

**London Assembly Transport Committee – Wednesday, 15 May 2019
Transcript of Item 9 – Tram and Bus Safety in London – Panel 1**

Florence Eshalomi AM (Chair): Welcome to our guests this morning. Our first session is going to be looking at tram safety. I would like to introduce and welcome our guests. We have Jill Collis from Transport for London (TfL), Director of Health, Safety and Environment. We have Jon Fox from TfL, Director of Rail and Sponsored Services. We have Finn Brennan from the Associated Society of Locomotive Steam Enginemen and Firemen (ASLEF) union. We also have Adrian Jones, Safety Director, First Group, and Jackie Townsend from Tram Operations Ltd (TOL), Managing Director. Welcome to all of you this morning.

Our first session will be looking at tram safety. We had the really sad incident with the Croydon tram derailment in 2017 when, unfortunately, seven people lost their lives. Following that, there was the Rail Accident Investigation Branch (RAIB) investigation, which had a number of recommendations. TfL also conducted its own investigation and also had a set of recommendations. We are going to take some questions and look at some of those.

As Chair, I am going to use my position and start on the questioning of that and ask, on the back of those recommendations, if anyone would like to give us an update and what you felt about the recommendations to date and if we are going in the right direction.

Jon Fox (Director of Rail and Sponsored Services, TfL): Shall I do that? I would like to start by putting on record that our thoughts do remain with all of those affected by this incident, and to reiterate that not a day goes past really without something coming across our desks in order to try to address the incident and the causes and the things we are doing about it, and to restate our determination to make sure that everything that we possibly can do is done to address these issues. That was a statement at the start.

We have had a number of reviews of all of the activities that we have undertaken. As you rightly pointed out, there were a number of investigations that threw up a number of recommendations. It is fair to say that the primary one is the RAIB one, which has 15 recommendations.

Just to summarise how we have progressed on those, if you take those 15, two of them are addressed at the industry more generally and can say something about those, but of the 13 that are more specific we have already completed seven of those. Of the six that remain, all of those have started and many of them are closing towards completion. Our target is that, when it comes to Croydon, we will have closed those up by the end of this year or thereabouts. We have a programme for all of those actions and activities underway. Some of them have been accepted by the regulator as closed out and we update them regularly.

Most recently, we can tell you that among the recommendations we have concluded an approach and an implementation on the glazing on trams. One of the recommendations was around how strong the glazing is, what it does and what its purpose is. We have completed our work on that. We have applied a much thicker film to the glazing on those trams and that work is now completed.

Also, I am sure you will be more than aware of the over-speeding device that it has been suggested to us that we have. We are now in contract with a provider of that. We are in the design phase, working out how that

will work, and there is a programme of activity that sees that on-tram completion by the end of this calendar year.

Those are the highlights of the latest activities that we have done. It is well documented the work over the two and a half years now that we have done on signage, on lineside works, on the in-cab drivers' protection device and a number of other things that we have undertaken. I am happy to take any questions on those, but I would like to summarise and say that we are appreciative of everyone's support to get this far, but we are quite well advanced on all of those recommendations. As Simon French [Chief Inspector of Rail Accidents, RAIB] said in his annual report this past year, he recognises the determination that we have to complete them all. He has commended us in our joint efforts.

Florence Eshalomi AM (Chair): There is good progress on that.

Finn Brennan (District Organiser, ASLEF): I would certainly be a lot less complacent than Jon [Fox] about how much progress has been made. For me, the key recommendations as a representative of the drivers, the people literally at the front end, are recommendations 11 and 12 made by the RAIB, which talk about issues around fatigue and also, crucially, a just culture.

In any safety-critical environment, the culture is the most important thing. That is not just a matter of having the correct policies and the correct forms that are ticked in the right places. It is people being confident and able to say, whenever an incident happens or a problem happens, "This is something we can learn from". If, for example, a driver makes a mistake and does something that is potentially dangerous, you need a culture where that driver can go to their manager and say, "Guvnor, I made a mistake today and something bad could have happened because of that".

If you look at the Sandilands incident, there was a precursory incident two weeks beforehand. The culture did not exist where the driver involved was able to go to a manager and say, "Something bad could have happened there", because the culture that existed was that drivers felt that if they made a mistake they were going to be blamed and they were going to be disciplined. We had a case not long before, about a year and a half before, where a driver had over-spiced and had an accident. He had not just been disciplined and sacked by the company but had been prosecuted. That fostered a culture where, if people made a mistake, they wanted to hide that mistake. If a culture like that exists in a safety-critical organisation, accidents are bound to follow. The key thing to guarantee safety for the future on Tramlink has to be that change in culture.

I do appreciate there have been some changes in senior management at Tramlink, but that has yet to filter down to the front line. The drivers booking on in the mornings are still seeing the same managers who still treat them in the same way.

Equally, with the recommendations on fatigue, some progress has been made on fatigue and we are discussing new rosters with the company at the moment and making some good progress on that, but I would argue that all the company has done is the very minimum asked for in the recommendations.

I will give you a very practical example and, again, the in-cab Guardian Device comes into this. All that device really has done is to spend a lot of money telling us something we already know because guess what? If someone has to get up at 3 o'clock in the morning to go to work, travel in to work, spend four and a half hours driving, have something to eat inside half an hour or so, they are going to start to feel sleepy as they digest the food. I am sure any of you have had the same experience driving a car up a motorway, etc. If you were driving

a car, the advice would be to pull into a service station, have a nap, etc. Of course you cannot do that if you are in charge of a vehicle with people behind you.

I do not believe the culture exists where someone can come into work and say, "Actually, last night my child had a toothache. The neighbours were having a row. I did not get a proper night's sleep. I really do not feel well enough to do my duty this morning because I am tired", and be treated with sympathy and support. Actually, the most likely reaction is going to be, "Are you going sick, then?" Unless we have a culture where people can be completely open and honest and feel supported, we are not going to crack the issue of safety.

Florence Eshalomi AM (Chair): Just on fatigue, the Office of Rail and Road (ORR) referenced really good practice guidance. Are you saying that TOL is not adopting that and taking some of that on board?

Finn Brennan (District Organiser, ASLEF): TOL has not done anything like enough yet to change the culture. I accept that cultural change takes time and new management has been brought in at the senior level, but a hell of a lot more has to happen to change that culture. TOL are clearly aware that there are a lot of eyes on them and are taking the steps that they are being pushed to take and we are making some progress, but there is a long way to go to build that just culture with proper guarantees on safety.

Florence Eshalomi AM (Chair): Thank you. Adrian?

Adrian Jones (Safety Director, First Group): Can I answer that, alongside with Jackie as well? Can I firstly, before I start, reinforce what Jon [Fox] said earlier on? Everybody at First Group was deeply shocked and saddened by the tragic incident and we want to reiterate our condolences to all the victims, their families and friends, and anyone injured or affected by the incident. We are committed to work with TfL and work tirelessly to adopt the recommendations from the RAIB investigation. Certainly in the areas specifically for TOL we have made extremely good progress.

I do not disagree with Finn [Brennan] that a just culture is extremely important. We know that. Across First Group, safety is a personal core value for us all and we do adopt a real culture of safety.

If I could invite Jackie to speak bit more specifically about what has been done to promote particularly reporting of incidents and people feeling able to report incidents, that may be helpful.

Jackie Townsend (Managing Director, Tram Operations Ltd): As you are aware, Finn and I work very closely with each other, as we do with Unite. For anybody who has done any investigation into a just culture, it takes about three years to actually embed that into any company and so we are at the start of all that.

