

Report of the Independent Review Committee on Hong Kong's Franchised Bus Service

The Honourable Mr Justice Michael Lunn, GBS
Mr Rex Auyeung Pak Kuen, JP
Professor Lo Hong Kam, JP

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IRC REPORT-INDEX

| <u>Chapter</u> | <u>Chapter Title and Sub-topics</u> | <u>Paragraphs</u> |
|------------------|---|-------------------|
| CHAPTER 1 | The terms of reference | 1-6 |
| CHAPTER 2 | The course of the Committee's work | 7-14 |
| CHAPTER 3 | The grant, regulation and monitoring of public bus service franchises and their renewal <ul style="list-style-type: none">• Statutory framework; Guidelines on Bus Captain's Working Hours, Rest Times and Meal Break; and bus franchise agreements• Forward planning programme – black boxes; lack of use of its data; and training• Vehicle maintenance• The TD's assessment of the performance of franchised bus operation• The renewal of franchises | 15-76 |
| CHAPTER 4 | Responses to the widespread publicly expressed concerns as to the safety of franchised buses <p><i>A. Sham Shui Po fatal accident – 22 September 2017</i></p> <ul style="list-style-type: none">• (i) October 2017 – meetings between TD/franchised bus operators and TD/trade unions• (ii) 23 February 2018 – Revision of the Guidelines on Bus Captain's Working Hours, Rest Times and Meal Break <p><i>B. Tai Po Road fatal accident – 10 February 2018</i></p> <ul style="list-style-type: none">• (i) 12 February 2018 – special meeting of the Tai Po District Council• (ii) 15 February 2018 – the Legislative Council Panel on Transport meeting• (iii) 12 March 2018 – KMB accident report• (iv) Mid-March 2018 – Working Group on Enhancement of Safety of Franchised Buses• (v) 10 April 2018 – KMB Action Plan• (vi) Early May 2018 – CTB's Safety Committee | 77-85 |
| CHAPTER 5 | Guidelines on Bus Captain Working Hours, Rest Times and Meal Break <ul style="list-style-type: none">• Revision of the Guidelines: 23 February 2018• The position of the TD• The position of the trade unions• The position of franchised bus operators• The position of the TD (on rest facilities) | 86-115 |

| <u>Chapter</u> | <u>Chapter Title and Sub-topics</u> | <u>Paragraphs</u> |
|-------------------|---|-------------------|
| CHAPTER 6 | KMB's Accident Report and Action Plan | 116-124 |
| | <ul style="list-style-type: none"> • Accident Report • Recommendations: safety belts and safety devices • Action Plan | |
| CHAPTER 7 | A review of the safety measures on Tai Po Road | 125-139 |
| | <ul style="list-style-type: none"> • Reduction of the speed limit and planned installation of a fixed speed enforcement camera • Earlier requests for additional safety measures on Tai Po Road | |
| CHAPTER 8 | Working Group on Enhancement of Safety of Franchised Buses | 140-183 |
| | <ul style="list-style-type: none"> • Membership and terms of reference • Safety devices • CTB/NWFB-Safety Committee and participation in the Working Group • NLB-participation in the Working Group • Ongoing work of the Working Group | |
| CHAPTER 9 | Recruitment and training | 184-207 |
| | <ul style="list-style-type: none"> • Training • Part-time bus captains | |
| CHAPTER 10 | NLB's use of non-franchised buses with drivers | 208-212 |
| CHAPTER 11 | Tachograph/telematics or 'black boxes' | 213-262 |
| | <ul style="list-style-type: none"> • The Hong Kong Institution of Highways and Transportation • CTB/NWFB • KMB/LWB and NLB • Openmatics: supplier of telematics systems to KMB and LWB • Digital map • KMB's use of data obtained by the black box to monitor driver behaviour • KMB's real-time operational management system | |
| CHAPTER 12 | Speed limits | 263-271 |
| | <ul style="list-style-type: none"> • Community for Road Safety • Low speed limits / speed limit zone • Speed survey of franchised buses | |

| <u>Chapter</u> | <u>Chapter Title and Sub-topics</u> | <u>Paragraphs</u> |
|-------------------|--|-------------------|
| CHAPTER 13 | Salary of bus captains | 272-290 |
| | <ul style="list-style-type: none"> • NWFB and CTB • NLB • KMB/LWB | |
| CHAPTER 14 | Difficulties in recruiting bus captains | 291-300 |
| | <ul style="list-style-type: none"> • CTB/NWFB • KMB | |
| CHAPTER 15 | Bus captain stresses and frustrations | 301-339 |
| | <ul style="list-style-type: none"> • The Road Safety Council <p><i>Stress and frustrations</i></p> <ul style="list-style-type: none"> • (i) Illegal parking at and adjoining bus stops • (ii) Abuse / assaults on bus captains • (iii) Rest and toilet facilities | |
| CHAPTER 16 | Professor Stanley: Melbourne | 340-374 |
| | <ul style="list-style-type: none"> • Curriculum Vitae of Professor John Stanley • Melbourne: brief facts • Accreditation, safety principles and safety duties <p><i>Recommendations</i></p> <ul style="list-style-type: none"> • (i) Governance: accreditation; safety duties; and independent safety regulator • (ii) Bus captain training • (iii) Guidelines on Bus Captain Working Hours, Rest Times and Meal Breaks • (iv) Standing Committee on Bus Safety • (v) Public disclosure of franchised bus safety data • (vi) Seat belts | |
| CHAPTER 17 | Mr Weston: London | 375-469 |
| | <ul style="list-style-type: none"> • Curriculum Vitae of Mr Mike Weston • London: brief facts <p><i>TfL</i></p> <ul style="list-style-type: none"> • The award of bus route contracts • Contract monitoring and performance management • Collaboration between TfL and bus operators • TfL's bus safety management • Bus Safety Standard | |

| <u>Chapter</u> | <u>Chapter Title and Sub-topics</u> | <u>Paragraphs</u> |
|-------------------|--|-------------------|
| | <ul style="list-style-type: none"> • Bus Safety Innovation Challenge • Safety performance index • Cost / benefit analysis <p><i>Recommendations</i></p> <ul style="list-style-type: none"> • (i) Subsidised trials and installations by franchised bus operators of technological safety devices and bus driver training • (ii) Adoption of new technology • (iii) Safety data transparency • (iv) Enhanced collaboration between franchised bus operators and TD • (v) Independent safety regulator • (vi) Bus driver training • (vii) Speed limits lower than 50 km/h • (viii) Incentivising the safety performance of franchised buses | |
| CHAPTER 18 | Report of the Working Group on Enhancement of Safety of Franchised Buses – October 2018 | 470-523 |
| | <ul style="list-style-type: none"> • Proposed installation of in-vehicle safety devices • Trials of new safety technology • Other technological devices • Training for bus captains : Practice Note • Seat belts | |
| CHAPTER 19 | The Transport Department’s ongoing response to the submissions and evidence received by the Committee | 524-544 |
| | <p><i>Proposed developments</i></p> <ul style="list-style-type: none"> • Overview of proposed changes • Permanent Working Group / Bus Operators Forum • TD Technology Team <p><i>The TD’s position on other matters</i></p> <ul style="list-style-type: none"> • Availability of accident data to the public • Low speed limit zones | |
| CHAPTER 20 | The franchised bus operators’ response to the submissions and evidence received by the Committee | 545-555 |
| | <p><i>KMB/LWB</i></p> <ul style="list-style-type: none"> • The use of technology • Digital speed limit map • Excessive speeding: exception reports | |

| <u>Chapter</u> | <u>Chapter Title and Sub-topics</u> | <u>Paragraphs</u> |
|-------------------|--|-------------------|
| | <i>CTB/NWFB</i> | |
| | <ul style="list-style-type: none"> • Digital speed limit map • Excessive speeding: exception reports • Revised threshold for audio / visual alert for excessive speeding | |
| CHAPTER 21 | The Singapore LTA | 556-567 |
| | <ul style="list-style-type: none"> • Training • Abuse of bus captains • Technological devices • Bus priority boxes and lanes • Quality of service standards – penalties | |
| CHAPTER 22 | Competitive tendering for franchises | 568-573 |
| | <ul style="list-style-type: none"> • Competition Commission’s submission • CTB/NWFB’s submission | |
| CHAPTER 23 | Recommendations | 574-669 |
| CHAPTER 24 | Summary of recommendations | 670 |
| CHAPTER 25 | Epilogue: acknowledgements and In Memoriam | 671-678 |

ABBREVIATIONS

APPENDICES

- Appendix I – Declaration of interest**
- Appendix II – Chronology of key events**
- Appendix III – Guidelines on Bus Captain working hours, rest times and meal breaks**
- Appendix IV – Information and Records relating to the bus service to be kept and provided by the Grantee included without limitation under clause 28(1) of the franchises granted to grantees prior to 1 June 2016**
- Appendix V – Information and Records Relating to the Bus Service to be Kept and Provided by the Grantee under Schedule II of Clause 28(1) of the Franchises Granted to Grantees on or after 1 June 2016**
- Appendix VI – Specifically identified interested parties who provided both written submissions and oral evidence; specifically identified interested parties and members of the public who provided written submissions only**

LIST OF ABBREVIATIONS

A

| | |
|------|------------------------------------|
| ADL | Alexander Dennis Limited |
| AEB | Automated Emergency Braking |
| ANFA | Average Net Fixed Assets |
| ANPR | Automatic Number Plate Recognition |
| ASLS | Active Speed Limiting System |

B

| | |
|------|--|
| BCM | Bus Contracting Model (adopted in Singapore) |
| BMCS | Bus monitoring control system |

C

| | |
|-----------------|--|
| CBR | Cost: benefit ratio |
| CCTV | Closed-circuit television |
| CE | Chief Executive of the Hong Kong Special Administrative Region of the People's Republic of China |
| CMIS | Case Management Information System |
| Commissioner | Commissioner for Transport |
| Committee / IRC | The Independent Review Committee on Hong Kong's Franchised Bus Service |
| CPC | Certificate of Professional Competency |
| CTB | Citybus Limited |

D

| | |
|-----|---------------------------|
| DQM | Driver quality monitoring |
|-----|---------------------------|

E

| | |
|-------------|---|
| EKEO | Energising Kowloon East Office |
| EQ | Emotional quotient |
| EQM | Engineering Quality Monitoring |
| ESC | Electronic Stability Control |
| ETA | Estimated Time of Arrival |
| E-ticketing | Electronic fixed penalty ticketing system |
| EWT | Excess Wait Time |

F

| | |
|------------|---|
| FAA | Fare Adjustment Arrangement |
| FB | Franchised bus |
| Federation | The Federation of Bus Industry Trade Unions |
| FPP | Forward Planning Programme |

G

| | |
|------------|--|
| GIS | Geographical information system |
| GPS | Global Positioning System |
| Guidelines | Guidelines on Bus Captain Working Hours, Rest Times and Meal Breaks |

I

| | |
|-----|------------------------------|
| ISA | Intelligent Speed Assistance |
|-----|------------------------------|

K

| | |
|-----|---|
| KCM | Kwoon Chung Motors Company Limited |
| KMB | The Kowloon Motor Bus Company (1933) Limited |

L

| | |
|----------|---------------------------------------|
| LTA | Land Transport Authority of Singapore |
| LWB / LW | Long Win Bus Company Limited |

M

| | |
|-------|-------------------------|
| MTRCL | MTR Corporation Limited |
|-------|-------------------------|

N

| | |
|------|---------------------------------------|
| NLB | New Lantao Bus Company (1973) Limited |
| NWFB | New World First Bus Services Limited |

O

| | |
|------------------|---|
| Ordinance / PBSO | The Public Bus Services Ordinance, Cap. 230 |
|------------------|---|

P

| | |
|---------|--|
| Police | Hong Kong Police Force |
| PSTH(T) | Permanent Secretary for Transport and Housing (Transport) |
| PTI | Public transport interchange |

Q

QoS Quality of Service standards

R

Regulations The Public Bus Service Regulations, Cap. 230A

ROM Real-Time Operations Management System

RSC Roll Stability Control

S

SDU Speed display unit

Secretary for TH Secretary for Transport and Housing

SPI Safety Performance Indicator

SPIx Safety Performance Index

T

TAC Transport Advisory Committee

TD Transport Department

TfL Transport for London

THB Transport and Housing Bureau

TRL Transport Research Laboratory

TSV Transport Safety Victoria

W

WG / Working Group Working Group on Enhancement of Safety of Franchised Buses

THE REPORT

The Report is written in English, with a Chinese translation.

The Independent Review Committee's report on Hong Kong's Franchised Bus Service

CHAPTER 1 – The terms of reference

1. On 13 March 2018, the Chief Executive announced that the Independent Review Committee on Hong Kong's Franchised Bus Service ("the Committee") had been set up and that Mr Justice Michael Lunn had been appointed Chairman and Mr Rex Auyeung Pak Kuen and Professor Lo Hong Kam¹ members of the Committee.

The Terms of Reference

2. The Committee's Terms of Reference are:

From the point of view of safety, in the light of the fatal accident on February 10 and other recent serious incidents involving franchised buses in Hong Kong:

- (a) to examine the operation and management of bus franchises under the current legislative, franchise and other contractual requirements;
- (b) to examine the present regulatory and monitoring system for franchised buses; and
- (c) in relation to the above, to make recommendations to the Chief Executive on safety-related measures with a view to sustaining a safe and reliable franchised bus service in Hong Kong.

3. The Committee may invite submissions from interested parties and from the public on the above matters and should use its best endeavours to submit its report within nine months. Issues relating to the causes and liability of persons involved in the fatal accident on 10 February 2018 will be investigated by the Police and fall outside the Committee's terms of reference.

¹ Declaration of Interest at Appendix I.

The prosecution of the driver of the franchised bus involved in the fatal accident on 10 February 2018

4. By a letter, dated 25 October 2018, a representative of the Commissioner of Police informed the Committee that the driver of the franchised bus involved in the fatal accident on 10 February 2018 on Tai Po Road at Tai Po Mei Tsuen had been charged with nineteen charges of manslaughter by gross negligence, contrary to Common Law, and eighteen charges of causing grievous bodily harm by dangerous driving, contrary to section 36A of the Road Traffic Ordinance, Cap. 374. Each of the deceased and the injured was a passenger on the bus.

5. The Particulars of Offence of each of the manslaughter charges alleged that, in breach of a duty of care owed to each of the deceased passengers on the bus, the bus driver failed to take reasonable care for the safety of that passenger by:

- (a) driving at an increasing and excessive speed along the downhill carriageway of Tai Po Road, Tai Po bound, and at the start of the right bend before the bus stop at Tai Po Mei Tsuen, Tai Po;
- (b) failing to slow down the Bus when negotiating the right bend;
- (c) failing to apply footbrake engine brake sufficiently or at all when approaching and negotiating the right bend;

It was alleged that the breach of duty amounted to gross negligence, in consequence of which the Bus toppled over and crashed, and was a substantial cause of the death of each of the passengers.

6. The Committee was informed that the proceedings will be transferred from the Magistracy to the High Court for trial. Of course, that will be trial by judge and jury. In conducting these proceedings the Committee has been conscious of the need to ensure that it does not give any currency to material that might prejudice the future fair trial. As noted earlier, our Terms of Reference stipulate that “the causes and liability” of persons involved in that fatal accident fall outside our terms of reference.

CHAPTER 2 – The course of the Committee’s work

7. On 28 March 2018, the Committee issued a notice on its website stating that it was inviting “specifically identified interested parties” to provide written submissions initially, on or before 17 April 2018, concerning the existing operation and management of bus franchises under the legislative regime, current franchises and other contractual requirements. The passengers and family members of the victims of the accident on Tai Po Road on 10 February 2018, together with members of the public, were invited to make their submissions on or before 30 April 2018.

8. In a notice issued on 12 April 2018, the Committee announced the appointment of counsel assisting the Committee, namely Mr Peter Duncan S.C., Ms Maggie Wong and Mr Derek Chan, and Wilkinson & Grist as solicitors for the Committee.

9. In due course, the Committee received written submissions from a great majority of the interested parties from whom assistance had been sought, from members of the public and from interested associations and a statutory body. Although the Committee received some anonymous submissions, it has not had regard to them in its deliberations. Similarly, written submissions provided by persons who identified themselves but who, when asked, declined to give oral evidence in support of the assertions made in those submissions have not been taken into account.

10. On 3 May 2018, the Committee issued a notice stating that it was in the process of inviting specified interested parties to give oral evidence to the Committee through nominated representatives and that the first of those hearings was to commence on 7 May 2018. On the same date, the Committee published on its website the Rules of Procedure that would govern the receipt of such evidence. Although the Committee indicated that it would consider applications by any of the interested parties to be assisted by a legal representative in leading evidence-in-chief, no such application was made. In the result, evidence was led

from witnesses by counsel assisting the Committee on a total of twenty one hearing days from 7 May to 16 October 2018. Some of the witnesses chose to make an opening statement. As was stated in the notice, a transcript in English and Chinese was made of all the oral evidence received and was posted on the Committee's website. In addition, the submissions and attachments identified for use by the Committee were posted on the website and Hearing Bundles.

11. On the 25 June and 13 July 2018, the Committee appointed Professor John Stanley, Adjunct Professor of the Institute of Transport and Logistics Studies, University of Sydney Business School, and Mr Mike Weston, an Independent Passenger Transport Consultant and formerly the Director of Buses of Transport for London, respectively to assist the Committee by giving their respective expert opinions in written reports and by way of oral evidence. In due course, both Professor Stanley and Mr Weston provided the Committee with written reports and gave oral evidence.

12. In a notice, dated 12 October 2018, in anticipation of the receipt of oral evidence concluding on 16 October 2018, the Committee announced that it was inviting specified interested parties and members of the public to make closing written submissions on recommendations that the Committee ought to make or not make to the Chief Executive "on safety-related measures with a view to maintaining a safe and reliable franchised bus service in Hong Kong", on or before 7 November 2018.

13. Subsequently, the Committee received written closing submissions, including one from the Competition Commission.

14. On 29 November 2018, the Committee received closing submissions from counsel assisting the Committee.

CHAPTER 3 – The grant, regulation and monitoring of public bus service franchises and their renewal

The statutory framework

The Road Traffic Ordinance

15. The Road Traffic Ordinance, Cap. 374 and its subsidiary legislation provides for the regulation of road traffic and the use of vehicles on roads. All the references to “public buses” or “buses” in those provisions are applicable to the buses operated by franchised bus operators.

The Public Bus Services Ordinance

16. Section 5(1) of the Public Bus Services Ordinance, Cap. 230 (“the Ordinance”) provides that the Chief Executive in Council may grant to any company registered under the Companies Ordinance (Cap. 622) the right to operate a public bus service on such routes as he specifies by order.

17. Section 5(3) provides that:

“A franchise-

- (a) may be granted following a public tender or in such other manner as the Chief Executive in Council thinks fit;
- (b) ...
- (c) shall be subject to such conditions as the Chief Executive in Council specifies;”.

18. Pursuant to section 6(1), the franchise may be granted for a period not exceeding 10 years. Section 6(2) provides that, on the grantee giving notice in writing of a request for an extension, the Chief Executive in Council may extend a franchise for a period not exceeding 5 years. By section 12(1), the grantee is

required to "...maintain to the satisfaction of the Commissioner² a proper and efficient public bus service", whereas section 12(2) provides that the grantee does not satisfy that requirement "...unless it maintains the service and operates the same in accordance with its franchise, this Ordinance, any direction or requirement under its franchise or this Ordinance and any programme or any approval under section 16A."

19. Section 9 of the Ordinance provides that the Chief Executive may appoint not more than two persons to be additional directors of a grantee. In their written submissions, the Transport and Housing Bureau ("THB") said that the power had been exercised and two directors had been appointed to each of the companies granted a bus franchise. In his evidence, Mr Joseph Lai, Permanent Secretary for Transport and Housing (Transport) ("PSTH(T)") said that the Commissioner and the Deputy Secretary responsible for bus service had been appointed as those directors.

20. Sections 22(1) and (2) of the Ordinance provide that the Chief Executive in Council may require the payment of a financial penalty "in respect of any failure by a grantee to comply with its franchise or this Ordinance or any direction or requirement under its franchise or this Ordinance, or with any programme or any approval under section 16A." Section 22(3) provides that the financial penalty shall not exceed \$10,000, \$20,000 and \$50,000 for the first, second and subsequent occasions on which a penalty is imposed.

21. In his evidence on behalf of the THB, Mr Joseph Lai, PSTH(T), said that, to the best of his recollection, the financial penalty sections had never been invoked due to the safety issue. For his part, Mr Joseph Lai said that he was not aware of any such application having been made in "recent times".

22. Section 24 of the Ordinance provides that the Chief Executive in Council may revoke the franchise, if satisfied, amongst other things, that the grantee has

² Section 2: "Commissioner" means the "Commissioner for Transport".

failed “to maintain a proper and efficient public bus service” and the grantee has not shown cause why such right should not be revoked.

Public Bus Service Regulations

23. Section 35(1) of the Ordinance provides that:

“(1) The Secretary for Transport and Housing may make regulations for all or any of the following matters-

...

(d) generally as to the conduct of passengers and intending passengers on buses used by a grantee;

...

(j) regulating, in relation to the drivers of buses used by a grantee-

(i) the maximum number of hours during which any such driver may be permitted to drive such a bus; and

(ii) the intervals to be provided by a grantee for the rest and refreshment of such drivers,

in any period specified by the regulations;”

Section 35(2) of the Ordinance provides that the Chief Executive in Council may provide by regulation that a contravention of any regulation is an offence and provide for a penalty of a fine not exceeding \$5,000 and imprisonment not exceeding 6 months.

24. Regulations 9-12 of the Public Bus Service Regulations, Cap. 230A (“the Regulations”), provide, amongst other things, for the conduct of a driver of a bus, whereas Regulation 13A provides for the conduct of passengers. Regulation 11(d) provides that a driver “shall take all reasonable precautions to ensure the safety of passengers in or on or entering or alighting from the bus”. Regulation 13A(1)(a) provides that no passenger or intending passenger shall “wilfully obstruct, impede or distract the driver of the bus”. Regulation 25(3) provides that any person who,

without reasonable excuse, contravenes various regulations, including regulations 11(d) and 13A(1), commits an offence and is liable to a fine of \$3,000 and imprisonment for 6 months.

25. In his evidence Mr Joseph Lai, PSTH(T), said that no review had been conducted of the regulations and because it was thought that the provisions were sufficient. However, he said that in the aftermath of the Tai Po Road incident, and having received reports that there were occasions of “rising tension between drivers and passengers”, the Transport Department (“TD”) had been tasked to produce an “education plan” to remind passengers to behave in a civil and orderly manner and to inform them that there were avenues to make complaints. He said that it was anticipated that, in doing so, the TD would have regard to the sufficiency of the regulations. [Transcript Day 1; 7 May 2018, pages 40-41]

By-laws

26. Section 36 of the Ordinance provides, subject to the approval of the by-laws by the Legislative Council, for the making of by-laws:

“(1) Subject to this Ordinance and its franchise, a grantee may make by-laws for all or any of the following matters-

...

(c) the safe and efficient operation of the grantee’s public bus service;

...

(e) generally as to the conduct of passengers while using the grantee’s buses...”

Section 36(3) provides that a contravention of any such by-laws shall be an offence, the penalty for which shall not exceed a fine of \$2,000.

27. No such by-laws have been made. For his part, Mr Samuel Cheng, the Managing Director of CTB/NWFB, said that he was unaware of the provision and that no consideration had been given by the companies to making by-laws. [Transcript Day 4; 30 May 2018, pages 62-63] Mr Godwin So of KMB said that

the company had not and were not considering passing by-laws, because if it was to do so it would have the responsibility to enforce the by-laws and because of concerns about the availability of staff to deal with the matter immediately. By contrast, he said the police had the resources and the professionalism to deal with the matters arising from difficulties with passengers. [Transcript Day 13; 10 August 2018, page 83]

Guidelines: Working Hours, Rest Times and Meal Breaks

28. Although, as noted earlier, specific provision is made in the Ordinance for the making of regulations to govern the maximum hours which a bus captain may drive and in respect of his/her rest time and refreshment, no such regulations have been made. Rather, since 1983 the TD has promulgated “*Guidelines on Bus Captain Working Hours, Rest Times and Meal Breaks*” (“the Guidelines”), which Guidelines have been revised from time to time. The Guidelines of October 2010³ and February 2018 encompass the following elements in respect of a working day:

- (i) the maximum working hours;
- (ii) the maximum driving hours;
- (iii) the duration and distribution of rest time;
- (iv) the duration of the break between successive working days; and
- (v) the arrangements for a meal break.

29. Of the February 2018 Guidelines, it is to be noted that the TD stated in their submissions of 25 April 2018 that, as agreed with the franchised bus operators, the Guidelines: [TD-1; page 65, paragraph 7]

“...would be implemented by phases starting from the second quarter of 2018, with full compliance by the second quarter of 2019, subject to the recruitment of sufficient bus

³ Appendix III.

captains to fill up the shortfall arising from the shortening of duty hours and driving hours of the existing bus captains.”

30. In their submissions, dated 25 April 2018, the TD said that it monitored compliance with the Guidelines by requiring the franchised bus operators to submit quarterly reports and, after January 2018, monthly reports of compliance with the Guidelines. In addition, the TD engaged independent contractors “to carry out annual field surveys so as to assess the actual situation of compliance with the Guidelines by the FB⁴ companies.” The TD noted that “the overall compliance rate is over 96% in the past three years”. [TD-1; page 66, paragraph 8]

The franchised bus agreements

31. The Chief Executive in Council has granted the current right to operate a public bus service, specified in the appropriate Schedule of Routes order from time to time in force under section 5(1) and in notices under sections 14 and 15 of the Ordinance, to the following companies for the periods of time stipulated in the general geographical areas described:

- (i) Long Win Bus Company Limited (“LWB”) - 1 May 2013 to 1 May 2023 in North Lantau and the Airport;
- (ii) Citybus Limited (“CTB”) - 1 May 2013 to 1 May 2023 in North Lantau and the Airport;
- (iii) New World First Bus Services Limited (“NWFB”) - 1 July 2013 to 1 July 2023 in Hong Kong Island, Cross-Harbour, Kowloon and Tseung Kwan O;
- (iv) CTB - 1 June 2016 to 1 June 2026 in Hong Kong Island and Cross-Harbour;
- (v) New Lantao Bus Company (1973) Limited (“NLB”) - 1 March 2017 to 1 March 2027 in Lantau and one New Territories route; and
- (vi) The Kowloon Motor Bus Company (1933) Limited (“KMB”) - 1 July 2017 to 1 July 2027 in Kowloon, Cross-Harbour and the New Territories.

⁴ “FB” means “franchised bus”.

32. Clause 1(3) of each of the six operative franchises requires that “unless there is express provision to the contrary, the Grantee shall at no cost to the Government comply with any direction and requirement given under this franchise by the Commissioner”. [TD-2, page 323] Clause 7 of each of the six operative franchises requires that: [TD-2, page 325]

“(1) The Grantee shall, as far as practicable, acquire, provide, adopt, maintain, or modify to the satisfaction of the Commissioner such safety or service enhancement facilities, installation, fixtures, fittings, apparatus or equipment on its buses as may be reasonably required by the Commissioner after consultation with the Grantee.

(2) Subject to Clauses 9 and 10, the Grantee shall acquire, provide, adopt, maintain, modify, or remove to the satisfaction of the Commissioner such Facilities as may be reasonably required by the Commissioner after consultation with the Grantee.”

Clause 1(1) defines “Facilities” as including “bus regulators’ offices and kiosks”. Clause 8 makes a similar provision in respect of “canteens, washrooms and toilets for its employees”.

33. Section 18(1) of the Ordinance provides that the grantee of a franchise shall keep proper records in respect of stipulated matters and provide copies of the same at the request of the Commissioner.

34. Each of the grants of a franchise to the respective bus companies provides that the grantee must, as required by the Commissioner, provide to the Commissioner in writing copies of the records kept by the grantee, together with information relating to the Bus Service, including without limitation the matters stipulated in the grant of franchise.

35. The operative franchises granted to grantees prior to 1 June 2016 stipulate the same records and information, identified as items (a) to (m)⁵, whereas those

⁵ Appendix IV.

granted on and after 1 June 2016 each stipulate the same records and information, identified in Schedule II as items (a) to (q)⁶.

Forward planning programme

36. Section 12A of the Ordinance provides that not later than 30 June in each year of an operative franchise, the grantee shall “prepare a programme of the operations of the grantee for the following 5 years in respect of the matters specified in the Schedule” and that the grantee and the Commissioner shall take all reasonable steps to reach agreement on the programme by 30 September of that year, failing which, pursuant to section 12A(4) the Secretary for Transport and Housing (“Secretary for TH”) shall “decide on the point (in disagreement)”. In his evidence, Mr Joseph Lai, PSTH(T), confirmed that the Secretary for TH had never been called upon to make that decision. [Transcript Day 1; 7 May 2018, page 46]

37. Paragraphs (a) to (g) of the Schedule to section 12A stipulate specific material that shall be contained in the programme, but paragraph (h) also provides that it shall contain “any other matters, whether or not specified in paragraphs (a) to (g) inclusive, as may be required by the Commissioner by notice in writing to the grantee.”

38. A letter from the TD to CTB, dated 17 May 2017, attached to the CTB submissions [CTB-2, pages 3-19] illustrates the process by which the grantees are informed by the TD of the matters required to be encompassed in their five-year forward planning programme, which programme is provided to the TD on an annual basis. The letter states that CTB was being provided with “a set of guidelines and requirements covering the following aspects for your compliance in preparation of the Five-Year Forward Planning Programme (2018-2022) (“FPP”)”. Under the heading “*Bus Safety*” it is stated:

⁶ Appendix V.

“Your FPP submission should include a separate chapter on “Bus Safety” with the following information-

- (a) An analysis of the types/causes of accidents for the past 2 calendar years, relationships of accident rates with different factors including:
 - (i) driver age;
 - (ii) length of service of bus captain;
 - (iii) length of driving hours before the accident happened;
 - (iv) experience of the bus captains on the route;
 - (v) experience of the bus captains on the bus model operated;
 - (vi) the number of routes which a bus captain operates in one shift; and
 - (vii) the number of buses a bus captain operates in one shift.
- (b) The target for reduction of accident involvement rate per million km yearly for the coming 5 years.
- (c) Programmes planned in the next two years to reduce common types/causes of accidents.
- (d) Programmes/plans in the next two years to enhance the safety of the elderly and persons with disabilities on buses.
- (e) *A plan for automation of monitoring of bus captain driving behaviour through data captured in black boxes or similar devices.*
- (f) Publicity programmes/plans in the next two years to enhance passenger safety.
- (g) Programmes/plan in the next two years to enhance bus captain training.
- (h) Programmes of retrofitting of double hand rail on double deck buses with straight staircases.
- (i) Please provide a study on the feasibility of installation of seat belts on (a) all seats and (b) all seats on the upper deck on all new buses.” [Italics added.]

The Franchised Bus Operators' Five-Year Forward Planning Programme ("FPP") (2018-2022)

39. Although in its written submissions the TD had declined, on the basis of commercial confidentiality, to provide the Committee with copies of the Five-Year FPP submitted on an annual basis by the grantees to the TD, as a result of a request of Ms Mable Chan, the Commissioner, in her oral testimony by counsel assisting the Committee, and with the consent of all the grantees, the Committee was provided with the chapter on Bus Safety in the respective FPPs submitted to the TD in 2017. Subsequently, at the request of the Committee, KMB/LWB provided copies of the chapter on Bus Safety for each of their annual FPPs for the overall period 2019-2023.

40. The chapter on Bus Safety in the KMB's FPP for 2018-2022 set out an analysis of accidents by their nature in respect of the two years 2015-2016. It is to be noted that it stated that 51.5% of the accidents in that period involved "Passenger Loss of Balance". There were about 450 such accidents for each of the two years. Of that, it was said "(m)ore than half of these cases were caused by the bus braking in traffic". In an analysis of "Accidents by Liability", it was stated that in 25% of the accidents the bus captain had been "Negligent", whereas the bus captain was said to be "Innocent" in respect of 75% of the accidents. [TD-1, pages 183-184]

41. In his evidence on behalf of the Hong Kong Police Force, Chief Superintendent Baker said that the police compiled their own accident statistics, namely the Case Management Information System ("CMIS"), which was shared with the TD. The police officer investigating any particular accident inputted data into that system by using a template, which detailed sixty specific "driver contributory factors" in respect of the cause of an accident. In addition, the template contained boxes that addressed the possibility that there were "Other driver factor" and "No driver factor". He said that he was unaware of the existence of the information contained in the FPP of the franchised bus operators, but acknowledged that it would be useful if the police had access to such detailed

information. [Transcript Day 17; 24 September 2018, pages 13-14, 19 and 28-30] The focus of the data was on the causes not the consequences of an accident. The template did not provide a box for the “failure to use a seat belt”. [Transcript Day 17; 24 September 2018, page 33]

Black boxes

42. The responses of the different grantees in respect of the TD’s respective requests of them for information of their plans for automation of monitoring of bus captains driving behaviour through data captured in Electronic Data Recording Devices (“black boxes”) or similar devices illustrate the fact that all that is required of grantees is that they have a tachograph with basic capabilities fitted to their buses. That requirement was imposed by the TD on the franchised bus operators by a letter, dated 17 October 2003, and came into effect on 1 July 2004 in respect of buses first registered after that date. Of the purpose of the requirement, significantly it was stated: [CTB-2(A), page 206]

“ **Basic Minimum Requirements for Electronic Data Recording Device**

1. The purpose of the Electronic Data Recording Device is to *provide tools for the bus company to monitor and manage* the on-road speed- and safety-related behaviour of its buses, and indirectly to encourage better driving behaviour.”
[Italics added.]

43. Of the requirements of the device itself, it was stated:

“2. The device should sample the following data at 1 second intervals, and store data every 30 seconds for a period of 2 weeks:-

(a) Operation Times (real time)

- start time
- rolling time
- idle time
- finish time

(b) Vehicle Speed

3. The software for analysing onboard or downloaded data to be capable of reporting the following:-
- (a) Accident Report - vehicle speed profile at time interval of 1 second for the 3 minutes period preceding detection of a a (sic) 0.2G deceleration.
 - (b) Overspeeding Report - frequency, maximum speed attained and overspeeding duration the speeds over 70 km/h.”

44. Of course, it is to state the obvious to note that whilst 70 km/h is the maximum speed that franchised buses may travel on the roads of Hong Kong, most of their journeys are on roads on which a maximum speed limit of 50 km/h only is imposed.

45. As noted subsequently, the TD informed the Committee on 3 October 2018 that in August 2018 that the ‘*Basic Minimum Requirements for Electronic Recording Device*’ had been revised. One change was to the threshold value of detecting deceleration from 0.2G to 0.4G. [TD-5; page 1773, Chapter 2.22 and page 1807]

46. A programme to retrofit tachographs to franchised buses was begun by some of the franchised bus operators in 2004 and progressed gradually over the years, so that briefing papers to the Legislative Council Panel on Transport, dated November 2009 and 26 November 2012, asserted that in September 2009 and January 2012 respectively about 70% and 85% respectively of the franchised buses had been equipped with black boxes. [SEC-1; page 350, paragraph 7 and page 409, paragraph 16]

47. No subsequent specific additional requirements in respect of that device, reflecting advances in technology, were made of grantees by the TD until August 2018. However, in the course of negotiations between the TD and CTB, on the one hand, and TD and NLB, on the other hand, for the renewal of their respective

franchises, CTB and NLB committed in August 2015 to providing service enhancement initiatives, including: [CTB-3, page 582; NLB-2, page 34]

“(a) Clause 14 of New Franchise

- (1) provide Real Time Bus Information System (RTBIS) for dissemination of estimated time of departure or arrival of bus trips at bus termini and stops (as appropriate) for all bus routes operated by your Company based on real time data through mobile devices (including but not limited to smart phone, tablet and computer), and supplemented with display panels installed at... bus termini...”

48. In his evidence, Mr James Wong, the managing director of NLB, said [Transcript Day 5; 19 June 2018, page 133]:

“After 2003, while we were required to install black box, so all along we have been using an old model of black box. We couldn’t upload certain data to our server, and when we started discussing the new franchise in 2016, we needed to work on ETA⁷, so we replaced the old black box with a new model of the black box.”

49. In their five-year FPP submitted in 2017 for the years 2018-2022, KMB and LWB asserted: [TD-1; pages 187-188 and 218, paragraph 8.3.2]

KMB

“Speed monitoring and limiting devices are already installed or are being installed on buses.

- The electronic tachographs are being used to monitor bus captain performance, especially with regard to speeding. An electronic tachograph is standard equipment on new buses. At the end of April 2017, a total of 3,922 KMB buses (i.e. 100% of registered licensed fleet) were installed with electronic tachographs; and,

⁷ “ETA” means “Estimated Time of Arrival”.

- Real-time Driving Indicators are installed on all buses which can help bus captains to utilize the driving skills learnt in the Eco-safe Driving Training Course.”

LWB

“Speed monitoring and limiting devices are already installed or are being installed on buses.

- The electronic tachographs are being used to monitor bus captain performance, especially with regard to speeding. An electronic tachograph is standard equipment on new buses. At the end of May 2017, a total of 24 buses (i.e. 100% of registered licensed fleet) were installed with electronic tachographs; and,
- Real-time Driving Indicators 駕駛提示器 are being installed in buses from mid-2013 which can help bus captains to utilize the driving skills learnt in the Eco-safe Driving Training Course.”

50. By contrast, under the heading “*Plan for automation of monitoring bus captain driving behaviour through data captured in black boxes or similar devices*”, NLB stated: [TD-1; pages 236-237, paragraph (C)(e)]

“Retrieval of data from black box is usually conducted after a traffic accident; these data, which are electronic in nature, would require special analysis.

Analysis results could be put forward for prevention studies to avoid accidents of similar nature.

Specialist’s support would be required for retrieval, analysis and recommendations.”

51. In their written submissions in response to questions posed of them by the Committee in respect of the use made of the data capability of black boxes installed on their buses, NLB said: [NLB-1, page 33]

“To record and manipulate all these large number of data, it is require (sic) heavy capital investment of data transmission, data storage system and sophisticated software to do so. At the time being, is it (sic) not a mandatory requirement for franchise bus operator to perform real-time bus captain performance monitoring by black box system, and the

utilisation of technology to perform real-time bus captain monitoring is subject to each operator's operations needs and financial affordability.”

52. However, in his evidence, Mr Timothy Wong, a Director of NLB, said that, although NLB was unable to produce an exceptional over speed report at present, it was intended that NLB system would be capable of generating such a report in the fourth quarter of 2018. No determination had been made as yet of the criteria to be applied for the generation of such a report. NLB was “...hoping to upload data from the black box per second” in the future. That involved additional transmission of data costs of around \$100 per bus per month, compared with the transmission of data every 30 seconds at present. On the other hand, Mr Timothy Wong said that NLB was still considering whether or not to provide a real-time alert to their bus captains of over speeding. This was a matter for discussion with labour unions. [Transcript Day 5; 19 June 2018, pages 125-128]

53. The 2015 Annual Report of Transport International Holdings Limited, the holding company of KMB and LWB, published in March 2016, stated: [KMB-5, page 1526]

“Bus Estimated Time of Arrival (“ETA”)

At the end of 2015, the in-house developed ETA service had been applied to all solely-operated KMB and LWB routes, making them the first two bus companies in Hong Kong to provide such a service across the entire fleet. Passengers are able to obtain bus arrival information via display panels at bus termini and bus stops, as well as the KMB/LWB smartphone app and the KMB and LWB websites.”

54. In a Legislative Council Brief, dated 28 March 2017, [TD-2 and TD-3, pages 496-569] the THB informed the Council that in advance of the renewal of the KMB franchise on 1 July 2017, KMB had given an undertaking to implement commitments in respect of service enhancement and enhanced safety features, including [TD-3, page 543]:

“Passenger information

- (ii) providing real-time bus arrival information through website and smartphone application, and installing display panels at suitable bus stops in phases for disseminating such information.”

55. Although in their written submissions, dated 13 July 2018, the TD said that at meetings with KMB and CTB in 2005, 2009 and 2016, the TD had suggested to the franchised bus operators that they made greater use of the data recorded by the black boxes on their buses “to monitor bus captains’ driving manner and behaviour”, it appears that the first time that the TD required any specific report of information obtained from the black boxes to be provided to the TD was in January 2018. That requirement was made “following the bus accident in Sham Shui Po in September 2017”. It appears that prior to that date it was a matter for the respective franchised bus operators to determine what use to make of the tachographs/black boxes for that purpose. [TD-1, pages 50 and 394-395]

56. In their submissions, dated 25 April 2018, the TD said that: [TD-1; page 50, paragraph 40]

“All FB operators are required to submit to the TD the following monthly reports starting from January 2018-

- (i) the results of random check on the operational data recorded in black boxes and the corresponding follow-up actions;”

57. The Monthly Report on Monitoring Measures relating to Bus Safety for January 2018 indicated that the TD template required, *inter alia*, “Checking Black Box Data for Monitoring of Driving Behaviours of Bus Captains” on two bases, namely: “Rout(e)ine (sic) Checks on Black Box Data Conducted (as at end Month)” and “Ad-hoc Checks on Black Box Data Conducted (For instance, complaints) (as at end Month)” in respect of “-Speeding-Braking Suddenly-Others (please specify)” and the “Follow up actions taken”. Of 8,552 checks conducted in the Routeine (sic) category, 271 cases of speeding were reported, in respect of which a total of 271 verbal, written and final warnings were issued. Of the 400 Ad-hoc checks,

5 cases of speeding and 8 cases of braking suddenly were reported, in respect of which 13 verbal warnings were issued.

58. Of the statement in the TD's submissions, dated 4 May 2018, that the TD "reviewed the monthly report submitted by the FB operators to ascertain that the FB operators have been monitoring the driving behaviour of their drivers and have taken/will take follow-up action", [TD-1, page 163] when asked by the Chairman whether reference to the term "reviewed" meant merely that the TD read the document, the Commissioner did not answer the question directly, rather she said: [Transcript Day 2; 8 May 2018, page44]

"This monitoring mechanism by means of a monthly report serves to provide us with basic information on how the bus companies conduct the checks, either on mysterious ride or black box data, and the follow-up actions. This serves as one of the tools for us to do the assessment on the bus company on an annual basis, coupled with our independent analysis based on the accident data in respect of the bus operators and the contributing factors, if any, say in relation to the driving behaviour of bus captains."

Training

59. In respect of programmes/plan "in the next two years to enhance bus captain training", CTB, in respect of both Franchises 1 and 2, and NWFB stated: [TD-1; pages 200 and 232, paragraph 5.11(ii); page 208, paragraph 5.3(ii)]

"Provide refresher driving training to every Bus Captain. The course content shall be reviewed periodically and shall include defensive driving concept, accident prevention tips and traffic accident black spots."

60. Of their programmes/plans, KMB and LWB said: [TD-1; pages 187 and 218, paragraph 8.3.1]

"Driving performance monitoring is carried out with systematic checking by driving instructors and followed up with disciplinary actions if required. Moreover, real-time Driving Indicators (駕駛提示器) will also help to identify those bus captains who have a higher incidence of 'harsh braking' on a given route than is normal. This

information can be used as to ensure that appropriate proactive feedback is given to a bus captain with aim of promoting improved driving behaviour that will in turn serve to prevent/reduce ‘loss of balance’ cases (as well as accidents in general).”

61. By contrast, NLB stated: [TD-1; page 237, paragraph C(g)]

“Programmes/plan in the next two years to enhance bus captain training

NLB may seek to cooperate with fellow franchised bus operators to achieve the above, by sending bus captains to the training programmes offered by other operators, subject to mutual acceptance and cooperation.

Co-operation with external professional bodies in providing driving skills enhancement training for existing and newly recruited drivers.”

62. In her oral evidence, the Commissioner explained: [Transcript Day 1; 7 May 2018, page 89]

“As far as bus captains are concerned, franchised bus operators have also voluntarily made performance pledges on providing training to all new recruits, and training once every 3 years for in-service bus captains. They submit information on training to the TD on an annual basis for monitoring.”

63. In answer to a question from Mr Duncan, as to whether the TD was dependent on information supplied by the franchised bus operators or whether it conducted independent checks of the training of bus captains, the Commissioner said: [Transcript Day 1; 7 May 2018, page 107]

“The bus companies have provided information in this regard in their annual programme to meet their voluntary performance pledges. We take note of the information supplied in that programme and we review their work on an annual basis.

But I would like to emphasise that the Transport Department does not, as in the previous case, perform our independent checks on that, because I must admit that the *training is not a requirement that flows from the franchise or that flows from the ordinance. It was actually formulated by the bus company on a voluntary basis* as part of our

discussions with them to improve and enhance bus safety, but there is no such legal requirement nor requirement in the franchise.

So, up to the present moment, *Transport Department does not do any spot-checks or independent checking on the training provided by bus companies.*” [Italics added.]

64. The Commissioner confirmed that the TD did not “specify specific requirement on training or on specific measures to be taken”, nor issue “any directive” to the franchised bus operators in respect of training and answered in the affirmative the question “So that’s a matter left entirely to the bus companies?” (Transcript Day 1; 7 May 2018, pages 132-133)

65. On the other hand, in their submissions, dated 25 April 2018, the TD said: [TD1; pages 50-51, paragraph 40]

“The FB operators are required to submit quarterly reports to the TD in respect of the training provided to the newly recruited bus drivers and the training offered to the in-service bus drivers (i.e. once for every three years).”

Vehicle Maintenance

66. In their submissions, dated 25 April 2018, the TD said that the issue of ensuring the vehicle safety of franchised buses was addressed not only by the annual examination but also by monthly inspection of in-service franchised buses conducted by the franchised bus operators, in respect of which they were required to provide a “Monthly Return of Vehicle Maintenance Under Clause 18(2) of the PBSO⁸”. Amongst other things, that document provided information of the breakdowns on the road of franchised buses, stipulating the particular defect. In addition, the TD conducted “spot checks on 14 FBs per day”, for which vehicles were chosen randomly [TD-1; pages 90-92, paragraph 9, TD-4, pages 1390-1391] It was noted that: [TD-1; page 92, paragraph 11]

⁸ “PBSO” means the “Public Bus Services Ordinance”.

“...the number of safety-related defects per bus examination undertaken by the TD on the FB fleet of respective bus operators in 2012 to 2016 only ranges from 0 to 0.08.”

The TD’s assessment of the performance of franchised bus operation

67. In the TD’s written submissions, it was stated that the TD had regard to information provided by the franchised bus operators, and information obtained independently by the TD, in making an annual assessment in respect of the “*Performance of Franchised Bus Operation*”. In her oral evidence, Ms Mable Chan said that the assessment was provided to the Transport Advisory Committee (“TAC”), which advises the Chief Executive in Council. [Transcript Day 2; 8 May 2018, page 3] In making the assessment, regard was given to nine key indicators, two of which were specifically related to safety, namely “(s)afety-related defects per examination” and the number of buses “involved in accidents per million vehicle-kilometre”. [TD-2, page 316]

68. The assessment for 2016, dated September 2017, was provided to the Committee as an illustration of the process. Annex B to the assessment addresses *Measures to Enhance Safety of Bus Operation*. Under the heading *Enhanced safety facilities and on-bus design features*, it was stated: [TD-2; page 317, paragraph (b)]

“The whole franchised bus fleet has been equipped with speed limiters which limit the speed of a bus to 70 kilometres per hour. All have also been retrofitted with a black box.”

