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Monday, 16 July 2018

(9.07 am)

EVIDENCE FROM COMMUNITY FOR ROAD SAFETY REPRESENTATIVES: MR KWONG TSE HIN, JULIAN AND DR KOU SIO KEI.

CHAIRMAN: Good morning.

This morning, we thank the representatives of the Community for Road Safety for responding to our invitation to assist the Committee with evidence, and I'm going to ask counsel, Ms Wong, to begin asking questions.

Examination by MS WONG

MS MAGGIE WONG: Thank you, Mr Kwong and Dr Kou for coming.

I will be asking questions as counsel on behalf of the Committee in relation to the safety-related measures for franchised bus service. May I start with some introduction about your organisation.

From your submission, if we look at the letter from Mr Kwong dated 28 March 2018 in the MISC-2-bundle, page 754.

This is a letter addressed to you dated 28 March 2018 inviting you to make submissions, and we can see at page 757, in the first paragraph in your reply to the letter you stated that:

"The Community for Road Safety is an organisation dedicated to road safety since 2004."

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And your information, the information on the organisation is also set out in the TD-5 bundle at page 1699 to 1670. At the bottom it has set out the information including the background, the names, the posts held by different persons.

Can you confirm those persons listed there are the same as of to date. You may need to go over to the next page as well.

MR JULIAN KWONG: Yes. That is the case. Except that some of the members are not that active. I need to confirm their interest to be members anymore.

MS MAGGIE WONG: Yes. And Mr Kwong, you also provided your curriculum vitae --

CHAIRMAN: Before we get to that, can you give us some background about your committee, how long have you been in existence, how often do you meet? What is your purpose?

MR JULIAN KWONG: Yes. Chairman.

Well, the organisation is actually a small organisation. We are interested in road safety issues, and we want to have a group of people, actually a small group of people, and working together, and giving recommendations to government, and organising activities, for example organising forums, doing some campaigns, and that is it.

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We are not a very -- we are not an organisation which are like a charity, or a major organisation, but we can -- we would sit together from time to time and also we communicate through e-mails.

CHAIRMAN: What is your legal status?

MR JULIAN KWONG: Legal status is a society, registered society.

CHAIRMAN: When were you registered first?

MR JULIAN KWONG: 2004.

CHAIRMAN: Thank you.

How often does the committee meet, if there is a pattern?

MR JULIAN KWONG: We do not meet very often, we communicate more through e-mails.

CHAIRMAN: So you circulate papers by e-mail?

MR JULIAN KWONG: Yes.

CHAIRMAN: Do you have a convener?

MR JULIAN KWONG: We don't have a convener as such. Sorry, do you mean a convener for --

CHAIRMAN: Somebody who organises matters?

MR JULIAN KWONG: Usually it is myself organising the matters.

CHAIRMAN: And the composition of the committee, if that's the right word, how is that determined? The range of skills that you bring to focus on the issues, how did

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you come about choosing that?

MR JULIAN KWONG: Chairman, well, the composition, we do not specifically select people who would contribute to our ideas, but basically people or friends of our committee members who are interested in this matter, and we welcome them, especially if they come from a diverse background in road and traffic. And therefore, you can see that our members usually consist of professionals, with interest, or a background in road traffic, or injuries.

CHAIRMAN: Can you just help us with a thumb sketch of the range of skills that your members have?

MR JULIAN KWONG: Yes. The skills we have up to date, include civil engineering, traffic engineering, drivers training, trauma surgeon, and also the landscape architect.

CHAIRMAN: That being relevant to road design?

MR JULIAN KWONG: I would say so.

CHAIRMAN: Yes. Now I interrupted counsel who was asking you to help us with your own CV.

Ms Wong.

MS MAGGIE WONG: Yes. If you look at MISC bundle 2, page 820-4, Mr Kwong, you set out your own curriculum vitae setting out your education, membership and road safety training and also the ongoing projects from 2008

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until present.
If we could look at your education, it is set out there that you have a civil and environmental engineering degree, and then you also have a number --
CHAIRMAN: That's from the University of Newcastle?
MR JULIAN KWONG: That's true.
CHAIRMAN: When were you awarded that degree?
MR JULIAN KWONG: Chairman, the first degree in civil and environmental engineering was awarded in 1986.
CHAIRMAN: Thank you.
MS MAGGIE WONG: And then you have, a believe is that a master's degree studying fatal road traffic injuries at the Faculty of Medicine, University of Hong Kong.
MR JULIAN KWONG: Yes, that's true. That was awarded in 2004.
MS MAGGIE WONG: 2004. And I can see that you also have a Highways England Approved Certificate of Competency In Road Safety Audit. Can you elaborate what is this road safety audit?
MR JULIAN KWONG: Yes, road safety audit is a procedure initiated in 1988 in the United Kingdom. And now it has become a very well adopted procedure in many countries. The idea is to have an independent audit team looking at the design of road projects. Traditionally the design of road projects will be the responsibility of

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authorities and consultants, or designers, but with road safety audit, we conduct independent audit giving recommendations to the project clients, and also to the consultant.
For the Certificate of Competency, that is a certificate enabling me to be able to participate in highways projects for the Trans-European road network. That is projects funded by the EU and also projects in many other countries.
MS MAGGIE WONG: Yes.
CHAIRMAN: What is the process by which you obtained that certificate?
MR JULIAN KWONG: That certificate requires attendance of training, and also the requirement of evidence that I have participated in an adequate number of audits.
CHAIRMAN: So it is a combination of training and experience?
MR JULIAN KWONG: That's true.
CHAIRMAN: Where was the training conducted?
MR JULIAN KWONG: That training was conducted in London.
CHAIRMAN: At what institution?
MR JULIAN KWONG: That was awarded by a training company called TMS Consultancy.
CHAIRMAN: Is that an acronym for something? TMS?
MR JULIAN KWONG: I'm not aware of that. It is just TMS,

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and they give that certificate of competency of course with the accreditation of Highways England, and Highways England is the authority responsible for the highway network in the United Kingdom.
CHAIRMAN: Thank you.
Yes, Ms Wong.
MS MAGGIE WONG: We can see at the road safety training, there are four courses or four trainings that you have undertaken. The first is road safety two-week training in France. Was this course undertaken in France or Hong Kong?
MR JULIAN KWONG: That course took place in Paris, France.
MS MAGGIE WONG: When was that?
MR JULIAN KWONG: That was in the year of 2009.
MS MAGGIE WONG: The two-week training, can you briefly tell us what it entails.
MR JULIAN KWONG: That training entailed all aspects of road safety, including policies in the European Union and also in France, that also include most of the subjects of road safety such as the highway safety on major highways, safety in urban areas, traffic calming, but also in road safety audit.
MS MAGGIE WONG: Yes, and the second one is the Advanced Road Safety Engineering. It is a five-day training in UK by TMS. When was that?

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MR JULIAN KWONG: That was in 2007.
MS MAGGIE WONG: Is that the course that you have taken for the Certificate of Competency In Road Safety Audit?
MR JULIAN KWONG: The history was that by year 2007 I started attending courses in road safety engineering in order to be able to conduct road safety audit. And after I have attained adequate experience in road safety audit, in 2016 I attended the course to obtain the certificate of competency.
MS MAGGIE WONG: Yes. And the third one is the International Road Assessment Program training for five days. Who organised this programme?
MR JULIAN KWONG: The training was organised by iRAP, that is the International Road Assessment Program, which is a charity based in the United Kingdom, which is now very well known in the area of road safety throughout the world.
MS MAGGIE WONG: Lastly is the Road Safety Audit that you mentioned, training by TMS. When did you have that training?
MR JULIAN KWONG: That was the training in 2016 preceding the award of the Certificate of Competency. That is the same course.
MS MAGGIE WONG: Yes.
Mr Kwong, if you look further down, it set out the

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ongoing projects that you are now undertaking.
And one of them relates to review of potential roadside safety hazards in the Hong Kong road network, an investigation by the Highways Department. Can I take you to a document to see what this is about.
This is in bundle TD-5, page 1653.
If we look at (f), it set out -- it is a paper submitted by the Transport Department in May 2018 attached to the Transport Department's letter dated 28 May 2018. This view stated that:
"The TD and Highways Department have commissioned a consultancy study on 'review of potential roadside safety hazards in the Hong Kong road networks investigation' in mid May 2018 to identify roadside safety hazards of all public roads in the Territory in a thorough and systematic approach taking into account the latest overseas technology, through which suitable road safety enhancement measures would be formulated."
And the consultancy brief, and the scope coverage and objective of the study is at attachment VI, which we can find at page1685.
If we look further down, it sets out the objective of this project.
Firstly, Mr Kwong, are you involved in this very project?

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MR JULIAN KWONG: Yes. I have been involved since mid-May this year.
MS MAGGIE WONG: What is your role in this project?
MR JULIAN KWONG: My role is road safety team leader under the main consultant.
MS MAGGIE WONG: Under the main consultancy --
MR JULIAN KWONG: Which is AECOM.
CHAIRMAN: Sorry, the main consultancy is?
MR JULIAN KWONG: The main consultant for this project is AECOM.
CHAIRMAN: Thank you.
MS MAGGIE WONG: According to this agreement, if we look at 2.3, one of the tasks to look at is:
"To minimise the risk of the existing roads, TD and [Highways Department] have been jointly conducting road safety check for identifying and rectifying potential roadside safety hazards on existing roads with speed limit 70 [kilometres an hour] or above."
So is the scope of the project limited to roads with a speed limit 70 kilometres per hour or above?
MR JULIAN KWONG: Yes.
Chairman, as regards to this project, due to the terms of my agreement with the main consultant, I am not able to comment on the project in this hearing.
MS MAGGIE WONG: Thank you.

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Can you tell us, when is it likely that the review will be completed, or the expected completion date? Is there a fixed completion date for this review?
MR JULIAN KWONG: Chairman, this consultancy, similar to any work I'm doing, has a limited time. But regarding the exact programme, I think I'm not in a position to provide here.
CHAIRMAN: No doubt the Transport Department are, and we will ask them.
MR JULIAN KWONG: Thank you, Chairman.
MS MAGGIE WONG: Now, Mr Kwong, your Community for Road Safety organisation also has a website posting articles that your members have worked on from time to time regarding road safety; is that correct?
MR JULIAN KWONG: Yes. That's true.
MS MAGGIE WONG: Throughout the years, your organisation has written no less than 11 articles, I believe, to the government, setting out your views on various issues relating to road safety.
If I may take you to, just, for example,TD-5, page 1700.
CHAIRMAN: What are we being taken to?
MS MAGGIE WONG: This is a submission by the Transport Department in May 2018, annex 1, submitted in May 2018 annexed to the Transport Department's letter dated

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28 May 2018.
It set out --
CHAIRMAN: Where is the letter dated 28 May?
MS MAGGIE WONG: The 28 May letter is in TD-1 bundle.
CHAIRMAN: Perhaps you could just describe the letter. Is the letter a letter to this Committee?
MS MAGGIE WONG: Yes. This is a letter from Transport Department to this committee, and it was a supplementary written submission. And the reference is at TD-1, page 361. The submission followed on from the oral hearings held on 7 and 8 May 2018.
CHAIRMAN: So you are taking us now to an annex to this submission and we find that at which page?
MS MAGGIE WONG: Page 1700.
CHAIRMAN: Of TD-5?
MS MAGGIE WONG: Yes.
CHAIRMAN: Thank you.
MS MAGGIE WONG: And if you look at paragraph 8, it set out -- I believe there is at least 11 submissions or comments that your organisation made to either the LegCo Panel on Transport or the government, voicing our your views or comments in relation to the public transport strategy study or the renewal of licence of KMB and Citybus. If we go over to page 1701 as well, it sets out the subjects and also the reference links in the

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LegCo.
Can you confirm that?
MR JULIAN KWONG: Yes.
MS MAGGIE WONG: Now --
CHAIRMAN: If you wish to follow this in paper form, the lever arch box files are behind you.
MR JULIAN KWONG: Okay.
CHAIRMAN: Then you can always look ahead or behind if you need to do that.
MR JULIAN KWONG: Thank you, Chairman.
MS MAGGIE WONG: In all these articles, I think earlier on you have been asked questions about the circulation of papers and the drafting of documents, and you informed us, normally it is by e-mail. I notice in all the submissions it was written relatively close to each other. For example the 2016, if you see on this page, on comments on the fire alarm system, and also in the same year, 14 April 2016, on the public transport strategy study, and also on 16 June 2016 on the renewal of licence for KMB and Citybus.
Now, in all the submissions, how would you circulate, or how would you draft the comments, or how would your members discuss about the issues and come up with the paper submitted to the Administration or the LegCo?

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MR JULIAN KWONG: Yes. Usually for these papers, we would circulate to parties which we think are important. For example, we started off by sending the paper to government, to Transport and Housing Bureau, and later we started sending letters to the LegCo. But in terms of circulation, we are not systematic as such, in that we would not usually circulate to too many parties or to the media. It depends on whether the subject has been raised in LegCo or has been raised by government.
For the compilation of these papers usually that is myself. If any other members are interested they are welcome to participate.
In terms of the discussions, sometimes, admittedly, I have not been able to discuss with the other members in time, but say for the recent report, then we have been discussing the paper.
Sometimes the papers are discussed in advance but sometimes I can only afford to send to them afterwards for comments and if there are more comments and we can resolve them, then we can -- the idea is that we can supplement the information to the parties we were sending to.
MS MAGGIE WONG: Thank you.
Mr Kwong, you just mentioned the submission that you have submitted. I'll take you to this document first,

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it is MISC-2-bundle, page 782.
This is a report on bus safety submitted by your organisation in April 2018, in reply to the Committee's request.
And your submission is separated into a summary of five points, and if we look at page 783, it sets out five topics: bus operation, safety risks, current efforts and concerns, and comparison with overseas practices, and lastly conclusion and recommendations.
So can you confirm this is a collective project of all the members of your organisation?
MR JULIAN KWONG: I would like to explain it like this. Due to the time constraint to prepare this document, it is actually me drafting the document, and for some particular issues I did consult one or two members.
But after the submission of this report, I circulated this report to all members for comments. In case they wished to make any additional suggestions or if they do not agree with some points, then I would still have a chance to supplement information to the Independent Review Committee.
MS MAGGIE WONG: Yes. Mr Kwong, if I may take you to your paper at page 785, it sets out the recommendation, in the first paragraph:
"The 'safe System' approach should be adopted to

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cover the interactions among vehicle factors, road factors, human factors and management."
So you identify four factors as essential to your safe system approach; is that correct?
MR JULIAN KWONG: Yes. That's true. In the document.
I would like to also add that of course the safe system would also cover policies, which in the report I have opted not to put in, for simplicity reasons.
MS MAGGIE WONG: Yes.
If we look at the first factor that you mentioned, it is the operational protocols and operating systems.
You stated:
"The most important measure is the formulation of new operational protocols for safe driving, and this protocol should cover speed, acceleration, deceleration."
And you set out two primary categories. First is the general protocol and the route-specific protocols.
Could you elaborate on what you meant by general protocol, as to what factors you would take into account in considering general protocols.
MR JULIAN KWONG: Yes. Without an insider knowledge of what at the moment the bus companies are doing with their rules for driving, among the drivers, we have been looking at the issues from the safe system approach,

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that we think that the driving of bus would need more regulations or control, and I put it as general protocol here meaning that, for example, driving a bus on a busy urban street, what kind of behaviour, what kind of speeds should be adopted.

