

PARLIAMENTARY DEBATES

HOUSE OF COMMONS
OFFICIAL REPORT
GENERAL COMMITTEES

Public Bill Committee

VEHICLE TECHNOLOGY AND AVIATION BILL

Second Sitting

Tuesday 14 March 2017

(Afternoon)

CONTENTS

Examination of witnesses.

Adjourned till Thursday 16 March at half-past Eleven o'clock.

Written evidence reported to the House.

No proofs can be supplied. Corrections that Members suggest for the final version of the report should be clearly marked in a copy of the report—not telephoned—and must be received in the Editor’s Room, House of Commons,

not later than

Saturday 18 March 2017

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The Committee consisted of the following Members:

Chairs: JAMES GRAY, † JOAN RYAN

† Baker, Mr Steve (<i>Wycombe</i>) (Con)	† Malthouse, Kit (<i>North West Hampshire</i>) (Con)
† Brown, Alan (<i>Kilmarnock and Loudoun</i>) (SNP)	† Marris, Rob (<i>Wolverhampton South West</i>) (Lab)
† Burden, Richard (<i>Birmingham, Northfield</i>) (Lab)	† Matheson, Christian (<i>City of Chester</i>) (Lab)
† Doyle-Price, Jackie (<i>Thurrock</i>) (Con)	† Prentis, Victoria (<i>Banbury</i>) (Con)
† Foxcroft, Vicky (<i>Lewisham, Deptford</i>) (Lab)	† Selous, Andrew (<i>South West Bedfordshire</i>) (Con)
† Fuller, Richard (<i>Bedford</i>) (Con)	Snell, Gareth (<i>Stoke-on-Trent Central</i>) (Lab/Co-op)
† Hayes, Mr John (<i>Minister of State, Department for Transport</i>)	Stewart, Iain (<i>Milton Keynes South</i>) (Con)
† Hendry, Drew (<i>Inverness, Nairn, Badenoch and Strathspey</i>) (SNP)	† Tugendhat, Tom (<i>Tonbridge and Malling</i>) (Con)
† Knight, Sir Greg (<i>East Yorkshire</i>) (Con)	Ben Williams, Farrah Bhatti, <i>Committee Clerks</i>
† McDonald, Andy (<i>Middlesbrough</i>) (Lab)	† attended the Committee

Witnesses

Steve Nash, Chief Executive Officer, Institute of the Motor Industry

Teresa Sayers, Chief Executive, Downstream Fuel Association

Edward Woodall, Head of Policy and Public Affairs, Association of Convenience Stores

Ben Howarth, Senior Policy Adviser for Motor and Liability, Association of British Insurers

Iain Forbes, Head, Centre for Connected and Autonomous Vehicles

Richard Moriarty, Group Director of Consumers and Markets and Deputy Chief Executive, Civil Aviation Authority

John de Vial, Director of Financial Protection, Association of British Travel Agents

Captain Martin Drake, Chairman of the BALPA Security Group, British Airline Pilots Association

Steve Landells, Flight Safety Specialist, British Airline Pilots Association

Commander Simon Bray, National Policing Lead for Airport Policing, Metropolitan Police

Chief Inspector Richard Goodwin, Metropolitan Police

Captain Paul Watts, Chief Pilot, National Police Air Services

Public Bill Committee

Tuesday 14 March 2017

(Afternoon)

[JOAN RYAN *in the Chair*]

Vehicle Technology and Aviation Bill

2 pm

The Committee deliberated in private.

Examination of Witnesses

Steve Nash, Teresa Sayers and Edward Woodall gave evidence.

2.1 pm

Q65 The Chair: We will now hear oral evidence from the Institute of the Motor Industry, the Downstream Fuel Association and the Association of Convenience Stores. We have until 3 pm for this session. Could the witnesses please introduce themselves for the record, starting with Mr Woodall?

Edward Woodall: Good afternoon. I am Ed Woodall. I am head of policy and public affairs at the Association of Convenience Stores, which represents 33,500 local shops and 8,000 forecourt retailers across the UK.

Teresa Sayers: I am Teresa Sayers. I am the chief executive of the Downstream Fuel Association. We represent the non-refining companies and major supermarkets.

Steve Nash: I am Steve Nash. I am the chief executive of the Institute of the Motor Industry, which is the professional body for individuals working in the motor industry.

Q66 Richard Burden (Birmingham, Northfield) (Lab): Welcome. I have two sets of questions. The first is probably principally to Mr Woodall and Ms Sayers, and the second is principally to Mr Nash. On the Bill's provisions on electric charging points, I think it is fair to say that your two organisations have been rather more critical of what the Government are suggesting than a number of others. Can you outline why you think they are going in the wrong the direction with the provisions on charging infrastructure?

Teresa Sayers: First, we welcome the opportunity to comment on the Bill and work with the Government on looking at ways to build up the infrastructure for electric vehicles. I represent four major retailers, and my members already have some provision for electric charging points within their infrastructure.

We believe that the emphasis on petrol forecourts is wrong for a number of reasons, not least because the configuration of forecourts does not lend itself to allowing cars to be placed there for in excess of 20 to 30 minutes. We provide electric charging points, as I say, but they are exclusively in the car parks of our stores and at head offices. We are looking closely at how we can further develop provision along those lines, but we are very concerned about the emphasis on placing them in the forecourt.

Edward Woodall: Also, there is the question of how we define “large fuel retailer” in the Bill to determine whether a retailer has the capacity for electric vehicle charging points on their sites. That is quite a difficult task to deliver in regulation, because this is quite a diverse and different sector. That could take into account fuel volumes and number of sites, and it would also have to take into account size of sites, as Teresa was saying, in terms of having the space for people to charge their vehicles on the site.

I suppose there is also a concern about the desire of consumers to charge in those locations. The Government's own evidence suggests that 95% of vehicle users currently charge at home; 26% then charge their vehicles in workplaces; and only 12% look to charge their vehicles in public spaces. Would they choose to do that on fuel sites? It is a question; I am not sure. Do the fuel sites have the capacity to deliver in this way? Only 11% of our members have seating areas in their forecourt sites, so what does someone do for the 30 minutes if there are rapid charging facilities on those sites?

There are other logistical issues around whether sites have the capacity to deliver that energy. Electric vehicle charging points will need a direct connection with the grid; obviously, that does not cover all sites across the board. So there is a real challenge in how you define in regulations a large fuel retail site, and whether it has capacity to deliver those services.

Q67 Richard Burden: The Bill refers to “large fuel retailers”. Evidence that we heard this morning rather suggested that what will make or break the expansion of electric charging infrastructure is much broader than motorway service areas. There was a lot of discussion about supermarkets, what to do around on-street parking and smart charging at home. I will press you a bit further on whether your reservations about the parts of the Bill relating to electric charging are concerns about Ministers being given regulation-making powers to mandate others to provide charging points to certain specifications. Or do you basically accept that principle, but think that the provisions are targeted wrongly in focusing on large fuel retailers?

Edward Woodall: The latter. I understand the principle and the objectives, but is it right to focus this purely on fuel sites, when the evidence suggests that consumers are perhaps not looking to go to those sites to charge their vehicles? There is also a concern about whether it matches up with what drivers will do while they are charging their vehicles. It makes sense to have charging points in an area where they might be going to the cinema or the shops, as opposed to having them on a forecourt site, which may not have the space or the retail capacity to deal with that issue.

We also put, in our submission, evidence about ways to incentivise other partners to use this system—for example, changes to the national planning policy framework might give more specific direction on where charging points should go, so that local plans could be informed by that, and capacity could be increased across the board.

Q68 Richard Burden: Can I come to Mr Nash on a different area? In the written evidence you provided, you put quite a lot of emphasis on the importance of training and accreditation for people working on these charging points and autonomous vehicles in the future. Could you say a little bit more about your concerns?

Steve Nash: Absolutely. I think it is worth understanding a little bit about our sector. Everybody knows we have a franchise sector, and we tend to talk about the independent sector, but that is a catch-all phrase. There are about 40,000 businesses in there, ranging from Halfords and Kwik Fit down to a man working on someone's drive.

Right now, of all the technicians out there working on cars—there are just under 200,000 people we know of, but there are probably quite a few that we do not know of, because they do not necessarily belong to a trade body or anything else—only about 1% are qualified to work on high-voltage electrics. Let us make no mistake about this: you have to be licensed to work on domestic electrics, and I would venture to suggest that the electrics in an electric car are potentially more lethal than the mains. We are talking about direct current—more than enough to fry you—so you do have to be properly trained and know what you are doing. In this sense, a car is not a car, just because it looks like a car. These are the biggest technical changes we have seen for 100 years. This is not an evolution of old technology—this is new technology.

We know that the manufacturers will do what they need to do to ensure that their franchise dealers can cope. Most of them are already using our accreditation scheme to qualify people at different levels, including knowing what you should not do and how to disable the electrics to work on other non-high-voltage systems safely. The higher level is for working on the high-voltage systems.

If you really want these cars to proliferate, there are a couple of problems. One is that right now it can cost you up to 50% more to insure one of these cars, because the insurance industry is quite aware that there is a limited repair market out there. If your car has been in an accident, you need somebody who knows what they are doing to put the thing back together, and the industry is assuming a higher cost because there is a limited repair market. That will continue unless you find a way of engaging the wider market, and the wider market will not readily make that step because there is cost involved, so it becomes a chicken and egg situation.

As I said, there is a very real health and safety issue. You do not see it now, because there are 32 million cars on the road that do not have this technology, and there is plenty to go round in the service and repair market. There are cars that have been around for a while, such as the Toyota Prius models and so on, but we know from our own experience that a lot of the independent guys do not touch those—they pass them back to the dealers—because they do not need that work to make a living. However, as these cars proliferate—and that is everyone's intention; if you look at the product plans that all of the manufacturers have at all the motor shows, it is all about plug-in hybrids and electric cars, so these cars will proliferate—if you want a competitive market for servicing these cars, you need the independent sector to engage.

To make that happen, first you need regulations to protect people's safety, and secondly you have to consider using some of the large fund—I believe it is something like £600 million—that has been put aside to help move us in that direction. Some of that money should be directed towards a training fund to help the independents engage in the training that they need to work on the cars safely.

Q69 Richard Burden: Could you outline how it would work? In other words, how would the Government, or whoever, define the vehicles that would require licensed people to work on them, and what things they would need to work on? For example, some might say you should not have to be licensed in order to check the tyres; that is different from working on the electrics. There is potential for this to be a difficult area for definition.

Steve Nash: We have worked very closely with manufacturers to define three levels of accreditation. Level 2 says you can work safely on the passive systems of the car, so you are still going to have steering and suspension. I was going to say brakes, but actually a lot of these cars have regenerative brakes, so even that is potentially risky. The second level of accreditation is knowing how to switch off the high-level electronics and knowing what you should not touch, because there are certain systems on the car that have very high residual currents in them, even when the car is turned off.

Level 4 accreditation is for people who are properly trained to work on the high-voltage systems, which include the control systems and the battery packs. Working with manufacturers, we have refined that to understand that it covers the entirety of their own group of technicians working in their franchise.

The Chair: If Members wish to remove their jackets, that would be fine. Let us try to keep questions and answers crisp.

Q70 Andrew Selous (South West Bedfordshire) (Con): I have a question for Ms Sayers and Mr Woodall. I understand your concerns, because it is quite a change to your business model, but are you not missing out on future potential? Given that we all expect this to be a growing and significant market, do you not want to be part of it, to capture that revenue? Are you not looking at other ways to make money around this, reimagining your business model a bit?