69. Under the heading *Training for bus captains*, it was stated: [TD-2, page 317]

“The franchised bus operators continue to adopt measures to improve their bus captains’ driving skills, driving attitude and safety awareness. In addition to the training for new recruits, all bus operators provide enhancement, refresher and remedial training courses on safe driving to their serving bus captains. *There are also incentives schemes which give safety bonus and safe driving awards to bus captains.*” [Italics added.]

70. Under the heading *Improvement of the rest time for bus captains*, having noted that the Guidelines were last revised in October 2010, it was asserted: [TD-2; page 318, paragraph (d)]

“The Guidelines were fully implemented starting from the fourth quarter of 2012 when all bus operators increased meal break time to no less than one hour. Bus operators are required to submit regular reports on the compliance with the Guidelines to TD. TD also conducts regular surveys to assess compliance with the Guidelines and has found the situation satisfactory.”

The renewal of franchises

71. As noted earlier, the grant of a franchise may follow a public tender “or in such other manner as the Chief Executive in Council thinks fit”. No open public tender has been conducted for the grant of a franchise since 1998, when the Administration determined not to renew the franchise of China Motor Bus Company Limited and invited tenders for the grant of a five-year franchise in respect of various routes. Rather, existing franchises have been renewed following an assessment by the government of whether or not the grantee was providing “a proper and efficient public bus service”. [TD-1, page 74]

72. The renewal of the franchises of NWFB, LWB and CTB in 2013 illustrates the process. By a Discussion Paper, dated July 2011, the Legislative Council Panel on Transport was informed that the Administration planned to renew their respective franchises. In that context, the THB stated: [SEC-1; page 378, paragraph 6]

“According to the established practice, bus companies who have proved themselves to be capable of providing proper and efficient services, and are willing to further invest in their franchised bus operations are granted new franchises for a period of 10 years.”

73. Of the process of the determination of whether or not the grantee was providing proper and efficient services, it was asserted: [SEC-1; page 378, paragraph 7]

“...The Transport Department (“TD”) has been conducting regular reviews of their performance through passenger satisfaction surveys, site surveys, vehicle inspections, examination of regular returns and public feedback.”

74. There then followed “Assessments”, analysed under the headings “Service Performance and Operational Efficiency”; “Safety and Service Enhancement Measures”; and “Public Opinion on Bus Services”, before it was stated that it was the view of the Commissioner that the grantees “...have been providing proper and efficient bus services and have demonstrated their willingness to invest for further improvements.” In conclusion, it was stated that “...the Administration plans to negotiate with the three franchised bus companies respectively new ten-year franchises to take effect immediately upon the expiry of their existing franchises in 2013.” [SEC-1; page 379-383]

75. Having conducted meetings on 26 July 2011 and 27 March 2012, the TAC advised the Secretary for TH by letter, dated 10 April 2012, that it supported “the Administration’s recommendation in granting new ten-year franchises to the three bus companies upon the expiry of their current ones...” [TD-4, page 1372] Then, in a Legislative Council Brief dated April 2012, the THB informed the Legislative Council that at a meeting on 24 April 2012, the Executive Council had advised and the Chief Executive had ordered that new ten-year franchises be granted to the three grantees to take effect at different dates in 2013. In doing so, reference was made to the fact that the views of the “public and the Traffic and Transport Committees of all District Councils” had been sought and the Legislative Council Panel on Transport and the TAC had been consulted. [TD-4, page 1275]

76. In her evidence, the Commissioner said that recent examples of competitive tendering for new franchised bus routes included the West Kowloon Station and the Hong Kong-Zhuhai-Macau Bridge. However, she clarified that those tenders were restricted to existing franchised bus operators and were not open public tenders. Ms Amy Tse, Principal Transport Officer of the TD, said that the last open public tendering exercise was in 1998, when routes previously operated by

China Motor Bus Company Limited were offered for tender. [Transcript Day 19;
4 October 2018, pages16-26]

CHAPTER 4 – Responses to the widespread publicly expressed concerns as to the safety of franchised buses

A. Sham Shui Po fatal accident-22 September 2017

77. On 22 September 2017, three persons were killed when a franchised bus collided with the rear of taxi, which had stopped at traffic lights, travelled forward and collided with pedestrians standing, who were on the pavement waiting to cross the junction and, having collided with an overhanging canopy cane to a stop. A passenger on the upper deck and two pedestrians on the pavement were killed.

78. Beginning in early October 2017, the TD had a series of meetings with representatives of various unions and franchised bus operators in which the question of a revision of the Guidelines was considered. In February 2018, the TD promulgated a revised set of the Guidelines which provided, *inter-alia*, for a reduction in the maximum number of hours per day a bus captain was permitted to drive a bus.

B. Tai Po Road fatal accident-10 February 2018

79. In the immediate and ongoing aftermath of the fatal accident involving a franchised bus on the Tai Po Road on 10 February 2018, in which 19 persons were killed and many more injured, a range of meetings took place and initiatives were embarked upon.

(i) 12 February 2018-special meeting of the Tai Po District Council

80. At a special meeting of the Tai Po District Council held on 12 February 2018, to address widespread concerns arising out of the accident on the Tai Po Road on 10 February 2018, the Commissioner advised the meeting that KMB had undertaken to provide an accident report to the TD within one month, informing members that the Chief Executive had determined to constitute an Independent Committee of Inquiry. [DC-2, page 786]

(ii) 15 February 2018- the Legislative Council Panel on Transport meeting

81. The Legislative Council Panel on Transport meeting of 15 February 2018 was informed by the Secretary for TH of “the follow-up actions taken by the Administration in the aftermath of the February 10 accident”. In the result, three motions were carried. One of the motions called for the TD to explore the feasibility of retrofitting all seats with seat belts. Another motion urged the Administration not only to explore that possibility but also to make it “compulsory in phases for passengers to wear seat belts.” That motion also called for the modification of speed limiters and the installation of automatic emergency braking. Finally, it urged the franchised bus companies to review the working hours, remuneration and training of bus captains. [SEC-3; pages 1345-1346 and 1360-1362]

(iii) 12 March 2018-KMB accident report

82. On 12 March 2018, KMB provided the Commissioner with the accident report arising from its investigation of the accident of 10 February 2018. [KMB-1(A), pages 98-116]

(iv) Mid-March 2018-Working Group on Enhancement of Safety of Franchised Buses

83. In written submissions, dated 25 April 2018, the TD informed the Committee that in mid-March 2018 it constituted a Working Group on Enhancement of Safety Franchised Buses, which was comprised of the five operators of franchised buses, representatives of three bus manufacturers and representatives of the TD. [TD-1, page 95; TD-5, pages 1761-1763] It is to be noted that the first meeting of the Working Group was held on 13 March 2018, the day after the Commissioner had received the report from the Special Committee of KMB on the Tai Po Road accident.

(v) 10 April 2018-KMB Action Plan

84. By letter, dated 10 April 2018, KMB provided the TD with an Action Plan, which addressed implementation of the key recommendations contained in the accident report, dated 12 March 2018. [KMB-1(A), pages 145-151]

(vi) Early May 2018-CTB's Safety Committee

85. In early May 2018, CTB constituted a *Safety Committee* headed by Mr Samuel Cheng, the Managing Director. [CTB-1, page 54; Transcript Day 3, 29 May 2018, pages 2, 24-27]

CHAPTER 5 – Guidelines on Bus Captain Working Hours, Rest Times and Meal Breaks

86. As noted earlier, the Guidelines in force in respect of the working hours, rest times and meal breaks for bus captains were the revised Guidelines provided by the TD in October 2010 until the second quarter of 2018, when implementation of the revised February 2018 Guidelines began, it being proposed, subject to recruitment of bus captains, that there be full implementation by the second quarter of 2019.

Guidelines : 23 February 2018

87. Although Guideline (1)(a) provides that the maximum duty hours, namely the time from the beginning to the end of the shift including all rest breaks, shall not exceed 12 hours, namely time spent performing driving duty plus short rest breaks in a shift, nevertheless Guideline 1(b) provides for a special shift “arranged to cater for service demand in the morning and evening peaks” which may exceed 12 hours but which is limited to a maximum of 14 hours of duty, albeit that the maximum driving hours remained at 10 hours, but with the requirement for a rest break of no less than three consecutive hours.

88. Guideline (2) provides: [TD-4, page 1086]

“The off-duty break between 2 successive shifts should not be less than 10 hours. The total off-duty breaks in 3 successive shifts, *other than special shift duties*, should not be less than 22 hours.” [Italics added.]

The position of the TD

89. In their written submissions, the TD noted that: [TD-1; page 64, paragraph 6, Footnote 3]

“(M)ore than one half of the FB routes are operating with much more frequent headways during the morning and evening peak periods. During off-peak period, the

demand for these routes is low and thus much less drivers are required. Currently, the FB operators have a total of about 1,500 special shift duties. Removal of all special shift duties will result in a demand for more than 1,000 additional bus drivers, *and recruiting such a large number of additional bus drivers is quite impracticable, let alone the financial costs to be incurred. Besides, the take-home pay of bus drivers who are currently working under special shift duty will be reduced.*" [Italics added.]

90. Of the fact that the requirements of Guideline (2), in respect of minimum off-duty breaks between three successive shifts, do not apply to special shift duties, the TD explained: [TD-1; page 65, paragraph 6, Footnote 4]

“(T)he new requirement that the total off-duty break period in three successive duty shifts should not be less than 22 hours cannot be applied because the existing maximum duty hours of 14 and existing provision of a minimum of 10-hour off-duty break period between two successive shifts are maintained for the special shift duties *to cope with operational needs.*”

The position of the trade unions

91. As noted earlier, in early October 2017, following the fatal bus accident on 22 September 2017 in Sham Shui Po, the TD held meetings with representatives of various trade unions in which they were consulted, *inter-alia*, about the existing Guidelines, meal breaks and rest times.

Motor Transport Workers General Union

92. In his evidence, Mr Lam Tin Fu of the Motor Transport Workers General Union acknowledged that the position taken by the union was as stated in a notice published on 17 October 2017: [TU-1(D), page 289-274]

“It is not advisable to lower the upper limit of the working hours in the work guidelines within a short period without considering the specific situations. Instead, the problem should be addressed by adopting transitional or interim measures;”

93. Mr Lam said: [Transcript Day 9; 30 July 2018, pages 63-64]

“...when we met Frank Chan, the Secretary for Transport and Housing, we made it very clear that 14 hours is the maximum duty hours. It doesn't mean that all bus captains should have 14-hour duties.

The second point is that for the 14-hour duty to be reduced to 12 hours, it will have a huge impact on income. If there is a reduction by two hours per day, it will translate to a reduction of salary by \$5,000 a month. If 14 hours is to be reduced to 12 hours that means bus companies will have to give those reduced hours to some other staff members with shorter duty hours. Say there are 2,000 staff members with KMB, that means they will need another 2,000 staff members, and they will have to employ another 400 people, which cannot be done within a short time.

If they can't employ additional staff, that means the reduced hours will go to staff members with shorter duty hours.

We think that rest time, rest facilities are more important. This will provide a better working environment for bus captains.

So we should not just look at a 14-hour shift. This should not be demonised. We need flexibility. Bus captains will have to apply to work special shift. They are not just being assigned these duties.”

94. For his part, Mr Cheung Tsz Kei acknowledged that other unions had suggested that the limit for duty hours be reduced to 12 hours.

95. Of the need for adequate rest facilities for bus captains, Mr Lai Siu Chung said: [Transcript Day 9; 30 July 2018, pages 56-57]

“For instance, when it comes to Kowloon Bay Depot, the bus driver may live in Tuen Mun so he has to find a rest kiosk or a rest on the bus or go back to the depot. He will have to choose the location. Whether the facilities are sufficient, well, maybe around 70 per cent of them... whether there are sufficient rest facilities, not always the case, the rest kiosk may be very noisy, they may go to 7/11, McDonald's to take a rest.”

The Federation of Bus Industry Trade Unions

96. In his evidence for the Federation of Bus Industry Trade Unions (“the Federation”), Mr Lam Kam Piu confirmed that the Federation advocated reducing the maximum working hours from 14 to 12 hours. For his part, Mr Lau Kai Him pointed to the references made in an Annex to the written submissions of the Federation, in which the practices of work hours in the European Union, the United States of America, Singapore and South Korea were cited in support of the position. [Transcript Day 9; 30 July 2018, pages 119-120; TU-1(B), pages 260-351 to 260-388] It is to be noted, that no written information was provided in the Annex in respect of either the United States of America or South Korea.

97. Of the Federation’s objections to the special shift described in the 2018 Guidelines, Mr Chung Chung Fai complained that the TD had not stipulated whether or not the continuous three-hour break “will come with pay or not” and asserted that: [Transcript Day 9; 30 July 2018, pages 121-122]

“(T)here is no proper ...rest facility for us to take a proper rest. And the bus captains have to sort of roam around during the rest break, so how can they replenish during the rest break?”

98. In their written submissions, dated 24 April 2018, the Federation said “when revising the working guidelines for bus captains, the TD promised to improve the resting facilities for bus captain.” In that context, it was asserted: [TU-1(A), page 226-25]

“...establishment of resting facilities, like lounge room, also involves several government departments, such as Transport Department, Lands Department, Food and Environmental Hygiene Department, Housing Authority, Police and so on, and is subject to approval by the Home Affairs Department and a series of consultation procedures. Taking Quarry Bay (Yau Man Street) Terminal of Hong Kong Island as an example, after nearly ten years’ efforts, a small resting space has still not been approved up to now; the establishment of a lounge room in Lok Wah Estate Terminal has turned into a small-scale opposition.”

99. It is to be noted that in the THB's letter, dated 18 April 2018, to the Federation of Bus Industry Trade Unions, contained in the latter's submission dated 16 July 2018, it was asserted that "Meanwhile, the franchised bus companies have pledged to consider providing suitable salary terms to bus captains during their rest breaks and to further improve the resting environment and facilities for bus captains." [TU-1(B), page 260-341-4]

The KMB Employees Union

100. In their written submissions, KMB Employees Union submitted that the "reasonable maximum working hours per day shall be 12 hours". [TU-1(A); page 90-7, paragraph 5]

101. Mr Wong Kin Wai gave evidence that he worked as a bus captain for KMB driving on a special shift. He did so on a roster of five or six days work followed by one day's leave, working the same hours each day. As an illustration of the routine of his work pattern, he described his work on 26 June 2018, about a month before he gave evidence. He left his home in Kwai Shing West Estate at 06:30 hours and, having travelled by bus first to Mei Foo he travelled by KMB coach to Stonecutters Island bus depot, where he clocked in at about 07:20 hours before he boarded a bus which he drove to Kwai Shing East Estate Bus Terminus from where he began driving on his route at 08:00 hours. At 12:45 hours, he returned to that bus terminus, from where he took a bus to Kwai Shing West Estate Bus Terminus where he began his break at 14:08 hours, resting in the staff facilities. There were no rest facilities at Kwai Shing East Estate Bus Terminus. He resumed driving at 15:55 hours. He was scheduled to finish work 20:43 hours at Stonecutters Island. However, prior to that, he was involved in a traffic accident, as a result of which he had been on sick leave ever since. [Transcript Day 10; 31 July 2018, pages 40-48]

102. In their closing submissions, the KMB Employees Union submitted: [TU-1(A), page 112-127]

“the arrangement of working for 14 hours per day is a policy that disregards safety no matter what excuses are used. Working 12 hours a day, of which 10 hours of driving time is the limit of the human body, as *there will be accumulated fatigue for resting one day only after working for many days continuously* (regardless of those bus captains who only take two or three rest days a month).” [Italics added.]

Monthly-Rated Drivers Union

103. Mr Yan Kin Ming, a KMB bus captain and member of the newly formed Monthly-Rated Drivers Union, gave evidence illustrating his routine work as a bus captain driving a special shift by reference to his movements the previous day. He left home in Mong Kok about 06:00 hours and travelled to the Tsing Yi Island Bus Depot, where he clocked in at 07:00 hours. There, he boarded the bus he was to drive that day and drove to Cheung Hang Bus Terminus and at 07:45 hours drove first to Yau Tong Bus Terminus and then to Discovery Park Estate in Tsuen Wan, where he began to drive the bus on route 42M to and from Cheung Wang Bus Terminus. At about 12:30 hours he parked the bus at Tsing Yi Airport Station and took a break until 15:20 hours during which he rested at the staff facilities at the Cheung On Bus Terminus. From 15:35 hours he drove the bus on the route 41A between Cheung On Bus Terminus and Tsim Sha Tsui East before returning the bus to the Tsing Yi Island Bus Depot where, after refuelling the bus, he clocked off at 21:00 hours before returning home at 21:40 hours that night. [Transcript Day 10; 31 July 2018, pages 120-126]

KMB

104. In his evidence, Mr Patrick Pang of KMB said that “about 23 per cent” of the company’s bus captains were on special duties, namely where “working hours would not exceed 14”. Mr Pang acknowledged that the significant difference between the new and existing Guidelines was that the driving hours were limited to 10 hours and the requirement that “bus captains must have a rest break of no less than three hours and on a continuous basis.” He added “we would never force any colleague to take up any special or split shift duties. All bus captains who are

on such split shift duties do so on a voluntary basis.” [Transcript Day 14; 11 August 2018, pages 65-67] For his part, Dr Norman Leung, Chairman of the KMB, said that “Although this is permitted by the Transport Department, to have 14 working hours per day, we will review that, and our intention is to reduce the working hours from 14 to 13.” [Transcript Day 14; 11 August 2018, page 69]

105. Of the rest facilities available for KMB bus captains operating special shifts, Mr Patrick Pang said: [Transcript Day 15; 12 September 2018, page 81]

“9 per cent of bus captains doing special shifts, that is 134 of them, they will take their rest at the four depots. As Mr Lee⁹ has said, we do have horizontal beds. So 134 of them would have their rest breaks at the depots. For others taking the rest at their bus termini, 17 per cent of them, in other words 262 of them. Then for those who go home for the three-hour rest break, in fact they account for 74 per cent of the special shift captains, 1,117 of them”.

106. The information was a succinct summary of statistical data that had been provided to the Committee at its request of the movements of bus captains performing split shift schedules on 11 August 2018. The information in respect of LWB, stated that 8% of the drivers took their split shifts break at a depot, whereas 31% and 61% respectively to the split shifts at the termini or at home. [KMB-12(A), page 5010]

107. Earlier, Mr Roger Lee, Managing Director of the KMB, confirmed that the four depots were located at Lai Chi Kok, Kowloon Bay, Tuen Mun and Sha Tin and that each of them enjoyed the same facilities as those at Tuen Mun, which had been inspected by the Chairman and the Secretariat, in particular sleeping facilities. [Transcript Day 15; 12 September 2018, pages 55-58]

108. Mr Lee said of the 217 termini used by KMB: [Transcript Day 15; 12 September 2018, page 61]

⁹ “Mr Lee” is Mr Roger Lee, Managing Director of the KMB.

“...we have 50 termini with purpose-built toilets, and we have 66 termini with chemical toilets and about 100 would rely on surrounding facilities, including shopping malls. One terminus has no toilet facilities.”

109. For his part, Mr Patrick Pang said: [Transcript Day 15; 12 September 2018, pages 65]

“I am quite surprised that some termini have no toilets. Even we can add chemical toilets, but for new termini, I am quite surprised that they have not factored in a permanent toilet.

... For example, the West Kowloon Express Railway Station bus terminus. It’s a sizeable bus terminus but there is no toilet. For Hung Luen Road in Hung Hom, there is a new terminus to replace the Hung Hom Pier terminus. It is a public transport interchange; again, there is no toilet, there is no rest kiosk. For the Hong Kong-Macau-Zhuhai Bridge terminus, as we see now, there will be no toilet.”

The position of the franchised bus operators

CTB/NWFB

110. In his evidence, Mr William Chung said that hitherto CTB did not deploy its bus captains on special shifts. Furthermore, he said that although the February 2018 Guidelines permitted the employment of bus captains on special shifts for up to 14 hours on duty, CTB/NWFB intended to limit such a special shift to a maximum of 13 hours on duty when the special shift was implemented in the third quarter of 2018. He said that the decision was taken in light of public concern about safety. The delay in implementation of the Guidelines was brought about by the need to recruit 121 additional bus captains in order to accommodate the new guidelines and in order to provide additional rest facilities for bus captains. [Transcript Day 4; 30 May 2018, page 75] Mr Chung said that it was proposed that a bus captain employed in such a shift would be paid eight hours at the basic salary rate, plus five hours at the overtime rate.

111. Mr William Chung said that there were different practices in respect of special duty shifts in CTB as opposed to NWFB. In the former, bus captains were assigned a roster of driving duties, which might include split-shifts for some of the duties. It was open to a bus captain to swap those duties with a colleague if he wished. On the other hand, bus captains in NWFB had the option of choosing to drive split-shifts or not. If they chose the former, those for the duties assigned to them.

112. In his closing submissions on behalf of CTB/NWFB, Mr Samuel Cheng said: [CTB-1; page 107, paragraph 6]

“We noted that some union representatives had raised objection to the introduction of special duty under the revised Guidelines on Bus Captains Working Hours, Rest Times and Meal Breaks issued by the Transport Department in February 2018. Special duty is necessary for franchised bus companies to cater for the morning and evening peak demand. Despite the fact that the maximum duty spread of a special shift is 14 hours, a rest break of no less than three consecutive hours is required in the duty and therefore, the maximum driving of 10 hours under a special duty is the same as that of a normal duty.”

NLB

113. In their written submissions, dated 27 June 2018, NLB said that they operated 24 routes, 9 of which “require special shift arrangement.” However, NLB went on to assert: [NLB-1, page 51]

“Since our bus captains are mainly living near their sign-on/sign-off location, if bus captains required to perform special shift duty, they most likely return to their home for take rest without difficulties. We have no special facilities provided to bus captain for such special shift resting purpose, but basic facilities, such as microwave oven, refrigerator, distilled water supply, table, seating bench, air-conditioned room in major bus terminus are providing for staff meal break.”

TD

114. In written submissions dated 20 July 2018, the TD said: [TD-1, page 438]

“There are no specific guidelines issued to the FB operators on the provision of toilets and rest facilities. It is because toilets and rest facilities are generally part of the basic facilities to be considered when new bus termini are designed. Requirements and comments from the FB operators on toilets and rest facilities would be incorporated in the design of the bus termini as appropriate.”

115. Of the assistance given to franchised bus operations in securing such facilities, the TD said: [TD-1, page 438]

“When relevant departments/authorities consider and vet the applications for setting up these staff facilities, the TD has been providing appropriate coordination so as to facilitate early installation of such facilities.”

CHAPTER 6 – KMB’s Accident Report and Action Plan

Accident Report

116. In their written submissions to the Committee, dated 24 April 2018, KMB provided the Committee with a redacted copy of a report provided to the Commissioner, dated 12 March 2018, of the “*Investigation to Examine the Bus Accident*” on the Tai Po Road on 10 February 2018 by a Special Committee, comprised of Dr Norman Leung and Dr John Chan, the Chairman and Deputy Chairman of the company, and Mr Andy Tsang. [KMB-1(A), pages 98-116] The provision of that report had been requested in a letter, dated 12 February 2018, by the Commissioner in which KMB had been asked “to conduct an investigation to examine the accident and review all safety-related issues of bus operation holistically”, including the following stipulated issues, namely: [KMB-1(A), pages 117-118]

- “(a) Qualification and recruitment requirements of bus captains, and general and route-specific training to bus captains (full time and part time);
- (b) KMB’s policy on part-time bus captains and details of these captains, including the number of part time captains, deployment and working hours, etc;
- (c) Monitoring mechanism of full-time and part-time bus captains’ performance and measures to enhance the monitoring system on safe driving of buses in operation as well as measures to enhance the awareness of the bus captains on the consequences of the monitoring system, in terms of disciplinary action and other penalties; and
- (d) KMB’s policy on bus captains (full time and part time) with traffic accident and/or traffic-related offence records before and after joining KMB, and any measures to ensure such bus captains are fit for driving.”

117. Part 4 of the report addressed *RECOMMENDATIONS* under various headings, namely:

- A. Recruitment;

- B. Training;
- C. Performance;
- D. Working conditions; and
- E. Psychological support.

118. Part 5 addressed *OTHER MEASURES TO ENHANCE BUS SAFETY*, namely:

- Safety Belts;
- Electronic Stability Programme;
- Geo-Fencing;
- Tilt Alarm;
- Speed Alarm;
- Speed Limitation;
- Condensation; and
- Drowsiness of Bus Captain.

119. The ambit of the matters considered by the Special Committee of the KMB under the heading “Other Measures to Enhance Bus Safety”, as was noted in the preamble to that chapter of the report, reflected matters that had been raised by Members of the Legislative Council, amongst others. Clearly, that was a reference to matters raised by Members of the Legislative Council Panel on Transport in a special meeting on 15 February 2018, some of which matters had been the subject of three unanimous motions of the Panel, at which meeting Dr Norman Leung and Mr Roger Lee, amongst other senior officers of the KMB, were in attendance. [SEC-3; pages 1360-1362]

Recommendations: safety belts and safety devices

120. In its report, the Special Committee made a series of “recommendations” in respect of various safety devices, which it stated that the KMB’s management “will be implementing or further examining.” [KMB-1(A); page 114, paragraph 39]

121. Of safety belts, the report said: [paragraph 40]

“KMB has already requested its suppliers to install safety belts on all seats as a standard feature for new buses ordered after 5 March 2018. As for buses that are currently in service, where certain routes so require, safety belts will be installed on the upper deck of KMB buses phase by phase.”

122. Of Electronic Stability Control on buses and driver’s drowsiness monitoring devices, it was stated that they were being tested (the former) or would be tested (the latter) in trials and, if the results were satisfactory, they would be installed in KMB buses. [paragraphs 41 and 47] Of Geo-Fencing, it was said that tests would be performed on ten buses and, if the testing was satisfactory, consideration would be given to implementing the technology in the fleet and, if implemented, priority would be given to routes with steep slopes or sharp bends. [paragraph 42] Of automatically activated Speed Limitation, involving braking or retardation by use of the gearbox, it was said that it could be installed on new buses after a period of testing. [paragraph 45] It was stated that the problem of driver windscreen condensation would be addressed by either the installation of hot air demisters or heated windscreens [paragraph 46] and that a tilt alarm “will be installed on every bus of the entire fleet.” [paragraph 43] Finally, it was noted that the threshold for activation of the audio and warning light speed alarm in the bus captain’s cockpit had been adjusted from the previous threshold of 75 km/h to 70 km/h.

Action Plan

123. In a letter, dated 19 March 2018, the TD requested, amongst other things, to be provided with an “expected timetable” for the implementation or completion

of study of the recommendations made in respect of measures to enhance bus safety by the use of safety devices at paragraphs 39 to 47 of the Special Committee's report. [KMB-1(A) pages 134-137] In response, by a letter, dated 10 April 2018, KMB provided the TD with an "Action Plan" which addressed the progress and results of trials and, where appropriate, the progress of implementation of such safety devices. [KMB-1(A), pages 138-151]

124. In KMB's Action Plan, dated 10 April 2018, it was stated that it was not feasible to retrofit safety belts on the lower deck of buses, but that ongoing enquiries were being made as to the feasibility of installing them on the upper decks of buses. Of the Electronic Stability Control Device, it was stated that they would be installed on new Euro VI buses and that ongoing enquiries were being made as to the feasibility of retrofitting them to existing buses. It was said that feasibility studies were ongoing in respect of geo-fencing, the threshold to be set for the tilt alarm and the installation of automatic speed limitation system by engaging brakes and the gearbox on new buses; whereas, the bus driver's drowsiness monitoring device would be tested on four buses from the end of April 2018. In fact, the test was carried out in June 2018. [TD-5, page 1803 and KMB-1(A), page 232] The retrofitting of hot air demisters or heated windscreens on existing buses would take place over the following 12 months. [KMB-1(A); pages 150-151, paragraphs 14-21]

CHAPTER 7 – A review of the safety measures on the Tai Po Road

125. At the meeting of the Tai Po District Council on 12 February 2018, at which meeting the Commissioner was in attendance, several District Councillors asked the TD to review the speed limit set on the section of the Tai Po Road in which the accident of 10 February 2018 had occurred. [DC-2(B); pages 783-800, that paragraphs 17, 21 and 24] For her part, the Commissioner said “the Department will consider appropriate accident-improvement measures in consideration of the number and nature of past accidents, road design, site environment, and the impact on the drivers.” [DC-2(B); page 798, paragraph 34(ii)]

Reduction of speed limit

126. In a paper circulated to the Tai Po District Council, dated 9 April 2018, the TD said that it had reviewed the speed limit of the road section of the Tai Po Road between Tsun King Road, Sha Tin and Yung Yi Road and had done so in accordance with the “established regular mechanism to review the speed limit of the road with a view to ensuring road safety and maintaining smooth traffic.” In doing so, the TD had regard to the following factors: [TD-5, page 1617-1 to 1617-4]

- “(a) traffic accident records of the subject road section;
- (b) speeds of vehicles travelling on that road section; and
- (c) road environment and features such as gradient, sightline of motorists, road intersections, pedestrian traffic, etc.”

127. Superintendent Lee Tai Wai testified that two or three years earlier he had attended meetings of the Working Group on Speed Limit Review. It had been convened first in 2000. It was made up of representatives of the TD, the Police, the Hong Kong Automobile Association and the Institute of Advanced Motorists Hong Kong met at the headquarters of the TD, which provided secretarial services

and set the agenda. [TD-1, page 121; Transcript Day 17; 24 September 2018, pages 107-112]

128. Of that exercise, in respect of the section of the Tai Po Road between Chek Nai Ping and Yung Yi, the TD noted: [TD-5; page 1617-2, paragraph 4(c)]

“The traffic accident rate of the relevant road section was on a rising trend and above the overall average traffic accident rate in Hong Kong in the past year. The detected vehicular speeds in recent months were lower than those of the past and generally below the current speed limit of 70 km/hour. In addition, as there have been many large-scale development projects being completed or constructed in Pak Shek Kok in recent years, there has been a significant increase in the vehicular traffic on this road section via the flyover at Pok Yin Road, Yau King Lane and Lookout Link. The proportion of heavy vehicles has been on the rise also.”

129. In the result, noting that the Working Group on Speed Limit Review agreed with the recommendations and that the Highways Department was arranging to direct appropriate traffic signs, the TD concluded: [TD-5; page 1617-2 to 1617-3, paragraph 4(c)]

“In light of the aforementioned new circumstances, the speed limit of the relevant road section has scope for downward adjustment. The speed limit of 70km/hour is recommended to be lowered to 50km/hour for further enhancing road safety.”

130. Finally, TD stated that the new speed limit would come into force on 27 April 2018 and noted: [TD-5; page 1617-3, paragraph 6]

“TD is currently seeking resources and aims to firm up the installation of a fixed speed enforcement camera at the section near Chek Nai Ping of Tai Po Road... before the end of this year.”

Planned installation of a fixed speed enforcement camera

131. The THB, Security Bureau and Hong Kong Police Force’s paper, “*Law Enforcement against Moving Traffic Offences*”, which reference was made earlier,

noted that there were only “24 speed enforcement cameras operating at 130 camera housing locations across the territory.” [SEC-3; page 1420, paragraph 7] In her evidence Chief Superintendent Yau Sin Man explained that “from time to time, the cameras are placed at different housings.” She went on to say that when the THB obtained funding from the Legislative Council the THB “provided a certain ratio”. However, she said that “(t)he latest discussion is such that there should be a camera placed at each housing. I think that is our main focus of the discussion.” In that context, she explained that the delay in locating a fixed speed camera on the Tai Po Road as recommended in the TD’s discussion paper circulated to the Tai Po District Council, dated 9 April 2018, was related to funding which she had been informed had now been obtained by the TD. [Transcript Day 17; 24 September 2018, pages 141-143]

Earlier requests for additional safety measures on Tai Po Road

132. By letter, dated 5 June 2017, addressed to the Traffic Branch Headquarters of the Hong Kong Police Force at Siu Lek Yuen, Tai Po District Councillor Mr Chan Siu Kuen said that he had received complaints “from the residents in the vicinity of Tai Po Road because there are often speeding and unlawful motor racing on Tai Po Road”, as a result of which he requested the installation “as soon as possible (of) a “speed camera” on Tai Po Road near the location between Deerhill Bay and Tai Po Mei”. [DC-2(B), page 840-74]

133. In reply, by letter dated 16 June 2017, copied to senior police officers, police officer Lam Chi Hang replied: [DC-2(B), page 840-73]

“The locations for installation of fixed speed monitoring cameras are mainly determined by the Transport Department. After installation, the Police is responsible for taking enforcement action. This Office understands that the Transport Department currently has no plans to install fixed speed monitoring cameras in the captioned road section.”

134. For his part, Superintendent Lee Tai Wai said that the matter at issue being a speed camera and not speed limits was not a matter that would have been referred

to the Working Group on Speed Limit Review. [Transcript Day 17; 24 September 2015, page 119]

135. At the meeting of the Traffic and Transport Committee of the Tai Po District Council on 13 March 2015, the request of Mrs Juliet Ashton of the Japanese International School, in a letter dated 10 February 2015, that the speed limit in the vicinity of the school near Deerhill Bay on the Tai Po Road be reduced from 70 km/h to 50 km/h was addressed. The request was made in light of the fatal accident of a pedestrian which had occurred on the road outside the school. The representative of the TD in attendance at the meeting said “the TD would examine whether the present speed limit of the road section was appropriate.” [DC-2(B), pages 840-84, 840-91 to 840-93]

136. For his part, Superintendent Lee Tai Wai said that, given that the representative of the TD had dealt with the matter at the meeting, the Police would not have referred the matter to the Working Group on Speed Limit Review. [Transcript day 17; 24 September 2018, page 124]

137. In a letter, dated 24 July 2015, to Mr Wong Kwok Leung of the TD, Tai Po District Councillor Mr Chan Siu Kuen pursued the request “to expeditiously install the “50km” speed limit signs” around the bend of Savanna Garden on Tai Po Road. [DC-2(B), page 840-75] In his evidence, Mr Chan confirmed that the letter was a request that the speed limit be reduced from 70km/h to 50km/h. [Transcript Day 6; 14 July 2018, page 9] Mr Chan said that “the Transport Department did not give me a direct reply. However, I have spoken to them on the phone.” He said that he had telephone conversations with Mr Wong in which he had been told that before the speed limit could be changed a study and consultations had to be conducted. [Transcript Day 6; 14 July 2018, pages 9-11]

138. For its part, in written submissions, dated 13 July 2018, the TD said “the TD did not receive the letter dated 24 July 2015 from the Councillor Mr Chan Siu Kuen according to the record.” [TD-1; page 396, paragraph 11]

139. For his part, Superintendent Lee Tai Wai said that the correspondence was not copied to the Police, who had no records of the matter. [Transcript Day 17; 24 September 2018, page 130]

CHAPTER 8 – Working Group on the Enhancement of Safety of Franchised Buses

Membership and terms of reference

140. Of the establishment of the Working Group and its purpose, the Committee was informed in the TD’s written submissions, dated 24 April 2018, that: [TD-1; page 95, paragraph 4]

“...the TD set up a Working Group (“WG”) with representatives from all FB companies and bus manufacturers in mid-March 2018 to review the technical feasibility and desirability of installing some new safety devices or applying new technology on the safety devices of FB for enhancing protection to bus passengers.”

141. The TD’s submissions went on to assert that the Working Group was also giving consideration to the training of bus captains, stating that the Working Group would: [TD-1; page 131, paragraph 15]

“... review, among others, the training arrangements for the bus captains (including both full-time and part-time). The Working Group will focus on the need to align the **re-training requirements** for drivers who have committed key traffic offences or have traffic accident records.

....

Whilst the review is still underway, we have floated the idea of promulgating a set of guidelines, setting out the key principles and parameters for the induction training and ancillary training of bus captains (covering the structure of the training courses, relative weighting of each of the modules, range of duration, etc.) as well as the internal monitoring and audit mechanism within FB operators. General feedback from FB operator representatives is positive. All the FB operators agree to work towards putting in place a common structure for the induction or ancillary training for bus captains, while reckoning the need to allow some flexibility for different FB operators to tailor make their training courses (such as duration, frequency, etc.) to meet the different scale of operation and operating environments of individual FB companies...”

[Italics added.]

142. By a letter dated 7 May 2018, the TD provided the Committee with a document entitled: [TD-1, page 351]

“Working Group on Enhancement of Safety of Franchised Buses

Scope of Work”

The scope of work of the Working Group was set out in three separate items. The first item was concerned with the training of bus captains and the third with the “technical feasibility, cost-effectiveness, applicability and any other issues relating to the installation of on-vehicle safety device”, including seven stipulated items. The second item stated:

“To examine the technical feasibility, cost effectiveness, applicability and any other issues relating to installation of seat belts on all seats other than exposed seats;”

Of training of bus captains, it stated:

“(1) To review and enhance the training arrangements targeting different types of bus captains (e.g. new recruits, in-service captains and in-service captains having committed traffic offence or having involved in accident, etc.);”

Safety devices

(i) Seat belts

143. Having noted that “... the 3 double-decked bus manufacturers (i.e. Alexander Dennis Limited “ADL”, Volvo and MAN)” have confirmed that it was technically feasible to install seat belts for all seats, the TD’s submissions stated **“all FB operators indicate that they agree to incorporate this requirement for procurement of new buses”** [TD-1; page 96, paragraph 7]

144. The submissions noted that the feasibility and costs of retrofitting seat belts to existing buses was being explored, but noted “the retrofitting work will involve substantial modifications”. [TD-1; page 97, paragraph 8]

(ii) Electronic Stability Control (“ESC”) and Roll Stability Control (“RSC”)

145. Having noted that 170 franchised buses in Hong Kong had been fitted with ESC, the TD’s submissions stated that **“all FB operators agree to incorporate the requirement of installing ESC system (which will include the function of RSC) for procurement of new buses.”** [TD-1; page 100, paragraph 15]

(iii) Speed limiters

146. Having noted that “... all FBs are now equipped with speed limiters to limit the maximum speed of a bus at 70 km/hour”, which operate by cutting off the fuel supply, the TD’s submissions stated “(i)n a free rolling situation, the vehicle speed is not determined by engine revolutions or gearing”. Then, having said that the three bus manufacturers advised that it was technically feasible to “engage retarder” to slow down a bus that was travelling downhill, the TD’s submissions stated **“all the FB operators indicate that they agree to incorporate this requirement for procurement of new buses.”** [TD-1; page 101, paragraphs 16-18]

(iv) Geo-fencing

147. The TD’s submissions stated that geo-fencing provides “a variable speed limiting function” within a predefined boundary, the position of the vehicle being determined by a GPS signal interacting with a digital map, with the speed of the vehicle being determined by a speed sensor. Further, it was stated that retardation of speed was achieved by “... a mechanism that retards the engine ignition timing for a short period or cuts the fuel supply or even applies the braking system.” The submissions stated that, whilst the three bus manufacturers said that system was “theoretically feasible”, nevertheless they expressed reservations about the accuracy of the Global Positioning System (“GPS”) signals as affected by high-rise buildings. Further, it was noted that it was a concern of the franchised bus operators that drivers might be encouraged to rely on the automatic function of the system rather than driving according to the prevailing conditions. [TD-1; pages 101-102, paragraphs 19-20]

(v) *Speed display unit (“SDU”)*

148. The TD’s submissions noted that the speed of a franchised bus, as recorded by the vehicle speed sensor, could be displayed on a screen visible to passengers on the bus, as was the requirement in Public Light Buses (“PLB”). However, noting that the franchised bus operators were concerned that the display of the information “would create conflicts and arguments between the bus captain and passengers”, the submissions concluded by stating “The FB operators consider that the SDU is not conducive in enhancing bus safety.” [TD-1; page 103, paragraph 22]

(vi) *Collision prevention and lane keeping devices*

149. The TD’s submissions noted that collision prevention systems, which relied on one of radar, laser beam or camera, provide an alert based on the distance of the vehicle in front of the vehicle in which the system was installed. Failure to react to the alert activated the braking system. Lane keeping systems deploy a forward-looking camera which detects lane markings on the road and provides corrective steering or braking or a warning.

150. Having noted the reservations of the three bus manufacturers to the use of the lane keeping system, given the necessity in Hong Kong for vehicles to change lanes frequently, and the less than positive experience of some of the franchised bus operators who had conducted trials of the systems, the TD’s submissions concluded “the FB operators do not consider that the installation of collision prevention and lane keeping devices are effective for enhancing the safe operation of FB services.” [TD-1; page 105, paragraph 26]

(vii) *Driver monitoring device*

151. The TD’s submissions noted that systems for monitoring the drowsiness/attention of drivers as they drove deployed cameras and provided a visual/voice alert to the driver. The submissions stated that two franchised bus

operators proposed conducting 3-month trials of such a system on four of their buses, beginning in May 2018. [TD-1; page 106, paragraph 28]

CTB/NWFB-Safety Committee and participation in the Working Group

152. As noted earlier in his evidence, on 29 May 2018, Mr Samuel Cheng, Managing Director of CTB/NWFB, said that about three weeks earlier CTB/NWFB had constituted a *Safety Committee* of which he was the Chairman, which comprised the heads of the Operations, Engineering and Human Resources and Administration departments, Mr William Chung, Mr Paul Li and Mr Gareth Ng respectively, together with the Senior Operations Manager and the Senior Engineering Support Manager. He acknowledged that the Safety Committee had been constituted in consequence of the formation by the TD of the Working Group and that prior to it being constituted some of those responsibilities fell to the head of Operations, who was responsible for service quality and the investigation of bus captains driving behaviour and accidents. The companies had relied mainly on their bus suppliers to acquaint them with proven developments in technology. [Transcript Day 3; 29 May 2018, pages 24-26] However, in 2014 they had acted on their own initiative, having been approached by an Israeli supplier, Neshtech as a result of which they had conducted an unsuccessful trial of Mobileye.

Active speed limiter and electronic stability control

153. Mr Samuel Cheng and Mr Paul Li confirmed that the decisions of the companies to procure new buses fitted with an active speed limiting system and with electronic stability control came after the suggestion had been made on an agenda provided by the TD to the Working Group. The companies had asked their bus suppliers to confirm whether or not retrofitting the devices was feasible and to provide an estimate of costs. [Transcript Day 4; 30 May 2018, pages 38-43 and 47-48]

Geo-fencing

154. Of the geo-fencing system, Mr William Chung said that the accuracy of the GPS signal in Hong Kong was a matter of concern but that the companies intended to obtain devices to test their accuracy for use in a geo-fencing system. [Transcript Day 4; 30 May 2018, page 46]

Collision prevention

155. Mr William Chung said that in 2014 the companies had tested a collision prevention system, Mobileye, but determined that it produced too many false alerts so that the companies determined not to install a collision prevention system or a system that gave an alert for lane changing. [Transcript Day 4; 30 May 2018, pages 50-52]

Driver drowsiness/alertness

156. Of the driver alertness monitoring system, Mr Paul Li said that the companies had made enquiries of three suppliers and were in the process of testing the efficacy of the systems and receiving quotations of the cost. One of the suppliers was Guardian, which the companies were aware, was the company from which the Singapore Land Transport Authority had procured the driver alertness monitoring system mandated for use on franchised buses in Singapore. [Transcript Day 4; 30 May 2018, pages 53-54, 57-58]

Seat belts

157. Of the installation of seat belts on franchised buses operated by the companies, Mr Paul Li said their companies had agreed that new buses delivered from June 2019 would be provided with three-point safety belts for all seats. However, in their written submissions, confirmed by Mr Samuel Cheng in his oral evidence, the companies observed that very few passengers seated in the “exposed

seats”, which were fitted with seat belts, wore those seat belts. Mr Cheng said: [Transcript Day 4; 30 May 2018, pages 59-61]

“If it is not mandated by law, then it is impossible to enforce the law. Currently, there is no requirement that when you are on a bus you have to put on your seat belt. Even if it is mandated by law, in the absence of law enforcement, I’m afraid it’s also a waste of resources.”

158. Mr William Chung said that when the companies raised with the TD their reservations about the limited use of seat belts on franchised buses by passengers, the TD had responded by saying that at least if it was available, a passenger had a choice to make as to whether or not he wore a seat belt. Of the consideration of retrofitting seat belts to existing franchised buses, Mr Paul Li said that ADL had indicated that it was feasible to fit seat belts on the upper deck to their buses manufactured post-2013, but that the preliminary estimate of costs was £15,000-£20,000 per vehicle. Given that the companies had 1,100 such buses, retrofitting seat belts to those buses would cost \$180 million to \$240 million. [Transcript Day 4; 30 May 2018, pages 61 and 67]

159. In his evidence, Chief Superintendent Baker endorsed the view of the TD in respect of affording passengers an option “I think that passengers should have an option to enable them to travel as safely as possible, ... (I)f seat belts are not fitted then that option is denied.” [Transcript Day 17, 24 September 2018, page 48] However, he went on to acknowledge: [Transcript Day 17, 24 September 2018, pages 48-49]

“...it can be seen from personal experience that most people don’t use seat belts on public light buses, and we can expect the same thing on franchised buses, for the reasons that have been discussed: convenience, short journeys, things like that.

So enforcement will be an issue, and I don’t think the police would be able to regularly enforce such regulations, if they existed.”

NLB's participation in the Working Group

160. For his part, Mr James Wong, Managing Director of NLB, acknowledged that NLB had participated in the three meetings of the working group convened by the TD up until then, held on 27 March, 30 May and 12 June 2018 at which there had been discussions in respect of the installation and use of safety devices on franchised buses. [Transcript Day 5; 19 June 2018, page117]

Geo-fencing

161. Of the use of geo-fencing to monitor or control speed, Mr Timothy Wong, Director of the NLB, said that NLB was “open-minded”. He suggested that fewer interferences for roads on Lantau made it more likely that it would be “easier for us to send the GPS data correctly to our server”. Further, he said that “What is important is that for the real-time transmission of the data from the GPS, and for it to interface with the computer on board, it takes time to develop the arrangement.” [Transcript Day 5; 19 June 2018, page 119]

Speed Display Unit

162. Of the use of speed display unit, Mr James Wong expressed concerns as to the likely response of passengers, if they were thereby informed that the bus captain was exceeding the speed limit, “...there is a high possibility, however, that the passengers will confront the bus captains.” Of that, he said “This is the last thing that we would like to see.” Rather, he said “...if there is a technical means to make sure there is no speeding of the buses, then we would prefer to do that.” [Transcript Day 5; 19 June 2018, pages 137-138]

Electronic Stability Control

163. Of the use of an electronic stability control system, Mr Patrick Yeung of NLB said: [Transcript Day 5; 19 June 2018, pages 81-82]

“There are two functions. One is to stop over-steering and to improve the steering. The other is anti-tilting. Before the critical speed is reached, the speed of the vehicle will be reduced to maintain stability of the vehicle.”

164. Mr Yeung said that rather than installing another alarm system, which might disturb the bus captain, “...we aim to enhance the stability of the vehicle itself.” [Transcript Day 5; 19 June 2018, page 82]

Ongoing work of the Working Group

165. Having confirmed in her evidence on 8 May 2018 that minutes were kept of the meetings of the Working Group, when asked to disclose them to the Committee the Commissioner said: [Transcript Day 2; 8 May 2018, page 6]

“As far as minutes are concerned, because as a general rule it is comprised of internal deliberations, and our general principle is that we will not disclose the internal deliberations which may comprise incomplete analysis and research and may affect candid discussion within the government.”