And also another example is, for example, driving along a highway, I mean what kind of speeds do we expect from the drivers, and that could be different from the legal speed limit. Because as a road engineer, I'm well aware that road designs are very much diversified, and we cannot rely entirely on speed limit or what we call design speeds. On urban streets, for example, there are always a lot of interactions between traffic and pedestrians, and therefore we need far more stringent control on speeds and also on acceleration and deceleration.

And that is what I meant by general protocols, that I'm not talking about a specific street, but any busy urban street.

MS MAGGIE WONG: Yes.

If we look for the moment at page 817, first, in this MISC-2 bundle. Page 817. If you look at the top, it sets out what you consider as the precise criteria to be further developed in considering general operational protocols. You have divided it into four criteria. The

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first is the urban areas; second is the high-speed road; third is the narrow, hilly roads; and lastly, the cyclists.

Now on the urban areas, you advocate a certain speed limit for urban streets as 40 kilometres per hour for urban streets in general. Then you advocate for busy urban streets 30 kilometres per hour maximum.

Can you tell us the logic behind this 40 kilometres per hour speed limit that you are advocating?

MR JULIAN KWONG: Yes. Bearing in mind that these criteria are recommendations at the moment, and subject to further investigation, the idea of having lower speed, lower speed than the legal speed limit on urban streets is based on the safety criteria, safety being the conflict between traffic and pedestrian, and also between one vehicle and another vehicle.

On urban streets, the major risks of conflict come from vehicle and pedestrians, and also vehicles at junctions.

Looking at the speeds, we need to take into account many criteria. For example, how quickly can a driver decelerate, that is to stop, in order to avoid an accident? We also need to look at the tolerance of a human being, for example an elderly person; what kind of speed can he still tolerate before sustaining serious

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injuries or fatalities?

These are very important considerations when we talk about speeds in an urban area.

And we looked at many overseas reports, and also the trend in many countries throughout the world, that on busy urban street there has been a trend to adopt lower speed limit, and for example 30 kilometres per hour in a dense, urban area.

Some countries adopt 40 kilometres per hour speed limit, some only 30, some both 30 and 40.

We also need to look at the --

CHAIRMAN: Which countries do have in mind?

MR JULIAN KWONG: Yes. Chairman. I would like to explain that in Europe, in European countries, starting from the Netherlands, for urban streets and residential streets, 30 kilometres an hour; in Scandinavian countries, that is also the case. But in Norway, for example, and Denmark, in addition to 30 kilometres per hour they also have 40 kilometres per hour for the more major streets. In Australia it is quite common nowadays to have 40 kilometres per hour, for example throughout the central business district of Sydney.

MS MAGGIE WONG: Mr Kwong --

CHAIRMAN: And the United Kingdom?

MR JULIAN KWONG: Yes, Chairman. In the United Kingdom they

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have been adopting the 20 miles per hour. That is equivalent to 32 kilometres per hour. But in the United Kingdom they do not have the equivalent of 40 kilometres per hour. The next step would be 30 miles per hour, equivalent to 48 kilometres per hour speed limit.

CHAIRMAN: And this is the subject of a paper, to which you referred, from the Department for Transport in January 2013, guiding local authorities about the applicability of such protocols?

MR JULIAN KWONG: Yes, Chairman. In 2013, and actually starting from 2011, we have been advocating this idea as recommendations.

CHAIRMAN: Yes, but I'm referring in particular to the UK Department of Transport's paper entitled "Setting Local Speed Limits". That is when it was formulated, and has been adopted in various cities, in particular in London, in multiple areas; am I correct?

MR JULIAN KWONG: Chairman, yes. In the United Kingdom actually the 20 miles per hour speed limit zone has a long history. Longer than 2013. But in 2013 the document which you mentioned entitled "Setting Local Speed Limit", has been updated. That document, as far as I understand, further confirmed the concept of adopting 20 miles per hour speed limit. Thank you.

CHAIRMAN: Thank you.

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MS MAGGIE WONG: Mr Kwong, you mentioned earlier on about advocating this speed limit. If I may take you first to one of the articles --

CHAIRMAN: Before we do that. You are describing this as general protocols that are recommended. I'm looking at the top of page 817. Who do you envisage is responsible for recommending such protocols?

MR JULIAN KWONG: Chairman, during the compilation of this document we have not worked out in depth who should be responsible, but our recommendation is that there should be a general operation protocol, and that is not a legal speed limit, and that is a recommendation of having internal control by the bus company, or as imposed by government.

The idea is that changing speed limit takes time, and that requires the legal process, and also change of the way, how speed limits are defined in Hong Kong. But we think that changing the protocols or changing the driving rules within the bus company can be much faster. Thank you.

CHAIRMAN: We have received evidence that after the accident on the Tai Po Road on 10 February of 2018, by 27 April 2018 the speed limit had been changed from 70 kilometres an hour to 50 kilometres an hour. So in some circumstances it doesn't take all that much time.

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MR JULIAN KWONG: Chairman, yes, you are right. I read from the news that for that section of Tai Po Road, the speed limit has been reduced.

As regards our proposal to have 30 kilometres per hour, or 40 kilometres per hour, that is the new concept where the speed limit is applied as a zone, what we call the speed limit zone, and that means that speed limit will be applied in a very wide area in the urban areas.

There are two issues here, the first one being that according to the current design manual, actually 30 kilometres per hour speed limit is not encouraged. The second point is that probably the 40 kilometres per hour speed limit is not yet in the Road Traffic Ordinance, so we cannot apply that directly, but for this point I think I need to further verify.

CHAIRMAN: You are referring to the Guidelines on Speed Limits in volume 6 of the Transport Planning And Design Manual, are you not?

MR JULIAN KWONG: Yes.

CHAIRMAN: That's to be found at our bundle at 820-57, just to remind you. You have quoted there from the two clauses that are relevant to what you have just -- I'll just pause.

MR JULIAN KWONG: Chairman, sorry? TD-1?

CHAIRMAN: This is MISC-2 at page 820-57. Perhaps I can

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just quote what you have written:

"In Hong Kong, the standard urban speed limit is [50 kilometres per hour]. Guidelines on speed limits is given in volume 6 of the Transport Planning and Design Manual ... published by Transport Department.

Clause 6.4.2.5 of [that manual] states that 'Generally, speed limits lower than 50 [kilometres an hour] are not recommended for public roads as they require a higher level of enforcement to ensure compliance, and it is doubtful that the lower speed limit imposed will contribute significantly to accident prevention'."

Now that last statement is challenged, is it not, by the modern approach to speed limits?

MR JULIAN KWONG: Chairman, yes, that is the case.

CHAIRMAN: What is the date at which this provision was formulated?

MR JULIAN KWONG: Chairman, you mean the TBDM?

CHAIRMAN: Yes, does it have its origins in the United Kingdom Transport Department's papers?

MR JULIAN KWONG: Chairman, yes. The origin is not from the 2013 edition, as you mentioned, the document entitled "Setting Local Speed Limits", but there are some other references which that document refers to.

CHAIRMAN: Where do we find the first formulation of this

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proposition? Does this come from 1974, UK transport provisions?

MR JULIAN KWONG: I do not have the exact references here, but broadly speaking, many of the references I would say are outdated.

CHAIRMAN: Yes, thank you. Sorry for the diversion, Ms Wong.

MS MAGGIE WONG: Yes. One of the papers that you explained about this is we can see that at page 820-57.

This is a paper, I believe you presented at the second United Nations Global Road Safety Week on 7 May 2013, advocating safer and attractive streets in Hong Kong with lower speed limits.

And if --

CHAIRMAN: Where do we see the reference to where it was presented?

MS MAGGIE WONG: If you look at page 820-25, it is at the bottom: "Second United Nations Global Road Safety Week".

CHAIRMAN: I see, the numbers are in the top right-hand corner. Yes.

MS MAGGIE WONG: Yes.

If you look at this paper, did you present this paper for the second United Nations Global Road Safety Week, Mr Kwong?

MR JULIAN KWONG: Yes.

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MS MAGGIE WONG: If we look at some of the speed limits that you have been advocating, based on zones, that would be 820-35. We can see that you have set out 20 speed limit, 30 and 40. And then divided into different zones, like new development areas, hospital, housing estate, tourist areas, residential districts and villages, it is not exhaustive, but in effect you have divided it based on zones, in determining which speed limit should be applicable; is that right?

MR JULIAN KWONG: The idea of this slide is a vision. Because I was advocating this idea. So it is a vision that what types of urban developments are we talking about, that these speed limit zones would be able to apply. And that doesn't mean that -- that is not the case at the moment.

The speed limit zone, I would like to just briefly explain. Traditionally, to adopt a speed limit we need to put a sign, a traffic sign stating the speed limit for every street. Unless it is 50 kilometres per hour. That is the default speed limit, we don't need to put any sign. So if it is not 50, if it is 30, then it means that we need to put a lot of signs in the urban areas. The idea to have a 30 kilometres per hour zone with the sign which I propose, that also needs to go through the legal process of defining this sign. And if

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we have this sign, meaning 30 kilometres per hour speed limit zone, then we will not need to put such sign on every street. We only need to put the sign at the entrance and the exit of the zone. That is very much the practice, for example in the Netherlands, France and the United Kingdom.

MS MAGGIE WONG: So the idea behind it is of course to promote safe driving, and if we can see an example at page 820-36, for 30 kilometre per hour zones you have explained why you promote this, basically it is applicable to crowded streets, one-way streets, and housing estates where people would frequent those areas.

If we look at 40km per hour on the next page, this is on dual carriageway or for primary distributors, where the roads are wider and people less frequently walk on those roads, and when we come to 50 kilometre per hour zone, 820-38, we can see in the fourth paragraph you are advocating -- it is where there are fewer pedestrians, more footbridges and good visibility.

And then, of course, when you advocate this, if we look at the next page, 820-39, the reason you suggest 20 on this page is because all these areas are, first of all, the road condition is quite different, and it is narrower, and a lot of people walking around, with shopping districts, entertainment, village centre and

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open market. So these are the areas that you are promoting 20km per hour, is that the logic behind it?

MR JULIAN KWONG: Yes, that's true. The logic of these slides, they have been especially tailored to the situation in Hong Kong. For example, as I mentioned, a 40 kilometre per hour speed limit is not adopted in all the advanced countries, but in Hong Kong, for the specific situations, I think that would be necessary.

I also wish to mention that for the shared surface, with 20 kilometres per hour, streets like this will only account for a small proportion in the urban areas. Usually in the core areas, say, in Causeway Bay, in Central, but the idea is usually most roads will be covered by 30, 40, or 50 kilometre per hour speed limit. Thank you.

MS MAGGIE WONG: Yes.

And your study is also based on some statistics from the Department for Transport in France, if you look at 820-46, it set out the probability of fatality for elderly pedestrians, and you stated you based this on the sources from the UK Department for Transport 2010, and Certu France 2006.

Can you explain a little bit as to this diagram, what it meant?

MR JULIAN KWONG: Yes. By the year 2010 the Department for

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Transport for the United Kingdom published a report summarising and reconfirming some of the previous studies on the risk of injuries, fatal injuries and serious injuries for different groups of pedestrians. I used the information from that document.

As for the information from France, I think that is just general, meaning that I would consider one second of reaction time and 7 metres per second squared of braking, deceleration. That is very much adopted in other documents as well.

Basically what this diagram shows is that if an elderly person is impacted by a small passenger car at 30 kilometres per hour, he would have 4 per cent probability of being killed. But if the same person is collided by the same car at 70 kilometres per hour, then he would have 97 per cent probability of being killed.

The idea is that between 30 and 70, or even between 30 and 60, the difference is very big.

And the relevance of reaction time, as I indicated here, is that when a driver sees a pedestrian coming out from a road, he needs at least one second before he starts to apply the brake. At 70 kilometres per hour speed, that one second already means almost 20 metres. So, during that 20 metres of distance, the driver has not even start braking.

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So within that 20 metres, if an elderly comes into that position, he would almost certainly be killed.

To briefly summarise, this diagram shows that on the one hand, having lower speed will be less likely to result in fatalities: this is due to the tolerance of human beings.

The second point is that the higher the speed, the longer the time a driver needs to stop the vehicle completely; and also the time to react is very relevant.

MS MAGGIE WONG: Thank you.

Shall we go back to your report in April 2018, page 786, where we have touched upon the general protocol. Now it is about route-specific protocol.

CHAIRMAN: Before you get there, as far as matters generally are concerned, when I asked you who do you say is responsible for recommending protocols, you said that that hadn't been worked out as yet, but it wasn't something that was applicable to the legal speed limit, what you had in mind was that bus companies could do this, or this could be imposed on them by government.

Have I summarised you correctly?

MR JULIAN KWONG: Chairman, yes, that's true.

CHAIRMAN: So how do you envisage that the bus companies would go about -- because that is what we are tasked to recommend -- measures for bus safety, how would the bus

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companies go about recommending drivers drive at lower than the legal speed limit in particular areas?

MR JULIAN KWONG: The legal speed limit is the highest speed which a driver should adopt, but they are also required to adopt appropriate speed at any time, appropriate to the road conditions.

The proposal here is that I presume that the bus company can always produce guidelines for the drivers in respect of certain road conditions and what speeds they should adopt, and that can be in the form, say, of a document or in training, but as I said, the exact speed, whether it is 40, or 35, or 45, that also needs more investigation.

Monitoring is a different story. First of all, we need to have the rules. And then next, we can talk about monitoring. Thank you.

CHAIRMAN: So, for example, we have received some information about how certain black spots were identified by one of the bus companies where difficult bends are involved, and they have come up with a formula for the speed that should be adopted by drivers going around those bends. Is that what you have in mind, as a general indicator of how you might do it?

MR JULIAN KWONG: Chairman, yes, for the general protocols, then it is general. But what you just mentioned, that

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can be, say, a particular bend, and that would be referred to the route-specific protocols which I stated in the document.

CHAIRMAN: Yes, Ms Wong, you were moving to that.

MS MAGGIE WONG: Yes, I'm moving on to that.

But following on the question from chairman, on this page at the top, you stated that the purpose here is to promote safer driving. That's the second paragraph after the second bullet. The second line:

"The purpose is to promote safer driving conforming to these protocols rather than being a tool to penalise drivers."

So your idea is to invite the operators to conform to these protocols, rather than being a tool to penalise driver; is that the logic behind it?

MR JULIAN KWONG: Yes, that's true. In the compilation of this report we do not want to talk about too much on responsibility or anyone breaching any responsibility, and for drivers, we understand their difficulties. Our whole idea is to promote safe driving, so that everyone is safe, the management would be happy. So I put that point just to emphasise this. Thank you.

