

TfL Response to GLA Transport Committee Report on Bus Safety



Introduction

Following a review of safety on Transport for London's (TfL) bus network, the London Assembly Transport Committee published a report – 'Driven to Distraction' – Making London's Buses Safer' on the 17th July 2017.

The report suggests a number of recommendations to improve the safety of travelling by bus in the capital. These are set out below:

Recommendation 1

TfL should set safety targets for bus operators. We suggest the best way to do this is to integrate safety targets in the QICs performance target structure as soon as possible. If safety performance targets are adopted, the proposed safety scorecard may be redundant and TfL could consider ceasing work to develop it. TfL should write to the committee, setting out how it will take this forward by the end of October 2017.

Recommendation 2

TfL should revise its senior staff bonus scheme to introduce a direct link between bus safety and performance-related payments. TfL should write to the committee, setting out how it will take this forward by the end of October 2017.

Recommendation 3

By the end of October 2017, TfL should set out the steps it will take to improve the data it uses for bus safety analysis and trend reporting, in response to this report. This should include:

- Amalgamation of STATS19 and IRIS data sets
- more accurate reporting of long-term bus collisions and injury trends

Recommendation 4

TfL should commission a comprehensive and independent investigation or piece of research into London bus drivers' working conditions (with a focus on the causes of fatigue) in order to determine the scale of the problem. This should involve setting up working groups and surveying drivers as well as others who can offer different perspectives, such as controllers, mechanics and other operational staff.

The report should be made public and any findings should feed into the proposed revision of the Bus Safety Programme.

Recommendation 5

TfL should undertake additional work with the operators to try and reduce the number of distractions facing drivers. This could include:

- work to understand the extent to which distracting maintenance issues go unresolved (such as faulty wing mirrors or wipers) and consideration of how to speed up maintenance works in garages.
- a commitment to deliver a toilet on each bus route (available at all times that the bus is in service) by the end of 2018
- a review of radio contact procedures and development of guidelines or best practice principles
- a review of best practice for bus infrastructure and design. This should include bus lane installation, bus stop siting and consideration of the impact other infrastructure, like parking bays, has on the driver's ability to navigate the route safely

TfL should write to the committee, setting out how it will take this forward by the end of October 2017.

Recommendation 6

TfL should take responsibility for delivering driver safety training, as it has for customer service training. TfL should develop a new safety training package, based on close consultation with the operators and bus drivers. This training should be delivered on a rolling basis and could form part of the mandatory 35 training hours that drivers must complete every 5 years.

Recommendation 7

TfL should commit to a publication date for the Bus Safety Standard. TfL should also undertake a cost/benefit analysis for retrofitting the BSS to the entire bus fleet.

Recommendation 8

TfL should conduct a review of bus maintenance practices in garages. It should also carry out work to understand the scale of the bus engineer shortage in London and develop measures to tackle it.

TfL should write to the committee, setting out how it will take this forward by the end of October 2017.

Recommendation 9

TfL should tackle the barriers drivers face accessing CIRAS –the confidential incident reporting service. TfL should:

- clarify to bus operators that CIRAS can and should be used as a first line reporting tool for drivers
- communicate information about CIRAS to all drivers by embedding it in safety training and monitor its use through driver surveys

TfL should write to the committee, setting out how it will take this forward by the end of October 2017.

Recommendation 10

TfL should carry out a review into how bus incidents are investigated in London. In particular, it should consider:

- whether serious incidents should be investigated by an independent body, as occurs in the rail industry
- how to make incident reporting more consistent between operators
- how to ensure that lessons are learned from all incident investigations and shared between all operators

TfL should write to the committee, setting out how it will take this forward by the end of October 2017.

Recommendation 11

TfL should publish an update on the Bus Safety Programme in January 2018. This should draw on learnings from the first two years of the BSP and address the issues and recommendations contained in this report.

Background

London's bus network is one of the safest in the world, with fewer than three injuries for every million passenger journeys. Yet there are still 5,600 injuries to passengers and the public each year. We recognise that these numbers are unacceptable, and we, the bus operators and all who work for London's bus network remain focused on delivering rapid improvements in bus safety to drive the number of casualties down.

Over the past decade the number of people killed or seriously injured (KSI) as a result of a collision involving a bus or coach has decreased by 55 per cent.

<http://content.tfl.gov.uk/long-term-bus-casualty-trends-paper.pdf>. This equates to an average 8.1 per cent decrease year on year, compared to a 6.5 per cent decrease in all KSI road casualties.