166. Notwithstanding, the initial caution about providing the Committee with the minutes of the Working Group, the Committee was provided first with redacted “Notes” and “Draft Notes” of meetings of the Working Group and its component groups, namely the Technical Meeting on Training Arrangements for Bus Captains and the Sub-Working Group on On-Vehicle Safety Devices for Franchised Buses and finally, apparently with the agreement of all the parties of the Working Group, on 14 September 2018, with an un-redacted version of those documents.

Seat belts

13 March 2018

167. The Notes of the first meeting of the Working Group, on 13 March 2018, at which representatives of all the franchised bus operators were in attendance, stated that, in respect of the issue of the installation of seat belts on franchised buses,

Ms Rachel Kwan, the Assistant Commissioner for Transport said: [KMB-12(A), page 4869-6, paragraph 13]

“Taking the technical feasibility into the account, TD proposed to install seat belts on all seats for new buses and retrofit seat belts on all seats on the existing buses.”

168. It was noted that the representatives of KMB/LWB and CTB/NWFB all agreed that, whilst it was feasible to have seat belts installed on buses at the time of procurement, difficulties arose subsequently. Installation of seat belts on the lower deck would increase the structural loading of buses. The floor of the lower deck was made up largely of fibreglass, which would make retrofitting difficult.

169. The Notes stated that the representatives of CTB/NWFB: [KMB-12(A), page 4869-6, paragraph 16]

“...queried the practicability of installation of seat belts on all seats to enhance passengers safety because it would be difficult for the bus captains to ensure passengers on buses wearing seat belts. Besides, CTB/NWFB also raised the concerns on the need of wearing seat belt by standees who could not be provided with seat belts.”

170. Of the response of the TD, the Notes stated: [KMB-12(A), page 4869-6, paragraph 16]

“TD advised that there were requests for a comprehensive review on seat belt installation on bus after the traffic accidents. *It had been more than a decade since the last review on the installation of seat belt on buses.* The objective of the prevailing discussion should focus on the technical feasibility, cost-effectiveness, applicability and other issues relating to installation of seat belts on all seats other than exposed seats.”¹⁰

[Italics added.]

¹⁰ 2007

It is to be noted that the issue of retrofitting seat belts on franchised buses and, in particular a review conducted of the practice of overseas jurisdictions, was addressed in the paper entitled “*Progress on Measures to Enhance Safety of Franchised Bus Operation*”, dated January 2007, prepared by the TD for the Legislative Council Panel on Transport. [SEC-1; pages 274-283 at pages 275-276, paragraphs 3-4]

23 April 2018

171. The Notes of the second meeting of the Working Group, on 23 April 2018, stated: [KMB-12(A), page 4887-5, paragraph 16]

“KMB/LW supplemented that it would cost about an additional of £5000 for each double-decker to install seat belts for all passenger seats. All bus operators agreed to incorporate this requirement in their new single-decked buses and double-decked buses to be procured.”

172. The Notes went on to state that: [KMB-12(A), page 4887-6, paragraph 18]

“For existing buses, CTB/NWFB and KMB/LW advised that the technical feasibility for installation of the seat belts on all passenger seats at upper deck was still uncertain. Even if it proved to be technical feasible, the subject still needed further deliberation taking into consideration the financial implications and impacts on bus operation (i.e. the availability of bus) due to the time required for the substantial modification of buses.”

The paper stated that information had been collected from six countries and the state of Victoria, the same jurisdictions to which reference was made in the paper prepared for the Legislative Council Panel on Transport meeting of 25 July 2018. The former paper asserted: [paragraph 4]

“So far, we have not found any country that have (sic) legal requirements for the provision of seat belts on passenger seats of buses designed for urban use and are allowed to carry standing passengers. According to the transport authorities of these countries, the benefit of imposing a seat belt requirement in their buses is uncertain.”

The issues of retrofitting seat belts on franchised buses and that of requiring passengers to wear seat belts where they were provided was addressed in the paper entitled “*Progress on Measures to Enhance Safety of Franchised Bus Operation*”, dated July 2007, prepared by the TD for the Legislative Council Panel on Transport. [SEC-1; pages 291-299] Of the latter issue, the paper noted: [SEC-1; page 295, paragraph 8]

“There are also practical difficulties for imposing such requirement on buses deployed on urban bus routes or buses that allow standing passengers. The enforcement of such requirement by the Police on franchised buses is much more difficult than on public light buses since passengers can stand or move around in a bus even when the bus is in motion.”

2004

The issue of the installation of seat belts on franchised buses had been addressed in the paper entitled “*Report on Franchised Bus Operators’ Review of Arrangements to Enhance Safety of Franchised Bus Operation*”, dated May 2004, prepared by the TD for the Legislative Council Panel on Transport. It stated that information had been collected from “6 overseas countries and the European Union” and observed: [SEC-1; pages 183-199 at pages 188-189, paragraph 23]

“Most countries examined require the installation of seat belt on driver’s seat but do not require the installation of seat belts on other seats on buses. For countries where the seat belt requirement applies, urban bus routes are exempted. Studies conducted in Australia and Canada indicated that the additional safety benefit of installing seat belt on all seats in a bus might not be as great as envisaged.”

21 June 2018

173. The Notes of the third meeting of the Working Group, on 21 June 2018, stated: [KMB-12(A); pages 4908-7 to 4908-8, paragraphs 25-26]

“The Meeting noted that it was technically feasible to supply all new buses with seat belts for all passenger seats conforming to relevant international standards and all FB operators committed that all new FBs would be incorporated with seat belts on all passenger seats.

As for existing buses, the Meeting noted that retrofitting seat belts on all passenger seats of the upper deck of some existing double-deck bus models should be feasible. KMB/LW advised that they would retrofit seat belts on all passenger seats of the upper deck or deploy buses with seat belts on all passenger seats on routes which serve long haul passengers or are operating on expressways with limited boarding or alighting activities at the enroute stops.

[Post-meeting note: KMB/LW advised that there would be about 400 new buses with seat belts on all passenger seats by mid-2019. KMB/LW would deploy these buses to the required routes. Retrofitting seat belts to existing buses would depend on the actual situation/requirement at that moment.]”

174. The Notes went on to state: [KMB-12(A); page 4908-8, paragraph 27]

“...the Meeting had discussed and come to the views that having regard to the technical feasibility in retrofitting seat belts on existing buses; operation of FBs in Hong Kong which were mostly deployed on urban routes with standing passengers; and the costs and downtime incurred to retrofit seat belts on all existing buses, as well as overseas experiences, that there were insufficient justifications to make it a mandatory requirement for all buses to be fitted with seat belts on all passenger seats.”

175. Of the stance taken by CTB/NWFB, the Notes stated: [KMB-12(A); page 4908-8, paragraph 28]

“CTB/NWFB was requested to consider retrofitting seat belts on all passenger seats on the upper deck for the buses operating selected bus routes for long haul passengers or

operating on expressways with limited boarding and alighting activities along the routes. CTB/NWFB indicated that it would be difficult for their companies to allocate their buses to solely operate specific routes as their buses would serve a number of routes in a day under their existing operations. In addition, CTB/NWFB *observed that very few passengers would make use of seat belts*, it would not be financially viable to retrofit existing buses with seat belts on all passenger seats. CTB/NWFB requested the Government to fund the retrofit of seat belts to existing buses if that was what the government wanted.” [Italics added.]

Enhancement of the Safety of Franchised Buses: 25 July 2018

176. By a letter, dated 19 July 2018, the TD provided the Committee with a paper entitled *Enhancement of Safety of Franchised Buses*, prepared by the THB and TD for discussion of the Legislative Council Panel on Transport for their meeting of 25 July 2018, stated that it set out the findings and recommendations of the Working Group to further enhance safety of franchised buses. [TD-1; pages 403-404, paragraphs 1 and 3]

Overseas experience/practices

177. Of the issue of the installation of seat belts on passenger seats on franchised buses in Hong Kong, prior to making recommendations, the paper stated that the Working Group had “...reviewed the prevailing overseas practices or requirements on the installation and wearing of seat belts on buses.” The attached Annex stipulated that the jurisdictions reviewed were the United States of America, the United Kingdom, the Netherlands, the state of Victoria, New Zealand, Canada and Singapore. Of the result of that review, it was stated: [TD-1; page 409, paragraph 15]

“Currently, for inter-cities or cross-boundary routes, some overseas jurisdictions (e.g. United States, United Kingdom and Netherlands) have mandated the provision of seat belts for all passenger seats, while others (e.g. United Kingdom, Netherlands, and Australia (Victoria) have imposed mandatory requirement of wearing seat belts.

Nevertheless, *for buses serving urban routes buses or buses allowed to carry standing passengers, none of the overseas jurisdictions that the WG has reviewed thus far have statutory requirement for the provision of seat belts on passenger seats.* According to the transport authorities of those jurisdictions, the urban buses are typically used for short journeys, in terms of both time and distance, and undertaken at moderate speeds on urban routes. Thus, no seat belt requirement at passenger seats on these urban buses has been imposed.” [Italics added.]

178. Of the recommendations of the Working Group in respect of the installation of seat belts on passenger seats on franchised buses, having noted that all the franchised bus operators agreed to do so, the paper stated that it was recommended that “seat belts should be provided for **all seats** in future procurement of **new buses**”. [TD-1; page 409, paragraph 16(a)]

179. Having noted that the bus manufacturers had advised that the floor structure of existing buses, particularly that of the lower deck, was not designed for the installation of seat belts so that the retrofit of seat belts on passenger seats “will involve substantial modification and reinforcement of the bus chassis”, the paper noted that it was their advice that “...it is technically impracticable, if not infeasible, to retrofit seat belts on all passenger seats of both upper and lower decks.” Nevertheless, it was asserted “it should be more feasible to retrofit seat belts on **all passenger seats of the upper deck only in some vehicle models** of the existing double-deck fleet. [TD-1; page 408, paragraphs 12-13]

180. Having noted that the bus manufacturers did not have resources available in Hong Kong to conduct the retrofitting work, the paper noted the reservation of some bus operators, namely that “retrofitting of seat belts would not only incur significant financial implication, but also considerable time and manpower resources, not to mention the need to re-deploy or procure additional buses to maintain the existing bus service level during the whole process.” Of the “significant financial implication” a footnote stated “With the absence of detailed study on the technical details for retrofitting seat belts on all seats in the upper deck,

a rough estimate on the costs of retrofitting a bus is about HK\$200,000 (excluding manpower and overhead costs).” [TD-1; page 409, paragraph 14]

181. Nevertheless, the paper stated that the Working Group recommended: [TD-1; page 409, paragraph 16(b)]

“subject to further assessment on the technical, operational and financial feasibility, consideration may be given to retrofitting all seats in the **upper deck with seat belts on buses deployed for specific bus routes**, i.e. long-haul routes which are operated via expressways with relatively few bus stops.”

A footnote stated that the franchised bus operators said that about 2,000 buses were deployed on such routes.

182. For his part, Chief Superintendent Baker said that he was not aware of the existence of the Working Group nor was he aware whether or not the police had been consulted when the recommendations were being formulated. [Transcript Day 17; 24 September 2018, pages 37 and 40] Of the recommendations that seat belts be fitted on all new buses and that they should be retrofitted to existing buses where that was feasible, Chief Superintendent Baker said: [Transcript Day 17; 24 September 2018, page 47]

“...the police believe that seat belts save lives...

Now, speaking purely from a road safety perspective, we would encourage the use of seat belts as widely as possible.”

183. Chief Superintendent Baker went on to say: [Transcript Day 17; 24 September 2018, page 48]

“I think that passengers should have an option to enable them to travel as safely as possible... if seat belts are not fitted then that option is denied.”

CHAPTER 9 – Recruitment and Training

184. In their written submissions, CTB/NWFB said that in March 2018 they had begun exploring the feasibility and effectiveness of conducting a psychological assessment of bus captain applicants. Mr Gareth Ng of CTB/NWFB said that the companies had held meetings with a clinical psychologist and a psychologist academic and proposed to have a meeting with a professor of mechanical engineering who had relevant experience. [Transcript Day 3; 29 May 2018, page 85]

Training

CTB/NWFB

185. In their written submissions, CTB/NWFB said that all newly recruited bus captains were provided with training. [CTB-1; page 37, paragraph 10] Full-time bus captains who did not possess a bus driving licence were given 15 days of driver training in groups of five recruits to an instructor, after which they sat the bus driver's licence test. If they failed the test, they were provided with another 5 days of driver training. Having passed the test, full-time recruits were provided with "induction training", which included one day in a classroom and 10 to 15 days of driver training with a total of 24 hours of driving. Recruits who possessed a bus driving licence were provided with the "induction training" only. At the completion of their respective courses, the driving skills of all recruited bus drivers were assessed by CTB/NWFB inspectors. Mr Samuel Cheng of CTB/NWFB said that such instructors held driving instructor licences and were very experienced bus captains themselves. [Transcript Day 3; 29 May 2018, page 93]

Refresher driving course

186. Full-time bus captains are provided with refresher training course in a classroom at least once every 3 years. In addition to receiving instruction on defensive driving concepts, emergency handling and the analysis of traffic

accidents, the course included customer services and emotional quotient (“EQ”) management. [CTB-1, page 38]

Remedial driving course

187. On incurring eight or more driving offence points, full-time and part-time bus captains are required to attend a one-day remedial training course. Half a day is spent in the classroom, in which the bus captain is instructed in defensive driving and in maintaining a proper attitude in driving. In the second half of the day, the bus captain’s driving is assessed by a driving inspector. Finally, the bus captain is required to participate in a written driving test. [CTB-1, page 38]

188. In their submissions of 18 May 2018, and in Mr Samuel Cheng’s opening statement in evidence on behalf of CTB/NWFB, it was asserted that, in their review of training, the Safety Committee had identified areas which required improvement. [Transcript Day 3; 29 May 2018, pages 2-3; CTB-1, pages 54-63]

- First, in order to improve the familiarity of bus captains with routes, in future they would be required not only to travel as a passenger on a bus plying a route, to which the bus captain would be assigned, but also they were required to drive that route in a bus without passengers. [CTB-1, page 60, subparagraphs 6(f)-(g)]
- Secondly, in future newly recruited part-time bus captains would be required to undergo sixteen hours of driving training, rather than the current eight hours, and in addition they would receive four hours of classroom training, which would include customer services, EQ management and traffic safety awareness. [CTB-1, pages 54-55; Transcript Day 3; 29 May 2018, page 113]
- Thirdly, in future, part-time bus captains would be required to attend refresher training in the same way as full-time bus captains, namely once every three years. [Transcript Day 3; 29 May 2018, page 114]

189. In his evidence, Mr Samuel Cheng accepted the fact that 23.7% of bus captains who had undergone a remedial driving course were involved in culpable driving accidents within 6 months was a matter of concern. He said that the

companies plan to perform a more detailed analysis of the causes of each accident. [Transcript Day 3; 29 May 2018, pages 102-103]

NLB

190. In his opening statement at the hearing on 19 June 2018, Mr James Wong of NLB said of measures that NLB “have implemented and will implement” in recent months were: [Transcript day 5; 19 June 2018, page 2]

“First, increasing the number of hours and the instructor-to-trainee ratio of driving training for our bus captains; ...

third, setting up a Bus Captain Training School to assist qualified persons in obtaining bus driving licences; and

fourthly, making reference to international standards in raising the standard of safe driving.”

191. In their written submissions, dated 24 April 2018, NLB stated that they only recruited bus captains, either full-time or part-time, who held bus driving licences. [NLB-1; page 22, paragraph 10] Those bus captains were provided with five days of training, which recently had been increased to six days. Finally, bus captains were required to pass an assessment made by an NLB driving instructor before they began duty. Refresher training including service enhancement training, of one to two days was provided to serving bus captains. Training of one to three days was provided to those bus captains who were found to be inadequate. [NLB-2; page 467, Annex 10; Transcript Day 5; 19 June 2018, page 67]

192. However, in his evidence, Mr Richard Lee said that NLB was in the process of establishing a Training School for bus captains and had applied to the TD for restricted instructor licences for franchised buses (“GP2”), so that NLB would be able to train bus captain recruits to sit the bus driving licence examination. It was proposed that the number of bus driving instructors be increased from four to six. If the Training School was established as envisaged,

training of bus captains who already held bus driving licences would be increased to nine days and training of those with a private car licence but not a bus licence, training would be increased to eighteen days. [Transcript Day 5; 19 June 2018, pages 67-72]

193. Mr Timothy Wong explained that the plan outlined by NLB in the FPP of seeking the cooperation of other franchised bus operators to train NLB bus captain recruits had been overtaken by the recruitment of Mr Richard Lee in 2018. [Transcript Day 5; 19 June 2018, page 76]

Part-time bus captains

CTB/NWFB

194. Part-time bus captains were recruited mostly from those who held bus driver licences. Those recruits who had not worked previously for franchised buses were given 2 days of bus driving training, with a total of 8 hours driving, to familiarise them with bus models and the routes to which they would be assigned.

195. In their written submissions, dated 27 April 2018, CTB/NWFB offered an explanation for the employment of part-time bus captains. There are, they said, two peak periods of demand for bus services, namely 7:00 a.m. to 9:00 a.m. and 5:00 p.m. to 8:00 p.m. Of the consequences, it was said: [CTB-1; pages 28-29, paragraph 4(a)]

“...quite a number of our buses are operating for approximately 14 hours a day. Splitting these 14 hours between a full-time bus captain working for 10 hours and a part-time bus captain working for 4 hours can achieve the best operational efficiency. Otherwise we would need to deploy to 2 full-time bus captains each working for 7 hours a day, which is below their basic duty length of 8 hours. This will incur wastage and create additional burden on recruitment.”

196. In their written submissions, dated 27 April 2018, CTB/NWFB stated that their respective establishment of full-time bus captains was 2,193 and 1,607, whilst

they had 346 and 314 part-time bus captains respectively registered with those companies. [CTB-1; page 29, paragraph 4(a)]

197. In their written submissions, dated 18 May 2018, CTB/NWFB stated: [CTB-1; page 55, paragraph c)]

“Starting from 1 June 2018, to improve monitoring of rest time of part-time bus captains before commencing driving duties, we will mandatorily require all part-time bus captains, including those in-service and new recruits, to declare details of the working hours and working days pattern of their principal employment.”

Those details are to be obtained in written form from the current part-time bus captains and are to be obtained from future part time recruits.

198. Together with their letter to the Committee, dated 8 June 2018, CTB/NWFB provided a copy of a document entitled ‘DECLARATION FORM OF PART-TIME BUS CAPTAIN’. The form required a part-time bus captain to declare “all outside jobs”, including the name of the employer and the position occupied by the part-time bus captain. For some reason, the first information required was in respect of monies earned in outside employment. Secondly, detailed information was required in respect of the specific hours worked each day of the week, both in respect of daily “basic hours” and “overtime work” and whether that work was “shift” work. Further, information was required in respect of “rest day”. [CTB-3; page 571-1 to 571-2]

NLB

199. In their written submissions, dated 24 April 2018, NLB stated that in February 2018, NLB employed 173 full-time bus captains and 50 part-time bus captains. The ratio of the employment of part-time bus captains in relation to the employment of full-time bus captains had increased significantly from 2015, when NLB employed 145 full-time bus captains and 26 part-time bus captains. [NLB-1, page 17] In his evidence, Mr James Wong said that the choice of whether to work full-time or part-time was a choice for the applicant for employment, not for

NLB. However, he suggested that, among other reasons, the explanation for that ratio of employees "...probably it is due to the fact that the pay isn't really that different". [Transcript Day 5; 19 June 2018, pages 6-7]

200. Of the information available to NLB of the nature and hours of work of other employment of part-time bus captains, Mr James Wong acknowledged that the application form for employment contain no requirement to state the number of hours worked elsewhere. [Transcript Day 5; 19 June 2018, page 11] However, Mr Benny Chan said:

"...we have enhanced the requirement that part-time bus captains declare to us their principal employment as well as the number of working hours, so as to safeguard us, so that we can meet the requirements of the Transport Department."

Mr Chan went on to say "it was introduced recently in June." [Transcript Day 5; 19 June 2018, page 9]

201. For his part, Mr James Wong said that those questions had been posed of part-time bus captains, some of whom had declared their other employment and the hours that they worked in that employment. He said: [Transcript Day 5; 19 June 2018, page 14]

"From the initial information we have received, there are part-time bus captains, according to them, that they are bus captains working for a hotel. According to the information supplied to the company, they work on average five days a week. Per working day, the average driving time is about eight hours. That is just an example."

Mr James Wong went on to say:

"There are 30 or so of them who have replied to us. It's about 80 per cent of our part-time bus captains, those 30 or so bus captains."

202. Notwithstanding those statements, the written submissions of NLB dated 27 June 2018, to which was attached a sample of the "new application form", stated:

"The new form will be introduced by year 2019."

KMB

203. In their Accident Report, dated 12 March 2018, the Special Committee of KMB stated under the heading Recruitment: [KMB-1(A); page 104, paragraph 13]

“Discontinuance of Employment of Part-Time BCs¹¹”

KMB has discontinued the employment of all part-time BCs whose working hours fall below 18 hours per week. However, in order to meet the demand for bus services during peak hours, KMB has already offered the previous part-time BCs the option to convert to contract hourly rated BCs or to take up alternative duties in the Company.”

Part-Time Drivers Union

204. In their opening statement to the Committee in their evidence, the Part-Time Drivers Union explained that the union had been formed in consequence of the action taken by KMB: [Transcript Day 10; 31 July 2018, page 142]

“We are a group of part-time bus drivers who got together after the tragic accident on 10 February. Shortly after that, KMB have stopped duty allocation to us, and we were very upset about this. Because the immediate reaction after the accident was the driver was a part-time bus driver, and as a result, we as a group of part-time bus drivers were under immense unjust, unfounded and untrue attacks from other trade unions, other members of the public, which has led to a suspension of duty allocation to us.”

205. In their closing written submissions, having reiterated those sentiments, the Part-Time Drivers Union welcomed the changes that had taken place in “how franchised bus companies handled part-time bus captains”.

206. Of the changes in CTB/NWFB, they noted that the declaration required of part-time bus captains “contains information as to the name of full-time employers, daily and weekly work hours, income from such positions. These forms are acknowledged and signed by senior management with copies returned to the

¹¹ “BC” means “bus captain”.

respective part-time bus captains”. Also they noted, with obvious approval, that annual refresher courses were now available to part time bus captains, which courses had previously been available to full-time employees only. [TU-1(D), page 294-20]

207. Of the changes in KMB, they said that: [TU-1(D), page 294-20]

“1-Part-time bus captains are required to make declaration on details about their full-time employment on an annual basis and undertake to notify the companies (of) any changes immediately;

2-Part-time bus captains are required to give consent to the companies to access their records in demerit points on an annual basis; and

3-Compulsory instructor supervised route training are offered to part-time bus captains on routes not previously served by such captains.”

CHAPTER 10 – NLB’s use of non-franchised buses with drivers

208. In their written submissions, NLB said that, with the agreement of the TD, in order to accommodate an upsurge in passenger usage at weekends and public holidays, NLB hired non-franchised buses and their drivers. The arrangement with the TD had been in place for over 20 years and was renewed twice per year and currently permitted for the use by NLB of 80 and 50 non-franchised buses, identified by their registration numbers, on Sundays/public holidays and Saturdays respectively.

209. Operation of the buses by NLB was subject to conditions imposed by TD, including that: [NLB-1, page 38]

“(d) the buses must be equipped with similar on-vehicle facilities such as, coin collection box, route destination display etc. for operating franchised service”

Mr James Wong said that he understood that the provision required, amongst other things the installation of a tachograph and a speed limiter.

210. Mr James Wong said that NLB had entered into a contract for the provision of the buses and drivers with Kwoon Chung Motors Company Limited (“KCM”), NLB’s ultimate holding company. [NLB-2, page 491] KCM shared the Openmatics reports in respect of the installation and commissioning of tachographs on the buses which NLB hired. [NLB-2&3, pages 500-501]

211. Mr James Wong acknowledged that there was no similar requirement of KCM to inform NLB of the qualifications and driving records of bus captains provided together with the hired buses. [Transcript Day 5; 19 June 2018, page 34] He said that NLB had yet to make a decision as to whether or not to require the provision of the information from KCM. [Transcript Day 5; 19 June 2018, pages 37 and 38]

212. In answer to the question of the Committee of whether or not “NLB is required to ensure that bus captains hired together with non-franchised buses from Kwoon Chung Motors Company Limited... comply with the ‘Guidelines on Bus Captains Working Hours, Rest Times and Meal Breaks’ ”, TD said in a reply, dated 20 July 2018: [TD-1, page 436]

“The Guidelines are not applied on NFB¹² drivers. The TD did not require NLB to provide the reports of compliance with the Guidelines in respect of the drivers of NFBs as they are not the employees of NLB. That said, NLB has taken initiative to take into account the Guidelines in arranging driving duty of the NFB drivers in actual operation.”

¹² “NFB” means “non-franchised bus”.

CHAPTER 11 – Tachograph/Telematics or ‘Black boxes’

The Hong Kong Institution of Highways and Transportation

213. In their written submissions to the Committee, dated 17 May 2018, the Hong Kong Institution of Highways and Transportation said of the use of technological devices to assist in bus safety: [MISC-1(C), page 156-3]

“Driving behaviour is difficult to control, however some kind of device shall be in place to monitor the vehicle and driver along the whole journey, this may help the operator to monitor and control individual drivers driving behaviour. Such device is already available and shall be installed on all buses. Bus is running along fixed routing, it is feasible to check the driving manner along the route to identify whether the bus has been driven dangerously. Currently technology shall be able to provide on-line real-time monitoring, should any abnormal driving occur, warning alarm to the driver could be activate (sic) and send to operator’s central control room for immediate action. This may help to prevent accident caused by dangerous driving.”

214. Surprisingly, the technological devices considered by the Working Group did not include a consideration of new tachograph/telematics system.

CTB

215. In its submissions CTB and NWFB said that they intended to implement an “update to black-boxes with real-time capability” in the third quarter of 2018. The “real-time” capability of the system was described as being that the “black box system will emit an instant audio warning (i.e. a beeping sound) automatically through the black-box control panel in the driver cab to alert the bus captain whenever an overspeed event occurs.” [CTB-1; page 58, paragraph 4] Mr Kenneth Lit explained that the data would be transmitted to the company’s computers from the franchised bus every 15 seconds.

216. Mr Kenneth Lit said that in about 2015, in advance of the renewal of the CTB franchise, the TD made it a requirement that the company be in a position to provide an ETA of a bus to passengers. At their own initiative in 2017, the companies started to install a system called Real-Time System 2, which system would alert the bus captain when the bus was speeding. No such alert was given in respect of any other bad driving misbehaviour.

217. Of the current system, Mr Samuel Cheng said that the black boxes on buses recorded data in respect of excessive speed, acceleration, deceleration and, for example, whether or not the bus doors were open. An excessive speed report was generated when the bus travelled for 10 consecutive seconds at over 75 km/h and at over 55 km/h on 25 selected sections of roads with a speed limit of 50 km/h. He said that it was intended that the audio alert to be given to the bus captain of over speeding was to be limited to the existing parameters. The stipulation as to the time period of speeding was determined after consultations with the trade unions. One consideration was a need to avoid a bus captain braking sharply, if he noticed that he was travelling over the speed limit, rather than reducing speed more smoothly over a period of time.

218. Mr William Chung accepted that the 25 stipulated sections of road represented a very small proportion of the roads travelled on all of the routes plied by the companies. Mr Cheng said that it was planned to introduce into that system of monitoring of speeding additional randomly selected sections of roads to which a 50 km/h speed limit applied, but before that was done discussions would be held with trade unions.

219. Mr Cheng confirmed that the criteria employed in stipulating the 25 sections of road were that they were continuous downward slopes of significant length; or had sharp bends; all were the site of serious or frequent traffic accidents. Mr William Chung said that the view was taken in the companies that buses travelling at over 50 km/h on those sections of roads posed some danger. In June 2013, the initial eleven sections of roads had been identified. Subsequently, in September 2014 a further three sections had been identified and, finally, in March

2018 a further eleven sections of roads had been identified. All those sections of roads were described in detail in the Bus Captain Handbook, which was available to all bus captains.

220. Mr Samuel Cheng explained that currently the data from the black boxes installed on buses was uploaded to the computers of the company at the depots of the companies after the bus had completed service for the day. An automatic report of speeding was generated and over the ensuing period of about five days the driver was identified from data generated by the driver's use of an Octopus card when he began duty. Then, an email was generated automatically and sent to the operations division of the particular bus franchise in the companies. Thereafter, the appropriate disciplinary procedure of the identified driver was engaged.

221. Mr Samuel Cheng said that only in response to a passenger complaint, or when there had been an accident involving a franchised bus, was data other than excessive speed examined. No automatic reports were generated in respect of that data. [Transcript Day 4; 30 May 2018, page 18]

222. In their submissions, dated 15 October 2018, CTB said: [CTB-1, page 98]

“From 18 September 2018, we started monitoring the speed of our buses on all roads by applying the “Speed Limit” data provided by the Transport Department. The criteria for generating over speed event reports remain unchanged as follows:

- Speeds of over 55 km/h for more than 10 consecutive seconds on road sections with speed limit of 50 km/hr; or
- Speed of over 75 km/h for more than 10 consecutive seconds on road sections with speed limit of 70 k/hr or above.

We also introduced a real-time audio alert to remind bus captains to slow down under the following situations:

- Speed of over 53 km/hr for more than 5 consecutive seconds on road sections with speed limit of 50 km/hr; or

- Speed of over 73 km/hr for more than 5 consecutive seconds on road sections with speed limit of 70 km/hr or above.

We are liaising with our black-box supplier on the feasibility of providing real-time alert to bus captains when a harsh braking or sudden acceleration event occurs. We are studying the feasibility of generating harsh braking and sudden acceleration reports automatically to identify bus captains with frequent jerky driving events.”

KMB/LWB and NLB

223. In their additional written submissions, dated 24 April 2018, KMB asserted that: [KMB-1(A); page 91, paragraph 19]

“Since 2015, KMB has taken the initiative to equip its buses with speed limiters, blackboxes and surveillance cameras to monitor the driving performance of bus captains as well as to assist in accident investigation. Such equipment has subsequently become part of the franchised requirements.”

224. In response to questions from the Committee that the particular franchise requirements be identified, in their written submissions, dated 18 May 2018, KMB asserted: [KMB-1(A), page 175]

“During the discussions of the new franchise, the Government has requested KMB to commit to adopt a list of enhanced safety features including but not limited to on-bus electronic data processing device (also known as black box), speed limiter and surveillance cameras, as the standard provisions when acquiring new buses (please refer to extracts of the letter from TD dated 10 March 2017...). KMB has given its undertaking to TD to implement these commitments under the new franchise.”

225. At the request of the Committee, KMB provided a copy of their letter to the TD, dated 10 March 2017 in which they undertook to abide by those commitments. Under the heading “*Provision of On-Bus Facilities*” and annexed to the letter stated: [KMB-9(B), page 3997]

“Pursuant to Clause 7 of the new franchise, KMB has committed:

- (a) to adopt the following features and facilities as the standard provisions when acquiring **new buses** after granting of the new franchise:

Service enhancement, barrier-free and elderly-friendly features and facilities:

(i)

...

(x)

Enhanced safety features:

(i)

..

(iii) Electronic Data Processing Device;”

226. For his part, Mr Leung Kin Wang agreed that KMB had not been asked by the TD to commit to any enhanced use of the black box or to any enhancement of its capabilities. [Transcript Day 12; 7 August 2018, page 80] There was no commitment by KMB to do anything. It is to be noted that the Legislative Council Brief, dated 28 March 2017, prepared by the THB to inform the Legislative Council of the circumstances in which the Chief Executive had ordered the grant of a new franchise to KMB, whilst referring at some length to the KMB’s service commitments, made no reference to a commitment by KMB to any enhanced safety features of the black box. [TD-2&3, pages 496-569] For its part, the TD acknowledged in respect of KMB’s 2017 commitments that “there was no particular updating in the written technical requirements in respect of electronic data processing devices/black boxes (which) (sic) are the same as those made in October 2003.” [TD-1; page 431, paragraph 6]

Openmatics: supplier of telematics systems to KMB and LWB

227. In a letter to the Committee, dated 26 June 2018, Zhong Lun Law Firm, acting on behalf of ZF Friedrichshafen AG and its subsidiaries ZF Services Hong Kong Limited and Openmatics s.r.o. said that on 16 April 2013 Openmatics had

entered into a contract to supply telematics systems to KMB and LWB. [BM-1, pages 64-72] On 14 July 2018 Mr Jan Kuliš, a systems engineer employed by Openmatics gave evidence by video link from Czech Republic. [Transcript Day 6; 14 July 2018, pages 136-177]

228. The telemetry units Openmatics supplied to the companies were first the “Mozart Box” and secondly, after it had been introduced in the summer of 2015, its successor the “Bach box”. The latter equipment had been supplied to KCM. By use of a driver feedback device, those units were capable of providing visual and acoustic feedback second by second of the fact that the vehicle had reached the threshold values in respect of speed, acceleration, deceleration, engine idling and the tilting angle of the bus. A beeping sound was emitted and a LED light lit if the respective calibrated thresholds were reached. It was necessary to calibrate the unit by inputting threshold values.

229. A screenshot depicted the calibrated threshold values of the Openmatic’s telemetry unit fitted to the KMB franchised bus involved in the accident on the Tai Po Road on 10 February 2018:

Configuration of acceleration values

| | |
|-----------------------------------|---------------------------|
| *Acceleration signal source | [change in vehicle speed] |
| *Acceleration [m/s ²] | [1.15] |
| *Deceleration [m/s ²] | [2.3] |
| *Tilting angle [degrees] | [44.0] |

Configuration of excessive speed values

| | |
|------------------------|--------|
| *Speed [km/h] | [75.0] |
| *Speed in areas [km/h] | [75.0] |

Configuration of idling values

| | |
|------------------------|----------|
| *Idle time [min]/[sec] | [15] [0] |
|------------------------|----------|

Configuration of engine values

*Engine revolutions [RPM] [3000]

230. Mr Kuliš explained that, whilst the driver audio and visual alert system was enabled for deceleration and acceleration, values of that data were not recorded. That was determined by KMB. Acceleration and deceleration were determined from changes in the vehicle speed, which itself was determined from the speedometer. Mr Kuliš said that the value of 44°, which was inputted as the tilting angle, in effect deactivated that warning. He said that the equipment was capable of handling two different speed values “For example, you can have some areas with 50 and some with 70”. [Transcript Day 6; 14 July 2018, page 150] A feature, which was not depicted in the screenshot, enabled details of the different areas to be configured. An algorithm was used to calculate the position if the GPS signal was lost temporarily. The fact that the same speed was inputted into both calibrations for speed meant that the feature was not being used.

231. Mr Kuliš said that an application running on the server was capable of receiving events as they appear, together with information as to the position where the event occurred. This particular unit was calibrated to transmit data to the server every 30 seconds, which calibration was a matter of choice. The lowest useful transfer rate was about 5 seconds. Such transmission of data could be achieved by an Openmatics portal and additional applications on the server or by the customers’ provision of its own IT system, the latter being the method employed by KMB. The system as configured could be used in conjunction with a digital map to generate alarms in respect of two different speed limits. However, by the application of software it could easily be extended to support more speed limits.

232. Mr Kuliš said that the data was susceptible to being analysed to produce a report of the driver behaviour characteristics of a particular driver, for example in respect of speeding events, acceleration and deceleration. In Germany, those and other values were analysed to examine the driving behaviour of truck drivers.

Finally, he said that software could be uploaded to analyse data in the telemetry units to log the drivers driving time.

KMB

233. In his evidence for KMB, Mr Leung Kin Wang said that, although the black box in the bus involved in the accident on 10 February 2018 on the Tai Po Road did not make a record of acceleration and deceleration, the data was transmitted to the KMB server, where it could be accessed. [Transcript Day 12; 7 August 2018, page 93] He said that the thresholds of deceleration, acceleration and speed, namely 1.15 metres per second squared, 2.3 metres per second squared and 75 km/h, and described by Mr Kuliš as having been set in that black box had been provided by KMB. He said that KMB was not aware that the speed of 75 km/h had been set in the configuration for ‘Speed in areas’. On the other hand, KMB was aware of, but had not provided, the ‘Tilt’ value of 44°. KMB had been unable to obtain any tilt reference value from ZF. Those thresholds had been set in the black boxes for all of the KMB fleet at the time. [Transcript Day 12; 7 August 2018, pages 101-103] On 23 February 2018, the threshold for speed had been changed from 75 km/h to 70 km/h. [Transcript Day 12; 7 August 2018, page 97]

234. Mr Godwin So said that the delay in transmitting data recorded in the black box to the KMB server had no impact on analysis of the data because “...we do not perform real-time analysis”. [Transcript Day 12; 7 August 2018, page 89]

235. Mr Leung Kin Wang acknowledged that it would be desirable for KMB to have a system which alerted the bus captain not only as to the fact that the bus he was driving was travelling in excess of the 75 km/h speed limit but also one which informed him if the bus was travelling in excess of a 50 km/h speed limit. [Transcript Day 12; 7 August 2018, page 104]

Digital map

236. In that context, Mr Leung King Wang said that KMB had been glad to learn of the existence of a digital map available from the TD. He learned that from a letter, dated 7 June 2018 sent by the TD to KMB, informing KMB that a digital map was available. He thought that it came about because of the concern expressed by the Committee. [Transcript Day 12; 7 August 2018, pages 107-109] As a result, KMB arranged for Openmatics to assist KMB to incorporate the digital map into the black box system and a test had been performed to confirm that real-time information could be provided of the fact that the bus had exceeded the speed limit at a particular place. The update of KMB's Action plan described a test having been arranged with Openmatics on 31 July 2018, of which it was said: [KMB-1(A); page 231, paragraph 16]

“The test drive showed that speed alert could be produced according to the defined 50km/h and 70 km/h speed limit zones.”

237. Copies of the TD's letter dated 7 June 2018 were sent to all the franchised bus operators. It stated, *inter-alia*: [TD 1, page 477]

Road Network with Speed Limit Information

I refer to our recent discussions on the proposed on-vehicle safety device of **Speed control by Global Positioning Service** (sic) (“GPS”) or **geo-fencing** during the meetings of the Working Group on Enhancement of Franchise Bus Safety.

I am pleased to inform you that dataset of speed limits under the road networks managed by TD in the geographical information system (“GIS”) format is already available to download from DATA.GOV.HK (<http://www.data.gov.hk>)...”

You may utilise these GIS data packages to explore the technical feasibility on speed control by GPS or geo-fencing with your bus manufacturers or other appropriate party(ies) and conduct relevant trials. Apart from the said on-vehicle safety advice, I understand your company currently also utilize the blackbox information to monitor the driver behavior and we trust that these GIS data package could provide you a more precise information on relevant speed limits of your bus routes.”

238. In their written submissions, dated 20 August 2018, the TD explained that the “Speed Limit” and “Road Centreline” data were first produced by the TD in 2010, whilst the digital base map was prepared and updated by the Lands Department. In July 2008, TD had established an internal computer system “to maintain road traffic information, including road speed limit and road centerline data”. Recognising that the data had the potential of a wider usage, the data was first made available for sale to the public on 22 November 2010, on which date an announcement to that effect was published on the TD website, and maintained thereafter, and letters were sent to potential buyers inviting them to subscribe, including NWFB (Attention: IT manager) and KMB (Attention: Head of Customer Service Department). [TD-1; page 481, paragraphs 3-6; TD-5, pages 1752-1755] However, the companies did not subscribe to the service.

239. The TD explained further that on 18 January 2018, it was announced on TD’s website that the data were now available to the public “to download free of charge via DATA.GOV.HK”. On the same date, letters were sent to subscribers, but not to NWFB and KMB because they were not subscribers. [TD-1, pages 481-482].

KMB’s use of the data obtained by the black box to monitor driver behaviour

240. In their written submissions, dated 18 May 2018, KMB explained that the information collected by the on-board black box, which was transmitted to the company’s server, in respect of the manner in which the bus was driven was examined, together with other data obtained from other systems as to the bus registration number and route number. It took “about 10 days to retrieve such data for analysis”. [KMB-1(A), page 168]

241. In his evidence, Mr Leung Kin Wang said that the time taken for the exercise of retrieval and analysis had now been reduced to four days. Of the mechanics of the exercise, he said: [Transcript Day 12; 7 August 2018, pages 136-137]

“We need to provide the interface between the systems so that we can tell the bus driven by a particular bus captain, the relevant locations and the performance.

Then we need to do more processing, to know which zones are 50 kmh sections. So we need to have the FMI, the fleet management information system, which can tell the journey, the locations, and which road sections are 50 kmh which are 70 kmh. So we need to know the route, the bus captain, the data of the journey, and so on. That’s why it’s complicated.

So if we have a digital map and everything is stored in the black box, we can do it much more quickly, and we will be able to produce the same report in one day.”

242. Mr Leung acknowledged that the necessary technology to simplify that task had been available for a long time. Although asked, he did not offer any explanation as to why use had not been made of it earlier.

Speed exception reports

50 km/h speed limit

243. Mr James Wong explained that an exception report was generated by the black box if the speed exceeded a threshold for a predetermined amount of time. In a speed limit area of 50 km/h, if the speed exceeded the limit in the range of between 56 and 65 km/h an exception report was generated after 30 seconds of speeding, whereas speeding in the range of between 66 and 75 km/h generated an exception report after 15 seconds of speeding. Finally, an exception report was generated after 2 seconds if the speed was in between 76 and 79 km/h. [Transcript Day 12; 7 August 2018, pages 134-135; KMB-1(B), page 572]

244. In their submissions to the Committee, dated 3 October 2018, KMB clarified that the thresholds of time and range of speed described in evidence by Mr James Wong were ones that were applicable on and after 1 August 2018 only. Prior to that date an excess speeding report was generated when a franchised bus travelled at speeds on and between: [KMB-1(B); page 572, paragraph 3(A)I]

- 56 and 65 km/h for 60 seconds or more;
- 66 and 75 km/h for 30 seconds or more;
- 76 and 79 km/h for 30 seconds or more; and
- 80 and 89 km/h for two seconds or more.

70 km/h speed limit

245. Mr James Wong said that in a speed limit area of 70 km/h, an exception report was generated when a franchised bus travelled at speeds between 76 and 79 km/h for 30 seconds or more and at speeds between 80 and 89 km/h for two seconds or more. Again, KMB clarified in their letter, dated 3 October 2018, that the thresholds were applicable on and after 1 August 2018 only and that prior to that date the thresholds were 60 and two seconds respectively. [KMB-1(B); page 572, paragraph 3(A)II]

246. On each occasion of excessive speeding within the parameters described, the maximum speed of the bus and, if it was available, its GPS coordinates of latitude and longitude were captured in the exception report.

Real-time monitoring of the bus captains driving behaviour

247. In the context of Mr Kuliš's evidence that, given that data could be transferred with a delay of only five seconds to the server from the black box on KMB's buses, it was possible, with the use of additional software to conduct real-time monitoring of the bus captains driving behaviour the issue of whether or not the use of its black boxes in their way was canvassed with KMB by counsel assisting the Committee. Mr Leung Kin Wang said that the matter had been considered, but rejected as: [Transcript Day 13; 10 August 2018, pages 50-51]

“not practicable because we have 4,000 bus captains. We cannot have that number of supervisors to watch over 4,000 bus captains.”

248. At the request of the Committee, KMB produced a set of exception speeding reports for the period 1 to 7 May 2018, which provided data under a range of headings, with the employee name and number redacted: [KMB-9(B), pages 3993 to 3995-3). One of the entries illustrates the operation of part of the system: [KMB-9(B), page 3995-1]

| <u>operating date</u> | <u>bus no.</u> | <u>location from</u> | <u>dept time</u> | <u>route no.</u> | <u>run no.</u> | <u>shift</u> |
|-----------------------|----------------|----------------------|------------------|------------------|----------------|--------------|
| 01/05/2018 0:00 | TW5352 | Island Resort | 01/05/2018 19:26 | 606 | 03 | 2 |

| <u>operating route</u> | <u>operating time</u> | <u>duration</u> (seconds) | <u>max. speed</u> | <u>gps-pos-lat</u> | <u>gps-pos-long</u> |
|------------------------|-----------------------|------------------------------|-------------------|--------------------|---------------------|
| 606 | 01/05/2018 20:07 | 32 | 67.9 | 0 | 0 |

249. Mr Leung Kin Wang explained the significance of that data: [Transcript Day 12; 7 August 2018, page 132]

“When a certain setting is exceeded, information would be displayed. In other words, for a duration of 32 seconds, the setting was exceeded, but the maximum speed was 67.9. So over this period of 32 seconds, our pre-set setting was exceeded. So apparently this is a 50 kilometre per hour zone. If this is a 70 kilometre zone, this entry should not exist.”

250. Although the Committee asked to be provided with a similar document evidencing harsh braking and sudden acceleration no such document was provided, rather what was provided was a weekly report. Mr Leung Kin Wang said of that report: [Transcript Day 12; 7 August 2018, page 138]

“This weekly report will look back at the past week in respect of a bus captain and how many seconds of exceedance in those three areas: harsh braking, sudden acceleration and speeding.”

Weekly report of driver behaviour in excess of thresholds: speed, acceleration and deceleration

251. The weekly report describes the incidence of speeding, harsh braking and sudden acceleration in the week 24 to 30 July 2018 in respect of excess of thresholds of speed, acceleration and deceleration in which period drivers accumulated a total of more than the specified minutes of such behaviour. [KMB-1(A), pages 367-375] Fifty-seven drivers were described as having speeded at more than 75 km/h for more than 4 minutes, one of whom had done so for a total of 23 minutes. Fifty-one drivers were described as having braked harshly, namely a deceleration of more than 8 km/h per second for more than 4 minutes, two of whom had done so for a total of 7 minutes. Nine drivers were described as having accelerated suddenly, namely an acceleration of more than 4 km/h per second for more than 60 minutes, one of whom had done so for no less than a total of 76 minutes. Obviously, incidents of harsh braking or sudden acceleration by their nature are unlikely to last for more than several seconds on each occasion. So, the report speaks to multiple instances of harsh braking and sudden acceleration in the period of driving for one week.

The KMB bus involved in the accident on 10 February 2018 on the Tai Po Road

252. In response to Mr Duncan's question as to whether or not the bus involved in the accident on 10 February 2018 had generated an exception report in respect of either speeding or excess deceleration/acceleration, Mr James Wong said "(i)f the bus exceeded 75 km/h, it should show up on this table" and agreed that if the thresholds of acceleration and deceleration had been exceeded that would have automatically generated a report. [Transcript day 14; 11 August 2018, pages 8-10] Mr Wong said that if he was able to identify the report he would share it with the Committee.

253. In their written submissions, dated 23 August 2018, KMB responded to that enquiry: [KMB-1(B), page 436]

“Yes, such exception reports were generated. The driving records of the bus captain, who drove the bus involved in the Tai Po Road accident on 10 February 2018, do not appear in those reports.”