MS MAGGIE WONG: Yes. How do you suggest that monitoring can be used to promote confirmation to these protocols or conforming to these protocols, rather than to

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penalise? How do you suggest we can achieve that in the monitoring process?

MR JULIAN KWONG: I would like to say that the purpose of monitoring is to identify those drivers constantly breaking the rules, and also to identify those drivers who consistently break the rules in an excessive way.

I would presume that the second group of drivers would be the ones who contribute to the largest risk among all drivers.

So the idea is not to say if a driver breaks the rule just by a small extent, for example if we set the safe speed as 40 kilometres per hour, and then at some point say he went to 42 or 43, that is not the point -- unless that location is particularly dangerous.

We need to identify drivers who consistently break the rules, and also those who break the rules in a very dangerous way and then to timely rectify their behaviour.

That, I think would be the whole idea. Thank you.

MS MAGGIE WONG: How would you suggest to achieve this, by identifying those who consistently break the rules dangerously?

MR JULIAN KWONG: Thank you. Traditionally I presume that there is -- it has been worked by, say, having plain-clothes inspectors to sit on a bus, or sometimes

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it depends on complaints, and they send inspectors. But that is not a very efficient way. As technology has advanced, I believe there can be better ways, and monitoring system based on black box, which can be automated, which can be real time, and that would be I think far more efficient. Thank you.

CHAIRMAN: This is technology that has been available for some years, is it not? The mystery riders and reacting to complaints is not unlike the system that first obtained when cars were driven, and a man walked in front of the car with a red flag. It is a very old system, is it not?

MR JULIAN KWONG: Chairman, yes. I agreed that we should now rely far more on advanced technology. For monitoring. Thank you.

CHAIRMAN: Now, in your report you put it this way, that:

"Monitoring will need to be based on advanced, real time and automated black box systems."

Would you like to speak to those three items?

MR JULIAN KWONG: Chairman, thank you. Well, first of all, I would like to declare that I'm not an expert in black box system, or in the advanced technology they are using. But I am purely --

CHAIRMAN: Was your attention drawn to the evidence we received on Saturday from an engineer from a black box

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manufacturer, ZF? Have you seen the transcript of that evidence?

MR JULIAN KWONG: Chairman, yes. I have scanned through the transcript.

CHAIRMAN: You have declared your lack of expertise in this matter, but what is it you had in mind, answering these three criteria: advanced, real time, automated?

MR JULIAN KWONG: Yes, Chairman. I have looked at the current status of these black boxes, well, what I meant was that I am not an expert in the technology and also in how the softwares can be developed. But I look at it in a way that what objectives we want to use this black box system, and on the understanding that they can collect a lot of information that would be of the greatest interest for us; namely acceleration, deceleration, tilting angle, speeds, et cetera.

So in this report actually, given the advanced functions of these technologies, we think that they can be adopted, and we also looked at some other operators which have started to use this for management of their traffic fleet.

So in the compilation of this report we think that it is fair to recommend an advanced, real time and automated system.

CHAIRMAN: What is the advantage of real time?

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MR JULIAN KWONG: Chairman, 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.

That is the whole idea why I mentioned about the importance of real time monitoring.

CHAIRMAN: What is the advantage and significance of automated reports of this kind of inappropriate driving?

MR JULIAN KWONG: Chairman, in my opinion, 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. Thank you.

CHAIRMAN: From the information that we received on Saturday, and you have read, this technology is available, is it not, automated reports of inappropriate driving?

MR JULIAN KWONG: Chairman, yes. That's true.

CHAIRMAN: And it is available on the devices that are currently on the buses.

MR JULIAN KWONG: Chairman, from my reading of the document, I presume yes.

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CHAIRMAN: So the effect of this would be, if one was to put a threshold trigger, let's take a 50 kilometre an hour speed zone, if one was to put a trigger of 55, that's a 10 per cent over the limit, that would generate an automated real time alert of driver misbehaviour.

MR JULIAN KWONG: Chairman, yes, I read about this.

The question now I would consider is what criteria we should set, what are the thresholds, and then also about what control we are looking to. An alarm, or reminder is one possible control measure, but there could be others.

So the whole process of how we can use this black box, this technology, to the full extent, and also with respect to the risk of crashes and injuries, I think that would be a focus of any future investigation of using the technology. Thank you.

CHAIRMAN: Are you aware of any direction or mandate from the Transport Department to the franchised bus operators as to how they should use this technology to produce real time automated reports?

MR JULIAN KWONG: Chairman, I have not studied in detail with respect to the question you just asked.

CHAIRMAN: Have you seen it in any of the documents that discuss the renewal of franchises?

MR JULIAN KWONG: Chairman, I have not seen anything like

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this.
CHAIRMAN: You have made recommendations, have you not? And I think we are going to be coming to them in due course, about what should be included in franchise documents for renewal?
MR JULIAN KWONG: Yes, Chairman. We made recommendations but those are more or less general recommendations on the directions.
CHAIRMAN: We will see how some of them are actually quite specific and resonate with what we have just been talking about.
Ms Wong, please resume the questioning.
MS MAGGIE WONG: Yes.
We'll come back to that topic, maybe we will finish this area first.
We are coming to the route-specific protocol. In your submission, you make reference to route-specific protocol. at page 786, in the second black bullet it addresses specific safety risk such as sections of the narrow hillside road lacking a safety barrier. And you elaborate this further at page 817. And you identify some examples at page 817, right above section 5.4, that you would like to formulate the route-specific operational protocol to address particular high risk conditions along specific road sections, including long

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steep/exceptionally steep gradient road, sharp bends, risk of falling from heights where existing safety barrier is absent, risk of falling from heights on the basis of tested level of existing bridge and narrow road sections with poor visibility, and road sections with elevated risk of conflicts with pedestrians.
Those are the examples you have given. Are these the examples that is -- apart from the general operational protocol, those are more specifically directed at the specific roads or condition of the road concerned?
MR JULIAN KWONG: Yes. This paragraph explains our whole rationale, that compliance with the legal speed limit, although it is globally important, it is grossly inadequate to address the safety of individual sections, and we understand that certain road sections in Hong Kong, for example the historical hilly roads on Hong Kong Island, they are not designed for heavy bus usage, because they were built a very long time ago, and from my understanding, in my profession, I can tell you that for example there is no safety barriers, or the safety barriers are inadequate to stop a bus travelling at, say, 40 or 50 kilometres per hour.
For this reason, we need to pay particular attention to those identified road sections so that the bus

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company and the bus drivers are well aware of that, and those sections can be subject to special control, say a speed, for example, 30, 35 kilometres per hour.
Another example is that on a high-speed road, subject to higher speed limit, a public bus can go at 70 kilometres per hour. However, not all high-speed roads have the same safety level. Say, for example, a particular flyover has the safety barriers not reaching the standards for stopping a bus to travel at -- to impact at 70 kilometres per hour. In that situation then we may need to impose on the bus drivers that they should go a bit slower, say, 60 kilometres per hour.
So the whole idea is actually to tie up the speed, and also other behaviour of bus operation, in conjunction with the road conditions based on engineering criteria and also injury criteria.
Thank you.
CHAIRMAN: But approaching this again, this is to impose controls on the bus drivers, although the legal limit permits them to drive at this speed, as you put it, that's grossly inadequate from a safety point of view, again, is this a control that is to be imposed by the bus companies?
MR JULIAN KWONG: I think in the compilation of this report

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as I mentioned, I did not specify who is going to impose that, but I presume that both bus companies and the government can work together to formulate these protocols, and for the bus company to implement.
Thank you.
MS MAGGIE WONG: But presumably identifying all these road sections that have those characteristics as you mentioned earlier on, would it not be easier if the government undertake that task? Because I was wondering if you would know, do you know the Transport Department actually keeps a digital map of the entire territory of Hong Kong. Are you aware of that?
MR JULIAN KWONG: Excuse me, you mentioned about Transport Department keeping --
MS MAGGIE WONG: A digital speed limit map for the entire territory in Hong Kong.
MR JULIAN KWONG: I am not sure whether there is a speed limit digital map, but in my opinion -- yes, sorry, in my opinion, the changes of speed limit in Hong Kong are not excessive, and it shouldn't be that difficult, because most of the roads are subject to a 50 kilometre per hour speed limit, and certain roads are subject to different speed limit, and I'm not sure whether they are already on digital maps.
MS MAGGIE WONG: If I may take you to one document. It is

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TD-1, page 368.

That's a letter from the Transport Department dated 12 June 2018, in response to questions raised by the Committee requesting for digital maps on statutory speed limits. If you can read from the second paragraph of that letter, it states that:

" ... we enclose a map showing the whole territory of Hong Kong ... and another one with a larger scale showing the Hong Kong Island only with the roads of speed limits at 70km/h or above ...

For your information, the dataset of speed limits under the road networks managed by the Transport Department ... in the Geographical Information System ... format is already available for downloading from data.gov.hk ... of the Hong Kong SAR government. By using GIS software, members of the public, including the bus operators, can import the dataset of speed limits on to the base map dataset of the [Hong Kong] road network, which is available from Lands Department or alternatively online maps such as Google Map or Open Street Map, to prepare the digital speed limit map of roads in HK."

Over the page:

"The [Transport Department] has put forward the use of the above mentioned GIS datasets on speed control by

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the method of 'geo fencing' for consideration by the bus operators. It will be followed up in the Working Group on Enhancement of Safety of Franchised Buses."

So what is suggested in this letter is we have actually the utility of a digital map showing the speed limits, and if you can combine the digital map with the geofencing or the GPS system that the bus operators are working, then you can identify which routes may require special attention.

Do I understand that correctly from -- I believe based on your experience?

MR JULIAN KWONG: Okay. I would like to comment like this.

Yes, if such data is already available on digital maps, then it is very useful. Of course that would help a lot for the geofencing concept. But if we start from the basic concept, the idea is that we need to let drivers be aware of which particular sections of roads they need to slow down, or what speeds they should adopt, and even without advanced technologies we can do that already. We just tell them.

But the geofencing, of course, if it is digitised, then it can be tied up with a monitoring system to remind them. But such kind of system would be very useful in the long term, but in order to give immediate attention to the problem, I think we can start from the

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simplicity that we formulate locations for the most dangerous sections, and we can already inform the drivers and train the drivers.

Of course in the long term, that can be far more automated with the systems you just mentioned.

CHAIRMAN: That's the whole point of monitoring, is it not? The easier monitoring is made, the more the drivers are disciplined into driving appropriately, particularly if monitoring is real time and automated? And with a digital map with speed limits, and where it is known where the bus is physically, latitude, longitude, it is possible to put in certain thresholds for driving in certain areas?

MR JULIAN KWONG: Chairman, yes. And I presume that would help a lot. But also we need to understand that perhaps drivers are under stress, and the whole idea is to help them, rather than putting a lot of constraints on them, and how we do that in the most rational way, I think we still need to look into the details.

CHAIRMAN: Are you aware of one of the bus operators in Singapore operates a score card for its drivers, deploying these kind of parameters that you have discussed: that is speeding, deceleration, acceleration, as examples, and the driver who drives his bus without exceeding speed, without braking harshly, without

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accelerating harshly, scored a good score, he is a green driver. Then you have the other driver who speeds regularly, brakes harshly, throws the passengers around when he accelerates away from the bus stop, and he is a red driver. And in order to help the drivers, you give the green driver a bonus.

It is a pretty simple system, isn't it?

MR JULIAN KWONG: Chairman, I agree. We need to encourage and to reward those drivers who are driving in a safe way. Thank you.

MS MAGGIE WONG: I believe in the UK that has been the system. Have you heard about the system called "Green Road" in UK? Have you heard about that?

MR JULIAN KWONG: Sorry, I have not heard about this.

CHAIRMAN: I think it is a software that was used both in the United Kingdom by Abellio on their franchise in London, and it is the same one used in Singapore, that I was just describing.

MR JULIAN KWONG: I see, thank you.

MS MAGGIE WONG: In short, the Green Road monitors the harsh braking, harsh acceleration, and excessive engine idle time. So the bus operators in England use this system on peer-to-peer assessments, and drivers are given different score cards, as the chairman stated, green, amber and red score cards, based on the number of events

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they obtain.
And drivers with amber and red scores receive further guidance and retraining. And the system is able to pinpoint the location of events so drivers can learn the hot spots, and this system is also used to reward drivers in the form of financial bonus for good driving scores.
So it is used as a way not only to penalise drivers, but also a national measure to measure who are the top drivers being awarded elite status who are then entered into local or national Driver of The Year competition.
So the way they go about it, instead of penalising them, they give them carrots, to reward them, to give them incentive to drive better and more safely.
Have you heard about this system using score cards to reward drivers rather than to penalise them?
MR JULIAN KWONG: Thank you. I have not heard about this, but it seems that this or similar system would be the way to go, provided that it is not too complicated, and sustainable. Thank you.
MS MAGGIE WONG: And we have gone through these protocols, and now may we go to the bus design as set out on page 786 of MISC-2 bundle.
You mentioned a number of safety features that you recommend as priority, and you set out six of them.

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One of them is the safer bus front; second, safety seat belts; and using more protective pads; corrugated walls on stair ways in the bus interior; speedometer; improvement on driver's vision; and features to alert pedestrians staying away from a moving bus.
Can I ask something about this improvement to driver's vision, about improved mirrors and CCTV cameras. How do you suggest, or what equipment would you suggest in terms of improvement to driver's vision?
MR JULIAN KWONG: Yes. Large vehicles usually have a lot of problems for vision. For heavy vehicles, heavy goods vehicles, that is a big problem. For the buses we are using today, I presume that they are better, because there is a large window.
Nowadays, I presume many buses or most buses would have a CCTV camera monitoring the rear for reversing safety. But still, occasionally, we have severe pedestrian fatality cases. Apparently the bus driver failed to see a pedestrian crossing, just in front, or just on the side of the bus.
Now there are more CCTV cameras installed on buses, as far as I understand, but I notice that the CCTV monitor displays are positioned on the top above the bus driver, and I'm not too sure whether that location is the best for bus drivers to observe what is happening at

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the blind spots. I'm not going to say that it is not going to work satisfactorily, but I'm just suggesting that we should look at the CCTV cameras, the location of the monitor display, whether they really address all the blind spot problems.
But on the other hand, I learned from the Transport for London website that they are also looking at the visibility problems for bus drivers.
I just want to give you an example. For goods vehicles, there is big problems, because drivers cannot see a pedestrian directly in front of the vehicles due to blind spots, and traditionally drivers will rely on the side mirrors, so they need to look at the side before starting the vehicles. But that is not a very natural way of look and driving. And drivers may fail to look at the side mirrors.
The current move in some countries led by London in the United Kingdom is to encourage vehicle manufacturers to make the vehicle far more friendly for the drivers to see what is happening in the front, and also on the side, and they called it a direct vision initiative. And they are already driving changes.
For the buses, as I mentioned, they can be better, because compared to a heavy goods vehicle, the bus drivers usually sit at the lower position.