Teresa Sayers: Absolutely. My members are very keen to engage in the development of alternative fuels infrastructure. As I said earlier, they already have some provision, they are actively exploring how best to develop that and they will happily work with the Government on that, but their considerations as to where it would be appropriate to place these additional electric vehicle sites are around convenience, the identification of strategic corridors, the proximity of the car parks to other retail parks, the duration of time that shoppers typically spend within stores and the size of the car park. All of these considerations are around existing car parks, so there is a willingness for and understanding of the potential growth of this. We are playing our part, but we maintain that the forecourt is not the appropriate place to put this emphasis.

Edward Woodall: I agree. This is about whether the development of the market needs to be regulation-led through the Bill, or whether it needs to be led through making the business case for the fact that this infrastructure is going to grow. The question that comes back to the Office for Low Emission Vehicles is about more research to make a business case for businesses to have these on their forecourts, and about looking at using funding to incentivise the introduction of this new infrastructure,

instead of enforcing it. That incentivising might be done through business rates relief for people with very large business rates bills who put these on their forecourt sites, or through direct Government funding to think about how to put these on the sites. There is this question of whether it should be regulation or incentive-led.

Q71 Andrew Selous: Thank you. I have a final question for Mr Nash. Hearing about the training needs of the industry, what preparation is going on in schools and further education colleges to set up courses so that we have enough skilled technicians to service these vehicles in future?

Steve Nash: There are plenty of places around the country that can train people in the technology. Obviously, over time, the new apprenticeship standards will evolve, but it has to be remembered that an apprenticeship is a start, not a finish—we are talking about lifelong learning here. Apprentices will not come out of their apprenticeships ready and available to work on the high-voltage electrics. That will take time, and that is additional training that will come as they develop their career. We as an organisation, a professional body, work with a network of 600 FE colleges, training companies and manufacturers' academies around the country, many of which are capable of delivering this kind of training. As I said earlier on, it is a sort of chicken and egg situation—a question of supply and demand. They are ready to offer it once people have moved in that direction, but it will not happen on its own.

Q72 Rob Marris (Wolverhampton South West) (Lab): I want Ms Sayers to clarify a bit. The supermarket I go to every week is, I suspect, like quite a lot of them. It has a large car park—it is one of the major multiples—and alongside but distinct from that car park is a petrol station, which is branded by the supermarket but is a Shell station. As my hon. Friend the Member for Birmingham, Northfield (Richard Burden) said, the Bill gives “large fuel retailers” certain responsibilities. Would your members prefer the wording, “large retailers”, to make that clearer? In the supermarket car park, people may typically leave their car for 30 minutes. I am thinking of those old westerns where people hitch up their horse outside the saloon—people hook up their car, grab a trolley, go in to do their 30-minute shop and, when they come out and unplug it, they have had a fast charge. The charging points would therefore be better placed in each parking bay for the supermarket proper, which is not a large fuel retailer at the moment. Is that more consonant with the way in which your members are thinking?

Teresa Sayers: Very much so. Our apprehension about the wording is all about the location of the EV charging point on a forecourt, for the reasons we have discussed.

Q73 Rob Marris: The word “fuel” in “large fuel retailers” is causing you to scratch your head a bit?

Teresa Sayers: Yes, absolutely.

Q74 Rob Marris: “Large retailers” would be more palatable for your members. Am I right?

Teresa Sayers: Yes.

Rob Marris: Thank you. That is very helpful.

Q75 The Minister of State, Department for Transport (Mr John Hayes): This is a question for Edward, and then perhaps Steve. Given the need to ensure that we have breadth in the charging infrastructure—not just number, but location—is it not important that we also base charging points in rural places, village shops and small post offices, rather than concentrating them in places that already have charging points? Similarly, is it not also important that we work with small garages, rather than simply the major garages, to avoid creating an uneven distribution of charging points that would be a major barrier to entry to the market for many potential consumers? Would you like to deal with that one before I come on to my second question?

Edward Woodall: Obviously, we do not want to be left behind. The fuel retailers in our membership are looking at this at the minute. They have electronic vehicle charging points, but significant costs are associated with delivering that. Keeping pace with those costs, if we introduce charging points by regulation, would be a challenge. It would be even more of a challenge for village post offices and shops to have charging points on their sites. Obviously, we do not want to be left behind, but I think the industry will naturally fill that space where it is appropriate.

Q76 Mr Hayes: We would not want to exaggerate or exacerbate the trend towards fewer places at which to buy fuel and food. Steve, on your point about skills, this morning, at a roundtable with the industry, the point was made that this might act as a spur to people who were keen to get into the industry. The excitement of the new technology, and of being part of an important, cathartic change, might attract more recruits. Have you come to any judgment on that and, if not, how can we make that happen, as it is surely a good thing?

Steve Nash: We are like every other industry: we are competing hard for talent, and we are definitely using the massive, incredibly exciting change we are going through to engage young people and show them that this is a cutting-edge, futuristic industry—so, absolutely. As the professional body for the industry, part of our *raison d'être* is to raise professionalism and bring new talent into the industry, and this a great catalyst for that, yes.

Q77 Mr Hayes: We heard from a witness this morning who suggested that we should have roadshows—demonstrations of electric vehicles in different localities—and that once people had tasted the fruit, they would want more of it. That might also apply to people who want work in the industry. Is this not about marketing in a sense?

Steve Nash: Yes. We are very much involved in UK skills and world skills. We are at the Skills Show. Last year, in co-operation with some of the manufacturers, we featured electric cars there, and it absolutely does pique interest. I very much go along with what you are saying.

Mr Hayes: Good. Thank you.

Richard Burden: I should declare an interest. I am an honorary fellow of the Institute of the Motor Industry. It is non-pecuniary, but I thought I had better put that on the record.

Q78 Drew Hendry (Inverness, Nairn, Badenoch and Strathspey) (SNP): I want to ask a question similar to that asked by the Minister. Earlier, we were talking about the need to look not just at fuel stations as the only charging point locations. There is an issue of unintended consequences, arising perhaps from a lack of strategy and thinking over the deployment of charging points. Similar to the situation with village shops, in your view, is there a risk if we concentrate, for example, on large retailers, that we could see a further impact on high streets because there would be a disincentive to go there? A follow-up question would be, do you believe that enough work has been done and consideration given to other technologies such as in-road inductive charging as a possible solution to those conundrums?

Edward Woodall: Obviously we do not want further disincentives for people going to high streets. That comes back to the point I made earlier about how we can encourage this more widely. Perhaps we should look at the planning system and the national planning policy framework to ensure that people and planners are thinking about where to put charging points in future. I agree that we do not want to focus too much on one particular area. We should follow where the consumers—the people who have electric vehicles at the moment—are going. They are saying that they want to charge in locations that are convenient for them. It is not necessarily in fuel retailer sites, but in car parks and leisure facilities, on high streets and in other car park areas. That might include village shops and convenience stores.

Teresa Sayers: I support everything that Ed said. It is very much about destination and convenience. When you look at such criteria, a variety of alternatives offer themselves up as being appropriate for the positioning of EV charging points.

Q79 Drew Hendry: Can I press you for some thoughts on other charging technologies? That was the last part of my question.

Edward Woodall: I do not have a great deal to add on that.

Q80 Mr Steve Baker (Wycombe) (Con): Mr Woodall, if I understood correctly—I listened very carefully to the answer about business models, because the same question occurred to me—you said you do not wish to be forced, but you would be happy to be paid one way or another to take charging stations. I am not surprised, but you did not mention profit as an incentive to provide this service to consumers. Can you elaborate? Why did you not mention the potential to make a profit out of charging?

Edward Woodall: Obviously there is a benefit to having charging on a site. I suppose I am focusing, in the context of the Bill, on how it will work in retailers' thinking about investing in something that is developing in the long term.

Q81 Mr Baker: Is it just not profitable to provide charging to people?

Edward Woodall: Petrol forecourt sites make their money out of the shop. They do not make their money out of the fuel or the electric charging. That is a very low-margin part of their business. That is why you are seeing so much investment in the sector.

Q82 Mr Baker: That is what I imagined. To make a profit, you need to get people through as swiftly as possible, get them in the shop spending as much money as possible, and then on they go. Hopefully, they are happy and have had the service they want.

Edward Woodall: It is not quite that simple, but yes.

Q83 Mr Baker: Suppose you had an energy source that could be changed quickly, instead of over half an hour, would your current business model work? If, for example, we used hydrogen, as we were discussing this morning, your business model would continue to work in the same way, would it not?

Edward Woodall: Yes, but obviously the investment for putting hydrogen on fuel sites is significant. We asked fuel retailers about the cost of putting on electric vehicle charging points, and the estimate was between £50,000 and £60,000 per site, depending on the site. That increases significantly for hydrogen sites, because the infrastructure behind that is much bigger and more expensive, and it is a harder case to make because fewer consumers use that type of fuel source.

Mr Baker: Does anybody else wish to add anything on that point? No? Thank you very much.

Q84 Alan Brown (Kilmarnock and Loudoun) (SNP): Earlier, in the discussion with Rob, there was discussion about phraseology—about large fuel retailers or just retailers—and an issue with forecourts. I want to clarify something. I am not sure if forecourts are mentioned in the Bill, so is that a red herring? Is it not going to be up to the retailers to site the charging points where they are most convenient?

Following on from the previous question, if you are not blocking the forecourt, a rapid charger may take 30 minutes, but is that not an opportunity for sales if it is the shops that make all the money? I would have thought that for somebody who is travelling, if it is an intermediate store, it would be an ideal opportunity to park and charge their car, go into the shop, buy a newspaper or a magazine and a few snacks, sit in their car, then move on. Is there not a business opportunity there?

Edward Woodall: Yes, there is. As we said in our submission, only 11% of sites have seating areas for customers, so there might not be the capacity to manage all that. Equally, how big is a forecourt site? Think about your local forecourt site—how many cars can it fit? For some of these electric vehicle charging areas, they will not consider it unless it is an acre or an acre-and-a-half-sized site.

Teresa Sayers: Certainly, the charging sites would have to be on the periphery of a forecourt. The current configuration of estates has very limited space to accommodate any parked vehicles. As was previously mentioned, the business model is a very high throughput of vehicles. The maximum duration on the forecourt is usually below five minutes—they fill up, pay and leave. It is just not built and configured to have additional cars there for a very long period of time.

Q85 Kit Malthouse (North West Hampshire) (Con): I want to ask about brevity. Mr Woodall, I have to confess that I cannot ever remember spending more

than five or 10 minutes in a convenience store—presumably, that is why they are called convenience stores, because it is convenient and quick—so I cannot quite see the model of me pulling up in my electric car, plugging in for the half an hour or even 15 minutes, and spending that time in the convenience store, particularly when the number of spaces will necessarily be limited. There will not be 15 or 20 spaces; you might perhaps have two, which might therefore be full the whole time. Do your members really see this as a big business opportunity or is there a Government subsidy available so you might as well take it?

Edward Woodall: I agree with all those points. I think it is difficult in our format of retail to deliver electric charging, given that both on forecourts and in convenience stores, there is large throughput and we are usually in areas of small parades where there are limited parking spaces, or they are on forecourts that are likewise limited for parking space.