254. Annexed to that reply was a document described as being BOP¹³ 207 records from 29 January to 13 February 2018 (Sha Tin Depot). [KMB-1(B), page 436] The document provided much of the information provided in the exception speeding reports for the period 1 to 7 May 2018, in addition to which it stipulated the speed limit and location of the speeding event and the action taken. The only speeding event meeting the criteria set in KMB’s black boxes, namely speeds in the range 76 to 79 km/h for 60 seconds and 80 to 89 km/h for 2 seconds, on 10 February 2018 was at 21:32 hours when a bus travelled in excess of the speed limit for 9 seconds at a maximum speed of 82 km/h at Shing Mun Tunnel Road. [KMB-12(A), pages 4828-4833] Clearly, that was not the bus involved in the accident on the Tai Po Road.

255. The other documents annexed to KMB’s reply were in the nature of weekly reports of sudden acceleration, namely greater than 4 km/h per second, and harsh braking, namely greater than 8 km/h per second, which provided no details of whether or not any of those incidents occurred on 10 February 2018, in respect of which the bus captains employee number had been partially redacted, notwithstanding the fact that the employee number of the bus captain on the bus involved in the Tai Po accident was not provided to the Committee in any event.

256. In their submissions, dated 10 December 2018, KMB informed the Committee [KMB-1(B), pages 579-580]:

“Recently, we have reduced the time required for our system to generate exception reports on speeding to 4 days. The time required will be further reduced to 1 day within this month.”

The submission went on to state:

¹³ “BOP” means “Programme of the Bus Onboard Monitoring System”.

“...we believe that instant alert of speeding for our bus captains is a more effective way in preventing traffic accidents. Our current system will only alert the bus captains when the speed exceeds 70 kph. However, later this month, we will launch an alert system that is also capable of alerting bus captains of speeding at locations whose limits are 50 kph. The new alert system will be installed in our entire fleet of buses phase by phase.”

KMB's Real-Time Operation Management System

257. Mr Alok Jain, a management consultant specialising in transport and traffic matters and a trainer for the International Association of Public Transport, was employed by KMB from June 2013 until December 2016 first, as the Head of the Planning and Development Department and thereafter as the Deputy Operations Director.

258. When Mr Alok Jain joined KMB, Openmatics was supplying telematics equipment to KMB's franchised buses. That equipment was to be used to publish information to the public about the estimated time of arrival (“ETA”) of buses travelling on KMB's routes. In addition, it was planned to establish a “Real-Time Operation Management System (“ROM”) by the transmission in real-time of the data collected and collated by the telematics equipment, namely the speed, acceleration, deceleration, braking, tilting angle, fuel consumption and position to an Operation Control Centre. The centre was to be located in the Lai Chi Kok Centre, where the movements and relevant data in respect of KMB buses were to be depicted on screens. [Transcript Day 8; 17 July 2018, pages 83-87 and 95]

259. Mr Alok Jain said that it was envisaged that an “exception report” would be generated by a bus that was driven in a way that exceeded calibrated thresholds, enabling an alert to be given to a bus captain on a driver display unit in the bus cab and for an intervention by a supervisor in the Operation Control Centre to give the driver a warning, either by use of the driver display unit or an audio warning by radio or 3G communication. The intended purpose of those proposed interventions was to encourage bus captains to improve their driving skills.

Consideration was given to calibrating route specific thresholds so that, for example, different thresholds of speed at different locations could be calibrated into the equipment. However, the plan for real-time use to be made of the data was scrapped. Nevertheless, use was made of the telematics data “post-event”, namely after the event had occurred. [Transcript Day 8; 17 July 2018, pages 84, 95, 98; FE-1(A); page 36, paragraph 2]

260. Mr Alok Jain testified that he, and other senior management of KMB, had made a lot of presentations about actively managing driver behaviour by using telematics. [Transcript Day 8; 17 July 2018, pages 99-100] In his statement, dated 10 September 2018, he said that having ceased employment at KMB he was not in a position to produce any documents relating to the ROM system but emails and files had existed evidencing internal and public presentations of that use of the ROM system. [FE-1(A), pages 46-299 and 46-300]

261. For KMB, Mr Leung Kin Wang said of Mr Alok Jain’s evidence in respect of the ROM system: [Transcript Day 13; 10 August 2018, page 41]

“It is an operations real-time management system. It is about bus operations management. It has nothing to do with driving safety.”

Mr Leung added: [Transcript Day 13; 10 August 2018, page 47]

“It was never scrapped. This project started in October 2014. It has never been terminated. It’s ongoing.... This is about the real-time operation management system by using the black box and the availability of real-time location information, so that we can be more efficient in bus deployment.”

262. On 10 and 23 August 2018, at the Committee’s request, KMB produced records relating to the ROM System project. [KMB-1(B), page 422; KMB-11, pages 4484 to 4746] It is to be noted that, although there were no files or emails evidencing presentations of use of the ROM system for real-time driver behaviour management, in email correspondence between Chung Lim Chan (IT) and Louisa

Lam (ODD¹⁴), dated 25 February 2016, reference was made to there being a “change of scope of the Real-time Operations Management System”, although no information was provided as to the change. [KMB-11, pages 4741-4742]

¹⁴ “ODD” means “Operations Development Department” of the KMB.

CHAPTER 12 – Speed Limits

Community for Road Safety

263. In papers provided to the Legislative Council Panel on Transport, dated 16 September 2014 and 16 June 2016, in respect of the grant of new franchises to CTB and NLB [MISC-2, page 777] and KMB respectively, the *Community for Road Safety* made the same recommendation, namely that: [MISC-2, page 773]

- “• Incorporate into franchise requirement the need to set up a comprehensive standard and driver monitoring system using the installed black boxes. Monitoring systems should be automated with streamlined procedures to educate and retrain drivers.
- Key monitoring controls are:
 - Acceleration and deceleration characteristics... crucial to problem of passengers losing balance.
 - Speed through risky hilly roads - e.g. 25-40 km/h... crucial to prevention of disastrous events.
 - Speed through urban areas - e.g. 20-35 km/h... crucial to pedestrian and general safety.
 - ...
 - Speed through bus terminus - e.g. 15 km/h...
 - Tailgating
 - Driving behind and around bicycles.”

264. In the submission, dated 16 June 2016, it was observed: [MISC-2, page 772]

“There is vast potential of using black box in buses but is not clear how these are being used.”

None of those suggestions were reflected in any way whatsoever in the franchises granted to those several bus operators.

265. In their submissions, dated April 2018, the Community for Road Safety recommended that the “*Safe System*” approach should be adopted in respect of road safety, contending that: [MISC-2, page 785]

“In the short term, active measures based on operational protocols and deployment of monitoring systems can be quickly implemented.”

266. Of that recommendation, it was contended: [MISC-2, pages 785-786]

“The most important active measure is the formulation of new operational protocols for safe driving. These protocols should cover speed, acceleration, deceleration etc. There are two primary categories:

- General protocols-addressing typical scenarios including speeds on busy urban streets
- Route-specific protocols-addressing specific safety risks such as sections of narrow hillside road lacking a safety barrier

Monitoring will need to be based on advanced, real-time and automated black box systems. The purpose is to promote safer driving conforming to these protocols rather than being a tool to penalise drivers.”

267. In his evidence, Mr Julian Kwong explained the advantage of a real-time report: [Transcript Day 7; 16 July 2018, page 35]

“...some behaviours, which are grossly inappropriate, need to be identified and regulated in a very timely manner. We cannot rely on, say, passengers making complaints, and then having inspectors to investigate, and then only making recommendations, say, after a few weeks.”

268. Of the importance of an automated report, Mr Kwong said:

“...such black box systems are likely to generate an enormous amount of data, and if we solely rely on manual identification, or processes which are not fully automated, I presume that would require a lot of manpower, to the extent that the process is not sustainable.”

Low speed limits/speed limit zones

269. In their closing written submissions the Community for Road Safety acknowledged that their submissions were made in light of the evidence received by the Committee. The information that the TD intended to conduct trials in Hong Kong for speed limits of lower than 50 km/h was welcomed. Having noted the adoption of 30 km/h speed limits in many countries, including the Netherlands, the United Kingdom, Norway, Sweden, Denmark, France, Spain, Germany, New Zealand, United States, Switzerland and Finland, and the adoption of a 40 km/h speed limit in far fewer countries, it was submitted be limited, that: [MISC-2, page 820-109]

“(a) 40 km/h speed limit is needed for Hong Kong as a general rule for urban streets, whereas 30 km/h speed limit is applied to minor streets, residential neighbourhoods and urban centres etc.”

270. In support of that submission, it was asserted that: [MISC-2, page 820-110]

- “• Paris is on the way of transforming 90% of its streets with 30 km/h speed limit
- Madrid has commenced transforming 85% of its streets to 30 km/h zones
- Edinburgh has almost the entire city centre 30 km/h speed limit”

Speed survey of franchised buses

271. The Committee engaged the PolyU Technology & Consultancy Company Limited to conduct a survey of the speed at which franchised buses travelled on twenty selected road sections. The survey was conducted at different times of the day in the period 29 August to 23 September 2018 on one road subject to a 70 km/h speed limit and nineteen subject to a 50 km/h speed limit. Of the 2,381 buses surveyed, none was found to be speeding in the road section subject to the 70 km/h speed limit, whereas 234 franchised buses were found to be travelling in excess of the 50 km/h speed limit. However, only 48 of those franchised buses were found to be travelling at speeds in excess of 56 km/h or more.

*CHAPTER 13 – Salary of bus captains**NWFB and CTB*

272. In their written submissions, CTB and NWFB stated that part-time bus captains were paid at an hourly rate of \$80. [CTB-1, page 36] It was acknowledged that bus captains employed by the two companies were paid at different rates depending on the date of their first employment. Mr Samuel Cheng of CTB/NWFB agreed that the level of salary paid to the bus captains by the two companies was entirely a matter for them and had nothing to do with the TD. [Transcript Day 3; 29 May 2018, page 40]

CTB

273. The submissions stated that CTB bus captains were paid: [CTB-1, pages 34-35]

- (i) a basic salary;
- (ii) an allowance for driving airport buses;
- (iii) a Chinese New Year bonus; and
- (iv) overtime at an hourly rate of current basic salary according to the date of first employment.

The basic salary was described as being \$17,106 for those recruited on or before 9 March 1999; \$15,874 for those recruited on and between 10 March 1999 and 8 March 2004; \$15,364 to \$15,764 for those recruited on or after 9 March 2004.

NWFB

274. By contrast, NWFB bus captains were paid: [CTB-1, pages 35-36]

- (i) a basic salary;
- (ii) a Chinese New Year bonus; and

- (iii) overtime at an hourly rate of current basic salary according to the date of first employment.

The basic salary for NWFB bus captains recruited on 1 September 1998 was \$18,184 to \$18,664; \$15,764 to \$17,178 for those recruited on and between 1 September 1998 and 23 August 2001; \$15,764 for those recruited on and between 24 August 2001 and 8 March 2004; and 15,364 to 15,764, the range of salary reflecting increments for years of service, for those recruited on or after 9 March 2004.

275. Mr Samuel Cheng of CTB/NWFB accepted that there had been a decrease in the salary paid to bus captains who had been recruited on or after 9 March 2004 from what had been paid to those recruited at an earlier date. He explained that the salaries paid from any given point in time reflected "...the prevailing demand and supply in the labour market". [Transcript Day 3; 29 May 2018, pages 41-42]

Bonuses

276. Although the written submissions stated, under the heading "*Reward for good performance*", that the bus captains of both companies were eligible for payment of bonus payments, namely (i) safety bonus; (ii) performance bonus; and (iii) attendance bonus, Mr Cheng said that at the request of the bus captains and their representatives, with effect from 1 March 2018, the bonuses had been "merged into the basic salaries". [Transcript Day 3; 29 May 2018, page 61] As a result, none of them were subject now to deduction and all of them now formed part of the salary on which the overtime rate was calculated. Mr Cheng explained that hitherto payment of the bonuses, including the safety bonus, was subject to deduction to reflect the behaviour or attendance record of the bus captain. He accepted that there was no longer a financial incentive for a bus captain to drive safely. [Transcript Day 3; 29 May 2018, page 66]

277. Mr Gareth Ng's explained that in February 2018 the basic salary had been \$12,536. In seeking to explain why the written submissions of CTB and NWFB

had stipulated that the salary was at least \$15,364 on and after 9 March 2004, Mr Cheng said that, following the merging of the three bonuses into the basic salary and the increase of the basic salary, the latter had become \$15,364. [Transcript Day 3; 29 May 2018, pages 69-70]

NLB

278. In their written submissions, dated 24 April 2018, NLB described the constituent parts of monetary payments made to their bus captains from July 2017 onwards. Full-time bus captains hired on monthly terms in the Lantau Group were required to work a minimum of 9 hours per day, for which they were paid a basic salary of \$6,400 per month. The basic salary was subject to incremental payments based on years of service was increased by \$1,000 per month for 10 or more years of service. In addition, the following allowances and bonuses were payable: [NLB-1, pages 21-22]

- (i) Duty allowance-\$230 per day;
- (ii) Safety bonus-\$1,700 per month;
- (iii) Attendance bonus-\$750 per month;
- (iv) Saturday/Sunday/public holiday bonus-\$200 per day; and
- (v) Rest day work allowance-\$625 per day.

279. Bus captains in the Shenzhen Bay Group worked full-time and were paid a basic salary of \$6,000 per month for 12 hours of duty per working day. The basic salary was subject to incremental payments based on years of service up to an increase of \$1,000 per month for 10 or more years of service. Although broadly speaking the bonuses and allowances they were paid were similar to the Lantau Group, they were paid a greater safety bonus, namely \$2,200 per month.

280. Mr James Wong said that typically a full-time bus captain would be required to work 24 or 25 days per month. He explained that the attendance bonus was subject to deductions for non-attendance: \$200 for the first day; \$250

for the second day; and \$300 for the third day, and so forth. Further, an additional safety bonus of \$450 was paid quarterly to full-time bus captains. He accepted that the objective of the allowance and bonus system was to encourage bus captains to work for NLB, "...our core belief is that the more you work, the more return you will get." [Transcript Day 5; 19 June 2018, page 111]

281. Part-time captains on daily terms were required to work a minimum of 9 hours per day and were paid \$565 per weekday, and \$625 per weekend day, and \$675 per Sunday and public holiday. They received no bonuses or allowances, save for a daily safety bonus of \$30. Part-time bus captains employed on hourly terms were paid \$76 per hour. [NLB-1, page 21]

282. Mr James Wong said that, in light of the agreement reached in March 2018 by NWF, CTB and KMB with their bus captains' unions to merge bonuses and allowances into basic salary, NLB had agreed to pay its drivers a special bonus in September 2018. [Transcript Day 5; 19 June 2018, pages 103-104]

KMB/LWB

283. The Accident Report of the Special Committee of KMB to the Commissioner, dated 12 March 2018, provided details of the different rates of remuneration of basic salary of bus captains, depending on the time of first employment, and the range of allowances and bonuses that were available for payment. The basic salary for bus captains employed before 2004 at "the highest pay scale point" was said to be \$13,915. The bonuses and allowances available for payment were: Safety Bonus \$1,778; Split Shift Duty Allowance \$1,951.50; Overnight Shift Allowance \$3,218; Airport Allowance (LWB only) \$780; and a year-end discretionary bonus, said to be one month's basic salary. However, it also stated: [KMB-1(A); page 108, paragraph 29]

"Salary structure enhancement for BC

On 21 February 2018, KMB and LWB announced that Safety Bonus and Good Service Bonus would be incorporated into Basic Salary effective from 1 March 2018."

284. In their written submissions to the Committee, dated 24 April 2018, the range of remuneration paid to bus captains from 1 March 2018, depending on the date of their first employment, together with overtime allowances was set out. It was asserted that the “average take-home of different categories of BCs” was: [KMB-1(A), page 75]

KMB

| | |
|---|----------|
| Monthly rated (employed before 2004) | \$23,425 |
| Monthly rated (employed after 2004) | \$21,486 |
| Daily rated | \$29,884 |
| Retired and re-employed (monthly rated) | \$21,062 |
| Retired and re-employed (hourly rated) | \$17,572 |
| Contract hourly rated | \$5,968 |

LWB

| | |
|---|----------|
| Monthly rated (employed before 2004) | \$25,857 |
| Monthly rated (employed after 2004) | \$22,022 |
| Daily rated | \$30,946 |
| Retired and re-employed (monthly rated) | \$21,996 |
| Retired and re-employed (hourly rated) | \$17,669 |
| Contract hourly rated | \$6,909 |

285. In his evidence, Dr Norman Leung said that the effect of the changes in the pay structure was that the “monthly rated bus captain will receive a basic salary of about \$15,400 a month” with proportionate increases in overtime payments and annual bonus. [Transcript Day 12; 7 August 2018, page 11] Of the cost to the companies, it was asserted in written submissions “This change costs approximately HK\$170 million and HK\$10 million per annum for KMB and LWB

respectively.” [KMB-1(A), page 61] Dr Norman Leung went on to say that he was proposing to make further enhancements to the remuneration received by bus captains, namely by increasing the three grades of bus captains to five grades and expanding the annual increments points from 8 to 20 increments. Of those proposals, he said: [Transcript Day 12; 7 August 2018, pages 25-26]

“So, my principal objective is to enhance the remuneration of the bus captains as a whole and hope that not only would I be able to recruit new bus captains but to retain the serving bus captains as well.”

1 September 2018 pay scale

286. Subsequently, the Committee was informed that the proposals had been brought into effect from 1 September 2018, of which change Dr Leung said: [Transcript Day 15; 12 September 2018, page 93]

“...with effect from 1 September, if a new recruit joins KMB or Long Win as (a) bus captain, he will be earning about \$23,000 a month, inclusive of the double pay at the end of the year. That is a substantial increase over the previous remuneration.”

287. In written submissions, dated 21 September 2018, KMB provided the Committee with schedules to illustrate the effect of the changes to the pay structure of 1 September 2018 and to present a comparison with payments received by bus captains prior to March 2018. The basic salary at the entry point for a monthly rated bus captain was now said to be \$16,466. If a bus captain worked an eight hour day (including a meal break of one hour and rest time) for 26 days, he would receive a salary of \$16,466. By contrast if a bus captain worked ten hours a day (including a meal break of one hour and rest time), in other words including two hours of overtime per day, for 26 days he would receive a total salary of \$21,817.50 for the month. In addition, both bus captains would receive a 13th month payment of the basic salary. So, the average monthly salary for the bus captain who worked eight hours per day for 26 days would be \$17,838.20, whereas it would be \$23,189.60 for the bus captain who worked ten hours per day for 26 days. The latter represented an increase, compared with the total payments

received before March 2018, of 15.7%, whereas the former represents an increase of 9%. [KMB-1(B), page 517]

288. The calculation of the monthly salary that a Daily-rated Bus Captain [KMB-1(B), page 520] would receive for the two different patterns of work, namely eight hours per day and 10 hours per day for 26 working days, produce monthly incomes of \$23,028 and \$29,277 respectively. However, because the Year-End and Lunar New Year End bonuses were calculated on a formula applied to “total annual income”, there was an increased difference between the average monthly income, namely \$24,947 and \$31,717. The latter represented an increase, compared with the total payments received before March 2018, of 7.9%, whereas the former represented an increase of 5%. [KMB-1(B), page 520]

The 20 increments points

289. Prior to the introduction of a 20 increments point system on 1 September 2018 there were three grades of bus captains and eight salary points. The range of monthly basic salary was from \$15,366-\$16,266. The 20 increments points system applied to five grades of bus captains, four increment points for each grade, which resulted in a range of basic salary from \$16,466-\$18,901.

1 March 2018 changes in KMB's pay structure

290. In his evidence Mr Cheung Tsz Kei, a representative of the Motor Transport Workers General Union, said of the merging of allowances and bonuses into the basic salary with effect from 1 March 2018: [Transcript Day 9; 30 July 2018, page 91]

“We have been making this request for 10 years, but our request was never acceded to, because of the circumstances.”

CHAPTER 14 – Difficulties in recruiting bus captains

CTB/NWFB

291. In their written submissions CTB and NWFB said that the major problems encountered in recruiting and retaining bus captains was because of the unsocial hours they were required to work and the distance that they lived, often in the New Territories, from the depots where they began and ended their duty. Mr Samuel Cheng said that the level of pay for bus captains that attracted recruits “varies from person to person” but nevertheless “There are people turning up wanting to be bus captains every day, but there is a difference between the number of people turning up and the number of vacancies.” [Transcript Day 3; 29 May 2018, page 49]

292. Of the overall constraints on the ability of the companies to offer bus captains improved conditions of pay and working hours, in their written submissions CTB/NWFB said that “Staff wages represent approximately 52% of our total operating costs.” [CTB-1; page 41, paragraph c] It was asserted that, although the Fare Adjustment Arrangement (“FAA”) permitted a return on Average Net Fixed Assets (“ANFA”) of 9.7%, “We forecast that the Return of ANFA of CTB (F1) and NWFB will be below 1% for the financial year ending 30 June 2018.” Of the ensuing consequences, it was contended: [CTB-1; page 42, paragraph g]

“Should there be any significant increase in staff and fuel costs, both of these franchises may well become loss making. Therefore, let alone earning a reasonable return, when the Companies’ commercial viability is at stake, it will be impossible for our Companies to provide the high quality and efficient services expected by the public, and to offer attractive pay packages to recruit and retain staff.”

293. Having noted that the last time at which a fare adjustment had been permitted for the companies was in 2008, complaint was made that, although an application had been made for a fare adjustment by CTB (F1) and NWFB in August 2017 the application was “still being scrutinised by the Government.” Of

the fact that “(p)ublic acceptability and affordability” was a factor considered by the government in determining a fare adjustment application, complaint was made that “...this factor is highly discretionary and subjective and has been conveniently abused by politicians.” [CTB-1; page 41, paragraph f] In that context, it was contended that: [CTB-1; pages 41-42, paragraph f]

“Although we were fully justified to seek fare adjustments under the FAA on various occasions, no application had been made mainly due to the ineffectiveness of the FAA and the highly politicized environment against fare/price increases of public utilities.”

KMB

294. In their written submissions, dated 24 April 2018, KMB addressed the issue of the difficulty of recruiting franchised bus captains and asserted: [KMB-1(A), page 60]

“The transport industry in Hong Kong has faced shortage and aging problem of commercial vehicle drivers. The issue had been discussed at a meeting of the Legislative Council in June 2016... discussed at a meeting of the Legislative Council on 20 April 2018... as the problem has intensified.”

295. In his June 2016 statement to the Legislative Council, the then Secretary for TH said “the fundamental issue is not about the supply of eligible persons. Rather, it is about how to attract them (especially younger people) to take up employment in the trades.” He went on to say: [KMB-9(A), page 3841]

“In respect of land transport, franchised bus and GMB¹⁵ operators have been attracting new blood through different means, such as improvement of salaries and welfare, hiring of part-time drivers to meet service demand during peak hours, etc. Franchised bus companies have been trying to reduce the turnover of bus captains through improving the working environment and bus stop facilities as well as offering promotion prospects.”

¹⁵ “GMB” means “green minibuses”.

296. In the Commissioner for Labour’s reply to the Legislative Council on 20 April 2018 it was noted that the number of vacancies for positions as franchised bus captains had increased from 192 in 2013 to 366 and 2017. [KMB-9(A), page 3847-3]

297. In their written submissions, KMB went on to assert: [KMB-1(A), pages 60-61]

“Although we have extended our recruitment channels (e.g. outreach recruitment at bus termini, mobile recruitment car, recruiting through social media and online recruitment websites, posting recruitment posters and distributing flyers at busy locations), *the number of BC applications is inadequate to meet our demand*

...

Factors such as the surging number of assaults against BCs, the increasing occurrence of illegal parking on bus stops and the intensifying traffic congestion have hindered new entrants to the industry.” [Italics added.]

298. In addressing the effect of the requirement for additional bus captains in consequence of the introduction of the February 2018 Guidelines, Mr Patrick Pang of KMB said: [Transcript Day 13; 10 August 2018, page 137]

“If we are to follow the revised guidelines, we need to recruit an extra 200 bus captains. Then, under the revised guidelines, we have the special shift, this special shift, in future, if we are to do away with it and if we have a straight shift, then we need another extra 1,000 bus captains.”

299. For its part, in its written submissions, the TD said: [TD-1; page 65, paragraph 7]

“...it is estimated that a total 250 additional bus captains will be required for full implementation of the Guidelines. The FB operators have undertaken to step up their efforts in the recruitment of bus captains and would improve the remuneration packages to attract new blood. In addition, with the shortening of the duty shift hours, the take-home pay of bus captains will be affected. The TD have also urged the FB

operators to take this into account in adjusting the duty rosters for bus captains and to consider increasing the level of remuneration, on top of their annual pay adjustment, in order to compensate the bus captains for the loss in take-home pay. If the additional number of bus captains and improved remuneration package for the bus captains necessitate the FB operators to apply for fare increase, the TD would process any such fare increase application in accordance with established practice.”

300. At the conclusion of the oral evidence of KMB on 12 September 2018, the following interchange ensued: [Transcript Day 15; 12 September 2018, pages 99-100]

“Member Auyeung:

You spend a lot of time today talking about how to improve the working conditions of all the bus captains. Can you give us some description on the hiring successes of bus captains so far, using say the last month versus three months ago to six months ago? Are you having much success hiring bus captains?

Mr Godwin So: (Via interpreter)

At present, on a weekly basis, we can recruit 20 to 30 new bus captains. Compared with what it was six months ago, we were only able to recruit 10 to 15 bus captains. But it has to do with the market. But, at the same time, the company has done certain things. First of all, pay and remuneration. As our chairman has said, there was an enhancement in March, and then in August there was a pay increase. So altogether we are talking about 15 per cent increase in one year. With higher pay, we can attract more bus captains.

Secondly, we were talking about the conditions, more facilities for rest, and so on, and also in our recruitment we have stepped up our efforts.”

CHAPTER 15 – Bus captain stresses and frustrations

The Road Safety Council

301. In the submissions of the Road Safety Council, dated 10 May 2018, concern was expressed “...in particular about the working hours of bus drivers, the mental and physical health of bus drivers and the driving attitude of bus drivers.” It was noted that the driver’s mood could be exacerbated by driving in congested traffic conditions and it was suggested that bus drivers who were unable to handle the various “emotional stresses might allow their frustration to be released through less careful driving practices.” [MISC-1(C); pages 127-1 to 127-2, paragraphs 2-3]

Stresses and frustrations

(i) Illegal parking at bus stops

CTB

302. Those considerations are relevant to the concerns that Mr William Chung expressed about the prevalence of illegal parking at bus stops, which he described as “commonplace and serious problem” and giving rise to safety concerns. [Transcript Day 4; 30 May 2018, page 121] The representatives of the Motor Transport Workers General Union echoed those concerns in their testimony. They suggested that the installation of closed-circuit television (“CCTV”) would act as a “deterrent”. [Transcript Day 9; 30 July 2018, page 81]

Federation of Bus Industry Trade Union

303. In their written submissions, dated 24 April 2018, the Federation of Bus Industry Trade Unions referred to the problems of illegal parking at a bus stop in Nam Cheong Street, near Woh Chai Street which, although complaints had been made to the TD, were unresolved at the time when a KMB bus captain had been attacked on 30 August 2017. He had failed to stop at a bus stop, in which vehicles were illegally parked, and for which he was blamed for having “skipped the stop”. [TU-1(A), page 226-30; KMB-1(A), page 217-19] The representatives

of both unions indicated that, if such a scheme was adopted, they were prepared for bus captains to be involved in flagging in an electronic way the time at which the forward-looking camera on their buses captured illegal parking at bus stops.

304. For his part, Mr Samuel Cheng, of CTB, rejected the suggestion made in the submission by the Democratic Alliance that the system employed in Singapore, namely that use be made of video cameras installed on franchised buses to identify vehicles illegally parked at bus stops. [MISC-2, page 644-2] That was not the responsibility of a bus captain. Rather, it was for the Police to enforce the law. [Transcript Day 4; 30 May 2018, page 126] As is noted subsequently, the Singapore Land Transport Authority explained to the Committee in their written replies that the role of a bus captain in capturing video evidence of an infringement of a bus lane by another vehicle in Singapore was limited to activating the camera to capture the infringement and notifying his employer bus operator of that fact. Thereafter, the video recording was handed over by the bus operator to the Land Transport Authority for their action. [EXP-1(C), page 249-9]

The Hong Kong Police Force

305. In the written submissions on behalf of the Hong Kong Police Force, dated 10 August 2018, Chief Superintendent Cadman said that the feasibility of the use of CCTV in enforcement actions in respect of both congestion-related moving vehicle offences and illegal parking was considered by the “*Energising Kowloon East Office*” (“*EKEO*”), led by the Development Bureau and was launched in two phases. The phase in respect of moving vehicles began in January 2018 and involved police officers using CCTV cameras, which evidence, if necessary, was used to support the oral testimony of the police officers. The phase in respect of illegal parking commenced in August 2018. Of that project, Chief Superintendent Cadman said: [MISC-1(C), page 124-539]

“As regards mounting automatic cameras on lampposts to monitor unauthorised stopping at bus stops, the consultant in the above mentioned EKEO project is looking into the feasibility of using technology to identify the offence but there are still legal

limitations and the technical issues, about electricity supply in lampposts, that need to be overcome.”

306. In a written reply in response to a question raised by the Hon James To, dated 23 May 2018, the Secretary for TH informed the Legislative Council of the results of a two-month pilot scheme operated by the Hong Kong Police Force in the New Territories North and Kowloon East in December 2017 and January 2018 in which video cameras have been used to assist police officers to take action in respect of six stipulated traffic offences, including “unauthorised stopping at bus stop/public light bus stand/taxi stand/public light bus stopping place”. Of the 25 fixed penalty tickets for this offence issued in that period in six Police Districts, all 25 had been issued in Sheung Shui. [SEC-3, pages 1424-1428]

307. In her evidence, Chief Superintendent Yau Sin Man explained that the legislation in respect of illegal parking required that the fixed penalty ticket be handed to the driver of the vehicle or fixed on the vehicle itself. She said that the relevant provision was subsection 15(2) of the Fixed Penalty (Traffic Contraventions) Ordinance, Cap. 237¹⁶. She said: [Transcript Day 17; 24 September 2018, pages 65 and 89]

“If we use electronic ticketing or use CCTV image and then issue a ticket, under current legislation, we are unable to do it.”

Chief Superintendent Yau said that she was aware that the THB had started working on proposed legislative amendments to address the difficulty.

308. In written closing submissions to the Committee, dated 7 November 2018, Chief Superintendent Cadman said that the Police had received legal advice from the Department of Justice to the effect that the proviso “should not be read as a

¹⁶ Section 15 of the Fixed Penalty (Traffic Contraventions) Ordinance, Cap. 237, provides that:

- (1) If a police officer has reasonable cause to believe that a contravention is being or has been committed, he may give the registered owner of the vehicle concerned or... the driver liable an opportunity to discharge his liability in respect of that contravention by payment of a fixed penalty.
- (2) For the purposes of subsection (1) notice in the prescribed form shall be delivered personally to the person in charge of the vehicle or fixed on the vehicle: Provided that the operation of this section or section 16 shall not be affected by a failure to comply with this subsection.

qualification undermining the mandatory nature section 15(2) nor an indication to allow remote delivery of the fixed penalty tickets.” [MISC-1(C); page 124-613, paragraph 5]

309. Of resolution of the conundrum, Chief Superintendent Cadman said: [MISC-1(C); page 124-613, paragraph 7]

“Legislative amendments for the above provision about the mode of delivery of fixed penalty tickets for illegally parked vehicles, are planned to be introduced in the 2019/2020 Legislative Council sessions so that fixed penalty tickets could be delivered after the event in the future.”

310. However, as was conceded by Chief Superintendent Cadman, in a letter dated 12 October 2018, the more apposite provision for the prosecution of the driver of a vehicle for unlawful stopping at a bus stop is section 3(1) and (2) of the Fixed Penalty (Criminal Proceedings) Ordinance, Cap. 240, which is in similar terms but makes reference to a “scheduled offence”. [MISC-1(C); page 124-604, paragraph 2] Nevertheless, he said that because of the restricted limits of a bus stop, often it was necessary to prosecute vehicles for stopping in the immediate environs of a bus stop, in places where they impeded access or exit of buses. The Schedule refers in terms to the offence of unauthorised stopping at a bus stop, created by regulation 45 of the Road Traffic (Traffic Control) Regulations, (Cap. 374 sub. leg. G), namely that:

“...a driver of a vehicle on a road shall not stop within an area designated as a bus stop unless the vehicle is a franchised bus...”

Electronic ticketing for parking offences

311. In that context, it is to be noted that although the topic of electronic ticketing for parking offences had been considered first in 2012, Chief Superintendent Cadman said that technical difficulties had been encountered and the pilot scheme and been shelved in 2016, albeit that it had been revived in early 2018 at the *Forum on Application of Technologies in Traffic Management and*

Traffic Contravention Enforcement, chaired by the THB. [MISC-1(C), page 124-538]

Automatic number plate recognition

312. Chief Superintendent Baker said that a trial of the automatic number plate recognition system had been conducted in 2013, but that it had been mounted on a “very limited basis” namely in respect of persons with outstanding traffic arrest warrants. [Transcript Day 17; 24 September 2018, pages 68-69] The THB, Security Bureau and Hong Kong Police Force’s paper, “*Law Enforcement against Moving Traffic Offences*” prepared for the Legislative Council Panel on Security meeting on 13 April 2018 stated: [SEC-3; pages 1418-1423]

“The Police have been using the Automatic Number Plate Recognition (“ANPR”) system since 2015. The system enables traffic enforcement officers to detect relevant traffic contraventions, including those involving expired vehicle licences, registered vehicle owners driving while disqualified or having traffic arrest warrants. In the past three years (2015 to 2017), the Police have issued 996 fixed penalty tickets and arrested 46 persons with the aid of the ANPR system.”

Bus priority

313. Mr Samuel Cheng of CTB said that he welcomed the suggestion that, like Singapore and Seoul, a signal priority system for buses be introduced in Hong Kong. Such a system afforded priority to a bus over other vehicles at intersections with limited capacity. [SEC-2; page 822] He said that the issue would be raised with the TD. [Transcript Day 4; 30 May 2018, pages 128-130]

314. Similarly, Mr William Chung said that the companies would welcome a system where other vehicles had to give way to a bus as it leaves a designated bus stop, as is required in Singapore. However, having regard to the objections that had been raised in Hong Kong in respect of bus only lanes, which had resulted in some of those bus lanes being discontinued, he expressed reservations about the

success of such a system in Hong Kong. [Transcript Day 4; 30 May 2018, page 129]

(ii) Abuse/assaults on bus captains

315. In both the written submissions and in evidence the representatives of the Motor Transport Workers General Union and the Federation of Bus Industry Trade Union expressed their serious concern at the regular pattern of abuse delivered by passengers to bus captains and the growing number of assaults on them, in respect of which they provided some detail. At the request of the Committee, KMB provided statistics of assaults on KMB and LWB staff reported to the companies and the Police in the period 1 January 2015 to 22 July 2018. [KMB-1(A), pages 217-1 to 217-29] In 2017, there were 35 such cases, but in the period of just over 6 months in 2018 there were 41 such cases. Overall, many cases were not pursued to charging of the alleged assailant. Typically, if a charge was laid it was of common assault or assault occasioning actual bodily harm. Few cases resulted in convictions. No sentences of imprisonment were imposed in any of the 188 cases described in the statistics. In a few cases in which sentences were imposed they were low level fines.

316. In their written submissions, KMB and LWB said that they had responded to the increased number of assaults on their bus captains by not only installing surveillance CCTV that covered the driver's seat on all new buses commissioned since 2015 and retrofitting CCTV on existing buses but also in June 2018 they had begun to install protective shields on their buses between the position occupied by the bus captain and passengers. [KMB-1(A), page 62] For their part, the representatives of the Motor Transport Workers General Union were highly critical of those shields, which they complained were not big enough, reflected light in a way which distracted bus captains and created noise. [Transcript Day 9; 30 July 2018, pages 34-35]

317. In his evidence, Superintendent Lee Tai Wai said that the Hong Kong Police Force had been able to identify the results in 182 of the cases described by

KMB: there were 131 assaults on bus captains in the course of their work by bus passengers. Assailants had been identified in 99 cases and prosecutions brought in 83 of those cases, in which 75 convictions had resulted. [Transcript Day 17; 24 September 2018, pages 82-84]

318. Of the submission made by KMB that, in prosecuting bus passengers, the Police ought to make greater use of Regulation 13A(1)(a) of the Public Bus Service Regulations, Cap 230A, which provides that no passenger shall “wilfully obstruct, impede or distract the driver of the bus”, for contravention of which regulation a fine of \$3,000 and a sentence of 6 months’ imprisonment might be imposed, Superintendent Lee Tai Wai said: [Transcript Day 17; 24 September 2018, page 98]

“The most ideal situation is that before an incident deteriorates, the police can intervene and then we can put a stop to the incident or we can use an easier method to handle it, say, for example, to use any offences under Cap. 230A. But very often, when the police arrive on the scene, there would be injuries and there would be physical contact already.”

319. In those circumstances, Superintendent Lee said “(i)f there is actual physical contact and if there is assault, I would think that we should go for the most appropriate offences.” [Transcript Day 17; 24 September 2018, page 101]

320. For her part, Chief Superintendent Yau Sin Man said that in 2016 a prosecution against a bus passenger under those Regulations had been brought only once, whereas no prosecution for that offence had been brought in 2018. [Transcript Day 17; 24 September 2018, page 103]

321. As noted subsequently, in Singapore the *Protection from Harassment Act*, Cap. 256A makes it an offence, punishable by a fine, or imprisonment for up to 12 months or both, for a person by any means to “(b) make any... threatening, abusive or insulting communication, towards or to a... public service worker”, including a bus driver.

(iii) Rest and toilet facilities

322. As noted earlier, many representatives of trade unions have been vocal in their complaints to the Committee about the inadequate provision of rest and toilet facilities at bus stations and bus termini. Of the current position, Mr Cheung Tsz Kei said in evidence: [Transcript Day 9; 30 July 2018, page 45]

“For a lot of termini, there are still no toilets or rest kiosks available, especially for those in public housing estates... We have been talking to the Transport Department, saying that for existing termini they have to be retrofitted, and for new ones, it must come with toilets and rest kiosk.

With these facilities, then they are considered to be a complete set of facilities at terminus. Without such facilities, we would not be able to provide the services we are supposed to.”

KMB

323. For his part, Mr Patrick Pang, of KMB said of the absence of the provision of toilets at bus stations and bus termini and the need for bus captains to use toilets elsewhere: [Transcript Day 15; 12 September 2018, pages 64-65]

“...they might have to walk eight or ten minutes to reach a toilet. Their rest time might be jeopardised as a result, and this issue has bothered our bus captains.

I am quite surprised that some termini have no toilets. Even we can add chemical toilets, but for new termini, I am quite surprised that they have not factored in a permanent toilet... For example, the West Kowloon XRL Station bus terminus. It’s a sizeable bus terminus but there is no toilet.”

324. Of the provision of rest kiosks, Mr Roger Lee, the Managing Director of KMB, said: [Transcript Day 15; 12 September 2018, page 60]

“As for terminus facilities, the kiosk approved by the government is about 40 square feet in area, and these are needed by bus captains, even those not on special shifts. We do not make a distinction for those on special shifts... We are talking about kiosks of 40 square feet. This is not a place to sleep.”

325. In the context of the assertion by the TD in their submissions, dated 20 July 2018, that “requirements and comments from the FB operators on toilets and rest facilities would be incorporated in the design of the bus termini as appropriate”, [TD-1; page 438, paragraph 28] and in answer to the question of who was responsible for the design of a bus terminus, Mr Roger Lee said: [Transcript Day 15; 12 September 2018, page 86]

“There are several types of termini. Some termini are on government land or government property. When they were built, the government might not have decided which bus operators would operate the routes there, and they seldom invited the operators for comment. The TD would have their own teams of consultants to design the termini. So, over the years, we were never consulted on whether toilets should be installed.”

TD

326. For their part, in their submissions, dated 19 October 2018, the TD refuted the assertion that KMB had not been consulted about the provision of ancillary facilities at the West Kowloon Station Bus Terminus (West Kowloon XRL Station Bus Terminus): [TD-1, page 513]

“...the TD had consulted KMB, among others, on the provision of ancillary facilities (including regulator’s kiosk and toilet) at the West Kowloon Station Bus Terminus during the planning stage in July 2010. In reply, KMB had provided their preference to place portable bus regulator office and other facilities (including restroom and toilets) on their own cost.”

327. In fact, in a letter dated 6 May 2009, the TD provided KMB with a layout plan of the prospective construction of the public transport interchange and said of the proposed facilities: [TD-6, page 2147]

“...a structural bus regulator office with toilet facilities is proposed to be provided at the site. Should this structural bus regulator office be required, you will be required to pay for the construction costs.”

In addition, the TD invited “initial comments, from bus operation point of view, on the PTI¹⁷ layout, in particular, the size and location of bus regulator office”.

328. Correspondence ensued between KMB and the TD in respect of the provision of a regulator’s office with/without toilets. In a letter to the TD, dated 2 September 2009, KMB said: [TD-6, page 2167]

“We note that a public toilet is located more than 200 metres away from the proposed KMB regulator office. In order to facilitate our bus operations, we hereby propose to provide toilet facilities next to our regulator office. Grateful if you could revise and incorporate the above requirements.”

329. In a letter, dated 17 December 2009, the TD informed KMB: [TD-6, page 2187]

“The construction cost of the regulator office without the toilets is estimated to be around one million and the one with the toilets will be around \$1.2 million... Please let us have your preference...”

330. KMB having taken issue with the estimated costs of construction in a letter to the TD, dated 15 January 2010, the TD informed KMB in a letter, dated 3 June 2010: [TD-6, page 2195]

“...the government has no intention to construct the regulator office on your behalf. Nevertheless, if you wish to construct the facilities as per your operational needs we are pleased to liaise with MTRCL¹⁸ for you to arrange your contractor to enter the site.”

331. By letter, dated 29 June 2010, KMB protested the position of government articulated by the TD: [TD-6, page 2196]

“We do not quite understand the rationale and the reasons why the government has no intention to construct the regulator office on behalf of KMB. In fact, KMB has been

¹⁷ “PTI” means “public transport interchange”.

¹⁸ “MTRCL” means “MTR Corporation Limited”.

following the procedures laid down by your department... (ref... dated 29 August 1996)... due to the following identified problems:

- (a) There is considerable time lag between the opening of the bus terminus and the completion of the ancillary facilities
- (b) Delay was further aggravated by the long time required for the approval of KMB's building plans
- (c) Technical problems arising from the lack of engineering coordination/integration thus affecting the provision of utility service to the bus terminus"

332. In a letter, dated 7 July 2010, the TD informed KMB that the ancillary facilities could be constructed either by KMB, or its contractor, or by the construction agency of the bus terminus, concluding: [TD-6, pages 2201-2202]

"...we have no objection and in fact encourage your side to construct your own ancillary facilities at the Jordan Road permanent PTI as necessary to facilitate your daily operation."

333. In an email, dated 14 July 2010, the TD informed KMB: [TD-6, pages 2204]

"there may be three feasible options for KMB to provide the regulators kiosk cum toilet and other facilities... (1) permanent structure to be constructed by KMB, (2) permanent structure to be constructed by the construction agency of the bus terminus...and (3) temporary structure in the form of portable and well-designed units."

334. Of KMB's options, the TD said:

"...for option (2) you may need to consider the cost implications, as the initial estimated construction cost provided by MTRCL is about \$2M and will be subject to change in the detailed quotation. For option (3), it will be very unlikely that chemical toilets will be acceptable to locals during the consultation stage, and your staff may need to use the public toilets to be provided next to the B/T which is about 70 to 200 metres away from the bus stacking area."

335. In a letter of reply to the TD, dated 28 September 2010, KMB said: [TD-6, page 2205]

“Among the three options indicated by your department, KMB preferred Option 3-i.e. temporary structure in the form of portable and well-designed units.”

Nevertheless, KMB went on to state “Please note that the provision of toilets at permanent bus terminus is still required since the public toilet is about 200m away from our proposed office and bus captains’ rest area.”

336. In an email to the TD, dated 17 April 2012, KMB confirmed that it “will place/construct our own bus regulator office and lavatory including all necessary utilities connection to support its operation”. [TD-6, page 2240]

337. In emails exchanged between the TD and KMB in 2013, KMB indicated that it intended to install chemical toilets at the bus station. [TD-6, pages 2241-2243] Thereafter, in 2013 to 2018, correspondence was exchanged between KMB and TD about the location of the facilities to be installed at the bus station. Finally, by letter dated 28 September 2018, the TD approved KMB’s application to install various kiosks and some chemical toilets. [TD-6, pages 2300-2308]

338. On the occasion of the inspection of the facilities at the West Kowloon XRL Station Bus Terminus by the Chairman and the Secretariat on 3 October 2018, which terminus had come into operation on 16 September 2018, it was noted that there were seven KMB kiosks, two of which were rest facilities for bus captains, but no chemical toilets. [MISC-3, pages 1275-1286.]

339. Clearly, the absence of toilets or their location at lengthy distance from where the bus captain is taking a break in his driving is an unnecessary cause of frustration to the bus captain. The lack of provision of rest facilities or the provision of inadequate rest facilities for bus captains to rest in breaks in their driving, in particular those performing split shifts, is an obvious potential cause of fatigue and is highly relevant to the safety of franchised buses.

*EXPERT EVIDENCE**CHAPTER 16 – Professor Stanley: Melbourne*

340. To give an international context to understanding the mechanism under which franchises are granted to companies to run franchised bus service in Hong Kong and the way in which they are monitored and regulated, the Committee appointed Professor John Stanley and Mr Mike Weston to make reports in respect of the franchised bus systems in Melbourne and London respectively. Further, they were invited to identify the differences and similarities between those jurisdictions and Hong Kong and, finally to make recommendations to the Committee of changes that might be introduced in Hong Kong to enhance the safety of franchised buses.