Despite a positive trend in KSI reduction, this is only one aspect of bus safety. Injuries on buses sometimes arise as a driver is taking evasive action, for example sharp braking, to avoid a road collision. Therefore, it is important to view the overall safety of the bus network, both for road users and bus passengers, in the round. Increases in congestion as a result of population growth and disruption from major highway schemes create a challenging environment in which to continue to deliver a reduction in all injuries that occur on the bus network.

In response to the number of casualties on our network, we launched the Bus Safety Programme in February 2016. The programme aims to continue to: drive down the number of people killed or seriously injured on the bus network; reduce the number of injuries as a result of on board slips, trips and falls; and reverse the increase in (predominately damage only) collisions. Since the launch of the Programme, the Mayor has published his draft Transport Strategy and announced that he will be taking a Vision Zero approach to road danger. This includes an aspiration to eliminate all deaths and serious injuries on the road network by 2041. He has also set challenging targets for buses: a 70 per cent reduction in the number of people killed or seriously injured on or by a bus by 2022 (against a 2005-09 baseline) and zero people killed on or by a bus by 2030.

To eliminate fatalities on the bus network we will need to continue to evolve the Bus Safety Programme as new research and evidence becomes available. We welcome the Transport Committee report and its contribution to the debate on how to make London's bus and road network safer for all.

Responses

Recommendation I

TfL should set safety targets for bus operators. We suggest the best way to do this is to integrate safety targets in the QICs performance target structure as soon as possible. If safety performance targets are adopted, the proposed safety scorecard may be redundant and TfL could consider ceasing work to develop it. TfL should write to the committee, setting out how it will take this forward by the end of October 2017.

TfL Response

Quality Incentive Contracts (QICs) incentivise bus operators to compile robust schedules for each route, based on experience and forecast traffic conditions. This includes sufficient journey time for the bus driver to travel from the bus depot to the start of each route and a break at the end of each trip. Robust schedules enable bus drivers to drive their vehicles at a speed appropriate for the road and traffic conditions and allow the bus operator to ensure that their buses are evenly spaced throughout the route. In this way QICs already draw the link between reliability and good safety performance.

In place of the proposed safety scorecard, we have developed two new safety measures which offer a more comprehensive view of safety than the original proposed scorecard. These will combine all of our monitoring systems and Key Performance Indicators (KPIs), and we will use these in our performance management of bus operators:

- A Bus Operator Safety Performance Index (SPI) – this will be a comprehensive and detailed measure of bus operator safety performance. The SPI will encompass a broad set of metrics relating to safety performance that includes incident data (such as collisions), as well as behavioural type observations such as drivers speeding in bus stations and operators reporting incidents to TfL outside of prescribed timescales. This will provide a more comprehensive and accurate reflection of the safety maturity of bus operators by measuring both actual failures (e.g. number of incidents that have occurred) and arrangements or behaviours that could lead to failure (e.g. near misses). This approach is already used effectively across other parts of our transport network.
- Safety Maturity measure – a new Bus Operator Health, Safety and Environment Assessment Tool has been developed to replace the annual health and safety audit. This will be used with each operator throughout the year to assess what the Operator's health and safety management arrangements are actually delivering on the ground.

The SPI and the Operator Safety Maturity measures will take account of incidents as part of performance, but will avoid the potential to be counter-productive in achieving honest reporting and the opportunity to learn from incidents.

It is important that we understand the safety performance of each individual operator before we determine how best to use these measures to improve the outcomes both in the day-to-day performance management of operators as well as the evaluation process. The bus operators are supportive of this new approach and we are working with them to develop individual SPIs and expect this to be complete by early 2018. After an initial bedding-in period, we plan to launch it as a performance tool from mid-2018.

In addition to this approach there are a series of mechanisms in place or planned for positively incentivising a greater focus on casualty reduction:

- **Safety Innovation fund**

The Bus Safety Innovation fund is a new scheme to encourage bus operators and their staff to develop and implement proposals to improve safety and/or safety culture. With funding from us of up to £1m, this scheme is designed to complement the existing Bus Safety Programme and look at ideas and issues beyond its scope. Proposals could target local issues or address wider issues with solutions that could be rolled out across the fleet. The bids will be assessed against the cost and potential benefits, with awards due to be made in November 2017. Successful ideas will be shared with all operators.

- **Contract tender and evaluation**

We have approximately 650 contracts for bus routes sourced from ten different groups of operating companies who hold the necessary operator licence issued by the Traffic Commissioner to operate vehicles. The contract for each route lasts between five and seven years, at which point it is retendered. This is part of a continuous rolling programme, with the bids for approximately 10 new contracts being evaluated and awarded each month. Typically, two or three bids are received for each route.

The evaluation of bids includes assessment of 10 categories of performance criteria, many of which are directly related to safety, for example Driver Quality Management and Engineering Quality Management. As set out above it is our intention to incorporate the new SPI and safety maturity operator measures in our evaluation process once they are established.