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But gathering the information I collected, as I mentioned, I think there is still room to improve the direct vision for drivers. Thank you.
CHAIRMAN: Of a bus?
MR JULIAN KWONG: Sorry, for bus. For bus drivers.
CHAIRMAN: One of the problems with lorry drivers is the problem looking through the door, as it were, to see the cyclist right next to where the driver is; is that not one of the problems?
MR JULIAN KWONG: Chairman, yes. Yes, to see the cyclist, and also to see someone walking just in front of the vehicle.
CHAIRMAN: And it was the inability to change that requirement on vehicles that led Boris Johnson to determine that "If the EU could not allow me to put windows into truck doors, then I should be leaving the EU"; was it not?
MR JULIAN KWONG: Chairman, I'm not able to comment on this, thank you.
MS MAGGIE WONG: I think you gave us an example by one of your articles, I think it is dated 17 March 2018, "Road Safety at the [heart] of Workability". It is at page 820-78.
This is the first page of the article. If we go to page 820-82, this is an illustration of the "Direct

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Vision" initiative that you talked about earlier on. Can you explain a little bit. What is meant by "off-road HGV" and "Direct Vision HGV"?

MR JULIAN KWONG: Yes. Gathering from the information from the source I quoted here, heavy goods vehicles actually are designed for highways, for running on the highways. Meaning that there are few pedestrians, so the vehicles will travel without stopping a lot. I gather that is what is meant by "off-road". But in reality, in many parts of the world, including Hong Kong, we have such heavy vehicles running on virtually every street, including the very crowded residential streets, and central business districts, and that is where the problem comes in.

MS MAGGIE WONG: Yes. If we go back to your report earlier on page 786 where you mentioned all the six factors, one of them relates to features, the last one:

"Features to alert pedestrians staying away from a moving bus."

What features are we talking about?

MR JULIAN KWONG: Here in the report I did not specify the features, but in some countries, for example quoting the Transport for London, they are looking at new features including alarms or flashing lights.

MS MAGGIE WONG: So where would the alarm and flashing

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lights be placed?

MR JULIAN KWONG: I have not studied this in details, but I presume that they can be placed, say, around the blind spot areas of the bus, for example just on the side of the bus in the front, where pedestrians can be obscured by the vehicle body of the bus.

CHAIRMAN: Would this be a sensor that sounds an alarm when the pedestrian is picked up as being close to the vehicle?

MR JULIAN KWONG: Chairman, I think that is a possibility, but I presume that those features can be activated even without an accompanying sensor, so, say, as long as the bus is turning. So that needs investigation.

Thank you.

MS MAGGIE WONG: You mention also on this page about safety belts. Can I take to you page 805, where you elaborate on safety belts, in the section where you stated that:

"seat belts are generally available at limited number ... of exposed seats."

And you have calculated 14 exposed seats in a double-decker bus. The bus driver, upper deck front seats, lower deck front seat facing the corridor on both upper and lower deck, and you stated that seat belts are deemed useful subject to detailed evaluation.

Are you aware that actually the new design of the

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buses nowadays, so far as the upper deck front seats are concerned, the new buses have already installed seat belts, the upper deck.

CHAIRMAN: At the front?

MS MAGGIE WONG: The front seats, upper deck front seats.

MR JULIAN KWONG: Upper deck front seats. Yes.

As mentioned in the report, I'm well aware that those seats on the upper deck front are already equipped with seat belts.

MS MAGGIE WONG: One of the matters that was discussed with the Transport Department was in relation to this topic. If we can go to TD-5, page 1688.

CHAIRMAN: What are we going to?

MS MAGGIE WONG: It is a document, annex 2 document prepared by the Transport Department in response to the Committee's enquiries, following the oral hearing.

The title of the paper is "Application of New Technologies in Franchised Bus Operation".

CHAIRMAN: Is this paper 8?

MS MAGGIE WONG: That's annex 2. That's an additional supplementary submission.

If we scroll it down, it mentioned something about -- 1693, I think.

Can we go back to 1691, paragraph 12. It is stated that:

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"At the [Working Group] meeting held on 13 March ... the TD proposed and all FB operators agreed to install seat belts on all seats for new buses, whilst the feasibility of retrofitting seat belts on all seats on the existing buses is to be ... explored in the technical sub-working group."

So it appears from the discussion that there will be new seat belts installed on all seats for new buses in future. Are you aware of this?

MR JULIAN KWONG: I read from the documents of the previous hearings about this. So I'm aware of that.

CHAIRMAN: I think the overall context, it may be you have read this as well, would help. The Transport Department convened a working group to examine the application of what they called new technology, whether or not that's the right description, in March of 2018. And this was the subject of a paper -- I think I'm right in remembering paper 8; is that right?

MS MAGGIE WONG: Yes, that's paper 8.

CHAIRMAN: Where a whole range of different aspects of technology, but not black boxes or tachomatic devices was considered. And it is this group that has been meeting with bus operators, bus manufacturers, Transport Department, in the last three months, considering at this stage how these devices might be used. Are you

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aware of that?
MR JULIAN KWONG: Chairman, I'm aware of that committee, but I'm not aware of the detailed discussions.
CHAIRMAN: That's the context I wanted you to understand. So now seat belts.
MS MAGGIE WONG: If we may go to that paper, TD paper 8, that's in the TD-1 bundle page 94.
It is a paper by TD, Transport Department, setting out the feasibility and desirability of certain features for franchised buses, and at the bottom it states it set up a working group on bus safety following the Tai Po Road bus accident.
Over the page, 95:
"... the TD set up a working group ... 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 ..."
And one of them is in relation to installation of seat belts for all passenger seats, that's at paragraph 5, from paragraph 5 to paragraph 9.
During the hearing, we heard some evidence that some bus operators commented that even if you install seat belts, most of the passengers are unwilling to put on their seat belts. How would you propose to assist the

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public to understand this, and use it?
MR JULIAN KWONG: Yes, I understand that even with existing buses equipped with seat belts the usage is very, very low. That is a difficult question. We need to do it in a number of ways. I think requirement by law is certainly one possibility. And another one is that we need publicity. And the contents of the publicity would be really important. Because we are not just trying to impose something on the passengers. We need to explain to them and have them understand, have them understand the importance of having the seat belts fastened, not only to protect themselves, but say in case for those seats where there are passengers facing them, that if they are thrown forward they would injure other people, and even in a rollover, if they do not wear seat belts, they can also injure other people.
So how to translate this technical knowledge to public understanding, I think that is a real challenge, thank you.
CHAIRMAN: That was the formula adopted with seat belts in motor cars, was it not? To start with, it was voluntary, and nobody used them, and then eventually it was made compulsory, and everyone uses them now.
MR JULIAN KWONG: Chairman, yes, I agree. But I think we also need to look at the model of public light buses.

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It is compulsory by law to have the seat belt fastened, but today I can see that the compliance rate by passengers is not very high. We certainly need far better ways, I think, to convince and also to require passengers to wear seat belts.
But how to do that, I'm not able to give very definite answer, thank you.
CHAIRMAN: It is illegal to park a vehicle on double yellow lines, but we know from walking around the streets of Hong Kong, that enforcement is the problem.
MR JULIAN KWONG: Yes, Chairman. Enforcement is an issue, but I'm also sympathetic with those charged with the responsibility for enforcement. Because in terms of road safety, every day, everywhere, there is so much violations in one way or another, including seat belts, and it is very difficult to have enforcement conducted all the time. Thank you.
CHAIRMAN: Perhaps some of the time would be beneficial.
MR JULIAN KWONG: Chairman, yes, I agree.
MS MAGGIE WONG: In this paper, it also mentioned other safety devices that have been touched upon in your paper, including, if we look at page 98 of TD-1, the use of technology on the safety devices of franchised buses. It mentioned electronic stability control and roll stability control, which is also mentioned in your paper

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at page 818, called the electronic stability programme.
Do you know --
CHAIRMAN: Before you move on, if you are moving to devices, in your piece on bus design, you mentioned at 786, in fact it is the first matter that you address, it is a safer bus front, and you give details of it.
What is it that is unsafe at the moment about the front of a bus, or relatively unsafe?
MR JULIAN KWONG: Yes, Chairman, the upper deck of a bus, at the front, there is very limited space, what we call the concept of crumple zone. Safety belts on the upper deck front seats are beneficial for certain types of incidents, for example a bus braking abruptly, or a bus colliding with a safety barrier, colliding with a small passenger car. But considering that the double-decker bus collides with a container vehicle in the front, or colliding with a bridge pier, then the upper deck front passengers, even if they are restrained by seat belts, they will suffer severe injuries.
And in this respect, maybe I also invite Dr Kou to supplement the information.
CHAIRMAN: Yes, Dr Kou.
DR KOU SIO KEI: Mr Chairman. So in an unrestrained or restrained passenger, if the occupant compartment collapses, say for example in the upper front part of

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the bus, it is the interior posterior type of compression that causes serious injuries to the occupant in the chest, which we have all the major organs inside, and also the abdomen and the pelvis, and we know that by this type of compression injuries, especially in the chest and pelvis, it would result in very severe and even fatal internal bleeding.

That's the reason why Mr Kwong noted that the upper front seats of a double-decker bus, the occupants sitting over there, whether they are restrained or unrestrained, they are at a higher risk. Thank you.

CHAIRMAN: It is right, is it not, from the photographs that I have seen and perhaps you have seen, that the front of the bus in the Tai Po Road accident on 10 February, that was severely damaged, was it not, the upper front of the bus?

If you have not seen the photographs, by all means say so.

MR JULIAN KWONG: Chairman. I have seen the photographs.

For that --

CHAIRMAN: Perhaps that's a different cause of damage.

MR JULIAN KWONG: I'm not always sure of the exact mechanism of that incident. When the bus rolls over, or topples, whether the buses topple directly onto the bus shelter, and it is the bus shelter structure intruding into the

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bus body that contributes to the high number of fatalities.

And that could be a reason, but I'm not always sure, until there's adequate evidence. As I mentioned in the report, we need to understand injury patterns and mechanisms. Because, say, if we are trying to introduce a particular measure, including seat belt, we need to understand that they can be very helpful for certain kinds of crash and injury mechanisms, but they may be not very useful for certain mechanisms. So that is the precise directions we are advocating, that we need to understand crashes and injuries in a much better way. Thank you.

CHAIRMAN: Thank you.

MS MAGGIE WONG: And on this topic, Mr Kwong, and Dr Kou, may I refer you to your April 2018 paper at page 805, at the bottom. The topic on compartmentalisation, and also the rollover test to UNECE Regulation No. 66 at the bottom.

It referred to a:

"... widely accepted regulation requiring bus superstructures to have sufficient strength to maintain a defined volume of residual space integrity during and after a rollover test with the objective to promote passengers' survival."

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Can you elaborate on this? Are you suggesting it is in fact a regulation requiring a bus manufacturer or operator to have a specific material used to ensure there is sufficient space/integrity? Maybe you can elaborate on that.

MR JULIAN KWONG: Okay. While admitting that I'm not an expert in vehicle design, I did try to study a number of documents related to bus superstructure design, and I came to understand that the rollover test to UNECE regulation No. 66, that is required for single-decker buses. The idea is that when a bus rolls over, it is very important that the superstructures does not deform excessively, otherwise the passengers inside will be compressed, and there is a real risk that they come into contact with the road because they are compressed during the rollover.

So they require that the superstructure remains more or less intact. But I also came to understand that this test applies to single-decker buses. There was a proposal in 2009 by an expert to the UNECE that double-decker buses should also be included.

I'm not sure whether the regulations have been updated, and I'm not sure whether double-decker buses have indeed been tested for rollover.

But I would like to add a point, that my

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understanding is that this rollover test is a simple rollover test, that means the bus toppling onto one side, without toppling onto objects like a bus shelter, a wall, a safety barrier, and railing, et cetera.

And secondly, the main emphasis is that the objective is to maintain the residual space integrity, passengers are subject to injuries in a number of ways when a bus rolls over. And this test will help a lot. But that is not the entire story. It cannot prevent all kinds of injuries.

In this sense maybe I would also like to see if Dr Kou has something to supplement.

DR KOU SIO KEI: In the case of a toppled double-decker, we need two things. One is that the superstructures remained intact, as Mr Kwong has mentioned. The second thing is we try to prevent the occupants inside the compartment to move excessively, either out of the window of the vehicle, or onto the other passengers inside the same compartment. Because if we know that if a person becomes unconscious but is still breathing, but then if there are two people of similar size on top of him or her, then he or she would very likely suffer from suffocation as a result of that external pressure by others.

That would be some of the points of consideration in

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cases of a toppling bus.
MS MAGGIE WONG: If we go back to the TD paper, TD-1, page 98, we were onto the electronic stability control and roll stability control system which is also mentioned in your paper at 786 as the electronic stability programme. Do you know much about this programme?
MR JULIAN KWONG: Again, I would like to say I am not an expert in vehicle design, but having read about the electronic stability control and the rationale, and also seeing that it is actually a mature technology, I consider in the report that it is something we would recommend, at least to be investigated in detail.
MS MAGGIE WONG: Yes, in fact the Transport Department has advocated this. If we look at page 100 in bundle TD-1, still in the same bundle, but in paragraph 15, same paper. If we look at paragraph 15 it stated:
"One of the bus manufacturers have advised that their new and existing buses have already been equipped with the [electronic stability control system]. As such, about 2.8 per cent of the [franchise buses] ... in Hong Kong procured from this manufacturer have been installed with the ESC."
That is the electronic stability control:
"The bus manufacturer further advised that one of

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the functions ... [is to use] electronic-controlled suspension for rollover protection ...
Based on the bus manufacturers' advice, their [electronic stability control] could already assist the vehicle back to track before the rollover situation begins. However, the bus manufacturers pointed out that even with the installation, a bus can still lose control due to inappropriate driving behaviour, eg aggressive driving. The bus would roll over if it is being driven off-road and the body angle is too high ... To improve bus safety, all FB operators agree to incorporate the requirement of installing ESC system ... for procurement of new buses."
That's the electronic stability programme. Do you know whether it has been widely used in UK, and in France, and in the programmes that you have undertaken?
MR JULIAN KWONG: I do not have information regarding the current extent of usage and for applications to public buses.
MS MAGGIE WONG: Yes. The other thing that you mentioned in your paper is the autonomous emergency braking system. That is in your paper at page 786. Can you elaborate on what this is.
MR JULIAN KWONG: For this paragraph, I mentioned that these features should be explored. Autonomous emergency

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braking system, as I understand, of course it is an intelligent system. When a vehicle detects that a collision is imminent, for example colliding with a pedestrian or colliding with a vehicle in front, then the system will be automatically activated to stop or to slow down the vehicles.
And I recommended this for a number of reasons. Rear-front collision is one of the most serious concerns. A bus rolling over, or falling down a cliff, of course that is a major concern, but rear-front collisions are more common, and that often happen on highways, often resulting in a lot of injuries, and the upper deck front passengers usually suffer severe injuries. Another one is pedestrian collision.
So on the understanding that some bus companies are already introducing such systems, whether definitely or as trials, I thought that that would be a good feature to be explored. Thank you.
MS MAGGIE WONG: And if we go back to the TD paper, page 102, that's TD-1, page 102, on speed display unit --
CHAIRMAN: Before we move on, what was the result of the consideration by the working group on adopting advanced technology as far as this is concerned?
MS MAGGIE WONG: I believe they have not touched on this

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subject. Can I go back to ...
CHAIRMAN: Is this addressed under the heading "Collision prevention" at page 103 of TD-1? There are two matters being dealt with there, one is keeping lanes, but the other seems to be dealing with what Mr Kwong has been calling front to tail of a collision.
So one is keeping you in a lane, and the other is avoiding a collision with a vehicle in front because you are too close, or the vehicle has stopped and you have not, and also with pedestrians.
MS MAGGIE WONG: Yes, that's correct. That's page 103 to 104.
If we look at page 103 at the bottom, the last three lines, paragraph 24:
"When the bus gets too close to the vehicle in front, a signal (audible and/or visual) will alert the driver. Some systems offer collision warning with the brake support. If the driver does not react after the collision warning, the brake support function will activate the braking system to react quickly and hence the brakes will be applied. In the event of an imminent crash and the driver has not applied the brakes, some of the new systems that are available in the market would apply heavy braking automatically to help reduce the impact of the crash."