Professor John Stanley

341. Professor John Stanley is, and has been since 2008, an Adjunct Professor and Bus Industry Confederation Senior Research Fellow in Sustainable Land Transport at the Institute of Transport and Logistics Studies of the University of Sydney. In and between 1991 and 1999, he was the Deputy Chairman of the Australian National Road Transport Commission, whose responsibility was for vehicles of 4.5 tonnes and above. The Commission is responsible for creating initiatives to improve the productivity, safety and environmental performance of road transport in Australia. In and between 1999 and 2008, he was the Executive Director of the Bus Association Victoria, whose 500 members were bus operators. In that role, he negotiated contracts for members with the state government, but was also concerned in identifying the value of public transport, and particular buses, to the community. The Association also had a business, Road Safety Inspections, which operated road safety inspections of buses in Melbourne and regional Victoria, of which he is currently a member of the board. [Transcript Day 16; 15 September 2018, pages 2-10; EXP-1(A), page 107]

342. Professor Stanley is the author and co-author of numerous books on issues arising in transport and has published multiple articles on the same subject. Of the ambit of his writings, Professor Stanley said that “policy has been my main focus, and strategic planning to help implement that policy”. [Transcript Day 16; 15 September 2018, pages 10-15; EXP-1(A), pages 108-114] In his report, Professor Stanley stated candidly “The author is not an expert on bus operation but has expertise in matters to do with the institutional environment within which bus operates (sic) and how this can impact performance.” [EXP-1(A), page 56]

Melbourne

343. Professor Stanley noted that in 2017 Melbourne had a population of 4.8 million people, but had a much lower density of population than London. Victorian government statistics published in 2018 stated that the number of passengers boarding trains, trams and buses annually were 240 million, 205 million and 120 million. So, buses accounted for 21% of the number of passengers boarding public transport annually. By contrast, about 4 million passengers boarded franchised buses in Hong Kong per day, giving an annual figure of about 1.4 billion. About 1,700 franchised buses applied bus routes in Melbourne. [EXP-1(A), page 5; Transcript Day 16; 15 September 2018, pages 17-19]

344. Professor Stanley said that about one-third of the route bus services in Melbourne were competitively tendered, whereas two-thirds were negotiated contracts. Only one operator, Transdev Melbourne, a French company, currently operated a contract obtained by competitive tendering. It was the largest bus operator and operated over 500 buses. By contrast, 12 operators held the total of 15 negotiated contracts. [Transcript Day 16; 15 September 2018, pages 20-21, 26 and 34-36] The contracts were for a seven-year period, after which they were either renegotiated or re-tendered. No bus operators who wished to renew a negotiated contract had failed to secure that renewal. [Transcript Day 16; 15 September 2018, pages 43 and 48]

Accreditation, safety principles and safety duties

345. Of the Victorian Bus Safety Act 2009, Professor Stanley said: [EXP-1(A); page 22, paragraph 3.3.2]

“The Act is vital for route bus operation for two main reasons. First, it provides a two gateways through which anyone wanting to operate a route bus service must pass to be eligible to operate such a service. That gateway is **bus operator accreditation**...Second, and most importantly, it establishes the safety expectations within which bus operations take place, in terms of **safety principles** and **safety duties**, together with some key compliance mechanisms.”

Accreditation

346. The accreditation system requires that one senior representative of each contracted route service operator completes a course in Safety Management for bus operators. The only approved course is conducted by Monash University. The course comprises 4 subjects: [EXP-1(A), pages 8 and 22]

- Introduction to Bus Safety
- Bus Safety Risk Management for Bus Operators
- Financial Management
- Business Development

In addition, the bus operator must have in place both a Management Information and also a Maintenance Management system, compliant with the requirements notified to the bus operator by the Safety Director.

347. Of the operation of the Bus Safety Act 2009, Professor Stanley said: [EXP-1(A); pages 22-23, paragraph 3.3.2]

“Vital parts of the Act are **safety principles** and **safety duties** that are expected of bus operators. Two principles are noted here.

- **Principle of shared responsibility** (Part 2, Section 9). This principle states that the safe operation of bus services is the shared responsibility of the operator, bus safety workers, procurers, persons who determine the location of bus stopping points, or who design, construct, install, modify or maintain a bus stopping point or bus stop infrastructure, the Safety Director and members of the public. This principle thus links to the Chain of Responsibility and the National Law...
- **Principle of accountability for managing safety risk** (Section 10), which talks about risk allocation: *Managing risks associated with the provision of bus services is the responsibility of the person best able to control the risk.*”

348. Section 14 of the Act provides: [EXP-1(A), page 23]

“(1) To avoid doubt, a duty imposed on a person under this Act or the regulations to ensure safety, so far as is reasonably practicable, requires the person to-

- (a) eliminate risks to safety so far as is reasonably practicable; and*
- (b) if it is not reasonably practicable to eliminate risks to safety, to reduce those risks so far as is reasonably practicable;”*

The monitoring of bus safety

349. Professor Stanley explained that Transport for Victoria is “the portfolio policy agency and main adviser to the responsible Ministers”. By contrast, monitoring of bus operators was conducted by Public Transport Victoria and Transport Safety Victoria, together with Victoria Police and VicRoads. [EXP-1(A); page 28, paragraph 4.1] Public Transport Victoria, Transport Safety Victoria and the independent position of Transport Safety Director were created by the Victorian Transport Integration Act, 2010. [Transcript Day 16; 15 September 2018, pages 106-107]

Public Transport Victoria

350. Professor Stanley said that Public Transport Victoria “is the contract manager and monitors operator performance against the requirements of their

service contracts.” [EXP-1(A); page 28, paragraph 4.2] However, he noted that: [EXP-1(A); page 26, paragraph 3.4]

“Safety is not a KPI¹⁹ under the contracts and safety performance is not subject to incentive/penalty provisions under the contracts but poor safety performance could result in the Safety Director removing an operator’s accreditation, which would mean loss of contract.” [Italics added.]

351. Of the role of Public Transport Victoria, Professor Stanley said: [EXP-1(A); page 29, paragraph 4.2]

“PTV²⁰ holds regular contract meetings with route bus operators, where industry/operator issues are discussed. Particular safety issues may be discussed in these meetings, such as fatal accidents, major vehicle maintenance concerns and such like. This is about open communication and identifying ways to improve safety, particularly at system level.”

Transport Safety Victoria

352. Of Transport Safety Victoria’s role, Professor Stanley said that it “is front and centre in terms of monitoring route bus safety”. There were two main ways by which it monitored bus safety: [EXP-1(A); pages 29-30, paragraph 4.3]

“First, it has a **compliance program**, which mainly involves road-side inspections (primarily trucks), and inspections at major tourist destination locations (primarily buses and coaches).”

However, Professor Stanley noted that “TSV²¹ advises that it typically undertakes about 30-40 compliance checks annually, most regional.”

353. Of the second method of monitoring bus safety, Professor Stanley said: [EXP-1(A); page 30, paragraph 4.3]

¹⁹ “KPI” means “Key Performance Indicator”.

²⁰ “PTV” means “Public Transport Victoria”.

²¹ “TSV” means “Transport Safety Victoria”.

“TSV has a **safety audit** program that checks (for example) the Management Information System and Maintenance Management System that accredited route bus operators must have in place.”

354. Of the ambit of the audit programme, Professor Stanley said: [EXP-1(A); page 31, paragraph 4.3]

“TSV notes that it undertakes around 560 audits annually, which indicates that operator audit frequency is considerably less than annual. Given resource constraints, TSV’s approach is to categorise operators into risk levels and undertake more frequent audits on those operators thought more likely to be at risk of poor safety outcomes. It notes that around 100 infringement notices are typically issued annually and that some operators have had their accreditation suspended (no metropolitan route operators). None has had accreditation cancelled.”

Transport Safety Director

355. Of the position of Transport Safety Director, Professor Stanley said that the Director had “...his own organisation with a staff... I am guessing... probably around about 30 or 40”. He said that the incumbent was an “expert in safety risk management, I think in aviation was his experience background.” [Transcript Day 16; 15 September 2018, pages 107-108]

356. Of the role of the Transport Safety Director, Professor Stanley said: [EXP-1(A); page 99, paragraph 6.2]

“The Transport Safety Director has a strong focus on the development and improvement of safety culture in a bus business and safety risk management, working with operators and the industry to improve practice. Guidance material is available, such as *Guidance - Safety Culture, September 2016* (TSV 2016).”

357. Of the significance of his independence, Professor Stanley said: [EXP-1(A); pages 99-100, paragraph 6.2]

“The independence of the Transport Safety Director both elevates safety as a desirable policy outcome and provides an independent source of accountability and transparency on safety processes and outcomes that exceed what is likely to result if (route) bus safety was left solely to the public transport regulatory agency and/or a governmental department to manage. Transport Safety Director’s audit processes and industry engagement has led the agency to the conclusion that Melbourne’s route bus services and practices are safe and that the safety focus should be on developing a *proactive* and forward-looking **safety risk management culture**, as distinct from practices that *react* to safety concerns after they happen.”

Recommendations

(i) Governance

358. In his review of the differences between the regime of governance in Melbourne and that obtaining in Hong Kong, Professor Stanley noted the presence in Melbourne, but the absence in Hong Kong, of: [EXP-1(A); page 79, paragraph 3.4]

- requirement that bus operators be accredited before they can hold a route service contract;
- the imposition of safety duties on a whole range of persons connected with the operation of franchised buses;
- an independent Transport Safety regulator/auditor to administer the safety of franchised buses; and
- the imposition of contractual obligations regarding training.

359. In the result, Professor Stanley recommended: [EXP-1(A), page 80]

“The safety of the Hong Kong FB system is highly likely to be enhanced if these Melbourne measures were adopted.”

Specifically, he recommended that the Committee should consider recommending: [EXP-1(A); page 100, paragraph 6.2]

- introducing enforceable safety duties on all parties in the chain of responsibility for route bus service delivery;
- the creation of the independent position of Transport Safety Director, whose role is to be responsible for administering matters related to safety duties, ensuring compliance and enforcement;
- requiring that all franchised bus operators be accredited by the Transport Safety Director as a precondition for holding a route service franchise, this accreditation being dependent on their capacity to demonstrate a capacity to meet safety duties through use of systems that are consistent with ISO 39001 with a safety risk management focus; and
- extending this accreditation requirement to all commercial bus services.

(ii) Bus captain training

360. Whilst Professor Stanley said that the Practice Note on training, promulgated by the TD was “a good idea” he said that the training framework: [EXP-1(A); page 90, paragraph 5.1]

“...needs to include a specific component on fatigue management, which could form part of an Occupational Health and safety module and should extend to supervisors.”

He recommended a requirement in Hong Kong for the provision of: [EXP-1(A); page 94, paragraph 5.3]

“...training in fatigue management as an integral part of Bus Captain training.”

361. As noted above, Professor Stanley recommended the adoption in the franchises in Hong Kong of the practice in Melbourne of incorporating requirements in the contract with the bus operator for the training of all staff, including bus drivers. He noted that the provision in the Melbourne contract stated: [EXP-1(A); page 78, paragraph 3.3.3]

“The Operator must... ensure that all Staff are properly trained, experienced and otherwise fit and proper, in relation to the duties to be performed by them as part of the Operator’s performance of its obligations under this document.”

The contractual provision went on to require training in stipulated areas:

- service requirements of passengers with disabilities;
- management of confrontational or difficult passengers and personal safety;
- occupational health and safety issues; and
- passenger service standards and requirements.

(iii) Guidelines on Bus Captain Working Hours, Rest Times and Meal Breaks

362. Professor Stanley recommended that the Guidelines on Bus Captain Working Hours, Rest Times and Meal Breaks be embedded in regulations “to emphasise their importance and strengthen the importance of compliance.” [EXP-1(A); page 94, paragraph 5.3] He did so, having noted that the TD’s submissions showed a compliance with the Guidelines by the franchised bus operators of only 96%, not 100% [TD-1, page 66] and having noted that, by contrast, the requirement was contained in a regulation in Victoria. Further, he observed that section 35 of the Hong Kong Public Bus Services Ordinance, Cap. 230, made specific provision for the requirement to be made a regulation. [EXP-1(A); page 91, paragraph 5.1.1]

363. Of the Commissioner’s evidence that the advantage of the current system of promulgating the requirements in the Guidelines was that the Guidelines “could be reviewed and revised in a more timely basis” Professor Stanley said: [Transcript Day 16; 15 September 2018, page 176]

“It seems to me that you have to decide whether the guidelines or a regulation are about convenience to the authority or whether they are about outcomes to the public, and coming as a consequence of compliance.”

364. Further, he suggested the establishment of a Standing Committee on Bus Captains' Working/Driving/Rest hours: [EXP-1(A); page 94, paragraph 5.3, subparagraph 5]

“...consisting of (at least) government representatives/nominees, FB operators and fatigue experts, to meet at least twice a year, to inter alia, (1) review compliance with the relevant Guidelines... (2) review international experience in the field and (3) review emerging understanding of the causes of driver fatigue and ways of better managing fatigue.”

(iv) Standing Committee on Bus Safety

365. Professor Stanley recommended the establishment of a Standing Committee on Bus Safety, which he suggested meet at least twice a year: [EXP-1(A); page 94, paragraph 5.3, subparagraph 6]

“...to review and evaluate the latest technology that may impact on bus safety, particularly for route bus operation, and advise government on desirable safety inclusions in the FB fleet and other bus systems. The newly formed Working Group on Enhancement of Franchise Bus Safety could form the basis for this Committee but membership should be broadened to include other bus operators.”

366. In his evidence, Professor Stanley clarified that he had in mind including minibus organisations, which he noted formed a “significant part of your market”. Further, he said that *prima facie*, he was in favour of the inclusion of representatives of unions in the Standing Committee. Finally, he said that ideally its findings and research would be made public. [Transcript Day 16; 15 September 2018, pages 114-115]

(v) Public disclosure of franchised bus safety data

367. In his report, Professor Stanley referred specifically to the data contained in the Five-Year Forward Planning Programmes prepared by the franchised bus

operators and provided to the TD, of which he said: [EXP-1(A); page 66, paragraph 2.2.3]

“(they) contain some very useful analysis and discussion of safety outcomes and safety initiatives. The assessments, for example, of correlations between accident rates and factors such as Bus Captain age, Bus Captain years of experience, hours worked, route experience of Bus Captains, and such like are very useful.”

368. He noted, in particular, that “the accident rate seems to increase somewhat in the 6-8 hours working range... This possible correlation needs closer examination to test its validity and, if confirmed, reasons for its occurrence should be investigated and possible remedies explored.”

369. In the result, he went on to recommend: [EXP-1(A), page 67]

“The Forward Planning Program documents are understood to be confidential documents, as between the relevant FB operators and the Transport Department. The author believes that the data analysis they contain is an important part of the process of an operator demonstrating their capacity to operate a *proper and efficient* service...

Being publicly accountable for their safety performance would help to sustain performance pressure. There are solid arguments favouring publication of the Bus Safety chapter of the FPPs, because of the wider societal costs of accidents.”

370. In particular, he recommended examination of “the 6-8 hours and 12-14 hour(s) working periods to see what safety enhancements can be supported in these times, which may mean reducing the 14 hour limit.” [EXP-1(A); page 94, paragraph 5.3]

(vi) Seat belts

371. In his evidence, Professor Stanley said that seat belts were not required on urban buses in Australia. That was because of the belief that “the mass of the vehicle itself is normally going to provide sufficient occupant protection” and the challenge “with existing vehicles of retrofitting and the cost of so doing.”

[Transcript Day 16; 15 September 2018, page 124] He said that, if the issue arose in Australia, it would be addressed by “a process called a regulatory impact statement”, which was a cost/benefit analysis.

372. Having been taken through some of the evidence that the Committee had received in respect of the consideration of the installation of seat belts on new franchised buses and the retrofitting of seat belts on existing buses, including the transcript of relevant parts of the evidence of Mr Samuel Cheng, the Managing Director of CTB/NWFB, the Notes/draft Notes of the Working Group on the Enhancement of Bus Safety and its sub-groups, and the paper by the TD and THB prepared for the meeting of the Legislative Council Panel on Transport on 25 July 2018, when asked for his observations on the installation of seat belts on new buses and retrofitting them to existing buses, Professor Stanley said: [Transcript Day 16; 15 September 2018, pages 144-145]

“I think there are two levels to this particular question. The first level is: is it technically feasible to fit seat belts in certain kinds of positions on buses, for example on the upper deck of new buses, on retrofitting for older buses. That’s a technical question of feasibility.

The second level then is: if it is technically feasible, what is the cost/benefit ratio of doing that installation? In other words, what will it cost? That is the probability of particular kinds of accidents being reduced if those seat belts are installed? Will people wear them, is one of the questions that needs to be addressed in that setting?

I don’t have a view on any particular circumstances whether it is a good idea or not. What I would say is that that’s exactly the kind of problem that you should submit to a regulatory impact statement. There will be information around on the probabilities of accidents, these different varieties. You can put monetary values on the probability of those sorts of accidents being reduced. You probably can form a view too on the probability of wearing seat belts, which would affect the effectiveness of the wearing thereof.

So I think this is an exercise that needs a serious piece of cost/benefit analysis done on it. Now government may decide it wants to make a policy decision to install seat belts

where it is technically feasible. That's fine. As a matter of course, the way I would approach this, though, is to say you need to go through that cost/benefit analysis first, and I think that's what should be done in this situation." [Italics added.]

373. Of the benefits that might be obtained, Professor Stanley said: [Transcript Day 16; 15 September 2018, page 149]

"...you need to look of what are the sorts of accidents that are happening in the vehicle, and, for example, is this happening to people who are standing; is it happening to people who are sitting; what is the probability that exposure to those sorts of accidents will be reduced in the event that seat belt-wearing is required, and what do you need to do to encourage that seat belt-wearing?"

374. Of the parties that ought to be involved in a proper and effective cost/benefits analysis, Professor Stanley said that, apart from bus manufacturers, consultants who conduct customer survey work ought to be engaged to identify "the sorts of factors that would be influencing the probability of these seat belts being worn". In that context, he suggested that regard ought to be had to jurisdictions in which the installation of seat belts was mandated to "see whether people are actually wearing their seat belts there". [Transcript Day 16; 15 September 2018, pages 146-147] He agreed that it would be necessary to consult both the Police and bus operators as well. Finally, he suggested that recourse ought to be made to those who perform accident research, perhaps at universities or research centres. [Transcript Day 16; 15 September 2018, page 150]

CHAPTER 17 – Mr Weston: London

375. Since October 2016, Mr Weston has been an independent consultant in the bus industry. Prior to that, he was an employee of Transport for London (“TfL”), and its predecessor London Transport, for about 20 years. Having been the head of Bus Infrastructure (1999-2003), Bus Operations (2003-2004) and Operations Director (2004-2013) of London buses, Mr Weston was the Director of Buses, TfL, from October 2013 to September 2016.

376. The similarities and differences of the public transport systems, in particular the franchised buses, in London and Hong Kong respectively are illustrated by some salient statistics:

- in 2017-18, there were about 2.2 billion passenger journeys on buses in London, whereas there were about 1.4 billion such passenger journeys in Hong Kong; [EXP-1(A); page 120, paragraph 2.2; THB-2, page 103]
- in 2014, the proportion of the population using public transport on a daily basis was around 30% in London, whereas it was around 90% in Hong Kong; [THB-2, page 2]
- in 2017, the proportion of the population using public transport who used franchised buses was around 31% in Hong Kong and 56% in London; [THB-2, page 103; Transcript Day 18; 27 September 2018, pages 10-11]
- in 2018, the total number of franchised buses in London was around 9,200, of which 6,800 were double deck; whereas in Hong Kong the total number was around 6,000 franchised buses; [EXP-1(A); page 126, paragraph 3.4; THB-1, page 30]
- in 2017-18, the franchised bus fleet in London operated 490 million kilometres, an average of around 53,000 kilometres per bus per year; whereas, in Hong Kong the fleet operated 500 million kilometres, an average of around 83,000 kilometres per bus per year [EXP-1(A);

page 120, paragraph 2.2; Transcript Day 18; 27 September 2018, page 12]

Transport for London (“TfL”)

377. Mr Weston described the metamorphosis of the model by which bus and other services were delivered in London from London Transport to TfL began in 1985 with the tendering of some bus routes to private operators. London Transport was a public corporation which owned buses and garages and employed the operating staff. By about 1998/1999 all franchised bus routes were operated on a tendered basis and in 2000 TfL came into being. [Transcript Day 18; 27 September 2018, page 20; EXP-1(A), page 119]

378. In April 2017, there were six large groups of bus operators who between them operated about 94 percent of the annual scheduled mileage of franchised buses operated for TfL, the ultimate holding company for which groups of bus operators were: [EXP-1(A), page 126]

- Abellio Transport Holding BV (Netherlands) - 8.1%
- Arriva Passenger Services Limited (Germany) - 17.2%
- Comfort Delgro Corporation Limited (Singapore) - 19.2%
- Go Ahead Group Plc (UK) - 23.7%
- RATP Development (France) - 11.6%
- Stagecoach Group Plc (UK) - 14.6%

379. TfL is responsible for: [EXP-1(A); page 127, paragraph 4.1]

- contracting of services and setting performance standards;
- service/route planning;
- contract monitoring and management;
- provision of bus passenger infrastructure;

- passenger information;
- ticketing and vehicle location equipment.

By contrast, the role of the contracted bus operators is to:

- tender for individual bus routes;
- employ drivers, controllers, engineers and other operating staff;
- operate services to TfL standards;
- own assets-garages and buses.

380. Mr Weston said that one significant consequence of the tender for individual bus routes was that operators “will inevitably have contracts at every stage of the contract life”. [EXP-1(A), page 137]

381. Mr Weston summarised the process by which TfL awarded bus route contracts as being: [EXP-1(A); page 128, paragraph 4.2]

“Transport for London operate a pre-qualification system with new operators being required to complete a prequalification questionnaire. Subject to successful evaluation of this questionnaire a newly approved supplier would then be asked to sign a Framework Agreement and invited to start bidding for individual bus routes.

For each route tendered TfL will issue a service specification setting out all the requirements specific to that bus route including frequency required at certain times of the day, route to be followed and vehicle type-double deck, single deck etc.

The Framework Agreement covers all the generic contract provisions with the route specific information in terms of the route - for example timetable, minimum performance standards, vehicle type being contained within the Route Agreement.”

Vehicle specifications

382. Mr Weston said that the Framework Agreement detailed TfL’s requirements of vehicle specification, over and above national requirements for the initial certification of a bus, and included “assault screens, engine bay fire

suppression, CCTV systems including in vehicle monitors”. However, he observed: [EXP-1(A), page 134]

“Currently bus driver or passenger seat belts are *not* a legal requirement in the UK on scheduled bus services.” [Italics added.]

383. Furthermore, he noted “At present no London operators fit passenger or driver seat belts on buses contracted to TfL.” Also, he noted: [EXP-1(A), pages 134 and 142]

“Vehicle telematics systems are *not* currently mandated by TfL although all operators have adopted systems over the last few years from several suppliers including Green Road and Mixtelematics.” [Italics added.]

Tender evaluation

384. Mr Weston noted that each tender was subject to an evaluation process which “will seek the ‘most economically advantageous’ outcome.” However, he went on to say that “The technical evaluation of an operator’s bid will include an assessment of all aspects of their current performance including safety.” [EXP-1(A), page 129]

TfL contracts with bus operators

385. Of the contract model operated by TfL with bus operators, Mr Weston said: [EXP-1(A), page 125]

“Gross cost contracts are used by TfL with the operators being paid for each mile operated with additional bonuses and deductions based on the reliability of the service. Passenger revenue is retained by TfL...”

Passenger revenue: subsidy

386. Of the ratio of passenger revenue to the overall cost of the service, Mr Weston said: [Transcript Day 18; 27 September 2018, pages 33-34]

“...in the financial year 2016/17, 70 per cent of the cost of the network was covered by passenger revenue. So the other 30 per cent was subsidy, which was £626 million.”

Contract bonuses and deductions

387. Of the operation of that Quality Incentive Contract, Mr Weston said that: [EXP-1(A); page 131, paragraph 4.3.3]

“(it) combined the base payment regime of gross cost contracts with additional payments or deductions based on the actual Quality of Service Indicator (“QSI”) performance compared to the minimum performance standard contained within the route agreement. Payments are graduated with an increase or decrease in the payment for every 0.10-minute change in Excess Wait Time (“EWT”) and every 2.0-minute change in on-time performance for low frequency routes compared with the contract minimum standard. These payments could range between +15/–10% and were aimed at increasing operators focus on reliability of the service in addition to quantity (i.e. mileage operated) which had been the focus of the gross cost contracts.

For high frequency route (every 12 minutes or more) the measure of quality of service is EWT and for low frequency routes the on-time performance is measured. EWT measures the excess wait passengers experience on high frequency services where it is assumed they arrive randomly at the bus stop and should therefore ideally wait on average half the scheduled headway.”

388. Mr Weston explained that the contract price agreed between the bus operator and TfL, divided by the annual schedule mileage, produced a contract price per mile. The operator was paid that rate per mile for every mile they operated, but lost the contract rate per mile for mileage that they failed to operate due to reasons within their control “for example, if they have no driver to run the journey or they have no bus because of mechanical failure”. However, for mileage lost for reasons beyond their control, for example “traffic delays, or diversions due to planned or unplanned events” payments were not deducted. Finally, he said that “there is a relationship with these additional payments for reliability of the service.” [Transcript Day 18; 27 September 2018, pages 23-24]

389. Mr Weston said that of the calculation of EWT: [Transcript Day 18; 27 September 2018, page 27]

“Historically...it was done by manual data collection. Now it is calculated automatically through the vehicle location system. So historically it was a sample; now it is effectively 100 per cent statistic based on all buses on that route.”

Length of the contract

390. Of the length of the contract, Mr Weston said: [EXP-1(A), page 129]

“London bus contracts typically run for an initial period of 5 years with the potential for a two-year extension based on operational performance during four quarters of years 3&4... If operators meet the contract extension criteria, then they are eligible for an automatic extension. The operator can decide whether they wish to accept the extension.”

391. Of the operational performance criteria, Mr Weston said “operators are required to exceed the minimum performance standard (On-time or Excess Wait Time) to be eligible for a contract extension”. However, having said that the contract could be varied to include other matrices, such as safety performance, he noted “...at present only EWT or On-time performance form part of the extension criteria.” [EXP-1(A), page 130]

Annual Contract Price Adjustment

392. Mr Weston said that all route agreement contracts were “eligible for an annual Contract Price Adjustment on the anniversary of the date of tender to reflect cost inflation. The formula used to calculate that adjustment was a weighted basket of factors, including Average Earnings Index, Retail Price Index and Index for diesel price increase. [EXP-1(A); page 135, paragraph 4.5.4]

Termination of the contract

393. Section 27 of the Framework Agreement makes provision for termination of the Route Agreement “for several reasons including a material breach of any provisions of the Route Agreement, including where performance in respect of the route agreement is not... to the standards required.” However, Mr Weston noted that “In practice the contract termination provisions have been rarely used”. [EXP-1(A); page 132, paragraph 4.5.1]

394. Mr Weston explained: [Transcript Day 18; 27 September 2018, pages 42-43]

“One of the big advantages of the route level tendering system over perhaps an area-based franchising system, such as for example in Singapore, is that the ability of the authority to adjust the size of a company through route awards is very, very flexible. The challenge with a big area franchise is that if performance in certain aspects of the contract isn’t up to standard, it is a very big decision to terminate that contract. You may have a contract for 400 of 450 buses. A very, very big decision and potentially very disruptive to the transport network and members of the public.

The benefit of the London system is that you can send some very clear messages to the operator by not awarding them some contracts for a period of time. It doesn’t have a devastating effect on their business but sends a very strong message that they’ve got to improve their performance.”

Contract Monitoring and Performance Management

Performance Account Manager

395. Mr Weston said that each contracted bus operator was allocated a Performance Account Manager by TfL, whose role was to “...identify performance issues and then work with the operator to identify solutions and implement plans to resolve the issue.” [EXP-1(A), page 136]

396. In summarising the contract monitoring regime, Mr Weston identified the following relevant factors of “output”: [EXP-1(A), page 136]

- Mileage Operated;
- Reliability (Excess Wait Time/On-Time performance);
- Driving Standards-DQM;
- Contract Audits-driving hours, mileage returns etc; and
- Engineering Standards-EQM.

397. In addition, he said that the perceptions of the users of the franchised buses were relevant and regard was had to customer satisfaction surveys and customer correspondence. Further, assessment was made by trained surveyors of drivers “from a non-technical viewpoint in terms of helpfulness, attitude to passengers etc” in what were called Mystery Traveller Survey. [EXP-1(A); pages 136-137, paragraphs 5.2-5.3]

Driver Training

398. Mr Weston noted that all franchised bus drivers were required to take a specific driving test and obtain a Public Service Vehicle Licence (“PSV”) and, in order to maintain eligibility for that licence, to undertake 5 days accredited training every 5 years. Most drivers underwent a one day course every year and, thereby, were able to maintain a Certificate of Professional Competency (“CPC”). In addition, TfL required that all new franchised bus drivers obtain within one year Level 2 of the Professional Bus Driving qualification, accredited by City & Guilds. [EXP-1(A); page 144, paragraph 6.6] Drivers allocated to a route were expected to be familiar with the Route Risk Assessment (“RRA”) which bus operators were required to produce as part of the Framework Agreement “...to identify potential risks along a route.” [EXP-1(A); pages 142-144, paragraphs 6.4 and 6.6]

In the Zone

399. In 2015 and 2016, TfL developed a course ‘In the Zone’ delivered by the bus operators’ trainers to all their drivers to enable them to identify and respond to risk-taking behaviour to reduce the consequences of risk-taking. Mr Weston said the course was effectively a training course which use videos which showed “how drivers manage and assess risk”. [Transcript Day 18; 27 September 2018, page 176; EXP-1(A); page 144, paragraph 6.6]

Hello London

400. In 2016-2018, TfL delivered to all the bus operators’ 24,500 drivers a two-day, CPC accredited course, *Hello London*, the primary objective of which was to improve customer service delivered by bus drivers in different situations. Mr Weston said that the course was delivered: [Transcript Day 18; 27 September 2018, page 178]

“...centrally by Transport for London contractors. So *it was a big commitment.*” [Italics added.]

401. The context of Mr Weston’s observation as to the size of TfL’s commitment is to be found in TfL’s Board Paper “*Bus Driver Training*”, dated 8 November 2016, which noted: [MISC-3; page 1370, paragraph 4]

“(T)he Hello London approach has been to harness innovative situation drama with reflective facilitation. Following a competitive process, the training contract was awarded to specialist supplier Steps Drama. The budget for the training, delivered over two years, is £6.5m.”

402. In the *Hello London* programme, actors were used to create an interactive dialogue with the bus driver participants about specific situations, for example: the various circumstances in which a bus does not stop at a bus stop, or if it stops does not open its doors to allow passengers to board, and the resulting consequences; the consequences of a bus not stopping at a bus stop; and conflicts between angry

passengers and the bus driver arising from the bus being late, a mother refusing to collapse a child's buggy or from an aggressive foulmouthed passenger who abuses the bus driver. Further, the course addressed the risk of the resulting frustration and distraction leading the driver to take risks whilst driving. [EXP-1(A); pages 144-145, paragraph 6.6] Mr Weston said that it was the latter factor that was the link to safety "if drivers can become less stressed and agitated by the way in which they deal with passengers, then hopefully they are less distracted when they are driving the vehicle after that incident or that interaction". [Transcript Day 18; 27 September 2018, pages 177-178]

Driver quality monitoring ("DQM")

403. Qualified driving instructors were employed to undertake covert surveillance of a sample of each of the franchised bus operator's drivers each year. The 'Scoring Sheet' identified multiple factors under three separate headings: Passenger Consideration; Other Safety; and Driving Ability. [EXP-1(A), pages 137 and 159]

Engineering Quality Monitoring ("EQM")

404. In addition to being required to maintain the buses in accordance with laws and regulations and to being subjected to an annual test, Mr Weston said that TfL employ a specialist contractor who inspected approximately 25% of the fleet of each of the bus operators each year in unannounced inspections. [EXP-1(A); page 138, paragraph 5.4]

Bus contract Audit

405. Mr Weston said that TfL had a contract audit team who visited individual garages on a regular basis to undertake audits of compliance of making records of various items, including lost mileage and drivers hours. [EXP-1(A); page 138, paragraph 5.5]

Collaboration between TfL and bus operators

Bus Operator Forum

406. In addition to contract monitoring and performance management, Mr Weston said that there existed a relationship of collaboration between TfL and bus operators as evidenced, in particular, by the Bus Operator Forum which met about every eight weeks and is comprised of the managing directors of the bus operators on the one hand and directors and senior managers of TfL on the other hand. He said that the forum had been established at least 15 years earlier and that he had chaired it for 6 or 7 years. It had been established as a proactive measure, rather than being reactive to particular events. [Transcript Day 18; 27 September 2018, pages 83 and 89] Those meetings afforded the bus operators the opportunity to raise “generic issues and concerns” and for TfL to indicate future consequences for the bus operators of TfL’s business plan. [EXP-1(A); page 139, paragraph 5.7; Transcript Day 18; 27 September 2018, pages 83-84]

Sub-groups

407. In addition to the Bus Operator Forum, there existed a series of sub-groups, including one in Engineering and another in Safety. Those sub-groups met in a similar cycle of eight weeks and discussed issues of common interest and best practice.

Safety sub-group

408. Of the meetings of the safety sub-group, Mr Weston said: [Transcript Day 18; 27 September 2018, page 85]

“...the safety sub-group is attended, again, by all the bus companies, sometimes at a managing director or director level, sometimes by the bus companies’ head of Safety. That’s where again common issues around safety would be discussed.

The forum is also used as a place for operators to share lessons learned from incidents, road traffic incidents.”

Engineering sub-group

409. Mr Weston said that the engineering sub-group is generally made up of engineering directors who shared issues around the maintenance of vehicles. That he said was another forum “for collaboration and sharing good practice.” [Transcript Day 18; 27 September 2018, page 87]

The Bus Operators Forum, its sub-groups and Trade unions

410. Mr Weston said that trade union representatives did not attend the meetings of the Bus Operators Forum or its sub-groups. He noted that 95% of bus drivers belong to the Unite trade union so that “liaising with the trade union from TfL’s point of view is relatively easy.” Of issues of bus safety, Mr Weston said of TfL: [Transcript Day 18; 27 September 2018, pages 88-89]

“...they would meet with the trade unions probably to share some of their thoughts on the bus safety standard, for example. But it is left down to the individual bus companies to deal with their local trade union representative in terms of local issues and local terms and conditions.”

TfL: Bus Safety Management

TfL’s Bus Safety team

411. Mr Weston said that in early 2015 TfL: [Transcript Day 18; 27 September 2018, page 94]

“...set up a dedicated team to focus on the bus safety programme, and it included somebody who was seconded from the road safety team of TfL, and the aim was so they would focus, and that team is still focusing, on improving bus safety and delivering the bus safety programme.

So there is a dedicated team of two or three people whose job is purely focused on this agenda and driving bus safety.”

Intelligent Speed Assistance (“ISA”)

412. Mr Weston acknowledged that earlier, in 2009, TfL had commissioned a report conducted by 2CV, a marketing consultancy, to explore drivers’ attitudes towards Intelligent Speed Adaption, which provided speed limit information which could be acted on to limit the speed of a vehicle in one of three modes: namely; Advisory, Voluntary and Mandatory. [MISC-3, page 943] Of the statement “In May 2009, Transport for London commenced a trial of one of the latest ISA systems”, which trial was in cars and the purpose of which was to evaluate the appropriateness of the system in vehicles, not specifically buses. [Transcript Day 18; 27 September 2018, pages 102-103]

413. However, Mr Weston said that in 2015 TfL commissioned a report of a trial of “*Intelligent Speed Assistance on London Buses*” conducted by Transport Research Laboratory (“TRL”), a consultancy specialising in road transport and technical assessment of road transport matters. Two bus routes were selected for the trial, which began in June 2015 and resulted in a comprehensive report published in November 2016. [MISC-3, pages 1002-1133] Of the technology, Mr Weston said: [Transcript Day 18; 27 September 2018, page 97]

“...it uses the digital speed map that’s available for London, and each of the vehicles fitted with equipment talk to the digital speed map, and therefore restricts the driver’s ability to accelerate beyond the speed limit. So it controls the driver’s speed at the speed limit.”

414. Of TRL’s role, Mr Weston said that they provided not only a rigorous analysis but also an independent analysis, noting: [Transcript Day 18; 27 September 2018, pages 97-101]

“So this technology was funded on these two routes by Transport for London, but they commissioned TRL to do the monitoring.”

Bus Safety Programme: February 2016

415. Mr Weston noted that in February 2016, TfL launched its Bus Safety Programme, core elements of which included: [EXP-1(A), page 146]

- transparent bus collision data analysis;
- contract and performance management;
- vehicle design; and
- bus driver training.

Data collection and transparency

416. Mr Weston said that bus operators were required by their contract to submit “comprehensive data relating to incident and accidents” and did so through the Incident Reporting Information System. On a quarterly basis, TfL published data compiled by the police, “STATS 19”, of road collisions involving death or personal injury. A trend analysis was provided on a “bus safety dashboard”. Also, on a quarterly basis, TfL published Excel spreadsheets, entitled “Details of incidents resulting in a fatality or injuries which required hospital attendance and treated on scene”, of incidents involving franchised buses. [EXP-1(A), page 141]

London Buses Safety Dashboard-Q1, 2018

417. The Quarter Summary of the ‘*Quarter One Report 2018*’ of the London Buses Safety Dashboard, published on the TfL website, included the statement: [MISC-3, page 1327]

- “• In Q1, there were 2.9% injuries for every one million passenger journeys.
- The proportion of injuries attributed to slip trip fall went up from 47% in Q4 2017 to 51% in Q1 2018.
- Collisions accounted for 13% of all injuries; this is the lowest proportion since 2014.

- 8.6% of the reported 16,912 incidents in Q1 resulted in injuries. This quarter is the lowest for incidents since 2014.”

TfL’s Bus Safety Data Publication

418. Beneath the heading “*TfL Bus Safety Data Publication*”, the TfL website states: [MISC-3, page 1338]

“All data is gathered from London Bus operating companies using an in-house data logging system which every London bus operating company has access to. *Bus companies are required to report incidents regardless of blame and severity.* The logging system is intended to provide data for statistical reasons to support safety evaluation. Only initial information relating to incidents are provided to TfL by bus operating companies on prima facie basis. Incident investigations are carried out by the operating companies involved who retain resultant information.” [Italics added.]

419. The caveat entered by TfL in respect of the use of the data states: [MISC-3, page 1338]

“It is not considered to offer a reliable means of comparing individual bus routes or bus operating companies in relation to safety. This is mostly due to the fact that route characteristics are often different as are other key factors such as density, frequency, traffic volume and the bus type used...”

420. As Mr Weston observed in his report, the information listed in the Excel spreadsheets included: the Date; Route; Operator and Group name; the Borough in which the incident occurred; the gender, the adult/child, passenger/or not status of the injured person, together with the type of incident and resulting treatment. [EXP-1(A), page 141] The TfL website explains that the description of the incident, as involving a fatality, excludes “health related events such as suspected heart attack.” Finally, a description is given of whether or not an injured person was treated at the scene only or whether or not hospital attendance was required. [MISC-3, page 1338]

421. The TfL website goes on to state that:

“Road Safety Statistics (STATS19)

STATS19 is the main source of road safety data for London and is used as the authoritative source for analysing road casualties across the city.”

Further, the website states:

“Due to the fact that bus operating companies are unable to verify the nature of injuries in all cases at the time of logging incidents, anyone viewing this data is advised against using it as an authoritative source of statistics on road traffic casualties. STATS19 publications should be used for this purpose, particularly when seeking to ascertain the severity of injuries sustained.”

Verification of the data

422. Mr Weston said that TfL had a process of verification of the data provided to it: [Transcript Day 18; 27 September 2018, page 50]

“So all operators have a requirement to enter all the incidents onto the central database, and that’s the main source of information, and there’s audits undertaken by Transport for London to ensure that operators are correctly populating that database. In addition, that data is cross-referenced with the police data for serious incidents.”

Safety innovation fund

423. TfL established a *Safety Innovation Fund* and having invited bids from bus operators in August, in November 2017 it awarded a total of £500,000 to six bus operators to conduct trials on technological safety devices. Mr Weston said that the technological devices being examined included autonomous braking, pedal confusion prevention, mirror design and frontal crash protection. [EXP-1(A), pages 146-148]

424. Ms Lorna Murphy, the Safety Director of Abellio, reported to Mr Weston and the Chairman in August 2018 that its tests of Mobileye, a forward-facing

camera which displayed changes to speed limits and alerted drivers of the distance between the vehicle in front and possible conflicts with pedestrians and cyclists, have resulted in a 28% reduction in accidents and a decrease of on-board injuries of 75%.

425. Mr Jon Pike, Head of Safety and Risks of RATP, reported that its trial of the Guardian ‘Seeing Machine’, a drowsiness detection camera, had resulted in a 25% reduction in accidents on the route on which the trial being conducted. The system detected the fact that a person’s eyelids were closed for a period of more than 1.5 seconds and transmitted an alert to a central control room from where, after verification that the alert was positive, communication was made with the garage who, in turn, contacted the driver by radio. Mr Weston and the Chairman viewed an example of a video recording of a bus driver in such circumstances, which had led to an alert on 28 August 2018, and were told that contact was made directly with the driver within 5 minutes. [EXP-1(A), pages 146-147]

426. Mr Weston noted that: [Transcript Day 18; 27 September 2018, page 101]

“TRL have also been engaged in the assessments of all the other technologies that are being considered as part of the new bus safety standard in London.”

Bus Safety Standard

427. Mr Weston said that a core part of the Bus Safety Programme was the establishment of a Bus Safety Standard on which TfL had been working since 2016 in collaboration with TRL, Loughborough University, bus operators and bus manufacturers. He noted that a rigorous approach had been adopted “to the assessment of each potential option using cost/benefit analysis to target the interventions which will give the greatest return for each £ spent in terms of injury/accident reduction.” The primary objective was to reduce the number of those killed and seriously injured in bus accidents. [EXP-1(A); page 148, paragraph 7.5]

Safety performance indicators (“SPI”)

428. Mr Weston said that, as part of the development of the Bus Safety Programme and Bus Safety Standard, TfL had developed a *Safety Performance Indicator*, which he anticipated would be announced publicly by TfL at the time that the Bus Safety Standard was to be promulgated. Of the SPI, he said: [EXP-1(A); page 150, paragraph 7.8]

“...SPI monitors a basket of measures including incident data and outputs from the observational measures giving operator an overall score which is benchmarked at 80. Their individual future performance is then measured against the benchmark to track for either deterioration or improvement. The system is not designed to compare bus companies between each other but to track the trend of an individual company.”

Seat belts

429. Mr Weston said that he and the Chairman had been told by representatives of TfL that TfL had “(n)ot looked at” the installation of seat belts on franchised buses. [Transcript Day 18; 27 September 2018, page 119] Of that he said:

“The view has clearly been taken that they don’t want to pursue seat belts, I suspect because they know what the cost is and they feel that there are greater benefits from some of the other options”.

430. Mr Weston acknowledged that, in May 2010, the Department for Transport of the United Kingdom had issued a statement providing guidance and advice on the legislative requirements in respect of the installation of seat belts on urban buses. Having noted that it had been a requirement, since 1 October 2001, that seat belts be fitted on seats in all new buses, the statement said: [MISC-3, page 1274]

“The only exemption from this requirement is for buses that are designed for urban use with standing passengers. An exemption is permitted for these vehicles because they are typically used for short journeys, in both time and distance, undertaken at moderate speeds on urban routes.”

431. Finally, he said that it was anticipated that TfL would announce the first phase of the Bus Safety Standard on 16 October 2018 and that two further phases would follow in 2021 and 2022. [EXP-1(A), page 148]

Bus Safety Standard: October 2018

432. TfL launched its Bus Safety Standard on 16 October 2018. In the accompanying Executive Summary, Ms Claire Mann, the Director of Bus Operations of TfL, said of the steps taken since the launch of the Bus Safety Programme in February 2016: [EXP-1(B), page 189-308]

“Since then we have commissioned TRL (the Transport Research Laboratory) to research and develop that standard. This has been an evidence-based and collaborative project, consulting with bus manufacturers and operators on technical feasibility, timelines and implementation.”

433. Ms Mann noted that “(n)ot all the technologies are available immediately and some will require development time, so our bus safety roadmap sets out our future plans for the buses, to give the manufacturers time to invest in these new safety features.” Of that, it was noted that it now presented “a ‘Preferred’ date earlier than any ‘Required’ date.” The latter, represented the date when multiple bus models “would be expected to be available to the market and will typically follow a few years later.” [EXP-1(B), pages 189-308 and 189-324]

434. In his Supplemental Report, Mr Weston noted that the measures announced were categorised under separate headings: [EXP-1(A); page 189-65, paragraph 3.1]

Driver Assist

- Advanced Emergency Braking;
- Intelligent Speed Assistance;
- Improved Direct and Indirect Vision;
- Pedal Application Error; and
- Runaway Bus Prevention.

Partner Assist

- Acoustic and Visual Conspicuity.

Partner Protection

- Vulnerable Road Users Frontal Crashworthiness.

Occupant Protection

- Occupant Friendly Interiors and Slip Protection.

435. Mr Weston noted that it was envisaged that “the standards will apply to all new buses from 2019 onwards (around 700 per annum)”, but that “consideration is also being given to the potential to retro-fit existing buses possibly as part of their mid-life refurbishment which takes place after around 7 years.” [EXP-1(A); page 189-64, paragraph 2.3]

*Driver Assist measures**(i) ISA (Intelligent Speed Assistance)*

436. Of the Driver Assist measures, only ISA was required by the end of 2018. Mr Weston noted that this measure was “considered especially helpful to drivers as the number of 20mph zones increases across London.” [EXP-1(A); page 189-66, paragraph 3.3]

AEB (Automated Emergency Braking)

437. The Executive Summary acknowledged that advanced emergency braking on buses provided “a unique additional challenge because of the multiple passengers that are seated and unbelted, or who might be standing” and acknowledged that “...each false activation also carries a risk that it could cause passenger injury.” [EXP-1(B), page 189-311] Of that, Mr Weston said “The roadmap recognises this requirement for further development work and therefore envisages this feature being delivered from 2024.” He said that it was claimed

that the acknowledged risk of injury to passengers on board the bus, from false activation of the AEB system, would be "...off-set by a reduction in the number of fatal and serious injuries outside the bus." [EXP-1(A); page 189-66, paragraph 3.3]

Driver's Direct and Indirect Vision

438. Having noted that a driver's ability to respond to an imminent collision was dependent on how well he could see out of or around the bus, the Executive Summary said that the Bus Safety Standard would "minimise direct vision obstructions from pillars and improve indirect vision via the use of mirrors, or blind spot information systems and Camera Monitor Systems in the future." The latter system might replace external mirrors and remove the risk of collision with those mirrors by those outside the bus. (EXP-1(B); pages 189-313 to 189-314, paragraph 2.3)

Pedal Confusion Prevention

439. Mr Weston explained that "(p)edal confusion refers to situations where a driver presses the accelerator when intending to press the brake thus leading to an unintended acceleration". A variety of solutions were being considered, including dashboard lighting to indicate the acceleration and braking. [EXP-1(A), page 189-67]

Runaway Bus Prevention

440. To prevent the "rare" circumstances of a runaway bus, in 2020 TfL will require "a system of interlocks to prevent the bus from rolling away if circumstances lead to the driver forgetting to apply the parking brake" when leaving his seat. [EXP-1(A), page 189-67]

Partner Assist

441. Having regard to the increased use of electric and hybrid buses, in order to assist other road users, TfL will require all “new models” be fitted with an Acoustic Vehicle Alerting System from September 2019 and all “new builds” from 2022. That system assists those outside the bus to detect the presence of the bus. Testing and trials of improved visual conspicuously of buses were still underway. [EXP-1(B), pages 189-317 to 189-318]

Partner Protection

442. Of vulnerable road users (“VRU”) outside the bus, Mr Weston said: [EXP-1(A); page 189-68, paragraph 3.5]

“Pedestrian friendly front end design could incorporate a variety of features designed to better protect pedestrians and other VRU in the event of a collision. This includes changes to the geometric front-end design of the bus, impact protection and energy absorption assessment, and runover prevention measures such as an airbag device located under the bus which is activated if the bus comes into contact with a pedestrian. These requirements will also include the impact performance of wing mirrors and their potential replacement with camera monitoring systems.”