What we have agreed with the trade unions is an error and violation policy because Finn is right. We had four surveys done on our drivers by the British Transport Police, the ORR, the RAIB and also our own staff satisfaction survey and our drivers were very critical of the environment in which they worked. You have to accept all of those things from the survey.

What we have done is that we have done an error and violation policy so that anybody who is involved in any error - and that is any operational incident, anything - is done on a development process. We develop people and we give them competency training. That is how it is dealt with. There is no discipline at all in TOL on anybody who makes an error.

Unfortunately, if they are involved in a violation where they have purposely done something, that is a violation for which they will be disciplined. That is much easier for the drivers because they now understand what the difference is - most of them - and it also helps my managers, who understand the difference because that was the problem. The perception was that if a manager liked you, you got off, and if he did not like you, you did not. Whether that was true or not true, perception becomes reality. We have investigated that.

We did some work about fatigue and if people are fatigued, but we have had a few drivers who have rung in and said, "I have had a really bad night", and we have accepted that they are not coming in and they are still paid. It is not as though we do not pay them, but very few do that. Our managers said, "If you allow them to ring in and say that they are tired, they will all ring in". I have to tell you that people do not do that, and so we have all of that.

We are on a journey, but we have started well. Our communication is much better with the staff now. We have a monthly communication with them called *The Loop*, which tells them all about safety and the targets against what incidents we have had for that period. It tells them about our performance. It tells them about any incidents and what is happening within TOL. Also, we have a magazine that comes out every three months, we have safety alerts, all of those things operating, which we share with all of our staff, not just with the drivers but with everybody else who works at TOL. That is becoming more effective. We have our Critical Incident Reporting System (CIRS), where they can report any incident, and also the First Group safety report, which is all anonymous.

For any driver who has any incidents, especially if we are talking about fatigue, we have introduced a machine on this tram that alerts any driver for microsleeps, drowsiness, distraction and over-speeds of over 70 kilometres an hour. From that information we are able to draw some really important information about time of day, driver, duties, location where these fatigue incidents happen, which is why when we were introducing these new rosters, I believe it was the first time in this country that rosters had been based on the information from our own drivers about fatigue. We have incorporated all of those things: the ORR best practice, the location of these, the time of day.

One of the things about the rosters is that you need a break within three hours of booking on because, as Finn says, if you come on at 3 o'clock in the morning, you probably have not had breakfast and you probably have not had a drink. What do you think is going to happen? We are incorporating all of those things.

I am quite excited about the work that we are doing at TOL because it is innovative. We are sharing that across industries - bus, trucks, national rail - and the information we are getting, but we need the data to be able to work with this. We have been doing this for about a year to get the correct data to be able to manage these things. We are beginning to get more and more data that enables us. If any driver has any issue, we work with them on a plan individually. We work with our occupational health. We have actually identified a couple of drivers who have medical conditions. We have had two with sleep apnoea, which they did not know they had. Another driver had an underactive thyroid but she had not been for a blood test and, basically, this identified that she had a problem. She has now gone back and upped her dose of her thyroxine. It is not a punitive thing. We never discipline anybody for any of this. This is about helping them to live their lives.

One of the things that we are planning to do in the next few weeks is to have an open day with all of the families of our tram people to show them the work we are doing with fatigue and also to explain to them about their circadian rhythms. People are either owls or early birds and your body just has to go with all of that. It is an area with fatigue that the transport industry has not done vigilantly before. It is very new. There is not a lot out there and we are really making inroads into what it means.

Of course the other issue is that people cannot differentiate between tiredness and fatigue. Fatigue is a chronic issue. It is not being tired. If you are on a shift work, you are prone to chronic fatigue and those are the issues that we are looking at. I am very happy for the Assembly to come to TOL to see what we are doing and the work that we are doing if you wish to.

Florence Eshalomi AM (Chair): That is great and we will definitely take you up on that offer. Before I bring in my colleague Assembly Member Bailey, one of the things I wanted to add was that it is really tragic what happened with the derailment and the deaths. Coming back to some of the points that Finn mentioned, there is this culture which in essence is something that would have been happening over the years.

Had management been responding to that and taking note of some of those concerns coming forward? It is really great that there is action and a programme in place agreed with the staff to address that going forward, but looking back, were there things that maybe could have been signalling points and flashpoints that you could have picked up maybe earlier?

Jackie Townsend (Managing Director, Tram Operations Ltd): I was not the Managing Director of TOL at that point and so I cannot really say that. I was brought in after the incident.

Florence Eshalomi AM (Chair): That is fine.

Jackie Townsend (Managing Director, Tram Operations Ltd): All I am saying about it is that all I have done is to build on what was already there. Yes, there were things, if we look at anything, that were not right --

Florence Eshalomi AM (Chair): Maybe Adrian might be able to come in on that point.

Adrian Jones (Safety Director, First Group): I became Safety Director in 2015 and so that was fairly early. There were not any indicators that would certainly come up at group level that would highlight a cultural issue at TOL.

Jon Fox (Director of Rail and Sponsored Services, TfL): If I might say in terms of the wider transport industry and the so-called just culture of interaction, listening and working out the best outcomes, it is an immature place for the whole of the industry. What we have learned here is how to do that a bit better. Finn [Brennan] might say, "You should have done it", and you might say, "You should have done it", but nobody is really world-class at this at the moment. We are in this learning together. That is a good place to be and we need to share that a bit more because, whether it is national rail, international rail or international transport, there is not a lot of best practice in this area.

Finn Brennan (District Organiser, ASLEF): The airline and nuclear industries, clearly, are leaders in this. In the rail and transport industries and in Tramlink and a slightly different place when Jill [Collis] and I were working on the London Underground, there is massive resistance by many layers of managers to it because many managers at a lower level have come through and bought up the culture where they see the role as disciplining the people below them rather than leading them. There is huge work to be done but the impetus for that cultural change has to come from the top.

I do find myself in an almost symbolic position here in between TfL and First Group because of course one of the other issues involved in the safety management down there is the interaction between the two parts.

There was a classic example sometime last year when new signage appeared on the system put up by TfL, which was quite a surprise to the people working on the Tramlink system at the time because they simply were not communicating properly with each other. I hope that has improved but there is a long way to go.

Shaun Bailey AM: I want to focus in on this area of culture because of course you seem to have had this system changed but, if I follow Jackie's [Townsend] comment, it takes three years for these things to come through. That means we are supposedly going to be in three years of poor culture. Is there anything you have to speed up that culture?

If I go to Finn's point, it seems like you are very actively changing the culture for the drivers, which is correct, but what are you doing for the management? How are you affecting their training and affecting the collective responsibility around safety? Correct me if I am wrong, but it would seem that traditionally the safety response has been for the driver. Is it now seen as for everybody else? Is that something you are working on?

Jackie Townsend (Managing Director, Tram Operations Ltd): One of the things that came out of a couple of the surveys was the relationship between the driver and the controller. That was not a great relationship. What we have done is the drivers no longer report to the controllers. They report to the duty managers, who are above the controllers. What we are doing is we are developing each of our managers. TOL is very small. There is only 236 people and do not think I have hundreds of managers. Every one of them is on a development course about leadership, about managing, about coaching, about mentoring and how to talk to each other. I have to say that I occasionally experience some very strange conversations between the controller and the driver both really talking at each other and not to each other. It is quite good that they are taped calls so that you can say, "Who do you think this is?"

We are developing how to investigate operational incidents and what questions to ask. We now have more assessors who will develop these drivers. Every development programme is bespoke to that driver and the managers are part of that development plan. Each duty manager has a group of their own drivers so that they are responsible for that group of people, for their welfare and also for developing them going forward. Everybody has a personal development plan.

