20 and 5.21).

Publicity and education programmes

12. The Road Safety Council organises publicity and education programmes to disseminate road safety messages. A variety of publicity and advertising means are employed including the broadcast of announcements in the public interest (APIs) on television. In 2011 and 2012, the broadcast of an API for combating drug

driving was shelved and another one for promoting safe cycling was temporarily withheld respectively after receiving complaints about their contents. There is a need to draw lessons from these cases to prevent recurrence of similar problems (paras. 6.2, 6.3, 6.5 and 6.6).

Audit recommendations

13. **Audit recommendations are made in the respective sections of this Audit Report. Only the key ones are highlighted in this Executive Summary. Audit has *recommended* that the Commissioner of Police should:**

Measures to tackle drink driving

(a) **conduct an overall review of the random breath test operations taking into account the observations made in this Audit Report (para. 2.13(b));**

(b) **streamline the breath test procedures with a view to improving the effectiveness in enforcing the three-tier penalty legislation (para. 2.25);**

(c) **complete the current testing of the mobile evidential breath test device as soon as possible and make an early decision on the way forward in providing suitable and adequate equipment for implementing the drink driving breath tests (para. 2.25(a));**

Measures to promote safer vehicle operation

(d) **in conjunction with the Road Safety Council, step up the enforcement and publicity efforts on promoting the wearing of passenger seat belts on PLBs (para. 4.32);**

Accuracy of traffic accident data

(e) **tighten up procedures and supervisory control to ensure the correct input of grid references for traffic accident locations (para. 5.14(a));**

(f) **tighten management control to improve the accuracy of accident contributory factors input (para. 5.22); and**

Publicity and education programmes

(g) **in conjunction with the Road Safety Council, tighten controls to ensure that road safety API contents are critically checked (para. 6.8).**

14. **Audit has also *recommended* that the Commissioner for Transport should:**

Measures to tackle speeding and red light jumping

(a) **in conjunction with the Commissioner of Police, expedite action on the trial scheme of the average speed camera system (para. 3.18(a));**

(b) **in conjunction with the Commissioner of Police, explore measures to improve the effectiveness of the present enforcement camera systems, drawing on overseas experience where appropriate (para. 3.18(b));**

Measures to promote safer vehicle operation

(c) **in conjunction with the Director of Environmental Protection, make greater efforts to encourage owners of diesel PLBs to participate in the upcoming incentive scheme for the early replacement of their vehicles with cleaner models fitted with passenger seat belts (para. 4.31(a));**

(d) **explore other measures to encourage owners of the liquefied petroleum gas fuelled PLBs without passenger seat belts to retrofit their vehicles with seat belts (para. 4.31(b));**

(e) **consider the need for introducing additional measures to enhance the safety operation of taxis (para. 4.42(a)); and**

(f) **take into account the health check requirements on taxi and bus drivers adopted by the Mainland and other countries in the ongoing review of measures to ensure the road safety of franchised buses and other major road-based public transport modes (para. 4.52(a)).**

Response from the Administration

15. The Administration agrees with the audit recommendations.

PART 1: INTRODUCTION

1.1 This PART describes the background to the audit and outlines the audit objectives and scope.

Background

1.2 Road traffic accidents can have a devastating impact on the victims and their families, regardless of whether they are drivers, passengers or pedestrians. While Hong Kong's traffic fatality rate has declined in recent years and is one of the lowest in the world, the Government has continued to promote road safety through a three-pronged approach: traffic engineering and management measures, legislation and enforcement, and publicity and education.

1.3 The Transport and Housing Bureau has overall policy responsibilities on road safety matters. The Transport Department (TD) assists the Bureau in introducing road traffic legislation and formulating road safety measures. The Hong Kong Police Force (Police) is responsible for enforcing road traffic laws. Both the TD and Police have input to educate the public on road safety. Moreover, the Road Safety Council, established in 1983, is a government advisory body (consisting of government officials and community members from various professions appointed by the Secretary for Transport and Housing) to coordinate road safety activities in Hong Kong (Note 1).

1.4 For 2012-13, the Police's estimated expenditure on its Road Safety Programme was $1,405 million which mainly covered the staff cost to support traffic enforcement. The TD's expenditure on road safety could not be readily ascertained as such work formed parts of three wider Programme areas, i.e. the Planning and Development Programme, the Licensing of Vehicles and Drivers Programme and the District Traffic and Transport Services Programme. The

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Note 1: *The Road Safety Council is chaired by the Deputy Commissioner of Police (Operations) with members drawn from seven government bureaux and departments (including the Transport and Housing Bureau, the TD and the Information Services Department) and six non-governmental organisations (including the transport associations). It is supported by two committees, viz. the Road Safety Campaign Committee and Road Safety Research Committee.*

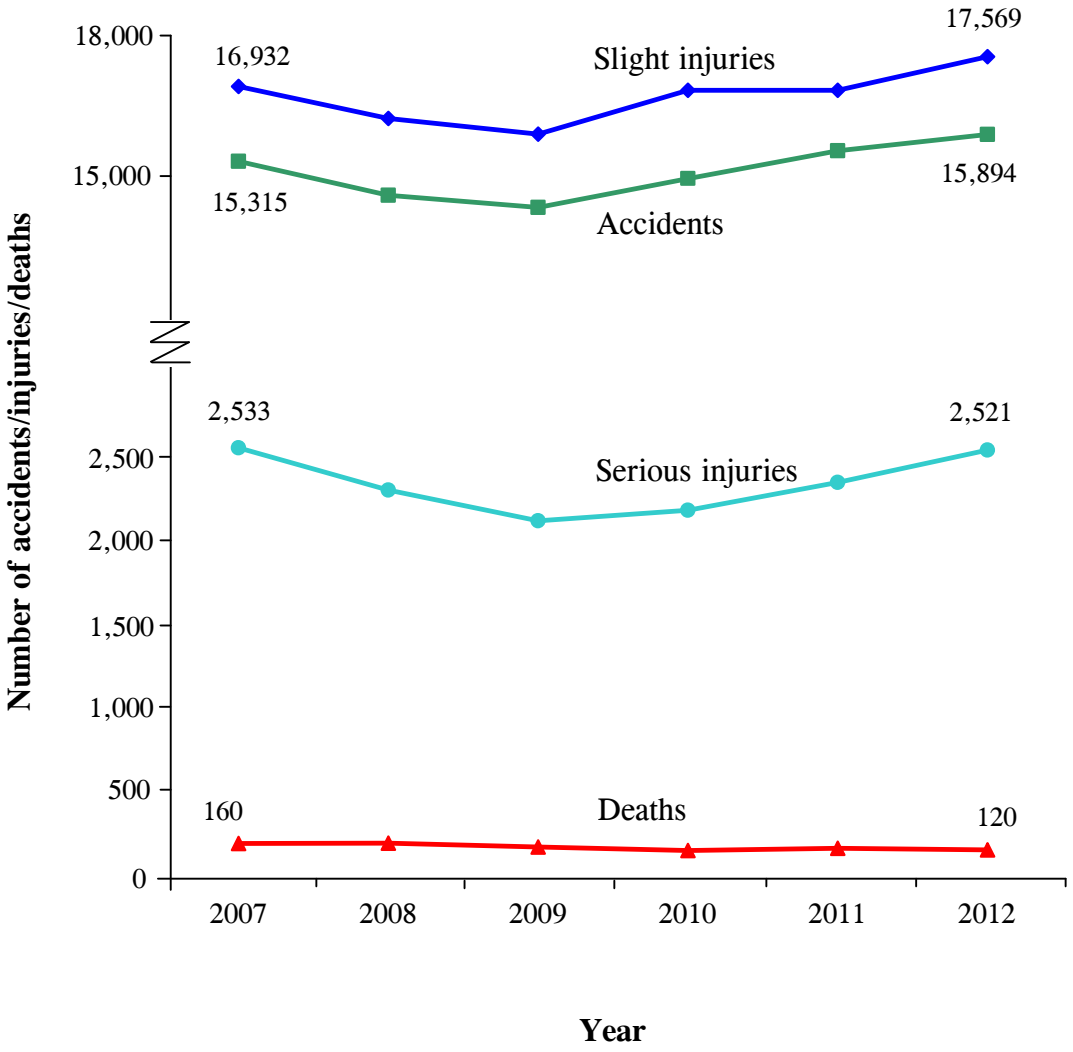
2012-13 estimated expenditures for these Programmes were $299 million, $270 million and $382 million respectively.

Traffic accident trends

1.5 Hong Kong recorded a drop in traffic accident fatalities (from 160 in 2007 to 120 in 2012) and serious injuries (from 2,533 in 2007 to 2,521 in 2012) in recent years. However, the number of accidents increased by 4% from 15,315 in 2007 to 15,894 in 2012 and the number of slight injuries increased by 4% from 16,932 to 17,569 over the same period (see Figure 1).

Figure 1

Traffic accident and casualty trend (2007 to 2012)



Source: *TD records*

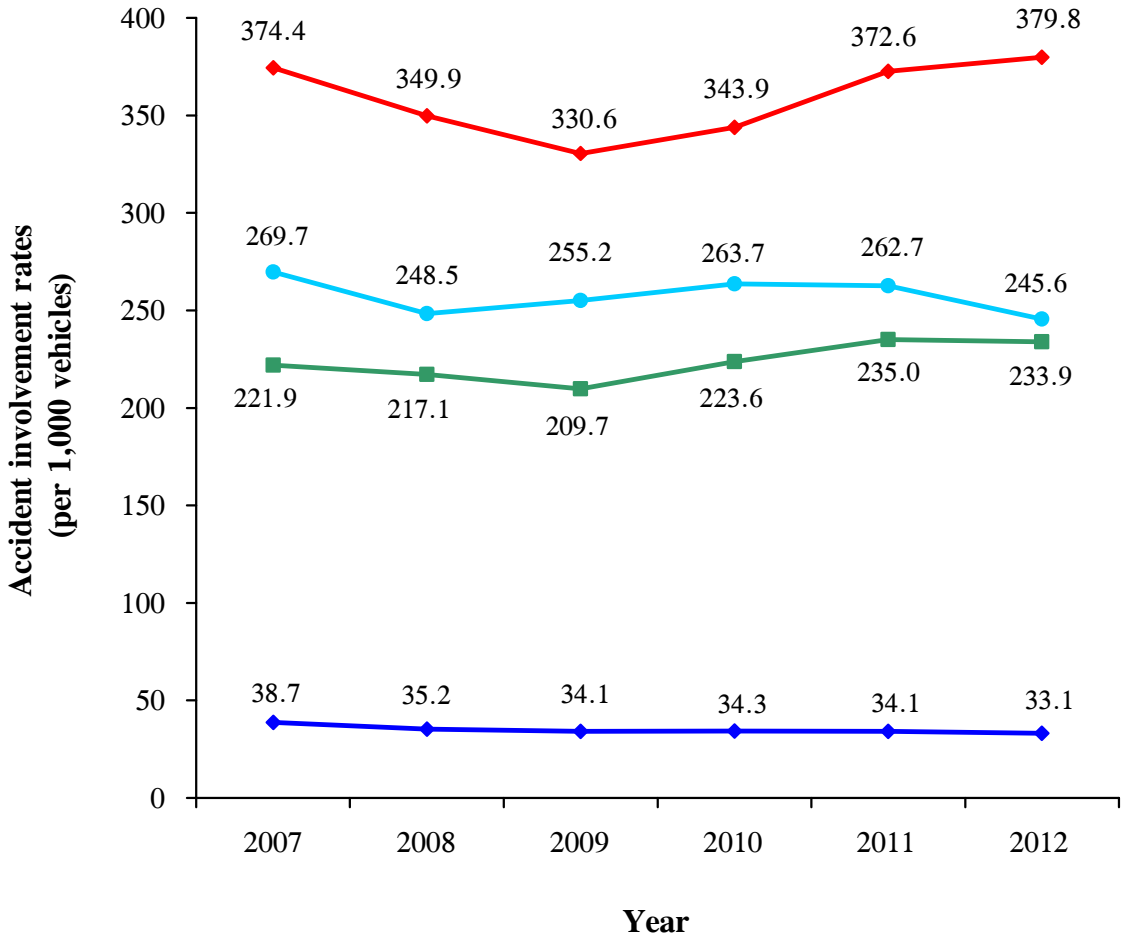
Remarks: *According to the TD's classification, "Deaths" refer to those who sustained injuries and died within 30 days of an accident. "Serious injuries" refer to those hospitalised for more than 12 hours. Injuries causing death 30 or more days after an accident are also included in this category. "Slight injuries" refer to those requiring roadside attention and hospitalisation for less than 12 hours.*

1.6 The occurrence of traffic accidents could be attributed to many different factors. According to the TD's records, on average, driver contributory factors (Note 2) accounted for 79% of the traffic accidents during the six years from 2007 to 2012. To illustrate the accident involvements of different vehicle types, the TD uses two commonly adopted measures i.e. traffic accident involvement rates per 1,000 vehicles and accident involvement rates per million vehicle-kilometres. The involvement rates for franchised buses, public light buses (PLBs) and taxis were consistently higher than the average for all motor vehicles (see Figures 2 and 3).

Note 2: *Examples of driver contributory factors are driving too close to vehicle in front, driving inattentively, exceeding speed limit and disobeying traffic signal/light.*

Figure 2

Accident involvement rates per 1,000 vehicles (2007 to 2012)

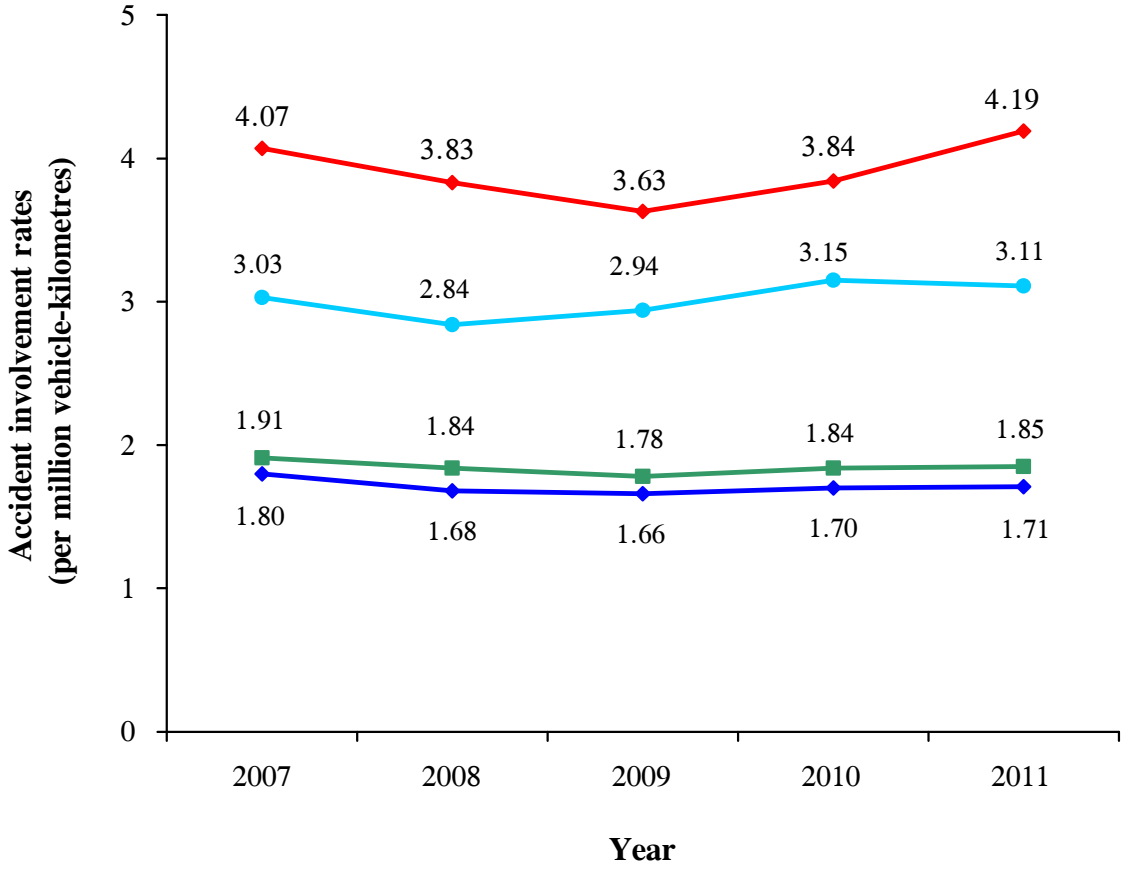


Source: *TD records*

Remarks: *The accident involvement rates are calculated using the number of vehicles as at mid-year. As at mid-2012, there were 5,837 franchised buses, 4,344 PLBs, 18,128 taxis and 639,705 units of all types of licensed motor vehicles.*

Figure 3

Accident involvement rates per million vehicle-kilometres (2007 to 2011)



Source: *TD records*

Remarks: *For 2012, the accident involvement rate for franchised buses was 4.28 per million vehicle-kilometres. As at March 2013, the TD had not compiled the 2012 accident involvement rates per million vehicle-kilometres for other types of vehicles. In 2011, the vehicle-kilometres travelled were 511 million for franchised buses, 367 million for PLBs, 2,305 million for taxis and 12,344 million for all motor vehicles.*

New road safety measures in recent years

1.7 As part of its efforts to enhance road safety, the Government has introduced the following new measures to tackle improper driving behaviours and enhance the safety of PLB operation in recent years:

(a) ***Measures to tackle drink driving.*** In 2008, the Road Traffic Ordinance (Cap. 374) was amended to empower the Police to conduct random breath tests on the alcohol levels of drivers not involved in traffic accidents (starting from February 2009). In December 2010, a three-tier penalty system (i.e. heavier penalty for a higher alcohol level) took effect as a further deterrent to drink driving;

(b) ***Measures to tackle speeding and red light jumping.*** In 2008 and 2012, the TD obtained $47 million and $48 million funding for expanding the enforcement camera systems for the Police to tackle the problems of speeding and red light jumping respectively;

(c) ***Measures to tackle drug driving.*** Under the Road Traffic (Amendment) Ordinance 2011 (which took effect in March 2012), the Police is empowered to conduct preliminary drug tests on drivers who are suspected of drug driving, or are involved in a traffic accident, or have committed a traffic offence; and

(d) ***Measures to enhance the safety of PLB operation.*** Since 2005, PLBs have been required to install speed display devices (Note 3) as a vehicle licence condition. With effect from May 2008, any misuse or malfunctioning of the devices would constitute an offence. Under the Road Traffic (Amendment) Ordinance 2012, the following regulations on PLB operation have been introduced (Note 4):

(i) imposing a cap on the maximum speed (80 kilometres per hour (km/hr)) at which a PLB may travel;

Note 3: *The devices are primarily used to facilitate monitoring by PLB passengers and caution PLB drivers against speeding.*

Note 4: *All measures took effect from April 2012 except items (iii) and (iv), the implementation dates of which are to be specified by the Transport and Housing Bureau.*

(ii) requiring every PLB to be fitted with a speed limiter approved by the TD;

(iii) requiring new PLBs to be fitted with an electronic data recording device (Note 5);

(iv) requiring applicants of PLB driving licences to attend and complete a pre-service course before issue of the licence; and

(v) requiring every PLB driver to display a driver identity plate in the PLB when it is in passenger service.