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Then it sets out a photo show activation of the collision prevention system. The Transport Department is also mentioning the three bus manufacturers' reaction to this. It is at paragraph 26:

"All the three bus manufacturers advise that there are in-built or third-party lane keeping systems ... However, they have reservation in the installation of such device on the [franchise buses] as the traffic in Hong Kong is heavy and frequent lane changing is required ..."

CHAIRMAN: Isn't this dealing with a separate topic?

MS MAGGIE WONG: Yes.

CHAIRMAN: One is avoiding front-tail collision and the other is lane keeping. Is there any response to avoiding collisions?

MS MAGGIE WONG: I think it is at the last line:

"In sum, 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."

CHAIRMAN: Thank you.

MS MAGGIE WONG: So the FB operators, that's the franchised bus operators, seem to take a different view as to the efficiency of this prevention collision system. That's why I would like your experience in this. Because in

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your paper you did raise this as one of the devices that you consider of some use.

How would you respond to this?

MR JULIAN KWONG: Of course, the introduction of any new systems would need to be thoroughly discussed with the bus operators, and also to have the feedback from bus drivers.

It can create problems if we have too many systems causing distractions and difficulty of usage or any unwanted effects.

However, I recommend the study of collision prevention system, that is the autonomous braking system, is based on the prevalence of rear-front collisions, and the implications, and also that a number of operators overseas have introduced the system or are seriously having trials of the system. What I'm not sure from this paragraph is the rationale that the FB operators do not consider them effective.

Whether the discussion is just they do not want it, or they have some good justification of not doing that, or whether they are willing to at least conduct some trials, so I cannot comment on this due to the lack of information. Thank you.

CHAIRMAN: Well, to help you, it is my memory that we received some information from Citybus that they had

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conducted a trial of such a system, and they had found it distracting, too many alarms going off, and so on. But perhaps that could be found after we take a break, and you can be taken to what that evidence was so that you can see what the rationalisation was.

If I could ask you to look that up, Ms Wong.

MS MAGGIE WONG: Yes.

CHAIRMAN: It is my memory it came in the oral evidence of Citybus. I know one of these devices is called Mobileye, but there may have been another device that was used by Citybus.

MS MAGGIE WONG: Yes.

CHAIRMAN: We are going to take a break of 20 minutes, and then we will resume with your evidence. Thank you.

(11.17 am)

(A short break)

(11.41 am)

MS MAGGIE WONG: Before the break, we were discussing about a number of issues. In response to the chairman's question about the evidence of one of the bus operators, Citybus, of this collision or lane keeping device, can we go to transcript bundle TSCP-1, at Day 4 of the oral session at page 49.

It should be TSCP-2 bundle, at pages 49 to 51.

The question by Mr Duncan, that's the counsel,

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leading counsel for the Committee, at line 19. Mr Chung is representing the Citybus in relation to technological device, and he asked Mr Chung:

" ... if I could then ask to you look at paragraph 26 [which is the paragraph we have looked at]. It records the fact that 'the ... bus operators do not consider that the installation of collision prevention and lane-keeping devices are effective for enhancing the safe operation of franchised bus services', and I believe this for the reasons that you can see earlier in paragraph 26. Is that the case?

MR WILLIAM CHUNG: Correct.

MR DUNCAN: So do I understand correctly then that as far as the company is concerned, it is not proposing to pursue that possible device any further?

MR WILLIAM CHUNG: Let me first of all explain. Such a device, in the year 2014, our company did carry out a test of such devices. This is called Mobileye. Mobileye is a driving assisting device. At that time, it was mainly applied to private cars. What was involved was that they would use the visual aid to detect what is in front and then the system will carry out an analysis and then calculations would be made as to the distance between the subject vehicle and the preceding one and the following one, and then come up

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with an idea about the time of collision, then warning signals would be sent to the driver.

At the time we fitted this Mobileye on three of our buses, we carried out a trial scheme for four months. We made arrangements for representatives of different trade unions, that is bus captain representatives, as well as 50-plus bus captains to drive such buses, that is three of them, in their normal service, and after that they were asked to fill out a questionnaire for us, telling us what they think about this device called Mobileye.

So the findings were such that some of the alerts were not quite suitable for use on buses. Say, for example, when the bus pulls up at a bus bay, since it is detected that there are people in front of the bus, as you know there are passengers waiting at the bus stop, so when people are detected then there will be an audio signal. Well, in fact the driver hasn't yet straightened the bus and so a signal would also be sent.

Moreover, when the bus is stopped too close to the preceding bus, this will be a signal to be sent out in the case of when the traffic is slow. As a result, it means that the warning signals are emitted many times during a journey. 46 per cent of the bus captains told us in the questionnaire that there were too many warning

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signals and it was causing a nuisance to their driving, and as a result they ignored the signals, and then 50 per cent of the drivers told us that the Mobileye didn't help in their safe driving.

So having considered the functions of this Mobileye and having taken into account the views of our bus captains, moreover there is a high cost involved in the installation, we as a result decided against following up on the idea.

So that's our experience. We shared our experience at the meeting."

So that's the transcript.

And if I may also take you to the report, that it is mentioned in the evidence. That is in CTB-3. Page 601.

That's the first page, that's the Mobileye trial result.

At page 603 it referred to the time when this trial was carried out: Background, second paragraph you can see it was carried out in 2014, and if you look down at paragraph 2, the second paragraph, Mobileye trial:

It was split into two phases, and the second paragraph:

"Questionnaires were sent to 13 union representatives and 54 bus captains who had driven the test buses to collect their feedbacks ..."

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And then if we go to page 609, it is setting out the conclusion and recommendation. Paragraph 5:

"Bus captain's acceptance.

50 per cent of bus captains opined that the Mobileye was not helpful for driving safety and 44 per cent of bus captains opined that the alerts of the Mobileye caused usance to driving. The suitability and usefulness of the Mobileye is questionable. Hence it is not recommended to go ahead with the Mobileye."

Lastly, in the recent paper submitted by the Transport Department in May 2018 for completeness, that's at TD-5, page 1691 at paragraphs 12 to 13, you can see at paragraph 12, the fifth line from the bottom of paragraph 12 it mentioned:

"... the collision prevention lane keeping device ... were tabled for discussion at the [working group]. It was agreed at the [working group] meeting that the feasibility and applicability of the ... on-bus devices would be further deliberated in the technical sub-working group."

And paragraph 13, I believe right in the middle. It stated that:

"... no final decisions have been made on the proposals of the new technology. It is expected that a report on the recommended safety-enhancement measures

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and facilities to be installed on buses will be released in June/July 2018."

So for completeness, no final decision has been made, but only Citybus has done a trial result, based on the 54 bus captains' experience.

Given the information in front of you, would you like to comment on the information, because in your report you recommended this autonomous braking system, emergency braking system, would you like to make further comments on this area?

CHAIRMAN: I think to be fair to Mr Kwong he recommended that it be tested, not that you gave a blank cheque that it was recommended to be used.

MR JULIAN KWONG: Chairman, yes. We have recommended that it is explored, and everything is subject to evidence and practicality.

CHAIRMAN: Am I right in remembering, Ms Wong, that Mobileye or Mobicon is in use with other bus companies elsewhere in the world? Is it not in use in London?

MS MAGGIE WONG: Yes, it was an equipment used I believe in England, in a study, and that is why it was proposed to be used in Hong Kong.

CHAIRMAN: But has it not been used more recently in London, subject to this 2014 test?

MS MAGGIE WONG: Yes. In a recent report. We will find out

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the relevant references for you in due course.
May I move on to another --
CHAIRMAN: One reason it may not be useful in Hong Kong is bus drivers drive centimetres away from the bus in front of them, particularly when they are slow moving, and no doubt that does cause irritating alarms, but presumably one can set a distance setting for the alarm going off, and if you are driving so close that a pedestrian can't even walk in front of the bus as the bus is stationary, it is not surprising there are lots of alarms.
MR JULIAN KWONG: Chairman, yes. I think we need to understand more about the threshold and criteria, and also this equipment will be advancing all the time, the technology, so I recognise that Citybus has done a very good trial, and they did a survey afterwards, and I have no comment on that, but the main reason we are recommending that such systems are explored is based on a need, the need being that we have rear-front collisions which are really serious, and then we also have the risk of collisions with pedestrians, and such systems, if they are matured enough, may be a very good measure to mitigate our problems.
But, of course, everything will be subject to trials, and also we need to prove that it really works. Thank you.

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CHAIRMAN: Thank you.
MS MAGGIE WONG: Thank you. And before we move away from this TD paper, may I ask a few questions about some of the proposals suggested by the Transport Department.
One of them is the speed display unit, at page 102 of TD-1. That's the paper 8 in relation to the new technology. At paragraph 21, the last line, it mentioned that the existing speed display unit installed on a public light bus may resemble the installation of the proposed device on a franchised bus is shown in figure 6. And then if we go over the page at paragraph 22, it sets out the response of the franchised bus operators, near the end of paragraph 22:
"In addition, the FB operators are concerned that SDU would create conflicts and arguments between the bus captain and passengers, and impose additional pressure on the bus captains which in turn would affect the safety for bus driving. The FB operators consider that the SDU is not conducive in enhancing bus safety."
We all know that the speed display unit has been installed in public light buses, but what would you say about the response made by franchised bus operators as to the efficiency of this unit in terms of enhancing bus safety?
MR JULIAN KWONG: Thank you. I understand the standpoint,

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but from our point of view it would be whether such installation would be really helpful to road safety. That would be our major concern.
May I just point out that in our report submission we did mention about the term "speedometer", but in our submission, we were talking about speedometer in digital display for the driver, as opposed to the current analogue display for the drivers.
That is important because we need to first make sure that drivers are aware of what speeds they are using. Sometimes they may not be deliberately exceeding the speed excessively. But current display, it seems that drivers would find it difficult to read the analogue display, because of the position, and also it is not digital. So that was our recommendation that there needs to be a fairly prominent digital display for the driver at the right position.
But then coming to the second point about speedometer installation for passengers. After we came to know about this proposal, I also had some thoughts.
For passengers to make complaint or to tell the drivers, I'm not too sure whether that will be an effective way. But one possible use of such speedometer display is to enhance inspectors. To quickly gather information where, whether bus drivers have been grossly

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violating speed limit, or the pre-defined protocols for speeds at different location or in general.
And that could be a possible benefit. But as I mentioned, relying on passengers to make complaints, from my experience, I'm not too sure whether that would be really effective, given the cost of installation.
So that needs to be -- I think it would be better always to study it in more details, maybe to have some trials. Thank you.
CHAIRMAN: When you say passengers' complaints are not too useful. Do you have in mind passengers complaining to the bus on the stop to the bus captain?
MR JULIAN KWONG: You mean according to my experience?
CHAIRMAN: No, when you say you don't think it would be too useful to enable passengers to complain, do you have in mind that the passengers might complain to the bus captain in real time on the spot?
MR JULIAN KWONG: Yes, Chairman. I would like to say that I would not make a conclusion now, but it is not easy to decide on that, because we have to look at the behaviour, and also to look at how it works in reality. Because most passengers I presume they do not care -- as long as the bus is not going as crazy speeds. They may not be aware that, say, for example, I mentioned that on busy urban street, going at 45 or 50 kilometres per hour

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is already dangerous. Passengers may be more interested in getting to their destination in time, and they may not be so sensitive to small variations in speed.

Of course if the bus driver is going at a grossly excessive speed, then that is a problem. That may help passengers talking to the bus drivers, and to stop his behaviour in time.

But that is also going to be difficult, because in that situation the driver would already know very well that he is going at much faster speed than his company, or the legal speed limit would permit: and the passenger talking to him directly whilst he is driving, that could be seen as an aggression.

So these issues could be complicated. So to conclude, I would like to say that if we concentrate on this usage of the speedometers, I am not yet sure whether that is going to contribute a lot to bus safety, but we can always investigate this issue in more detail, thank you.

CHAIRMAN: The Transport Department has a complaint telephone number, does it not?

MR JULIAN KWONG: Chairman, yes. I think --

CHAIRMAN: Have you examined the mechanism for this complaints? How one makes the complaints?

MR JULIAN KWONG: Chairman, as far as I understand, there

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are a number of channels.

CHAIRMAN: There is a form, isn't there?

MR JULIAN KWONG: There is a form and you can --

CHAIRMAN: Does that form have a box that says "bus excessive speed"?

MR JULIAN KWONG: Chairman, I'm not aware of that.

CHAIRMAN: I have looked at it, and I can't find it. But perhaps you might consider this scenario: if a passenger was concerned about the speed at which a bus was being driven -- and the manner, because speed by itself is not necessarily dangerous, is it?

MR JULIAN KWONG: Can you repeat?

CHAIRMAN: Speed by itself is not necessarily dangerous.

MR JULIAN KWONG: Yes, it is not only speed, it is the degree of conflict, and in what context.

CHAIRMAN: Yes. Well, since there is a complaint mechanism, would it not assist if the passenger on the bus would have his suspicions confirmed that the bus was actually going, say, 65 kilometres an hour and not 50 in a 50 zone, and all the passenger has to do is use the iPhone that he is already using for other purposes, to take a photograph, and then he e-mails the photograph to the transport complaint unit, and then you have a photograph of the speed, and perhaps also where the bus was.

MR JULIAN KWONG: Chairman, that is a very good idea, and in

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that case I think there needs to be some thought on how we position that speedometer display, considering, for example, you take the picture, and together you take the picture of the road ahead, so that there can be a proof of where the bus is, and maybe the display also has the number of the bus, the registration plate, and also that that is positioned at a location where the bus drivers will not be able to see that the bus passenger is taking the photograph, to avoid any direct conflicts between the driver and the passenger.

CHAIRMAN: Thank you.

MS MAGGIE WONG: Mr Kwong, if I may take you to the last proposed device proposed by the Transport Department. It is the driver monitoring device at TD-1, page 105. Paragraph 27.