What we are doing is we are not just putting everything on the drivers. We are saying to our managers, "You need to start managing. This is not about disciplining people". I have to say that we discipline very few people in any year, but if they have been involved in a violation, absolutely that needs to happen. Our managers also need to understand why things happen to people. As Finn said, the culture before was, "Actually, I am not going to believe you", but we are teaching them how to do that.

We also have Be Safe in First Group as well and that is about having conversations with people and that really works well. Everybody knows that safety is at the heart of everything that we do within First Group. The whole thing with a just culture is that you have to change everybody and so we are changing everybody within TOL.

Florence Eshalomi AM (Chair): Adrian, quickly?

Adrian Jones (Safety Director, First Group): Jackie there mentioned our Be Safe programme. Aside from the bespoke training that has been done with the local managers and supervisors, we have had a programme that was rolled out across the last three years across the whole of First Group, all five divisions. We call it Be Safe. This is all about changing safety behaviours through positive reinforcement.

We took some science from some colleagues in the United States and we trained every management supervisor across First Group in how to have what we call 'touchpoint conversations'. which are really about positive reinforcement of good safety behaviours. It is a positive interaction and not an historically negative interaction. We do not go out to find people doing things wrong. We go out to find people doing things right. We try to have like a four-to-one ratio of positive to challenging conversations. Over time, that is going to change completely our safety culture right across the group and TOL is an integral part of that.

Keith Prince AM: I have a few things, unfortunately. The first one is to Jill, if I may. Are you aware of any dissatisfaction from any current or former TfL Board member on how TfL dealt with the investigations into the derailment?

Jill Collis (Director of Health, Safety and Environment, TfL): No, not about how we dealt with the investigations. We had our own independent investigation undertaken by SNC-Lavalin, which we shared with the Safety Panel, which is a subcommittee the TfL Board. We fully supported both RAIB and ORR's investigations.

Keith Prince AM: Are you aware of the letter that Michael Liebreich [former member, TfL Board] wrote to Howard Carter [General Counsel, TfL] on 13 July 2017 expressing concerns that Leon Daniels [former Managing Director of Surface Transport, TfL] was the person who reported on Sandilands, given his background as a Director of Tram Operations for over 10 years?

Jill Collis (Director of Health, Safety and Environment, TfL): I believe there was correspondence between Michael Liebreich, the Chair [of the Safety Panel], and Howard Carter, but the individual content of that and the response to that going forward is --

Florence Eshalomi AM (Chair): It may be helpful to clarify that we received an amount of correspondence from Michael prior to this meeting, which he did indicate to Mike Brown [MVO, Commissioner, TfL] that he was going to share with us. We are happy to share that with you later. Maybe you could check on that.

Jill Collis (Director of Health, Safety and Environment, TfL): Yes. I am aware that Michael wrote about the fatigue report. There was correspondence between TfL and Michael as Chair of the Panel and as a former Board member about the fatigue audit we undertook.

Keith Prince AM: Do you know who is on the Sandilands Incident Review Board?

Jill Collis (Director of Health, Safety and Environment, TfL): Yes. It is a Review Board that is chaired by our General Counsel and was set up to look at our claims, how we manage claims and progress them through and other legal issues.

Keith Prince AM: Would you be able to share with us the full members of the board? Not right now, obviously.

Florence Eshalomi AM (Chair): If you can provide that to us, that would be helpful, please. Thank you.

Keith Prince AM: I have a couple more questions, if you do not mind, Chair. On 26 June 2017 the Safety, Sustainability and Human Resources Panel (SSHRRP) was told by Leon Daniels that the fatigue audit was

“satisfactory and did not give rise to any concerns”. TfL later classified the audit as “requires improvement” and the RAIB stated that:

“The conclusions of the TfL audit are consistent with its own finding that, at the time of the accident, TOL’s management of fatigue risk was not in line with published industry practice, and that there was significant scope for improvement.”

How does that square with Leon’s comments that the audit was “satisfactory and did not give rise to any concerns”?

Jill Collis (Director of Health, Safety and Environment, TfL): When Leon was commenting, it was a progress update. The audit investigation work had just been undertaken. The audit itself had not been concluded and so it was more of a progress statement of where we were at the time in the audit. It was later concluded after we had looked at the fieldwork and the results of what that entailed.

Keith Prince AM: You are saying that it is a matter of timescales and that when Leon reported, you had not had the full report. Is that what you are saying?

Jill Collis (Director of Health, Safety and Environment, TfL): Yes, we had not had the full report with Leon reported.

Keith Prince AM: Can you tell me when you did get the full report?

Jill Collis (Director of Health, Safety and Environment, TfL): The full report was issued on 15 September [2017], I think. The fieldwork was done in June that year. The fieldwork had been finished very close to when the Panel meeting was.

Keith Prince AM: He was reporting on the fieldwork, yes?

Jill Collis (Director of Health, Safety and Environment, TfL): It was a general update on where we were at the time and the final audit report had not been concluded at that stage. There was more work to be done.

Keith Prince AM: Sure. That is a fair comment, but is it not a little strange though that the report changes significantly between the fieldwork and the conclusions? Would you not have thought that the fieldwork might have highlighted some of these concerns in order to give you the conclusions you got to?

Jill Collis (Director of Health, Safety and Environment, TfL): I cannot comment on the specifics of what Leon was thinking at the time, but the fieldwork would have flagged up issues and then we would look at them against the criteria of the audit and the ORR’s findings to come to firmer conclusions, as well as looking at whether First Group is complying with its own procedures as well. It was an ongoing process and we were getting more evidence as it went on.

Keith Prince AM: Your report was separate from the RAIB report, was it not?

Jill Collis (Director of Health, Safety and Environment, TfL): The audit report, yes.

Keith Prince AM: Finally, Chair, this is to everybody on the panel, really, but requires only a very short answer. Do you believe that TfL’s approach to the Sandilands investigation has been transparent and

satisfactory throughout this process? Are there any significant questions to answer? Jackie, do you want to kick off on that one?

Jackie Townsend (Managing Director, Tram Operations Ltd): The whole thing about Sandilands - and I do not want specifically to go into the fatigue audit and the whole thing about tram and the whole tram industry, not just Croydon, which is why some of those recommendations have gone to the wider UK tram industry - was based on line-of-sight for drivers and so the driver was always going to make the right decision because would drive in line-of-sight. Since Sandilands, the UK tram industry has reviewed its position as well as the rail regulator, which also has a recommendation out of the RAIB report. As an industry we are relooking at the whole of how tram works and in fact we have also been working with Europe as well about the tram industry. The tram itself has always been a very basic vehicle and that is why TfL, working with us, are adding extra things onto the tram to aid the driver like the emergency brake. We are introducing iTram, the glass [with film] and all of those things, which were never introduced within the tram. Other tram companies within the UK are doing those things. The fact that we also reduced the speed from 80 to 70 kilometres an hour is not just Croydon. It is within the whole of the UK industry.

After any of these tragic events, it is a real shame that we have to learn from them, and unfortunately in any of these industries that we have we all learn a very hard lesson from these things. Tram is learning from this. As the MD of TOL, everything in my power will be there so that we never, ever have another Sandilands.

Florence Eshalomi AM (Chair): That is good to hear.

Jackie Townsend (Managing Director, Tram Operations Ltd): That is why we are doing all the things that we are doing. I cannot say that we did everything right beforehand, but we have learned, and we are rectifying those and we are working together.

Keith Prince AM: Just to remind you of the question, although I appreciate the answer, the question was: do you feel that TfL's approach to the Sandilands investigation has been transparent and satisfactory throughout?

Jon Fox (Director of Rail and Sponsored Services, TfL): Perhaps if I can --

Keith Prince AM: No, let us go through.