Audit review

1.8 In 1998 and 2006, the Audit Commission (Audit) conducted two audit reviews on road safety. The results were reported in Chapter 10 of the Director of Audit's Report No. 30 of June 1998 and in Chapter 6 of the Director of Audit's Report No. 46 of March 2006 respectively.

1.9 In the light of the road safety measures introduced in recent years (see para. 1.7), Audit has conducted a review to examine the administration of these measures (Note 6). Particular reference is made to vehicles with higher accident involvement rates (see para. 1.6). The review has focused on the following areas:

(a) measures to tackle drink driving (PART 2);

(b) measures to tackle speeding and red light jumping (PART 3);

(c) measures to promote safer vehicle operation (PART 4);

Note 5: *The device records the speed and manoeuvring data of a vehicle. It facilitates traffic accident investigation and deters drivers from improper driving.*

Note 6: *In view of the small number (three cases) of drug driving related accidents in 2012, this review did not cover the new measures to tackle drug driving (see para. 1.7(c)). This review also did not cover traffic engineering measures, relating to the infrastructure and maintenance works of the Highways Department for enhancing road safety.*

(d) accuracy of traffic accident data (PART 5); and

(e) publicity and education programmes (PART 6).

Audit has found room for improvement in the above areas and has made a number of recommendations to address the issues.

General response from the Administration

1.10 The Commissioner for Transport, the Commissioner of Police, the Secretary for Transport and Housing and the Director of Information Services agree with the audit recommendations.

1.11 The Commissioner for Transport has said that:

(a) there has been a marked decrease in traffic accident fatalities from 160 in 2007 to 120 in 2012. Compared with other major cities in the world, Hong Kong's road traffic fatality rate is among the lowest. The number of serious injuries has also dropped from 2,533 in 2007 to 2,521 in 2012. This is a result of the concerted efforts of all parties and the adoption of three-pronged approach for enhancing road safety in Hong Kong, viz. development of comprehensive legislation and effective enhancement, provision of a safe and efficient transport infrastructure and traffic management system, and focused publicity and education; and

(b) the TD will not be complacent. It will continue to implement various measures to enhance road safety and collaborate with all parties to implement measures to combat all types of inappropriate driving behaviour.

Acknowledgement

1.12 Audit would like to acknowledge with gratitude the full cooperation of the staff of the TD, the Police and the Information Services Department (ISD) during the course of the audit review.

PART 2: MEASURES TO TACKLE DRINK DRIVING

2.1 This PART examines the measures taken to tackle drink driving, focusing on:

(a) implementation of random breath tests (paras. 2.4 to 2.14); and

(b) enforcement of the three-tier penalty legislation (paras. 2.15 to 2.26).

Breath tests on drink driving

2.2 Alcohol affects the central nervous system, blunting perception and coordination and impairing one's ability to detect risk. Studies have shown that drivers who have consumed alcohol have a much higher risk of involvement in accidents than those who have not consumed alcohol. Since 1995, it has been an offence under the Road Traffic Ordinance for a driver to exceed a prescribed limit of alcohol in his blood, breath or urine. The law provides the Police with the power to conduct breath tests on a driver who is suspected of having consumed alcohol when driving a vehicle; or has committed a traffic offence when the vehicle is in motion; or has been involved in an accident.

2.3 The breath test procedure is made up of two parts:

(a) ***Screening breath test***. A screening breath test is conducted at the scene. If a driver fails this test, he may be put under arrest for undergoing an evidential breath test; and

(b) ***Evidential breath test.*** An evidential breath test is conducted in a police station/evidential breath test centre (see Note 12 to para. 2.21). If a driver fails this test, he will be charged with a drink driving offence.

Implementation of random breath tests

2.4 In 2008, the law was further amended to empower the Police to conduct breath tests on drivers without the need for reasonable suspicion that they have consumed alcohol. The drivers are selected at random and a pre-screening test (also

known as the random breath test — Note 7) is performed on roadside. If a driver fails the random breath test, he is required to undergo the screening breath test and evidential breath test as appropriate.

2.5 From February 2009 (the effective date of the random breath test legislation) to December 2012, the Police conducted a total of 416,557 random breath tests and 1,993 drivers were arrested as a result. As can be seen from Table 1, the percentage of arrests over the period declined from 0.7% in 2009 to 0.4% in 2012. It appears that fewer people drank and drove than before.

Table 1

Arrests made as a result of random breath tests (February 2009 to December 2012)

Year	Number of arrests (a)	Number of random breath tests conducted (b)	Percentage of arrests (c) = (a) ÷ (b) ×100%
2009 (from February)	269	39,994	0.7%
2010	572	105,490	0.5%
2011	603	133,900	0.5%
2012	549	137,173	0.4%
Overall	1,993	416,557	0.5%

Source: Police records

Timing of random breath test operation

2.6 In January 2011, the Police briefed the Legislative Council Panel on Transport on the results of the random breath test operations. Among other things, the Police informed the Panel that:

Note 7: *The random breath test takes about 10 seconds to complete which is shorter than the four-minute completion time for a screening test.*

(a) comparing with the situation before the introduction of the random breath tests, accidents involving drink driving decreased by 62% in 2009 and 68% in 2010;

(b) as a vast majority of drink driving accidents occurred between 9:00 pm and 3:00 am, 60% of the random breath test operations (Note 8) were scheduled between 9:00 pm and 6:00 am; and

(c) to enhance the deterrent effect of the random breath test operations, tests would be conducted on drivers who were stopped for having committed traffic offences in addition to the then prevailing practice of performing such tests at police roadblocks.

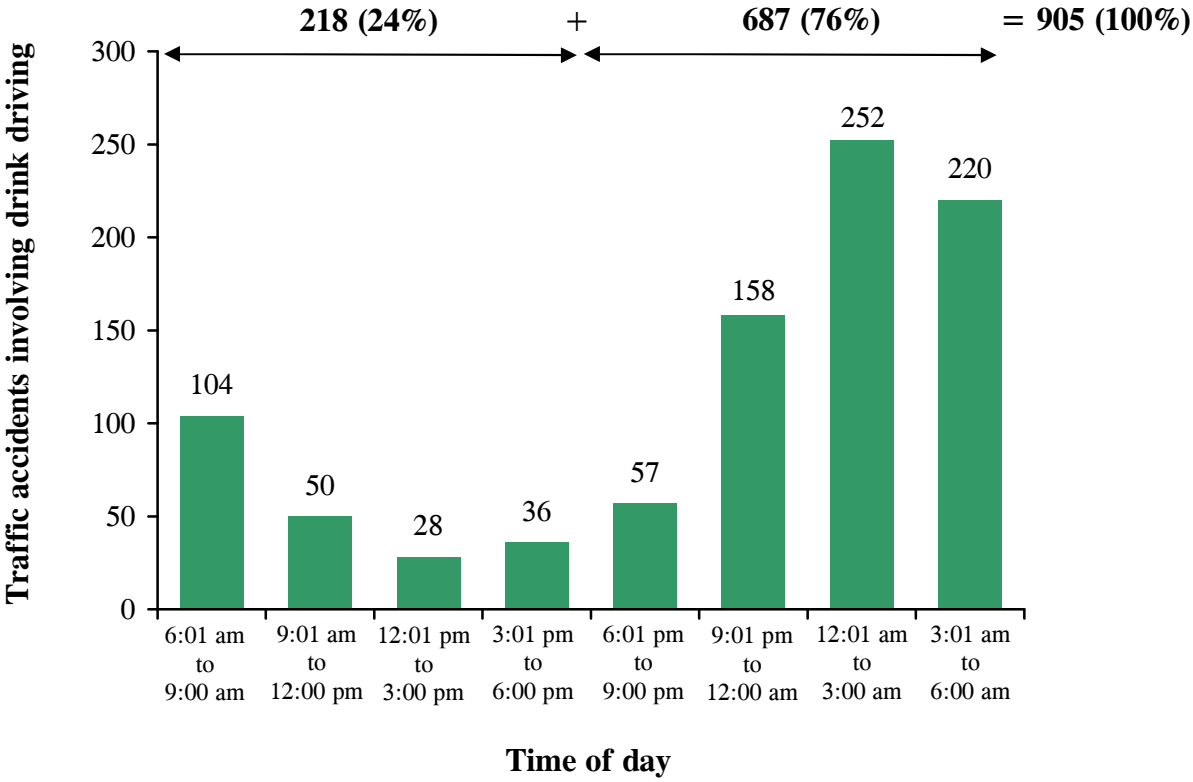
2.7 In response to a Panel Member's request, in June 2011, the Police provided the Panel with a breakdown of the 715 arrests made as a result of the random breath tests from February 2009 to October 2010. The breakdown showed that 90% arrests were made between 9:01 pm and 6:00 am (another indication that this was a high risk period — see para. 2.6(b)).

2.8 ***Audit examination.*** From February 2009 to December 2012, there were a total of 905 drink driving related accidents, and 1,993 arrests made as a result of 416,557 random breath tests. Audit analysed these data by time of day. The results are shown in Figures 4 and 5.

Note 8: *In a random breath test operation, the Police uses a roadblock to stop drivers for conducting the tests. The operation duration and the number of tests conducted vary from operation to operation.*

Figure 4

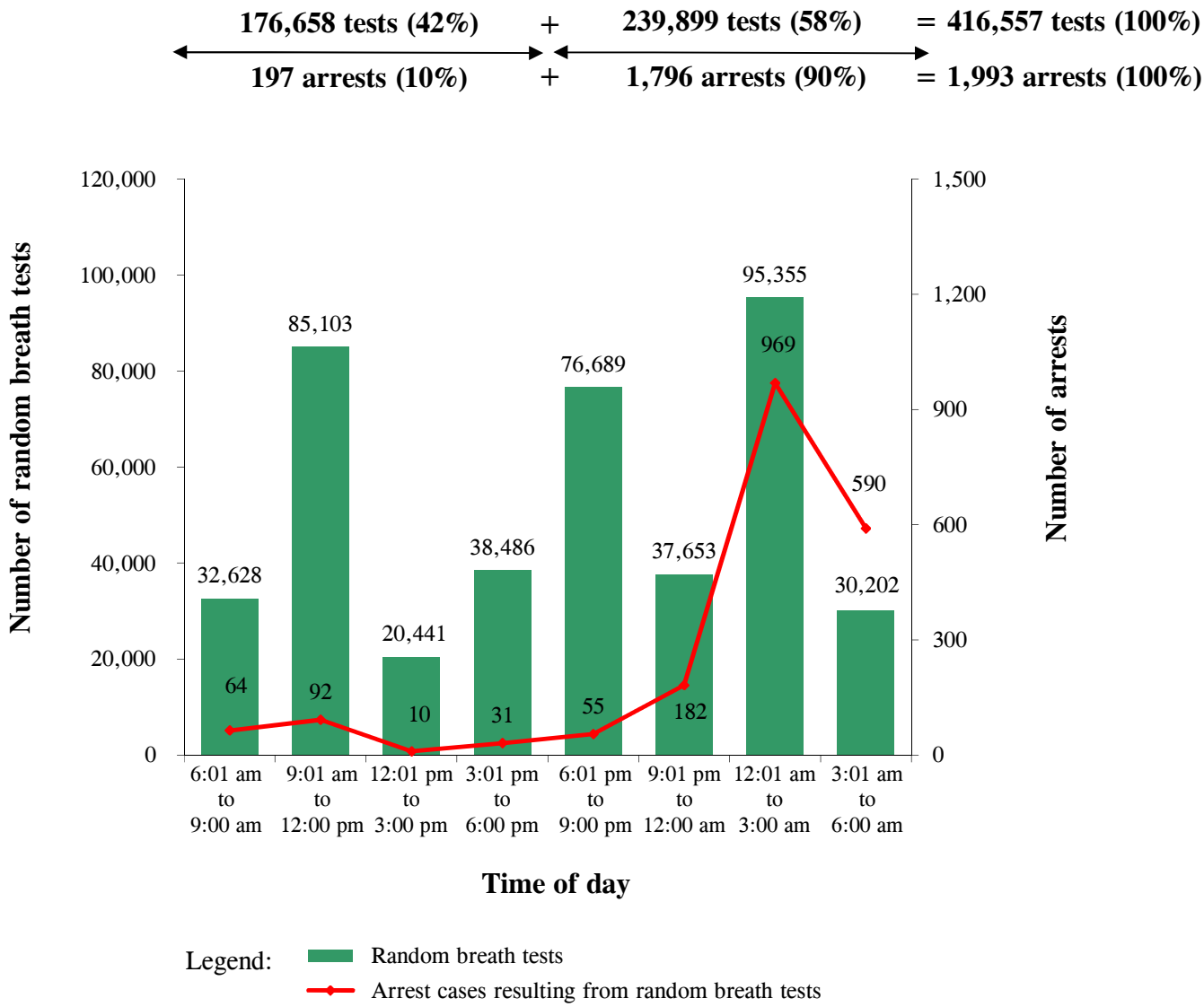
Analysis of drink driving related accidents by time of day (February 2009 to December 2012)



Source: Audit analysis of Police data

Figure 5

Analysis of arrests and random breath tests by time of day (February 2009 to December 2012)



Source: *Audit analysis of Police data*

2.9 Figure 4 shows that 24% of the drink driving related accidents occurred between 6:01 am and 6:00 pm (daytime), and 76% occurred between 6:01 pm and 6:00 am (nighttime). Figure 5 shows that 10% of the drink driving related arrests were made between 6:01 am and 6:00 pm, suggesting that fewer people drank and drove during the daytime than the nighttime. However, 42% of the random breath

tests were conducted during the daytime when both the drink driving related accidents and arrests were on the low side. Figure 5 also shows that, 39% (37,653 + 95,355 + 30,202 = 163,210) of the 416,557 random breath tests were conducted between 9:01 pm and 6:00 am which were less than the 60% (operations) reported to the Panel on Transport in January 2011 (see para. 2.6(b) and Note 9).

2.10 In February 2013, in response to Audit's enquiry, the Police said that:

(a) the number of the random breath test operations reported to the Panel on Transport was not the same as the number of breath tests conducted, and the duration of each operation conducted might not be directly proportional to the number of breath tests conducted. Specifically, operations conducted during the mid-night period might result in a lower number of breath tests conducted as compared with those mounted during the daytime due to the much lighter traffic flows, whereas in each daytime operation, because of more traffic flows more tests would likely be conducted;

(b) no statistics using the random breath test operation parameters (e.g. locations in the periods concerned) had been maintained. The number reported to the Panel on Transport was a general observation of the enforcement situation;

(c) the thrust of random breath test operations was to deter irresponsible drink driving behaviour. Carrying out the operation during the daytime and when approaching the hours of darkness had created greater deterrent effect by increasing the awareness of drivers; and

(d) drink driving enforcement was only one of its enforcement commitments, and equally important was the need to prevent speeding, handle traffic accidents, and maintain smooth traffic flow. The multitude of policing commitments required most of the police officers to be deployed intensively between 6:00 am and 11:00 pm every day to cope with heavy traffic flow, which affected the Police's capacity to dedicate extra resources to combating drink driving specifically during the nighttime.

Note 9: *For the period February 2009 to December 2010 (i.e. before the Panel meeting of January 2011), 37% of the random breath tests were conducted between 9:01 pm and 6:00 am.*

2.11 Audit appreciates that there is a need for conducting sufficient random breath tests during the daytime to deter irresponsible drink driving behaviour. However, a risk-based tasking of the test operations is important to ensure the cost-effective use of the limited enforcement resources. For the period February 2009 to December 2012, the average arrest rate per test conducted was 0.11% (197 ÷ 176,658 × 100%) during the daytime which was significantly lower than the 0.75% (1,796 ÷ 239,899 × 100%) during the nighttime. Given that the tests would also cause inconvenience to the motorists, there is a need to administer the tests judiciously.

2.12 With the random breath tests in operation for almost four years, it is opportune to conduct an overall review with a view to capturing learning points for future improvement, taking into account the observations made in this Audit Report.