This was a device that was said to monitor driving performance and alert the driver if it detects a lack of attention or drowsiness, and if we jump a line:

"When the system detect potential unsafe behaviours, such as 'looking aside', 'dozing', 'drowsiness' or 'bad posture', the system will give visual warning and voice alert to the driver."

We go over the page:

"All three bus manufacturers have advised that these systems are third-party system and standalone ... It is

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technically feasible to monitor the bus captain's status but will also pose unnecessary nuisance to the bus captain when there is a false alarm. Two FB operators advise that they would install a similar system in four of their buses for a trial of 3 months tentatively starting from early May 2018. The TD, in collaboration with the FB operators concerned, will assess the effectiveness of the system upon completion of the trial."

First, Mr Kwong, have you heard about this driver monitoring device system before?

MR JULIAN KWONG: I am aware of such systems, but I have not gone into the details of such system. Fatigued driving, or inattention certainly is a possible factor for road crashes.

But again, whether such systems would be beneficial, then we need to look at whether such problems mentioned, back posture, inattention, et cetera -- really account for large proportions of our crashes for buses.

So I am open to that, but I cannot give too detailed comments at this stage, thank you.

CHAIRMAN: Is fatigue an issue, a risk, in Hong Kong franchised bus drivers? How do you assess that?

MR JULIAN KWONG: Chairman, I presume that fatigue will be related to the number of hours of driving, rest hours,

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but it would also depend on individuals. For one reason or the other, that he is tired. On this topic, in our report we have not devoted a lot of writing on that, because I have not studied this issue. Although in some other parts where I have been working, for long distance driving we need to care a lot about the possibility of fatigue driving. In Hong Kong I think we need to look at that. Because any system we are trying to introduce, that should be tied up with the real crashes we are facing, and also the risks we are facing. So I can only say this for the moment. Thank you.

CHAIRMAN: Are you aware of any attempt to study the risk factor of fatigue driving, in questionnaires? Any surveys? The examination of accidents? Are you aware of anything like that? Empirical data.

MR JULIAN KWONG: You mean in Hong Kong?

CHAIRMAN: Yes.

MR JULIAN KWONG: Chairman, I'm not aware of that.

MS MAGGIE WONG: Prior to the break, Mr Kwong, we are discussing about the structural strengths of the upper deck front of the buses, and the potential hazards to passengers sitting at the front of the vehicle, upper deck of the vehicle.

And I would like to show you a photo of the Tai Po accident which touched on this. May we pull up the

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photo. We can see a photo of the incident showing, I think the upper deck, the front portion has been completely damaged. And does this help you to explain your statement about having safer bus fronts as set out in paragraph 5.5 of your April report?

MR JULIAN KWONG: Looking at this picture, I would consider that to be a composite collision. There are many possibilities of crash scenarios. The simple one would be the bus colliding directly with an object, with a tall object like a container truck in the front, colliding with a bridge pier, colliding with a lighting column, colliding with a projected canopy of a building. But for this one it is probably a composite collision. Maybe the bus has collided with the bus shelter, which is high enough to damage the upper deck structure. Maybe it has also collided with a lighting column, but at the same time the bus also rolls over.

As I mentioned earlier, the bus could have rolled over directly onto the bus shelter, and in this process the bus shelter also contributed to the destruction of the bus front and also the side of the bus, or even directly intruded into the bus compartment, directly injuring the passengers inside.

But without further evidence, this is just speculation.

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CHAIRMAN: We don't need to speculate. Others can tell us the result of their examinations.

MR JULIAN KWONG: Chairman, yes, hopefully. We consider that understanding crash mechanisms and also injury mechanisms is really important for the formulation of evidence-based strategies and measures. Thank you.

MS MAGGIE WONG: Yes. Mr Kwong, the Committee has made further enquiries after your submission in relation to some of the articles published on your website, because we are on this topic about transport data.

If we look at page 820-1, and if we scroll down, paragraph 8.

It is stated that in your web page there is a section called the "Traffic Speed Data". And you explained that you agreed to publish this on the Committee's website, but due to resources you state this task is intermittent and not systematic at the moment:

"We are doing it ourselves and in partnership with interested parties. Tonight, (11 July ...) we are meeting some interested group of young people to conduct new surveys."

And you have done, I believe, a few selected locations. TST, Sham Shui Po, Route Twisk, and then over the page, Lyttleton Road, and Tai Hang Road, and you stated that:

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"In support of the Fourth United Nations Global Road Safety Week with the theme 'Save Lives Slow Down' in May 2017, CRS collaborated with a district councillor and a professional producer to produce a short movie to raise awareness. The target road site is Tai Hang Road. Below is a captured photo of the video. The speed of some vehicles was even well beyond 80km/h at night."

May I first of all ask, Mr Kwong, this is obviously a study you have done on your own initiative in collaboration with other interested parties, yes?

MR JULIAN KWONG: For this Tai Hang Road, yes, we are happy to collaborate with any parties interested in the topic. We make it non-profitable, politically we are neutral. So we just need people to collaborate because we are trying to bring the message out to increase the awareness within the society. And conducting speed limit is very time consuming, it is manual work. So that is why we have not been doing that systematically as we would like.

MS MAGGIE WONG: Yes. What equipment -- we have seen a photo here. Is that a laser gun that you use by your partners in detecting the speed limit of certain vehicles?

MR JULIAN KWONG: That's true, it is a laser gun with the model name Tru Speed, so that is a speed gun which I own

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myself.
CHAIRMAN: Who is the manufacturer?
MR JULIAN KWONG: The manufacturer, as I understand, is Laser Technology.
CHAIRMAN: Is this a device that is used by law enforcement organisations either here or elsewhere?
MR JULIAN KWONG: Chairman, as I understand, that is correct, but it also depends on the model.
CHAIRMAN: Is it used in Hong Kong?
MR JULIAN KWONG: Chairman, yes.
CHAIRMAN: What is the model that you were using?
MR JULIAN KWONG: This model, as I mentioned, that would be the Tru Speed model. The exact number I cannot remember, but I understand that this model has been used by the police as well. There are some newer models which they are using.
CHAIRMAN: How old is this model?
MR JULIAN KWONG: Chairman, this model, I purchased probably in the year of 2011.
CHAIRMAN: In this or in any other survey, have you deliberately sought to monitor the speed of franchised buses?
MR JULIAN KWONG: Chairman, we have not conducted speed surveys specifically for franchised buses, although this is ideal, because if we look at bus safety, then I would

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really want to look at the speed of buses specifically. But I did conduct some casual speed check for buses from time to time.
CHAIRMAN: Did you choose particular locations to do this at?
MR JULIAN KWONG: Chairman, one location that I would like to quote is that some years ago, I went to Des Voeux Road Central, I looked at the -- because I wished to look at the speed of buses going from the direction from east to west, to see exactly what type of speeds they are using. And this section of Des Voeux Road Central is where many pedestrians cross the road without a pedestrian crossing. And the purpose of my doing this exercise was to see what speed a bus driver will use if they are trying to overtake a bus stopping at the bus stop.
The reason I am interested in this is that the stopped bus will obscure any pedestrian trying to cross in front. If the bus is going at excessive speed it is not going to be able to stop in time, and I compared some guidelines, for example, from Canada, there is a recommendation or a rule saying that if the bus, the transit bus has to overtake a stopped bus or a stopped vehicle, then it should not go beyond the speed of 30 kilometres per hour.

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And that was a very casual exercise for me, but then at that time the highest speed I noted was 49 kilometres per hour. But admittedly, I did not check too many buses. I only check five or six buses.
Recently I also did some speed check, because a newspaper reporter invited me to do a filming, an interview on Des Voeux Road Central. So again, I used the speed gun to have a casual check of the buses going buy, and on that occasion many buses will go in the range of 30 to 35 kilometres per hour. That is the buses going freely, they are not obstructed by anything.
One bus, the highest speed I recorded was 42 kilometres per hour.
The rationale of my doing this is not to prove that buses are going at excessive speed. Another main purpose is to see what speeds the sensible drivers will be using.
So from my point of view, 30 to 35 kilometres per hour is sensible. Thank you.
MS MAGGIE WONG: Mr Kwong, thank you for sharing this with us.
About this radar gun, have you maintained it from time to time when you use it, or is it in good maintenance?
MR JULIAN KWONG: Yes. That is in good maintenance. I have

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to do calibration from time to time. From my understanding, laser guns -- I mean this one is a laser gun as opposed to a radar gun, normally it does not require calibration all the time, but for accuracy purpose I need to do two tests. If I pass these two tests then normally there shouldn't be any particular problems.
I would usually do these tests from time to time. Thank you.
CHAIRMAN: What is the margin of error of this device, according to the manufacturers?
MR JULIAN KWONG: Chairman, I do not have the exact figures, but my understanding is that laser guns are very accurate. That means the error would be well within the need as far as our purpose is concerned.
CHAIRMAN: Can you put a figure on that?
MR JULIAN KWONG: I would presume that would be 1 to 2 per cent, at most 3 per cent.
CHAIRMAN: Thank you.
MS MAGGIE WONG: Apart from the locations that you have identified in the document at pages 820-1 and 820-2 of MISC-2 bundle, have you in collaboration with the other interested parties considered exploring other locations as well?
MR JULIAN KWONG: I would like to give you an example.

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We were referred to by a social worker in Tsuen Wan, that residents were concerned about the safety of a zebra crossing near their village. They considered the traffic speed too high. And at that time I have some free time, so I agreed that we collaborated to do a speed survey at Route Twisk in Tsuen Wan, around the zebra crossing.

The way it worked is I trained the villagers up to use the speed gun correctly, and then they conducted the surveys by themselves.

In the end, for that exercise, they conducted the survey for 800 vehicles.

Normally, at any single location in order to produce a speed distribution graph we need at least 100 vehicles.

MS MAGGIE WONG: Do you have a report of that Route Twisk data, the speed data report?

MR JULIAN KWONG: Yes. That report, I think I have supplied to you. I would like to declare that because of some difficulties of transforming the report from simplified Chinese to traditional Chinese font, and the report I replied to you is in simplified font, but that is still the one I handed into them. Thank you.

MS MAGGIE WONG: Thank you.

If I may go back to your report, and continue with

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the third area, which is the road design. That's also at page 786 of this bundle, MISC-2 bundle, the road design.

And you suggested also a number of suggestions, six in total, about the road design and traffic management that are crucial for bus safety. The first is adequate safety barriers; second is the elimination of sloping end terminals or similar features at high risk sites; third is the widening of blind bends on certain old roads; fourth, reduce speed limit in urban areas; fifth, safe crossing facilities; and lastly, better protection of waiting passengers at bus stops on major busy roads.

Can we go to safety barrier first. I think you elaborated on that at page 808. In this section you referred to this as important to contain an errant vehicle from colliding with roadside hazardous objects falling off the slope.

And you use the Tuen Mun bus crash report in 2003, and you make reference to a parapet. And I'm going to refer you to that Tuen Mun report. If we may go to bundle SEC-1, page 1 is the first page, and then if we go to paragraph 16 and 17 at page 10 to 11: if we look first at paragraph 15, it states that:

"Parapets are protective devices designed to reduce the severity of an accident. They provide a passive

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line of defence and are not the cause or a contributory factor of an accident.

16. After examining local and international standards, the panel considers that the existing parapet design ... adopted by the Highways Department ... are generally in line with the international practices."

Then if you jump a few lines:

"However, there is room for enhancement at critical locations where penetration of the vehicular parapet may result in catastrophic consequences. The panel advocates a total safety management approach ..."

And if we go to paragraph 17, it mentioned something about:

"... a strong parapet designed to a high containment level may stop a heavy vehicle in the desired manner, but may cause considerable damage to a small vehicle ..."

And then if we jump a few lines:

"For enhancement of parapet design in the long term, the panel recommends that the [Highways Department] expand the range of containment levels, in particular at the high end, and review the parapet height ... The panel also recommends that [Highways Department] continue to monitor the development of multiple containment parapet overseas ..."

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If we go to page 109, at paragraph 9.38 it sets out the figures mentioned there for a double-decker bus, the simulation result for a double-decker bus for a speed of 60 kilometres an hour, the angle of impact is 10 degrees.

I believe you stated these figures in your report at page 808, MISC-2 bundle. In this section at paragraph 3 you stated that:

"Some viaducts are not yet equipped with L3 safety barrier. According to the Tuen Mun Road report ... the earlier generation of 'P2' has been verified by simulation to contain a bus at 60km/h at 10 degrees. The significance of such knowledge is to set route-specific operational protocols for bus operation. As an example, where P2 parapets are used, the speed of buses will be limited to 60km/h and travel on the left lane. This will ensure that an errant bus will not exceed the performance of the parapet."

Can you explain this. So if a bus is driving at 70 kilometres per hour, does it mean this parapet is not going to work?

MR JULIAN KWONG: Okay. Thank you. Chairman, first of all I would like to declare that I myself, as put forward right in the beginning of this session, I am involved in this project at the moment for government. But what I'm

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going to say, actually relates to what I have been raising all the time since probably at least 10 years ago. So I'm not going to touch on anything related to the project I'm working on. But anything I'm going to quote, I have the knowledge independent of the project I'm working on.

So to answer your question, the idea here is to set protocols or rules for bus driving, we need to understand the capacity of our road design, for example in relation to the capacity of the safety barriers. For this particular case, it is just an example, if the bus is going at 70 kilometres per hour, at the same impact angle, that I think according to the report would be 20 degrees. The report said that it has been tested, but only by computer simulation, at 60 kilometres per hour and 20 degrees. So I would like to see that there is an increased risk that the bus will overcome the barrier.

But of course we need to understand that these tests are often based on a particular speed, particular angle of collision, and also a particular weight of the bus. It depends on the number of passengers inside.

So it means that in the case I quoted, it is not certain that there could be a chance of the bus overcoming the parapet.

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I believe that if there is more information about different parapets, and safety barriers on different roads, that would provide a very good indication and good data for the government or the bus operators to formulate better route-specific protocols for their drivers. Thank you.

MS MAGGIE WONG: And on page 808 you identify eight roads where there are no safety barriers at all. That's Repulse Bay Road, Tai Tam Road, Peak Road, Stubbs Road, Pokfulam Road, Tai Po Road, Clear Water Bay Road, Keung Shan Road.

Of course I'm not going to the consultancy brief report, but have these matters been raised by you with the Transport Department before the consultancy brief, or is this the first time you raised this, in this report?

MR JULIAN KWONG: Chairman, these issues and what is stated in this report have been raised for a number of years, and also compilation of this report was prior to my involvement in the consultancy study you just mentioned.

CHAIRMAN: With whom did you raise these concerns?

MR JULIAN KWONG: Chairman, usually we would raise the concern to relevant government departments, such as Highways Department, Transport Department. I have forgotten whether I did raise it, say, to the Bureau.

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CHAIRMAN: What response, if any, did you get? We are looking at a road with what looks like a stone wall on a steep slope. What response did you get when you said, "Why isn't there a safety barrier here?"