Jackie Townsend (Managing Director, Tram Operations Ltd): With TfL, we had lots of external people doing investigations, the RAIB, the ORR, the British Transport Police. TfL with us had been co-operating with those people and TfL did its own investigation because it owned the contract on the tram. I believe that TfL could not have been doing anything differently to what it has done in the circumstances.

Keith Prince AM: That is fine. Thank you.

Florence Eshalomi AM (Chair): Adrian?

Adrian Jones (Safety Director, First Group): I can only echo what Jackie said. Since the incident, there have been thorough investigations. We have worked very closely with TfL and are committed to implementing all the recommendations from the RAIB report. In terms of relationships between us and TfL, they have certainly been satisfactory from our point of view.

Finn Brennan (District Organiser, ASLEF): Mind you, some of the public commentary on the investigation has rather got lost in the weeds and the details of whichever report and the fatigue audit, etc, and we have lost sight of the bigger picture. Seven people died that day. The driver of that tram has been arrested but still to this day not charged. It is a massive tragedy for all of the people involved. I can understand people wanting to peer into when a fatigue audit happened, etc. I am not sure it takes us much further on. We do have to look at the bigger picture and I hope we get a chance to talk more about some of the things that have been done and still need to be done.

Jon Fox (Director of Rail and Sponsored Services, TfL): I was only going to add that it feels like there is a lot of scrutiny for us from the inside and, if we try to do anything other than being transparent, that information will come out eventually. We were talking about culture earlier. In our mindset, we present what we can, do the best that we can and present the information that is available to us in the best way that we can. There is no culture that I can see of not trying to be transparent. That is a personal observation from how it has felt through the last two and a half years of this process.

Keith Prince AM: Thank you.

Jill Collis (Director of Health, Safety and Environment, TfL): Chair, I reiterate all that has been said and say as well that we have also been transparent when we have it wrong as well and explained why and tried to rectify it as soon as we could. We have been transparent throughout.

Steve O'Connell AM: Just briefly, again, I would like to register my thanks to the Committee and also to you for today's meeting and your ongoing work after an incident that was so tragic to Croydon and affected some people, particularly in the New Addington community.

This is a point that is going to be asked a bit further later, but it is this big picture point that I wanted to touch on about fatigue. I understand completely there are recommendations around fatigue, a fatigue report and a fatigue audit. It is understood that the drivers and people generally are owls or early birds and getting up at 2.30am in New Addington to go to work and to be on the tram and to have breakfast first now and that sort of stuff.

However, I would be interested at some stage during this morning, perhaps now, to touch upon something more radical about fatigue and about expectations on people, people being expected to drive at 3 or 4 o'clock in the morning. We can make recommendations and we can address it and we support the culture and that whole thing, and I believe there is a willingness across all parties, but it might be a more fundamental thing that might have cost that will change the way of working in this industry and other industries whereby people are not expected to work those sorts of hours. That might mean re-rostering. It might mean more staff. It is that big picture thing.

It may well be that we might be interested in the recommendations because there are 15 recommendations, there are eight TfL recommendations and there are other reports. This is good stuff, but there might be something more fundamental that we could do to avoid another tragedy. It is that bigger picture thing that Finn [Brennan] touched upon, particularly on the tiredness aspect.

Could anybody put any other ideas that we could have that are even bigger than the things that we touched upon? Finn is bursting to come in.

Finn Brennan (District Organiser, ASLEF): I am very glad you asked that question, Steve, because it is critical. I gave the example earlier on of someone waking up at 3 o'clock in the morning to come into work. For instance, for TfL and London Underground, the earliest time a driver starts is 4.45am in the morning. That is still too early, but we have drivers who work shifts through the night to take out the earliest trains in the morning and put the latest ones to bed. That has a resource implication. It does mean that you need to have more staff because they are doing less productive work during the night but you are avoiding having people starting at, to be frank, silly o'clock in the morning.

They thing is - and you pointed to it, Steve - these are human beings, not robots. People do have a personal responsibility. I absolutely accept that. If you throw all the responsibility back at individuals and say, "You have to get up at 3 o'clock and so you have good bed at 7 o'clock the night before", I cannot get my seven-year-old to go to bed at 8 o'clock on a summer night! The idea that an adult is going to do that on a regular basis is just not feasible with the best will in the world. Any human being has other responsibilities. They have to put their own kids to bed, not go to bed themselves at 7 o'clock every evening. It is right to say that people have a personal responsibility to report when they are tired, etc, but you have to have a system in place that recognises that human beings are doing this work.

Equally, if someone is working late shifts, is the expectation that they are going to come home and sleep through all the rest of the next day? What happens when the road is getting dug up outside or the kids wake up or the Sainsbury delivery has to be done and the dog has to be taken to the vet, all those responsibilities that people have. We have to recognise that it is human beings, not robots.

That does have a resource implication and we all want an efficient system, but unless you have enough staff in place -- and then this of course comes back to TfL and First Group running a very tight budget. They are paid by TfL. If they have to have more drivers, they are going to say, "We want TfL to pay". TfL is going to point out that George Osborne [former Chancellor of the Exchequer] took all of the money away from TfL. It is a real problem that has to be dealt with.

Steve O'Connell AM: Just briefly, could we have a brief response from either Adrian [Jones] or Jon on that big-picture piece around resource, drivers, numbers, rosters, etc?

Jon Fox (Director of Rail and Sponsored Services, TfL): I take Finn's point about night turn staff but inevitably you drive a different challenge if you have all-night turn staff. It is not necessarily popular to tomorrow go back to Finn and say, "Fine. We are not doing early turn anymore. Everyone is working nights. Are you happy with that?" There will be, equally, challenges around forcing people to work nights. Then you get into the question of how early is too early. If 3.20am is too early, what about 4 o'clock? What about 5 o'clock then? Let us say 5.30am. By the time you get to work it is 6.30am. The first train out is 7 o'clock and therefore we are not running any services until 7 o'clock in the morning? There may not be a comment or two from those who use it and --

Steve O'Connell AM: There are bigger resources. My point - and I am going to have to move it on, through you, Chair - is that it is so difficult for people who run businesses and unions to push aside that piece to say, "What will be an ideal", which is the point I was pursuing. I will leave it there, Chair, because I know we are going to pursue this further.

Shaun Bailey AM: It is a tiny thing. Just to go back to Jill [Collis] and talk about this correspondence between Michael Liebreich [former member, TfL Board] and Mike Brown [MVO, Commissioner, TfL]. On

10 August [2017] Michael Liebreich wrote to Mike Brown expressing his view that there should be a safety officer reporting directly to Mike. Do you agree with him?

Jill Collis (Director of Health, Safety and Environment, TfL): Yes, Michael did write to Mike Brown, yes, but --

Shaun Bailey AM: Let me be clear, sorry: that you should be reporting directly to Mike Brown. Do you agree with him?

Jill Collis (Director of Health, Safety and Environment, TfL): I do have a dotted line right to Mike and so I do report to Mike.

Shaun Bailey AM: Directly?

Jill Collis (Director of Health, Safety and Environment, TfL): Not directly, indirectly, but I --

Shaun Bailey AM: That is the operative word here: 'directly' to Mike. Do you think that you should be doing that?

Jill Collis (Director of Health, Safety and Environment, TfL): That is one option that is being considered, yes, or the position of a Safety Director reporting to Mike for the group, yes.

Shaun Bailey AM: OK. Thank you.

Florence Eshalomi AM (Chair): Thank you. We are going to move on. I am mindful of time, Members. In our next section we are going to delve in a little bit more - we have covered some of it - in terms of responses to the recommendations. I will bring in my colleague, Assembly Member Pidgeon.