As we continue to have a large number of other contracts continuing to be operated by the various bidders, continuous management of operators safety performance is undertaken to ensure that the necessary standards are met at all times, regardless of whether the route is subject to re-tender or not. For example, if a garage achieved a low EQM score over a number of periods, the operator concerned would be called in to meet with the performance and contracts teams and obliged to provide an action plan outlining remedial actions to improve the scores over an agreed timescale. Completion of these actions would then be monitored by TfL.

To improve safety across the bus network, we believe that it is essential for TfL and all operators to work collaboratively to reduce risk and injury. If safety is, or is perceived

to be, a competitive advantage, there is a risk that under-reporting will take place which will have a detrimental effect on our understanding of where and why collisions are taking place. It would also impact our ability to share best practice and learning between operators and raise safety standards industry-wide.

We are confident that the combined approach that we are proposing will ensure that we have a strong set of safety measures to use in our performance management of operators and in contract evaluation.

Recommendation 2

TfL should revise its senior staff bonus scheme to introduce a direct link between bus safety and performance-related payments. TfL should write to the committee, setting out how it will take this forward by the end of October 2017.

TfL Response

A new TfL balanced scorecard for 2017/18 was developed by our Board and Executive Committee to ensure we deliver our Business Plan. Fourteen objectives have been identified in the Business Plan against which we measure our performance, both through improving outcomes in 2017/18 and putting the enablers in place for improvements in future years. Ensuring safe travel is one of these objectives.

Our Senior Manager Reward Framework is linked to achievement of targets on the scorecard. The scorecard is balanced against four areas (operations and safety, financial, customer, and people) and each area has been given a weighting of 25 per cent.

The scorecard includes a target for a reduction in Killed & Seriously Injured (KSIs) on London's roads - this includes KSIs on the bus network. This will ensure that senior managers maintain a focus on the holistic delivery of safety across London's entire road network.

Similarly the Surface Transport scorecard (which covers buses) also includes a target for reduction in KSIs on London's roads. However, given the focus required to continue to improve safety on the bus network, we will be reviewing more specific measures relating to bus safety for inclusion on the 2018/19 Surface Transport scorecard alongside the existing measure.

Our Risk Management Maturity Model (RM3) looks at how effectively we manage safety and also contributes to the Surface Transport scorecard. The RM3 assessment reviews our safety management standards for managing the bus network (such as control rooms, bus stations and mobile operational response staff) as well as how we manage our supply chain, which will include bus operators and other parties working on our behalf.

Development of the 2018/19 Scorecard will commence this autumn with measures and targets agreed ahead of the start of the next financial year.

All senior manager job descriptions for the new buses management team include specific safety accountabilities. These have been reviewed in light of the Transport Committee's report and are being strengthened to include more prescriptive and focused accountabilities relating to safety.

Recommendation 3

By the end of October 2017, TfL should set out the steps it will take to improve the data it uses for bus safety analysis and trend reporting, in response to this report. This should include:

- Amalgamation of STATS19 and IRIS data sets
- more accurate reporting of long-term bus collisions and injury trends

TfL Response

Through our Bus Safety Programme we are working to improve the quality of our data and make it more accessible. This involves: improving our use of data, data publication and deep dive analysis.

Many of the work streams within these areas have already commenced and others such as the deep dive analysis will be concluded early next year. An explanation of the difference between the STATS19 and IRIS datasets is include in Appendix A.

Improving our use of data

We have been exploring how to achieve greater consistency between the STATS 19 and IRIS data sets to improve our understanding of why bus collisions are happening and what preventative measures can be introduced. This will become increasingly easier with the roll-out of the Metropolitan Police Service's new Case Overview and Preparation Application (COPA) system.

COPA is being used by 25,000 MPS officers, of which around 2,000 have direct access via hand held devices. It is intended to provide:

- Enhanced quality and timeliness; including live data, live validation and improved injury definition, which means both STATS 19 and IRIS data now becomes available to us within a similar timeframe and records are easier to match;
- Improved identification of vehicle types; including London buses, bicycle types (pedicab, cycle hire) and splitting taxis from private hire vehicles;
- Linkage of collisions to investigations data; including the use of mobile phones, which provides new data to support our understanding of sources of road danger and incident investigations; and
- Access to damage only collision data and online self-reporting

We are working with the MPS to improve the usage and implementation of this service; however we envisage that it will help how we use the data for improving safety on the bus network. For example, a field has been added within the IRIS system for Operators to confirm whether or not the Police have been involved in the incident which will enable us to match incidents with STATS19 entries if required.