MR JULIAN KWONG: Chairman, I have forgotten the exact reply I got, but I presume that they understood, and I can remember that there was an interest in that, and that they have done something about that, but then of course the problem is very extensive. And I have to keep on repeating the same message to these departments.

So it is an ongoing issue. My only interest is whether something has been improved. So I do not know exactly what is going on inside government, but I only make the comments out of what I see at the site.

CHAIRMAN: And that's why it is ongoing? Because you see the same thing, year after year?

MR JULIAN KWONG: Chairman, yes. That's true.

But of course there may have been local improvements for some particular sites, but this is one site, the pictures show one site which I would consider to be highly risky. Thank you.

MS MAGGIE WONG: May I just show one specific example of the Tai Po Road section where -- as we have stated earlier, the Tai Po accident happened in February and the Transport Department was able to reduce the speed limit,

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make changes to the road traffic signs, and on the road markings within two months.

And if I can show you the Tai Po District Council paper, in TD-1, page 354.

CHAIRMAN: What's the date of this report?

MS MAGGIE WONG: The date of this report is 9 April 2018.

CHAIRMAN: This is the Transport Department paper provided to the Tai Po District Council for their meeting?

MS MAGGIE WONG: Yes, for their meeting.

And we can see this paper, first of all, set out the review of the speed limit, and then right in the middle, they suggested at the subject road section the traffic signs and road markings are set along the road to remind motorists to take heed of road condition by adding warning traffic signs, reduce speed now, bend to right ahead, and some chevrons showing the deviation of route to right.

If we go over the page, 360-2 at paragraph 4(c). It referred to this section of the road -- the current speed limit is 70km per hour, and stated there are developments, et cetera, and if we go over the page, they recommend that the speed limit be lowered to 50km per hour, and then if we go down this page, there are other improvement measures over the page, suggesting about certain improvements, and if we look at some of

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the photos concerning some of these measures that have been implemented, as of to date, we see photo 13, we see the first "ahead" sign, photo 14, we see another "ahead" sign, photo 15, speed limit changed to 50km per hour, and then the marking on the road. And then photo 16, the first "Reduce speed now" sign, and then photo 17, the second speed sign, and then we can also see nine chevrons. And then photo 18, showing the location of the chevrons.

So the point that I would like to ask you is, if the Transport Department wants to do something, they can, because within two months they were able to achieve this.

What is your view about all these improvements given your study on this Tai Po Road that you mentioned? Do you think all these measures are enough, or sufficient, or have you explored this?

CHAIRMAN: As I understand it, Mr Kwong, you are working on this particular section of road; am I right?

MR JULIAN KWONG: Chairman, the project, the consultancy study I'm working on, that covers roads in Hong Kong, so I'm not working on these particular improvement works, and I have not studied it in detail.

CHAIRMAN: So you don't have any problem in answering whatever the question was?

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MR JULIAN KWONG: Chairman, no problem.

CHAIRMAN: Perhaps you would reformulate the question.

MS MAGGIE WONG: Mr Kwong, we have heard some complaints -- not really complaints, but some of the other concerns expressed by the Tai Po District Council last Saturday, commenting that there are certain improvements that could be done for the latter part of this road section, and if we can pull up the map, if we can see that this road, the brown, or the brown/orange colour section is the section where the speed limit has been reduced from 70km per hour to 50km per hour, and one of the matters they raised in this section is they said that when you change the speed limit from 70 to 50km per hour, around the location of number 15 to 17, you are in effect going slightly uphill -- sorry, it is from 13 to 14, you are in effect still going 70km per hour. So if you change the limit at that point of 15, that is reduced to 50km per hour, in effect it is difficult.

Some of the comments made are because you are going uphill and you obviously have to increase your gear to go uphill, and then when you immediately go down your bus may not be able to immediately shift or reduce the speed to 50km per hour.

CHAIRMAN: Perhaps we could see a photograph of where the new speed limit sign is.

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MS MAGGIE WONG: Yes. Maybe we can pull out 15.

CHAIRMAN: Perhaps we could go back to show the photograph before, so one is coming up an incline towards the crest of the hill, and then at the crest that is the view looking down towards what is the downhill, and then the bend where the chevrons are -- and the complaint was?

MS MAGGIE WONG: The complaint was that if your speed is maintained at 70km per hour and then you change to 50km per hour, your vehicle would still be travelling at a speed that is higher than 50km per hour.

So one of the suggestions they made is whether you can pull it -- like, I think, if I understand correctly, is pull it a little bit down before you move up the hill, so that you could reduce the speed before you reach the top of the incline.

I think that's one of the suggestions made by the Tai Po District Council.

I wonder if you have any views on this.

MR JULIAN KWONG: Chairman, largely speaking it is a bit difficult for me to give solid comments on these kinds of improvement schemes. But I would to say that one important concept of highway design is to make the road as self-explaining as possible, so that we can keep the number of signs and markings to a minimum.

The reason is that the excessive use of warning

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signs can defeat the whole purpose of the signing system. But whether the signs here would be excessive, I'm not going to give comment.

CHAIRMAN: Perhaps we can have a look at them again. We have two warning signs before you get to the crest of the hill. Can we see that.

So ahead there is a 50 kilometres zone; ahead there is a 50 kilometres zone, and then we get to the crest of the hill, and we are now downhill. What is the problem about braking in those circumstances?

MR JULIAN KWONG: Chairman, I think from 70 to 50 is not a big problem for braking, but whether drivers -- our main interest would be whether drivers will really conform to the speed limit. They need a solid reason. If they can see the danger by themselves they are far more willing to slow down their vehicles.

For these types of roads, personally I would consider that perhaps a good compromise would be to have a speed limit of 60 kilometres per hour. However, we also have the thought that we do not wish to complicate the signing system too much, and that is one reason why I think the best choice which can be 60 kilometres per hour has not been adopted in Hong Kong.

And I have a bit diverged from the discussions, but my main emphasis would be that we want to keep drivers

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willing to drive at a speed which is safe. And speed limit of course is a tool which has legal status. We need to monitor the speed of the drivers, and to verify if the comments, say, from the district council, are valid.

What we are going to do, for example, is to conduct speed surveys of the vehicles to see if they truly conform to the speed limit signs. Because we want to help the drivers. We are not trying to impose something which they cannot easily comply with. Thank you.

CHAIRMAN: So what you are saying, perhaps, is demonstrated by the photos we have just seen. If you want the drivers to understand why there has been a change in speed limit, and by changing the speed limit after you have gone over the top of the hill, it shows you why there is a change in speed limit, because ahead of you is an array of chevrons and a bend, down an increased gradient. Isn't that consistent with accommodating the driver's understanding of why there has been a change?

MR JULIAN KWONG: Chairman, your observation, I think, is correct. Basically the whole idea is that any signs or any speed limit, they should appear to the driver to be consistent with an imminent hazard or change of road conditions. Thank you.

CHAIRMAN: Ms Wong.

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MS MAGGIE WONG: Another suggestion the Tai Po District Council made is adding speed bumps or adding speed humps on the road beneath. Because they considered that by doing that you would have palpable sensation that you would have to slow down, more effective than a road sign or road markings. What would you say to that?

MR JULIAN KWONG: Okay, Chairman. Speed humps come in all kinds of shapes, and some are more aggressive, and some are more gentle, but usually the adoption of speed humps on a highway has to be very carefully validated.

The main concern is that if drivers are going too fast and they are not aware of the presence of the speed hump, then they may brake abruptly or lose control. Usually speed humps have to be introduced in conjunction with speed reduction measures on the approach. And as I mentioned earlier, drivers have to see a reason why they have to slow down. Usually, according to my experience, for using speed humps on main highways, we have to especially create a zone of speed reduction prior to introducing the speed hump so that drivers' speeds would have slowed down, most of the drivers will have slowed down to not more than 50 kilometres per hour and ideally 40 kilometres per hour. Thank you.

MS MAGGIE WONG: Yes, and another topic I would like to explore with you is ISO 39001, the Road Traffic Safety

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Management System referred to in your report, at the top of page 786.

In the third paragraph you stated that:

"It is highly recommended that ISO 39001 'Road Traffic Safety Management System' will be made a requirement for franchised bus operators."

First, this ISO 39001, can you tell us whether it is widely used throughout the world?

MR JULIAN KWONG: Chairman, okay. Let me explain this. The ISO 39001 was introduced in 2012. At this moment, about 500 enterprises have adopted the ISO. Not every country. Certain countries are more enthusiastic, for example the United Kingdom, Sweden, Japan, et cetera.

So this is the fact at the moment.

In Hong Kong, as far as I understand, there have been no certification. We would recommend that this ISO is explored, because at the moment nobody has been using it, but the interesting point of this ISO is that it has been developed by top experts, and the World Bank and the World Health Organisation are supporting it, and it is based on the safe system approach.

I would like to emphasise that this ISO standard is not a technical standard. I would say that it is a high-level framework, encouraging high-level management to work towards no serious injuries and

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fatalities in road safety, as far as they can control or influence. And so that is very visionary.

The standard does not specify a particular technical system, it doesn't specify the particular monitoring system or how to achieve that exactly. So the standard itself is not adequate. It also needs to be complimented with technical systems. And that is quite agreeable.

Of course this standard is new to Hong Kong, and compared to other ISO standards worldwide, the number of certified enterprises is admittedly not as numerous. But looking at the standard, and the way it is shaped, and I have the standard here, I would like to say that the important point of this standard is its more visionary and progressive approach, encouraging the enterprises to proactively be engaged in reducing risk and reducing road accidents to the end of having no serious injuries and fatalities as the long-term aim. Thank you.

CHAIRMAN: Can you just help us with this. You say that it has been adopted by about 500 enterprises.

MR JULIAN KWONG: Yes.

CHAIRMAN: Are we to understand the adoption has been done by companies in various countries as opposed to the regulatory authority requiring it to be adopted?

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MR JULIAN KWONG: Chairman, in that case, I would like to quote from the ISO standard. My understanding is that it is targeted at any enterprises or companies which have to deal with road transport, whether that is a public transport operator, a logistics company, or any company having a vehicle fleet, a taxi company, a public light bus company.

But from my understanding, in the text, in reading the text of this document, that can also apply to regulatory authorities. But I am not too sure that at this moment whether in reality throughout the world, whether regulating authorities or similar have adopted this standard.

CHAIRMAN: Are you aware of any bus companies in United Kingdom, Sweden or Japan, the countries you mentioned, that have adopted this standard?

MR JULIAN KWONG: Chairman, I'm not aware of a particular name or company, but from some of the information I gathered, that in Japan, probably there are a few companies, but not a lot, engaged in public transport. But I think that needs to be validated. Thank you.

CHAIRMAN: Thank you.

MS MAGGIE WONG: We see from some of the documentation that KMB has been adopting an ISO standard 9001. If I may just refer you to a document. KMB-3, page 676. It is

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a 2011 annual report.

If we look at the left column, 1999, the section on 1999:

"KMB became the first public bus company in Hong Kong to receive ISO 9001:1994 certification on a corporate-wide basis for its quality management systems. In fact, KMB is the fourth organisation in Hong Kong to achieve such corporate-wide certification."

Can you tell us what is the difference between this ISO 9001 standard and the 39001?

MR JULIAN KWONG: Thank you. Chairman, while I'm not an expert in management systems, my understanding is that the ISO 39001 has been specifically written to address road traffic safety in the perspective of the safe system approach, which is being advocated by the World Health Organisation, by United Nations, and by a number of advanced countries, very serious with road safety. So this standard is specifically written to address road traffic safety as far as the organisation or enterprises can control or can influence. Thank you.

MS MAGGIE WONG: Mr Kwong, I'm going to another topic. It is about your submissions made in relation to the renewal of the licence, or your comments made in relation to the renewal of the licence --

CHAIRMAN: By "the licence" you mean the franchise?

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MS MAGGIE WONG: The franchise, and on the new franchise for bus network for Kowloon Motor Bus, it is your submission on 16 June 2016 at SEC-2, page 777.

Now, Mr Kwong, that's a document in Chinese and I believe the whole report was written in English.

May I read just the first paragraph to explain --

CHAIRMAN: So this begins at 775?

MS MAGGIE WONG: Yes.

CHAIRMAN: Where the purpose is stated to be to provide insight to further improve the performance of Citybus Ltd and New Lantao Bus under the new franchises, and reference is made to the consultation document.

MS MAGGIE WONG: Yes.

CHAIRMAN: What is the date of this document?

MS MAGGIE WONG: The date is 16 June 2016.

CHAIRMAN: Thank you.

MS MAGGIE WONG: In your first paragraph you reacted to a public consultation, and submitted a document commenting on the Administration Paper on New Franchise for Bus Network of KMB, report on the public consultation on the new franchise.

And in the second paragraph you -- I think it is not a complaint, but you made an observation that the administration paper only consists of a short paragraph on safety, with two simplified points, namely to monitor

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bus captains' driving behaviour more closely and to improve safety facilities on buses. But then you mentioned that these clearly fail to reflect the much broader issues that you raised.

Can you elaborate on what you meant by the much broader issues you raised?

CHAIRMAN: Which paragraph and which page are you reading from?

MS MAGGIE WONG: I'm reading from 778, second paragraph.

CHAIRMAN: But before we get there, but at some stage, if not now, ought not we deal with the consultation document, and what it is that Mr Kwong had to say about its emphasis? I'm looking at the second paragraph of 775. Maybe you are going to come back to it.

MS MAGGIE WONG: Yes, I will come to it now.

To put it in context, maybe if I refer you to the letter from the Transport and Housing Bureau to the LegCo.

CHAIRMAN: Is this the consultation paper?

MS MAGGIE WONG: Yes. Shall we go to the TD-3 bundle. Pages 661 to 768. This was dated, I think it is the third LegCo paper to update the LegCo on the position of franchise renewal as of February 2012.