Caroline Pidgeon MBE AM (Deputy Chair): Lovely. Before I get into that, I want to pick up maybe with Jackie and Jon. Has your approach to managing the tram services changed since Sandilands and is it now that you are managing it more like a railway service rather than a bus service? Has that fundamentally changed? Jon, do you want to go first?

Jon Fox (Director of Rail and Sponsored Services, TfL): When you have those recommendations in front of you, it makes you think differently about how we are going to manage this tramway. Unfortunately, it has taken that incident to challenge the whole tram industry, not just the one in Croydon. There are challenges and opportunities for putting different arrangements in on trams. Yes, we have been challenged to do so and so, yes, there is an element of railway thinking, you might say.

The Rail Safety and Standards Board (RSSB) was set up after the Ladbroke Grove disaster and the heavy rail industry learned from that major incident and put in lots of different arrangements. In a way, that is similar to what has happened here. Of course the Light Rail Safety Standards Board is also now set up to learn lessons not just locally in Croydon but also across the national rail industry. I am part of that setup now to try to promulgate some of the lessons we have learned. There are some lessons to be learned from national rail and we have started that and there are also lessons to be learnt sharing across the seven tramways and two light railways in the UK where perhaps that was not quite as readily done before.

Caroline Pidgeon MBE AM (Deputy Chair): Your thinking has changed as a result of this as to how you manage risks on the trams?

Jon Fox (Director of Rail and Sponsored Services, TfL): Yes, we are definitely on a journey and we are changing the way we approach things. Just look at the actions that we are taking to do so, yes.

Caroline Pidgeon MBE AM (Deputy Chair): Jackie, from your point of view?

Jackie Townsend (Managing Director, Tram Operations Ltd): Yes. From my point of view, a tram is not a bus and it is not a train, but it is covered by the Railways and Other Guided Transport Systems (Safety) Regulations 2006 (ROGS). The emphasis has been about maybe raising our game a little. All of our standards within tram that we have introduced are all based on railway, but we have to remember because we travel in the town that we still covered under the Highways Act. It is quite complex and sometimes there are things that the highways need. For example, road signs are very small in comparison to railway signs, which was one of the reasons that we work with TfL about putting the yellow - if you come to Croydon - around the signs because we cannot have railway signs under the Highways Act and we have to have authority to do that. Things that you can take for granted within rail we cannot within tram. My senior managers have all come from rail and so we have put all our standards as though we were a rail company for that, incorporating the Highways Act as well. ROGS is very clear in our minds now about everything that we are responsible for. When we have any incident, it comes under the RAIB. It is not a road traffic accident. That is the way that we behave and that is how we drive it. There is a bit of a conflict between the Highways Act and also ROGS.

Caroline Pidgeon MBE AM (Deputy Chair): Yes, it is complex but the thinking is different running buses to running rail. I agree that this falls in between but it is how you think about it.

Jackie Townsend (Managing Director, Tram Operations Ltd): Our standards are the ROGS.

Jon Fox (Director of Rail and Sponsored Services, TfL): Also, from a policy perspective, though, trams will get more expensive to build in future as a result of this and those things that happen. There is, from a transport policy point of view, an expense to set up any transport network and this will drive costs in that area without doubt.

Caroline Pidgeon MBE AM (Deputy Chair): We have talked about some of the changes and the recommendations from all these reviews. How have you been engaging drivers and other stakeholders, including passengers, in how you are going about implementing these recommendations? Jackie, let us start with you.

Jackie Townsend (Managing Director, Tram Operations Ltd): Within all of our communications with all of the staff, the revenue protection inspectors and all that as well as the drivers, we are having driver briefings with our drivers. There are two of those a week. That is mainly based on safety, but it gives them the briefings on what we are doing. We send out this monthly *The Loop* letter and, also, every driver books on at the depot and sees somebody when they come in. There is always some communication between the driver and the controller. It may not always be like nice conversations between them because at 3 o'clock in the morning everybody is a bit grumpy, but they do talk to them. There is much more correspondence.

Also, we have an open-door policy. One of the things that I have introduced since we have been there is a tea and chat with Jackie on a Friday afternoon, if you want to come for that. Quite a few drivers take that up. We

have a cup of tea and we have a biscuit. Sometimes it is a bit of cake! They tell me everything they do not like and what they do like. I have to say that that is really quite rewarding.

One of the things that we have worked with TfL about is orientation in the tunnel. I think you know that the driver appeared not to know which way he was going. Out of the drivers came the cat's eyes that we have put in the tunnel. That came from the drivers. We have put cat's eyes into those tunnels so that they can see and are oriented about which way. They have been instrumental in the lighting in the tunnels. There are lots of things that they are wanting to tell us about. They comment on how we can make things better. All of that happens.

Stakeholder-wise, we have been to quite a few scrutiny meetings at Croydon Council and given them updates and we continue to do that. We have had the Leader of the Council, Cllr Tony Newman came with TfL and met with us. In fact we have Sarah Jones [Member of Parliament for Croydon Central] on Friday coming.

We are doing work with the community in New Addington. We have to always remember that 40% of my drivers live in New Addington and so this was very personal to them. We are doing some community work with them as well. We are helping to feed the children in the school holidays and all of those sorts of things. We are doing lots of work in schools. We bring lots of groups into the tram to show them. We have opened up to the community and lots of groups come in and see us and we talk about the tram.

We have also had some of the survivors come to the tram because they want to see what we do. We are doing all of those things. We do lots of work with the Metropolitan Police Service about how we can work with them because that also includes the knife crime that we have in Croydon and we help towards that. We are opening up and we are working with TfL.

We are a community transport system, which is very different to train and lots of the bigger bus companies. The people of Croydon own that tram. I go in and talk to them on the tram and people say to me, "We love the tram". People do not love buses, people do not love trains, but people love that tram. You can see that because we do not have much graffiti. We do not have much rubbish. You go on that tram and people look after it. That is because we have to work together to make that happen.

Caroline Pidgeon MBE AM (Deputy Chair): Can we tease out a little bit more there? I am hearing everything you are saying, but you are making big changes. You are implementing these recommendations. How are you consulting drivers and also real passengers? How are you getting passengers involved in this? They may have suggestions as well.

Jon Fox (Director of Rail and Sponsored Services, TfL): One of the challenges that we had after the incident was about using passenger information and complaints from people who had written in in various forms of communication. One of the things that challenged us was whether we were really valuing that information as it came.

We decided to change the way that we listen to customers' complaints. We now have a joined-up system. It was in place very shortly after the incident. We have a process for dealing with information, particularly safety-critical information that is coming in, and we deal with that on an immediate basis. We go and check the data. We go and check the information that people write into us. We are listening. There is a report that goes around to all of us on a daily basis of all the things, not just safety things, that happen. We look at that.

In one example, last week a customer wrote in saying that she thought that a tram was over-speeding out to New Addington. We checked that immediately and could not find any evidence of it, but I wrote to her personally to invite her to come in and tell us about her experience, "It might have been a valid speed and we think it was, but come in and tell us a little bit more because you might not have had the location right and so on". It has led us to be more sensitive to what our customers are saying about what they want from the system. Also, they are our eyes and ears out there when it is not picked up in other ways what is going on. That is changed post Sandilands.

Caroline Pidgeon MBE AM (Deputy Chair): That is about people who are, rightly, contacting you with concerns, but generally is there any work? Is there any user group? Is there anything with tram passengers that you are doing to engage them with the service?

Jon Fox (Director of Rail and Sponsored Services, TfL): Apart from the dialogue with the local communities and through Travelwatch, there is not specifically a passenger group --

Caroline Pidgeon MBE AM (Deputy Chair): OK, that is fine. I am trying to clarify that. Let me come to Finn. Let us pick up how drivers are being engaged. We have heard lots of stuff about the communication and it sounds good, but it is about it being two-way and how they are being consulted on these changes.