Q86 Kit Malthouse: So on your earlier point on the greater investment required for hydrogen, given that hydrogen requires no behavioural charge—you refuel in about the same amount of time as you do a current internal combustion engine—the throughput of people might be greater, so the return on investment could be higher. Rather than having two people sitting there for half an hour, you might have 30 people going through who would therefore spend commensurately more, even though the initial investment might be more.

Edward Woodall: In terms of the hydrogen market, we are a long way off hydrogen being—

Q87 Kit Malthouse: That is what everybody keeps saying. There is a body of us who do not necessarily buy that, but okay, I understand that.

Edward Woodall: It is hard for me to answer and model that—

Q88 Kit Malthouse: I understand that. I have one other question, which is about the very high voltage required for fast charging. On an existing petrol or diesel forecourt, you are not even supposed to use your mobile phone because of the possibility of some kind of arc or charging gas. Is there a safety issue with the incredibly high voltage that is required to charge a car in half an hour and the possibility of arcing in an atmosphere of gasoline fumes?

Teresa Sayers: I am not qualified to answer that question. However, that is something that needs careful consideration. There are technically qualified people who can give you a comprehensive answer.

Steve Nash: With current electric cars—no pun intended—and the connections you make, there is very little chance of arcing, but I understand that you are not going to put volatile things next to high electric charges.

I have some experience of hydrogen because I was formerly on the board of BMW in the UK and we were running hydrogen cars around London. To deliver hydrogen as a liquid, it has to be stored at absolute zero. That is very, very complicated. It is also a very small molecule, so it permeates just about everything, so storing it is a real challenge. We are talking about hydrogen fuel cells, which are still kind of in their infancy. It depends on

how the hydrogen is required, whether as a gas or a liquid. Either way, there is a long way to go. I think there are only two places in the south-east of England that could deliver hydrogen if you wanted it at the moment.

Q89 Kit Malthouse: There are six actually.

Steve Nash: Maybe I am out of date but, even so, that is not a lot. It will come, but there are technical complications. The battery electric cars are the ones that are going to proliferate first.

The Chair: Do Members have any further questions for this panel? No? I thank the panel for their time and co-operation.

Examination of Witnesses

Ben Howarth and Iain Forbes gave evidence.

2.35 pm

Q90 The Chair: We will now hear oral evidence from the Association of British Insurers and the Centre for Connected and Autonomous Vehicles. Could the witnesses please introduce themselves for the record, starting with Mr Forbes?

Iain Forbes: My name is Iain Forbes. I am head of a team called the Centre for Connected and Autonomous Vehicles, which is a policy team based in the Department for Transport and the Department for Business, Energy and Industrial Strategy.

Ben Howarth: I am Ben Howarth. I am policy adviser for motor insurance at the ABI. As part of that I have led all our work on the Automated Driving Insurance Group and drafted our response to the CCAV consultation that pre-empted the Bill.

Q91 Andy McDonald (Middlesbrough) (Lab): Good afternoon, gentlemen. Thanks for coming. I have a number of questions. At the beginning of the Bill, we are told that automated vehicles are what the Secretary of State says are automated vehicles. Clearly, some thought has gone into the criteria for so-designated vehicles. What are your own thoughts and observations on how we can be sure we are getting that set of criteria correct?

Ben Howarth: From an insurance perspective, that is one of the clauses we particularly welcomed when we saw the Bill. One of our concerns in advance was that it would not be clear to the customer what cars needed this new insurance system, so the clarification that the Government are going to take responsibility for doing that is really welcome. It means basically that we know what cars we need to have this new insurance for, and the customers will know that as well.

In terms of criteria, it is relatively simple. It is more about the user than the technology. I think the technology might not move that much, but it is the point where the user can feel confident that, when the car is in automated mode, it can deal with everything. Thinking about the worst-case scenario of an accident, if the car senses it is going to go into emergency mode, the car is able to do something to deal with that, which does not require the driver to come back in. We feel that if there is any point where the driver needs to come back in, it is not really an automated car. It is that tipping point where the car is completely capable of dealing with every situation. It

might not carry on driving, but, at the very least, it would do an emergency stop and get you into a safe stop manoeuvre. That is the tipping point, or distinction, that we see.

Iain Forbes: Just to underline that, the measures in the Bill are designed to deal with the sorts of situations where a vehicle can drive itself in automated mode and not require the oversight of a human when the driving test is being operated. The particular mechanism by which those vehicles are going to be certified is an active topic of discussion at international regulatory forums. We have actively participated in those discussions, but we felt it was important to flag at the outset of the Bill that that would be clear to people in the insurance industry and elsewhere, to make sure they were able to understand which vehicles these measures apply to and which ones they do not.

Ben Howarth: In practice, we would be hoping that, from an insurer's perspective, it is pretty easy to find that out, just by looking at the licence plate or the VIN number. There would be a clear definition that this is a car with automated functionality.

Q92 Andy McDonald: Of course, we are now entering a major shift, because we have to have insurers who are going to be picking up the tab for accidents involving automated vehicles. Presumably, as we progress, we will be getting errorless driving in automated vehicles. That is the objective, and incidents will result. Therefore, we should be looking forward to cheaper insurance policies, but that may not automatically be the case, if you pardon the pun. How progressed or how ready is the insurance industry to deliver products that would make fully automated vehicles accessible to people in terms of costings, including the cost of insurance?

Ben Howarth: We are very advanced as an industry, particularly in the UK. Because of the clear message that the Government have given, we are perhaps ahead of our contemporaries in other countries. The two really important criteria in terms of the cost of insurance will be the volume of accidents. We are fairly confident—Thatcham Research has done quite a bit of research that suggests the number of accidents is going to come down a lot once we get automated driving. That will obviously reduce the number of insurance claims, which will inevitably have an impact on the cost of insurance.

One factor that we probably do not know about at this point is the actual cost of the vehicles themselves, and how much they cost to repair. We might have considerably fewer claims, but very high costs associated with repair might have an impact. That said, that is something that is happening already. Vehicle technology is changing a lot already, so it is not a case of a huge tipping point in technology once we switch to fully automated cars. The technological change will happen more steadily, so I am very confident that the insurance industry is ready to deliver competitive insurance products that will be affordable, will help people and will make them want to take up this technology.

Q93 Andy McDonald: Will you help me on another matter? When an accident is caused by an automated vehicle, we are told in the Bill that the insurer is liable for the damage, but when the automated vehicle is involved but is not insured, it is the owner of the vehicle who is responsible for the damage. I am wondering

what your view is on whether that ought to be the person in charge of the vehicle, rather than the owner. We might have the perverse situation of a stolen vehicle being involved in an accident but, according to this, the owner of the vehicle would be in the frame. Do you understand?

Ben Howarth: I think I know what clauses you are referring to and my understanding of them is that that covers publicly owned vehicles and Crown Estate vehicles. They would not have insurance because they do not need them. In those cases, where it is a publicly owned vehicle, the liability would fall on the public body. It is a separate arrangement for genuinely uninsured driving—private cars that are uninsured.

Andy McDonald: That is really helpful.

Iain Forbes: That is exactly right. That clause covers publicly owned vehicles. We anticipate the situation being similar to the situation at the moment for conventional vehicles. It is often the case that they self-insure, rather than going through an insurance company.

Q94 Andy McDonald: I do not know what your handle is on this, and that was terrific clarification, but do you not see that it is possible to interpret it in the way I did? A vehicle that has been stolen is not insured, but the owner of the vehicle is picking up the cost, not the person who stole it.

Iain Forbes: Certainly, our legal team has been through the regulations to effect that as the policy aim, but if the Committee has comments, we have to look at it.

Q95 Andy McDonald: Finally from me, we are in the world of upgrades, which will present opportunities for manufacturers to continue to engage with the vehicle, in effect. I was wondering whether you had applied your minds to any future product liability exposures with the advent of new software. What does that mean in terms of those future liabilities and in terms of limitation, because current liability, once you part with the vehicle, has a 10-year limitation, although we have got some issues around extensions for people with disability insurance and so on? But if it is a product liability issue, there could be a succession of products that could give rise to liability. Is that factored into your thinking? Is it relevant? Have you dismissed it?

Ben Howarth: That is very relevant. When the consultation first came out, one of the questions was, "Do we bolt product liability into the motor insurance policy?" We looked at it in quite a lot of detail, and that was our initial assumption for how it would work. When we thought about it, those issues that you referred to and the fact that product liability lasts for only 10 years made it feel like too much of a change for product liability to be put directly into a Road Traffic Act situation. That is why we came to the conclusion that it should be a primary motor insurance policy, with the option then to recover from manufacturers.

Our conclusion is that you probably do not need to change the product liability, as it is kind of a backstop and it will not affect the original claimant. There might be a case on some occasions, if it is an older vehicle. We do not know quite how the market is going to develop—whether cars will be on the road for 10 years or longer in this situation, or maybe the product liability will renew itself every time there has been an upgrade. Let us

assume that it does not, and you do expire at 10 years. My understanding is that there will still potentially be the option for a civil liability claim, so you might be able to argue that the manufacturer is not product liable, but they are in effect acting as the driver, so there is another claim that you might be able to bring.

Q96 Andy McDonald: You could be caught with a person with a disability, or a child, who is not subject to ordinary limitation; it would be from the date of their majority. There could be an action on the attaining of that majority and your product liability recompense from the manufacturer is effectively null and void.

Ben Howarth: Yes. I think that is factored in. The Bill means that that is a problem for the insurer, rather than the victim. I suppose part of the calculations that insurers will make is how many of those claims they will be likely to face. Are they insuring vehicles that are over 10 years old? That might have an impact. What is important in the Bill is that it makes that a problem for us as an industry. It will not affect, say, a disabled person who is using these vehicles. I think that is the insurance we need at the moment.

Q97 Mr Hayes: On this insurance issue, there has been quite a lot of speculation about what might happen to the products that the industry offers, which will clearly have to evolve. We were told that again this morning. Is it your estimation that that will affect premiums? One would expect premiums to fall, given the fact that these cars will be safer; many of your claims are related to human error, after all. Is that how you see things developing? However, we are also told that many people who cannot currently drive will now be able to—the infirm, the elderly, some disabled people. In a way, that is the most exciting thing about this development. How would that affect your assessment of premiums?

Ben Howarth: On the first case, I would think of it more in terms of claims costs than actually speculating on what the premiums would be. Obviously, if the number of accidents comes down dramatically, that is going to have a significant impact on the costs that insurers face. Motor insurance is very competitive, and it is inevitable that, if we see a significant reduction in costs, we will see a significant reduction in the premiums charged. So I think we can be pretty confident of that. As far as we know, it is still four or five years before these products will come to market.

Looking ahead to the cars you are referring to, where, say, there is a severely disabled person who possibly cannot drive at all at the moment, we are probably thinking about a level 5 car that can go from A to B in fully autonomous mode. It is fair to say that this legislation is primarily aimed at cars that will be manual for some of the time, automated for the rest: more of a level 4 car. Once you get to level 5, that is probably the point at which the insurance system is going to have to change more significantly.

Where the Bill is really helpful is that it allows us to learn from the first developments, get an insurance function in place and see that that system works. It is probable that we are going to have to evolve further once we get to a fully automated car. David Williams, who was one of your witnesses this morning, is one of the insurers involved in trials of fully automated technology.

There is a significant degree of interest from insurers in the next generation of technology as well; but it is probably fair to say that this Bill is more around a level 4 car. I prefer to think of it as a binary distinction between automated and not-automated. I am not completely convinced about the levels and how useful they will be for consumers. It is probably fair to say that we think of it as level 4.