We are developing a software solution which enables data from the bus operators' own incident databases to be 'pushed' automatically into the IRIS system. This will remove the need for bus operators to input incident data twice, which will free up resource and improve data quality.

Other Data sources

To ensure that we maximise our use of all TfL data sets that may provide an insight into incidents on the bus network, we are now consulting additional sources of information. The information we receive from the police via the our Strategic Co-ordination Team in the immediate aftermath of an incident is being used to enhance the information that we capture regarding the severity of injury which allows us to provide greater granularity in respect of the injuries currently captured in the “taken to hospital” data set. Information provided by the TfL Customer Contact Centre is also being used to capture any incidents that have not been reported to the Operator or the Police.

We have also conducted a review into the correlation between hospital episode data (HES) and collision data (STATSI9), however results show that matching the data sets only works in a third of cases and would require further work by both the Department for Transport and the National Health Service to enable this matching to provide meaningful analysis.

Data Publication

In June 2017, we supplemented the publically available quarterly IRIS data sets with the introduction of a front-end tool that enables the public and other interested parties to easily view bus safety data relating to the period from 2015 to date. <https://tfl.gov.uk/cdn/static/cms/documents/qsr-publication.xlsx> . Users can view performance across the whole network, or dynamically filter the data set and associated charts to focus on specific Operators, routes, Boroughs, type of injured party or type of incident. This data set will grow over time, providing a longer term view of performance and trends. This is complemented by more detailed quarterly Bus Safety Dashboards that allow us to categorise data to focus on the root causes of incidents in the most recent two years. <http://content.tfl.gov.uk/q2-london-bus-safety-dashboard-17.pdf>. We will increase the time period included within this report to provide a longer term view of performance and trends.

Our road safety publications that utilise STATS 19 data will in future include the category of TfL Bus, separate from the general bus and coach category, in order to better understand trends.

We will continue to maintain the two data sets in order to meet all of our needs and duties regarding the reporting of incidents associated with our bus operations and our wider road safety remit. However, from the end of October, we will be undertaking a cross-check between the STATS19 and IRIS data sets as an integral part of our data cleansing and performance reporting process.

Data Deep Dive

As part of the Bus Safety Programme, we have commissioned Transport Research Laboratory (TRL) to do some preliminary research on casualties involving buses to identify potential countermeasures to be considered as part of the evidence base for the development of the Bus Safety Standard.

We have also commissioned another piece of research, constituting an in depth analysis of casualties arising from incidents involving London buses. This analysis will focus on other aspects of bus safety, including, but not limited to; marketing and communication

campaigns for drivers, customers and other road users, highway and junction design, parking and loading restrictions and the content and format of driver training.

The objectives of this analysis, which will be completed in spring 2018, are as follows:

1. To conduct an in-depth analysis of Bus incident data to find trends or insights that can help understand a root cause for:
 - KSI (Killed or Seriously Injured) vulnerable road users due to collisions with TfL buses
 - Customer Injuries of passengers using TfL buses, regardless of whether a collision has occurred or not (slips, trips, or falls)
2. To provide additional prioritised recommendations and counter measures to avoid and/or mitigate these casualties to build on the current Bus Safety Programme.

The findings from this research will be used to develop the bus safety programme further.

As well as commissioning research, we have conducted some preliminary analysis of incidents on London buses and held a workshop with all of the London bus operators to identify safety improvements that could be made in the short-term. Details of safety improvements that are being taken forward by both the operators and TfL will be included in the revised Bus Safety Programme that will be presented to the Transport Committee in January 2018.

Recommendation 4

TfL should commission a comprehensive and independent investigation or piece of research into London bus drivers' working conditions (with a focus on the causes of fatigue) in order to determine the scale of the problem. This should involve setting up working groups and surveying drivers as well as others who can offer different perspectives, such as controllers, mechanics and other operational staff.

The report should be made public and any findings should feed into the proposed revision of the Bus Safety Programme.

TfL Response

Being a bus driver in London is a challenging and multi-skilled role. We take the welfare of drivers very seriously because a healthy workforce supports safe operation of the bus network. Driving times and rest periods are governed by legislation, and compliance with these provisions is subject to continuous monitoring and controls.

We carry out additional audits and monitor the statutory obligations that operators have to abide by regarding the scheduling of drivers working hours. Where breaches are found, these are reported to the Traffic Commissioner and Operators can be called to account for any concerns. The new Safety Maturity measure will also provide assurance around driver fatigue management.

While the welfare of drivers is the responsibility of operators, we have a role to support and challenge the operators to continually improve driver working conditions. Therefore we both encourage and work with bus operators to find ways for improving conditions for their drivers - in particular around causes of fatigue.