Audit recommendations

2.13 **Audit has *recommended* that the Commissioner of Police should:**

(a) **regularly compile and analyse the statistics on the random breath test operations, the drink driving related accident and arrest patterns for the strategic planning of the operations; and**

(b) **conduct an overall review of the random breath test operations taking into account the observations made in this Audit Report.**

Response from the Administration

2.14 The Commissioner of Police agrees with the audit recommendations. He has said that:

(a) the Police has been compiling detailed statistics on random breath tests, but given the system limitation, it is unable to capture the locations and the timing for each random breath test operation except the timing for each pre-screening test. The Police will explore to include the dates, times and locations of the random breath test operations in the new Communal Information System, so that pattern and record data could easily be retrieved for strategic planning of operations as well as for analysis purposes;

(b) at the moment, the planning of random breath test operations is based on the prevailing circumstances and the professional judgement of frontline commanders. The Regional Traffic Formations are already applying a risk-based approach in deciding random breath test locations by considering the routes to bars/pubs area, drink driving related accident locations and number of public complaints;

(c) from February 2009 to December 2012, the Police conducted over 410,000 random breath tests on drivers, which amount to about 22% of the total number of driving licence holders (over 1,900,000). The number of traffic accidents involving drink driving had decreased markedly by nearby 70% when compared to 2008. It can be considered as evidence of the success of random breath test operations; and

(d) the Police will conduct a review with a view to providing a set of guiding principles for frontline commanders to make reference for the deployment of random breath tests at strategic locations. Nonetheless, it should be reiterated that the element of "randomness" is to be maintained in order to maximise the deterrent effect of random breath tests and to prevent opportunists from predicting the deployment patterns to dodge the tests. Regional Traffic Formations will also be reminded to review their own random breath test locations on a regular basis. The Police will also ensure that the respective Regional Traffic Formations regularly examine their policing priorities and deploy resources accordingly.

Enforcement of the three-tier penalty legislation

2.15 According to medical evidence, the risk of causing an accident increases with the increase of blood alcohol level in a driver. From time to time, there were calls for increased penalties on drink driving so that sentences handed down by the court would better reflect the seriousness of injuries caused by accidents involving drink driving. In December 2010, the law was amended to provide a three–tier penalty system in proportion to drivers' alcohol concentration levels. Under the penalty system, convicted drivers are disqualified from driving for a minimum period according to a sliding scale, as shown in Table 2.

Table 2

Penalty for different levels of alcohol concentration

	Prescribed limits of alcohol concentration (micrograms per 100 millilitres of breath (µg/100 ml))	**Minimum driving disqualification period**	
		First conviction	**Subsequent convictions**
Tier 1	Exceeding 22 µg/100 ml but less than 35 µg/100 ml	6 months	2 years
Tier 2	Exceeding Tier 1 but less than 66 µg/100 ml	1 year	3 years
Tier 3	Exceeding Tier 2	2 years	5 years

Source: Police records

Timeliness of evidential breath tests

2.16 As mentioned in paragraph 2.3, if a driver fails a screening breath test at the scene of an accident or an enforcement operation, he will be put under arrest for undergoing an evidential breath test in a police station/evidential breath test centre. If he fails the evidential breath test, he will be charged with a drink driving offence.

As the alcohol level usually decreases with time due to body metabolism (Note 10), it is important that the evidential breath test is carried out as soon as possible after apprehending the drink driving suspect. With the introduction of the three-tier penalty system based on drivers' alcohol levels, it has become even more critical to complete the evidential breath test within the shortest possible time so as to minimise the impact of the drop in alcohol level on the test result.

2.17 In the 1998 review, Audit raised concern about the long time interval (averaging 70 minutes) between screening and evidential breath tests. In the 2006 review, Audit found that the average time interval had been shortened to 50 minutes. In response, the Police said that it would continue to look for new enforcement tools with a view to improving operational efficiency.

2.18 ***Audit examination.*** In this review, Audit selected the drink driving arrests (totalling 744 cases — Note 11) made from January to October 2012 for examining the time interval between screening and evidential breath tests. Audit found that the time intervals for the 744 arrest cases averaged 44 minutes (ranging from 15 minutes to 90 minutes). According to the screening breath test results, 254 drivers (34% of the 744 cases) were suspected of having Tier 1 alcohol level, 351 (47%) Tier 2 alcohol level and 139 (19%) Tier 3 alcohol level.

2.19 However, by the time the evidential breath tests were taken, the alcohol concentrations of 182 drivers (24% of 744 cases) had dropped below the Tier 1 level and hence they were released. In addition, 215 drivers (29% of 744 cases) were charged with a lighter offence as their alcohol concentrations had also dropped to lower tiers (see Table 3 for details).

Note 10: *According to medical research overseas, after consuming alcohol, blood alcohol level will initially increase due to absorption through the stomach. Thereafter, blood alcohol level will decrease due to body metabolism.*

Note 11: *The 744 arrests were made as a result of random breath tests and other enforcement operations (such as for drivers involved in traffic accidents — see para. 2.2). In addition to the 744 cases, there were 47 arrests for which no evidential breath tests were conducted for various reasons (such as blood tests were conducted instead).*

Table 3

Comparison of alcohol levels between screening and evidential breath tests (January to October 2012)

Screening breath test		Evidential breath test			
Alcohol level	**Number of cases**	**Below Tier 1**	**Tier 1**	**Tier 2**	**Tier 3**
		Number of cases			
Tier 1	254	**173**	79	2	–
Tier 2	351	**9**	**146**	194	2
Tier 3	139	–	–	**69**	70
Total	744	182	225	265	72
397 cases released or charged with a lighter offence:		**182**	**146**	**69**	–

215 cases

Source: *Audit analysis of Police records*

Remarks: *Only the shaded cases had alcohol levels dropped to lower tiers during the evidential breath tests.*

2.20 It is unsatisfactory that 182 (24%) of the 744 drink driving arrest cases were released and 215 (29%) were charged with a lighter offence. Of these cases (totalling 397), Audit selected 45 cases for further review. Audit found that the time intervals between the screening and evidential breath tests for 37 of these 45 cases (i.e. ranging from 46 minutes to 89 minutes) were longer than the overall average of 44 minutes for the 744 arrest cases. Audit examined the relevant files to ascertain the reasons for the longer time taken. The results are summarised as follows:

(a) for 15 (41%) cases, the police stations (where the drink driving suspects were taken to for reporting of arrests) were not equipped with an evidential breath test device. Additional travelling time was incurred for taking the suspects to other police stations equipped with such devices for taking evidential breath tests;

(b) for 7 (18%) cases, the drink driving suspects were taken to police stations with evidential breath test devices for reporting of arrests. However, because of the breakdowns of the test devices, additional travelling time was incurred for taking the suspects to other police stations for evidential breath tests; and

(c) for the remaining 15 (41%) cases, the reason for the long time taken could not be ascertained from the files.

2.21 ***Provision of test devices.*** In the 2006 review, Audit reported that further travelling time would be needed if the police station was not equipped with an evidential breath test device (similar observation to para. 2.20(a)). In 2008, the Police increased the number of evidential breath test devices to 28, up from 26. However, as at January 2013, 18 (43%) of the 42 police stations (Note 12) were not equipped with such test devices. Audit noted that in January 2011, the Police acquired for testing two mobile evidential breath test devices (which could obviate the need for taking evidential breath test at police stations). As at January 2013, the test was still ongoing. In Audit's view, the Police needs to complete the testing as soon as possible and make an early decision on the way forward in providing suitable and adequate equipment for enforcing the drink driving legislation.

2.22 ***Arrest procedures.*** At present, the Police General Orders (Note 13) require a drink driving suspect to be taken to the police station covering the area where the arrest is made (which may not be equipped with an evidential breath test device) for reporting the arrest. However, Audit notes that the Police Force Ordinance (Cap. 232) only requires a police officer to deliver an arrested person into the custody of the officer-in-charge of a police station (i.e. no statutory requirement on which police station for reporting the arrest). To improve the operational efficiency in enforcing the drink driving legislation, the Police needs to study the feasibility of modifying the Police General Order requirement such that the

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Note 12: *In addition, there were four evidential breath test centres provided with such test devices but they could not be used for reporting of arrests. According to the Police, these centres were strategically located to support different police stations without such devices.*

Note 13: *According to the Police General Orders, where an arrest is made in connection with a crime, whether at the time of complaint or later, the person arrested shall be brought before the officer-in-charge of the police station covering the area in which the arrest was made.*

reporting of arrests of drink driving suspects may be made at the nearest police station with an evidential breath test device.

2.23 ***Maintenance of test devices.*** Regarding the delays in evidential breath test caused by the breakdowns of test devices in some police stations (see para. 2.20(b)), Audit noted that in 2012, the Police acquired 11 new evidential breath test devices to replace the old ones which were purchased before 2000. While the downtime risk has been reduced with the replacement of some of the old devices, the Police still needs to closely monitor the maintenance programme to ensure that all test devices are properly kept in a workable condition.

2.24 ***Time target.*** In the 1998 review, Audit recommended the Police to set a time target for monitoring the evidential breath test. In June 1998, the Police required case officers to submit explanations to the Police Headquarters if the time intervals between screening and evidential breath tests exceeded 90 minutes. While the average time taken had subsequently been shortened (see para. 2.17), the Police had not reviewed the time target set for submitting an explanation. As such, no explanation had been provided to the Police Headquarters for the long time taken in the 37 cases with the drink driving suspects released or charged with a lighter offence (see para. 2.20).

Audit recommendations

2.25 **Audit has *recommended* that the Commissioner of Police should streamline the breath test procedures with a view to improving the effectiveness in enforcing the three-tier penalty legislation. In particular, action should be taken to:**

(a) **complete the current testing of the mobile evidential breath test device as soon as possible and make an early decision on the way forward in providing suitable and adequate equipment for implementing the drink driving breath tests;**

(b) **closely monitor the maintenance programme to ensure that all evidential breath test devices are properly kept in a workable condition;**

(c) **study the feasibility of modifying the Police General Order requirement to streamline the arrest procedures of drink driving suspects for conducting evidential breath tests; and**

(d) **review and revise the target for monitoring the timeliness of evidential breath tests.**

Response from the Administration

2.26 The Commissioner of Police agrees with the audit recommendations. He has said that:

(a) as Hong Kong has adopted one of the highest standards of proof in the world in adducing evidence to prove drink driving offences, the Police has been following a cautious approach to satisfy the stringent judicial requirements. With the assistance from a local university, a comprehensive test on a mobile evidential breath test device commenced on 11 March 2013. The Police will continue to develop and adopt the mobile evidential breath test technology to enhance its effectiveness in combating drink driving behaviour;

(b) evidential breath test devices are checked and calibrated by the contractor every three months. The Traffic Formations will have to conduct routine checks on evidential breath test devices on a weekly basis. A replacement exercise of the old evidential breath test devices will soon commence to further reduce the downtime;

(c) the Police will study the feasibility to streamline the arrest procedures by bringing a drink driving arrested person to the nearest police station with an evidential breath test device. The Police will also consider gradually increasing the number of evidential breath test devices installed in police stations; and

(d) the timeliness of the evidential breath tests had been closely monitored by the Police and a comprehensive review on the target time will be conducted. The Traffic Formations will be required to closely monitor each "drop-out" case.

PART 3: MEASURES TO TACKLE SPEEDING AND RED LIGHT JUMPING

3.1 This PART examines the enforcement measures taken to tackle speeding and red light jumping, focusing on:

(a) operation of enforcement camera systems (paras. 3.8 to 3.19); and

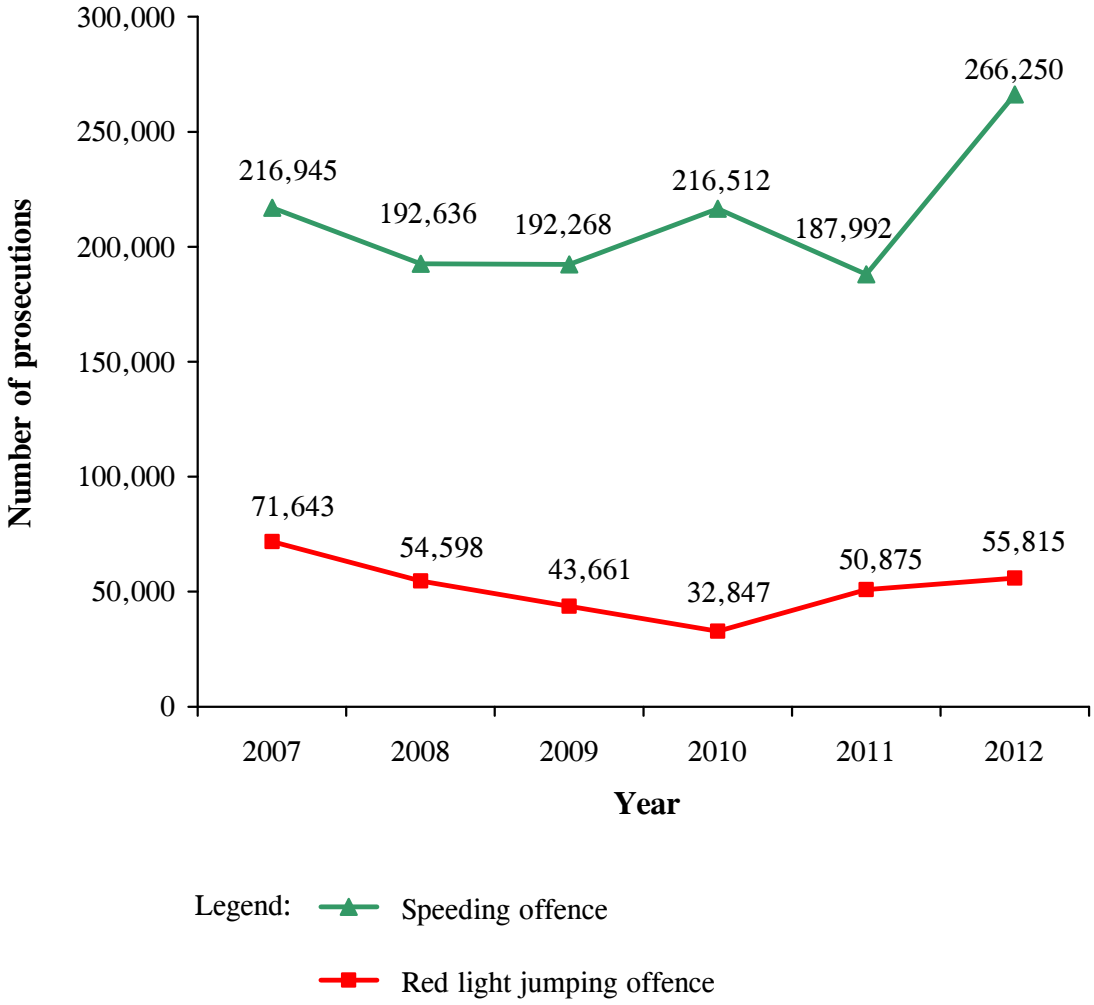
(b) monitoring of speeding enforcement operations (paras. 3.20 to 3.24).

Penalties for speeding and red light jumping

3.2 Speeding and red light jumping are common traffic offences in Hong Kong that could result in grave consequences not only on the drivers and passengers of the offending vehicles but also other road users. Figure 6 shows the number of prosecutions relating to speeding and red light jumping offences from 2007 to 2012.

Figure 6

Prosecutions relating to speeding and red light jumping offences (2007 to 2012)



Source: *Police records*

3.3 Under the law, the penalties for driving in excess of speed limit include fines and recording of driving-offence points (Note 14) as shown in Table 4.

Table 4

Penalties for speeding offence

Driving in excess of speed limit by	Fixed penalty	Driving-offence points
15 km/hr or less	$320	–
More than 15 km/hr to 30 km/hr	$450	3
More than 30 km/hr to 45 km/hr	$600	5
More than 45 km/hr (Note)	$1,000	10

Source: *Fixed Penalty (Criminal Proceedings) Regulations (Cap. 240A) and Road Traffic (Driving-offence Points) Ordinance (Cap. 375)*

Note: *The law also provides that such an offending driver may be summonsed to appear in court. On conviction, he is liable to a maximum fine of $4,000 and disqualification immediately from driving for a period of not less than six months unless the court, for special reasons, orders otherwise.*

Note 14: *The driving-offence points system was put into operation in 1984 to deter habitual traffic offenders and to improve the standard of driving in order to reduce the accident toll. A driver incurring ten or more points within a period of two years is required by law to attend a driving improvement course at his own cost. A driver incurring 15 or more points within a period of two years shall be summonsed and may be disqualified from driving by the court. The period of disqualification upon first conviction is three months and will be increased to six months for any subsequent convictions.*

3.4 For red light jumping, the offending drivers are liable to a fixed penalty of $600 and the recording of five driving-offence points. If a driver holding a probationary driving licence commits a red light jumping offence, he will be summonsed and is liable to:

(a) a maximum fine of $5,000 and three months' imprisonment upon first conviction; and

(b) a maximum fine of $10,000 and six months' imprisonment upon subsequent convictions.

Enforcement tools

3.5 The Police's enforcement efforts against speeding and red light jumping are aided by the following tools:

(a) ***Portable speed detecting radars (with camera) and laser guns.*** These portable devices (introduced since 1991 and 1993 respectively) require manual operation. A team of at least two police officers is required for each operation which only lasts for a period of time;

(b) ***Speed enforcement camera system.*** Since 1999, an automated speed enforcement camera system has been introduced to put selected road sections under 24-hour surveillance. The current system consists of digital cameras and radar units operating on a rotational basis at camera housings installed at various strategic locations. The photographs (showing the registration marks of the offending vehicles), together with other violation data captured by the cameras, will be downloaded onto a central computer system for identification of the offending vehicles and vehicle owners concerned; and

(c) ***Red light camera system.*** The system (first introduced in 1993) operates with cameras housed on top of camera poles planted on the footpaths of selected roads at a certain distance upstream of signalised junctions, and detection devices laid on the carriageways near the stop lines. The photographs of the offending vehicles and other violation data will be processed by a central computer system for identification of the offending vehicles and vehicle owners concerned.

Measures to tackle speeding and red light jumping

3.6 Since 1999, the speed enforcement camera system has been expanded twice with a total funding of $73 million approved by the Finance Committee of the Legislative Council.

3.7 From 1999 to 2010, the red light camera system was expanded three times with a total funding of $153 million. In April 2012, the Finance Committee approved a funding of $48 million for the implementation of the phase four expansion of the red light camera system in 2014. Table 5 summarises the number of enforcement tools as at December 2012.