Occupant Protection

(i) Seats

443. Having noted that “a large number of slight injuries occur in non-collision incidents such as harsh braking” [EXP-1(B), page 189-321], the Executive Summary asserted “TfL’s BSS²² is supporting safety improvements for bus passengers as a priority.” Having noted that passengers could be injured “in frontal impacts or when the bus brakes because this causes them to move forward into the seat in front” and that low backed seats allows large neck extension in rear

²² “BSS” means the “bus safety standard”.

facing seats in such circumstances, the Executive Summary said “TfL calls for innovation to develop a seat design that can provide greater protection”. [EXP-1(B); page 189-322, paragraph 5.1]

(ii) Slip Protection

444. The Bus Safety Standard “...will require a minimum skid resistance of the anti-slip flooring fitted in the buses.” [EXP-1(B); page 189-322, paragraph 5.2]

Bus Safety Innovation Challenge

445. Mr Weston said that the Bus Safety Innovation Challenge was a TfL fund to be launched in early 2019, which was open to bus manufacturers and their suppliers, as well as bus operators. First, an applicant had to describe the safety problem that it was intended to avoid or mitigate and how the safety measure worked. Secondly, evidence was required of how the innovation had been tested and its effectiveness and suitability for use on buses demonstrated together with a description of “the expected benefit in terms of the number of casualties it is expected to avoid”, quantified by “real world evidence” of the benefits “actually achieved, operational implications such as driver or passenger reaction to the system and costs.” [EXP-1(A); page 189-70, paragraph 4.2; EXP-1(B), page 189-325]

Safety Performance Index

446. Most helpfully, TfL provided Mr Weston with general information of the Safety Performance Index (“SPIx”), which had been employed on a trial basis with its bus companies since 2017. The SPIx comprises eight “baskets”, which contain a total of 81 indicators: [EXP-1(C); pages 189-743-1; 189-754 to 189-775]

- Customer Safety;
- Staff Safety (Employees and Suppliers Staff);
- Network Safety;

- Bus Engineering;
- Driving Standards;
- Issue Management & Assurance System;
- Infrastructure Safety; and
- Bus Station Safety.

447. The periodic SPIx Score is calculated by the application of the formulae:

- $SPI = \text{score} \cdot m + 100$

[Where “m” is the gradient unique to the business area on the degree to reach the target of 80 with a constant of 100 (best performance).]

- $\text{Score} = \text{weight} \times \sum \text{incidents}$

[The score is a function of multiplying a weight from 1 to 5, where 5 is the most serious, with the total number of incidents for any given period.]

The weighting value and the value of “m” are not publicly available.

Cost/benefit analysis

448. Similarly, TfL provided information about their cost/benefit model. The approach to a cost benefit analysis was described as involving a series of steps: [EXP-1(C), page 189-746]

- **Measure**
 - Problem
 - Description of solution
- **Target population**
 - What are the relevant casualties?
- **Fleet penetration**
 - How long to enter the fleet?
 - New build and retrofit
- **Effectiveness**
 - How well will it work on the target population?
- **Costs**
 - How much will it cost?

- Manufacturing and operational costs
- **Timeline** - When is the solution feasible to implement?
- **Overlaps** - What other safety measures does it overlap with?

449. As an illustration of the resulting cost: benefit ratio (“CBR”) calculated in respect of some of the proposed measures to be adopted in the bus safety standard, Mr Weston said that the following CBRs had been calculated in respect of these measures: [EXP-1(C), pages 189-743-1 to 189-743-2]

- Vulnerable Road User Frontal Collision-minimum geometric requirements
CBR = 1:9.98-28.15 (excluding insurance claims);
- Interiors Level 2
CBR = 1:7.99-20.2 (excluding insurance claims); and
- Indirect Visual Standard Requirements
CBR = 1:1.69-7.39 (excluding insurance claims).

450. So, it was calculated that every £ spent on the improvement of the design of the front of buses, in consequence of the Vulnerable Road User Frontal Collision requirements, would result in benefits of between £9.98 and £28.15. Mr Weston observed the exclusion of the anticipated benefit to bus operators, resulting from their insurance claims, reflected a conservative approach by TfL to the cost benefit analysis. [EXP-1(C), page 189-743-2]

Mr Weston’s recommendations

(i) Subsidised trials and installation by franchised bus operators of technological safety devices and bus driver training

451. Having observed that Hong Kong was probably unique in operating a franchised bus network without public subsidy, Mr Weston said that begged the question of whether that was overly restrictive of “investment the franchised

operators can make in the network especially in terms of developing and introducing new technology and initiatives.” He suggested that consideration be given to funding by TD of the “uptake of new safety technology and bus driver training targeted specially at safety”. In that context, he noted that the cost of safety improvements in buses operated for TfL was ultimately reflected in the increased bids made by franchised bus operators for routes. [EXP-1(A); page 152, paragraph 8.3]

(ii) Adoption of new technology

452. Of the adoption of new technological safety devices on franchised buses, Mr Weston said: [EXP-1(A); page 155, paragraph 8.9]

“It is clear from London’s experience that the adoption of new technology needs to be done *in a considered way* to ensure that the benefits from any financial investment are maximised. It is clearly necessary to understand both the cost and benefits of various technology options to ensure that any investment made maximises the benefits in terms of accident reduction.” [Italics added.]

453. Of the circumstances in which the decision had been made, first by KMB and then by the Working Group on the Enhancement of Safety on Franchised Buses to install seat belts on all new buses and the ongoing considerations of the Working Group of retrofitting them to existing franchised buses, Mr Weston said: [Transcript Day 18; 27 September 2018, pages 158-159]

“I think in my mind the bit that is missing in a lot of this assessment is really the cost/benefit, and really considering the cost of seat belts, and certainly the retrofitting is a huge cost... The key question is what are the benefits of that investment in terms of seat belts, in terms of reducing injuries, compared with how that money could be spent on other safety measures across the network...

So I think there’s a whole piece of work missing here about, for every dollar that’s invested in bus safety, are there bigger benefits to be obtained by intelligent speed adaptation/assistance, autonomous braking, front-end design, can that money be spent

more wisely on other things? And I think the worry is once the money has been spent on this, it's been spent.

... it's a significant amount of money, and I would question whether it could be spent on other forms of technology that would get better results.”

454. In the result, Mr Weston recommended: [EXP-1(A); page 155, paragraph 8.9]

“The approach adopted by TfL in the development of its Bus Safety Standard is worthy of consideration in Hong Kong especially given the main two UK bus manufacturers are key suppliers to both London and Hong Kong.

Safety technology will also continue to develop as the vehicle industry sees increasing autonomy. In this regard the assessment and adoption of new technology needs to be an ongoing process as vehicle safety features will continue to develop and any standards need to constantly respond to these developments.”

(iii) Safety data transparency

455. Having noted that it had been the experience in London that “greater transparency of data in relation to the safety performance of the bus network not only leads to greater stakeholder and public scrutiny it also leads to a sharper focus from both the transport authority and its contracted bus operators on the safety agenda. An open approach to incident data leads to accountability”, Mr Weston said: [EXP-1(A); page 153, paragraph 8.4]

“Consideration should be given to what safety data in relation to the Hong Kong franchised bus network could be placed into the public domain.”

456. In his evidence, Professor Stanley endorsed that suggestion forcefully. [Transcript Day 16; 15 September 2018, page 181] As noted earlier, having noted that the data contained in the Five-Year Forward Planning Programmes contained “some very useful analysis and discussion of safety outcomes and safety initiatives”, in his report Professor Stanley recommended the publication of the

Bus Safety Chapter of the Five-Year Forward Planning Programmes. [EXP-1(A); pages 66-67, paragraph 2.2.3]

(iv) Statutory regulation: collaboration between franchised bus operators and TD

457. Having said that it appeared, from the submissions of the TD “*An Overview of the Regulatory and Monitoring Regime of Franchised Bus*”, [TD-1, pages 34-53] “...that in terms of safety there is clearly a strong reliance on statutory regulations as the main thrust of safety management for the FB operators”, Mr Weston suggested that: [EXP-1(A); pages 153-154, paragraph 8.6]

“...an over dependency on the statutory regulations applying to all vehicles and fails to recognise some of the unique features of the bus operation especially in terms of their ability to carry upwards of 100 passengers. This over reliance on ensuring compliance with statutory regulations may also stifle innovation in terms of safety by both the TD and the FB operators.”

458. By contrast, Mr Weston said that in London compliance with statutory requirements relating to both vehicles and drivers was “very much expected” of franchised bus operators, with the result that in his view: [EXP-1(A); page 154, paragraph 8.6.]

“...it is the initiatives, projects and collaborative working beyond these that have and will make the real-world differences to safety. The collaboration between the London bus operators and TfL and their willingness to innovate and try new technologies and approaches has, and as part of the Bus Safety Programme, will deliver real results in terms of incident and injury reduction.”

459. In the result, he recommended that “The TD should consider how they can improve the collaborative working with the FB operators.”

(v) Independent Safety Regulator

460. Although Mr Weston acknowledged there was no Independent Safety Regulator for the bus industry in the United Kingdom, nevertheless, having noted that in the United Kingdom there was an independent Rail Safety Standards Board and that consideration was being given by the TfL and others to the establishment of a Light Rail Safety Standards Board for trams, Mr Weston suggested that the establishment of an Independent Safety Regulator for franchised buses in Hong Kong was a matter that deserved consideration. [EXP-1(A); page 156, paragraph 8.11]

(vi) Bus driver training

461. Having noted the role of TfL in developing some standard training courses for all bus drivers, albeit that the responsibility for driver training was imposed on the bus operators, Mr Weston suggested that, given that there were multiple franchised bus operators in Hong Kong and the public expected common and consistent standards, "...the transport authority is often best placed to set common training requirements especially in the topic areas beyond technical driving skills." [EXP-1(A); page 155, paragraph 8.8]

(vii) Speed limits lower than 50 km/h

462. In his report Mr Weston had not addressed the issue of the implementation of speed limits of less than 50 km/h on certain sections of roads. Nevertheless, in his oral evidence he was asked to express his view as to whether or not that was a matter that ought to be considered in enhancing safety of franchised buses.

463. In context, he was asked to do so given the increasing the extensive use of 20 mph speed limit zones in London and elsewhere in the United Kingdom. In the TfL publication "*Safe London streets; Our approach*", dated October 2015, it was asserted "A 1mph reduction speed could reduce the frequency of collisions by around six per cent in urban areas." Also, it was stated that: [MISC-3, page 987]

“Almost 25 per cent of the Capital’s roads now have 20 mph speed limits. In March 2015, we outline plans for eight new pilots on parts of our road network...”

464. The United Kingdom’s Department for Transport’s Circular “*Setting Local Speed Limits*”, dated January 2013, noted that: [SEC-3; page 1025, paragraph 89]

“20 mph zones are very effective at reducing collisions and injuries. Research in 1996 showed that overall average annual collision frequency could fall by around 60 %, and the number of collisions involving injury to children could be reduced by up to two-thirds.”

465. For his part, Mr Weston said: [Transcript Day 18; 27 September 2018, page 194]

“I think the answer to that question is somebody should probably first understand what the average speed is and what the range of speeds are.”

466. Of the issue of applying a cost benefit analysis to the resolution of the issue, Mr Weston added: [Transcript Day 18; 27 September 2018, page 195]

“...if you do slow all the bus routes down because you don’t go as fast, then to run the same frequency you potentially need more buses and more drivers, so there is a cost to that, and it’s back to the earlier point, is that more beneficial than fitting other safety features to the buses? It’s trying to take an overview of all the options that are available and making an informed choice...”

(viii) Incentivising the safety performance of franchised buses

467. In his evidence, Mr Weston said that he had noted in his report “concerns expressed by the bus operators...whether direct financial incentives potentially drive the wrong behaviours in a bus company and potentially reduce information-sharing and collaboration with their peer group.” [Transcript Day 18; 27 September 2018, page 199] Of that, he said it would be “...rather a strange link” to pay a financial incentive for improvements in safety where, nevertheless the bus operator had been involved in fatalities and serious injuries. On the other hand,

he said that if deductions were to be made for safety performance then bus operators "...will just build those deductions into their original contract price to mitigate the impact." [Transcript Day 18; 27 September 2018, pages 199-200]

468. In the result, he said: [Transcript Day 18; 27 September 2018, page 200]

"I think there is a whole host of concerns around directly linking financial incentives to the bus contracts. I think that's supported by TfL in their document about the bus route tendering process dated 2015, where they explain why they don't think the financial incentive would be right."

469. It is to be noted that TfL's publication *London's Bus Contracting and Tendering Process*, dated 12 August 2015: [EXP-1(A); page 189-0-21, paragraph 7.12]

Safety

A range of data is used by London Buses as part of the assessment of an operator's ability to provide a safe service and failure can result in the loss of a contract. Unsatisfactory performance can also lead to the failure to win new contracts. The incentive is not directly related to payments/deductions due to the importance of avoiding the suggestion that safety of operation is in any way a negotiable trade-off against cost.

CHAPTER 18 – Report of the Working Group on Enhancement of Safety of Franchised Buses

470. By a letter, dated 3 October 2018, the TD provided the Committee with the Report of the Working Group on Enhancement of Safety of Franchised Buses, dated October 2018. [TD-5, pages 1757-1816] In what was described as the ‘*Summary of recommendations*’, various topics were addressed: [TD-5; pages 1801-1804, Chapter 5]

- Proposed installation of in-vehicle safety devices;
- Trials of new safety technology;
- Installation of seat belts on passenger seats;
- Training for FB captains;
- Consultations; and
- TDs proposed actions.

Proposed installation of in-vehicle safety devices

471. Of the proposed installation of in-vehicle safety devices, it was stated that: [TD-5; page 1801, paragraphs 5.3-5.4]

“*All new double-deck buses procured from July 2018 onwards will be incorporated with:-*

- (a) **ESC**, and
- (b) **speed limiting retarder.**” [Underline added.]

472. Of the retrofitting of those devices to existing buses, it was stated that the TD and the franchised bus operators would “continue to work closely on the development” of those devices for approximately 3,300 existing buses of newer models.

473. Earlier in the report, it was noted that two bus manufacturers, ADL and Volvo, had indicated that it would take 12-24 months to develop ESC to be retrofitted to certain existing models. On a preliminary basis, it was estimated that it might be feasible to retrofit ESC to 3,300 double-deck buses of the existing 6,000 franchised buses. The agreement of the franchised bus operators to retrofit the devices on all existing double-deck buses was subject to an assessment by the bus operators of not only “the detailed retrofitting proposal (including cost implications, manpower required, and bus downtime” but also was subject to “commercial viability of the retrofitting proposal”. [TD-5; pages 1765-1768, paragraphs 2.4-2.9] The agreement of the franchised bus operators to retrofit speed limiting gearbox retarders was subject to the same considerations. [TD-5; pages 1768-1770, paragraphs 2.10-2.14]

Trials of new safety technology

474. Of the trials of new safety technology, it was stated that the franchised bus operators were launching trials “with a view to establishing the technical feasibility and cost effectiveness of their application” in respect of: [TD-5; pages 1801-1802, paragraphs 5.5-5.6]

- Bus monitoring control system (“BMCS”) with positioning function, operational information monitoring function, and variable speed limiting function with geo-fencing technology;
- collision alert and lane keeping devices; and
- driver monitoring devices.

475. The report stated that it was the view of the Working Group that priority should be given to the development and trials of the bus monitoring control system, rather than “pressing for the installation” of speed display units on franchised buses.

Bus monitoring control system

476. Of the bus monitoring control system, the report stated: [TD-5; page 1770, paragraph 2.15]

“...the WG has examined the possibility of using speed limiter in conjunction with the GPS/geo-fencing technique so as to provide a variable speed limiting function according to the prevailing speed limit of the road or a pre-defined boundary such that the maximum speed of the vehicle can be limited automatically to 50 km/hour in urban areas or 70 km/hour on expressways.”

477. The report noted the operation of the system involved the tracking by GPS of the real-time position of the vehicle “(which) will interact with the digital map to identify the prevailing speed limit on the road where the vehicle is travelling.” So that, if the vehicle was speeding, it would be “decelerated automatically to the imposed speed limit by a mechanism “such as cutting the fuel supply to the engine or applying the gearbox retarder, etc.” [TD-5; pages 1770-1771, paragraph 2.16]

Collision alert and lane keeping devices

478. Earlier in the report, it was stated that, although some franchised bus operators were doubtful about the usefulness of collision alert and lane keeping forward-looking safety devices, CTB and NWFB had agreed to conduct trials on such a safety device on five of their franchised buses and that KMB, LWB and NLB had agreed to conduct trials on similar devices obtained from different suppliers by the end of 2018. The Working Group concluded that collision alert devices that engaged an emergency brake assist might not be suitable in Hong Kong. [TD-5; pages 1773-1776, paragraphs 2.23-2.28]

Devices to detect driver drowsiness

479. Also, it was stated earlier in the report that KMB and LWB had embarked on a trial on four of their franchised buses in late June 2018 of a safety device that detected drowsiness in bus captains and that CTB, NWFB and NLB would conduct

a trial on similar devices, provided by different suppliers, by the end of 2018. [TD-5; pages 1776-1777, paragraphs 2.29 -2.30]

Other technological devices

(i) Speed display unit (“SDU”)

480. A speed display unit depicts the real-time speed of the bus on a screen in the passenger compartment. Such devices are installed on public light buses. The report noted that franchised bus operators had “expressed reservations” about the installation of SDUs on franchised buses, having cautioned that their installation might “give rise to possible further cause of conflicts” between bus captains and passengers. Nevertheless, it was stated that “it would be necessary to solicit views from the public and the staff unions”. The franchised bus operators would consult the staff unions and, subject to the “views or feedback from staff”, consideration should be given to requiring the installation of SDUs on franchised buses. [TD-5; pages 1778-1779, paragraphs 2.34-2.36]

(ii) Black box

481. In August 2018, the TD had promulgated an updated Basic Minimum Requirements for Electronic Data Recording Device. That replaced the minimum requirements stipulated in a similar document, dated October 2003. [TD-5; pages 1773 and 1807, paragraph 2.22] In addition to the requirements, stipulated in 2003, the device was required to record and store data of:

- Activation of Brake
- Status of Rear Door
- GPS Coordination
- Activation of Push Bell

Also, it was required to be able to transmit all the data to the back-end server wirelessly. The threshold value for detecting deceleration was changed from 0.2G to 0.4G.

482. The report noted that since May 2018 KMB and LWB had engaged Volvo to conduct a trial on a bus “to test the two-speed limiting function by utilising GPS technology” and that CTB and NWFB were developing a second-generation of real-time system to “provide alert for speeding at identified critical road sections.” [TD-5; page 1772, paragraph 2.20]

483. The report stated that it had been agreed by all the franchised bus operators that the trial would proceed in two phases. In Phase 1, trials were to be begun by the end of 2018 to determine whether or not the system did detect speeding and could provide a real-time alert to the bus captain. Then, if Phase 1 was successful, in Phase 2 during 2019 the enhanced speed limiting functions would be applied to the franchised buses.

(iii) Digital speed limit maps

484. Having noted that the “mapping of speed limit data in machine readable format is not novel”, the report noted that the TD had made that data available for sale to the public on 22 November 2010, and informed KMB and NWFB of that in writing. Further, on 18 January 2018, the data had been made available to be downloaded for free by the public. Finally, in a letter, dated 7 June 2018, the TD had informed all the franchised bus operators of the processes by which the data could be downloaded. [TD-5; page 1771, paragraph 2.18]

485. Having acknowledged that the Secretariat of the Committee had informed the TD in an email, dated 1 June 2018 that in evidence received by the Committee, CTB and NWFB had said that “they did not have a full set of digital data detailing the speed limit of all roads in Hong Kong” and that the TD had been asked to provide the Committee “with digital maps showing the statutory speed limits of roads in Hong Kong”, Mr YK Chan said that he presumed from the information

provided in the letter of the Committee that CTB did not know of the availability of the digital map. Of that, he said “That’s why we sent a letter to them to advise the data(s) are actually available.” There was a connection between the Committee’s letter and the letter to the franchised bus operators. [Transcript Day 19; 4 October 2018, pages 135-138]

486. When asked why the numerous potential enhancements to bus safety identified in the working group report had been considered only after, rather than before, the Tai Po Road bus accident, Mr YK Chan agreed with the suggestion that resulting discussions in the District Councils, the Legislative Council and in the press had provided the impetus for the TD to look into those areas. [Transcript Day 19; 4 October 2018, page 141] He said that a large part of the research had been done by the TD in February 2018, after the Tai Po accident. [Transcript Day 19; 4 October 2018, page 125]

Training for bus captains

487. The whole of Chapter 4 of the Working Group’s report is devoted to the issue of the training of franchised bus captains. In August 2018, in advance of the issue of the report, the TD promulgated a *Practice Note On Training Framework for Franchised Bus Captains*. [TD-5, pages 1813-1816] The Practice Note stated that its objective is “to lay down a set of industry-wide standard practices... including the basic requirements on modules, duration and weighting, so as to provide a common basis for internal monitoring and audit within individual franchised bus companies.” [TD-5; page 1813, paragraphs 1-2] Nevertheless, having acknowledged that the franchised bus companies “have different bus networks operating in different operating environment”, the Practice Note stated that it was for the individual franchised bus companies “to make specific training programmes in order to suit their respective operational needs on the basis of the common standard”.

488. Acknowledging the need for internal monitoring of the compliance with the Practice Note by the franchised bus operators and of monitoring of those activities by the TD, the Practice Note stated: [TD-5; page 1816, paragraphs 7-8]

“7. To ensure that adequate and appropriate trainings are provided to the bus captains, the franchised bus operators should set up an internal monitoring and audit mechanism in order to achieve the following objectives:

- (a) To monitor the compliance of this Practice Note;
- (b) To develop key indicators on the effectiveness of the training system provided to bus captains (e.g. accident involvement rates, complaints on driving skills and performance and etc.); and
- (c) In the light of the findings of (b), to review and determine appropriate actions or measures.

8. The management of franchised bus operators should submit regular periodic reports (at least half-yearly) to their respective Boards of Directors in respect of their findings on matters in para. 7 above.”

489. Of the periodic reports, the report stated that: [TD-5; pages 1798-1799, paragraph 4.27]

“...the FB operators will be required to submit to the TD the regular periodic reports prepared for the respective Boards of Directors... The TD will study those reports, and assess the effectiveness of the FB operators internal monitoring and audit mechanism as against their proposed key indicators. The TD will take follow-up actions with the FB operators to ensure that the FB operators have put in place effective monitoring and audit mechanism, and that the training programmes of respective FB operators have been designed and conducted in accordance with the framework laid down in the Practice Note as required”.

490. Of the development of key performance indicators, the Commissioner said: [Transcript Day 19; 4 October 2018, page 30]

“The proposal of developing key performance indicators will cover the performance of the bus operators, in providing training of in-service bus captains for refresher course, remedial course, and also for those that are necessary to rectify the driving misbehaviour of those bus captains committing traffic offences. And, on the other hand, we have also observed that while the bus operators have mentioned that they will provide behind-the-wheel training for the in-service bus captains, this may not be actually provided for the in-service bus captains to the extent that we expect.”

491. Of the TD’s expectations in that respect, the Commissioner said: [Transcript Day 19; 4 October 2018, pages 30-31]

“So we are expecting the franchised bus operators to develop key performance indicators along these fronts, so that it is easier and more efficient for the bus operators to achieve an internal monitoring and audit mechanism.”

492. Of the provision of half-yearly periodic reports from the Board of Directors of the franchised bus operators to the TD, the Commissioner said: [Transcript Day 19; 4 October 2018, page 31]

“In parallel, these reports should be provided to the Transport Department for our regular monitoring and also for us to review with them in our regular meetings with them, with their senior management.”

493. Of the necessity for the TD to maintain an ongoing review of training, the report stated: [TD-5; page 1799, paragraph 4.28]

“...since the training requirements of bus captains may evolve with time, the TD will keep in view the need to review the Practice Note with the FB operators in order to strive for the best industry-wide standard practices to cater for the ever-changing operating needs...”

494. In that context, the Commissioner said in her opening statement that the Working Group would continue its work and meet on a regular basis, amongst other matters, to “review the practice note on training framework for bus captains”. [Transcript Day 19; 4 October 2018, page 8]

495. Of the suggestion made by Mr Weston that the TD to consider giving funds to the franchised bus operators for “bus driver training targeted especially at safety”, Mr YK Chan said that in contrast to TfL, in Hong Kong: [Transcript Day 19; 4 October 2018, page 169]

“...the bus companies should be responsible to pay for all the outlays for operating the bus services and we believe that the operation, the equipment and buses are being provided by the bus companies and they should normally continue to do so.”

Nevertheless, Mr YK Chan went on to say “(b)ut for individual items, certainly we are open-minded about it and it should be discussed, if the bus companies see there is a need to do so.” [Transcript Day 19; 4 October 2018, page 170]

Seat belts

496. Of the installation of seat belts on passenger seats, the report stated: [TD-5; page 1802, paragraphs 5.7-5.8]

“**All new buses** ordered from July 2018 onwards will have all passenger seats installed with **seat belts**.”

For **existing buses**, subject to further assessment on the technical, operational and financial feasibility, consideration may be given to **retrofitting** all seats in the **upper deck with seat belts on buses deployed for specific bus routes** i.e. long-haul routes which are operated via expressways with relatively fewer bus stops.” [Underline added.]

Overseas jurisdictions

497. The report stated that the Working Group had reviewed “the prevailing overseas practices or requirements on the installation and wearing of seat belts on buses”. Annex IV of the report identified those jurisdictions as being: the United States of America, the United Kingdom, the Netherlands, the state of Victoria, New Zealand, Canada, and Singapore. Of that review, it was noted: [TD-5; page 1788, paragraph 3.11]

“...for the urban buses or buses allowed to carry standing passengers, *none of the overseas jurisdictions that have been reviewed thus far have statutory requirements for the provision of seat belts on passenger seats.* According to the transport authorities of those jurisdictions, the urban buses are typically used for short journeys, in terms of both time and distance, and undertaken at moderate speeds on urban routes. Thus, no seat belt requirement for passenger seats on these urban buses has been imposed.”
[Italics added.]

Installation of seat belt on newly procured franchised buses

498. Notwithstanding those findings, the report stated that all franchised bus operators had agreed with the recommendation of the Working Group that seat belts should be provided for all seats in future procurement of new buses ordered from July 2018 onwards. [TD-5; page 1784, paragraph 3.4]

499. Having been reminded that in a paper, dated October 2006, prepared by the TD for the Legislative Council Panel on Transport a review of the same seven jurisdictions had produced the same finding, namely that no jurisdiction that had been reviewed required the fitting of seat belts on passenger seats of buses designed for urban use or carrying standing passengers, and that the TD had said then “we consider that it is not appropriate to introduce mandatory requirements for installation and wearing of passenger seat belts for franchised buses”, the Commissioner acknowledged that “the overseas jurisdictions’ stance towards the installation of seat belts for urban bus routes remains generally the same.” [SEC-1; pages 266-273, paragraphs 19-20; Transcript Day 20; 6 October 2018, page 37]

500. Of what had changed in the meantime to lead to the different recommendations now being made by the Working Group, the Commissioner said: [Transcript Day 20; 6 October 2018, page 37]

“There has been a number of discussions raised in the Legislative Council Panel on Transport, so we have to look into this subject very carefully. We consider it from different aspects. First, it’s from a road safety and public transport safety aspect.

Secondly, we also look into the technical feasibility of installation of seat belts for new buses and on existing buses. Thirdly, we also look into the cost and financial implications of doing this extra installation of seat belts for all passenger seats.”

Cost benefit/analysis

501. Of the issue of whether or not a cost benefit analysis had been conducted in respect of the incidence of fatalities/injuries sustained by seated passengers on franchised buses who were not wearing a seat belt, the cost of installation and the benefits to such passengers if they wore a seat belt, Mr Tony Yau said “there are no specific study on public transport”. However, he acknowledged that he was aware of data that the police collated on that subject, albeit he said that the data had not been considered in any such analysis. [Transcript Day 20; 6 October 2018, pages 42-47; MISC-1(C); page 124-562, paragraph 4]

502. In a letter, dated 3 October 2018, Chief Superintendent Cadman had informed the Committee that the Police had some statistics “on the number of passengers who were injured while seated on a bus and not wearing a seat belt”. The information provided included: [MISC-1(C), page 124-562, paragraph 4]

| <u>Year</u> | <u>Wearing</u> | <u>Not wearing</u> |
|-------------|----------------|--------------------|
| 2015 | 211 | 364 |
| 2016 | 252 | 365 |
| 2017 | 323 | 515 |

The police had not conducted any analysis to determine whether or not the passengers who have been injured while not wearing a seat belt would have benefited from having worn a seat belt.

503. Noting that the estimated cost of fitting seat belts in new franchised buses was estimated to be £5,000 per bus, the cost of which was “over HK\$3 million”, Mr Yau said: [Transcript Day 20; 6 October 2018, page 42]

“So comparatively the cost is quite low, and the protective benefit is quite good, very significant.”

504. For her part, the Commissioner said: [Transcript Day 20; 6 October 2018, page 50]

“... in the course of the working group discussion, the Transport Department’s point of view is that the seat belt would render additional protection to passengers, but whether or not it can achieve the effect that we would like to would depend very much on whether the passenger will use the seat belt, in the first place, and whether or not they are seated.”

“We know the constraints that may affect the effectiveness of the seat belt, but notwithstanding that *we think that for new buses, the installation of seat belts is cost-effective*, but it will render additional protection, while the additional cost is not significant.” [Italics added.]

Retrofitting seat belts on existing franchised buses

505. Of the retrofitting of seat belts on existing franchised buses, the report noted: [TD-5; page 1786, paragraph 3.7]

“The bus manufacturers have advised that it is technically feasible to retrofit seat belts on **all passenger seats of upper deck** of the existing buses for ADL Enviro 500 manufactured after 2013, Volvo B9TL Euro V and MAN A95 buses. However it is technically impracticable, if not infeasible, to retrofit seat belts for seats in the **lower deck** of the above-mentioned bus models...”

506. The report went on to note that there were other consequences of retrofitting seat belts on to existing buses, namely the weight of the bus would increase by 300-400kg and the passenger capacity would be reduced by 7 to 8 passengers. Moreover, the bus manufacturers estimated that it would take about one week, for 3 to 4 skilled workers to retrofit seat belts to one bus. The bus manufacturers were unable to provide that manpower. The report said that a rough estimate was that it would take 6 to 12 years to complete the retrofitting of

3,300 franchised buses, if the retrofitting was done by redeployment of the bus operators' existing vehicle maintenance teams. That estimate was based on it taking 3 technical members of staff one week to retrofit each franchised bus. The deployment of more labour would reduce that time estimate. It was noted in a footnote that the rough estimate of the cost of retrofitting a bus was "about HK\$200,000 (excluding manpower and overhead costs). [TD-5; pages 1786-1787, paragraph 3.8]

507. Mr YK Chan conceded that, in addition, the estimated cost of retrofitting each of 3,300 franchised bus of \$200,000 did not include the cost of the loss of the use of the bus during the time of retrofitting. For her part, the Commissioner acknowledged that the overall cost for the retrofitting operation was \$400 million, a cost that was to be enhanced by those three variables. [Transcript Day 20; 6 October 2018, pages 57-62]

508. The report noted that there was a division between the franchised bus operators as to the proposal to retrofit seat belts to some existing bus models: [TD-5; page 1787, paragraph 3.10] On the one hand, it was noted that:

"Subject to the proposal from bus manufacturers, KMB and LW would retrofit seat belts on upper deck passenger seats or deploy buses with seat belts at all passenger seats on routes which serve long haul passengers or are operated on expressways with limited boarding or alighting activities at the enroute stops."

509. On the other hand, it was noted that:

"The remaining three FB operators (i.e. CTB, NWFB and NLB) do not support the retrofitting works due to the expected low utilisation rate and huge retrofitting cost, and *request for government subsidy should the proposed retrofitting be taken forward.*" [Italics added.]

510. In the result, the report concluded: [TD-5; pages 1788-1789, paragraph 3.13]

“The WG considers that there are insufficient grounds to make it a mandatory requirement for all buses to be fitted with seat belts on all passenger seats. Nevertheless the WG recognizes that as in the case of exposed seats and in bus compartment with no standees allowed, seat belts may offer extra protection to seated passengers. Hence, the WG **recommends**, and all FB operators have **agreed**, that the feasibility of retrofitting of existing buses for installation of seat belts has to be further examined. *Subject to further assessment on the technical, operational and financial feasibility*, consideration should be given to retrofitting all seats in the upper deck with seat belts on those buses deployed for specific bus routes, i.e. those long-haul routes which are operated via expressways with relatively fewer bus stops.” [Italics added.]

Consultations

511. At the conclusion of the report it was stated that its findings and recommendations in respect of the installation of seat belts had been presented to the Road Safety Research Committee on 17 July 2018 and the Committee had: [TD-5; page 1803, paragraph 5.10]

“...welcomed the proposal of installation of seat belts on buses and supported the recommended approach of installation, viz subject to further assessment on the technical, operational and financial feasibility, retrofitting the seats on the upper deck with seat belts in respect of buses deployed on long haul routes operating via expressways with relatively fewer bus stops.”

Similarly, it was stated that, having been provided with those findings and recommendations on 25 and 31 July 2018 respectively, the Legislative Council Panel on Transport and the TAC had “...generally welcomed and supported the recommendations of the WG.”

CTB/NWFB

512. Consistent with their submissions to the Working Group, in his closing submissions to the Committee on behalf of CTB and NWFB, Mr Samuel Cheng noted that in the Policy Address, the Chief Executive stated that the Administration

had set aside \$500 million “to subsidize franchised bus companies in retrofitting Electronic Stability Control (“ESC”), Active Speed Limiting System (“ASLS”) and seat belts for the upper deck seats of buses”, and observed that the subsidy covered only 80% of the retrofitting costs. He said that “we will not be able to afford the huge financial commitments for implementing the recommendations without substantial fare increases.” In the result, he said “In our view, full financial support from the Government is essential”, failing which he said that the retrofitting of the ESC and ASLS devices should be given priority “as these safety devices may prevent accidents from happening.” By contrast, he said that the retrofitting of seat belts on the upper deck seats should be accorded a secondary priority “as the cost-benefit of this may not be justified if the wearing of seat belt remains not mandated by law.” [CTB-1, pages 103-104]

513. Having been taken to passages of the reports of Professor Stanley and Mr Weston and the evidence of Professor Stanley of the need to conduct a rigorous cost/benefit analysis before requiring the installation of safety devices on franchised buses, the Commissioner said: [Transcript Day 20; 6 October 2018, page 73]

“I agree that for any installation of in-vehicle device to improve the bus safety standard, we would need to go through a robust and careful assessment.”

514. The Commissioner went on to say: [Transcript Day 20; 6 October 2018, pages 73-74]

“Given the retrofitting of the existing buses for seat belts appears to be not cost-effective at the present moment, and it involves a number of considerations, obviously should there be any decision to make it mandatory or statutory requirement for all existing buses to be installed with seat belts, in particular on the upper deck, we would have to look into seriously on how much marginal benefit we can achieve as compared with the cost and the technical considerations.”

515. In conclusion, the Commissioner said: [Transcript Day 20; 6 October 2018, page 74.]

“I agree with the expert advice that if we want to go forward with a mandatory requirement, we have to go through some cost/benefit analysis or impact assessment.”

Utilisation rate of seat belts currently installed on franchised buses

516. The Commissioner said that she had not obtained any data of the utilisation rate of seat belts currently installed on franchised buses, but that was something that she intended to do. Of the view expressed by the franchised bus operators, that the utilisation rate was low, the Commissioner said: [Transcript Day 20; 6 October 2018, pages 75-76]

“...we don’t think, if it is true, that the current low relatively low utilisation rate of seat belts should not be a key factor to stop us from exploring or examination or assessment of the installation of seat belts on existing buses, because I think this is something that both government and also the bus operators should do more in passenger education.”

Mandatory usage requirement

517. Of the possibility of a mandatory requirement that, if installed on franchised buses, passengers must use the seat belts, the Commissioner said that she agreed “with the expert observation that we have to go through a robust impact assessment before making it a statutory or mandatory requirement.” [Transcript Day 20; 6 October 2018, page 77] She said “I would not underestimate the issues or difficulties involved in an actual operation context, in particular the enforcement.” [Transcript Day 20; 6 October 2018, page 78]

The Chief Executive’s Policy Address

518. In her Policy Address on 12 October 2018, the Chief Executive announced:

“Improving Public Transport Services

264. To further enhance the operational safety of franchised buses, the Government will subsidise franchised bus operators in retrofitting existing buses with appropriate safety devices, including retrofitting all seats on the upper deck of some buses with seat belts.”

519. At a subsequent press conference, the Secretary for TH, Mr Frank Chan, announced:

“With a view to further enhancing the operational safety of the franchised buses, we propose to subsidise the franchised bus operators for retrofitting of three safety devices on appropriate existing buses, including the electronic stability control system, speed limiters with retardation function, and seat belts for all seats on the upper deck of long-haul buses running on expressways with fewer stops. We will be funding 80% of the relevant costs, including about \$500 million. For the remaining costs as well as a subsequent maintenance and repair works, they will be borne by the franchised bus operators.”

520. In her evidence on 16 October 2018, the Commissioner explained those statements in the context of her earlier evidence in respect of the retrofitting of seat belts to existing buses: [Transcript Day 21; 16 October 2018, page 130]

“...the installation of seat belts will particularly have to undergo a detailed assessment including operational, technical and financial feasibility assessment.”

521. The Commissioner went on to confirm that the assessment required a “cost/benefit analysis, covering technical, operational and financial feasibility.” [Transcript Day 21; 16 October 2018, page 131] In that context, she agreed that the statements in the Policy Address and those of the Secretary for TH were conditional on that cost/benefit analysis, explaining that the statements were “...an attempt by the government to provide and set aside the money...for providing the funding.” She agreed that the first exercise was “to see if the cost/benefit analysis delivers a positive result?” [Transcript Day 21; 16 October 2018, pages 132, 134]

522. Of the conduct of the cost/benefit analysis in respect of retrofitting seat belts, the Commissioner said that the issue would be examined by the standing forum that the Working Group on Enhancement of Safety on Franchised Buses was to become. It having been pointed out that the membership of the Working Group was currently restricted to the TD, bus manufacturers and the bus operators, the Commissioner said consideration could be given to recruiting members from

the Road Safety Council, professionals and academics with expertise in transport and transport technology. Further, having noted that there had been initial feedback about the cost implications, including operational costs, she said that it was important to identify and analyse the benefit to be generated from retrofitting seat belts to franchised buses. In response to the enquiry as to whether it would be necessary to engage independent consultants to perform those tasks, the Commissioner said that was a matter that the TD could “look into”. [Transcript Day 21; 16 October 2018, pages 140-141]

523. As Mr Mike Weston noted in his Supplementary Report, in which he summarised the Bus Safety Standard announced by TfL on 16 October 2018, TfL had appointed the Transport Research Laboratory “...to undertake a significant amount of research and to provide appropriate technical input to help develop the proposals”, which development had been “...based on an evidence led approach to both the costs and benefits of each option.” In particular, Mr Weston noted: [EXP-1(A); page 189-63, paragraph 2.2].

“TfL have adopted a rigorous approach to the assessment of each potential option using cost/benefit analysis to target the interventions which will give the greatest return for each £ spent in terms of injury/accident reduction. TRL also stressed that considering the cost of individual solutions was important as part of the assessment so that cost/benefit analysis could be undertaken.”

Chapter 19 – The TD’s ongoing response to the submissions and evidence received by the Committee

524. At the outset of her evidence on 4 October 2018, in an opening statement that the Commissioner said at the outset: [Transcript Day 19; 4 October 2018, page 6]

“Since our last attendance at the hearings in May, we know that the Committee has invited other parties to provide oral evidence and have closely followed through the submissions made by the various parties.”

525. Then, having said that she wished to “address a number of aspects on which we think the Committee has expressed keen interest”, she identified various decisions that had been made and proposals of action to be taken: [Transcript Day 19; 4 October 2018, pages 7-10]

- it was proposed “to set up a dedicated team to implement road safety audit” within the TD and that approval had been given for the necessary resources;
- the Working Group on Enhancement of Safety of Franchised Buses “will continue its work and will meet on a regular basis so as to monitor the progress of follow-up actions and review the Practice Note on training framework for bus captains”;
- it was proposed to engage a “service provider” to carry out “an independent trial on vehicles, to evaluate the applicability and effectiveness of using geo-fencing technology to control vehicle speed, which is one of the vital parts of the BMCS”; and
- the TD was securing manpower resources “to have a dedicated team to oversee transport technology, which will help speed up the process of such trials and initiatives”.

526. In addition, she said that in December 2017, the TD had set up a task force with representatives of relevant government departments and franchised bus

operators to monitor the provision or upgrading of the public transport ancillary facilities at public transport interchanges, bus stops and termini.

Permanent Working Group/Bus Operators Forum

527. Subsequently, in her evidence, the Commissioner said: [Transcript Day 19; 4 October 2018, page 82]

“...with the learning of the various experiences and views and suggestions through this Independent Review Committee, both the operators and the TD find the working group as a very useful forum. We will continue our work on that front and that will be an appropriate forum to bring the parties together to pursue all these meaningful initiatives to enhance measurement of safety performance of franchised bus operators. We will take it forward in that forum”.

528. The Commissioner confirmed that the Working Group would become permanent, similar to the TfL’s Bus Operators forum in that the TD was accepting Mr Weston’s recommendation that such a forum be constituted and be permanent. [Transcript Day 19; 4 October 2018, pages 82-83]

529. Of the limited membership of the Working Group, namely the TD, franchised bus operators and bus manufacturers, Mr YK Chan said: [Transcript Day 19; 4 October 2011, page 178]

“I think we can further look into the membership of this group and see whether it is possible to bring in independent opinions into the group, to provide independent opinions on the operations and running of this group.”

530. In response to the suggestion of Professor Lo, that members of the Road Safety Council might become members of the permanent Forum to emerge from the Working Group, Mr YK Chan said that he welcomed that suggestion and said “...members from the Road Safety Council are actually quite independent members.” [Transcript Day 19; 4 October 2011, pages 178-179]

531. Having acknowledged that there was no team within the TD dedicated to bus safety and that the Working Group was currently comprised of representatives of the franchised bus operators, bus manufacturers and the TD, in their closing written submissions, CTB/NWFB said: [CTB-1; page 106, paragraph 3]

“The present practice is that the Transport Department and bus companies will seek comments from unions when a proposal is mature and in response to such comments, the Working Group will fine-tune the proposal, as appropriate, before implementation. We opine that the present practice is effective and the involvement of unions in the Working Group is not necessary.”

TD Technology Team

532. As noted earlier, having acknowledged that there was no team within the TD dedicated to bus safety and that responsibility lay between the Bus and Railway Branch, the Road Safety and Standards Division and the Vehicle Safety and Standards Division, the Commissioner said: [Transcript Day 19; 4 October 2018, pages 95-96]

“Actually we learned a lot through this IRC²³ process. Over the past year or so, the Vehicle Safety and Standards Division, headed by Mr YK Chan, has been overseeing the new technology advancements in vehicle standards and maintenance. While there is no dedicated team or extra manpower resources, their division is driving for new technological advancements.”

533. Subsequently, the Commissioner added: [Transcript Day 19; 4 October 2018, page 96]

“...we see the need and the importance of having a dedicated team, as in the case of London and in other jurisdictions, of enhancing transport technology research capability within the Department. We are actually securing and bidding necessary manpower

²³ “IRC” means the “Independent Review Committee’s report on Hong Kong’s Franchised Bus Services/the Committee”.

resources involving engineers, transport officers and electrical and mechanical engineers, to set up a dedicated transport technology team within the Department.”

534. Mr YK Chan acknowledged that the work that had been done by the TD in advance of the constitution of the Working Group and its first meeting on 13 March 2018 had been done only after the Tai Po Road accident on 10 February 2018. [Transcript Day 19; 4 October 2018, page 125]

Publicly available accident data

535. In response to Professor Stanley’s opinion, endorsed by Mr Weston, that the “really informative” data contained in the Bus Safety Chapter of the annual Five-Year FPP of the franchised bus operators ought to be made publicly available, the Commissioner observed initially that the data now required of the bus operators, including material not required for the Fuller Disclosure parts of the Annual Report of the bus operators, but: [Transcript Day 20; 6 October 2018, page 87]

“...ventured into the area of asking the bus operators to diagnose the accident causes, say by bus route, down to bus route... So I’m not saying that may be commercially sensitive, but I think we have to be conscious that should that “Bus Safety” Chapter be made as a fuller disclosure to the public - I mean, the commercial sensitivity angle would have to be taken into account.”

536. However, having had the opportunity to review past Bus Safety Chapters, the Commissioner said: [Transcript Day 20; 6 October 2018, page 101]

“It appears to me that there may not be a significant part of the information that may directly relate to the commercial sensitivity of the companies involved.”

537. In the result, she concluded:

“So more transparency, greater transparency of data, in particular on safety that is of concern to members of the public, is an approach and a direction that I think TD would actively pursue and discuss with the bus operators.”

She said that she proposed to raise the issue with the bus operators in the coming months, but was unable to indicate when a decision might be made.

Low speed limit zones

538. In Annex 2 of the TD's submissions, dated 3 October 2018, it was asserted that the TD kept abreast of the latest worldwide developments in speed limit in relation to road safety enhancement. In that context, the TD went on to note that "low speed limit zones with speed limits of 20 mph (32kph) have recently been implemented in some overseas cities with proven safety records". However, the TD said that simply reducing the speed limit did not automatically reduce the speed at which vehicles travelled, which was better achieved by changing the traffic layout and introducing traffic calming measures. Then, having noted that the long-standing speed limit regime obtaining in Hong Kong generally called for a lowest speed limit of 50 km/h, the TD said: [TD-5, page 1820]

"Considering the potential safety benefits of low speed limit zones, the TD is studying its feasibility and applicability for use in Hong Kong with adequate modification of road layouts and the introduction of traffic calming measures. To ascertain relevant road designs, types of traffic calming measures, especially the effectiveness and performance of low speed limit zone in reducing vehicle travelling speed and accidents, we are considering to select some suitable roads in urban district with high pedestrian flow for trial of low speed limit zone with a speed limit of 30 km/h having regard to the impact on traffic flow in the vicinity. As franchised bus routes may fall within those roads, we are also studying the design of traffic calming measures for buses to lower their traveling speed as part of the trial."

539. In his evidence, Mr Tony Yau acknowledged that the TD was aware of the publication by the United Kingdom Department for Transport in January 2013 "*Setting Local Speed Limits*", and that guidelines were provided to determine whether or not it was appropriate to impose 20 mph speed limits or 20 mph speed limit zones. In particular, 20 mph speed limits were recommended for areas in

which the speed were already low and did not require road layout changes for traffic calming measures, whereas they were required in 20 mph speed limit zones.

540. Having noted that 20 mph speed limits required only terminal speed limit signs, with at least one repeater speed limit sign but did not require traffic calming measures, the report said “Research into signed-only 20 mph speed limits shows they generally lead to only small reductions in traffic speeds. Signed-only 20 mph speed limits are therefore most appropriate for areas where vehicle speeds are already low.” [SEC-3; page 1026, paragraph 95] The range of calming measures to be deployed in 20 mph zones included “speed humps, chicanes or repeater speed limit signing and/or rondel road markings at regular intervals, so that no point within a zone is more than 50 m from such a feature.” [SEC-3; pages 1023-1024, paragraph 80]

541. For his part, Mr Yau said: [Transcript Day 21; 16 October 2018, page 79]

“(W)e are now studying to see whether the low speed limit zone can be introduced, as a trial, and if the trial is a success, we may consider to include a low speed limit zone in our current speed limit structure.”