Q98 Drew Hendry: Public confidence in autonomous vehicles will be critical in terms of how quickly we can take advantage of some of the benefits that are portrayed by the industry. Given that the technology largely exists, do you feel that the Bill is going to go far enough to encourage the uptake of autonomous vehicles? I am specifically interested in whether you feel that the connectivity will allow a truly UK-wide uptake and also in rural areas, given that, as we have heard previously about electric vehicles, range and the ability to get to the destination is one of the limiting factors.

Iain Forbes: The point about confidence is really important. Trust in the technology is going to be a vital factor in seeing some of the benefits we are talking about. It is part of the reason that the Government are investing with industry in demonstration projects, which will involve members of the public trying the technology, understanding what it might mean for them and helping the developers to learn from that in terms of their public messaging and how they take the technology forward.

With regard to connectivity, what is interesting is that different developers are following different development paths for the technology, some of which rely on connectivity and some for which do not. So, from a Government perspective, it is difficult to say exactly what the final technological solution will look like. Some time is needed to work that through, but we are actively trialling this technology with the industrial players to understand, from a Government perspective, what action we need to take to make sure we are prepared for it.

Q99 Drew Hendry: Just to press that point about the end-to-end availability, is enough being done to ensure that you get truly wide coverage to allow people from outlying areas to get out and back again in the new technology?

Iain Forbes: It is an important bit of work that will need to be done as we develop out the technology. We are investing in connected vehicle test-beds to understand what the requirement is, and certainly one aim of that work is to try to understand how it can benefit everyone, not just people in cities.

Q100 Mr Baker: I would like to turn to clause 4, which relates to accidents resulting from unauthorised alterations or failure to update software. Hopefully, you have had a chance to look at this section of the Bill. It is all couched in terms of the operating system—interference with and failure to update the operating system. I am concerned that there are other aspects of software in a car that are relevant. Are you satisfied that the Bill is in the right shape, referring to the operating system, or would you prefer to see some other definition, in which case, what?

Iain Forbes: I guess it is my team that has been looking at the Bill, so I will ask Mr Howarth to comment first.

Ben Howarth: From our perspective, my initial reading of it was that it covered what we thought it was, and I am thinking it is the technology. I have to say, I am not a software expert, so if the wording could be clearer—the clause basically says you are not liable if a stupid individual mucks around with the car’s systems and does things that the manufacturer would not permit.

Q101 Mr Baker: We have a shared understanding of the purpose of this clause. I should say that I am a software engineer—or at least I was before I first came here—and I am slightly concerned that if this was tested in court and somebody had interfered or failed to update their firmware—a low level software—or if the driving was done by application software sitting on top of the operating system, the purpose of the Bill, of which we have a shared understanding, could be defeated. You are saying that you have not formed a view on whether “operating system” is the right definition.

Ben Howarth: To be fair, I do not think we have looked into the wording in that much detail. If the wording needs to be clearer, we would support that. We definitely want the same thing.

Mr Baker: Fine. Thank you.

Q102 Rob Marris: I have three quick points for Mr Howarth. First, the Bill talks about the vehicle being insured as opposed to what currently happens, from my understanding, which is that driver is insured. So I have policy motor insurance that enables me to drive certain vehicles, including my principal one. Is the insurance industry happy with what appears to be a change in focus—that is it now on the vehicle rather than the driver?

Ben Howarth: I think it is not a huge change in focus. In practice, the enforcement that industry currently does—via the motor insurance bureau—to check that you have insurance is done via the vehicle. It is done by checking licence plates. The responsibility is on the human driver, but the practical enforcement is to check whether that car, on the road, at that time, is covered by insurance. This Bill is primarily designed for vehicles that will be manually driven some of the time and automated some of the time. It is just the practicality that, once you are switching to an automated car, you need to be thinking about the car rather than the driver.

Q103 Rob Marris: On that basis, is the industry also happy that the insurer is liable rather than the owner-driver, which is currently the case?

Ben Howarth: Again, it is a practicality that we are essentially stepping to the front. We are coming into the sun.

Q104 Rob Marris: Yes, you used to be behind the scenes. For these vehicles, you would be up front. That is all right with the industry?

Ben Howarth: The whole purpose of the legislation is, I suppose, to be an enabler and say to people, “You can be confident using this technology, because you will not have to worry about getting into complex battles with your manufacturer.” We do not know for certain that that is what will happen. Some manufacturers have given positive statements about it, but if that does happen, the insurers will step into the front of the

system and say, “We are actually going to take these on. We are the first port of call, even in the case where the person to whom we have sold the insurance policy to is not directly liable.”

Q105 Rob Marris: The third point is on the software updates. From memory, when I bought my car, which has a touch screen on it for the radio and things, it would have cost me an extra £600 to have sat-nav put in. That is just the software because it already has the screen and the buttons and everything. I am thinking about software updates, which we have talked about, and a failure to install software updates could invalidate the insurance policy under clause 4. I understand that, but I am a bit concerned that the Bill appears to have no provisions to cap the charges for software updates. For the sake of argument, I have just spent £15,000 on a two-year-old automated vehicle and then some software update comes in that is £1,000 and a month later they want another £1,000 out of me. If I do not do it, the thing is useless, because it is uninsurable and therefore undriveable. Do you think there should be provision for a cap on software update costs, so that vehicles do not become uninsurable and therefore driven without insurance?

Ben Howarth: I have not really got a view on a cap, per se, but I have got a view that if it is a fundamental safety upgrade and it will change the functionality of the vehicle significantly, there needs to be an arrangement in place to make sure that is not optional. It is probably for other stakeholders to say how we make that affordable to the public. From an insurance perspective, we do not want cars to be unsafe simply because people cannot afford safety upgrades. That is true today, thinking about automated braking: it would be great if that was a standard feature of all new cars because it is proven to be safe. It is optional and it is often not taken up because it is too costly.

Q106 Rob Marris: This stuff would not be optional, would it? The software update, effectively, would not be optional.

Ben Howarth: No, where it is fundamental to the car’s safety, it needs to be non-optional. We are hoping for a system where it is impossible not to get the safety-critical upgrades. I cannot really comment on how much to charge for them.

Q107 Andrew Selous: I just want to return to two groups that miss out on the freedom and opportunities of being able to drive. We talked about older people and disabled people but also young drivers, for whom insurance is often prohibitively expensive, running into many thousands of pounds. What analysis have you done of the advantages of connected and autonomous vehicles over and above taxis, private hire vehicles, getting an Uber? What extra benefits do you see those two groups being able to derive once this technology is established and there is widespread take-up? Have you done any analysis or thinking on the social benefits for those two particular groups?

Iain Forbes: We have not done a research project on this, but I am aware that new products enabled by connected systems are opening up the ability to drive to a wider range of people. For example, younger people now have access to a wider range of insurance products enabled by telematics than was the case previously.

Certainly, there is innovation within the industry that I am aware of, which is opening up options for accessing insurance to younger people as well as to some other groups as well.

Q108 Andrew Selous: Has the insurance industry thought about these two groups?

Ben Howarth: The potential limitation is that we do not know when this completely automated technology is going to come to market. We are assuming about 2021, but we cannot be 100% certain. There is quite a gap until then.

Telematics, which Iain mentioned, are not directly linked because it is a plug-in the insurer gives you that is not necessarily built directly into the car, but that is probably the first step towards an insurance policy tailored much more around tracking what you as an individual do, rather than broader risk factors.

Longer term, we are talking about cars that will take away the most common human errors and make the road safer. Increasingly, insurance is going to be tailored around the vehicle rather than how the individual behaves. Where you are talking about younger drivers particularly, their behaviour is going to become less of a factor. So you would not necessarily be thinking about age as a relevant risk factor when you look forward into the future. For older people and people who are vulnerable and do not have access to cars at the moment, this is transformational. We probably have not done any more work than any other witnesses on the evidence of that.

Q109 Alan Brown: I have a couple of questions. The first one is for Ben. We have conflicting information about insurance cost. Insurance cost could be much higher because of the repair cost and the lack of people qualified to do the repairs, as well as the cost of the car itself, but there are also expectations that insurance costs will come down because there will be fewer accidents. Is it fair to say that at the moment there is just not enough information to do accurate modelling to understand what insurance figures are going to look like?

Ben Howarth: I think that some people have tried to do modelling, but there is that uncertainty between those two things. We don't actually know what the cars are going to cost on the market, and that is obviously going to be a factor in the insurance premiums as well. That said, our members are really enthusiastic about the technology. I think they all recognise that it is the future of driving. We don't know exactly when it is going to come to the road, but it is going to happen. I think they are going to be very keen to be involved in it from day one, and to therefore be offering competitive products that people will want. So there is a market incentive to say, "Don't make this too expensive."

In terms of really detailed modelling on the exact price, we do not know enough. On the technology side, a lot of that is developing now. We are going to get many more assisted cars. They might not be fully autonomous and self-driven, but that technology is the same kind of technology that will eventually lead to automated driving. We have already started work on resolving the questions around how good the repair network is going to be, so it is not just a question of waiting for automated driving and then it switching over.

Q110 Alan Brown: Are there any special requirements that insurance companies would need for different testing, for example showing that people are capable of using the software or, with a semi-autonomous vehicle, when the right moment is to take action? We know that some people have trouble switching from a gear stick to manual, so this is another quantum leap. Are there any special requirements that insurance companies would like to see, going forward?

Ben Howarth: I do not think we would have any, other than what interested parties in the road safety world would want. I think we want drivers to be well informed about what they have to do. They have to know how this technology that they are taking on the road works and be confident about when they can and cannot use it. That is probably going to need to be part of the driver testing regime. It is a valid question to ask whether the driving test that you take at 17, which never changes again, is fit for purpose when technology will potentially be upgraded on a regular basis. That is worth further consideration. I am not sure that is for this Bill, but it is definitely something we will need to think about before the cars are commercially available.

Q111 Alan Brown: I just wonder what input your organisations have in the testing trials that are ongoing. I know that there have been four trials in different parts of England, but I am thinking of the bigger issues. If we look at it from a Scottish perspective, we have rural roads, single-track roads and different weather conditions. There are connectivity issues, which my colleague touched on earlier. What plans are there to review the tests that are ongoing? How much more robust do the tests need to be and how is that going to be rolled out across the rest of the UK?

Iain Forbes: My team actually oversees the research programme that is paying for the tests you mention, the four city driverless car trials. It is really important when taking forward the competitions to have as open a process as possible. We work closely with Innovate UK, the Government's innovation agency, to design competitions around challenges where we think it is likely that the UK is going to be able to pull through developments in the research base into products that are going to be usable and commercially viable. The initial set of tests were in London, Bristol, Milton Keynes and Coventry. We anticipate having future rounds of competitions that will be open to anyone in the UK to participate in if they want to form consortium bidding.

Q112 Mr Hayes: You know that the Bill attempts to strike a balance between, on the one hand, doing enough not to constrain future development—indeed, to facilitate it—and, on the other hand, trying to determine what the schedule describes as an "unknowable future". Have we got that right, or should we have done more? I draw particular attention to the relationship between connection and automation and the issues of privacy and security of data. Should we do more now, or is it enough that we take powers to do things when we know more later?

Iain Forbes: It is a really important question. The advent of automated vehicle technology will in time require changes to different parts of our regulatory system. We have heard about some of those already today. The trick is to try to find ways of targeting the areas where we think action is necessary now in order to

unblock barriers, or where we know technology is near to market. We need to make sure that we have the framework in place to enable the safe use of that technology.