Finn Brennan (District Organiser, ASLEF): Jackie [Townsend] and I have the pleasure this afternoon of another visit to the Advisory, Conciliation and Arbitration Service (ACAS).

Caroline Pidgeon MBE AM (Deputy Chair): Gosh. That sounds a treat, does it not?

Finn Brennan (District Organiser, ASLEF): Absolutely. After two days of strike action down there from a 90% yes vote, which tells you a little about the staff, how engaged they feel and how valued they feel. There is a huge amount to be done. There are big weaknesses in the consultation and the engagement of people at the moment. The drivers see changes as coming from above and being done to them. They do not feel that they are being involved in these discussions. The representatives do not feel that. I know Jackie does want to change this, but there is a hell of a long way to go. They do not feel they are being engaged in those discussions about what things are going to happen.

To some extent, there is a process. Edicts come down from TfL saying, "First Group, you have to do this". First Group management then say to their staff, "You have to do this". No one is really consulting the people right at the front and saying, "What impact will this have on you?" There is a long way to go on that, Deputy Chair.

Caroline Pidgeon MBE AM (Deputy Chair): What about the specific issue of the new technology and the Guardian Devices? How are drivers feeling about them now?

Finn Brennan (District Organiser, ASLEF): There is certainly a lot less suspicion than there was initially, but it was a classic example because something was imposed from above rather people being engaged. The first thing people heard about it was when it started to appear. That is the classically wrong way to do things. If you want to bring change in, you have to bring your people with you and that means detailed consultation with the elected health and safety reps, making sure they are involved and part of the process. They then become your ambassadors in the mess room and on the front line reassuring people. We had to go through a very painful process and still are to some extent with the Guardian Device. That could have been avoided if

consultation had been proper in the first place. Again, to a large extent, it was driven by a kneejerk reaction. Something had to be done. TfL says, "We will do something", and people did not think through the process.

Jon Fox (Director of Rail and Sponsored Services, TfL): We strike a balance. Would we have anything in a cab today when you challenge us about that or not? Getting it right is a real balance to strike.

Caroline Pidgeon MBE AM (Deputy Chair): You are leading the way for trams across the country in terms of trying to get this balance right. Finn, is there other support that you think tram drivers need other than what has already been put in place? I realise that they are at an early part of the process and you have your two positions, but it sounds like you work fairly well together on both your sides. Hopefully, things will improve. Is there something else that you think tram drivers need in terms of support that we should be aware of?

Finn Brennan (District Organiser, ASLEF): It is getting to grips with changing the culture down there and understanding that people are human beings. It is our responsibility as a trade union to keep hammering management with this.

Some of this stuff is quite small. Dealing with issues around fatigue, when visiting the mess rooms down there, if you are tired on your half-hour break, you should be able to sit down in peace and quiet and have a 10-minute nap. That is a really good idea. There are no facilities for people to do that in Tramlink. There is hard seating in the mess room. It is small stuff like that. The new health and safety representative is now engaging globally with these issues and making those changes.

In terms of support from outside, all I would ask is that when we do have unfortunate events like having to be on strike, which we want to avoid, there is an understanding that this does not come from our members being greedy or lazy. It is because they have real issues and concerns and we want to work with the company to resolve them.

The biggest thing I would ask for, though, is a closer dialogue between TfL and First Group and also involving us in that dialogue. The situation at the moment is TfL does not speak to me about trams because they think that is the business of First Group. We are very happy to speak to anyone to make things better and we would like to have those tripartite discussions involving TfL. If you could knock their heads together to make that happen, it would be really helpful.

Caroline Pidgeon MBE AM (Deputy Chair): We try. I had one more question. A lot of my questions were on fatigue, which we have already covered, but I wanted to pick up with you, Jon, the issue around the windows and doors and the passenger containment issue. It says that you were putting extra film - for want of a better word - over the windows to help with that. Did I hear you say that that is now complete? Your target was March [2019].

Jon Fox (Director of Rail and Sponsored Services, TfL): It is, yes. It is now complete.

Caroline Pidgeon MBE AM (Deputy Chair): Also, the investigation said that there should be further research to look at improving passenger containment. What is happening with that? Is that ongoing?

Jon Fox (Director of Rail and Sponsored Services, TfL): One of the things that we had to think through was that one of the other recommendations aside from the containment one was around having an efficient evacuation process. One of the ways to improve containment is to improve the calibre of the glazing and go to

lamination or whatever, but the challenge there was that if you put impregnable glass on the side of a tram and then you want to evacuate, how does that work? Are you creating a bigger risk by following one recommendation and not the other? We really had to think through that quite carefully to make sure we were not creating another problem by solving one. What we came up with was this film solution.

Also what shows some of the complexity is that when we did some of the testing around whether the body shell would be able to take heavy laminate glass, the technical response was that, no, it would not and we would start to get cracking and disintegration of the body shell on the tram if we put heavy laminate in. Again, by solving one problem, we just created another. We would be withdrawing trams from service and having even more overcrowding on certain days at certain times. It took us a while to come to the right conclusion for the whole network in that regard.

In terms of what we can do for the future, we will need to replace the Bombardier trams, which are two-thirds of the fleet. That was the tram type involved in the incident. We will put into the specification for that when we go to market - to consider a more durable form of containment on the windows and that means building a stronger body shell, probably, in order to do so. That is all part of that debate. We have shared that with the tram manufacturers because there is not laminate glass in trams. The body shells are not strong enough. They are not built for that.

The other thing about it, of course, is that we do not want to be there again in any case and so it is all about prevention of that returning and that is where a lot of the focus has been.

Caroline Pidgeon MBE AM (Deputy Chair): It is not only specific research. The research really was you looking at what the options are and that is what you have now implemented?

Jon Fox (Director of Rail and Sponsored Services, TfL): We did some destructive testing on the various forms of glazing and so on.

Caroline Pidgeon MBE AM (Deputy Chair): Is there any report on that that is available for us to look at?

Jon Fox (Director of Rail and Sponsored Services, TfL): Yes, we shared it with the rest of the tram industry and so if you would like that --

Caroline Pidgeon MBE AM (Deputy Chair): That would be helpful. Is this being now applied to buses as well or considered for bus safety?

Jon Fox (Director of Rail and Sponsored Services, TfL): We have not had that dialogue yet but we have to go there in terms of considering it. Straight up, the focus has to be on prevention.

Caroline Pidgeon MBE AM (Deputy Chair): Yes, of course.

Jon Fox (Director of Rail and Sponsored Services, TfL): When you are into mitigation, you have lost the safety argument.

Caroline Pidgeon MBE AM (Deputy Chair): Fair point, yes.

Jon Fox (Director of Rail and Sponsored Services, TfL): It really has to be there. If we are talking about choices, in my view, let us put the money into prevention rather than into mitigation.

Caroline Pidgeon MBE AM (Deputy Chair): Thank you.

Steve O'Connell AM: Some good points have been covered. I first of all would like to take the opportunity. Having given Finn almost a blank cheque on extra resources, I will challenge you back on the initial resistance from your members on the Guardian Device piece because this was an intensely emotional time in Croydon and that response by the union was not well received. That needs to be noted, although I do understand the points that you have made.

Finn Brennan (District Organiser, ASLEF): Absolutely. In response, it was an intensely emotional time because drivers were picking up the trams in New Addington and being abused by people on the streets.

Steve O'Connell AM: That is unforgivable.