There are a number of initiatives being rolled out by bus operators that are directly targeted at dealing with issues relating to fatigue:

- Ensuring drivers have easy access to information which will educate them about fatigue;
- Setting up roadshows and workshops, often in conjunction with the Confidential Incident Reporting and Analysis Service (CIRAS) to educate drivers on the causes and mitigations against fatigue;
- Using the safety innovation fund to generate new ideas for dealing with fatigue;
- Encouraging open dialogue with drivers and management on issues relating to fatigue and what to do when they feel tired;
- Encouraging healthy eating and lifestyle to improve fitness and reduce fatigue;
- Reviewing the impact of different duty and rota patterns on fatigue, utilising lessons learnt from other transport industries; and
- Working with drivers and unions to optimise schedules on individual bus routes.

As outlined in our response to recommendation one, the Safety Maturity measure will include a continued assessment of these initiatives and their effectiveness.

We know there is a wealth of evidence across the transport industry to help combat driver fatigue. We plan to discuss this issue at the Bus Safety Summit in November in

order to share learnings and best practice. We will also explore this separately with bus Operators.

Recommendation 5

TfL should undertake additional work with the operators to try and reduce the number of distractions facing drivers. This could include:

- work to understand the extent to which distracting maintenance issues go unresolved (such as faulty wing mirrors or wipers) and consideration of how to speed up maintenance works in garages.
- a commitment to deliver a toilet on each bus route (available at all times that the bus is in service) by the end of 2018
- a review of radio contact procedures and development of guidelines or best practice principles
- a review of best practice for bus infrastructure and design. This should include bus lane installation, bus stop siting and consideration of the impact other infrastructure, like parking bays, has on the driver's ability to navigate the route safely

TfL should write to the committee, setting out how it will take this forward by the end of October 2017.

TfL Response

We completely understand the importance of minimising unnecessary distractions facing our drivers in order so they can focus on providing a safe and enjoyable journey for our customers.

We will continue to work closely with bus operators to ensure that all aspects of a driver's experience are optimised for the delivery of a safe service for our customers, staff and other road users.

Much progress has been made in recent months on toilet facilities. By this autumn every route will have a toilet when we place a temporary toilet on the final route. We have been working with the unions and operators for a considerable period of time to try and improve the situation and we shall focus on addressing each route which does not have a toilet open at all hours, with the aim of resolving these issues by the end of 2018.

We have regular forums with bus operators, attended by engineering directors from each of the bus operating companies, as well as our senior engineering staff. The forum is an opportunity to discuss and update on a range of operational and safety topics, and ensure best practice is shared. Written records are kept of actions arising from this forum, with progress reports shared between and at forums. Where safety issues have occurred these are dealt with immediately by the bus operators and then discussed at the forum.

Recommendation 6

TfL should take responsibility for delivering driver safety training, as it has for customer service training. TfL should develop a new safety training package, based on close consultation with the operators and bus drivers. This training should be delivered on a rolling basis and could form part of the mandatory 35 training hours that drivers must complete every 5 years.

TfL Response

Bus operators are the direct employers of all bus drivers in London and are responsible for ensuring that their staff receive appropriate safety training. Our role is to ensure that all drivers across the bus network receive the same standard of safety training in an innovative and engaging package.

To achieve this we are working with the bus operators to develop safety training materials for bus drivers and driving instructors. This will focus on the subject of Safer Urban Driving (SUD) with particular focus on Vulnerable Road Users (VRUs).

The course for drivers will use innovative training techniques to develop driver skills in identifying risk on the road and increase drivers understanding of VRUs. The driver course will be Certificate of Professional Competence (CPC) accredited to form part of compulsory driver periodic training and will be delivered by bus operators. The course for driving instructors will enhance their skills and knowledge of SUD best practice to ensure that the safest possible driving skills are passed on to new drivers. Early market engagement with training suppliers is being undertaken with a view to rolling out this training in the first half of 2018.

New bus drivers receive basic training which covers safety and legal requirements and are required to obtain a Passenger Carrying Vehicle licence. We also require them to obtain a bespoke City and Guilds qualification during their first year of service. This ensures consistent knowledge and understanding of London bus operation and what drivers need to do to meet our expectations and those of bus customers, as well as guidance on safety. This training is delivered by bus operators and quality controlled by City and Guilds.

Existing drivers must keep their CPC up to date by completing 35 hours of structured continuous development every 5 years – generally one day a year of further training. We work closely with bus companies to develop content for bus driver CPC courses to support on addressing key priorities. Recent examples of course content include improving accessibility of the service to disabled customers (All Aboard!), and safer driving (In the Zone).