To some extent it is a question that different people have different views on, but we certainly consulted last year with a range of different stakeholders on the areas where they thought action was necessary in order to ensure that the UK was doing the right things to set up a framework. The area in the Bill was the one that stakeholders highlighted as the one that was most important to act on first.

In time we will have to have further steps in the process of getting our regulatory framework ready. In doing so, I would hope to follow the same approach of identifying where the barriers are that need action now and which technologies are nearer to market. We need to make sure that we have the framework in place to enable those.

Q113 Richard Burden: Can I go back to the definition? At the start of the session you said that the thing you welcomed in the Bill was that it would define what an automated vehicle is by whether or not that vehicle was on the list produced by the Secretary of State. Do you think that creating a definition will be simple? Where would autonomous emergency braking come into that? A large number of vehicles might have autonomous emergency braking that one would not normally define as automated vehicles. Nevertheless, autonomous emergency braking, by its nature, will take control of the car and stop it whatever the driver is doing. So would the car fitted with autonomous emergency braking need to appear on that list, because it would

“in at least some circumstances or situations”

be capable of driving itself without having to be monitored by an individual? If it were included, are we saying that this new insurance product that the Bill brings into effect is essentially going to be the norm, not the exception, much more quickly than we thought?

Iain Forbes: Autonomous emergency braking is one of a suite of technologies sometimes referred to as advanced driver assistance systems. The Bill does not seek to set out a regime to manage those systems. It is about automated driving in vehicles where the driver can step out of the loop and does not need to be involved in monitoring the system. The difference between those systems and ADAS systems, as they are sometimes called, is that the driver always has to oversee what is going on in the vehicle. For those sorts of systems we anticipate the current regime being appropriate.

Q114 Richard Burden: Is the boundary between those two as exact as you say? In a sense, with autonomous emergency braking, the driver has to monitor it. Whether the driver is monitoring it or not, that technology will take control of the vehicle.

Iain Forbes: We anticipate the measures in the Bill interacting with other aspects of law, including type approval requirements for vehicles, which will be looking at how different systems should be approved for safe use on the roads in this country. There is a lot of technical work to do to understand what the particular approval regimes will be for different forms of technology, but we anticipate the higher levels of automation that we are

targeting in the Bill being different and distinct in the way they are approved from the ABS system that you were talking about.

Q115 Richard Burden: What kind of consultation would you expect the Minister to go through before producing his or her list? At the moment, the Minister has complete discretion. There is nothing in the Bill that says he or she has to consult anywhere.

Iain Forbes: I would anticipate quite a lot of work at international level to set the regulatory framework and technical standards that will underpin the safety framework for approving these vehicles. When that happens, there will be a decision for Ministers to take about how they consult with stakeholders in the UK to make sure that people are comfortable with those definitions before they are transferred into UK law.

Q116 Tom Tugendhat (Tonbridge and Malling) (Con): May I ask a couple of questions relating to the way that you have looked at the insurance? It seems to me that you are treating the concept of ownership as it is today, rather than as it is likely to become; transport is likely to become a service, rather than a commodity. Is that fair?

Iain Forbes: The policy aim of the Bill was to set up a framework that protected innocent victims of incidents relating to these vehicles in such a way that it felt similar to the current framework. We can have a framework around vehicle sale that is based on current patterns of ownership. In future that might change, as you say, in which case we would have to review the framework to make sure that we were making appropriate provision in law to allow people to operate the system safely.

Q117 Tom Tugendhat: It will probably become unlikely that car companies will end up selling their cars; they will lease them for shorter and shorter periods, as many car companies already do with their corporate fleets. It would seem sensible to have a look at that.

Perhaps we can go straight on to insurance. The safety systems before full autonomy—what you are calling level 4 cars—

Ben Howarth: I prefer to call them fully automated cars, but level 4 is the definition.

Q118 Tom Tugendhat: Various cars, while not fully automated, already warn you if you are going to cross a white line or are getting too close to the car in front. As automation levels come up, are insurance companies intending to offer better premiums?

Ben Howarth: I would say that insurers have already done that. Autonomous emergency braking was referred to. Even before we had any claims data to back this up, we set any car that had that technology a lower group rating. If you have that technology in your car as standard, you get a cheaper insurance premium. We now have evidence to back that up; we have pretty robust data that say that that technology works. That is definitely the intention, going forward.

One of the key things that we as an industry need to know is when that technology is in a car. That is a practical challenge that we have. I do not think it will be a problem in four years' time, when the Bill comes in. We as an industry would really like to know when this

technology is in cars, to make sure that we are pricing accurately. It is a data-sharing challenge, because it is often impossible to find out whether we have got it.

Q119 Tom Tugendhat: As the Bill comes in and starts to make greater provision for understanding who is liable, the question of ownership kicks in: is the driver responsible for upgrading the software, or does Toyota or whoever maintain ownership throughout? As semi-autonomy moves more towards full autonomy, you get an opportunity, but you also get this question: at what point do you start pricing out real drivers of real cars, if you see what I mean?

Ben Howarth: You do, potentially, but bear in mind that there will be a tipping point at which there are so many really safe cars on the road that it will have an overall impact on the number of accidents. The number of accidents will go down across the board. Also, the whole fleet will get safer; there will be a decreasing number of people in cars with no automated function at all, and even they will get the benefits of generally safer roads.

Q120 Tom Tugendhat: Of course, as the number of incidents goes down, premiums will presumably fall for everybody. Given that car insurance is the most lucrative area of the insurance market, have you done any work on what this will mean for house insurance and various other forms of insurance, on the grounds that it seems unlikely that your members will voluntarily lay profit aside?

Ben Howarth: I am not sure whether it is true that it is the most lucrative part of the insurance market, but we have not looked at the wider impact on the industry.

Tom Tugendhat: It makes up about 50% of insurance profits in the UK.

Ben Howarth: I am sure that individual insurers will look at the potential impact on other parts of the market, but we have not.

Q121 Andy McDonald: Returning to the issue of software, clause 4 devotes a lot of attention to when insurers will not be picking up the can—something that we are familiar with. Can you say a little bit about how you are expecting software to be updated? What is the process for doing that? We all update our phones; we plug them in and press “install”, and the phone tells us when it is done. What is the current state of knowledge? Where are we, scientifically, on achieving that?

Linked to that, what responsibilities should there be on manufacturers to provide updates and tell the owners or users of vehicles that those updates have to be made? As I read it, there is nothing in the Bill that places any obligations on manufacturers to do that. A lot of time is devoted to when the software has not been updated, but where is the principal obligation for the manufacturer to do it? There are a lot of questions, but I am wondering whether that loops back to the definition and whether that needs attention to ensure that we have addressed the obligation. So how is it done and what are the obligations on the manufacturer?

Iain Forbes: Those are good questions. To answer the second one first, what is important about this Bill is that it is looking just at the insurance regime for these

vehicles. It will have to work in concert with other parts of the law, including the system by which vehicles are approved for sale. You might imagine that if vehicles that operated automated systems were to be approved for sale there would be a close look at what would be necessary to ensure that the systems were updated where necessary to take account of any changes that were important to ensure safety.

Q122 Andy McDonald: Have we got this the wrong way around, then? Surely you have to establish how something happens before you start dealing with its insurance consequences. This is putting the cart before the horse, isn't it?

Iain Forbes: We are focusing on this now because this is an area where in consultation people told us that it was important to set out a framework now to allow insurers and manufacturers to have those discussions about what might be necessary to inform the products that come to market when these vehicles do in four or five years' time. In the meantime, we need to be working very hard to ensure that the appropriate approval regime for these vehicles is also in place. The vehicles will not come to market without that, so this will have to work in concert with another part of the law, which will say how these vehicles will be approved for sale.

Ben Howarth: If I can add one other thing, I think that the Bill is intended to do a new thing by protecting someone who is in the driving seat as, because they are not in control of the vehicle at the time of the incident, they are being treated as a victim. If they have done something to the car that means that they are responsible for the accident—perhaps they have not maintained it properly—it is reasonable to put it into their insurance policy that that is not something that they could claim for, as they would not be a victim. That is what these policies are broadly intended to do. I take your point that we absolutely need to define what updates need to be made and who is responsible for them, but if you turn it the other way by insuring the person in the driving seat and ensuring that they can claim if they are injured, the situation changes if they caused their own injuries.

Q123 Andy McDonald: If we are getting into a discussion on clause 4 about failures to update software, where is your starting point? You are basically telling me, “Ah, we'll do that somewhere else separately. We will have to get those regulations on board.” All that I am suggesting is that that is out of sync and we should be looking at the processes first, at least for what we are expecting, before we start dealing with the insurance consequences.

Iain Forbes: To answer the first part of your question about how this is done, that is likely to develop over time as new systems come to market. It is already the case that some manufacturers upgrade software systems by asking customers to take their vehicles to a dealer and some do it over the air, in a similar way to how a phone is updated, for example. That is an area that is currently the subject of international discussions, and indeed the UK is co-chairing the international regulatory group that is having a look at how over-the-air updates will function in future.

Q124 Andy McDonald: Really, what the manufacturer would say is that if a vehicle has not been updated for one reason or another, or if they discover some other

technical reason to shut it down, they will make sure that vehicle does not shift. Is it within the contemplation of the industry to take it that far?

Iain Forbes: What we need is systems that are transparent to people who are using them and that provide appropriate protections so that they feel confident using them. That is part of the discussion that we are having internationally at the moment.

Q125 Kit Malthouse: I have a couple of questions. We have a problem in this country with uninsured cars. Given that these cars are likely to be connected to the matrix in some way, do you think that it would be sensible for the Government to take a power to require that the car has to check whether it is insured before it moves? When I go and buy my tax disc, the system checks that the car is insured before it allows me to do so. Should these cars be required to do the same?

Iain Forbes: We are at too early a stage in the development of the technology to be able to consider that, but it is certainly something we could look at.

Q126 Kit Malthouse: Why?

Iain Forbes: It is not clear exactly how those systems will interact with a wider data network to enable the system to work.

Q127 Kit Malthouse: It is technically possible, right?

Iain Forbes: Many things are technically possible, but we do not know exactly how it will come to market and how the systems will operate.

Q128 Kit Malthouse: You seem to imply, Mr Howarth, that the insurance industry would be indifferent to the characteristics of the passenger, who need not be the driver of a level 5 car.

Ben Howarth: That seems reasonable to assume. As I understand it, a level 5 car will not even have a steering wheel so the driver will have a pretty minimal role in how the car performs.

Q129 Kit Malthouse: Would it be fair to say that level 5 cars might be the saviour of the rural pub? Can I drink and drive a level 5 car?

Ben Howarth: I am a big fan of the rural pub, but I do not know the answer for certain. That is probably also an infrastructure question: I can see the cars working in certain inner-city areas, but personally, I am not 100% sure whether level 5 is ready for some rural roads yet. I think evangelists for level 5 technology will say that it is.

Q130 Rob Marris: One for Mr Howarth. What will the industry do about Northern Ireland and automated vehicles? That is not covered in the Bill.

Ben Howarth: Is there any particular aspect of Northern Ireland that you think is not working?

Rob Marris: I do not know. I wondered whether you guys discussed it because the automated vehicle elements of the Bill do not apply to Northern Ireland, yet one would expect people in Northern Ireland, as elsewhere in the United Kingdom, to wish to have automated vehicles available to use.