20 mph Research Study

542. On 22 November 2018, the United Kingdom Department for Transport published *20 mph Research Study*, a report it had commissioned to evaluate the effectiveness of 20 mph (signed only) speed limits. [MISC-4, pages 1379-1599] The research was based on twelve case study schemes in England with reference to the guidelines included in the 2013 publication *Setting Local Speed Limits*. None of those areas involved the introduction of physical traffic calming measures or changes to the street design. Three comparator areas, with similar characteristics, but with speed limits of 30 mph were used to identify background trends in collisions and casualties.

543. Of compliance with the 20 mph speed limit, the report noted “47% of drivers in residential areas and 65% of drivers in city centre areas (equating to 51%

across both categories) complied with the new 20 mph speed limit, travelling at speeds of less than 20 mph.” Of the effect on the profile of the speed of vehicles, it was noted “...the median speed has fallen by 0.7 mph in residential areas and 0.9 mph in city centre areas.” Of the factors influencing compliance, it was noted “there is a widespread view among the public that 20 mph limits are not enforced and the likelihood of being caught exceeding the limit is very small; and this is one reason why bigger reductions in speed have not been observed in scheme areas.”

544. Of the collision and casualty rates, it was concluded that “there is insufficient evidence to conclude that there has been a significant change in collisions and casualties following the introduction of 20 mph limits in residential areas, in the short term”. Having noted that there had been reductions in those statistics in both the 20 mph speed limit areas and the comparator areas, the report suggested that an analysis to be made two years in the future might or might not reveal a significant change.

Chapter 20 – The franchised bus operators’ response to the submissions and evidence received by the Committee

KMB

545. In his closing submissions in evidence on behalf of KMB, Mr Roger Lee said: [Transcript Day 15; 12 September 2018, pages 113-114]

“In the process of giving evidence, we come to realise that KMB must progress with the times. We have to do more in this regard to enhance our service. Say, for example in terms of the use of technologies, we need to be comprehensive, and we have to aim at precision we have to work more on our safety system, and we need to catch up with the times.

Now I turn to the bus captains. The management of bus captains, the training of bus captains, are areas that we need to improve. And in terms of our facilities - and in fact just now we have talked about the rest facilities as well as the toilets - well, in fact we haven’t stopped making improvements in such areas.”

The use of technology

546. As is apparent from the description of the evidence received by the Committee, prior to the accident on 10 February 2018 on Tai Po Road, very little use was made by franchised bus operators of the available technology to enhance the safety of franchised buses.

Digital speed limit map

547. As noted earlier, KMB acknowledged in evidence that they did not know of the existence of a digital speed limit map of Hong Kong roads freely available from the TD until, prompted by evidence received by this Committee, by letter dated 7 June 2018 the TD informed them of that fact. That letter was prompted by evidence from CTB that they were unable to obtain a digital speed limit map of Hong Kong roads. Clearly, a digital speed map of Hong Kong roads was vital to the use of the capabilities of the existing black box installed on franchised buses to

provide an alert and record the fact of excess speeding in difference speed limit areas.

548. To their credit, as they informed the Committee in their evidence, KMB immediately arranged with Openmatics to perform trials of the combined system on 31 July 2018. In the result, as KMB informed the Committee in their submission, dated 10 December 2018, "...later this month we will launch an alert system that is also capable of alerting bus captains of speeding at locations whose limits are 50 kph." [KMB-1(B), page 580]

Excessive speeding: exception reports

549. Similarly, although in evidence the representatives of KMB said that it took them no less than 10 days to generate exception reports in respect of excessive speeding, the Committee was informed in the same letter:

"Recently, we have reduced the time required for our system to generate exception reports on speeding to 4 days. The time required will be further reduced to 1 day within this month. It is hoped that earlier identification of bus captains having exceeded speed limits will eradicate their speeding behaviours, hence reducing the risk of traffic accidents." [KMB-1(B), page 579]

550. As noted earlier, on 1 August 2018 KMB adjusted the threshold value at which an exception report in respect of speeding was generated on roads with a speed limit of 50 km/h at speeds in the range of 56-65 km/h from 60 seconds to 30 seconds and at speeds in a range of 66-75 km/h from 30 seconds to 15 seconds. Similarly, on that date the threshold value at which an exception report in respect of speeding was generated on roads with a speed limit of 70 km/h at speeds in the range of 76-79 km/h was adjusted from 60 seconds to 30 seconds.

551. In their letter to the Committee, dated 10 December 2018, KMB said:

“Our statistics show that in November 2018, there was a notable decrease in the number of speeding incidents when compared with those of the previous months.”
[KMB-1(B), page 579]

552. Of KMB’s ongoing efforts, it was asserted in their letter, dated 10 December 2018, that:

“We have continually strived to enhance our knowledge on bus safety. Our Managing Director and Operations Director made a trip to Singapore meeting two franchised bus operators there and exchanging our experiences. A second trip to Singapore will be led by Dr. Norman Leung, our Chairman, in January 2019, during which we shall be meeting with the Land Transport Authority of Singapore and the said two bus operators. We will make more visits to other parts of the world to broaden our safety knowledge.”
[KMB-1(B), page 580]

CTB/NWFB

Digital speed limit map

553. At the time that they gave evidence on 30 May 2018, CTB were unaware of the existence of a digital speed limit map provided freely by the TD. At that time, they monitored excessive speeding at a threshold of a franchised bus travelling at or more than 75 km/h for 10 consecutive seconds or more. In addition, they had added 25 sections of road with a speed limit of 50 km/h on which they monitored excessive speeding at a threshold value of more than 55 km/h for 10 consecutive seconds or more. In answer to the question of why all roads with speed limits of 50 km/h on which CTB and NWFB buses travelled were not incorporated in their system, Mr William Chung said: [Transcript Day 4; 30 May 2018, page 24]

“In theory, yes, but it would involve a lot of efforts, because then we would have to separate all the different routes and everything would be separated out. In the electronic map, we have to split the 50 kph and 70 kph. That would take a lot of efforts.”

554. To their credit, CTB have acted on the information now known to them and in their submissions, dated 15 October 2018, CTB said: [CTB-1, page 98]

“Our companies previously monitored the speed of our buses on 25 selected road sections with speed limit of 50 km/hr and all road sections with speed limit of 70 km/hr or above. From 18 September 2018, we started monitoring the speed of our buses on all roads by applying the “Speed Limit” data provided by the Transport Department. The criteria for generating over speed event reports remain unchanged...”

555. Also, as noted earlier, CTB went on to say that they had introduced “a real-time audio alert” for the bus captain when the vehicle travelled at speeds of 3 km/h per hour more than the respective speed limits of 50 km/h and 70 km/h. Furthermore, they said that they were exploring providing “real time alert to bus captains when a harsh braking or sudden acceleration event occurs” and generating reports automatically to “identify bus captains with frequent jerky driving events.”

CHAPTER 21 – The Singapore Land Transport Authority

556. In their most helpful reply, dated 17 October 2018, to the enquiries of the Committee, the Land Transport Authority of Singapore (“LTA”), having noted that seat belts were required to be fitted on “small buses” with a capacity of up to 15 passengers, explained the circumstances in which it had been determined not to require the fitting of seat belts for passengers on large franchised buses in Singapore: [EXP-1(C); page 249-5, paragraphs 4-5]

“Larger buses, by virtue of their design, size and mass, can better absorb the impact of a collision compared to small buses. The forces of a collision felt by occupants in a large bus are likely to be less than those experienced in small buses. As a result, in the event of a collision, the injuries for passengers on a small bus in general tend to be more severe than those in a bigger bus.

The consideration stated in paragraph 4, coupled with the current safety requirements for big buses, such as the compulsory periodic inspections, strict speed limit and speed limiter requirements for big buses... do not provide the impetus or compelling reasons to require bigger buses to be fitted with seat belts.”

557. Of the cost implications of a requirement that bigger franchised buses be fitted with seat belts, the LTA went on to say: [EXP-1(C); page 249-6, paragraph 5]

“Careful study will be necessary as the impact on the bus operators (e.g. costs incurred, disruptions to business operations, etc.) and other stakeholders (e.g. logistics preparations by the best body builders, additional cost to be borne by bus passengers, financial assistance provided by the government, etc.) will be significant, given our previous experience in implementing the seat belt requirements for small buses”.

558. Of the retrofitting of seat belts to small buses, the LTA noted that they had appointed workshops to undertake the work and authorised vehicle inspection centres to ensure compliance. Further, the government provided financial assistance to the operators of small buses to help defray the cost of compliance with the requirements or replacing their buses with new ones.

Training

559. The LTA explained that all newly employed bus captains in Singapore are required to undergo a five-day “Enhanced Vocational Licence Training Programme” conducted by the Singapore Bus Academy, which was opened in October 2016. The programme, which consists of six modules, is conducted by trainers from the Singapore Bus Academy, the National Transport Workers’ Union and two of the bus operators. The Service Literacy module endeavours to provide bus captains with skills to deal with difficult passengers. [EXP-1(C), pages 249-11, 249-13]

560. Following their foundational training by the Singapore Bus Academy, new bus captains “undergo an average of 5-6 weeks’ training” by the employer/bus operator before they are deployed on revenue services. Refresher training courses are provided to both full-time and part-time bus captains, whilst remedial training is provided to bus captains who identified as repeated safety offenders. (EXP-1(C), pages 249-11, 249-12)

Abuse of bus captains

561. The LTA noted that bus captains are protected from abusive conduct, whilst performing their duties by the *Protection from Harassment Act*, Cap. 256A. Section 6(1) of the Act provides that no person shall by any means “(b) make any ... threatening, abusive or insulting communication, toward or to a... public service worker” in relation to the execution of the victim’s duty as such ... public service worker. Paragraph 8 of the Protection from Harassment (Public Service Worker Order) 2014 defines a “public service worker” as including an employee, working as a bus driver, of a bus service licensee. On conviction, a defendant is liable to imprisonment for a term not exceeding 12 months or to a fine not exceeding \$5,000 or to both. [EXP-1(C), page 249-13]

Technological devices

562. The LTA said that some franchised buses in Singapore were fitted with electronic stability control, traction control and speed limiters, which limited the maximum speed to 60 km/h. Also, about 15% of the buses were fitted with a collision prevention device. Franchised buses delivered from January 2018 will be fitted with the Guardian anti-fatigue system. About 40% of the buses were fitted with telematics systems, which allow the bus operators to monitor driving behaviour. [EXP-1(C), 249-3 and 249-4]

Bus lanes

563. The LTA said that, having first introduced bus lanes in 1974, by 2018 there were 211 km of bus lanes in operation. In identifying a stretch of road as suitable for the operation of a bus lane, the LTA first identified “locations where high-volume of buses ply the road during relevant bus lane operating hours”. Then, it had regard to the impact on general traffic flow of the introduction of a bus lane, together with “concerns from stakeholders, such as bus operators, residents, and local businesses, whose activities may be affected by the proposed bus lanes”. Finally, the proposal was subjected to a cost benefit analysis. [EXP-1(C); pages 249-7 and 249-8, paragraphs 1-4]

Enforcement

564. Traffic wardens were charged with the primary task of enforcing bus lanes. That was achieved through the use of photographs. In addition, the LTA was assisted by the provision by bus operators of video footage captured by video cameras on their buses of infringements. All that was required of the bus driver was that he “...press a button to start recording of a video footage after witnessing a violation”. The LTA emphasised that the bus operators “are not responsible for the enforcement of the bus lanes.” [EXP-1(C); page 249-9, paragraphs 8 and 9]

Bus priority boxes

565. A bus priority box scheme has been in operation since 2008, which required other vehicles to afford priority to buses as they indicated that they were leaving a bus stop. Triangular give-way markings were painted onto the road to warn motorists of the requirement that they give priority to buses in such circumstances. There were 347 such bus stops, approximately 7% of all the bus stops in Singapore. The scheme is not implemented on “high-speed roads, single lane roads or sites where there is no clear sight of traffic.” The impact of the scheme on traffic was “relatively minor compared to bus lanes” because motorists had the opportunity to change lanes or to slow down to create a gap in traffic to allow a bus to exit the bus stop. [EXP-1(C); pages 249-9 to 249-10, paragraphs 10 and 13]

Quality of service standards-penalties

566. The Bus Contracting Model (“BCM”) operated in Singapore measures bus service reliability using the Bus Service Reliability Framework and the First and Last Bus Punctuality. Only two Quality of Service standards (“QoS”), namely QoS 1.1 and QoS 2.1 have been retained from the previous system operated by the Public Transport Council. For QoS 1.1, the bus operator provides 96% of the stipulated schedule mileage per month whereas, QoS 2.1 requires the bus operator to have less than 0.75 accidents per 100,000 bus-km per month, the respective penalties for which are SG\$20,000 per month on each non-compliant route and SG\$100,000 per month on each non-compliant standard. The LTA said: [EXP-1(C); page 249-15, paragraph 4]

“Since the move to the BCM, no PTO²⁴ has failed the QoS Standard regarding accident rate in the last two years.”

²⁴ “PTO” means “public transport operators”.

CTB/NWFB

567. In their closing submissions CTB/NWFB opposed any “suggestion of imposing financial penalties linked to safety performance”. They submitted that the provisions of section 12(1) of the Ordinance, which required the grantee of a bus franchise “maintain to the satisfaction of the Commissioner a proper and efficient public bus service”, together with the available penalty, pursuant to section 22(2) of the Ordinance, were sufficient to ensure the provision of a safe bus service. [CTB-1, page 105]

CHAPTER 22 – Competitive tendering for franchises

Competition Commission

568. In a written closing submission to the Committee, dated 31 October 2018, the Hong Kong Competition Commission, an independent statutory body established under the Competition Ordinance (Cap. 619) provided its comments “on how competition can play a role, alongside regulation, in enhancing safety and other aspects of franchised bus services.” [MISC-3, page 1374]

569. Having noted that the Committee had received evidence, in the report of Mr Mike Weston, that “the Hong Kong franchised bus network has not been subject to any open competition since 1995”²⁵, it asserted that: [MISC-3, page 1376]

“(T)he Commission is of the view that the lack of a competitive process or the slim possibility that such a process will be applied, favours incumbents and deprives consumers of the benefits of competition. What those benefits are would depend on the criteria used in the competitive process. They could include lower fares, higher quality services, greater innovation, enhanced safety or indeed all of these.”

“In particular, with a competitive process where the contracting criteria includes systems for upholding and enhancing safety, operators will face competitive pressure to improve quality and safety, or risk losing franchises to new entrants or existing bus services or other transportation providers looking to expand. This competition may be in terms of reduced incident rates as well as the development and adoption of new technology or processes which enhance safety.”

570. The Commission cited in a footnote a paper “*The contracting of urban bus services - Recent Australian developments*” published in 2014 in volume 48 of the Research and Transportation Economics, as research that linked “competitive tendering in Australia has been linked to improvements in service quality”.

²⁵ The reference to 1995 was made in error. As noted earlier, the last open, public competitive tender for franchised bus services was in 1998.

However, it cited no such research in respect of a link between competitive tendering for franchise bus routes/areas and enhanced safety. Reference was made in another footnote to a paper “*Fear of Flying? Economic Analyses of Airline Safety*”, published in 1992 in Volume 6, Number 2, of the *Journal of Economic Perspectives*, which examined the effect on airline safety of the deregulation of airlines in the United States of America in 1978. [MISC-3, page 1377]

571. In the context of addressing what was acknowledged to be the “challenges of bringing about effective competition”, the Commission acknowledged that: [MISC-3, page 1377]

“...the ownership of buses, depots, and other bus service-related assets by the incumbents may constitute a serious barrier to entry to potential entrants, and hence the introduction of a competitive process in the renewal of bus franchises will have implications on the ownership of such assets.”

572. Nevertheless, having asserted that “(t)he benefits to safety from enhanced competition have, however, the potential to be considerable”, the Commission suggested that the Government: [MISC-3, page 1378]

“to fully consider the costs associated with any required change in asset treatment relative to the benefits, including the safety benefits of competition.”

CTB/NWFB

573. In their closing written submissions, CTB/NWFB opposed the introduction of competitive open public tendering for franchised bus service in Hong Kong, describing it as “not a viable option”. In doing so, it was asserted that: [CTB-1; pages 104-105, paragraph 1]

- (a) Bringing in new operators will create wasteful competition, generate more emission and aggravate the already heavy traffic congestion.

- (b) Hong Kong is short of land resources. Our Companies are already very tight in depot and parking facilities. We believe that new operators will find themselves difficult, if not impossible, to secure new land for such facilities.
- (c) Franchised bus business is capital intensive and the payback period is long. Without a reasonable assurance of the long term sustainability of the business, potential operators will be reluctant to invest.
- (d) Franchised bus business is labour intensive and it is already very difficult to recruit frontline staff at the moment. Without a reasonable assurance of long-term job security, people will be reluctant to join the industry. Further, when an incumbent operator is not successful in the re-tender of its services, redundancy of staff, mainly at the frontline level, will be inevitable.”

Chapter 23 – Recommendations

The grant, regulation and monitoring of public bus franchises: safety

574. The current legislative regime and the requirements of the franchises granted to bus operators provide a wholly insufficient emphasis on safety. There is no express requirement in respect of safety in section 12 of the Ordinance, which merely requires that the grantee of a franchise maintain a “proper and efficient” public bus service. Similarly, there is no such requirement in the conditions imposed in the franchise agreements.

575. Save for the two indicators used by the TD of the safety performance of franchised buses, namely mechanical failure and the accident rate of buses, there are no detailed quantifiable safety performance indicators to enable the TD to better assess their performance. Whilst the 14 per day spot checks on vehicle safety defects appear to be very thorough, involving no less than 47 items, and the failure rate very low, there being only 11 successful prosecutions in the five year period 2012-2016, [TD-1; pages 91-92, paragraphs 9-11: TD-4, page 1427] the accident rate indicator is crude, being based only on the accident rate per million kilometres travelled by franchised buses. It gives no weighting to the different consequences of accidents, namely: fatalities, serious injuries and minor injuries, albeit that at least that bare distinction is made in the Fuller Disclosure contained in the Annual Reports of the companies who operate franchised buses.

576. Although section 35 (1) of the Ordinance provides for the making of regulations by the Secretary for TH, *inter-alia*, to regulate the driving hours, rest and refreshment intervals of bus captains, no such regulations have been made. Rather, mere Guidelines have been issued.

*A reactive approach to safety**The TD*

577. As is readily apparent, many of the measures taken by the TD to enhance the safety of franchised buses were reactive to events, rather than being proactive. For example, Mr Joseph Lai conceded that it was “fair to say” that the franchised bus accident in Sham Shui Po on 22 September 2017 prompted the review of the 2012 Guidelines on Working Hours, the revised version of which was promulgated on 23 February 2018. [Transcript Day 1; 7 May 2018, page 77] Mr Lai made a similar concession in respect of the setting up of the Working Group on the Enhancement of Safety of Franchised Buses in early March 2018 in relation to the franchised bus accident on Tai Po Road on 10 February 2018. [Transcript Day 1; 7 May 2018, page 79] The fact that initially it was intended that the Working Group report be completed within three months speaks eloquently about the perceived need for an urgent reaction by the TD. [Transcript Day 19; 4 October 2018, pages 130-131]

*The franchised bus operators**KMB*

578. Similarly, it is clear that many of the measures taken by the franchised bus operators subsequent to the Tai Po Road accident on 10 February 2018 were reactive to that event, rather than being proactive. For example, on 23 February 2018, KMB changed the threshold value at which an audio/visual alert is given to a bus captain of excessive speeding from 75 km/h to 70 km/h. Its Accident Report, dated 12 March 2018, said that it had been determined that from 5 March 2018 all new buses procured by the company would be fitted with seat belts. In that report, it was stated that installation of electronic stability control was “under testing and verification with the supplier”, whereas arrangements were being made “to test geo-fencing on 10 buses.” Moreover, it was said that the company was “conducting a trial with a supplier on monitoring drowsiness of BCs while they are

driving.” Of the employment of part-time bus captains, it was stated that the employment of those whose working hours fell below 18 hours per week had been discontinued, albeit that an offer had been made to them to be employed on different terms. Of training of bus captains, it was said all training features of bus captains had been “reassessed” and that “some new elements have already been introduced, while some will be executed at a later stage.” [KMB-1(A); pages 114-115, paragraphs 41, 42 and 47, and page 104, paragraphs 13 and 15]

CTB

579. For its part, not having had a Safety Committee hitherto, such a committee was constituted by CTB in early May 2018. In evidence, Mr Samuel Cheng said that the purpose of forming the committee was “to specifically examine all matters related to operational safety.” Of that examination, he said that “Initially, we have identified the following areas for improvement.” He went on to describe four areas in which bus captain driver training was to be strengthened, including increasing the number of hours of training for newly recruited captains and providing “training on customer service and EQ management”. Of recruitment, he said “we have started to explore the feasibility of conducting psychological assessment of bus captain applicants.” Then, he said that from 1 June 2018 part-time bus captains would be required to provide information of their working hours with the principal employment “to enable the companies to better understand whether they have sufficient rest time.” Next, he said that in the third quarter of the year it was proposed that the upgraded “on board black-box will automatically give out alert signals to the bus captain.” Finally, he said that the companies would continue to explore “the feasibility of introducing new technologies for enhancing safe driving.” [Transcript Day 3; 29 May 2018, pages 2-3]

580. The absence of a long-term, measured proactive approach by TD to franchised bus safety is best illustrated by the TD’s failure to require the franchised bus operators to keep abreast of advances in technology of devices that are directly or indirectly related to enhancing safety. For example, it is striking that having required, in November 2003, the franchised bus operators to install black boxes of

stipulated capabilities on new buses from July 2004, no additional requirements were stipulated by the TD until August 2018.

581. It is to be noted that, notwithstanding the fact that the TD had written to KMB and CTB on 22 November 2010 informing them of the existence of a digital map of Hong Kong's roads available for purchase from the TD and that on 18 January 2018 the public was informed by a notice on the TD's website that it was now available for free, [TD-5; page 1771, paragraph 2.3] it appears that KMB and CTB were not aware of its existence until the TD wrote to them by letter, dated 7 June 2018, informing them of that fact. KMB confirmed as such in terms in evidence. [Transcript Day 14; 11 August 2018, page 115] For his part, Mr Samuel Cheng of CTB said in evidence "...currently we are not able to get a digital map which includes all the speed limits of all the roads in Hong Kong. Currently there isn't such a digital map. So what we have to do is to manually mark such road sections onto our digital map." [Transcript Day 4; 30 May 2018, page 30]

582. Of course, a digital map, used in conjunction with a black box, was a simple way of monitoring excessive speed and was also an important component of an Intelligent Speed Assistance system. In evidence, Mr YK Chan of the TD confirmed that prior to February 2018 he was not even aware of the fact that TfL had published a lengthy report of extensive trials conducted in London in 2015 and 2016 of the use of ISA. [MISC-3, pages 1002-1133. Transcript Day 19; 4 October 2018, page 155]

TfL's proactive approach to bus safety

583. By contrast, it is clear that for many years TfL have adopted a long-term, measured, proactive approach to enhancing the safety of franchised buses. That approach is evidenced, in the field of technological safety devices and systems, by TfL's consideration of the use of the ISA system: first, in 2009, followed by an extensive trial of the system on two bus routes in 2015 and 2016, and the subsequent publication of the independently monitored report by TRL in 2016,

resulting in TfL's requirement in October 2018 that franchised buses be equipped with the ISA system by the end of 2018.

Responsibility for bus safety

TD

584. As noted earlier, the Commissioner for Transport acknowledged that there was no "single team" responsible for franchised bus safety within the TD. Rather, she pointed to a number of Branches and Divisions of the TD, namely the Bus and Railway Branch, the Road Safety and Standards Division and the Vehicle Safety and Standards Division. Further, she acknowledged that there was no Committee which met on a regular basis to discuss and consider franchised bus safety. [Transcript Day 19; 4 October 2018, pages 94-95]

CTB

585. In a similar vein, Mr Samuel Cheng of CTB said, in response to the question of who, within CTB, was responsible for bus safety that, prior to the establishment of a Safety Committee in early May 2018 "We didn't have a specific employee for that purpose. This is because, for safety-related matters we who are seated here today from the senior management share such responsibility." [Transcript Day 3; 29 May 2018, pages 25-26] That was a reference to the no fewer than six representatives of CTB who gave evidence.

KMB

586. In answer to the same question, Mr Godwin So of KMB said "At present, the company structure is such that every Department has some responsibility for safety. Mr James Wong said "Actually, safety should not be the responsibility of just one person in the company." Mr Roger Lee said "...safety is an interdepartmental matter." [Transcript Day 12; 7 August 2018, pages 40-43]

587. As noted earlier, Professor Stanley recommended that Hong Kong adopts the practice in Victoria in which there is an Independent Safety Regulator for buses. For his part, Mr Weston said that whether or not that was appropriate for Hong Kong would depend on the existing “local structures and circumstances”. He said “...maybe progress can be made quicker through collaboration and the current structures and the current players working together more closely.” He noted that “quite significant progress is being made around safety agenda for buses in London” within the existing structure in London, namely one without an Independent Safety Regulator. Moreover, he noted that the Bus Safety programme had been designed and coordinated “by two or three people within the buses safety team.” [Transcript Day 18, 27 September 2018, pages 108-116]

588. Quite clearly, Professor Stanley’s recommendations involve a very significant root and branch change to the existing franchised bus structure in Hong Kong and would require extensive new legislation and would take many years to implement. In our judgment, the enhancement of safety of franchised buses in Hong Kong can be achieved more quickly and efficiently by adoption of some of the relatively simple steps identified by Mr Weston.

589. *Recommendation: TD franchised bus Safety Director*

- (1) We recommend that the TD establishes a structure to develop a proactive approach to enhancing the safety of franchised buses;
- (2) We recommend that, as the first step towards developing a proactive approach, the TD appoints a franchised bus Safety Director, in charge of a small team dedicated to bus safety, who would have overall responsibility for all aspects of safety of franchised buses, including but not limited to these aspects of safety: recruitment and training; working hours, rest times and meal breaks of bus captains; the facilities available to rest for bus captains; the interior and exterior design of franchised buses; and the identification and trial of appropriate technological safety devices and, where appropriate, their

installation. In discharging those duties, no doubt the Safety Director would work closely with other colleagues responsible for the broader aspects of the various subjects identified. For example, no doubt he would do so with the team it is proposed be created within the TD to be dedicated to transport technology. The Safety Director's overarching responsibility would be franchised bus safety.

590. *Recommendation: Franchised bus operators*

- (3) We recommend that the TD invites the franchised bus operators to appoint their own Safety Directors, to have overall responsibility for all aspects of the safety of franchised buses, to permit ready direct contact between the TD's Safety Director and the franchised bus operators, and each other, on issues of bus safety.

Membership of the Permanent Working Group/Bus Operators Forum

591. We commend the Commissioner for deciding to constitute a Permanent Working Group on the Enhancement of Safety of Franchised Buses to operate in a manner similar to the Bus Operators Forum in London. Clearly, it is the experience of TfL that a permanent structure which facilitates regular meetings, every eight weeks or so, of senior managers of the bus operators, including those responsible for different aspects of safety of franchised buses, with TfL engenders an atmosphere of collaboration on the issue of safety.

592. *Recommendation*

- (4) We recommend that the membership of the Permanent Working Group be expanded beyond its current membership to include independent members with expertise relevant to franchised bus safety.

Technological safety devices: TD's technology team

593. In her evidence, the Commissioner said that the TD was “actually bidding necessary manpower resources” in order to “set up a dedicated transport technology team within the Department.”

594. Given the speed and ambit of the advances in technological safety devices suitable for use on motor vehicles, including franchised buses, it is very surprising that such a dedicated team was not established within TD some years ago. Clearly, such a team was and is needed by the TD to be responsible for keeping abreast of those advances; arranging for trials of those safety devices thought to be suitable to the circumstances prevailing in Hong Kong; ensuring that the results of such trials are independently tested and subjected to a cost/benefit analysis; and recommending installation on franchised buses of those safety devices or systems found to have satisfied that analysis.

595. *Recommendations*

- (5) We support the Commissioner’s application for funding and recommend that a dedicated technology team be formed in the TD urgently.
- (6) In addition, we recommend that, if constituted, the TD’s technology team establishes lines of communication with well-respected overseas jurisdictions, such as TfL in London and LTA in Singapore, to share information of what is known of the capabilities of not only new but also improved technological safety devices; what has been learned in the trials of such devices; the results of cost/benefit analyses; what devices were rejected and which ones were installed and with what success.
- (7) Similarly, we recommend that the franchised bus operators consider appointing members of their own staff to be responsible for those matters within their companies and, in their case, to consider

establishing or strengthening existing relationships with franchised bus operators in other jurisdictions or international bus organisations, so that they may also benefit from a similar flow of information in respect of technological safety devices.

Subsidies

Bus safety innovation fund

596. It appears that the provision of a relatively small sum of money in 2017 by TfL, £500,000, in TfL's *Safety Innovation Fund* has proved to be a successful means by which franchised bus companies have been encouraged to embark on testing technological safety devices, the overall results of which are shared by TfL with all bus operators and which have played, and are playing, an important part in the development of TfL's Bus Safety Standard. On the other hand, the Committee is aware of the current availability in Hong Kong of government funded grants for trials of road safety technology. In 2018, the Innovation and Technology Fund approved the grant of \$967,000 to Greensafety Technology Limited for a trial of "Application of Advanced Driver Assistance Systems + 4S solution to government vehicles" to study and enhance driving safety on roads.

597. *Recommendation*

- (8) We accept Mr Weston's suggestion that consideration be given by the TD to funding "uptake of new safety technology" by franchised bus operators and recommend that a relatively small fund of monies be made available for that specific purpose. If such a fund was created, disbursement of the monies ought to be subject to similar rigorous requirements identified in TfL's soon to be launched *Bus Safety Innovation Challenge*.

Subsidies: retrofitting seat belts on some franchised buses and Electronic Stability Control (“ESC”) and active speed limiting retarders on all franchised buses

598. As noted earlier, the statement on 12 October 2018 in the Chief Executive’s 2018 Policy Address that “the government will subsidise franchised bus operators in retrofitting existing buses with appropriate safety devices, including retrofitting all seats on the upper deck of some buses with seat belts” was qualified, first by the Secretary for TH, in a statement made at a press conference on the same day, who said that it applied to “all seats on the upper deck of long-haul buses running on expressways with fewer stops” and secondly, by the Commissioner who said in evidence that: [Transcript Day 21; 16 October 2018, pages 130-131]

“...the installation of seat belts will particularly have to undergo a detailed assessment including operational, technical and financial feasibility assessment.”

The Commissioner confirmed in terms that the assessment included a cost/benefit analysis.

599. Having said that, in addition to retrofitting seat belts on some buses, the government funding included retrofitting of “the electronic stability control system, speed limiters with retardation function” the Secretary for TH said “we will be funding 80% of the relevant cost, involving about \$500 million. For the remaining costs as well as subsequent maintenance and repair works, they will be borne by the franchised bus operators.”

600. The importance of conducting a cost/benefit analysis in respect of the retrofitting of seat belts on the upper deck of some buses is evidenced by CTB’s position in its closing submissions. Having complained of the “huge burden” on the companies of funding the 20% of the retrofitting costs and having asked that the government provide “full financial support”, it was asserted that, failing that eventuality: [CTB-1, page 104]

“...priority should be given to the retrofitting of ESC and ASLS as these safety devices may prevent accidents from happening. Retrofitting of seat belts on the upper deck seats

should be accorded with a secondary priority as the cost-benefit of this may not be justified if the wearing of seat belt remains not mandated by law.”

601. We endorse and support the Commissioner’s evidence that the TD intends that the retrofitting of seat belts on the upper deck of some franchised buses should undergo a thorough cost/benefit analysis.

602. *Recommendations*

- (9) We recommend that a cost/benefit analysis of the retrofitting of seat belts on the upper deck of some franchised buses be conducted and that it be performed by a well-respected independent consultant.
- (10) Similarly, we recommend that a cost/benefit analysis be conducted in respect of the proposed retrofitting to franchised buses of the electronic stability control system and speed limiters with retardation function and, if the trials of other safety devices proved to be technically successful, we recommend that a cost/benefit analysis be performed in respect of the use of those devices before such installation is required or recommended of franchised bus operators by the TD.

Safety Performance Indicators

603. The two performance indicators to which the TD has regard to assess the safety performance of franchised buses are, first the mechanical safety defects detected in the examination of franchised buses, both those conducted annually and those conducted on a random basis and secondly, the accident rate of franchise buses per million vehicle kilometres. In the context of the more nuanced approach taken by TfL, but prior to the publication of their Bus Safety Standard on 16 October 2018, the Commissioner said: [Transcript Day 19; 4 October 2018, page 80]

“We think there should be a performance indicator, at least a performance indicator for us to evaluate safety of the bus company. That said, we also think that if we can move towards the direction of embracing a number of key relevant factors, and come up with a simple index or indicator, that could be an area that we can further explore and study and examine.”

604. It is also to be noted from correspondence between the TD and the franchised bus operators and the more detailed analysis of the causes of accidents, both collisions and non-collisions, to be found in the Forward Planning Programmes that the TD appears to be moving towards identifying more nuanced safety performance indicators with which to measure the safety performance of franchise buses. That is to be commended.

605. In evidence the Commissioner said, in the context of the initiatives by TfL to establish Safety Performance Indicators for bus operators in London, that arrangements had been made some time ago for TD officers to visit TfL “to learn more about their road safety and public transport safety programme and plans”. Information in respect of those 81 Safety Performance Indicators was provided to Mr Weston in November 2018 and is set out in the *Bus Safety Performance Index (“SPI”) Project*.

606. *Recommendation*

- (11) We recommend that the TD established more nuanced safety performance indicators to measure the safety performance of franchised buses.
- (12) We recommend that the TD seek elucidation and clarification from TfL of the 81 Safety Performance Indicators now used by TfL in measuring the safety performance of bus companies in London.

Franchised bus accident data

607. Although the TD does publish road accident statistics on its website, only limited information is provided in respect of accidents involving franchised buses. The provenance of the data is the Hong Kong Police Force's CMIS, which provides information as to "driver contributory factors" in respect of the causes of accidents from a template of sixty specific factors. For its part, having analysed that data, TD produced an analysis of franchised accidents in which the bus captain's driving was a factor in the cause of the accident, which was attached to the letter, dated 21 May 2018, from the TD to the franchised bus operators. The letter identified matters to be addressed in the 2018-2023 Forward Planning Programme. [TD-5, pages 1728 to 1731-1. Transcript Day 19; 4 October 2018, pages 63-66] For their part, the police do not have access to the accident data compiled by the franchised bus operators.

608. As required by the TD, the franchised bus operators provide accident data in the Bus Safety section of their annual Forward Planning Programmes. Hitherto, that material has not been made public. A limited disclosure of such material is made in the Fuller Disclosure part of the Annual Report of the franchised bus operators.

609. The data contained in the Forward Planning Programme is a collation of statistics for a period of time. As Professor Stanley noted, it contains a detailed analysis of the correlation between accident rates and various other factors, such as age, years of experience, hours worked and route experience of the bus captains. In its latest iteration it identified seventeen causes of accidents in which a collision was involved and nine in which no collision was involved, together with the catchall "Others". [KMB-12(A); page 5020, paragraph 8.2.3.2] Other than when required to do so by the TD in respect of a particular accident, the franchised bus operators do not provide primary data to the TD in respect of accidents.

610. It is to be noted that, in addition, since January 2018 the TD have required the franchised bus operators to provide monthly reports of the statistics of

excessive speeding and harsh braking of franchised buses. It appears that the parameters by which those events are triggered have been left to the franchised bus operators to determine. For example, a report of excessive speeding is generated by CTB if their franchised bus exceeds 55 km/h for 10 seconds on a road with a speed limit of 50 km/h, whereas a report of excessive speeding is generated by KMB if its franchised bus travels for 30 seconds or more at a speed in the range of 55 to 65 km/h on a road with a speed limit of 50 km/h.

611. We agree with the thrust of the opinions of both Professor Stanley and Mr Weston that greater transparency in data in respect of incidents focuses attention on the issue of safety and is likely to lead to greater accountability. We accept Professor Stanley's statement that there are "solid arguments favouring publication of the Bus Safety Chapter" of the Forward Planning Programme. In respect of the issue of confidentiality, the Commissioner for Transport did not identify any reason why that material should not be publicly available.

612. *Recommendations*

- (13) Accordingly, we recommend that the accident data material in the Bus Safety Chapter of the Forward Planning Programme should be made available to the public.
- (14) In order to provide the TD with more information from more sources about accidents involving franchised buses, we recommend that the TD requires the franchised bus operators to report all accidents to the TD and to do so on a monthly basis.

Accident data: common standards

613. The analysis conducted by the police of the circumstances of an accident and its causes is conducted by reference to one template and that conducted by the franchised bus operators is conducted differently and is unknown to the police. As noted earlier, the threshold values applied by KMB and CTB to the generation of excessive speeding and harsh braking reports is different.

614. *Recommendations*

- (15) We recommend that consideration be given by the TD to instituting a common reporting/analysis system of franchised bus accident data.
- (16) For purposes of consistency of detecting and reporting instances of excessive speeding and harsh braking, we recommend that the TD stipulate to the franchised bus operators common thresholds at which those reports are to be generated.
- (17) Also, we recommend that the TD stipulate to the franchised bus operators a threshold at which a report is generated for sudden acceleration.

Real-time Alerts

615. Clearly, the currently available black box technology is capable of providing real-time alerts to bus captains of driving misbehaviour and of recording those events. It is to be noted that Mr Kuliš, of Openmatics, the supplier of black boxes to KMB, LWB and NLB, testified that the black box installed on the bus involved in the Tai Po Road accident on 10 February 2018 was enabled to provide the driver, not only with an audio and visual alert for excessive speeding (75 km/h) but also for deceleration (2.3 m/s^2) and acceleration (1.15 m/s^2).

616. As noted earlier, CTB are exploring with their black-box supplier the feasibility of providing driver alerts in respect of harsh braking and sudden acceleration. More particularly, they are also exploring the automatic generation of reports of such driver misbehaviour in order to identify bus captains with “frequent jerky driving events”, from which analysis they would provide remedial training or impose disciplinary sanctions. That is an obvious, albeit belated, use of the available technology.

617. *Recommendations*

- (18) We recommend that, if the TD follows our earlier recommendation that the TD stipulate the threshold values for the generation of alerts and reports of speeding, deceleration and acceleration, the TD requires the franchised bus operators to provide real-time alerts of excessive speeding, deceleration and acceleration to bus captains, which alerts are to generate a record to enable the franchised bus operators to identify patterns of driving misbehaviour by bus captains.
- (19) We recommend that the TD and franchised bus operators explore the feasibility of making use of the generation of real-time, or near real-time, reports of driver misbehaviour to provide an automatic alert to the franchised bus operator's Control Room of a pattern of driving misbehaviour over a period of time, to enable intervention and communication by the Control Room with the bus captain, if appropriate.

Bus Captain Training

618. Remarkably, prior to the issue of the Practice Note on Training Framework for Franchised Bus Captains, dated August 2018, the TD did not stipulate any requirements or make any directives as to the nature of or the framework for the training of bus captains by franchised bus operators. There is no doubt that the proper and adequate training of bus captains is a very important component part of a safe franchised bus operation. Different franchised bus operators provided different levels of training. Insofar as training was monitored at all by the TD, all that was required by TD was that the franchised bus operators submit quarterly reports that they had complied with their pledges to provide training for all new recruits and training for in-service bus captains once every three years. It is to be noted that in its submissions the TD said that in 2016 all the franchised bus operators reported virtually 100% compliance with those pledges. [TD-2;

pages 305-320; at page 319, Annex C] The TD did not perform any spot checks or take any steps to make independent checks.

619. The width of the new provisions in the Practice Note stipulating the requisite structure of the training system and the identification of the modules required in the courses to be provided to bus captains, together with the requirement that the franchised bus operators set up an internal monitoring and audit mechanism, speak eloquently of the wholly inadequate nature of the pre-existing arrangement. It is to be noted that the Practice Note requires the franchised bus operators “to develop key indicators on the effectiveness of the training system provided to bus captains” and to take appropriate remedial action, if necessary.

620. As is noted subsequently, Professor Stanley recommended that fatigue management be included in the training regime of both bus captains and their supervisors.

621. As noted earlier, Mr Weston recommended that consideration be given by TD to subsidising a safety aspect of bus captain training. An illustration of such subsidy by TfL is the provision of the *Hello London* programme in 2016-2018 to all bus drivers employed by franchised bus operators in London. In part, it addressed better equipping bus drivers to deal with angry and abusive bus passengers. In that context, it is to be noted that TD is involved, together with the Hong Kong Police Force, in the steps being taken in the long-term process of educating the public to treat bus captains on duty with the respect they deserve as persons providing a public service.

622. *Recommendations*

- (20) Rather than abdicating responsibility to the franchised bus operators for the identification of key indicators, their review and the taking of remedial measures, in respect of the effectiveness of the bus captain training system, we recommend that the TD itself plays an active role

in identifying those key indicators. Obviously, it should do so in collaboration with the franchised bus operators.

- (21) We accept Professor Stanley's suggestion and recommend to the TD that fatigue management form part of the training courses provided to bus captains. Moreover, we recommend that information relevant to that subject be provided to the bus captains' supervisors and regulators in the franchised bus operators.
- (22) We recommend that the TD providing funding for a special course/programme for bus captains to better equip them to deal with abusive and angry passengers.

Guidelines on Working Hours, Rest Times and Meal Breaks

623. As noted earlier, it is clear that Guideline 1(b) of the Guidelines on Working Hours, Rest Times and Meal Breaks promulgated on 23 February 2018, which provides for a special shift, was formulated, having regard to the reduction in the maximum duty and driving hours of bus captains, in the context of the difficulty encountered by the bus operators of recruiting and retaining bus captains, the need to maintain bus services, together with the financial cost to the franchised bus operators of having to recruit up to 1,600 extra bus captains in the absence of a special shift. [Transcript Day 2; 8 May 2018, page 96] Also, it is clear that the special shift has the support of some bus captains, because of the enhanced income it allows them to earn.

624. The new split shift arrangement was clearly a compromise brought about by force of circumstances: namely, relatively low salaries of bus captains determined by market forces; a consequent chronic shortage of bus captain recruits and the loss of currently employed bus captains; the willingness of some bus captains to work very long hours to obtain greater remuneration; the reluctance of the public to accept increased bus fares and the equal reluctance of the Government to provide subsidies to franchised bus operations.

625. It is to state the obvious to note that there is a link between the remuneration paid to bus captains and the chronic difficulties encountered in the recruitment of bus captains. That much was clearly acknowledged by both the franchised bus operators and the TD. As noted earlier, in their written submissions the TD noted that the franchised bus operators had undertaken to “improve the remuneration packages to attract new blood.” Both KMB and CTB have honoured those undertakings and the remuneration package available to bus captains after 1 September 2018 is radically different from that available at the time of the making of the Guidelines in February 2018, namely a total of about \$23,000 for a 6 day week of 10 working hours per day when combined with an annual bonus. For his part, Mr Godwin So, of KMB said in evidence that in September 2018 KMB was able to recruit twice the number of bus captains per week than KMB had been able to recruit six months earlier, acknowledging “With higher pay, we can attract more bus captains.” [Transcript Day 15; 12 September 2018, pages 99-100]

626. For its part, the TD acknowledged the inevitable link between an increased remuneration package for bus captains and an application for an increase in fares, stating that “...the TD would process any such fare increase application in accordance with established practice.” [TD-1, page 65]

627. The Committee acknowledges that the change in the maximum number of driving hours permitted for bus captains from 11 to 10 hours and the requirement for an off-duty break of 22 hours in three successive duty shifts had significant consequences for different parties. As noted earlier, the TD acknowledged as much in their written submissions: [TD-1, page 64]

“Removal of all special shift duties will result in a demand for more than 1,000 additional bus drivers, and recruiting such a large number of additional bus drivers is quite impracticable, let alone the financial costs to be incurred. Besides, take-home pay of bus drivers who are currently working under special shift duty will be reduced.”

628. The primary requirement of the Guidelines is that “the total off-duty breaks in three successive shifts should not be less than 22 hours.” No doubt, that limit addresses the perceived danger of accumulated fatigue brought about by lengthy hours on duty and driving, even in a relatively short period of time. It is a benchmark of safety. The special shift has been permitted as an exception to that limit. It permits a bus captain to be on duty for 14 hours and to drive 10 hours per day, day after day and week after week. Obviously, that regime necessarily increases the risk of accumulated fatigue in bus captains, not only in a relatively short period of time but also over extended periods of time. Perhaps, that is why both KMB and CTB have said that they intend to limit the hours of duty in a special shift to 13 hours, the latter stating that they did so in acknowledgement of public concerns about bus safety. That modified regime would permit compliance with the requirement of total off-duty breaks of 22 hours in three successive shifts.

629. Clearly, the justifications advanced by the TD for the special shift, as an exception to the benchmark safety provision of the 22 hours off-duty requirement, are simply economic and pragmatic. No reason has been advanced by the TD that the exception should be other than temporary, pending resolution of the recruitment issue and that of the cost of complying with the benchmark safety provision. None has been suggested in evidence.

630. Given that this Committee is charged with making recommendations to enhance the safety of the franchised buses in Hong Kong, the Committee’s concern is whether or not the interplay of the forces identified above, which resulted in the promulgation of the revised Guidelines in February 2018, has had a negative impact on the safety of franchised bus operations. Primarily, at issue is whether or not the Guidelines permit bus captains to be on duty and drive franchised buses for periods of time that impact on their ability to drive safely.

631. For his part, Professor Stanley recommended that the Guidelines be embedded in regulations and that there be established a Standing Committee on the Working Hours, Rest and Meal Breaks of bus captains, whose members would

include fatigue experts. He recommended examination of the "...12-14 hour working period to see what safety enhancements can be supported in these times, which may mean reducing the 14 hour limit." [EXP-1(A); page 94, paragraph 5.3(3)]

632. It is clear that the franchised bus operators do not have any formal system to monitor the fatigue of their bus captains. None is required of them by the TD.

633. *Recommendations*

Regulations

- (23) We recommend that the Guidelines on the Working Hours, Rest Times and Meal Breaks of bus captains be stipulated in regulations, as provided for by the legislation. Administrative convenience to the Administration in changing the provisions from time to time is a secondary consideration, given the importance of the issue to franchised bus safety. Indeed, it is to be expected that encapsulating the provisions in regulations would result in more and welcome public scrutiny of changes to the provisions.

Fatigue experts

- (24) We accept Professor Stanley's suggestion and recommend that the membership of the Permanent Working Group include an expert(s) on an *ad hoc* basis, in the area of fatigue identification and management. Those issues ought to be considered in the context of the practices and systems obtaining in other jurisdictions.

Duty hours

- (25) Having regard in particular to the fact that KMB and CTB have voluntarily eschewed using the maximum of 14 hour of duty permitted

in the split shift system, we recommend that consideration be given by that Permanent Working Group as to whether or not, having regard to the risk of accumulated fatigue, permitting 14 hours of duty in a split shift system is compatible with bus safety.