Table 5

Speeding and red light jumping enforcement tools
(December 2012)

Enforcement tool	Number of devices/cameras (a)	Number of housings (b)	Camera to housing ratio (a):(b)
Speeding enforcement tools			
Laser gun	52	N.A.	N.A.
Portable radar (with camera)	16	N.A.	N.A.
Speed enforcement camera system	20	120	1:6 (Note 1)
Red light jumping enforcement tool			
Red light camera system	155	155	1:1 (Note 2)

Source: *Police records*

Note 1: *In response to a recommendation of the 2006 Audit Report, the Administration increased the camera to housing ratio of the speed enforcement camera system from 1:8.5 to 1:6.*

Note 2: *Since 2004, the Administration has progressively increased the camera to housing ratio of the red light camera system from 1:4 to 1:1.*

Operation of enforcement camera systems

3.8 With their 24-hour surveillance functions, the speed enforcement camera system and red light camera system are the key enforcement tools. In terms of prosecution cases in 2012, 154,411 (58% of the total 266,250 — Note 15) speeding cases were detected by the speed enforcement camera system and 52,404 (94% of the total 55,815) red light jumping cases by the red light camera system. However, Audit has found that there are limitations in these enforcement camera systems (as detailed in paras. 3.9 to 3.17).

Limitations of speed enforcement camera system

3.9 The present speed enforcement camera system and its advance warning signs installed at strategic locations are effective to deter speeding when drivers approach the relevant sections of roads. However, some drivers may increase speed after passing the camera system. This has resulted in the deterrent effect of the camera system being localised.

3.10 According to the Police's records, a technology called average speed camera system has been used in other countries since 1999 to influence driver behaviour over a greater distance, like on highways. The system takes time-stamped photographs of all the vehicles at both the entry and exit points of an expressway and calculates the time taken by each vehicle to travel between the two points to ascertain whether there is a violation of speed limit. The use of such systems in the United Kingdom (UK), Australia, Europe and the Mainland had resulted in significant reduction in traffic accidents and an increased speed limit compliance rate.

3.11 In 2007, the TD (in consultation with relevant stakeholders such as the Police) commenced studying the feasibility of using the average speed camera system in Hong Kong. In late 2010, the Administration began to consider a trial of the system to ascertain its applicability in Hong Kong. Since then, actions have been taken to map out the trial scheme in greater details and a consultant was engaged by the TD in 2012 to carry out a preliminary design. As of February 2013,

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Note 15: *The remaining 42% cases mainly resulted from enforcement operations using speed detecting radars and laser guns.*

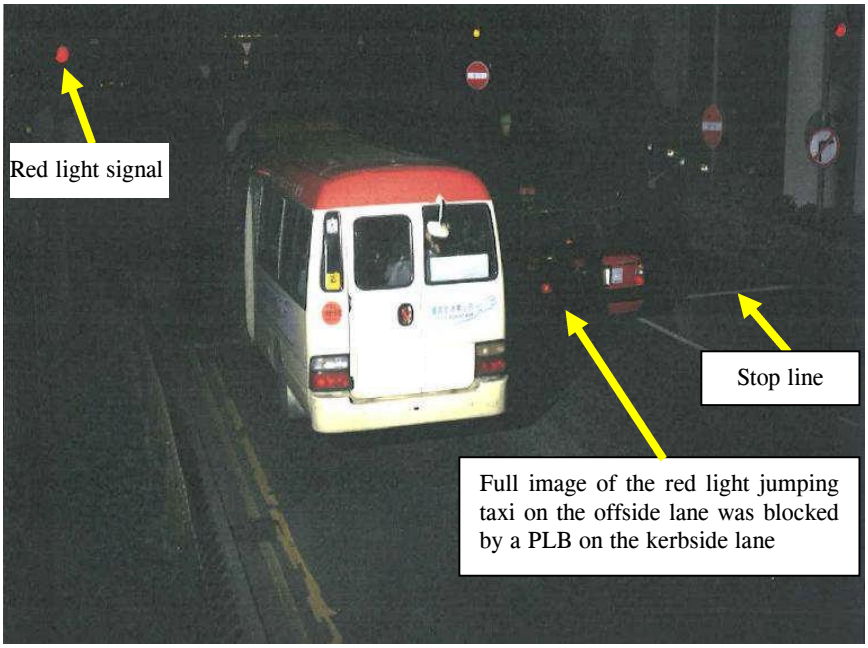
the Administration planned to seek funding from the Finance Committee by mid-2013 with a view to launching the trial scheme in 2013-14. In Audit's view, the Administration needs to expedite action on the trial scheme.

Images of offending vehicles blocked by other vehicles

3.12 As mentioned in paragraph 3.5(c), a red light camera is installed in a housing on top of a camera pole planted on the footpath of a road at a certain distance upstream of a signalised junction. The image of an offending vehicle on the offside lane (captured by a rear facing camera) may sometimes be blocked by other vehicle on the kerbside lane of the carriageway (see Photograph 1 for an example). In an examination of the Police's enforcement statistics from October to December 2012, Audit noted that 2,109 (9%) of the 22,871 red light jumping cases detected by the red light camera system could not be pursued because the images of the offending vehicles were blocked by other vehicles. It is a cause for concern that sanctions for the 2,109 cases during the three-month period (a fixed penalty of $600 and the recording of five driving-offence points each — see para. 3.4) could not be imposed on the offending drivers to deter their dangerous driving behaviour.

Photograph 1

Image of red light jumping vehicle blocked



Source: Police records

Problem in identifying offending driver

3.13 At present, both the speed enforcement camera system and red light camera system take photographs of the rear side of offending vehicles. The key considerations for doing so are as follows:

(a) for red light jumping offence, the photograph has to show that the offending vehicle is travelling when the red light is on. Only a rear facing camera can provide such evidence; and

(b) in order to obtain good quality photographs even when blinded by sunlight or overcast by taller vehicles, the flashes of the speed enforcement camera system and red light camera system are always on even when taking photographs in daylight. To reduce the interference of the flash on the drivers, both systems do not take frontal photographs of the offending vehicles.

3.14 The limitation of taking rear side photograph of an offending vehicle is that it only shows the vehicle's identity (i.e. its registration mark) but not the offending driver's identity. As such, the Police has to issue a notice to the vehicle owner requiring him to identify the offending driver within 21 days from the date of the notice. However, there had been cases that the registered owners of the vehicles had failed to identify the offending drivers. In addition, in the absence of photographic evidence, there is a risk that an offending driver could attempt to avoid incurring driving-offence points by arranging another driver to accept responsibility.

3.15 ***Overseas experience.*** Based on Internet research, Audit found that among the overseas jurisdictions using driving-offence points as part of the penalties for speeding and red light jumping offences similar to Hong Kong, some local authorities in the United States and the UK (Note 16) had adopted advanced technologies to overcome the limitations of the rear facing cameras. They used multiple cameras systems with less dazzling flash to take both the frontal and rear photographs of the offending vehicles for identifying the offending drivers.

3.16 In response to Audit's enquiry in March 2013, the TD has said that:

(a) the multiple cameras system is likely to be more costly (i.e. may incur double cost) for trying to recover some of the 9% on average violation images blocked by other vehicles (see para. 3.12). The additional resource required would be more cost effectively deployed to other sites to enhance the overall deterrent effect against red light jumping;

(b) from previous experience, many sites identified for installing enforcement cameras had to be given up because there was not enough space for building the foundations for the cameras due to the congested underground utilities and road condition in Hong Kong; and

(c) it is a criminal offence to shift responsibility of traffic law violation (see para. 3.14) and offenders would have to face serious consequences. There is no evidence to indicate that such occurrence is frequent.

Note 16: *Examples are Arizona and California in the United States, and Central London in the UK.*

3.17 In Audit's view, as the effectiveness of the speed enforcement camera system and the red light camera system as enforcement tools depends on the prosecution evidence they can provide, the TD and the Police should find measures to further improve the systems, drawing on overseas experience where appropriate. There is a need to take into account the latest technology development in future expansion/replacement projects of the speed enforcement camera system and the red light camera system.

Audit recommendations

3.18 **Audit has *recommended* that the Commissioner for Transport, in conjunction with the Commissioner of Police, should:**

(a) **expedite action on the trial scheme of the average speed camera system;**

(b) **explore measures to improve the effectiveness of the present enforcement camera systems, drawing on overseas experience where appropriate; and**

(c) **take into account the latest technology development in future expansion/replacement projects of the speed enforcement camera system and the red light camera system.**

Response from the Administration

3.19 The Commissioner for Transport and the Commissioner of Police agree with the audit recommendations. The Commissioner for Transport has said that the TD will continue to:

(a) explore new technology to improve the present enforcement camera systems drawing on overseas experience; and

(b) take account of new technology in future speed enforcement camera system and red light camera system projects.

Monitoring of speeding enforcement operations

3.20 As mentioned in paragraph 3.5(b), the camera housings for the speed enforcement camera system are installed at various strategic locations. These locations are selected by the TD, in consultation with the Police, based on the following criteria:

(a) accident records with particular emphasis on accidents caused by vehicle speeding;

(b) prevalence of speeding activities observed by the Police;

(c) the need for an even distribution of the camera housings to provide an area-wide deterrent effect;

(d) strategic or trunk roads with higher traffic speed and traffic flows; and

(e) geological and environmental factors surrounding the sites.

3.21 The Police has not issued specific guidelines on the deployment of the 20 speed enforcement cameras among the 120 camera housings (see Table 5 in para. 3.7). The authority of the camera deployment is vested with the five Regional Traffic Formations so that they can have effective and coordinated deployment of all kinds of speeding enforcement tools under their control. Table 6 summarises the distribution of these tools among the five Traffic Formations.

Table 6

Distribution of speeding enforcement tools by Traffic Formations (December 2012)

Regional Traffic Formation	Number of portable speeding enforcement devices	Number of cameras	Number of housing locations
Hong Kong Island	11	3	17
Kowloon East	11	2	10
Kowloon West	10	2	8
New Territories North	12	8	43
New Territories South	15	5	42

Source: Police records

3.22 According to the Police, the Regional Traffic Formations will review the deployment of all kinds of speeding enforcement tools under their command on a regular basis, taking into consideration a number of factors such as accident trends and prevailing speeding situation. As accident trends and speeding pattern could change over time, it is important that management information is compiled regularly to monitor the up-to-date situation. Audit found that not all the Regional Traffic Formations had done so and for those which had, the level of details also differed, as follows:

(a) the Hong Kong Island and Kowloon East Traffic Formations had monthly reports showing the deployment of their speed enforcement cameras by locations and duration, and the speeding cases detected by locations. The New Territories North Traffic Formation had weekly reports but only showing the deployment of its speed enforcement cameras by locations and duration. The remaining two Traffic Formations had not compiled similar management reports; and

(b) as regards other portable speeding enforcement devices, all five Traffic Formations had not compiled management reports on their deployment and the detection results by locations.

Audit recommendations

3.23 **Audit has *recommended* that the Commissioner of Police should require all Regional Traffic Formations to:**

(a) **compile sufficient management information regularly to monitor the prevailing speeding situation; and**

(b) **make good use of such information for the effective deployment of their enforcement resources in tackling speeding offences.**

Response from the Administration

3.24 The Commissioner of Police agrees with the audit recommendations. He has said that:

(a) respective Traffic Formations will compile management information to assist in the planning of speed enforcement camera deployment. However, they need to retain discretion in their deployment of various speed detection devices in combating speeding offences;

(b) the Police will revise its speeding enforcement policy to provide the guiding principles on the deployment and rotation of speed enforcement cameras; and

(c) in the long run, it is suggested to have one speed enforcement camera per camera housing in order to deter speeding offences, subject to the provision of adequate resources and manpower.

PART 4 : MEASURES TO PROMOTE SAFER VEHICLE OPERATION

4.1 This PART examines the following measures taken to promote safer vehicle operation:

(a) measures for PLBs (paras. 4.2 to 4.36);

(b) measures for taxis (paras. 4.37 to 4.43); and

(c) measures for franchised buses (paras. 4.44 to 4.53).

Measures for public light buses

4.2 PLBs provide essential daily services to commuters. In 2012, PLBs carried, on average, some 1.9 million passengers daily, accounting for about 16% of all passengers using public transport. As at December 2012, there were 4,350 PLBs. As shown in Figures 2 and 3 in paragraph 1.6, the accident involvement rates for PLBs (e.g. 245.6 per 1,000 vehicles in 2012) were consistently higher than the average for all motor vehicles (e.g. 33.1 per 1,000 vehicles in 2012).

Safety seat belt

4.3 According to a paper released by the World Health Organisation in September 2012, the wearing of a seat belt would reduce the risk of fatalities in traffic accidents by 40% to 50% for front seat passengers and 25% to 75% for rear seat passengers. In Hong Kong, the legal requirement for installing seat belt was first introduced in 1983 covering drivers and front seat passengers of private cars. The requirement was subsequently extended to cover drivers of all vehicles and passengers of some vehicles (including PLBs). The respective vehicle occupants are required to wear the seat belts if available. Appendix A is a summary of the seat belt requirements for different vehicle types.

4.4 ***Exempted PLBs.*** The seat belt law only applies to PLBs manufactured or registered on or after its effective date in August 2004. PLBs not fitted with the passenger seat belts but already in use before the effective date are exempted. As at 31 December 2012, of the 4,350 PLBs, 1,815 (42%) were not fitted with seat belts and 2,535 (58%) were fitted with seat belts. The high proportion (42%) of PLBs operating without passenger seat belts is a cause for concern. This is because the accident involvement rates for PLBs were consistently higher than the average for all motor vehicles (see Figures 2 and 3 in para. 1.6).

Retrofitting exempted PLBs with seat belts

4.5 To encourage the exempted PLBs to be retrofitted with passenger seat belts, in September 2006, the TD issued the relevant specifications and drawings as guidelines for retrofitting approved types of safety seat belts. In addition, the Administration has, since 2002, launched three incentive schemes (Note 17) to encourage owners of old diesel PLBs (among other diesel commercial vehicles) to replace their PLBs with cleaner (e.g. liquefied petroleum gas (LPG) fuelled) models. Those replaced in or after August 2004 were fitted with passenger seat belts.

4.6 In its investigation report published in December 2010 (Note 18), the Ombudsman's Office recommended the Administration to consider extending the passenger seat belt requirement to the exempted PLBs. In February 2011, the Administration informed the Panel on Transport that the PLB trade opposed to the proposed requirement and raised the following concerns:

(a) when the law on seat belts was passed in 2002, the clear understanding then was that seat belts would be required only on newly registered PLBs.

Note 17: *The 2002 scheme (which ended in 2005) provided a grant of $60,000 or $80,000 for replacing a diesel PLB with a LPG or electric PLB respectively. The 2007 scheme (which ended in March 2010) provided a grant that ranged from $40,000 to $80,000 for replacing old diesel PLBs with cleaner models. The 2010 scheme which provides a grant ranging from $77,000 to $92,000 for the replacement of old diesel PLBs, will end in June 2013.*

Note 18: *In the report, the Ombudsman expressed concern (among other things) that if relying on attrition and replacement of the exempted PLBs, the passengers would continue to face a higher risk for at least another eight years.*

Any retrofitting requirement would effectively label PLBs as an unsafe transport mode;

(b) the retrofitting cost was high (about $80,000 to $100,000, including the cost for floor refurbishment). The estimated cost had not yet included revenue foregone due to the vehicle downtime during retrofitting works; and

(c) given that the Government had introduced or would introduce a number of safety measures targeting at PLBs (see para. 1.7(d)), any further measure was unfair to the trade, and would create serious financial hardship for the operators.

The Administration undertook to, in consultation with the PLB trade, look into the feasibility of requiring retrofitting of PLBs which were registered after a certain date (such that PLBs which were too old and due to be replaced soon would be exempted) with a reasonable grace period for compliance.

4.7 According to the TD's records:

(a) up to 31 December 2012, only 83 PLBs had been retrofitted with seat belts on a voluntary basis; and

(b) on average, PLB owners would replace their vehicles after serving 12.7 years (the oldest one was replaced at 20). Ageing analysis showed that of the 1,815 PLBs without passenger seat belts as at 31 December 2012, 1,007 (55%) were 8 to 11 years old. It is likely that these PLBs would still be running on the streets in the coming years.

To protect passenger safety and to enable PLB passengers to form consistent habits of wearing seat belts, the TD needs to work towards applying the seat belt requirement to all PLBs.

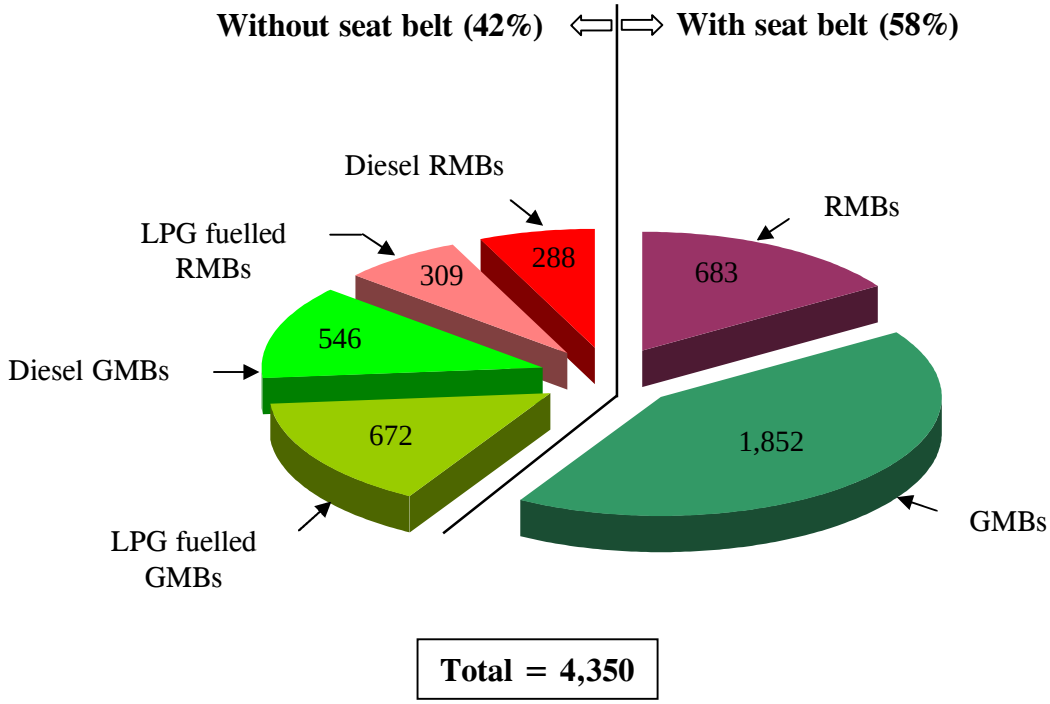
Recent developments

4.8 ***New measure.*** In November 2012, the TD introduced a new measure to require the use of PLBs with seat belts for operating some of the scheduled routes and fixed fares services (commonly known as the green minibuses — GMBs). According to the TD's records, as at 31 December 2012, 3,070 (71%) of the

4,350 PLBs were providing GMB services. The remaining 1,280 (29%) PLBs, known as red minibuses (RMBs), were providing non-scheduled and unregulated fare services. A breakdown of the PLBs by their service modes, fuel types and seat belt installations is shown in Figure 7.