Ben Howarth: I am not aware of any problem with Northern Ireland.

Rob Marris: From an insurance point of view?

Ben Howarth: I am not aware that we have any particular concerns about Northern Ireland, but I am not sure why it is not in the Bill.

Rob Marris: Okay, but from an insurance point of view, you have no concerns about Northern Ireland?

Ben Howarth: Not that I am aware of.

Q131 Tom Tugendhat: I assume that you looked at other countries as you prepared for the Bill. Will you say a little bit about how other countries are addressing the insurance and regulatory challenges?

Iain Forbes: The legal frameworks in different countries are often specific to those countries, so it is not possible to do an exact read-across, but we are looking at what people are doing to see whether there are broad lessons that we can learn. For example, in California, if you want to test automated vehicles, you have to put up a surety bond to ensure that there is a provision to cope with any accidents. Looking at that and other systems, we felt that the system in the Bill was appropriate for the UK and how our insurance system operates. It builds on a system that people would recognise, so it would look similar to what people do now, and it targets an important policy, which is to ensure that innocent victims caught up in an incident involving a vehicle in automated mode can get quick access to claims.

Q132 Tom Tugendhat: What about our European partners?

Ben Howarth: I was going to mention European partners, but from an insurance industry perspective, I think that we are ahead of everyone else in having clarity about how the legislation will work. Obviously there are still things that need to be done before the technology goes to market, but I get the sense that other people are debating the issues, but not with a formal proposal on the table. I genuinely think that we are a step ahead of everybody else.

Q133 Tom Tugendhat: The reason this matters is that a lot of people will now be thinking about booking their ferry and Eurotunnel tickets. Will we be able to take those cars abroad?

Iain Forbes: Interoperability is important, as you mentioned, and it is frequently discussed.

Q134 Tom Tugendhat: It does not matter which hand drive a car is, does it?

Iain Forbes: Which is part of the reason why it is important for some of the discussions about the regulatory framework to take place at international level, under the United Nations Economic Commission for Europe or other bodies that regulate how vehicles operate to ensure that, where possible, we have interoperable systems.

Ben Howarth: If you are thinking about cross-border insurance, as long as the broad principles are united—there are already big differences between the UK and other parts of Europe and how they insure vehicles; we have a driver-centric version whereas a lot of other European

countries have a vehicle-centric system and a form of strict liability with various definitions—one would hope that we could evolve a system that gives at least minimum cover on a unified basis. We should not therefore have too much of a problem.

Q135 Rob Marris: Mr Tugendhat made an interesting point. It had not occurred to me, but if I am in my automated vehicle, which I have taken through Eurotunnel, and I am driving down a road in France and a non-automated vehicle is coming at me in the middle of the road, I do not want my British automated vehicle diving off to the left—which is what you would do to take evasive action in this country—

Tom Tugendhat: Presumably, you have got GPS—

Rob Marris: This is a serious point in the context of Mr Forbes's discussing interoperability. I presume there has been a discussion about the coding—I would like reassurance about this—so that the evasive action that automated vehicles might take when faced by unsafe manoeuvres by non-automated vehicles is appropriate to the side of the road on which one drives. Otherwise, we will have a big problem, as Mr Baker will know, with software coding and so on.

Iain Forbes: These are the sorts of challenges that you have to work through when you sit down to think about how the system will operate in practice. We are still at the stage of the technology where the developers are making sure that they can get their systems to work in particular locations—particular cities or areas. If the developers want to sell products and services that can be used in more than one country, that is something we will have to bear in mind when taking forward our development programmes. Indeed, if they are going to operate in accordance with the right regulatory framework, they will have to have discussions with regulators about how that will operate in practice.

Q136 Rob Marris: Do we need legislation now, in the United Kingdom, to assist that process?

Iain Forbes: From my perspective, it feels a bit early to take forward regulation in that space, but we should definitely be involved in the discussions at international level and with developers, to make sure that those issues are dealt with in due course.

The Chair: If there are no further questions, may I thank the witnesses for their evidence, time and co-operation? We will move on to our next panel.

Examination of Witnesses

Richard Moriarty and John de Vial gave evidence.

3.27 pm

Q137 The Chair: We will now hear oral evidence from the Civil Aviation Authority and the Association of British Travel Agents. Welcome. Would the witnesses introduce themselves for the record? Shall we start with Mr Moriarty?

Richard Moriarty: I am Richard Moriarty and I am the group director of consumers and markets at the Civil Aviation Authority.

John de Vial: I am John de Vial and I am director of financial protection at ABTA.

Q138 Richard Burden: May I begin by exploring some of the Bill provisions relating to the relationship between the CAA and National Air Traffic Services? Perhaps we can come on to the issues relating to the air travel organisers' licence after that. I understand that the proposed changes have been broadly welcomed by stakeholders. I am struggling to understand how significant they are. They change the procedure through which the CAA can modify regulations under which NATS operates. Do we have any sense of how many of them are likely to happen and how often? The impact assessment says that the scale of the issue with which we are dealing is highly uncertain. Can you give us any guidance on the scale of the changes?

Richard Moriarty: The changes are all aimed at modernising our regime. We change the licence periodically: perhaps once or twice every three or four years we introduce a raft of changes, which are mainly to do with the charges that NATS can pass on to airlines and the service standards that it needs to meet. Of course, all of that needs to be balanced, because we need to ensure that it can finance its businesses.

I think it is worth saying, in order to give you comfort, that these measures are almost precisely similar to measures that were passed in the Civil Aviation Act 2012 in relation to our regulation of airports such as Heathrow and Gatwick. My answer to your question is that they are very helpful and to be welcomed. They modernise what is now quite an outdated regime for NATS, and they put NATS on a very similar footing to other regulated entities.

In terms of NATS's protection, it is important to say that nothing in these changes takes away our primary duty towards the safe system—safety. We also have a secondary duty to make sure that NATS cannot find it unduly difficult to finance its licence for activities. For those reasons, I strongly welcome these measures.

Q139 Richard Burden: Looking ahead to the next few years, for the moment we will be part of the single European sky framework. That, presumably, could bring a number of initiatives under it that would be relevant to the provisions in this Bill. Am I right about that? What could the impact of Brexit be on this area of the Bill?

Richard Moriarty: I fear I would be misleading you to be too precise about what some of those impacts would be, but one thing we have made clear in conversation with departmental colleagues is that we can regulate NATS successfully using our domestic legislation under the Transport Act 2000. This is one of the reasons why we are keen to modernise it in this way.

Q140 Richard Burden: So there should not be any impact at all?

Richard Moriarty: It is too early for me to say whether there would be an impact one way or the other. On the things we most care about—safety—NATS has been able to charge good prices to airlines and provide a good level of service. I am quite comfortable that the regime we would have in the UK based on the Transport Act 2000 would give us sufficient levers, particularly with these modernisation changes.

Q141 Richard Burden: The impact assessment, again, talks about the likelihood of there being what it describes as a "light-touch" review of these new arrangements

after five years and “a full review” after 10. I must confess that I could not see reference to either of those in the Bill. What was your understanding of the review arrangements around these changes?

Richard Moriarty: I cannot speak to that specific review, but I think it makes sense to review the powers that have been introduced after the event. We have done that in other arenas, so it is something we would welcome. We can work with the Department on the timing of that.

Q142 Richard Burden: But the principle of a review after a period of time would be something—

Richard Moriarty: I do not have a problem with that.

Q143 Richard Burden: Can we move on to the ATOL questions within the Bill? Can you describe what the changes mean in practice for consumers and holidaymakers?

Richard Moriarty: First, it is worth saying that the changes in the Bill at the moment are enabling provisions, but they are to enable us to implement the package travel directive. There are a number of important and welcome developments from that which will be good for UK consumers. First, the directive makes it much clearer what the definition of a package is. This may seem self-evident to most people but an industry of loopholes has developed over the years. Having clarity on this is a good thing.

Secondly, the package travel directive puts a requirement on member states to have effective regimes in place for insolvency. This is a big step forward compared with where we are today. It is also worth saying—although John may have a better view on this—that this provides a growth opportunity for UK businesses as firms in this country will be able to sell their goods and services into Europe.

John de Vial: We certainly support that view. The provisions in this Bill are necessary and we have no concerns about them as enabling legislation. I agree with Richard’s subsequent points. UK companies can currently sell in other European markets but they are required to license separately and individually in each market to comply with its version and its implementation of the 1990 directive. If we have a regime with the directive to come, which the provisions lay the ground for, and our traders in the UK can use the ATOL system and the Department for Business, Energy and Industrial Strategy arrangements to comply across Europe, that is a clear advantage for them trading across European member states.

Q144 Richard Burden: Are those companies covered by that protection because they are established in the UK?

John de Vial: By virtue of being established in the UK, you would be entitled to it.

Q145 Richard Burden: Wherever they sell?

John de Vial: Yes.

Q146 Richard Burden: Looking at it the other way round, if there is a company that is established in another part of the European Union but sells into the UK, I understand that the package travel directive would say

that the protections that it should offer would be those that would be applicable in that member state, rather than those that would be applicable in the UK.

John de Vial: Yes.

Q147 Richard Burden: Is there any potential downside to that? For any packages sold into the UK by companies established outside of the UK, could the protection be less than it is now?

John de Vial: Not less than it is now—we have that problem today. The current UK ATOL regulations and package travel regulations exempt companies that are compliant elsewhere. We have seen the problem in recent history. Our view is that, to the extent that this new directive is more robust and should raise the bar of implementation and enforcement in other member states, that can only be a good thing.

Q148 Richard Burden: Will it raise it to the level of ATOL protection?

John de Vial: No, I don’t believe it will. I think there are a number of aspects where the ATOL position is superior. The most obvious example is repatriation. The directive requires the costs of repatriation to be protected, so all member states should be doing that. The UK is not unique, but is one of a small number of member states, where organised repatriations—where the customer is, as it were, rescued—is the norm. We do have a superior system in the UK in that sense.

Q149 Richard Burden: A final couple of questions from me, and it is back to Brexit again. A lot of the changes in the Bill arise out of the package travel directive. From what you have said, some of our domestic ATOL protection is superior to what is in the package travel directive anyway, but are there any implications of Brexit for what this Bill brings in?

Richard Moriarty: Regardless of Brexit, this is a set of provisions that we would be supporting. It is worth remembering that 77% of UK consumers choose their holiday in Europe. As John suggested, the position around insolvency protection may not be all the way up to ATOL gold standard, but it will be a lot better, and enhanced by this package travel directive, than it is today. The former directive we fall back on is from the early ’90s, which predates the growth of the internet and people buying their holidays online.

John de Vial: I support that. It is also part of our job, with the ATOL brand and our brand as the Department for Business, Energy and Industrial Strategy’s approved body, to promote the merits of the schemes in the UK with UK businesses, where those exceed the European base level.

Q150 Richard Burden: The Bill provides for an air travel trust to be set up by the Secretary of State, but also leaves open the possibility that that could be split into a number of trusts if circumstances change. Could you tell us a bit about what that is all about and the kind of circumstances?

Richard Moriarty: If I may, I will declare an interest as a trustee of the current air travel trust. The consultations and discussions that the Department has had with the industry and consumer groups have suggested that the position around how people buy holidays could change. They are very keen to have some flexibility. Rather than

have one trust hardwired into legislation, they want to give themselves some more flexibility. For instance, one example that has been talked about a lot is linked travel arrangements, where it is not quite a package, but is two transactions for hotel and travel that are very closely associated. In my view, it would be prudent and sensible for Government to have the flexibility to respond to that. It is my understanding that that is why they are taking the enabling provision at the current time. In implementing that, I hope that they will follow the practice that they have followed today: consult with us, consult the industry, do the impact assessment, and so on.