In order to encourage consistency in customer service provision across bus operators, we launched and directly facilitated the 'Hello London' training course which forms part of driver mandatory CPC hours. Hello London is delivered by an external training company who use drama based learning to provide realistic scenarios which reflect drivers' day to day experience.

The 'Hello London' training package has proven very successful and has been well received by drivers and operators alike. A lot of the success has been attributed to the

delivery methods which are more engaging for bus drivers, so we are rolling this out to the new safety training package described above.

Recommendation 7

TfL should commit to a publication date for the Bus Safety Standard. TfL should also undertake a cost/benefit analysis for retrofitting the BSS to the entire bus fleet.

TfL Response

As part of the wider Bus Safety Programme, we have introduced a vehicle design and technology work stream which includes the development of a new Bus Safety Standard. To ensure that we are harnessing those technologies and design innovations that will achieve the greatest casualty reductions, an analysis of police collision investigation files for fatalities involving buses has been completed. This commissioned research, which focused on countermeasures relating to vehicle design, also included an analysis of some Department for Transport collision databases, such as the Road Accident In-Depth Study (RAIDS), On-The-Spot (OTS) and Heavy and Commercial Vehicles Incident Survey (HCVIS) to look at slight and serious injuries in addition to fatalities. This was to ensure the Bus Safety Standard addresses casualty reductions across all severities and all road users including bus passengers.

The study identified a range of problems and potential countermeasures including Autonomous Emergency Braking, reducing the incidents of pedal confusion, improving wing mirror design, windscreen glazing and front of bus re-design to reduce the impact of any collision.

The Transport Research Laboratory has been awarded the contract to carry out a series of work packages that will test the feasibility and evaluate the potential benefits of the proposed countermeasures to improving safety on London buses.

Outputs of this work will include:

- a vehicle design and technology roadmap for Buses in London
- detailed evaluation and testing of each of the proposed countermeasures
- detailed business cases for each of the proposed countermeasures
- peer reviewed Bus Safety Standard text for inclusion in the London Bus Vehicle Specification

An initial road map for the Bus Safety Standard will be available in winter 2017 and will be updated throughout the project. This road map will show which technologies and design features are suitable for inclusion in the first phase of the Bus Safety Standard, and which of these are not quite ready for market yet but will be suitable to fit to new buses in future years.

Evaluation and testing of the countermeasures will take place until summer 2018. A business case will be produced for each countermeasure which will include a cost/benefit analysis which will contribute towards the justification for a countermeasure to be included in the Bus Safety Standard immediately, in the future, or not at all. The cost/benefit analysis will also enable us to determine whether individual countermeasures are suitable for retrofit, and feasibility studies will be undertaken for any such suitable countermeasures.

The Bus Safety Standard specification will be written into the London Bus vehicle specification which forms part of our route contracts with the bus operators, by the end of 2018.

Recommendation 8

TfL should conduct a review of bus maintenance practices in garages. It should also carry out work to understand the scale of the bus engineer shortage in London and develop measures to tackle it.

TfL should write to the committee, setting out how it will take this forward by the end of October 2017.

TfL Response

There are various laws and regulations in place which specify minimum requirements for safety. The Driver & Vehicle Standards Agency (DVSA) sets out responsibilities and systems involved in maintaining vehicles in a roadworthy condition, regardless of operating conditions, fleet size or vehicle type. Each of our bus operators is required to follow these guidelines or risk losing their licences to operate services.

We have an extensive system of checks in place which review the roadworthiness of our buses before every journey, during service and periodically by an external independent auditor.

First use checks

Before each journey, bus drivers are required to perform a basic check of their bus to ensure it is roadworthy before it is taken out of the garage. If any safety risks are identified, the bus will not be allowed to be put into service.

Any other non-safety minor maintenance issues are flagged for repairs.

Vehicle hand-over checks

During a shift hand-over, the bus driver taking over the bus is also required to perform another basic safety check of the bus, filling out a Vehicle Defect Card (VDC), to ensure that it is roadworthy before putting it into service. The VDCs are then checked by engineers. Bus Operators report any safety critical defects immediately to iBus control; any safety critical defect will result in the vehicle being taken out of service until it is repaired.

Engineering Quality Monitoring (EQM)

We have commissioned the Freight Transport Association to carry out an independent review of our fleet which encompasses vehicle inspection for London Buses, Dial-a-Ride vehicles and rail replacement buses. This also includes service records inspection, site examinations (to quantify the vehicle maintenance standard) and to produce bus operator identified vehicle trends that can be documented through comparison tables and charts.

EQM is an integral service as this allows us to monitor the fleet condition, spot trends and help deliver a safe and reliable service to agreed standards and specification.