And then this is later followed by a brief stating that the decision of the Chief Executive in April 2012

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was adopted.
But if we look at this LegCo brief, just to give the background before the 2016 paper, the introduction stated that (a):
"A new franchise ... conferring upon New World First Bus ... the right to continue operation of its bus network ... from 2013 July to 0400 hours on 1 July 2023 ..."
And then:
"A new franchise ... conferring upon Long Win Bus ... from 2013 to 2023."
Then rolling down, a new franchise for Citybus also from the same period, May 2013 to May 2023.
Then if we look over, if we roll down, it sets out all the conditions, and the assessment criteria at paragraph 4:
"To assess whether NWFB, LW and Citybus ... have been providing proper and efficient public bus services, the Transport Department has been conducting regular reviews of ... [a number of factors] through passenger satisfaction surveys, site surveys, vehicle inspections, examination of regular returns and public feedback."
Then it simply stated that in light of the assessment given in paragraphs 5 to 8 below, we consider that they have fulfilled the criteria, and the service

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performance in the NWFB include the accidents and the average of lost trips scheduled as against the scheduled buses.
If we turn over the page, the Long Win Bus and Citybus also calculated by the annual average number of complaints per million passengers, or the number of bus accidents per million vehicle-km as a basis to calculate whether the accident rate has been normal or within range or acceptable level.
And I believe you have written a few papers on this as well.
If I may take you to --
CHAIRMAN: May I just enquire this. To what is the document at MISC-2 page 775 a response? To which paper?
MS MAGGIE WONG: MISC-2 is in relation to another paper, but because that paper also referred to Citybus, so I have to put this document in context, because it also referred to the Citybus comments on the Citybus paper.
CHAIRMAN: Well, this document is dated -- 775, as I read the date in numbers by Mr Kwong's name -- 16 September 2014.
Just a moment, let's put it up on the screen.
The question I'm asking is, to which paper is Mr Kwong responding?
MS MAGGIE WONG: He is not responding to this one. This

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paper is responding to a document at page 784.
CHAIRMAN: 784 is part of the April 2018 report, is it not?
MS MAGGIE WONG: Yes. That's the 17 June 2016 LegCo report on the updated background brief on the franchise of KMB.
784.
CHAIRMAN: Of which bundle?
MS MAGGIE WONG: Of SEC-2 bundle.
CHAIRMAN: That was the bit that was missing.
MS MAGGIE WONG: I'm sorry, Mr Kwong, can you also -- I think --
CHAIRMAN: Just a moment. Are we perhaps at cross purposes?
MS MAGGIE WONG: Yes.
CHAIRMAN: Page 784 of SEC-2 addresses KMB and its franchise. Page 775 of MISC-2 is addressing Citybus.
MS MAGGIE WONG: I think I might have referred to the wrong document. The chronology is a bit -- I went wrong on this.
Maybe I should refer to this document first. It is SEC-2 bundle, at page 748. It is the consultation paper. The paper is in January 2016. If we go --
CHAIRMAN: Just a moment, please.
MS MAGGIE WONG: Yes.
CHAIRMAN: Yes.
MS MAGGIE WONG: If we go to page 748, and it is for the new franchise for bus network of the new Kowloon Bus

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Company. And at 754, paragraph 16 --
CHAIRMAN: Before you move on. 748 is the discussion paper for the -- the government is informing LegCo that it plans to engage with KMB to discuss the granting of a new 10-year franchise for its bus network on the expiry of the existing franchise.
MS MAGGIE WONG: Yes.
CHAIRMAN: Is that right?
MS MAGGIE WONG: Correct.
CHAIRMAN: And at paragraph 4, the -- it is stated -- is this a document from the Transport Department? Transport and Housing Bureau and the Transport Department. Paragraph 4 of this document states this:
"The Government's key consideration in granting a bus franchise is whether an operator is capable of providing a proper and efficient public bus service."
Now, Mr Kwong, that is something you take issue with, is it not, in the report that we looked at some time earlier?
MR JULIAN KWONG: Chairman, I remember that at that time government was inviting the public to give their opinion on the new franchises for KMB and separately for Citybus and New Lantao Bus.
CHAIRMAN: But the sentence I have just read out is a sentence that recurs in these proposal documents by

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government, whether or not it is KMB or Citybus.
So the issue you were taking in MISC-2 at 775 is this:
"The consultation by government states that ..."
You then quote what I have just read out:
"The Government's key consideration in granting or extending a bus franchise is whether a grantee is capable of providing a proper and efficient bus service."
Then your observation:
"We are concerned that other important values, notably road safety ..."
The first one you put down:
"... quality of service, environmental friendliness, and social responsibility, are not mentioned."
That's your first response, is it not, to the way in which Government consults on renewal of a franchise.
MR JULIAN KWONG: Chairman, yes. Because we didn't see the word "safety", we were not sure whether the word "safety" has been embedded into the word "proper". We didn't know. But in any case, from what I interpreted from the document, at that time we were concerned that safety may not be a major issue to address, which is why we compiled a number of comments for them to consider. Thank you.

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CHAIRMAN: And of course there were the different franchises, on the one hand, if you like, the Citybus group, and then on the other hand the KMB group.
So Ms Wong, which one are we going to?
MS MAGGIE WONG: Shall we go to KMB first now that we are on this document, and I found -- I apologise for that, Mr Kwong. I found your Citybus submission in relation to that, but we'll come to that later. Now that we are on KMB we will deal with KMB first.
If we may go to KMB's submission where you respond to the administration paper in MISC-2 page 770.
The first matter is at 770, below the paragraph:
"Road Safety is of Paramount Importance".
And you mention that in clause 6(c) of the consultation document:
"... [it] indicates that KMB's accident rate was 2.95 accidents per million vehicle-km which is lower than 4.16 of the overall industry performance. While this indicate better overall performance of KMB, we consider it grossly inadequate to look at a single parameter ie accident rate ... to conclude on KMB's safety performance. Due to the scale of its operation, KMB accounts for more than half of the bus-related casualties. This justifies a major effort to further bring down the casualty toll.

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It will be necessary to analyse the number and rates of KMB buses involved in fatal and serious accidents, pedestrian accidents, multi-casualty accident ... from a much wider perspective. It is also important to identify and address any major safety risks involving KMB's operation."
Now the observation you made is it is not fair, if I put it correctly, to simply look at the accident rates, because it is just a single parameter. You have to look at the broader picture. Is that what you are suggesting here, first?
MR JULIAN KWONG: Chairman, yes. This is the case. And I have demonstrated this in our report, the report on bus safety we submitted to the review committee.
I have compiled some tables in this report, and I have expanded to using other rates, for example crash involvement rate per million passenger trips, for example pedestrian injury rates per vehicle-kilometre, number of serious injuries per million vehicle-kilometres, number of fatalities per vehicle-kilometre or per passenger trip. So the whole idea is if we want to understand the current pictures of road safety we need to look at multiple parameters.
And that is the whole idea. Thank you.
MS MAGGIE WONG: In this report, I think if I would like to

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go to a few recommendations that you made. The first is page 772 --
CHAIRMAN: Before you get to that. You expand on why it is necessary to look at multiple parameters, do you not? When, for example, you look at rear-front and junction collisions?
Perhaps, Ms Wong, would you be kind enough to read that out?
MS MAGGIE WONG: Yes. You stated:
"Given the prevalence of bus routes using high-speed roads and expressways, KMB buses are particularly susceptible to rear-front collisions involving multiple casualties. During the three-year period 2011 to 2013, there were over 40 multi-casualty crashes each with 5 or more casualties involving KMB buses. Historically, a single event with more than 100 casualties has been recorded. Such collisions could lead to very severe casualties, especially for passengers taking up certain seats, eg upper floor front row. Furthermore, these events often put enormous strain on the emergency and medical service. Nevertheless, such events would only be classified as a single accident and therefore their severity cannot be reflected in the accident rate. In July 2015 alone, there were at least three multi-casualty collisions involving KMB buses resulting

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in 45 casualties."
CHAIRMAN: And that is one of the reasons, is it, Mr Kwong, why you say you must look at multiple parameters?
MR JULIAN KWONG: Chairman, yes. That's true.
MS MAGGIE WONG: You made a few recommendations. The first one is at page 772. You stated that:
"We recommend that past accident data and potential safety risks of bus operation are studied in detail, with a view to identifying opportunities for improvements under the new franchises. Government should take the lead to emphasise the importance of road safety of bus operation. The franchise requirements should incorporate these aspects in addition to proper and efficient service. Consideration could be given to rewarding the bus companies for achieving pre-defined goals, such as reduction of certain accident types by 20 per cent per year."
This first point is that it reinforces that you shouldn't look at one accident data, but look at whether it involved multiple casualties as you mentioned in relation to the rear-front and junction collision; is that correct?
MR JULIAN KWONG: Chairman, that is correct.
In the way I work, I always like to understand issues in a more comprehensive way. Because that is

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critical. It is critical to, first of all, understand the overall picture, and secondly, that is crucial to the formulation of strategies and measures. And in this respect, I wrote those recommendations including mentioning something like rewarding bus companies -- that is just a suggestion -- the reason being that in all these letters, or submissions to government, or LegCo, we wish to encourage those responsible or involved in bus operation. We are not trying to make everything negative. We need to encourage the people working in it, we need to motivate them. That would be far more sustainable. Thank you.
CHAIRMAN: How do you envisage that a bus company might be rewarded for reaching a pre-defined target?
MR JULIAN KWONG: Chairman, that is only a suggestion. We have not gone into the details of the mechanism for rewarding. But the whole idea is that we need to encourage bus companies and encourage bus drivers for a good reason.
CHAIRMAN: Do you have in mind a financial reward, or some other kind of reward? Good Citizen of Hong Kong, or something like that. Or money? What do you have in mind?
MR JULIAN KWONG: Anything which is reasonable and which works I think can be considered. Thank you.

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CHAIRMAN: The opposite of reward is penalty. Do you consider that that would be appropriate. If you fail to reach a pre-defined target, for example, accident rate?
MR JULIAN KWONG: Chairman, penalty is also a possibility for sure. But I would also like to emphasise that we understand that not every accident is the responsibility of the driver or of the bus company. An accident may be due to third party, or that may be due to a combination of causes which several parties to have bear the responsibility for. So penalties can be useful in certain circumstances, but whether it is fair I think we still need to look at it seriously. Thank you.
CHAIRMAN: Are you aware that in Singapore the Land Transport Authority has a penalty accident rate provision in the franchises they grant?
MR JULIAN KWONG: I'm not aware of that.
MS MAGGIE WONG: If we go on in the middle paragraph, you make reference to the safety performance of bus companies, as to the modern approach to be introduced, how to assess the safety management performance.
And you make two recommendations in this section. It is first to introduce or encourage the bus company under the new franchise agreement to adopt a more advanced system towards the ISO 39001 standard.
And second, the government is to collaborate with

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bus companies to study bus accidents and risks in detail with a view of setting targets of accident reduction.
I believe this is not the first time you mentioned this 39001 standard to the government, but in relation to the new franchise to KMB you specifically raised this with the Transport Department to incorporate this requirement to the franchise. Can you confirm that?
MR JULIAN KWONG: Yes. But I think this is not the first time we mentioned about the ISO standard. What I have been trying to do is to encourage them at least to look at it and to study whether that should be adopted. Bearing in mind that, say, if they have an equivalent system then maybe that is fine. But the main reason is that the standard is based on the safe system approach which is the latest thinking in many advanced countries, and also that it is progressive. It looks at the ultimate elimination of serious injuries and fatalities. Thank you.
MS MAGGIE WONG: And the third one is in relation to the black box. And if we go down to the bottom, bus safety, driving standard, if I read the whole section:
"It would be fair to say that many public bus drivers are professionals and are performing reasonably well. However, this does not necessarily imply that risks have been minimised ... a certain proportion of

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bus drivers do behave aggressively and dangerously, contributing to undue risks. Clause 8(d) of the consultation document states that KMB has completed retrofit of speed limiters and black box ..."

But then you commented this line:

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

And then over the page you stated that:

"We wish to point out that the urban speed limit of 50km cannot be taken as the golden rule."

And the weight of the bus. And then there came the recommendations:

"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."

You stated a number of key monitoring controls. One of them include acceleration and deceleration characteristics. And you refer to a British Columbia Transit Infrastructure Design Guidelines.

Can you first of all explain this? What is meant by acceleration and deceleration characteristic, making reference to this British Columbia Transit Infrastructure Design Guidelines?

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MR JULIAN KWONG: Chairman, a driver abruptly accelerating or abruptly decelerating, can cause passengers to lose balance. And another problem is some drivers similarly accelerating or decelerating in a very unpredictable way, and that is something we wish to control.

In the design of, say, the MTR trains, there are certain parameters for train acceleration so that passengers inside will not be so easily destabilised or lose balance. In bus operation there is the problem because theoretically a bus driver can accelerate or decelerate very rapidly, and the idea here is that we need to control that in a reasonable way.

Normally, I would say that there is no need to accelerate or decelerate excessively, but of course in an emergency situation, maybe the bus drivers have to decelerate very rapidly. And that is also related to the recommendation on speeds. If bus drivers are allowed to go at higher speed, then there is more likelihood that he has to decelerate very rapidly, because there are many unforeseeable conflicts, say, on the urban streets. And looking at the guidelines from British Colombia, there are certain objective values which they recommend transit buses should accelerate or decelerate at. Thank you.

CHAIRMAN: Before you move on, Ms Wong, let me ask Mr Kwong this.

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At the outset you say this under the heading "Recommendations", page 773. You have recommended that there be incorporated into the franchise requirement the need to set up a comprehensive standard and driver monitoring system using the installed black boxes.

What did you mean by "a comprehensive standard"?

MR JULIAN KWONG: Chairman, I would presume that what I meant by comprehensive standard in the text means the protocol. That is what type of speed, what degree of acceleration or deceleration bus drivers should adopt, whether that is general or route-specific. Thank you.

CHAIRMAN: And that should be a comprehensive standard, but it also should be incorporated into the monitoring system. You set the standard, and this is what you monitor?

MR JULIAN KWONG: Chairman, yes, that is the case.

CHAIRMAN: For argument's sake, the standard might be set at 0.2G for decelerating or accelerating. That might be set lower, but that's the idea, is it not?

MR JULIAN KWONG: Chairman, yes. We need to set the standard first, based on evidence base, based on the safety problems we are facing and the risk, and then we use the monitoring system to enforce it.

But to what degree we enforce, that is another

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question. Whether just occasional violations already trigger disciplinary action, that is not covered. That needs further study. Thank you.

CHAIRMAN: And this resonates with what you were saying earlier, it should be done real time, and it should be automated.

MR JULIAN KWONG: Chairman, the more automation, the more features of real time notification of course is good. But at that time when I wrote this recommendation I think the first step would be, first of all, we need protocols, and the second point is that we need better monitoring. I did not go further into the precise wordings.

CHAIRMAN: But your primary recommendation was that it should find a place in the franchise requirement?

MR JULIAN KWONG: Chairman. Yes. This is exactly our recommendation.

CHAIRMAN: Did it find a place?

MR JULIAN KWONG: Chairman, as far as I understand, probably not.

CHAIRMAN: We can investigate that on another occasion.

But I think we have used up our time today.

MS MAGGIE WONG: Yes.

CHAIRMAN: One of our members has engagements that take him elsewhere, so we are unable to carry on sitting.

As I understand it, Mr Kwong, Dr Kou, one or both of you will be available tomorrow morning, have I got that right?

MR JULIAN KWONG: Tomorrow morning it will be only me. Dr Kou has some other engagement.

CHAIRMAN: Very well. In that case, we ought to thank Dr Kou for coming today to help us give evidence on behalf of the Community for Road Safety, and we will welcome you back tomorrow morning.

Can somebody remind me what time we are sitting?

MS MAGGIE WONG: 10 o'clock.

CHAIRMAN: We tried today to get in as much as we could and sitting as early as we did and as late as we did, and it has been most helpful, so we will adjourn now, and we will resume tomorrow at 10 o'clock, Mr Kwong.

Thank you.

MR JULIAN KWONG: Thank you, Chairman.

DR KOU SIO KEI: Thank you, Chairman.

(1.33 pm)

(The hearing adjourned to 10.00 am on Tuesday, 17 July 2018)

I N D E X