Q151 Richard Burden: I would be grateful if I could explore one other area with you briefly. One thing that raised a number of eyebrows when this Bill was published was the fact that it did not say anything about the regulation or safety of drones. How do you see the existing regulatory framework, and if we were going to look to improve that framework, who do you think should be responsible, for example, for bringing in geo-fencing?

Richard Moriarty: Drones are something that we are spending an enormous amount of time on—getting the balance right between effective regulation to prevent aviation-related risks and allowing this new technology and market to grow. There is an existing set of regulations for both commercial and public operators, but it is worth highlighting two important initiatives that we should all take stock of.

First, the Government are consulting on the future regulation of drones at the moment; we are working with them on that. Also, at the European level, the European Aviation Safety Agency, EASA, is doing some important work, which we hope it will publish in April and which may relate to international manufacturing standards, because things like geo-fencing, which effectively prevents drones flying into controlled space, are only really effective if that can be done through international manufacturing standards. That is one of the reasons why we are keen to see that EASA publication, which is mooted for April, before we decide next steps.

Q152 Mr Hayes: On the issue of penalties in respect of ATOL, you will know that this Bill attempts to amend the Transport Act 2000. In respect of section 225 of the Transport Act 2000, you will also know that there is a responsibility to prepare and publish a policy statement on the use of penalties. How do you envisage these penalties taking shape, and how will you ensure that their use is proportionate?

Richard Moriarty: The first thing I would say is that our having powers to introduce financial penalties for NATS brings us into line with the powers that we have for airports. It also brings us into line with other economic regulatory regimes in energy, water and telecoms, so it brings the regulation of NATS up to the modern standards of the other sectors.

We already have a published policy on how we would go about issuing a financial penalty for the airports. My starting position would be that the policy should be similar for NATS. Financial penalties are rare events in economic regulation: they do not come around too often, and there is a good reason for that. But they are a necessary part of the armoury, if you like, to drive the right behaviours and give a deterrent effect.

We would obviously have a graduated approach to enforcement. That would start off through informal means—conversations with the company, looking to it to put the issue right. If that had failed, we would move on to a more formal footing with them. I tend to think of financial penalties as a bit of a last resort but, as I said, it is important to have them there because it incentivises the right behaviours.

Q153 Mr Hayes: The other question I was going to ask reflects the point made by the hon. Member for Birmingham, Northfield about the post-Brexit deal on travel. We have been a leading player—one might say a trailblazer—in terms of providing protection for holiday makers, haven't we? Post-Brexit, it is really important that we retain consumer protection across Europe. What are your views on that?

Richard Moriarty: I completely share that objective. To go back to the point that John made, I think there is a job to be done by the CAA, ABTA and other groups on raising awareness with UK consumers about the level of protection that they get from different types of products. You can imagine a future where we are in a less binary world in package travel than whether something is ATOL-protected or not. There will be a graduation of protections that consumers can get. It is important that we work with consumer bodies to raise the level of awareness.

We start from a solid and good basis. The scores for levels of awareness of ATOL, which is often seen as the gold standard, are about 75% or 80%, so we start in a good position for that work.

Q154 Drew Hendry: Some UK operators have stated that they feel that passenger rights go too far. Which passenger rights do you feel are most contentious in the industry?

Richard Moriarty: A number of airlines have expressed concern not about the principle of compensating consumers for delays, but about the tariff—the amount that is charged. It is important to get the balance right. It was not so long ago that airlines did not take the issue at all seriously. We saw long delays and a lot of consumer detriment as a result. I hear from a lot of chief execs of airlines that although they would wish for a lower tariff, because it is clearly straight off their bottom line, this is not front and centre of their urgent priorities. I do not know whether John would take a different view.

John de Vial: I think that our members would agree. If you look at the package travel directive—that particular piece of work has been updated to allow for a new directive—there is broad industry support for it. I do not think there are any great concerns about it. The EU regulation 261 regime on denied boarding and flight delays is a different issue. A much smaller number of airlines have concerns about the denied boarding piece, but the concerns are principally around the delay regime whereby, through the European Court of Justice process, the same sort of tariff for delays has been adopted as existed and was intended for denied boarding. That is viewed as a rather blunt and sometimes counter-productive regime. The loudest voices are heard around that and there is considerable merit in it being revisited.

On Richard's point, it is about the level and proportionality of the tariff, where compensation for a few hours' delay can be a multiple of the purchase of a

low-cost ticket. That is seen to be an injustice—it is not the principle of providing the protection, but the way in which it operates.

Q155 Andrew Selous: I would like to come to NATS, which I understand expressed concern about economic uncertainty and market volatility following the Brexit vote. It thought that air travel demand and, therefore, its revenues might suffer. Has there been any evidence of that to date?

Richard Moriarty: Not that I can tell from the financial numbers that I look at. Indeed, in terms of the assumptions that we made with it for the last regulatory settlement, traffic has been better than we predicted.

Q156 Andrew Selous: So that we can have a better understanding of how NATS works, let me ask about the ability to extend the length of its contracts to give them greater financial certainty. What sort of length of contracts do they typically operate with London airports at the moment? What levels of extra investment would you be looking to see NATS make with longer-term contracts, because presumably it is unable to put that in at the moment?

Richard Moriarty: The position is different at different airports and in different regulatory regimes. The issue is the minimum notice period that is required before the Government can terminate the franchise, if you like—for want of a better expression. That minimum notice period counted down. NATS quite rightly, in our view, said, “We need to make long-term investments, and we need to raise debt on the open and private markets.” People looking at a shorter, shorter franchise find it quite difficult.

We did quite a bit of work to look at this. We spoke to financial advisers and looked at other regulatory regimes. Our advice, after looking at the asset price of the business and other regulatory regimes, was that 15 years feels like the right number for NATS. NATS is a slightly different business from some of the asset-intensive industries. It is operational based, rather than capital intensive. Having done the analysis, we very much support the Government provision to move this out from 10 to 15 years.

Q157 Andrew Selous: To clarify our understanding, can you elaborate a little on how the CAA will take action swiftly to protect passenger and staff safety when there is a serious system failure or when some aspect of NATS’s performance is worrying to you?

Richard Moriarty: One of the most important and significant aspects of the Bill is the provision enabling us to take action on past licence breaches. One feature of NATS is that if the systems have an outage, as they did in December 2013, you do not need a lot of time to create a lot of disruption to passengers. For instance, a 24-hour outage led to disruption for nearly 250,000 passengers, and there were 300 cancelled flights. Of course, you can put the system back very quickly—it is a 24-hour event—but if we do not have the power to look at past breaches, there is a risk, on behalf of consumers, that we are going to look toothless. That is one reason why I support the provisions that the Government are putting forward in this regard. I think that is one of the most important aspects of the package.

Q158 Richard Burden: Can I ask about rights in the Bill? The big change is that you make the modification and NATS has the right to appeal, as opposed to the co-determination model that we have at the moment. There is also a provision for other parties to appeal, including the owners or operators of aircraft that you consider appropriate and the owners or managers of prescribed aerodromes that you consider appropriate. I am struggling to work out who has got the right to appeal the modifications you make to NATS’s licence. What does prescribed aerodromes mean?

Richard Moriarty: The appeal mechanisms that are being introduced for NATS effectively replicate the same appeal mechanisms that we have for the regulated airports. For instance, an airline can appeal a determination that we make for Heathrow or Gatwick airport. There is an element of consistency across aviation in these provisions. Because NATS provides the London terminal airspace service, it also touches directly on some of the London airports—principally the large ones, but there may be some small London airports in it as well. It is right that the Government has a provision to name those airports, because they will be materially affected by certain decisions that we will take over the settlement that we reach with NATS.

The Chair: If there are no further questions from members of the Committee, I thank our witnesses for their evidence, and for their time and co-operation. It has been most helpful. Thank you very much. We are running a little ahead of schedule, so I propose to suspend the Committee until 4.10 pm, as the witnesses for the next panel have not yet arrived.

3.54 pm

Sitting suspended.

4.10 pm

On resuming—

Examination of Witnesses

Martin Drake, Steve Landells, Simon Bray, Richard Goodwin, Paul Watts and Richard Moriarty gave evidence.

Q159 The Chair: We will now hear oral evidence from the British Airline Pilots Association, the Metropolitan police, the National Police Air Service and the UK Flight Safety Committee.

I welcome our witnesses; thank you for joining us. Could the witnesses please introduce themselves for the record? Shall we start with Mr Moriarty, who has already given evidence to us this afternoon?

Richard Moriarty: I am Richard Moriarty, director of consumers and markets at the Civil Aviation Authority.

Paul Watts: I am Paul Watts, chief pilot of the National Police Air Service.

Richard Goodwin: I am Chief Inspector Richard Goodwin, airport commander at London City airport.

Simon Bray: I am Simon Bray, commander of security at the Met, but I am also the National Police Chiefs Council lead for airport policing.

Steve Landells: I am Steve Landells. I am a flight safety specialist at the British Airline Pilots Association.

Martin Drake: I am Captain Martin Drake. I am a current 747 captain and I am also chairman of the security committee at the British Airline Pilots Association.

Q160 Andy McDonald: Good afternoon, gentlemen. Could you help me with the issue of shining or directing a laser at a vehicle? The Bill as drafted states that it will be an offence to direct

“a laser beam at a vehicle which is in the course of a journey, and...the laser beam dazzles or distracts a person with control of the vehicle.”

I am concerned about that, because I have never flown a plane and I have never, to my knowledge, had a laser shined at me. I am just thinking the matter through. Is that the totality of the thing that concerns you all, or are there other instances short of being dazzled or distracted that would cause you concern and cause you to think that something ought to be an offence? Also, although such an activity may have taken place, the driver or person in control of the vehicle might have no knowledge whatsoever of it having happened. I do not understand the experience. Does someone who is in control of a vehicle experience it only when their eyes are actually dazzled, or is there another perception of the event having taken place?

Steve Landells: From a British airline pilots' point of view, our main concern is the distraction as well as the dazzle. As it stands, the dazzle has to be part of the offence. Our view is that it would be better to have the offence being just the pointing of a laser at a vehicle, because from an aviation point of view, if you cannot prove the dazzle and distraction—if it is not reported or the police do not know where the aircraft is going—you may not end up with the second part of that offence.

Q161 Andy McDonald: Would you even have to know that it has happened for an offence to have taken place?

Steve Landells: From our point of view in BALPA, no. It is about the act of shining a laser at the aircraft. If we see it, it will be reported, but if we do not see it, we would still like to see an offence there. The problem is that as the power of lasers gets greater and greater, there is a higher chance of injury occurring.

Q162 Andy McDonald: Thank you for that. Does anybody else want to comment on that aspect of this offence?

Paul Watts: From a helicopter perspective, again the dazzle and the distraction are the main concern, especially as helicopters operate in a much lower-level environment than airliners, and we rely on flying visually and visually avoiding other aircraft, buildings and obstructions. We also share the concern about the power of lasers and the frequency range—the fact that it may be possible in the future to have lasers that are not even visible. Again, we would like to see it being about somebody attempting to shine a laser at an aircraft, rather than having to show that it dazzled and distracted the pilot.