We specify that the work needs to be carried out by fully trained and qualified inspection engineers who are totally independent of the operating companies; also the engineers must be fully conversant with buses and DVSA standards to ensure all bus operators are keeping their buses maintained to the standard required by us and in line with DVSA recommendations.

Additional checks are often carried out on vehicles that are outside of the EQM process either at weekends or evenings (when the majority of vehicles are not in operation). These additional checks that we deem necessary are usually specification compliance issues.

The inspection engineers must be fully conversant and comply at all times with the Health and Safety working practices of each bus operator they are working with on any given day.

Any faults or defects found during an inspection will be communicated immediately to the local garage management to prevent the vehicle with a known defect entering service.

We specify that each year, the independent auditor carry out inspections on approximately 25 per cent of the operational fleet, so approximately 2200 vehicle inspections and associated maintenance records will be undertaken across our operators, garages and vehicles.

Bus Operator Forums

We also have regular Bus Operator Engineering Forums which are a regular forum with bus operators' engineering teams where maintenance issues are discussed and addressed to ensure that anything which could have an impact on safety is addressed and best practice is shared.

We continue to work with operators to optimise maintenance practices to ensure priority is being given to the most critical issues and ensuring an appropriate system is in place for dealing with minor issues including distracting maintenance issues which bus drivers might be experiencing.

Recommendation 9

TfL should tackle the barriers drivers face accessing CIRAS –the confidential incident reporting service. TfL should:

- clarify to bus operators that CIRAS can and should be used as a first line reporting tool for drivers
- communicate information about CIRAS to all drivers by embedding it in safety training and monitor its use through driver surveys

TfL should write to the committee, setting out how it will take this forward by the end of October 2017.

TfL Response

CIRAS is the Confidential Incident Reporting Analysis System for Transport. CIRAS take calls from all staff, from front line to Managers in the strictest of confidence. This has benefits for staff, managers and the industry as a whole:

- Staff - Provides an alternative confidential reporting route for staff to raise safety or health concerns that they feel are unresolved.
- Bus Operators - Provides a back-up safety net to capture and resolve issues that could otherwise manifest themselves in an incident which could cause damage to equipment, an injury or fatality. It enables learning from other members through sharing intelligence.
- Industry - Provides a platform for shared learning and a further line of defence for safety.

CIRAS is an independent component of a member organisations' safety management system, a further line of defence and a back-up to complement health and safety arrangements.

Both TfL and CIRAS are clear that CIRAS should not be used as a first line reporting tool. CIRAS is an alternative independent confidential reporting line. It is intended to be used when a reporter has exhausted their internal reporting system and feels they are not achieving a satisfactory response, or when a reporter feels they cannot use their own internal systems for some reason. However, the CIRAS call centre will rightly always ask a reporter whether they have used their internal system and will direct them there first unless there is a good reason for not doing so.

We facilitated the initial promotion of CIRAS to drivers, and we will be reviewing whether it has been embedded in induction and other relevant training since its launch through our Safety Maturity measure, with a view to improving awareness of the system amongst drivers. CIRAS has also invited one bus operator to join the CIRAS Board to ensure that there is complete representation and increased collaboration so all parties are involved in ensuring bus drivers concerns are addressed appropriately. We have facilitated the nomination of representatives.

Recommendation 10

TfL should carry out a review into how bus incidents are investigated in London. In particular, it should consider:

- whether serious incidents should be investigated by an independent body, as occurs in the rail industry
- how to make incident reporting more consistent between operators
- how to ensure that lessons are learned from all incident investigations and shared between all operators

TfL should write to the committee, setting out how it will take this forward by the end of October 2017.

TfL Response

We would be in support of the formation of an independent body to investigate serious incidents on the bus network similar to the Rail Accident Investigation Branch (RAIB) in the railway industry.

This will allow us to ensure that there is a consistent approach nationwide to the way serious incidents are investigated and will help to improve bus safety on bus routes across the UK.

Similar accident investigation units exist for all other major modes of transport:

- Rail Accident Investigation Branch (RAIB)
- Air Accident Investigation Branch (AAIB)
- Marine Accident Investigation Branch (MAIB)

However, there is no equivalent organisation for investigating serious accidents on buses or the wider road network. In order for us to align with other transport industries, and maximise the potential for improving safety on buses and the wider road network, a similar organisation would need to be set up.

Some level of independent investigation is carried out by the Serious Collisions Investigation Unit within the Metropolitan Police however this only covers serious incidents involving a collision and does not capture all types of safety incidents involving buses.

The DVSA may also carry out investigations into the condition of vehicles following some incidents. Recommendations are then provided to rectify any issues identified and subsequent enforcement action may be taken. Operators are required to notify DVSA of any incident resulting in a fatal or serious injury, where there has been an allegation of a safety defect or serious damage has been caused or at the request of the police. Any identified issues may result in a wider investigation into the operator.