Figure 7

Breakdown of PLBs by service modes, fuel types and seat belt installations (31 December 2012)



Source: TD records

4.9 GMB operators are required to apply to the TD for a passenger service licence for operating the scheduled routes (Note 19). At the GMB Operators Selection Board (Note 20) meeting held in May 2010, it was suggested that GMBs deployed for the provision of new GMB routes should be fitted with passenger seat

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Note 19: *According to the Road Traffic (Public Service Vehicles) Regulations (Cap. 374D), the licence may be issued and extended for periods up to five years each.*

Note 20: *The Board chaired by the TD comprises representatives of the Transport Advisory Committee, Transport and Housing Bureau, Home Affairs Department and Independent Commission Against Corruption.*

belts. In view of the difficult operating environment faced by the GMB trade, the TD did not implement the suggestion in 2011. Until November 2012 when applications were invited for operating four GMB routes, the TD laid down a requirement that all PLBs providing such services must have passenger seat belts and high back seats installed.

4.10 Audit noted that the new seat belt requirement only applied to one new route and three existing routes for which the incumbent operators did not apply to extend their licences. As at 31 December 2012, there were 482 GMB routes (with 3,070 GMBs in operation, of which 1,218 were without passenger seat belts) not covered by the new requirement. In response to Audit's enquiries in February and March 2013 regarding the application of the same seat belt requirement to these routes when the relevant GMB operators apply for extension of their licences (Note 21), the TD has said that:

(a) when the Administration amended the Road Traffic Ordinance for mandating provision of passenger seat belts on PLBs in 2004, the legislative intent was to require new vehicles registered after 1 August 2004 to be installed with passenger seat belts. In considering whether to impose a new licensing condition requiring seat belts to be retrofitted on PLBs when GMB operators seek to renew their passenger service licences, the TD will have to take into account:

  (i) the operating condition of the PLB trade;

  (ii) the physical conditions of the vehicle chassis, the remaining serviceable life of the vehicles concerned, the costs of retrofitting; and

  (iii) the improvements brought about by other measures introduced to enhance the safety of PLB operation; and

(b) since the Environmental Protection Department has proposed to phase out old diesel commercial vehicles with financial incentives while putting in

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Note 21: *The conditions for operating the GMB services are determined by the TD. According to the law (see Note 19 to para. 4.9), the TD has the discretion to approve or reject GMB operators' application for extension of their licences. It follows that the TD is not obliged to approve the application for extension based on existing conditions (i.e. without seat belt requirement).*

place more stringent regulatory measures (see para. 4.11), the TD believes it would be more cost-effective to take into consideration the participation rate of PLBs in the upcoming incentive scheme and the community consensus on the timing by which old diesel commercial vehicles are to be phased out before considering the imposition of a new licensing condition on existing GMB routes.

4.11 ***Policy Address.*** In his Policy Address of January 2013, the Chief Executive indicated that the Government would seek to phase out the heavily polluting pre-Euro and Euro I to III diesel commercial vehicles with greater financial incentives while putting in place more stringent regulatory measures. As shown in Figure 7 in paragraph 4.8, there were 834 diesel PLBs (288 RMBs and 546 GMBs) without passenger seat belts in operation as at 31 December 2012. For protecting both the environment and passenger safety, the TD needs to make greater efforts, in conjunction with the Environmental Protection Department, to encourage owners of these diesel PLBs to participate in the upcoming incentive scheme for the early replacement of their vehicles with cleaner models fitted with passenger seat belts.

4.12 As regards the 981 LPG fuelled PLBs (309 RMBs and 672 GMBs) without passenger seat belts (see Figure 7), they are not covered by the new air pollution control measures announced in the 2013 Policy Address. The TD needs to explore other measures to encourage the owners concerned to retrofit their vehicles with passenger seat belts.

Wearing passenger seat belt

4.13 In the 2006 review, Audit found that the seat belt wearing by PLB passengers was less than satisfactory. In response to Audit's recommendations, the Road Safety Council commissioned a survey in November 2006 to assess the effectiveness of its publicity campaign and to ascertain the reasons for the low passenger seat belt wearing rate in PLBs. The key findings and proposed actions of the survey report (published in May 2007) are summarised below:

(a) 96% of the respondents were aware of the presence of a law on wearing seat belt on PLBs. Although 88% of the respondents agreed that the message on wearing seat belts on PLBs had been brought out in the publicity through the broadcast of an announcement in the public

interest (API — Note 22), the storyline of which was not seen to be novel and unique. Moreover, only 28% and 22% of the respondents were able to cite the correct maximum fine and years of imprisonment respectively;

(b) 54% of the respondents considered that the Police's enforcement was effective. However, 21% considered the Police's enforcement was not effective, as there was no prosecution by the Police even when passengers were found not wearing seat belts. Another 17% said that it was hard for the Police to spot seat belt wearing outside the PLBs; and

(c) it was proposed that the Government should:

(i) enhance civic education among the general public on seat belt wearing;

(ii) improve the message of the API by correcting the misconception that seat beat wearing was troublesome and increase the frequency of broadcast of the API; and

(iii) strengthen the law enforcement and prosecution.

4.14 ***Publicity.*** In the light of the survey findings, the Road Safety Council procured stickers for placing at the back of every seat in PLBs to ensure passengers on board could read the message of wearing seat belts during their journeys. In April 2008, the stickers were distributed to the PLB operators through the TD. While not included as its major publicity theme from 2008 to 2012, the Road Safety Council had continued to spread the message of wearing seat belts on PLBs including the broadcast of the 2004 API on television (TV) and radio, and distribution of road safety bulletins and leaflets to the PLB operators and the public through the TD and the Police. These bulletins and leaflets were also posted on the websites of the Road Safety Council and the TD.

4.15 ***Enforcement action.*** The Police's enforcement actions against seat belt offence are mainly carried out during routine patrols by way of issuing summonses to the non-compliant passengers. Since 2005, the Police has also staged special operations on a territory-wide basis targeting seat belt offence of PLB passengers. Each operation lasts for 24 hours and focuses on education, publicity and

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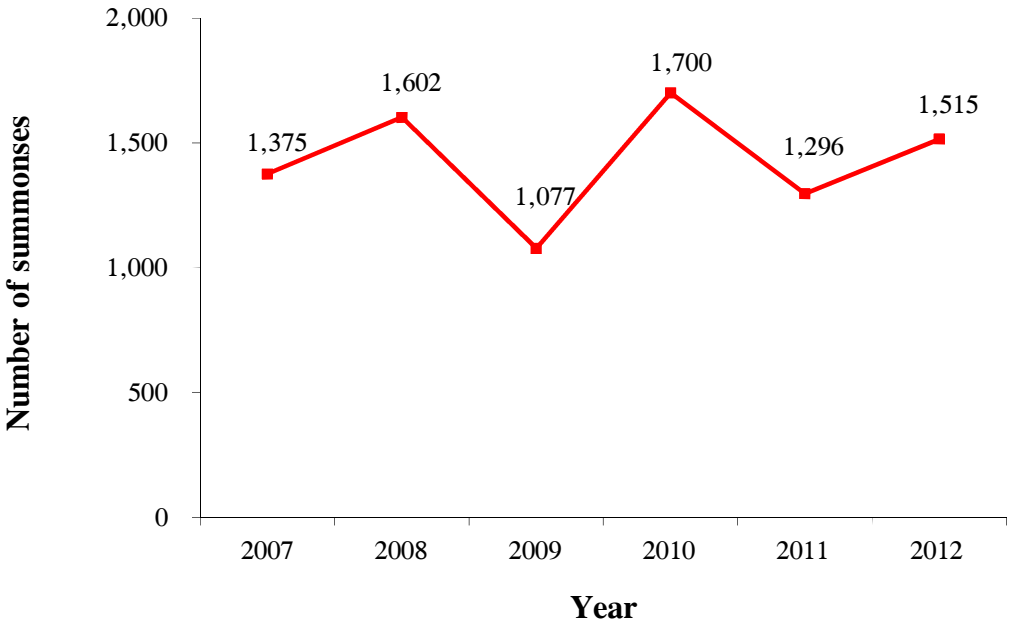
Note 22: *The API was produced by the Road Safety Council through the ISD in 2004.*

enforcement. From 2007 to 2012, two to three such operations were conducted each year. In addition, the Police has launched two territory-wide enforcement operations (one for combating malpractices of commercial vehicles and the other for PLBs) which also covered the PLB passenger seat belt offence since 2006 and 2009 respectively. In 2012, the Police carried out nine such enforcement operations. Besides, each Regional Traffic Formation also had its own ad-hoc operations mounted from time to time against the PLB seat belt offence.

4.16 ***Latest position.*** Notwithstanding the above publicity and enforcement efforts, there was little improvement in the seat belt wearing rate as reflected by the number of summonses issued against PLB passenger seat belt offence from 2007 to 2012 (see Figure 8).

Figure 8

Summonses issued against PLB passenger seat belt offence (2007 to 2012)

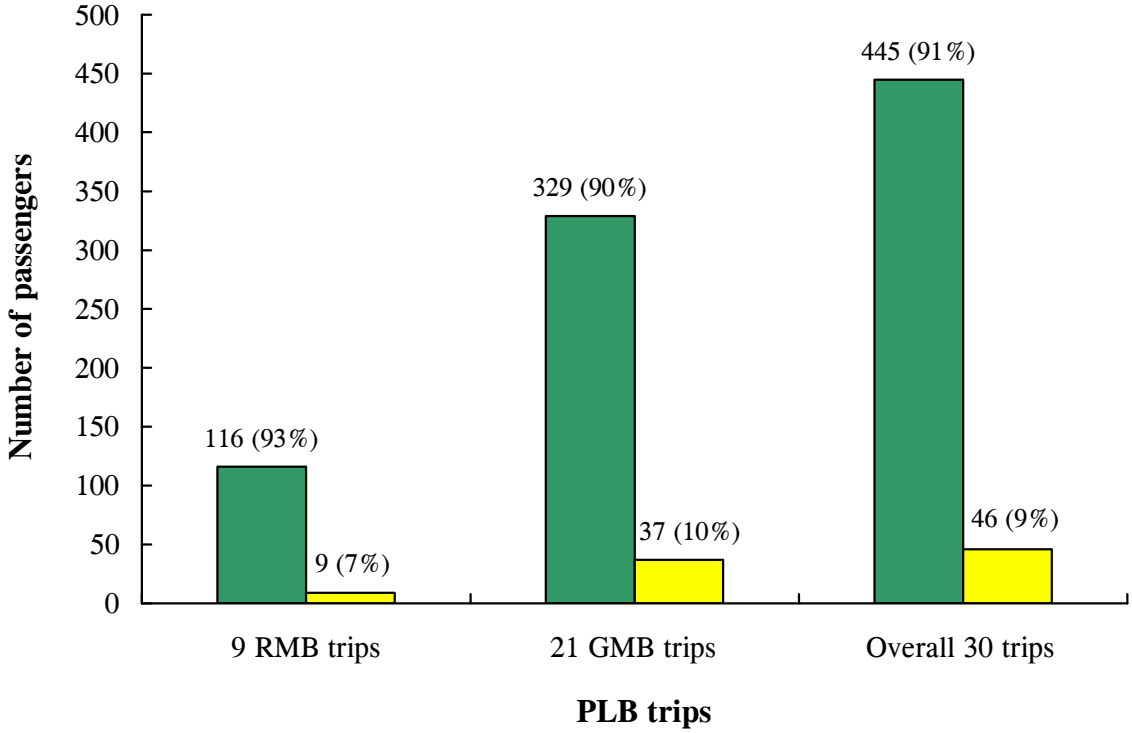


Source: Police records

4.17 In February 2013, Audit staff took 30 PLB trips (21 GMBs and 9 RMBs, all fitted with seat belts) covering Hong Kong Island, Kowloon and the New Territories and observed that 91% of the passengers did not wear seat belts. The results are shown in Figure 9.

Figure 9

Seat belt wearing rate found in 30 PLB trips (February 2013)



Source: *Audit field inspections*

4.18 The unsatisfactory seat belt wearing situation calls for greater efforts towards applying the seat belt requirement to all PLBs, as well as greater publicity and enforcement efforts to change the attitude and behaviour of the PLB passengers. As regards publicity, consideration should be given to measures such as improving the storyline of the API (see para. 4.13(a) and (c)(ii)). As regards enforcement, Audit noted that for the Police's territory-wide special operations targeting on seat belt offence of PLB passengers in 2011 and 2012 (see para. 4.15), a total of 1,280 passengers were found not wearing seat belts on PLBs. However, the Police issued warnings instead of summonses in 128 (10%) cases. Consideration should be given to taking more effective actions to convey a clear message that the Government is taking the matter seriously.

Other measures to enhance safety of PLB operation

4.19 In addition to the passenger seat belt requirement (see Appendix A) to enhance the safety of PLB operation, the Administration has introduced a package of measures to deter malpractices and speeding behaviour of some PLB drivers, and to achieve better regulation of the travelling speed of PLBs. These include:

(a) a measure introduced in May 2008 for penalising any misuse or malfunctioning of speed display device; and

(b) measures introduced in April 2012 for imposing a maximum speed limit of 80 km/hr, mandatory installation of a speed limiter for all PLBs (capping the speed at 80 km/hr) and an electronic data recording device (EDRD) for newly registered PLBs, and mandating attendance at a pre-service course for new PLB drivers.

4.20 ***Penalties for offences.*** The penalties for contravening the speeding related new regulations are summarised as follows:

(a) ***Misuse or malfunctioning of speed display device.*** The offender is liable to a fine of $10,000 and imprisonment for six months;

(b) ***Exceeding speed limit of 80 km/hr.*** The offending driver is liable to a fine of $4,000 and incurring 3 to 10 driving-offence points; and

(c) ***Malfunctioning or interference with the speed limiter.*** The offender is liable to a fine of $10,000 and imprisonment for six months.

4.21 ***Enforcement power.*** If a police officer has reasonable cause to believe that a PLB has been involved in the speed limiter offence (e.g. detected speed over the 80 km/hr limit), he is empowered to:

(a) direct the driver to drive the PLB to a vehicle examination centre; and

(b) detain the vehicle for examination at a vehicle examination centre for not more than 72 hours.

4.22 In April 2012, the Police issued guidelines to assist its frontline staff in understanding the new measures and set out the required actions to be taken against the contravening PLBs. Depending on the extent of the detected speed of a PLB over the 80 km/hr limit, the police officer shall either refer the case to the TD for arranging vehicle examination or detain the PLB for examination at the Police vehicle examination centre. If for any reason the PLB is not detained, the police officer concerned shall record his reason.

Enforcement action against speed limiter offence

4.23 From April to October 2012, the Police took enforcement actions against 540 PLB speeding cases and 11 speed limiter offence cases. Table 7 is an analysis of the 540 speeding cases by the extent of the detected speeds above the road speed limits.

Table 7

Analysis of PLB speeding cases
(April to October 2012)

Speed in excess of road speed limit by	Number of PLBs
(a) 15 km/hr or less	317
(b) 16 km/hr to 30 km/hr	221
(c) 31 km/hr to 45 km/hr	2
Total	540

Source: Police records

4.24 The Police has carried out the above analysis on a regular basis for all types of speeding vehicles. However, the analysis could not show whether the speeding PLBs had exceeded the 80 km/hr limit for which enforcement action should also be taken in respect of suspected speed limiter offence (see paras. 4.21

and 4.22). For the two cases in item (c) of Table 7 (Note 23), Audit requested the Police to confirm the detected speeds and the follow-up actions taken.

4.25 In January 2013, the Police informed Audit that:

(a) the PLBs in both cases had exceeded the 80 km/hr limit. However, enforcement action against suspected speed limiter offence as laid down in the Police's 2012 guidelines (see para. 4.22) had only been taken in one case; and

(b) the officer concerned had been reminded to strictly comply with the guidelines to prevent recurrence of similar omission in future.

4.26 In Audit's view, the Police needs to review other PLB speeding cases to see if there is any breach of the 80 km/hr limit similar to that in paragraph 4.25(a) for taking necessary follow-up action against suspected speed limiter offence. To facilitate management monitoring of such enforcement action in future, the Police also needs to enhance its analysis of the PLB speeding cases (see para. 4.24) to highlight those exceeding the 80 km/hr limit.

Follow-up action on suspected offences detected

4.27 Audit noted that the TD had on an ad-hoc basis conducted surveys (through contractors) to collect operational information of PLBs. In its surveys of 2010 and 2012, suspected offences were detected as shown in Table 8.