Finn Brennan (District Organiser, ASLEF): Absolutely. Obviously, it was only a tiny minority of people. It was an incredibly emotional time for the drivers there as well. The drivers felt that they were being blamed and at the time they did not feel they were being supported. That fed into the resistance to the Guardian Device. If the preliminary work had been done of engaging people, getting them involved, demonstrating the safety first of all, all that problem could have been avoided.

Steve O'Connell AM: The point needs to be made that there was a need and a demand, quite properly, for action. Often companies and institutions are criticised for delay. Any delay in in the need to make safe the trams was not welcome at the time. We have rehearsed that and it is understood, Finn, but I just wanted to relay that.

Finn Brennan (District Organiser, ASLEF): I hear your point, but we still remain to be convinced that the Guardian Device has a real contribution to long-term safety.

Steve O'Connell AM: That will be tested.

I welcome talking about prevention as opposed to reaction. Any new model of tram and other vehicles will have that containment piece because that was the real tragedy around the whole thing.

Really I wanted a couple of more questions and I wanted to also for the record thank the work that particularly Jackie [Townsend] has done with the community in Croydon. I know you have been out in Croydon with the Leader and the other leading politicians and the communities in giving reassurance over these last two years. I would like for the record to be grateful for that.

We have touched upon incident reporting and investigation already. Probably this is for Jill initially and possibly Adrian. How have procedures been improved about the whole incident investigating procedure? Is there a better procedure now for reporting by passengers and also by staff and others and managers as well? Is there a better system?

Jill Collis (Director of Health, Safety and Environment, TfL): As Jon has already mentioned, we have made it easier for customer complaints to be raised. We have reviewed that procedure. It is a lot quicker. It is prioritised. We can take action on high-priority incidents. That has definitely improved. There are some tangible benefits coming out of that. TfL gets to see all the complaints that come in and so we can look at patterns and trends. Incident investigation has improved.

Steve O'Connell AM: Yes, there is a better flow of information. We have heard examples of passengers coming forward. We are hearing that there is an evolving better flow of information between drivers and managers and leaders in the organisation. That is to be welcomed.

Are there any other lessons to be learned that are not necessarily specific in the recommendations? We talked about an idea around resources and staffing and I would like to put that on record as something that might need to be as a much bigger picture, above the pay grade of perhaps even the people in this room. Are there other things that could be suggested?

Jackie Townsend (Managing Director, Tram Operations Ltd): Our governance procedure has been reviewed and every period we have a health and safety meeting between London Trams and us. Every single incident that has happened is reviewed and actions come out of there. There is two-way traffic between incidents that happen within TOL and within London Trams and we discuss those each period and resolve those issues.

Steve O'Connell AM: That was not in place before?

Jackie Townsend (Managing Director, Tram Operations Ltd): They still had the health and safety bit, but there was not a level two that we have now, which is where Mark [Davis, General Manager of London Trams, TfL] and I meet. Anything that cannot be resolved at those meetings then comes to the General Manager and me. If we cannot do that, it goes to Jon [Fox] and Steve Montgomery [Managing Director, First Rail, First Group]. There is a clear understanding now of how we resolve issues. I have to say that it is very effective and we have moved on and have resolved many issues around the running of the tram because of these very effective meetings.

Steve O'Connell AM: There will be that expectation. Lastly from me, we have heard about the support for the families, bearing in mind that, as Jackie so profoundly put it, the trams are very much a community because the people in New Addington use them. They also drive them and sometimes they may even be controllers or the managers. They are wonderful people in New Addington. It is important that those families have been supported all the way through and I thank all the organisations here to do so. I would urge you to continue to do so and I assume you will be continuing to support the families. Is that fair to say?

Jon Fox (Director of Rail and Sponsored Services, TfL): Yes.

Steve O'Connell AM: That 'yes' is enough from me. Thank you.

Florence Eshalomi AM (Chair): Great. I am mindful of time. We have one more section before we change over, Assembly Member Prince?

Keith Prince AM: Just one quick question, if I may. As we are talking about the RAIB report - and this question is to Jill - do you think the report would have been enhanced had the RAIB received the TfL fatigue audit before its completion?

Jill Collis (Director of Health, Safety and Environment, TfL): If you look at the revised second version of the RAIB report that it put out, it did say that what information we provided to them did not significantly change anything. What both we and Todd had provided during the course of the investigations just confirmed what they had already discovered. It reinforced their own findings.

Keith Prince AM: Can you explain exactly why the report was not sent in advance?

Jill Collis (Director of Health, Safety and Environment, TfL): It was not sent as quickly as it should have been because it was a very regrettable genuine mistake. As soon as we found out we had not done it and that there was an oversight, we corrected it and sent it, but it fell in a gap between people who thought it should have gone out. It was just an honest oversight. Then, when we investigated that and found out it was, it then got corrected and we sent it up again.

Keith Prince AM: That was a genuine oversight on two occasions? It was asked in September [2017] that it be sent and it was then asked again in November that it be sent. Was that two genuine mistakes?

Jill Collis (Director of Health, Safety and Environment, TfL): We were asked in the January meeting to confirm whether we had sent it and it was then that we discovered we had not sent it.

Keith Prince AM: Let me help you.

Florence Eshalomi AM (Chair): There was a request put in twice.

Keith Prince AM: It was asked for on 9 September and again on 22 November.

Jill Collis (Director of Health, Safety and Environment, TfL): On 22 November we sent the report --

Keith Prince AM: We requested on 22 January [2018] whether it had been sent or not.

Jill Collis (Director of Health, Safety and Environment, TfL): Yes. We believed we had sent it and, when we investigated, we found that we had not. It was an oversight and it was a gap and we are very sorry that we had done that. We did apologise at the time and then corrected it after the January meeting to send it, but it was an honest oversight.

Keith Prince AM: OK. Thank you.

Florence Eshalomi AM (Chair): Thank you. Our last section on trams is looking at Vision Zero. Again, I was quite surprised that walking around the tram infrastructure was not discussed as part of the safety recommendations. I am going to hand over to my colleague Assembly Member Russell to lead on this question.

Caroline Russell AM: Yes. These questions are for TfL and so for Jill and Jon [Fox]. At TfL you have your Vision Zero action plan but there are no specific targets within the Vision Zero action plan for trams. Just generally, how do you think Vision Zero is shaping TfL's approach to tram safety?

Jill Collis (Director of Health, Safety and Environment, TfL): The Vision Zero philosophy is about TfL and how we manage safety. It is making sure that everybody understands that no fatality or serious injury is acceptable. If you look at what Jon was saying and look at the investigations and what Jackie [Townsend] has been saying, it is all about preventing accidents and working together to prevent them. That is very much core to how we are managing recommendations from the RAIB report but also more of our tactical safety improvement recommendations. It is making sure everybody understands why it is important in the wider community as well and all that engagement and really driving the Vision Zero.

Also, our regulator has a very similar vision, which is for zero fatalities and major injuries from industry-caused incidents. The regulatory side of trams and how we are being managed and how we get scrutinised is very much aligned to the Mayor's and TfL's Vision Zero philosophy.

Caroline Russell AM: Thank you. Jon, do you want to add anything to that?

Jon Fox (Director of Rail and Sponsored Services, TfL): It is a fair point. Should trams - and other modes, for that matter, apart from road-based ones - be more present in the Vision Zero programme? That is something that is worth taking away to see if we should make it more obvious that it is. The reality is that in the regulated environment in which we operate, we have no choice but to be zero-tolerant of killed and seriously injured incidents (KSIs). It is there, it is absolutely there, but perhaps we could articulate it a bit better.