In the absence of an equivalent national body for investigating accidents involving buses, we require bus operators to carry out internal investigations following any

incident and have developed the Notification of an Investigation into a Major Incident (NIMI) system for investigating serious incidents.

What is NIMI?

Following all types of incidents, major and minor, bus operators are required to capture data relating to the incident within the IRIS system. IRIS data is reviewed daily and incidents which meet certain criteria e.g. fatality, more than three people injured etc. are flagged as serious and trigger the issuing of a Notification of an Investigation into a Major Incident (NIMI) from us to the bus operator involved.

The NIMI is a consistent template which is sent to bus operators requesting additional information about an incident which is deemed serious. Various sets of information are requested within the template e.g. location of incident, driver hours and CCTV stills. It guides the investigation to ensure that it explores all potential causes and contributory factors. More recently we have provided greater support to operators' incident investigations, taking a partnership approach to identifying causes, recommendations and potential solutions to prevent recurrence.

Sending a template to all operators ensures that a consistent approach is in place for capturing information relating to the investigation of an incident. We are constantly reviewing this approach and working with operators to ensure the information captured is consistent and useful.

We periodically share the lessons learnt from all the investigations under the NIMI process with our operators. The structured approach now taken to the collection of information through the NIMI process also facilitates the identification of trends which are themes to address at an industry level and allows us to share more detailed information with bus operators and internal stakeholders. As a result, operators are now better able to learn from other operators' experience.

The information fields required within the NIMI template allow us to develop statistical intelligence relating to various causal factors and scenarios. This increase in intelligence is allowing us to better identify appropriate countermeasures, develop initiatives aimed at prevention of further incidents and work with operators to target areas that need focus. Examples of themes that can now be better analysed include:

- Factors that could influence driver fatigue
- Infrastructure issues such as road design, traffic light phasing, signage etc.
- Mechanical failures
- Maintenance issues
- 3rd party behaviour (to include other motorists, cyclists, pedestrians and P2Ws)
- The action of bus drivers
- The fitness to drive standards of drivers
- Vehicle design
- Route selection

- Driver distraction

As a working example of how this information is being used, the learning from a recent bus and pedestrian collision highlighted some issues with a junction design in Greenwich. We were able to take the observations from the investigation, coupled with historic data and to influence the design of a road improvement scheme in the area, with a view to improving the safety of pedestrians crossing the junction.

Recommendation II

TfL should publish an update on the Bus Safety Programme in January 2018. This should draw on learnings from the first two years of the BSP and address the issues and recommendations contained in this report.

TfL Response

The Bus Safety Programme is constantly evolving as new information and trends become apparent through both our data analysis work and interaction with bus operators and their bus drivers.

As requested, we will provide an update on the Bus Safety Programme in January 2018.

Appendix A: STATS19 and IRIS data sets

STATS19

STATS19 provides information for road traffic collisions that involve personal injury occurring on the public highway that are reported to the police. Damage only collisions are not included. Data is reported by the Metropolitan and City of London police services in accordance with the STATS19 national reporting system.

The Greater London area comprises 32 London boroughs and the City of London. Data is collected by police at the scene of an incident or in some cases reported by a member of the public at a police station, then processed and passed by the police to TfL for checking and analysis. Police data on road collisions (STATS19) remain the most detailed, complete and reliable single source of information on all road casualties.

IRIS

IRIS is used by bus operators under contract with TfL for reporting incidents relating to their TfL operational activities. Operators are required to report serious incidents within 48 hours and all incidents within seven days. The system serves as the complete and reliable single source of information on all incidents involving or affecting London's buses.

The IRIS system provides details of safety-related incidents across the network – this includes collisions but also extends to other safety incidents such as assaults or falls. In addition to capturing incidents that would form part of the STATS19 data set, it also captures incidents that are not reportable to the police and incidents that are considered safety-related, but did not result in injury. This would include, for example, falls that did not result in an injury and damage only collisions, all of which have the potential to cause injury. IRIS is designed to record incident information immediately available following the event and does not necessarily hold details of subsequent investigations by the bus operator or the police. This information is held locally by the bus company involved in the incident.

How we use STATS19 and IRIS

We use both datasets to inform our strategies and improvement plans. Our casualty reduction targets are based on STATS19. STATS 19 data is used to inform our road safety strategies in our role as a Highway Authority, which contribute significantly to the safety of the bus network. The IRIS data set is used to further inform the safety improvement plans that are specific to our bus operations. It also provides the data for a number of the indicators with the Safety Performance Index (SPI). Both data sets are used to provide management information which enables us to understand our performance and identify any need for further actions.



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