Note 23: *As the speed limits for most roads in Hong Kong are 50 km/hr or above, the PLBs in these cases (with speeds exceeding the road speed limits by 31 km/hr or more) were likely to be travelling above the 80 km/hr limit.*

Table 8

Suspected offences detected in TD's surveys

Survey	Number of suspected speeding offences	Number of suspected speed display device offences
2010 (January to February)	N.A. (Note)	33
2012 (September)	17	6

Source: *TD records*

Note: *The 80 km/hr limit for PLB only came into effect in 2012.*

Remarks: *A total of 1,334 and 141 PLBs were surveyed in 2010 and 2012 respectively.*

4.28 Audit noted that there was room for improvement in taking follow-up actions on these suspected offences detected as follows:

(a) for the 33 suspected cases of speed display device offences identified in the 2010 survey, the TD had not required examination of the PLBs concerned. Instead, the TD reminded the PLB operators to properly maintain the speed display devices;

(b) for the 6 suspected cases of speed display device offences and 7 of the 17 suspected speeding cases (Note 24) identified in the 2012 survey, the TD issued orders for examining the PLBs concerned (Note 25). However, the orders allowed the owners/drivers concerned to take their PLBs to the TD for examination within six to ten days from the dates of

Note 24: *According to the TD, vehicle examination of the remaining ten cases was not considered necessary.*

Note 25: *It is a requirement of the Road Traffic Ordinance to serve notice for vehicle examination but the notice period is not stipulated.*

the orders. In the event, no irregularities were found in the vehicle examinations for all 13 cases. As the prior notice would give time for the PLB owners/drivers to fix their problems before the vehicle examination, the TD needs to seek the Police's assistance to ensure that PLBs involved in suspected offences of speed limiter and speed display device are examined in a timely manner (e.g. detaining suspected PLBs for examination in warranted cases); and

(c) for the 17 suspected speeding cases identified in the 2012 survey, the TD referred them to the Police for necessary action in December 2012 (three months after the survey in September 2012). In January 2013, the Police informed Audit that no prosecution action could be taken on the 17 cases referred by the TD because there was difficulty to collect sufficient evidence after the long lapse of time.

Pre-service training course not yet implemented

4.29 In March 2012, the Administration informed the Legislative Council House Committee that a lead time of six to nine months (after the enactment of the new legislation in April 2012) was required to implement the pre-service course for PLB licence applicants (see para. 4.19(b)).

4.30 However, up to January 2013, the TD was still drafting relevant documents for inviting the interested training institutes to apply for provision of the pre-service training course. According to the TD, the pre-service course might be implemented in 2013 subject to the selection and designation of suitable pre-service training institute. In Audit's view, there is a need to expedite action in this regard.

Audit recommendations

Safety seat belt

4.31 **Audit has *recommended* that the Commissioner for Transport should:**

(a) **in conjunction with the Director of Environmental Protection, make greater efforts to encourage owners of diesel PLBs to participate in the upcoming incentive scheme for the early replacement of their**

vehicles with cleaner models fitted with passenger seat belts for protecting both the environment and passenger safety; and

(b) **explore other measures to encourage owners of the LPG fuelled PLBs without passenger seat belts to retrofit their vehicles with seat belts.**

4.32 **Audit has also *recommended* that the Commissioner of Police should, in conjunction with the Road Safety Council, step up the enforcement and publicity efforts on promoting the wearing of passenger seat belts on PLBs.**

Other measures to enhance safety of PLB operation

4.33 **Audit has *recommended* that the Commissioner of Police should:**

(a) **review the PLB speeding cases from April to October 2012 to see if there is any suspected speed limiter offence and take necessary follow-up action accordingly; and**

(b) **enhance the analysis of PLB speeding cases to highlight those exceeding the 80 km/hr limit for monitoring the enforcement action against suspected speed limiter offence cases.**

4.34 **Audit has also *recommended* that the Commissioner for Transport should:**

(a) **seek the Police's assistance to ensure that PLBs involved in suspected offences of speed limiter and speed display device are examined in a timely manner;**

(b) **promptly refer suspected speeding related offence cases to the Police for necessary follow-up action; and**

(c) **expedite action on the implementation of the pre-service training course for PLB driving licence applicants.**

Response from the Administration

4.35 The Commissioner for Transport agrees with the audit recommendations in paragraphs 4.31 and 4.34. She has said that the TD will:

(a) continue to encourage the GMB operators to retrofit their PLBs with passenger seat belts in particular when they apply for extension of their licences, and encourage the RMB operators to retrofit their PLBs with passenger seat belts as far as practicable; and

(b) expedite action on the implementation of the pre-service training course for PLB driving licence applicants with all concerned parties.

4.36 The Commissioner of Police agrees with the audit recommendations in paragraphs 4.32, 4.33 and 4.34(a) and (b). He has said that:

(a) all the Regional Traffic Formations have been notified to report PLB speeding cases from April to October 2012 for follow-up action; and

(b) a new monthly reporting mechanism has been devised for the Traffic Formations to follow for the purpose of better monitoring of the enforcement action.

Measures for taxis

4.37 In 2012, taxis carried, on average, about one million passengers daily, accounting for about 8% of all passengers using public transport. As at December 2012, there were 18,131 taxis. As shown in Figures 2 and 3 in paragraph 1.6, the accident involvement rates for taxis (e.g. 233.9 per 1,000 vehicles in 2012) were consistently higher than the average for all motor vehicles (e.g. 33.1 per 1,000 vehicles in 2012).

4.38 In 2001, the Administration introduced passenger seat belt requirement to enhance the safety of taxi operation. Most taxis have been fitted with seat belts (see Note 2 to Appendix A).

Pre-service training programme not implemented

4.39 In April 2003, the Administration informed the Panel on Transport of a proposal to improve the quality of taxi services. The proposal included a mandatory pre-service training programme to improve safe driving knowledge and attitude of prospective taxi drivers. However, the proposal has not been taken forward. The key events are summarised below:

(a) in 1998, after a review of the taxi licensing system, a working group of the Transport Advisory Committee recommended, inter alia, implementing a mandatory taxi driver pre-service training programme to raise the standards and performance of taxi drivers;

(b) the TD subsequently studied the practices in 18 overseas countries/cities and Mainland cities and found that 15 of them required taxi driver applicants to attend mandatory taxi driver pre-service training; and

(c) in April 2003, the Administration informed the Panel on Transport of a proposal to improve the quality of taxi services, as follows:

  (i) applicants for taxi driving licence should be required to attend a mandatory taxi driver pre-service training programme;

  (ii) the scope of the taxi licence test should be expanded to cover proper driving attitude, map reading skills, Putonghua and English listening tests; and

(iii) persons who had held a valid full private car or light goods vehicle driving licence for at least one year, in lieu of three years, should be allowed to apply for a taxi driving licence.

The Panel Chairman conveyed the general support of the trade on the proposal and called for its early implementation. In response, the Administration undertook to finalise the proposal taking into account the views of all relevant parties. However, the proposal has not been taken forward thereafter and the Panel has not been informed of such change (Note 26).

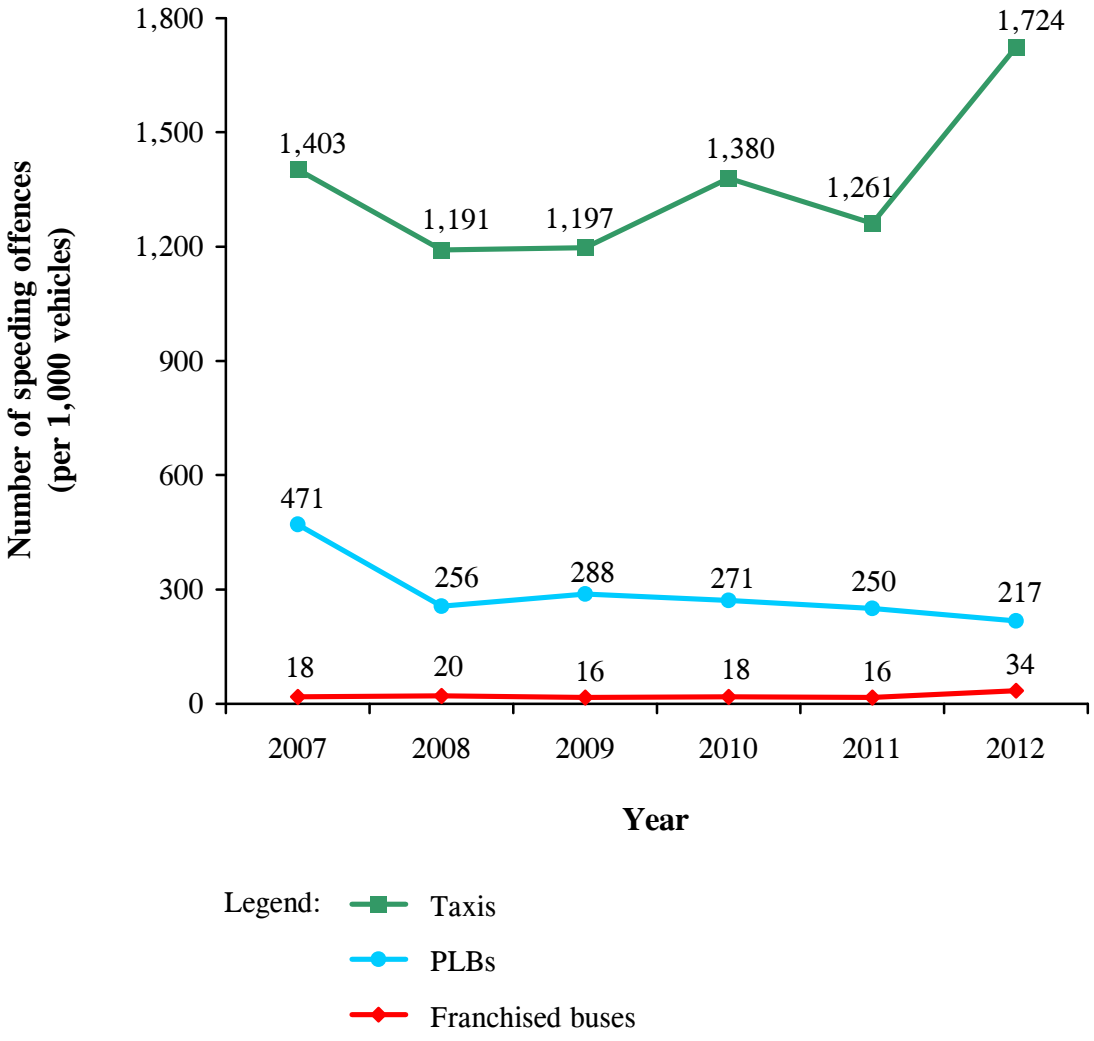
Speeding problem of taxis

4.40 Audit noted from the Police's enforcement statistics that the total number of speeding offences committed by taxi drivers had increased by 23% from 25,338 in 2007 to 31,258 in 2012. In terms of the number of speeding offences per 1,000 vehicles over the period 2007 to 2012, the speeding problem of taxis was more serious than that of PLBs and franchised buses (see Figure 10).

Note 26: *According to the TD, the proposed pre-service training programme was bundled with the proposal to relax the eligibility requirement for applying for a taxi driving licence (see para. 4.39(c)(iii)) in order to increase the supply of taxi drivers. With the subsequent improvement in taxi driver supply because of economic changes, the proposal (including the pre-service training programme) was shelved.*

Figure 10

Number of speeding offences per 1,000 vehicles



Source: Audit analysis of Police and TD records

4.41 The speeding problem and the consistently higher accident involvement rate for taxis as mentioned above call for additional measures to enhance their safety operation. Such measures may include mandatory attendance at pre-service training, imposing a maximum speed and the installation of EDRD, speed display device and speed limiter similar to those implemented for PLBs. As can be seen from Figure 10, the speeding problem of PLBs had been eased with the implementation of these measures.

Audit recommendations

4.42 **Audit has *recommended* that the Commissioner for Transport should:**

(a) **consider the need for introducing additional measures to enhance the safety operation of taxis; and**

(b) **keep the Panel on Transport apprised of any subsequent change in the implementation of a planned road safety measure.**

Response from the Administration

4.43 The Commissioner for Transport agrees with the audit recommendations. She has said that the TD will:

(a) consider practicable measures to enhance the safe operation of taxis where appropriate; and

(b) continue to keep the Panel on Transport apprised of any subsequent change in the implementation of a planned road safety measure.

Measures for franchised buses

4.44 Franchised buses are an integral part of the public transport system. In 2012, they carried, on average, some 3.8 million passengers daily, accounting for about 32% of all passengers using public transport. As at December 2012, there were 5,743 franchised buses. Their services are regulated and monitored by the TD in accordance with the Public Bus Services Ordinance (Cap. 230) and the Road Traffic Ordinance.

4.45 As shown in Figures 2 and 3 in paragraph 1.6, the accident involvement rates for franchised buses (e.g. 379.8 per 1,000 vehicles in 2012) were consistently higher than the average for all motor vehicles (e.g. 33.1 per 1,000 vehicles in 2012). Over the years, a number of measures have been put in place to enhance the safety operation of franchised buses, as follows:

(a) ***Statutory measure.*** Under the Road Traffic Ordinance, the maximum speed of a franchised bus is restricted to 70 km/hr for roads with general speed limit of over 70 km/hr; and

(b) ***Non-statutory measures.*** As requested by the TD, the franchised bus operators have enhanced their safety arrangements by:

  (i) requiring bus drivers aged 50 or above to undergo annual health checks (Note 27);

  (ii) arranging basic training for new bus drivers and refresher training for incumbent drivers;

Note 27: *Items covered are currently determined by the individual bus operators but the scope is similar. They include chest examinations as well as eyesight, hearing, diabetes, blood pressure, blood and urine test. For bus drivers aged 60 or more, an electrocardiogram is also required. However, the bus operators are not required to submit the health check results to the TD.*

(iii) reporting every three months on their implementation of the TD's guidelines on working hours of bus drivers (Note 28);

(iv) installing speed limiters and black boxes on their buses (Note 29); and

(v) providing seat belts at exposed seats (Note 30) of all new buses purchased after 2003, retrofitting seat belts at the front row on the upper deck of post-1997 design buses and installing additional horizontal guard rail across the upper deck windscreen of the pre-1997 design buses.

For item (iii) above, the TD engages an independent party to conduct annual survey on the working hours of bus drivers for verification purpose. According to the survey results of 2011, the compliance situation was generally satisfactory (Note 31).

4.46 ***Recent accidents.*** Between June and November 2012, there were three serious franchised bus traffic accidents in which the bus drivers concerned were reported to have lost consciousness at the times of the accidents. As at January 2013, the Police investigations or judicial proceedings of the three accidents were still in progress. Table 9 is a summary of background information of these accidents.

Note 28: *The guidelines stipulate that bus drivers should have a break of not less than 10 hours between successive working days, maximum duty should not exceed 14 hours and driving duty should not exceed 11 hours in a day. There should be a break of at least 30 minutes after 6 hours of duty and total service breaks of at least 20 minutes within that 6-hour duty while 12 minutes of which should be within the first 4-hour duty. There should also be a meal break of 1 hour for a duty of not less than 8 hours in a day.*

Note 29: *A black box is an electronic device that records the operational data of a vehicle similar to the EDRD of a PLB (see Note 5 to para. 1.7(d)(iii)). As at December 2012, all the franchised buses had been fitted with speed limiters and black boxes.*

Note 30: *Exposed seats are forward-facing seats which are not immediately behind another forward-facing seat or an internal partition/panel.*

Note 31: *As at January 2013, the 2012 survey (which started in September 2012) had not yet been completed.*

Table 9

Background information of three franchised bus traffic accidents

Date	Location	Brief description of accident
June 2012	Tuen Mun	A bus rammed into a group of people at a bus stop killing one person and injuring five.
August 2012	Tsuen Wan	A bus rammed into a shopping mall injuring five people.
November 2012	Chai Wan	A bus lost control when travelling downhill hitting two private cars in front and then rammed into a taxi and another bus on the opposite vehicle lane. Three people were killed and 57 injured.

Source: Audit summary of media reports

Health check requirement

4.47 The Chai Wan accident has aroused major public concern. In late November 2012, the Administration reported to the Panel on Transport about its follow-up action on the accident. The Administration undertook to:

(a) review, in conjunction with the franchised bus operators, the arrangements of health check for bus drivers to enhance road safety of franchised buses; and

(b) in the light of any inadequacies in the existing legislation or policies as may be identified in the Police's investigation, review in detail the matters so as to ensure the road safety of franchised buses and other major road-based public transport modes.

4.48 ***Existing legislative requirements for all drivers.*** The Road Traffic (Driving Licences) Regulations (Cap. 374B) stipulate that:

(a) an applicant for a driving licence shall, on new application or reissue or renewal, make a declaration in the application form if he is suffering from

any disease or physical disability listed in the Regulations (Note 32). The TD shall reject the application from an applicant with such disease or disability;

(b) an applicant aged 70 years or more shall, on new application or renewal, produce a medical examination certificate to prove that he is medically fit to drive; and

(c) a driving licence holder is required to inform the TD after he becomes aware that he is suffering from the listed disease or disability. The TD may cancel the licence after making the necessary inquiry which shows that he is unfit to drive.

4.49 On top of the above statutory requirements, the franchised bus operators have health check programmes for their drivers aged 50 or above, as requested by the TD (see para. 4.45(b)(i)). However, there is no similar health check programme for PLB and taxi drivers.

4.50 ***The Mainland and overseas practices.*** Based on Internet research, Audit has found that the Mainland and a number of overseas countries have stipulated in their laws more stringent health check requirements for taxi and bus drivers which would be of reference value to the Administration's ongoing review (see para. 4.47). For example:

(a) in the Mainland, Australia (New South Wales), Canada (British Columbia), Singapore and the UK (Note 33), applicants for bus and taxi driving licences are required to submit medical examination certificates when applying for licences;

(b) in the Mainland, Australia (New South Wales) and Canada (British Columbia), bus drivers are required to submit medical examination certificates periodically irrespective of their age;

Note 32: *Examples include epilepsy, uncontrolled diabetes mellitus and liability to sudden attack of disabling giddiness or fainting due to hypertension or any other causes.*

Note 33: *The health check requirements apply to applicants for bus driving licence in the UK and applicants for taxi driving licence in London area.*

(c) in the UK, bus drivers and taxi drivers (London area) are required to submit medical examination certificates periodically after they have reached the age of 45; and

(d) in Singapore, bus and taxi drivers are required to submit medical examination certificates periodically after they have reached the age of 50.

Details of the Mainland and overseas practices are shown at Appendix B.