Caroline Russell AM: When we think about people, for instance, walking and cycling around trams, there have been collisions in the past. A cyclist at the Morden Hall footpath crossing back in 2008 was killed in a collision with a tram and the RAIB suggested that there should be some work done to the foot crossings to make sure that it was more obvious what needed to happen. There was also an incident in 2013 when Roger De Klerk was killed. His bike got stuck in a tram line and he then fell into the path of a bus. It took five years after his death for related safety improvements to be made.

I suppose the question is: what more can be done to improve tram safety, particularly in relation to walking and cycling?

Jon Fox (Director of Rail and Sponsored Services, TfL): One of the things that we have been looking at across TfL is the impacts between vehicles, pedestrians and cyclists and how that environment can be improved. One of the things that happened when we bought the new trams on the tram network was that the modern Stadler trams have an under-run protector. That is a device that stops objects or people falling underneath the wheels of the tram. That was not on the original design but was provided as an option by the manufacturer when we bought the Stadler trams. When you think of the profile of the tram and making that profile more deflective perhaps for those incidents, that is some of the work that we have started that I am sure you will hear about in the bus environment too. That has already been there. We have already started thinking about how to work with the environment not just inside the tram but outside the tram.

On our journey, we will be wanting to specify that as part of the requirement when we buy new trams for future. In the past we took what the manufacturer proposed to us. That indicates the change in our thinking about the external environment as well as the internal environment of the trams, which is important.

Caroline Russell AM: What about the rails and the potential for people having problems with bikes in relation to rails?

Jon Fox (Director of Rail and Sponsored Services, TfL): The on-street running risk is a challenging one. Most of the tram network is not on-street. It is off-street in our case, not in all cases and in that case where the person did get stuck. We did do some information sharing at the time about that. Do you remember the detail?

Jill Collis (Director of Health, Safety and Environment, TfL): I do not remember, no.

Jon Fox (Director of Rail and Sponsored Services, TfL): I am happy to take that away and research the background to what we did in that because I do not have that available with me.

Caroline Russell AM: That would be useful. It is about guidance for when new trams are being put in but also for the environment around trams when they are on the street that there is proper Vision Zero guidance for local authorities and, if it is on TfL sections of road, that there is some thought in the guidance about how to make sure it is as safe as possible for people who are walking and cycling.

Jackie Townsend (Managing Director, Tram Operations Ltd): We are also looking at how we can help the people who are pedestrians and cyclists because trams can be quite quiet, for example. Part of the campaign is on that trams are quiet, therefore, how you can watch out for them and be aware of the environment you are in. That is part of Vision Zero to help people understand the environment they are cycling or walking in, as well as the two-way thing.

Jon Fox (Director of Rail and Sponsored Services, TfL): At each high-risk foot crossing we have put in a little chicane of fencing. It turns your whole body to look towards one way and the other one as you walk across the foot crossing. That is not prevalent in the rest of the tram industry in the UK and certainly is not in Europe where the mentality has --

Caroline Russell AM: Is that working?

Jon Fox (Director of Rail and Sponsored Services, TfL): That is working and that has changed things. It makes people look a little bit more. It does not if they have their earphones in and their hood up and they just walk straight across. How you ever deal with that is a challenge that remains with us but that has changed the way that people cross those crossings and has made a difference.

Caroline Russell AM: OK, thank you. Finally, there is the issue of people slipping, tripping and falling inside trams. We have seen the latest Health, Safety and Environment report for Quarter 3 for 2018/19. It said that a total of 94 customers were injured on the rail network of TfL in the quarter. Of these, 10 incidents occurred on the tram network. For the same period in 2017/18, there were only five incidents. Obviously, this is just one quarter and it is not a statistical trend but that is a lot of people slipping, tripping, and falling on the trams. I wonder whether you need to do more to be addressing that. Is that to do with the speeds they are driven at? We have heard they have come down from 80 kilometres an hour to 70 kilometres an hour but is there more that could be done around speed to reduce these incidents of slipping, tripping and falling?

Jon Fox (Director of Rail and Sponsored Services, TfL): One of the challenges that Jackie [Townsend] and Finn [Brennan] may wish to comment on too is around if an obstacle suddenly appears in front of a tram, the tram driver has different braking options available to him. The most extreme of those does cause an extreme stop, faster than a road vehicle, and so what the driver has to judge is whether to apply the extreme braking option and induce some internal, rapid braking, which causes a greater risk than if they put on a service brake.

Caroline Russell AM: Should a tram be travelling at a speed where there is a risk that something might appear in front where extreme braking is necessary? Surely the speeds should be appropriate to the people around.

Jon Fox (Director of Rail and Sponsored Services, TfL): Often people are walking across the road where they perhaps should not be and walk out in front of the tram.

Caroline Russell AM: That is what Vision Zero is about.

Jon Fox (Director of Rail and Sponsored Services, TfL): It is, absolutely.

Caroline Russell AM: That is about anticipating bad behaviour from people, pedestrians who wear headphones, they look at their phones, they are distracted by a small child who is crying because they want an apple, or they want a chocolate bar or whatever it is. People are distracted. Should the trams be travelling at the kind of speed where that sharp braking is required through areas where they are mixing with pedestrians?

Jon Fox (Director of Rail and Sponsored Services, TfL): Sure. I would love to invite you to come down to Croydon because if you have ever been outside of East Croydon Station - I have to hand it to the drivers in this case - the way they handle the risk of pedestrians walking across the environment outside East Croydon Station is a testament to their skill, frankly. They approach that by using the bell. They use the horn if they need to and the number of incidents that have not happened there is incredible.

Caroline Russell AM: Of course, and that absolutely is to do with the skill of the drivers. We should not be putting the drivers in a position where they are forced to use an emergency brake. Should the speeds be looked at across all the sections?

Jon Fox (Director of Rail and Sponsored Services, TfL): It is a good point.

Jackie Townsend (Managing Director, Tram Operations Ltd): The slower you are, if you go over the hazard brake, the more impact inside that tram. We can show you. If you come down, we can show you the closed-circuit television (CCTV) of the effect of the hazard brake especially in the CR-4000 [tram], if you put the hazard brake on. Of course, for whatever reason, social behaviour is changing. People do not want to sit next to each other anymore. Instead of people sitting on seats with their back to the seat, they sit like this [sideways on the chair] because they do not want to sit facing the next person. If the hazard brake comes on and you are sitting like this, you are going to go flying. Mark and I are going to try to do a campaign. It does not matter what speed you are going at, once that hazard brake is applied inside the tram, that is why the tram drivers have to --

Caroline Russell AM: But the hazard brake is much less likely to be applied if the tram is going slower overall.

Jackie Townsend (Managing Director, Tram Operations Ltd): No. People literally walk in front of them. Mobility scooters, cyclists; the tram is going slowly and some person, for whatever reason, walks right out and they have to apply that brake. It is not about the speed. In fact, the hazard brake at a higher speed does less damage inside the tram than at low speeds.

Jon Fox (Director of Rail and Sponsored Services, TfL): But your concern about the environment and if we have the focus on that, the Vision Zero is a completely valid one and we take that away to think about some more.

Caroline Russell AM: If you could come back to us with some thoughts on that and particularly about the impact of braking and the need for drivers to brake because if drivers are travelling at a slightly slower speed, they are more able to see and anticipate the people that are coming along around them. Thank you.

Finn Brennan (District Organiser, ASLEF): I would like to say thank you to all of you who have paid tribute to the skills and professionalism of the drivers. I am sure Jackie [Townsend] will reflect on that when we meet.

Florence Eshalomi AM (Chair): There were some reports that TfL were going to send through to us. We have taken a note of that. We will liaise with you. Just to thank our guests again: Jill Collis, Jon Fox, Finn Brennan, Adrian Jones and Jackie Townsend, thank you.