Driving hours

- (26) Having regard to the risk of accumulated fatigue in bus captains contributing to an increased risk of their having bus accidents, we recommend that consideration be given by the Permanent Working Group by reference to the practices of other respected jurisdictions, of restricting the total hours of driving by a bus captain in a period of, say 14 or 28 days.
- (27) We recommend that, having addressed the matters identified at recommendations (25) and (26), the Permanent Working Group engage an independent consultant to conduct a cost/benefit analysis of the effect of abrogating the special shift exception to the 22 hours of duty rule, in particular the potential safety improvements, the number and cost of the additional bus captains that would be required and the implication to franchised bus fares.

It has to be recognised that enhancing the safety of franchised buses may have to come at a cost to some or all of the parties who have interests in the current regime of working hours.

CTB's use of the split system: availability of rest facilities

- (28) Given that hitherto CTB have not used a split shift system for its bus captains, and having regard to the difficulties encountered with a range of third parties over the years by KMB in their attempts to provide suitable rest facilities for its bus captains, we recommend that TD and CTB work closely together to ensure that adequate rest facilities are available as the split shift system is deployed by CTB on

different routes, at which the minimum three hour continuous break is to be taken by bus captains at different bus stations and termini.

Part-time bus captains: other employment

634. All the franchised bus operators employ part time bus captains. In 2018, they represented 13.9% of the total number of bus captains employed by CTB and 8.4% of all the bus captains employed by the franchised bus operators. [TD-1, page 67] They make a considerable contribution to the operation of franchised buses. There is no evidence that they represent a greater risk to franchised bus safety than full-time bus captains. However, it is important that the franchised bus operators are aware of what other employment they have, in particular whether the nature and hours worked in that other employment might impact on the performance of their duties as bus captains.

635. From 1 June 2018, CTB required that part-time bus captains make a detailed declaration of their other employment, including the position they occupied and the hours that they worked each day. [CTB-3, pages 571-1 to 517-2 and Transcript Day 3; 29 May 2018, pages 81-84] Prior to the accident on 10 February 2018 on Tai Po Road, KMB did not require a part-time captain to declare what other employment he was undertaking. [Transcript Day 14; 11 August 2018, pages 59-60] However, subsequently part-time captains employed for between 10 and 18 hours per week were required to make a declaration in which they provided details of their “Full-time/part-time jobs not assigned by the Company”, including their position and their working hours. [KMB-11, pages 4785-4788]

636. In 2017, 29% of the bus captains employed by NLB were part-time bus captains. [Transcript Day 5; 19 June 2018, page 3] After their representatives had given evidence on 19 June 2018, the Committee was provided with a “Job Declaration Form for Non-Full-Time Bus Captain”. It required details to be provided of the position occupied by the part-time bus captain and the average working hours per working day and the average working days per week. Although in evidence and Mr Benny Chan, for NLB said that the form had been

“introduced” in June 2018, in their submissions, dated 27 June 2018, NLB said that it was intended that “The new form will be introduced by year 2019.” [NLB-1, page 47] Although the Committee sought clarification and, in a submission dated 11 July 2018, was provided with a form entitled “Non-Full-Time Driving Position Application Form”, which required details of the hours worked per day of the week in the other employment engaged by the part-time bus captain, the position as to what system was in force, when it came into force or was yet to come into force was confused. [NLB-1, pages 74-78]

637. Under a long-standing arrangement, with the consent of the TD, pursuant to a contract with Kwoon Chung Motors Company Limited (“KCM”), NLB is provided with “at least 30” non-franchised buses and drivers to meet increased demand at weekends and public holidays. However, Mr James Wong acknowledged that there was no arrangement under which NLB was provided with details of the qualifications and driving records of the bus captains provided with the non-franchised buses. Similarly, he said the bus captains were not asked to make a declaration in respect of the hours they worked in their primary employment. NLB had not decided what to do. [Transcript Day 5, 19 June 2018, pages 37-38] It appears that there is no system in which NLB is informed of the hours of duty and driving and the off-duty breaks of those drivers before they perform driving duties for NLB.

638. For its part, the TD said “The TD did not require NLB to provide a report of compliance with the guidelines in respect of the drivers of NFB’s as they are not the employees of NLB.” [TD-1, page 436] NFB is an acronym for non-franchised buses. It is wholly unsatisfactory that NLB are not aware of the hours of duty and driving and the off-duty breaks of those drivers, so that to ensure bus safety they are in position to be satisfied that those drivers are in a proper condition to perform their duties as bus captains.

639. *Recommendations*

- (29) We recommend that the TD stipulates to the franchised bus operators the information that they are required to obtain, maintain and update in respect of the other employment of part-time captains, including the nature of the employment and the hours worked.
- (30) We recommend that TD requires NLB to obtain information and maintain records of the duty and driving hours and off-duty breaks in their other employment of the bus captains provided to them by KCM, or any other supplier of buses and drivers to NLB, and that NLB is required to be satisfied that, when they are performing driving duties for NLB, they are compliant with the Guidelines on Bus Captain Working Hours, Rest Times and Meal Breaks.

The provision of rest and toilet facilities for bus captains

640. As noted earlier, under their respective franchise agreements the franchised bus operators are responsible for the provision of ancillary facilities at bus termini or public transport interchanges, including toilets and rest facilities. They must do so at their own expense. The facilities may be constructed by the construction agency of the public transport interchange or bus termini or by the franchise bus operators contractor. As noted earlier, in the consideration of the tortuous process leading to the provision of those facilities by KMB at the new West Kowloon Station Bus Terminus, it seems to be acknowledged by all parties that the franchised bus operators have more difficulty in obtaining approval for constructing permanent structures for rest and toilet facilities than does the government.

641. In evidence, Mr Patrick Wong of the TD confirmed that the TD had a *Transport Planning and Design Manual* and that it provided: [Transcript Day 21; 16 October 2018, pages 16]

“...toilets, washroom and canteen facilities for operator’s staff will not be required in the bus terminus of such facilities are available in nearby development.”

Mr Wong said that the working group within the TD on the Transport Planning and Design Manual would “review and revise” that provision. [Transcript Day 21; 16 October 2018, page 30]

642. *The Hong Kong Planning Standards and Guidelines* make provision for franchised bus facilities at public transport terminals. Paragraph 4.1.6 of Chapter 8 makes provision for Standards for Bus Termini. It states: [MISC-3, page 1317]

“A regulators kiosk and the other ancillary provisions would be required.”

643. In their reply to the Committee, dated 27 September 2018, the Planning Department said that there was no “specification for “other ancillary provisions” as used in paragraph 4.1.6 and that no request had been made by “THB/TD to particularise the phrase.” [MISC-3, page 1313-1315]

644. For his part, Mr YK Chan said that the TD would invite the planning department to provide a more detailed specification of the term “other ancillary provisions, namely to stipulate toilets and resting facilities. [Transcript Day 21; 16 October 2018, page 45]

645. In its submissions, dated 3 October 2018, the TD said that whereas it handles some of the applications by franchised bus operators, others are handled by “other parties such as HD, LandsD, GPA and Link Reit”. [TD-5, page 1824] On average these applications take considerably more time to process than those processed by the TD. Apparently, in response to the concerns caused by the delay in processing those applications the TD set up a ‘task force’ comprising representatives of relevant government departments and franchised bus operators in December 2017. Of the purpose of the task force, the Commissioner said that the TD: [Transcript Day 19; 4 October 2018, page 10]

“will continue to work closely with the relevant approving authorities through regular meetings, with a view to speeding up the processing of the applications.”

646. Of “planned action” to be taken by the TD to improve the provision of ancillary facilities for bus captains at public transport interchanges and bus termini, the TD said in its submissions dated 3 October 2018: [TD-5; page 1825, paragraph 15]

“...the TD will explore in consultation with the relevant government bureaux and departments on the approach for providing the ancillary facilities including bus regulator office(s), restrooms with toilets has built in structures in new PTI’s and bus termini at government cost, whilst the FB operators will pay the rent and recurrent costs for using these facilities.”

647. *Recommendations*

- (31) We recommend that the TD amends its Transport Planning and Design Manual to delete the provision that toilet facilities for operator’s staff will not be required in the bus terminus of such facilities are available in nearby development.
- (32) We recommend that the TD invites the Planning Department to amend the provision for Standards for Bus Termini in the Hong Kong Planning Standards and Guidelines to provide particularly for the meaning of the requirement to provide “other ancillary provisions” and to stipulate that the provision of toilets and rest facilities are required.
- (33) We commend the Commissioner’s initiative and recommend that the provision of ancillary facilities at new PTI’s and bus termini, including bus regulator offices and restrooms with toilets as built-in structures, be provided at Government cost, on the basis that franchised bus operators using those facilities would bear the rent and recurrent costs.
- (34) We recommend that the TD considers expanding its membership of the task force to monitor the provision or upgrading of ancillary facilities at public transport interchanges and termini to include a

representative of the Secretary for TH to provide an opportunity for the policy bureau to collaborate with other policy bureaux and their departments in addressing this issue.

Abuse and assaults on bus captains

648. Regrettably, it is clear that there is a growing trend of abuse and assaults of bus captains performing their duties in delivering a public service. Equally clearly, that is a matter of considerable concern not only to the bus captains, as expressed by the many submissions made by the trade unions, but also to the franchised bus operators. With the agreement of the TD, KMB has begun installing shields to protect their bus captains.

649. Obviously, the primary response to those problems is by education of the public, and we commend and endorse the initial steps taken by the TD [Transcript Day 1; 7 May 2018, pages 40-41; Day 2; 8 May 2018, pages 24-27; Day 21; 16 October 2018, pages 50-52] and the Hong Kong Police Force [MISC-1(C), pages 124-547 to 124-555] to promote the message that abusing a bus captain is unacceptable and a criminal offence.

650. *Recommendations*

- (35) We recommend that the TD and the Hong Kong Police Force conduct a long-term programme in the news print media, television and social media to educate the public that abusing a bus captain performing his duties is not only unacceptable but also a criminal offence.
- (36) We recommend that the TD requires the franchised bus operators to display notices where appropriate to remind franchised bus passengers that such conduct is unacceptable and constitutes a criminal offence.
- (37) A second limb of the response is to achieve a greater enforcement of the law. We recommend that, in compliance with privacy legislation, the TD requires the franchise bus operators to install a video camera(s)

with an audio capability at the entrance and next to the bus captains seating area on all franchised buses. Notices should be posted to advise franchised bus passengers of the presence of those cameras, their capabilities and, if appropriate, their potential use in criminal proceedings. Such equipment and related notification is commonplace on public transport and bus and railway and stations in other jurisdictions.

The prosecution of franchised bus passengers for criminal offences arising out of abuse and/or assaults of bus captains is a matter for the police. Obviously, the franchised bus operators have a role to play in assisting the police in such a prosecution. Primarily, it is likely that that will involve no more than retrieving the video and audio recordings of events captured on the camera and, if necessary, by providing evidence of the integrity of the system of the making, storage and retrieval of that material.

- (38) In order to better identify the threshold of unacceptable conduct by way of abuse of a bus captain, we recommend that the TD proposes specific legislation to make it an offence to make a “threatening, abusive or insulting communication” towards a bus captain performing his public duties. [See section 6(1) of the Singaporean Protection from Harassment Act, 2014]

Illegal stopping at and near franchised bus stops

651. It is clear that illegal stopping by other vehicles at and near franchised bus stops is a cause of considerable ongoing concern to both bus captains and franchise bus operators. It appears that on occasions such illegal conduct prevents bus captains from stopping at bus stops or causes them to stop in the road to allow passengers to board or alight from the bus. The latter is clearly unsafe. Both are the potential cause of wholly unnecessary friction between bus captains and their passengers.

652. The current primary method of enforcement of offences of illegal stopping at and near franchised bus stops of police officers issuing fixed penalty tickets to vehicle drivers or affixing the fixed penalty tickets to the vehicles is disproportionately wasteful of scarce police resources. In 2012, the Hong Kong Police Force started studying an electronic fixed penalty ticketing system (E-ticketing). In 2014, a pilot scheme was conducted, but shelved in 2016. Four years ago this month, in December 2014, the Transport Advisory Committee reported to the Secretary for THB on a “*Study of Road Traffic Congestion in Hong Kong*” and, having noted the limits of police resources, endorsed a trial scheme of issuing “fixed penalty tickets through an e-ticketing system”. The Committee went on to note that it was “expected to be rolled out in 2017.” That date came and went without the scheme coming to fruition. It appears that in 2018 steps were taken to revive implementing the system and that “THB is preparing for the legal amendments on the method of e-ticket delivery”. [MISC-1(C); pages 124-538 to 124-539, paragraph 3] That delay in adopting the use of technology and effecting simple legislative changes to make enforcement of the law more effective is truly lamentable.

653. This Committee has been informed that the necessary legislative amendments to permit the service of fixed penalty tickets to the address of the registered owner of a motor vehicle is not intended to be introduced to the Legislative Council until the 2019/2020 session.

654. *Recommendations*

- (39) We recommend, that the legislative provisions necessary to implement the service of fixed penalty tickets other than by affixing them to the vehicle or giving them to the vehicle driver and to commence service by E-tickets should be presented to the Legislative Council as soon as possible.
- (40) We recommend that the TD and the Hong Kong Police Force, no doubt having to work together with other interested parties, explore

the feasibility of installing CCTV cameras at appropriate locations, perhaps lampposts adjacent to bus stops and the immediate area around the bus stop at which there is egregious and recurrent infringement of the law, as a technological aid in support of enforcement of illegal stopping at franchised bus stops. No doubt, the vehicle Automatic Number Plate Recognition (“ANPR”) system would assist in identifying the registered owners of vehicles illegally stopped at or near bus stops.

- (41) Recognising that the deployment of dedicated CCTV cameras at selected franchised bus stops may be a relatively expensive exercise, we recommend that franchised bus operators and bus captains cooperate with the Hong Kong Police to make available to the latter the video film captured by the forward-looking cameras, already installed on board franchised buses, of illegal stopping at and in the immediate vicinity of franchised bus stops. As in Singapore, in respect of bus lanes, the role of the bus captain need involve no more than pressing a button marking the time that the illegal conduct was detected and informing his employer. For its part, the franchised bus operators would provide the recording to the police and may need to provide evidence of the integrity of the system of the making, storage and retrieval of that material. The prosecution of the offender is a matter for the police, but they are entitled to expect the assistance of those who are affected by the illegal conduct in the prosecution of the offender.

Priority measures for franchised buses

655. The fact that a franchised bus full to capacity carries many more passengers than any other vehicle on the road is, by itself, a considerable justification for affording franchised buses priority in the use of public roads. In a city which suffers as much road congestion as Hong Kong, encouraging people to use public transport serves an important public purpose.

656. *Recommendations*

Exiting franchised bus stops

- (42) Noting that since 2008 Singapore has implemented a successful system of affording priority to buses as they exit bus stops to rejoin the road, we recommend that the TD gives consideration to introducing a trial of such a system to Hong Kong. Obviously, as noted by the Singapore LTA, such a system causes least inconvenience to other road users when they are given advance warning of the priority to be afforded to buses exiting bus stops and other motorists are able to manoeuvre to other lanes of the road in advance of the bus stop.

Bus lanes

- (43) Although we are acutely conscious that the observation by the Singapore LTA of their experience in Singapore that “bus lanes are not popular amongst the motorists who feel that road space is being taken away” resonates strongly with motorists in Hong Kong, some of whom complain that relatively lightly used bus lanes are a waste of road resources [Reply of the Secretary for THB in the Legislative Council, 13 June 2018, SEC-3, pages 1525-1536], nevertheless, for the reasons set out above, we recommend that the TD makes greater nuanced use of bus lanes in appropriate locations. In doing so, we recommend that the approach of the LTA be adopted; namely, locations are identified where a high volume of buses ply the road and then a detailed analysis is performed of the impact of a bus lane on general traffic flow, having regard to residents and local businesses, whose activities might be affected and that a bus lane is implemented only where benefits exceed costs. [EXP-1(C); page 249-8, paragraph 3]

Speed limits

657. There is no dispute that on occasions bus captains drive franchised buses illegally in excess of the speed limit. That much is clear from the monthly reports of excessive speeding made by the franchised bus operators to the TD. Given the idiosyncratic way in which excessive speeding is determined by CTB and KMB, in respect of which separate recommendations have been made, the overall incidence of illegal speeding by franchised buses is uncertain. Nevertheless, it is clear from the survey conducted on behalf of the Committee, which did not require threshold values of time and excess speed over the speed limit before recording an instance of illegal speeding, that whilst there was illegal speeding on roads with speed limits of 50 km/h the incidence of illegal speeding, particularly in the range of 60-64 km/h, was relatively low.

658. Perhaps, the more important issue is not simply the fact of illegal speeding. Rather, it is the speed travelled by a franchised bus at a particular location within a speed limit zone. As several witnesses said, the governing speed limit on a road does not require the driver to drive at that speed. The appropriate safe speed that a vehicle is driven must have regard to multiple factors, including the nature of the vehicle, the particular location and the weather and traffic conditions.

659. *Recommendation*

'Route Risk' assessment

- (44) In that context, we accept Mr Weston's suggestion and recommend that TD requires the franchised bus operators to provide to the TD a 'Route Risk' assessment for each of the routes on which their buses ply.

Low speed limits and low speed limit zones: 20 mph/30 km/h

660. As is clear from the evidence received from Mr Weston and the related reports from the United Kingdom, there is a growing implementation of low speed limits and low speed limit zones in appropriate locations. Mr Julian Kwong pointed out that that approach has been mirrored in other countries in continental Europe.

661. In his evidence, Mr Julian Kwong described having measured the speed of franchised buses travelling from east to west on Des Voeux Road in Central. He had done so because of the particular circumstances of that location, namely because it was a place where franchised buses overtook stationary buses, whose presence created blind spots, and where many pedestrians cross the road without a pedestrian crossing. It was a place that he judged the safe speed to be about 30-35 km/h, although he measured the speed of one franchise bus as being 49 km/h. Clearly, he judged that to be an unsafe speed, but it was within the legal limit. [Transcript Day 7; 16 July 2018, pages 86-87]

662. *Recommendation*

- (45) Noting that Mr Tony Yau, of the TD, said that the TD was “studying whether the low-speed speed zone can be introduced as a trial”, we recommend that the TD identifies suitable locations, perhaps urban areas with high pedestrian traffic, to conduct trials of a low-speed zone, perhaps 30 km/h.

Competition

663. Although, in giving evidence about the franchised bus system in London, Mr Weston was describing a system in which there is open, competitive tendering for all bus routes following the expiry of an existing franchise after five years or, if it is extended, a total of seven years, it was his opinion that there was no link between enhanced franchised bus safety and an open, competitive tendering system

for bus routes. At best, it was neutral to safety. [Transcript Day 18; 27 September 2018, pages 63-67] For his part, Professor Stanley was of a similar view, even suggesting that there were potential negative consequences to bus safety from open, competitive tendering. [Transcript Day 16; 15 September 2018, pages 50-54]

664. Separately, not in the context of enhanced safety, the Commissioner said that, whilst the TD had no immediate plans to reintroduce open, competitive tendering for franchised bus routes, that was not ruled out and it was “always the government’s objective to promote competition and to improve service standards.” [Transcript Day 19; 4 October 2018, pages 25-26]

665. The Committee has received no empirical evidence that competitive, open tendering for franchised bus routes militates towards enhancing franchised bus safety.

Safety: incentives and penalties

666. Neither Mr Weston nor Professor Stanley supported the use of safety incentives. In his report, Mr Weston said: [EXP-1(A); page 153, paragraph 8.5]

“During discussions with the London bus operators it was clear that operators do not support the direct incentivisation of safety within the route agreement. Operators were concerned that direct financial incentivisation might drive the wrong behaviours, especially at lower levels within the company, including potentially encouraging under reporting. Also, operators felt that linking safety performance to financial payments could lead to a reluctance to collaborate with other operators on safety-related issues as it now had a competitive and commercial benefit. Overall options to incentivise safety within the bus contracts were not seen as a positive mood.”

667. In his evidence, Mr Weston supported that opinion, observing that it would be “rather a strange link” to pay a financial incentive for improvements in safety where, nevertheless the bus operator had been involved in fatalities and serious injuries. Mr Weston went on to say: [Transcript Day 18, 27 September 2018, pages 199-201]

“I think I have some big reservations about making financial incentives to do with safety because I think it just feels like the wrong approach, because you are either still paying people bonuses who are still having accident or you are making deductions that they just build into their contract.”

668. For his part, Professor Stanley agreed with Mr Weston, observing “I acknowledge that there is a risk that you could incentivise underreporting”. [Transcript Day 16; 15 September 2018, page 91]

669. Another highly relevant matter, as noted earlier, is the fact that as yet no nuanced Safety Performance Indicators have been identified by the TD. In the result, in our judgment there is no evidence that militates in favour of incentivising or penalising the safety performance of franchised bus operators.

Chapter 24 – Summary of Recommendations

670. The Committee has benefited from having received oral evidence over a total of twenty-one days from the representatives of nineteen specifically identified interested parties, and that of two expert witnesses, together with their written submissions/reports and those of other parties, together with the closing submissions of Counsel assisting the Committee²⁶. Those submissions/reports total over 22,000 pages of the Committee’s Hearing bundles. Having considered all that material, with a view to sustaining a safe and reliable franchised bus service, the Committee has identified the following forty-five recommendations of safety related measures which it makes to the Chief Executive.

Developing a proactive approach to bus safety

(i) Safety Director

- (1) TD establishes a structure to develop a proactive approach to bus safety.
- (2) The TD appoints a Safety Director and a small bus safety team.
- (3) Franchised bus operators appoint their own Safety Directors.

(ii) Permanent Working Group on the enhancement of safety of franchised buses

- (4) Membership of the Permanent Working Group is expanded to include independent members with expertise relevant to franchised bus safety.

(iii) Technological safety devices: TD’s technology team

- (5) A dedicated technology team is formed urgently in the TD.
- (6) The technology team establishes lines of communication with well-respected overseas jurisdictions, such as TfL and LTA to share information.

²⁶ Appendix VI.

- (7) Franchised bus operators appoint members of their own staff to be responsible for technological safety devices and to establish lines of communication with franchised bus operators in well-respected overseas jurisdictions to share information.

(iv) Subsidies

Bus safety innovation fund

- (8) The TD establishes a small fund to provide grants to franchised bus operators to promote the uptake of new safety technology.

Retrofitting seat belts and Electronic Stability Control and active speed limiting retarders

- (9) The TD engages an independent consultant to conduct a cost/benefit analysis in respect of the retrofitting of seat belts on the upper decks of some franchised buses.
- (10) The TD engages an independent consultant to conduct cost/benefit analyses in respect of the retrofitting of the electronic stability control system and speed limiters with retardation function, and all other safety devices proved to be technically successful, before the TD requires installation of those devices by franchised bus operators.

(v) Safety Performance Indicators

- (11) The TD establishes more nuanced Safety Performance Indicators.
- (12) The TD seeks elucidation and clarification from TfL of the Safety Performance Indicators adopted by TfL.

(vi) Franchised Bus Accident Data

- (13) The accident data material in the Bus Safety Chapter of the Forward Planning Programmes is made public.

- (14) The TD requires the franchised bus operators to report all franchised bus accidents to the TD on a monthly basis.

Common standards

- (15) Consideration is given by the TD to instituting a common reporting/analysis system of franchised bus accident data.
- (16) The TD stipulates to the franchised bus operators common thresholds for reporting instances of excessive speeding and harsh braking.
- (17) The TD stipulates to the franchised bus operators common thresholds of excessive acceleration.

(vii) Real-time alerts

- (18) The TD requires the franchised bus operators to provide real-time alerts of excessive speeding, deceleration and acceleration to bus captains and to generate records of those events.
- (19) The TD and franchised bus operators explore the feasibility of making use of the generation of real-time, or near real-time, of excessive speeding, deceleration and acceleration to provide an automatic alert to the franchised bus operators Control Room, permitting communication with the bus if appropriate.

(viii) Bus captain training

- (20) The TD collaborates with the franchised bus operators to identify key indicators of the effectiveness of the bus captain training system.
- (21) The TD stipulates that fatigue management form part of the training courses provided to bus captains.
- (22) The TD provides funding for a special course/programme for bus captains to deal with abusive and angry passengers.

(ix) Guidelines on Bus Captain Working Hours, Rest Times and Meal Breaks

- (23) The Guidelines are stipulated in regulations.

- (24) An expert(s) on fatigue identification and management is appointed as an *ad hoc* member of the Permanent Working Group.
- (25) Consideration is given by the Permanent Working Group of whether permitting 14 hours of duty in a split shift is compatible with bus safety.
- (26) Consideration is given by the Permanent Working Group to restricting the total hours of driving by a bus captain in periods of 14 or 28 days.
- (27) The Permanent Working Group engages an independent consultant to conduct a cost/benefit analysis of the effect of abrogating the special shift exception to the 22 hours of duty rule, in particular the potential safety improvements, the number and cost of the additional bus captains that would be required and the implication to franchised bus fares.
- (28) CTB and TD work closely together to ensure that CTB provides adequate rest facilities for drivers working on split shifts.

(x) Part-time bus captains: other employment

- (29) The TD stipulates to the franchised bus operators the information that they are required to obtain, maintain and update in respect of the other employment of part-time captains, including the nature of the employment and the hours worked.
- (30) The TD requires NLB to obtain information and maintain records of the duty and driving hours and off-duty breaks in their other employment of the bus captains provided to them by KCM, or any other supplier of buses and drivers to NLB, and that NLB is required to be satisfied that, when they are performing driving duties for NLB, they are compliant with the Guidelines on Bus Captain Working Hours, Rest Times and Meal Breaks.

(xi) The provision of rest and toilet facilities for bus captains

- (31) The TD amends the Transport Planning and Design Manual to delete the provision that toilet facilities for bus operator's staff will not be required in a bus terminus if such facilities are available in a nearby development.
- (32) The TD invites the Planning Department to amend paragraph 4.1.6 of Chapter 8 of the Hong Kong Planning Standards and Guidelines to stipulate that the provision of toilets and rest facilities are required at bus termini.
- (33) The Government provides built-in structures of a bus regulator's office, and restrooms with toilet facilities at new public transport interchanges and bus termini.
- (34) The TD invites a representative of the Secretary for TH to become a member of the TD's task force monitoring the provision of ancillary facilities at public transport interchanges and bus termini.

(xii) Abuse and assaults on bus captains

- (35) The TD and the Hong Kong Police Force conduct a long-term programme in the news print media, television and social media to educate the public that abusing a bus captain performing his duties is not only unacceptable but also a criminal offence.
- (36) The TD requires the franchised bus operators to display notices to remind franchised bus passengers that abusing a bus captain is unacceptable and constitutes a criminal offence.
- (37) The TD requires the franchised bus operators to install video cameras with audio capability at the entrance of buses and where the bus captain is seated.
- (38) The TD proposes specific legislation be enacted to make it an offence to make a threatening, abusive or insulting communication towards a bus captain performing his public duties.

(xiii) Illegal stopping by vehicles at and near franchised bus stops

- (39) Legislative provisions are presented to the Legislative Council as soon as possible to provide for the service of fixed penalty tickets, other than by affixing them to the vehicle or giving them to the vehicle driver, and to permit service by E-ticket.
- (40) The TD and the Hong Kong Police Force explore the feasibility of installing CCTV cameras at suitable vantage points, in particular lampposts, to monitor blackspots of illegal stopping by vehicles at and near franchised bus stops.
- (41) Franchised bus operators cooperate with the police to make available CCTV recordings obtained by cameras mounted on franchise buses of illegal stopping by vehicles at and near franchised bus stops.

(xiv) Priority measures for franchised buses

- (42) The TD gives consideration to introducing a system of affording priority to buses as they exit bus stops to rejoin the highway.
- (43) The TD makes greater use of bus lanes in appropriate locations.

(xv) Route risk assessment

- (44) The TD requires the franchised bus operators to provide the TD with a *route risk* assessment for each of the routes on which their buses ply.

(xvi) Speed limits

- (45) The TD identifies suitable locations to conduct trials of a low-speed zone of 30 km/h.

*Chapter 25 – Epilogue: acknowledgements and In Memoriam***ACKNOWLEDGEMENTS**

671. The Committee thanks the representatives of the specifically identified interested parties who have given oral evidence and/or provided written submissions, as well as all the many members of the public who provided written submissions.

672. The Committee wishes to acknowledge in particular the generous assistance provided by overseas authorities and the directors and members of staff of franchised bus companies in London. Stagecoach London provided a full written response to the Committee's questionnaire. Transport for London, Abellio London, Go Ahead London, and RATP were most generous in meeting the Chairman and Mr Weston in London and providing them with most informative presentations and demonstrations relating to the safety of franchised bus operations in London and in answering their questions.

673. Similarly, the Land Transport Authority of Singapore was most helpful in providing written information and answering follow-up questions about safety aspects of the operation of franchised buses in Singapore, including bus captain training, the trial and installation of technological safety devices and the affording of priority to buses in bus lanes and boxes to permit easier exit of buses from bus stops.

674. Next, the Committee thanks ZF Friedrichshafen AG and its subsidiaries, ZF Services Hong Kong Limited and Openmatics s.r.o., manufacturers of telematics/black boxes and suppliers of that equipment to KMB, for arranging for Mr Jan Kuliš, a systems engineer employed by Openmatics, to give most helpful evidence by video link from the Czech Republic.

675. Further, the Committee readily acknowledges the on-going assistance provided by the Transport Department and the franchised bus operators in providing written submissions in response to the many questions and issues raised by the Committee throughout progress of its enquiries.

676. Finally, the Committee wishes to thank Mr Peter Chan Ping Fai, Secretary to the Committee, and his staff in the Secretariat, counsel assisting the Committee, their instructing solicitors, those who prepared the transcript of the hearings and those who provided interpretation services.

IN MEMORIAM

677. The final words of our report must be in remembrance of those who died in consequence of the bus accident on Tai Po Road on 10 February 2018 and in other recent bus accidents, and in offering condolences to their loved ones and deep sympathy to those who were injured in those accidents.


678. It is the Committee's hope and expectation that the adoption of the safety measures recommended in this report would assist in preventing recurrence of such bus accidents and in sustaining a safe and reliable franchise bus service in Hong Kong.



Mr Justice Michael Lunn, GBS



Mr Rex Auyeung Pak Kuen, JP



Professor Lo Hong Kam, JP

Dated : 31 December 2018

APPENDICES

Declaration of Interest

For purposes of transparency, the Committee wishes to disclose that Professor Lo informed the Committee of various projects on which he had assisted various Departments of Government and others over many years. On two occasions Professor Lo provided services, for which he was paid by bodies that had been engaged by the Transport Department to conduct studies, namely: the Comprehensive Transport Study Model Enhancement, in and between 2009 and 2013, and the Installation of Seat Belts on Student Service Vehicles in Hong Kong, in between July 2010 and August 2011. In the former study, he provided sub-consultancy services to Ove Arup. In the latter, he served as a Project Advisor to the Department of Civil Engineering and Institute of Transport Studies of the University of Hong Kong. Ove Arup and the Department of Civil Engineering and the Institute of Transport Studies of the University of Hong Kong respectively had been engaged by the Transport Department to conduct those studies. In total, Professor Lo received \$105,600 for providing those services.

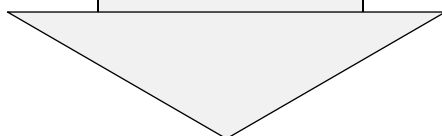
As is apparent, Professor Lo last preformed service indirectly for the Transport Department over four years prior to becoming a member of this Committee.

Professor Lo and the other members of the Committee are satisfied that there is no conflict-of-interest that would prevent Professor Lo from discharging his duties fully and properly in making recommendations of safety-related measures to the Chief Executive, with a view to sustaining a safe and reliable franchised bus service in Hong Kong.

Chronology of Key Events

| Incident / Hearings | Date/Year | Action by TD / Bus Operators |
|--|----------------|--|
| <u>22 Sept</u> : Sham Shui Po Accident | September 2017 | |
| | October 2017 | <u>Early-Oct</u> : TD's meetings with franchised bus operators and trade unions on revisions to Guidelines on Bus Captain Working Hours, Rest Times and Meal Breaks |
| | November 2017 | |
| | December 2017 | <u>Dec</u> : TD's task force on rest facilities set up |
| | January 2018 | |
| <u>10 Feb</u> : Tai Po Road Accident; CE announced plans to set up an Independent Review Committee | February 2018 | <p><u>11 Feb</u>: KMB investigation committee formed</p> <p><u>12 Feb</u>: Tai Po District Council special meeting</p> <p><u>15 Feb</u>: (i) LegCo Panel on Transport meeting; motions passed (ii) KMB discontinued recruitment of part-time bus captains</p> <p><u>23 Feb</u>: (i) Guidelines on working hours revised (ii) Threshold for KMB's speeding report lowered from 75 km/h to 70 km/h</p> |
| <p><u>13 Mar</u>: The Independent Review Committee on Hong Kong's Franchised Bus Service ("Committee") set up</p> <p><u>28 Mar</u>: Committee commenced work</p> | March 2018 | <p><u>1 Mar</u>: KMB and CTB merged performance and other allowances of bus captains with base salary</p> <p><u>12 Mar</u>: KMB accident report submitted</p> <p><u>13 Mar</u>: 1st meeting of TD's Working Group on the Enhancement of Safety of Franchised Buses</p> |
| <p><u>17 Apr</u>: Initial deadline for submissions to the Committee by specifically identified interested parties</p> <p><u>30 Apr</u>: Initial deadline for submissions from the public</p> | April 2018 | <p><u>9 Apr</u>: Safety improvements to Tai Po Road announced</p> <p><u>10 Apr</u>: KMB Action Plan submitted</p> <p><u>27 Apr</u>: Reduced speed limits of 50 km/h for certain sections of Tai Po Road</p> |

| Incident / Hearings | Date/Year | Action by TD / Bus Operators |
|--|----------------|---|
| <p><u>7 & 8 May</u>: Hearings with THB and TD <u>29 & 30 May</u>: Hearings with CTB/NWFB</p> | May 2018 | <u>Early-May</u> : CTB Safety Committee set up |
| <p><u>1 Jun</u>: Email from Committee's Secretariat to TD on availability of digital speed maps <u>19 Jun</u>: Hearing with NLB</p> | June 2018 | <u>7 June</u> : Letter from TD to bus operators informing them of the availability of digital speed maps |
| <p><u>14, 16 & 17 Jul</u>: Hearings with District Councils, Openmatics, Community for Road Safety and Mr Alok Jain</p> | July 2018 | <p><u>25 July</u>: LegCo Panel on Transport discussed TD's paper on findings and recommendations of Working Group <u>Jul</u>: Electronic stability control, speed limiting retarder and seat belts for all passenger seats to be installed in all new buses</p> |
| <p><u>30, 31 Jul & 1 Aug</u>: Hearings with unions and staff organisations, Mr Raymond Cheng and KMB staff</p> | August 2018 | <p><u>1 Aug</u>: KMB's updated Action Plan submitted <u>28 Aug</u>: Pay scale changes by CTB with retrospective effect to 1 Jan 2018 <u>Aug</u>: Practice Note on training finalised by TD for implementation in October 2018</p> |
| <p><u>7, 10 & 11 Aug</u>: Hearings with KMB/LWB</p> | September 2018 | <p><u>1 Sept</u>: Further pay scale changes by KMB <u>18 Sept</u>: CTB started using digital speed maps from TD for monitoring speeding by its buses on all roads <u>Sept</u>: KMB started incorporating digital maps in black boxes</p> |
| <p><u>12 Sept</u>: Hearing with KMB/LWB <u>15 & 27 Sept</u>: Hearings with experts <u>24 Sept</u>: Hearing with the Police</p> | October 2018 | <p><u>3 Oct</u>: TD's Working Group Report submitted to the Committee <u>10 Oct</u>: CE announced in her 2018 Policy Address a subsidy to franchised bus operators for retrofitting existing buses with appropriate safety devices and seat belts on some buses deployed on certain routes</p> |
| <p><u>4, 6 & 16 Oct</u>: Hearings with TD</p> | November 2018 | |
| <p><u>7 Nov</u>: Deadline for closing submissions <u>29 Nov</u>: Closing submission from counsel assisting the Committee</p> | December 2018 | |



**Guidelines on Bus Captain
Working Hours, Rest Times and Meal Breaks**

(Revised in October 2010)

- Guideline A - Bus captains should have a *rest time*¹ of at least 30 minutes after 6 hours of duty and within that 6-hour duty, they should have *rest times* of 20 minutes of which no less than 12 minutes should be within the first 4 hours of duty. *The time bus captains spend at a terminal point preparing for the next departure and monitoring passenger boarding should not be regarded as rest time.*
- Guideline B - Maximum duty (including all *rest times*) in a *working* day should not exceed 14 hours.
- Guideline C - Driving duty (i.e. maximum duty less all *rest times* each of 30 minutes or more) in a *working* day should not exceed 11 hours.
- Guideline D - The break between successive working days should not be less than *10* hours.
- Guideline E* - *Bus captains working for a duty of not less than 8 hours in a working day should have a meal break. Bus companies should complete the improvement of meal breaks to no less than 45 minutes by the third quarter of 2011, and further improvement to no less than one hour in one year thereafter.*

1. *Meal break is also regarded as rest time.*

Information and Records Relating to the Bus Service to be Kept and Provided
by the Grantee Included Without Limitation under Clause 28(1) of the
Franchises Granted to Grantees Prior to 1 June 2016

- (a) the number of passengers carried daily on each specified route and the daily receipts therefrom;
- (b) the frequency at and the period on every day during which public bus service is operated by the Grantee on each specified route;
- (c) the number and carrying capacity of buses in use on each specified route on each day and the number of buses and other vehicles and their technical specifications, used, kept or ordered by the Grantee for the purposes of or in connection with this franchise;
- (d) the number of journeys and the total kilometres travelled by each bus daily on each specified route;
- (e) the number of additional journeys operated on each specified route on each day;
- (f) the number of drivers allocated to each specified route on each day;
- (g) the total number of drivers on reserve (for relief of duty drivers) on each day;
- (h) the working hours of drivers on each day;
- (i) the number of journeys and total kilometres lost each day in relation to each specified route due to traffic congestion, accidents, breakdowns and vehicle and staff shortages, respectively;

- (j) the maintenance schedule of the buses and other vehicles and inventory of stores;
- (k) the number of passengers boarding and alighting at bus stops daily and at peak-hours on each of the specified routes as determined by the survey hereinafter mentioned. For the purpose of this Clause, the Grantee shall conduct at least once in each year surveys on a weekday, other than a public holiday or a day on which the storm signal Number 8 (or higher) or a black rainstorm warning is hoisted;
- (l) the journey time for journeys between terminal points on each of the specified routes as determined by the survey hereinafter mentioned. For the purpose of this Clause, the Grantee shall conduct surveys at such time and in such manner as the Commissioner may specify; and
- (m) the operation or future operation of the Bus Service.

Information and Records Relating to the Bus Service to be Kept and Provided by the Grantee under Schedule II of Clause 28(1) of the Franchises Granted to Grantees on or after 1 June 2016

- (a) the number of passengers carried on every day on each specified route.
- (b) the number of passengers boarding and alighting at bus stops and the occupancy of buses when leaving each of the stops at hourly interval on each specified route as collected by surveys or any other means as the Commissioner may specify after consultation with the Grantee. For the purpose of this Clause, the Grantee shall collect such information at least once in each year on a weekday, other than a public holiday or a day on which the storm signal Number 8 (or higher) or a black rainstorm warning is issued.
- (c) the number of passengers and the occupancy of buses when leaving such stops at half-hourly interval on any of the specified routes as the Commissioner may specify.
- (d) the number of buses in use on each specified route on every day and the carrying capacity of each of such buses for the purpose of or in connection with this franchise.
- (e) the journey time for journeys between terminal points on each specified route as reflected from the survey hereinafter mentioned. For the purpose of this Clause, the Grantee shall conduct surveys at such times and in such manner as the Commissioner may specify.
- (f)
 - (i) the scheduled and actual departure time of each journey on every day on each specified route, where the scheduled departure time refers to the time when the journey departs from the terminus in accordance with the Schedule of Service of each specified route; and
 - (ii) the actual departure time of adjusted journey departs from the designated stop.

- (g) the number of scheduled journeys, actual journeys and additional journeys operated by the Grantee on every day on each specified route in each of the periods of a day specified by the Commissioner, where the number of scheduled journeys refers to the number of journeys that shall be operated by the Grantee in accordance with the Schedule of Service of each specified route.
- (h) the number of scheduled journeys that the Grantee fails to operate on every day on each specified route due to vehicle breakdown, vehicle shortage, driver shortage, traffic congestion, accidents, inclement weather, public events, redeployment of buses and others, or any other categorisation of reasons as specified by the Commissioner.
- (i) the carrying capacity and technical specifications of buses kept by the Grantee for the purpose of or in connection with this franchise in each calendar month.
- (j) the number of buses of each bus type and other vehicles used and the number of buses ordered by the Grantee for the purpose of or in connection with this franchise in each calendar month.
- (k) the number of journeys and total kilometres travelled with breakdowns of revenue-generated kilometres and non-revenue-generated kilometres on each specified route on every day.
- (l) the number of bus driver duties scheduled to operate all specified routes in accordance with the Schedule of Service on a day required by the Commissioner and the percentage of bus drivers, selected on the sample size as specified by the Commissioner, in compliance with the guidelines on arrangements in relation to working hour and rest time of bus drivers issued by the Commissioner after consultation with the Grantee.
- (m) the number of bus drivers at the end of each calendar month required and available to operate all specified routes in accordance with the Schedule of Service; and the surplus or shortage of bus drivers.

- (n) the total number of bus drivers resigned, retired, separated with other reasons, newly recruited and re-employed in each calendar month.
- (o) the daily receipts from the passengers carried on every day on each specified route.
- (p) the maintenance schedule of the buses.
- (q) the maintenance schedule of other vehicles and inventory of stores.

**Specifically identified interested parties
who provided both written submissions and oral evidence**

Government Bureaux and Departments

- Transport and Housing Bureau
- Transport Department
- Hong Kong Police Force

Public and advisory bodies

- Tai Po District Council
- Sha Tin District Council
- Sham Shui Po District Council

Franchised bus companies

- The Kowloon Motor Bus Company (1933) Limited / Long Win Bus Company Limited
- The New Lantao Bus Company (1973) Limited
- Citybus Limited / The New World First Bus Services Limited

Bus and black box installation manufacturers

- ZF Services Hong Kong Limited / ZF Friedrichshafen AG and its subsidiary Openmatics s.r.o.

Trade unions / associations

- Motor Transport Workers General Union *[including its sub-unions, i.e. Citybus Branch, KMB Branch, Long Win Bus Branch, New Lantao Bus Branch and New World Bus Branch]*
- The Federation of Bus Industry Trade Unions *[including its members, i.e. KMB Staff Union, New World First Bus Company Staff Union and Citybus Limited Employees Union]*
- KMB Employees Union
- Staff Rights Association of KMB
- Monthly-Rated Drivers Union
- Part-time Drivers Union

Other parties

- Community for Road Safety
- Some current employees of The Kowloon Motor Bus Company (1933) Limited [*Ms Debbie Wong, Mr Kelvin Yeung*]
- Some former employees of The Kowloon Motor Bus Company (1933) Limited [*Mr Alok Jain, Mr Raymond Cheng*]

Experts engaged by the Committee

- Professor John Stanley
- Mr Mike Weston

Representatives of Transport for London and London franchised bus companies who met the Chairman and Mr Weston in London and provided them with an oral presentation and written material

- Transport for London, United Kingdom
- RATP Dev London
- Abellio London
- Go Ahead London

**Specifically identified interested parties and members of the public
who provided written submissions only**

Government Bureaux and Departments

- Department of Justice
- Planning Department

Public and advisory bodies

- Panel on Transport of the Legislative Council
- Transport Advisory Committee
- Road Safety Council
- Eastern District Council
- Islands District Council
- Sai Kung District Council
- Kwai Tsing District Council
- Central & Western District Council
- Northern District Council
- Southern District Council
- Tsuen Wan District Council
- Tuen Mun District Council
- Wan Chai District Council
- Yuen Long District Council

Bus and black box installation manufacturers

- Alexander Dennis (Asia Pacific) Ltd
- Regal Motors Ltd
- Volvo Bus Hong Kong Ltd
- NEC Hong Kong Limited
- LKW Parts & Services Limited

Overseas Parliamentary bodies, authorities and bus companies

- Land Transport Authority, Singapore
- Legislative Assembly, Parliament of New South Wales, Australia
- Transport for New South Wales, Australia

- Legislative Assembly and Legislative Council, Parliament of Victoria, Australia
- Public Transport Victoria, Australia
- Stagecoach London (bus company)

Trade unions / associations

- KMB Workers General Union [*including its sub-union, i.e. LWB branch*]
- The Federation of Hong Kong & Kowloon Labour Unions
- Hong Kong Confederation of Trade Unions

Other parties

- Hong Kong Institution of Engineers
- Hong Kong Institution of Highways & Transportation
- Some current employees of The Kowloon Motor Bus Company (1933) Limited [*Mr Jeff Poon, Mr Ken Wong, Mr Utan Wong, Mr Douglas Mak*]
- Some former employees of The Kowloon Motor Bus Company (1933) Limited [*Mr Eric Lee, Ms Alice Luk, Ms Lelia Wong, Ms Clara Leung, Ms Louisa Lam, Mr Gary Wong, Mr James Louey*]

Members of the public

Public bodies

- Hong Kong College of Orthopaedic Surgeons
- Competition Commission

Organisations

- Public Transport Think Tank of Hong Kong
- Public Transport Research Team
- Labour Party
- Democratic Alliance
- Pan-Democrats of Eastern District Council

Individuals (listed in sequence in which their first submission was received)

- Hon Jeremy Tam
- Mr Paul Surtees
- Mr Eric Tam, Tai Po District Councillor

- Mr John Brewer
- Mr Chan Hing Fai
- Mr Edward Logsdail
- Mr Lam Chi Kit
- Mr Poon Kwok Wo
- Mr Pi Chan
- Mr David Ho
- Mr Lok Man Wah
- A group of KMB 259D Bus Route Drivers
[Mr Chung Sai Kwok, Mr Wong Shing Kai, Mr Lo Wing Hang, Mr Wong Lai Kam, Mr Yip Wai Man, Mr Ma Wai Tin, Ms Wong Man, Ms Ho Yuk King, Mr Chan Kwok For, Mr Wong Wang Wah, Mr Lee Wing Fai, Mr Yu Ming Kwong, Mr Ng Chi Keung, Mr Cheung Wing Choi, Mr Or Din Man, Mr Chan Siu Keung, Mr Fong Wai Hung, Mr Yeung Chi Keung, Mr Lee Gut Yeung, Mr Lam King Bor, Mr Chan Pui Kwok, Mr Chow] (as best can be identified from the manuscript names provided to the Committee)
- Ms Yuen Hoi Yan
- Mr Franklin Tse
- Ms So Sam Yu
- Mr Leslie Chan Ka Long
- Ms SH Chan
- Mr Dennis Wong
- Mr Lo
- Mr Peter Yu
- Mr Mike Grimsdick
- Mr Clifford Chang
- Mr Edmond Lee
- Mr Peter Mann
- Mr Peter Kwok
- Mr Peter Crush
- Mr Lam Chi Kit
- Mr Brien Mak
- Mr Henry Chan
- Mr Chan
- Mr Eric Kwok Ping, Islands District Councillor