4.51 ***Problem in accessing drivers' medical records.*** According to the law which applies to all drivers, the TD may cancel a driving licence if the driver is unfit to drive (see para. 4.48(c)). Audit noted that from 2009 to 2012, the Police's traffic accident investigation revealed 55 cases where the drivers concerned might have been suffering from impaired health and hence unfit to drive. The Police had referred all these cases to the TD for follow-up actions. Audit sample checked 20 of the 55 cases and found that the TD could not obtain the drivers' consent to access their medical records in five cases (Note 34). Under the circumstances, the TD issued refraining orders to bar the drivers concerned (Note 35) from renewing their licences or applying for other vehicle driving licences. However, according to the TD's records, their licences would only expire between 2017 and 2019 (i.e. four to six years later).

Note 34: *For the other 15 cases, the TD had cancelled the licences in two cases (after obtaining confirmation that the drivers were unfit to drive) and was following up with the hospitals/clinics in nine cases. No further action was necessary for the remaining four cases as either the driver licences had expired or there were medical reports confirming the drivers' fitness to drive.*

Note 35: *The five drivers comprised two taxi drivers, two private car drivers and one PLB driver.*

Audit recommendations

4.52 **Audit has *recommended* that the Commissioner for Transport should:**

(a) **take into account the health check requirements on taxi and bus drivers adopted by the Mainland and other countries in the onging review of measures to ensure the road safety of franchised buses and other major road-based public transport modes; and**

(b) **explore measures to address the problem of obtaining drivers' consent to access their medical records in case they are suspected to be suffering from impaired health.**

Response from the Administration

4.53 The Commissioner for Transport agrees with the audit recommendations. She has said that the TD will take into account privacy concern in consultation with relevant authorities when exploring measures to tackle the issue mentioned in paragraph 4.51.

PART 5: ACCURACY OF TRAFFIC ACCIDENT DATA

5.1 This PART examines the accuracy of traffic accident data collected and maintained by the Police, focusing on data concerning:

(a) traffic accident locations (paras. 5.4 to 5.16); and

(b) traffic accident contributory factors (paras. 5.17 to 5.23).

Traffic accident investigation

5.2 The Police is responsible for investigating traffic accidents. The main objective of the investigation is to identify the cause of the accident and find out if the parties involved have contravened any traffic law for taking necessary enforcement actions. The Police requires its investigation officers to keep their investigation findings and results in individual physical files and input accident data into a computerised case management database (known as the Traffic Operations and Management System — TOMS) within 48 hours of the accidents. The data may be amended as necessary until the case is closed.

5.3 The Police's TOMS is linked with the TD's database (known as the Transport Information System — TIS (Note 36)) for the electronic transfer of traffic accident data. The TD uses the traffic accident data in the TIS to identify locations of accident black spots and accident trends for in-depth investigation and analysis. The data also serve as an important source of information for formulation of road safety strategies, publicity/education programme and on-going review of road safety legislation among other road safety initiatives.

Traffic accident locations

5.4 The TD uses computer sorting of traffic accident data to help compile a list of accident black spots. The traffic accident location is identified using a grid

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Note 36: *Before 2008, the TD's database was known as the Traffic Accident Data System. For simplicity both systems are referred to as the TIS in this Audit Report.*

reference system (Note 37). Locations meeting the following threshold criteria will be identified as accident black spots and prioritised for conducting investigation with a view to devising preventive and remedial measures:

(a) six or more pedestrian injury accidents in a year;

(b) nine or more injury accidents of any description in a year; or

(c) two or more fatal accidents within five years.

The accident black spot list is updated quarterly. As at 30 September 2012, there were 91 locations on the black spot list.

Inaccurate grid references

5.5 Inaccurate grid references could adversely affect the accuracy of the accident black spot list compiled by the TD in the following two ways:

(a) a non-accident prone site would be wrongly listed as a traffic accident black spot if the same grid reference was used for accidents occurring on different locations of a road; and

(b) a location with frequent accidents would be omitted from the accident black spot list if the grid references used for reporting the accidents were wrong on some occasions.

5.6 In the 2006 review, Audit found that the Police incorrectly input the same grid reference for 20 accidents occurring on different locations of a highway. The Police explained then that the grid references of new roads were often not input to the TIS immediately. For cases of grid reference not available at the time of data input, some police investigation officers had to use nearby grid references. In response, the TD said that the grid reference database of the TIS was updated regularly to include new roads once the maps were available. To help improve the

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Note 37: *For an accident occurring at the junction of two roads, the TD's computer system can alternatively use the two road names input by the Police to identify the accident location. However, the same cannot be done for an accident not occurring at the junction of two roads and such case will be sorted by the computer according to the input grid reference.*

accuracy in the input of grid reference, the TD agreed to upgrade the TIS to a more user-friendly map-based system.

5.7 Since the launch of the map-based TIS in October 2008, police investigation officers have been provided with online access from their computer terminals to the TIS's map. By clicking the recorded location of an accident on the map, a grid reference would be automatically generated for them.

5.8 ***TD's checking.*** To minimise the risks of inaccurate grid references mentioned in paragraph 5.5, the TD has since 2008 carried out selective checks on grid references input by the Police. Notwithstanding the launch of the map-based TIS, the TD still identified inconsistencies between the grid references and the description of the locations input by the Police.

5.9 In a meeting of April 2010, the TD informed the Police that about 40% of the input grid references were found to be inconsistent with the descriptions of the accident locations. It was subsequently agreed that the use of portable Global Positioning System (GPS) device would be a long-term solution. In October 2010 and March 2011, the TD provided a total of 105 GPS devices to the Police to facilitate the recording of grid references by police investigation officers when conducting investigations at the scene of traffic accidents.

5.10 ***Latest position.*** In this review, Audit found that the problem of inaccurate grid references still persisted. Out of the 27,755 accidents which occurred from April 2011 (after the provision of the GPS devices) to December 2012, the TD had checked 9,815 (Note 38) grid references input by the Police, by end of December 2012. The TD found that the grid references of 7,314 (i.e. 26% of 27,755) cases were inaccurate. Audit analysed the physical distances between the accident locations based on the inaccurate and the TD's amended grid references for the 7,314 cases. Those cases with distances over 50 metres (totalling 4,417) are

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Note 38: *Of the 27,755 accidents, the TD mainly focused its checking on 11,321 accidents that occurred at main roads. This was because 8,038 accidents that occurred at road junctions had been sorted by the TD's computer without using grid references (see Note 37 to para. 5.4). For 8,396 accidents occurring at minor roads and areas such as carparks, the TD did not consider them to be accident prone. In March 2013, the TD informed Audit that it had completed checking on the remaining 1,506 (11,321 less 9,815) cases and found that 950 had inaccurate grid references.*

summarised in Table 10. In seven of the 1,028 cases with distances over 1,000 metres, the locations based on the inaccurate grid references were actually outside Hong Kong.

Table 10

Analysis of grid reference errors
(31 December 2012)

Distance between the accident locations based on the inaccurate and the TD's amended grid references	Number of cases
Over 50 metres but not more than 100 metres	839
Over 100 metres but not more than 200 metres	826
Over 200 metres but not more than 500 metres	1,064
Over 500 metres but not more than 1,000 metres	660
Over 1,000 metres	1,028
Total	4,417

Source: Audit analysis of TD checking results

5.11 Audit also noted that, as a result of the inaccurate grid references input by the Police, seven locations were incorrectly reported to have more than 11 accidents each in 2011-12 (i.e. meeting the accident black spot criteria — see para. 5.4). In fact, the TD's checking revealed that the accidents occurred at different locations for all the seven cases.

5.12 In response to Audit's enquiries in February and March 2013, the Police has said that:

(a) the Police learnt of the 7,314 inaccurate grid reference cases (see para. 5.10) from Audit in February 2013. Through the monthly referral system, the TD had informed the Police of 205 inaccurate grid reference cases in 2011, and 157 inaccurate grid reference cases in 2012;

(b) the seven cases with grid references outside Hong Kong mentioned in paragraph 5.10 were caused by inputting the Northing and Easting components of the grid references in reverse order. There was no deliberate malpractice on the part of the officers concerned; and

(c) while the Police had already made effort to tighten up the procedures and supervisory controls for the input of grid references, there were system problems and difficulties experienced by the frontline officers in inputting grid references that needed to be addressed:

  (i) there were cases where the TIS rejected the verified grid references and police officers were unable to enter further data. This phenomenon is common in roads built in the past several years; and

  (ii) the map of the TIS had not been kept up-to-date. As such, grid references of accident locations on new roads might not be accepted by the TIS (Note 39).

5.13 The persistent problem of inaccurate grid reference input is unsatisfactory. The TD has to spend extra time and resources to rectify the problem. There is also a risk that the timeliness of accident black spot data could be compromised. In Audit's view, prompt and effective measures should be taken to ensure that the grid references for locations of traffic accidents are correctly input in the first place.

Note 39: *The grid reference system was overlaid by the TD onto the TIS map to enable the recognition of grid references. If there is no such overlay for a location on the map, the TIS cannot recognise its grid reference, meaning that the grid reference input by the Police will be rejected.*

Audit recommendations

5.14 **Audit has *recommended* that the Commissioner of Police should:**

(a) **tighten up procedures and supervisory control to ensure the correct input of grid references for traffic accident locations; and**

(b) **in conjunction with the Commissioner for Transport:**

(i) **take measures to address any difficulties encountered by police investigation officers in inputting grid references; and**

(ii) **consider enhancing the TOMS/TIS by incorporating a validation check control in the TOMS/TIS, so that police investigation officers would be alerted to any out of the range error at the time of data input.**

Response from the Administration

5.15 The Commissioner of Police agrees with the audit recommendations. He has said that:

(a) the Police and the TD have already agreed to have meetings to rectify difficulties faced by police officers in inputting grid references into the TIS; and

(b) the Police will continue to implement measures to tighten up procedures and supervisory functions for the input of data into the TOMS and TIS in an effort to reduce errors made by inputting officers. Supervisors at Sergeant, Inspector and Chief Inspector ranks will be required to double check the data of a specified percentage of cases.

5.16 The Commissioner for Transport agrees with the audit recommendations in paragraph 5.14(b). She has said that the TD will provide necessary assistance to the Police to improve the administrative procedures and implement system enhancement as appropriate.

Traffic accident contributory factors

5.17 The TD relies on the traffic accident contributory factors input by the Police into the TIS for identifying problems of road environment, road users and driving behaviour, and formulating strategies to tackle specific types of accidents.

5.18 In the 1998 review, Audit's sample check revealed an error rate of 25% in the input of accident contributory factors. The inaccuracies arose because of input errors or failure to update data upon further investigations. In response to Audit's recommendations, the Police subsequently launched a more user-friendly TOMS, provided training on data input to investigation officers and developed a file re-submission system which required double checking of the data input before closing an investigation case.

5.19 In the 2006 review, Audit's sample check revealed an error rate of 13% in the input of accident contributory factors. Audit also found that the different contributory factor lists used for the TOMS and TIS could be improved by standardising the factor descriptions and consolidating similar factors. In response to Audit's recommendations, the Police and the TD subsequently streamlined the contributory factor lists of the TOMS and TIS (Note 40). The Police also incorporated a supervisory checking function in the TOMS and provided training to staff concerned.

5.20 ***Audit examination.*** In this review, Audit examined 50 traffic accident investigation case files (Note 41) and the related 280 accident contributory factors input to the TIS. Audit found that 37 (13%) of the input factors in 34 cases were inaccurate, as follows:

Note 40: *The TIS list was shortened from 126 factors to 90 factors while the TOMS list was shortened from 45 factors to 44 factors. The TOMS list is shorter than the TIS list because the former mainly covers driver factors whereas the latter has a more detailed coverage of driver, vehicle, environment and casualty factors. The TOMS has a designated section of data fields for police investigation officers to input information for transfer to the TIS (including the 90 TIS accident contributory factors).*

Note 41: *The 50 case files covered all five Regional Traffic Formations (see para. 3.21).*

(a) in seven cases, mechanical defect was input as the accident contributory factor. While subsequent vehicle examination reports showed that no mechanical defect was involved, the TIS record was not amended (similar to the observation mentioned in para. 5.18); and

(b) for the remaining 27 cases, Audit found that the contributory factors input could not be supported by the evidence recorded in the case file. For example, mechanical defect was input as the accident contributory factor in 10 cases but there was no mentioning of such defect in the supporting documents (such as witness statements). In one accident involving a moving bus and a stationary bus at a bus terminus, lost control of the stationary bus was input as one of the contributory factors for the accident. However, there was no record to show how the stationary bus without a driver had lost control.

5.21 In view of the recurrence of the data input problem, Audit reviewed the internal control measures implemented by the Police (i.e. the file re-submission system and TOMS supervisory checking function — see paras. 5.18 and 5.19). Audit found that there were limitation and implementation problem of these measures, as follows:

(a) ***File re-submission system.*** The system ensured that invalid data in the TIS (as identified and rejected by the TD) were checked and re-submitted to the TIS correctly by police investigation officers and their supervisors. As the TD did not have access to the Police's case file, the TD's validation check could only reveal discrepancies among the input data in the TIS but not the discrepancies with the underlying records of the case file (such as those mentioned in para. 5.20); and

(b) ***TOMS supervisory checking function.*** The function facilitated the supervisory officers to conduct on-line checking of the accuracy of data input to the TOMS (but not those for conversion to the TIS — see Note 40 to para. 5.19). Moreover, the Police has not specified the required percentage of supervisory check. For the 50 accident investigation case files examined by Audit (see para. 5.20), there was no record of such supervisory check.

Audit recommendations

5.22 **Audit has *recommended* that the Commissioner of Police should tighten the Police's management control to improve the accuracy of accident contributory factors input to the TOMS by:**

(a) **reminding supervisory staff to critically check the accuracy of data input to the TOMS against the records kept in the case files;**

(b) **extending the TOMS supervisory checking functions to cover data for transfer to TIS;**

(c) **specifying the required percentage of supervisory check and regularly monitoring its compliance; and**

(d) **requiring supervisory staff to maintain record of their supervisory checks (such as keeping printouts of TOMS/TIS data checked) in relevant case files for management review.**

Response from the Administration

5.23 The Commissioner of Police agrees with the audit recommendations. He has said that:

(a) supervisory officers will keep the TOMS/TIS printouts in the files they have checked to facilitate the checking process. Records of checks made will be kept in a register designed for that purpose and also in the case file;

(b) the list containing input errors currently circulated by the TD to the team officer-in-charge will in future be copied to respective Superintendents of Police of the Regional Traffic Formations to ensure proper monitoring of the error rate and of the correction process; and

(c) supervisors at Sergeant, Inspector and Chief Inspector ranks will be required to double check the data input of a specified percentage of cases.

PART 6: PUBLICITY AND EDUCATION PROGRAMMES

6.1 This PART examines the following issues relating to the management of road safety publicity and education programmes:

(a) production of APIs (paras. 6.4 to 6.9); and

(b) publicity on bicycle safety fittings (paras. 6.10 to 6.18).

The Road Safety Council's role

6.2 The Road Safety Council organises publicity and education programmes through its Road Safety Campaign Committee (RSCC) to disseminate road safety messages and educate different road user groups (see Note 1 to para. 1.3). These programmes are primarily financed by government provision. In 2011-12, the Council received $4.7 million funding from the Transport and Housing Bureau and $260,000 from various commercial sponsors of its road safety activities.

6.3 Taking into account the traffic accident trends and public concerns, the Road Safety Council determines the major publicity themes for each financial year. For example, in 2012-13, anti-drug driving, elderly pedestrian safety and cycling safety were the Council's main publicity themes. Most of the road safety publicity campaigns are sustained throughout the year and employ a variety of publicity and advertising means including the broadcast of APIs on TV and radio, exhibitions, community involvement activities and a host of printed materials.

Production of announcements in the public interest

6.4 According to a survey commissioned by the Road Safety Council in 2005, TV topped the mediums through which road safety messages were effectively received by respondents. With the assistance of the ISD, the Road Safety Council produces one to three TV APIs each year to disseminate road safety messages.

6.5 In 2011 and 2012, the broadcast of an API for combating drug driving was shelved and another one for promoting safe cycling was temporarily withheld respectively after receiving complaints about their contents. The key events and circumstances leading to the shelving of the two APIs are summarised below (see Cases 1 and 2).

Case 1

API for combating drug driving

1. In September 2010, the ISD on behalf of the Road Safety Council awarded a contract for the production of a set of TV and radio APIs, and the design of a poster and a leaflet to publicise the adverse effect of drug abuse on driving. The contract sum was $406,000 (i.e. $353,000 for the TV API and $53,000 for the other items).

2. The TV API had been broadcast for two months from late January 2011 to early April 2011 when a local magazine alleged that the API had infringed the copyrights of a UK anti-drug driving video. After viewing the UK video, the ISD ceased broadcasting the TV API, sought explanation from the contractor on the similarities between the two videos and gathered more background information from the copyright owner of the UK video. While the contractor replied that the creative concept was his own, the UK copyright owner informed the ISD that his lawyer believed that there was a clear infringement of his copyrights.

3. After consulting the Intellectual Property Department in June and September 2011, the ISD tried a number of times to obtain more information from the contractor about the production of the TV API, but to no avail.

4. In March 2012, the ISD obtained an offer from the UK copyright owner to grant a licence for the broadcast of the API subject to the charging of a licence fee. While the ISD reminded the contractor of his contractual obligation to provide material that was free of copyright issues and to indemnify the Government against all claims, the contractor refused to pay the fee, maintaining that the API was his creation.

5. In April 2012, after obtaining legal advice, it was decided that no legal action would be taken against the contractor. In June 2012, the contractor's name was removed from the ISD's list of service providers for API production.

Source: Police and ISD records

Case 2

API for promoting cyclists' safety on public roads

1. In August 2011, the ISD on behalf of the Road Safety Council awarded a contract for the production of a set of TV and radio APIs, and the design of a poster, a leaflet and a banner to publicise cyclists' safety on public roads. The contract sum was $450,000 (i.e. $405,000 for the TV API and $45,000 for the other items).

2. The contractor was instructed to convey in the TV API key messages of joint efforts to prevent bicycle accidents, i.e. drivers should pay attention to cyclists on the road and keep a distance from them while cyclists are obliged to obey all traffic laws and are encouraged to wear helmets and safety gears.

3. On 16 September 2011 (two days before the shooting), the contractor invited the ISD by e-mail to approve the bicycle and vehicles to be used for the shooting. The side view photograph of the bicycle attached to the e-mail did not clearly show whether it was fitted with a bell and a rear reflector as required under the Road Traffic (Construction and Maintenance of Vehicles) Regulations (Cap. 374A). After consulting the TD and the Police, the ISD advised the contractor that the proposed bicycle and vehicles were acceptable and that there would not be any government officers attending the shooting.

4. The bicycle finally used in the API production was not fitted with a bell and a rear reflector (contrary to the Road Traffic (Construction and Maintenance of Vehicles) Regulations). However, the omission was not detected when the API rough cut and final cut were circulated to the TD and the Police (among other RSCC members) for comments in October 2011 and January 2012 respectively.

5. The TV API featuring an improperly fitted bicycle had been broadcast for six months from mid-January 2012 to July 2012 when the TD and the Road Safety Council secretariat received complaints and media enquiry concerning the bicycle. The RSCC then agreed to withhold the broadcast of the API temporarily for exploring possible remedy. In January 2013, the ISD was exploring the possibility of modifying the API.

Source: TD, Police and ISD records

6.6 The problems in the API contents of the above two cases not only frustrated the Government's efforts to disseminate road safety messages to the public but also affected the image of the Government. There is a need to draw lessons from these cases to prevent recurrence of similar problems. In this connection, Audit has the following observations:

(a) ***Copyright issues.*** There are clear provisions in the API quotation and contract documents about a contractor's obligations on the copyright issues and his liability to indemnify the Government against all claims. While these provisions serve to protect the Government's interest in the event of a legal claim against the Government, it is prudent to step up the review of API and other materials to be produced by contractors to identify early any possible copyright infringement issues. Consideration may be given to conducting Internet search for planned road safety APIs (Note 42) to see if there are similar materials being used by major overseas road safety authorities that could give rise to copyright infringement issues. The ISD may also explore the feasibility of introducing performance-based payment such that the contractor would only receive full contract payment after the successful launch of the API; and

(b) ***Relevant bureaux/departments' input in API production.*** According to the ISD's Good Practice Guide on Publicity Campaigns, relevant bureaux/departments are to attend the shooting session of TV APIs. However, no government officers attended the shooting of the API on safe cycling. In the light of this incident, the ISD has indicated that it would make a special effort to ensure that the API storyboard and script are cleared by relevant bureaux/departments and would insist that their appropriate experts are present during the shooting session. The ISD would refuse to proceed with the shooting session where appropriate if these conditions are not met.

Note 42: *The checking should be conducted as early as practicable (e.g. after the presentation of the creative proposals by the selected service provider) and during the review of the API rough cut.*

Audit recommendations

6.7 **Audit has *recommended* that the Director of Information Services should:**

(a) **step up the review of API and other materials to be produced by contractors to identify early any possible copyright infringement issues; and**

(b) **explore the feasibility of introducing performance-based contract payment to encourage compliance with the copyright requirement in API production.**

6.8 **Audit has also *recommended* that the Commissioner of Police should, in conjunction with the Road Safety Council, tighten controls to ensure that road safety API contents are critically checked.**

Response from the Administration

6.9 The Director of Information Services and the Commissioner of Police agree with the audit recommendations in paragraphs 6.7 and 6.8 respectively.

Publicity on bicycle safety fittings

6.10 According to the TD's statistics, cycling accident casualties were on an upward trend, i.e. an increase of 48% from 1,648 in 2007 to 2,443 in 2011. For the three years from 2010-11 to 2012-13, the Road Safety Council included cycling safety as one of the main publicity themes. The budget for cycling safety campaign activities was increased from $100,000 in 2010-11 to $650,000 in 2012-13.

6.11 As mentioned in Case 2 in paragraph 6.5, the Road Traffic (Construction and Maintenance of Vehicles) Regulations require that bicycles for use on roads should be fitted with a bell and a rear reflector. Other statutorily required safety fittings include a braking system, and a white front light and red rear light when running on a road during the hours of darkness or in poor visibility conditions.

6.12 The above statutory requirements have been promulgated by the Road Safety Council, the Police and the TD as part of their cycling safety publicity and education programmes as follows:

(a) in various leaflets/pamphlets for publicising safe cycling and on the Road Safety Council's website, cyclists have been advised to make sure their bicycle bells, lights, reflectors and brakes are functioning properly before riding. The Police has regularly distributed the leaflets/pamphlets to schools, bicycle shops and during on-street publicity activities (particularly in the New Territories where the use of bicycles for commuting and recreation is common). In 2009, the Road Safety Council distributed 3,000 free bicycle bells at its publicity functions; and

(b) in one of the videos on "Safe cycling: rules and tips" released by the TD in May 2012, cyclists have been advised to make sure their bicycle bells, lights, reflectors and brakes are functioning properly before riding (Note 43). A similar message is also carried in a pamphlet "Cycling safety" which is available on the TD's website. In the TD's Internet-based Cycling Information Centre launched in December 2011,

Note 43: *The video has been posted in the YouTube and websites of the Road Safety Council and the TD, distributed to schools, and broadcast at the TD's licensing offices, Hong Kong Sports Institute and several Leisure and Cultural Services Department venues.*

the relevant sections of the law concerning the bicycle safety fittings are cited.

6.13 To assess the extent to which bicycles used on roads are fitted with the statutorily required bell and rear reflector (Note 44), in January 2013, Audit staff inspected bicycles running/parked on the streets of the New Territories. As shown in Table 11, 104 (35%) of the 294 bicycles inspected were without a bell and 204 (69%) were not fitted with a rear reflector, contrary to the law. Photographs 2 and 3 show bicycles running/parked on streets without a rear reflector.

Table 11

Audit findings on bicycles in cycle parking areas outside railway stations

Railway station	Number of bicycles		
	Inspected	Without bell	Without rear reflector
Sheung Shui Station	39	12	25
Tai Po Station	50	19	39
Tai Wai Station	20	1	18
Yuen Long Station	50	17	28
Tin Shui Wai Station	50	19	33
Siu Hong Station	35	17	24
Tung Chung Station	50	19	37
Total	294	104 (35%)	204 (69%)

Source: Audit field inspections in January 2013

Note 44: *The other two required safety fittings were not covered because the working condition of the braking system could not be assessed by visual inspections and the fitting of front and rear lights was not required during the daytime.*

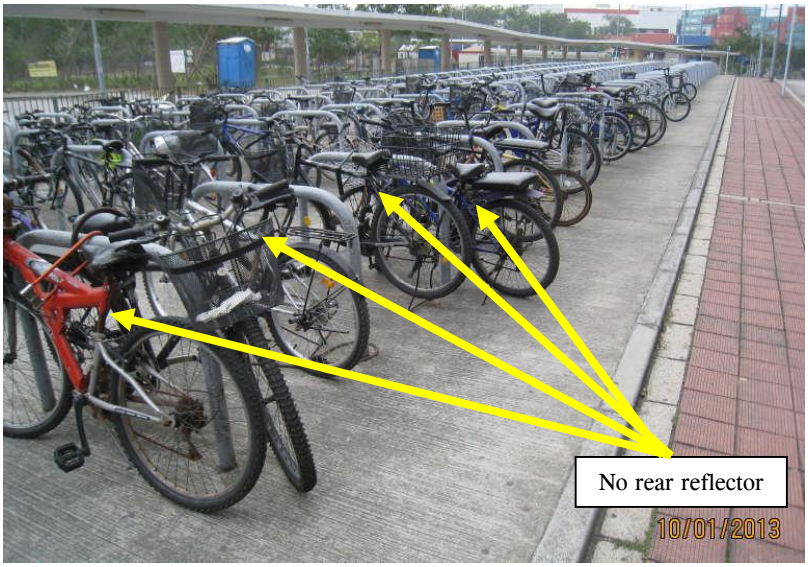
Photograph 2

Bicycle without a rear reflector running on the street

Source: Photograph taken by Audit in Sheung Shui

Photograph 3

Bicycles without a rear reflector in a cycle parking area



Source: Photograph taken by Audit in Tin Shui Wai

6.14 Audit staff also visited nine bicycle shops on Hong Kong Island, Kowloon and the New Territories and found that many bicycles for sale/hire had similar problems. As shown in Table 12, 186 (67%) of the 278 bicycles inspected were without a bell and 216 (78%) were not fitted with a rear reflector. Photographs 4 and 5 are some examples.

Table 12

Audit findings on bicycles for sale/hire

Shop	Location	Bicycles for sale		
		Inspected (Number)	Without bell (Number)	Without rear reflector (Number)
A	North District	23	23	18
B	Shatin	20	20	20
C	Kowloon	25	25	20
D	Kowloon	77	77	33
E	Hong Kong Island	29	25	21
	Sub-total	174	170 (98%) (Note)	112 (64%)
Shop	**Location**	**Bicycles for hire**		
		Inspected (Number)	**Without bell (Number)**	**Without rear reflector (Number)**
F	Tai Po	22	2	22
G	Shatin	30	7	30
H	Shatin	32	5	32
I	Shatin	20	2	20
	Sub-total	104	16 (15%)	104 (100%)
	Total	278	186 (67%)	216 (78%)

Source: *Audit field inspections in January 2013*

Note: *While 98% of the bicycles on display for sale were not fitted with a bell, Table 11 in paragraph 6.13 shows that only 35% of the bicycles in the cycle parking areas were found not fitted with a bell, suggesting that some bicycles could have been fitted with a bell at the time of purchase or afterwards.*

Photograph 4

Bicycles for sale not fitted with a rear reflector

Source: Photograph taken by Audit

Photograph 5

Bicycles for hire not fitted with a rear reflector

Source: Photograph taken by Audit

6.15 In January and February 2013, Audit made enquiries at 12 shops selling bicycles (including Shops A to E in Table 12) about the safety fittings that should be installed to a bicycle. 3 (25% of the 12) shopkeepers and 10 (83%) shopkeepers failed to advise that the fitting of a bell and a rear reflector respectively was a statutory requirement.

6.16 The above audit findings suggest that the statutory requirements on the safety fittings of bicycle might not be well understood. Audit considers that there is a need to step up publicity to promote the public awareness of the safety and statutory requirements, paying particular attention to shops from which the general public buy/rent their bicycles.

Audit recommendation

6.17 **Audit has *recommended* that the Commissioner of Police and the Commissioner for Transport should, in conjunction with the Road Safety Council, step up publicity to promote the public awareness of the statutory requirements for bicycle safety fittings, paying particular attention to shops from which the general public buy/rent their bicycles.**

Response from the Administration

6.18 The Commissioner of Police agrees with the audit recommendation.

Appendix A
(paras. 4.3, 4.19 and 4.38 refer)

Summary of seat belt requirements

<table>
<tr><th>Vehicle type</th><th>Driver and front seat passenger</th><th>Middle front seat passenger</th><th>Rear seat passenger</th></tr>
<tr><td>Private car</td><td>Seat belt must be worn if fitted (1983)</td><td rowspan="5">Seat belt must be worn if fitted (1996)</td><td>Seat belt must be worn if fitted (1996) (Note 1)</td></tr>
<tr><td>Taxi</td><td rowspan="3">Seat belt must be worn if fitted (1989)</td><td>Seat belt must be worn if fitted (2001) (Note 2)</td></tr>
<tr><td>PLB</td><td>Seat belt must be worn if fitted (2004)</td></tr>
<tr><td>Private light bus</td><td>N.A.
(Note 3)</td></tr>
<tr><td>Goods vehicle</td><td>Seat belt must be worn if fitted (1990)</td><td>N.A.</td></tr>
<tr><td>Bus</td><td>Seat belt for driver must be worn if fitted (1997)</td><td>N.A.</td><td>N.A.
(Note 4)</td></tr>
</table>

Source: *Road Traffic (Safety Equipment) Regulations (Cap. 374F)*

Note 1: *According to the TD, of the 454,697 licensed private cars as at 31 December 2012, 15,710 (3%) were registered before the relevant statutory requirement took effect in 1996 and hence exempted from the seat belt requirement.*

Note 2: *Of the 18,131 licensed taxis as at 31 December 2012, 2,073 (11%) were registered before the relevant statutory requirement took effect in 2001. According to the TD, most of these exempted taxis had been fitted with passenger seat belts when they were imported into Hong Kong (though the exact figure is not available).*

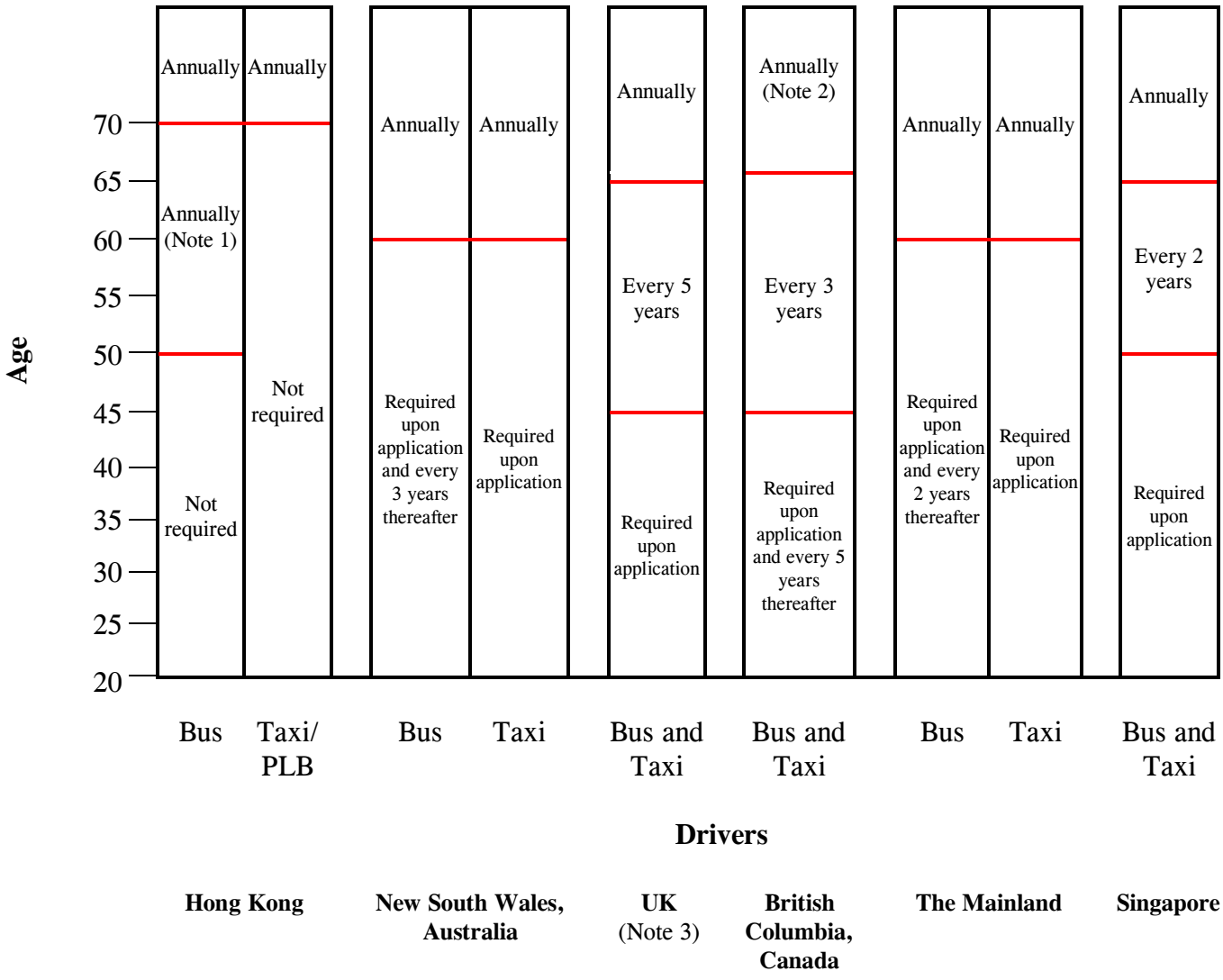
Note 3: *With effect from May 2009, newly registered private light buses for carrying school children are required by law to be fitted with safer seats and restraining barriers. According to the TD, as at 31 December 2012, of the 2,439 licensed private light buses, 1,468 (60%) were for carrying school children. In 2012, the accident involvement rate per 1,000 vehicles for private light buses was 5.4 as against 33.1 for all motor vehicles (see Figure 2 in para. 1.6).*

Note 4: *In 2007, the TD informed the Panel on Transport that its research showed no overseas countries required the fitting of seat belts on passenger seats of buses designated for urban use or for carrying standing passengers. As for franchised buses, the measures for protecting passenger safety provided by the operators upon the TD's request are detailed in paragraph 4.45(b).*

Remarks: *The year in bracket indicates when the relevant seat belt law became effective.*

Appendix B
(para. 4.50 refers)

Health check requirements in the Mainland and overseas countries



Source: Audit research

Note 1: The health check requirement for bus drivers between the age of 50 and 70 is imposed by franchised bus operators as requested by the TD. It is not a statutory requirement.

Note 2: Drivers are required to submit medical certificates annually after they have reached the age of 66.

Note 3: The health check requirements apply to applicants for bus driving licences in the UK and applicants for taxi driving licences in London area.

Acronyms and abbreviations

API	Announcement in the public interest
Audit	Audit Commission
EDRD	Electronic data recording device
GMBs	Green minibuses
GPS	Global Positioning System
ISD	Information Services Department
km/hr	Kilometres per hour
LPG	Liquefied petroleum gas
PLBs	Public light buses
Police	Hong Kong Police Force
RMBs	Red minibuses
RSCC	Road Safety Campaign Committee
TD	Transport Department
TIS	Transport Information System
TOMS	Traffic Operations and Management System
TV	Television
UK	United Kingdom
μg/100 ml	Micrograms per 100 millilitres