Martin Drake: It is possible to sustain an injury from a highly collimated laser—one where the beam is very narrow. It is possible to sustain an injury from that laser without having the dazzle and distract element. If it comes through your aircraft windscreen at a 90° angle, the dazzle and distract can be reduced, but if the pilot were to have that go into his eye, he could get retinal damage without getting the dazzle and distract element. I would say that that was fairly rare at the moment, but as the power of the lasers goes up and the frequency of the lasers changes, that is a concern that we have.

Simon Bray: Obviously the dazzling and distracting is the effect on the driver, pilot or whoever is in the cab. That is where the harm and the potential danger are. As well as having a victim, the legislation enables us to investigate more readily to prove an offence. If it were merely in the general direction of a vehicle, that would be more tricky to prove unless we were at the other end of that particular laser and had an opportunity to get into more of an investigation at that end of it.

Q163 Andy McDonald: Although we are not specifically restricting this discussion to aviation, because it could be another vessel, I think BALPA has suggested in evidence to the Committee that it is equally important and significant when lasers are shone at air traffic control towers. Have we got a history of that happening? Is it a significant risk? Would you prefer to see the legislation embrace air traffic control towers, rather than just vehicles, as currently described?

Martin Drake: There certainly is history of it in the USA, and I can think of a couple of times in the UK where a laser has been shone at the air traffic control tower. For an air traffic controller working the tower—that is the control bit that does the final approach and the controlling of the aircraft as they depart, so it is within close proximity of the airport—most of that is done visually. If his or her eyes were to be affected, it could reduce their capability of seeing aircraft close to the airport. They would then have to come off duty and be replaced fairly rapidly. It is not as common as shining at aircraft, but it does happen.

Steve Landells: Can I expand on that slightly? It depends on the airport's procedures, but I know of one airport where, if a laser is shone at the visual control tower, they take the visual controllers out of that tower. You effectively shut down the airfield.

Tom Tugendhat: I am sorry; what did you say?

Steve Landells: They take the visual controllers out of the tower to protect them, and if that happens, the airport is effectively shut down.

Q164 Andy McDonald: What do you think should be happening to better control the availability of the devices themselves? What restrictions would you prefer to see in place to stop the devices being acquired?

Simon Bray: There have been discussions about whether to deal with some of these items as offensive weapons. Clearly, if there is an intent to shine and to harm someone's eyesight with one of these devices, you can deal with them in that way, provided you get the evidence behind it that demonstrates possession of an offensive weapon with intent to cause harm; likewise if you assault someone with a laser. The difficulty is investigating and proving those instances.

What the Bill does do is provide blanket legislation that is suitably serious—more so than the different sorts of legislation that we are having to use at the moment. It is an advance on what we have currently got. I definitely take the point that were we to have additional powers restricting sale and possession, it would be easier for us to deal with things before they take place.

Richard Goodwin: Colleagues I have been working with in the Department for Transport are working with colleagues in the Department responsible for business

employment, looking at potential import restrictions and some of the issues around how we control the sale of some of these lasers. That work has been going on for seven or eight years, and during that time the availability and power of lasers has increased and the cost has come down. There is a Department looking at that control now, and clearly we support that.

Q165 Andy McDonald: Finally, changing tack totally, can the police officers help me with an unrelated matter in the Bill about diversionary courses for road traffic offenders? Have you come prepared to speak about that at all? Could you give some indication of your experience of those courses, how effective they are and, just as importantly, the evidence base that you may or may not have on whether they are effective and reduce repeat offending? Are you able to comment on that?

Simon Bray: It is not my area of expertise and I have never had to undergo one of those courses myself. There is a good look at diversionary methods at the moment. There are certainly plans to streamline the various diversionary methods and out-of-court disposals around the country. Clearly, that would fit in that overall picture, but it is not specifically traffic.

Q166 Mr Hayes: As you know, gentlemen, the CAA says that many of the incidents involving lasers are unreported and it is probable that there are many more than those of which we currently know. Is it your view that it is a growing problem? How do you think the proposed legislation will help with reporting? If you think it does not do enough, what more could it do?

Paul Watts: I am from the National Police Air Service and we saw it as a growing problem, probably about three or four years ago. Over the last three years, we have averaged out at about 100 incidents a year, so it seems to have plateaued somewhat, but it has gone from a low level to a very high level. We would welcome any legislation that makes it easier to catch an offender, but we would also still like to see a reduction in the availability.

We did see a tailing off of offences after the first few prosecutions for endangering an aircraft came into play. Over London, there was a reduction in the number of times a laser was used and less of the casual targeting of an aircraft. That seems to have tailed off and we seem to be back to a level of use that seems fairly stable and fairly high. On average, about 100 offences a year are reported through our safety system.

Simon Bray: I do not know whether Richard wishes to comment on the Met figures.

Richard Goodwin: We took a view that this matter was so serious that, despite the fact that it is not currently a reportable and recordable offence under Home Office counting rules—the legislation will change that—on 1 April last year we started reporting all lasers reported to us as crimes in London. I know that colleagues in Scotland have done the same thing. Across the year, we are averaging around 100 to 120 incidents within London being reported to us. The CAA figures are slightly higher.

Colleagues from BALPA did a survey of their members, which indicates that the figures are drastically underreported. We can get into the reasons for that, but some of it could be the perception that as pilots they were not being treated as victims and the matter was not being taken seriously. The legislation will give the degree

of gravity that we think the offence deserves and it will have an impact on the aviation community, pilots and captains. It will show them that we as the police will take it seriously, because we will have a consistent recording of all offences, particularly across aviation.

Richard Moriarty: We at the Civil Aviation Authority would strongly support the measures. Our figures show that laser incidents are at about 1,500 a year. That is probably an underestimate, for reasons that have been suggested by other panel members. To put that in perspective, that is three or four incidents a day in and around UK airports. We have talked before about injury to pilots and often these attacks are during their peak workload—either landing or take off, in and around airports—so there is a real aviation and public safety aspect, which it is very important to get right. We would strongly support it for those reasons.

Beyond the Bill, we are interested in continuing to work with other authorities and Departments on other measures to complement this, whether through import controls or working with the police on offensive weapons. The good news is that the provisions in the Bill will send a very strong signal that we all take this risk very seriously.

Q167 Mr Hayes: Clearly, the use of these devices in the way you have described is malevolent, but have you made any assessment of how much of this is what might be described as irresponsible, thuggish behaviour, and how much is more serious than that? Potentially, we could be talking about devices that were used by some very serious criminals indeed. What is your assessment of that? How much is this people grabbing hold of these things and causing trouble, and how much of it is planned, plotted and serious?

Simon Bray: The difficulty is that our detection rate of these offences so far has been pretty low. That is partly because of the legislation available to us. There is a range of it for the different areas of transport: the Offences Against the Person Act 1861 goes back many years on the railways, and air navigation orders are used in the policing environment for airports. In truth, the successes that we have had in prosecution have been where the National Police Air Service has been involved—we have our own helicopters, linking with our officers on the ground and so on.

One of the issues with the legislation that we have been able to use around distract and dazzle is that the offence under the air navigation orders has been not only not recordable, but not indictable. We have therefore not been able to use the full range of powers—entering premises in order to arrest someone or, once we have arrested them, going into premises to get evidence—and the proposed new offences will allow us the use of those powers. That is a real advance, which we welcome. We think that we will benefit from a defined power of stop and search around that. I have written to the Minister and had a response, but once the consultation goes live on that aspect we will certainly contribute to that debate, too.

Q168 Mr Hayes: Okay. But of course you would be able to search on suspicion following arrest.

Simon Bray: Yes, indeed. That would be the case. As regards the type of people involved, we have not got the full range of knowledge because there have been so many offences that we have not been able to get to the

bottom of and we have not been able to make those arrests and prosecutions. In some cases it will be malicious; in some cases it will be because people do not understand that it is a big problem. Again, one of the benefits of the legislation will be the opportunity to educate the public and law enforcement officers at the same time.

Mr Hayes: I see. Thank you.

Q169 Drew Hendry: I am interested in how we take further action to tackle reckless behaviour. You have said that, because of the previous legislation, it has been very difficult to get the numbers of offences that are actually being committed, but I imagine that, even if anecdotally, there is some evidence of serial offending in these cases of shining lasers at vehicles. Given that is the case, do you feel that there should be consideration within the work we are doing here on the Bill of future repeat offending to have further punishment?

Simon Bray: This legislation will allow the courts to do that in any event. It is an offence triable either way, which can be dealt with with summary powers and at a higher level, potentially, with short terms of imprisonment and so on. The fact that it will be a recordable offence means that we will be able, or required, to record all instances of it, which will give us a greater level of data about patterns and intelligence on where these happenings are taking place.

Martin Drake: The magistrates or judges can be informed by the Ministry of Justice and by the Crown Prosecution Service, which brings these prosecutions, of whether the offender has been prosecuted successfully before and, if they have, whether the case can be heard in the magistrates court or whether it is so serious that it needs to be pushed up to the Crown court. That can be done, given the span of punishments for somebody found guilty of that offence. Of course, there is also the question of the circumstances in which it occurred. If someone was using a laser slightly mischievously, that might be considered a lower offence, whereas if someone was doing that absolutely maliciously, it might be seen as a higher-level offence. The venue for the trial can be decided at the pre-trial hearing.

Drew Hendry: I should say that justice is devolved to Scotland, but I was curious about your views. Thank you.

Q170 Mr Baker: I want to pick up remarks that I made on Second Reading about the seriousness of the offence. As the Bill is framed, it is an offence only if the person shines or directs a laser beam at a vehicle that is in the course of a journey. As police officers, do you have adequate powers if a person is assaulted with a laser when not in a vehicle? You are nodding.

Richard Goodwin: If we are talking about retinal damage, we are talking about grievous bodily harm.

Q171 Mr Baker: Could you be clear on why those powers would not be adequate in the case of an aircraft in flight?

Richard Goodwin: It is difficult to prove, over that distance, the person's intent. They are arguably shining the laser at an object. It is very difficult to be accurate at that point. It may be a reckless consequence, so there is potential for that, but there are various scientific opinions

on what damage can be done at certain distances and angles, and depending on the strength of the laser—bits and pieces like that. Having said that, if somebody shines a laser and a plane crashes, there is a lot of injury to a lot of people; the consequences at that end are obviously catastrophic.

Q172 Mr Baker: You have pre-empted what I was going to ask. Can I ask BALPA whether it is possible that an attack with a laser could cause the loss of an aeroplane?

Martin Drake: Oh yes, absolutely. Most laser strikes happen within 3 miles of the threshold of the runway, when most aircraft are busy completing the due diligence checks that we do: “Are the wheels down? Are the flaps in the right place? Am I lined up with the runway?”—the things that pilots do all the time subconsciously. You approach at about 150 knots at that stage, so you are doing 2.5 miles a minute and are somewhere around the 1,000-foot mark. You are using all the visual cues that you get from the runway. The vast majority of these strikes happen at night, and you are using all lights. Your instruments are lit up. We have mostly cathode ray tube or LED instrumentation on the flight deck; there are very few aircraft still flying around with the old-fashioned dial-type instruments. The potential for a pilot to confuse whether he is looking at the centre line or a side set of lights—particularly in a crosswind, when you are canted over to deal with that—is huge. It is quite conceivable that if both pilots were affected by the dazzle effect at a critical stage of flight, they could attempt to land down the side of the runway, rather than down the centre of it.

Q173 Mr Baker: Could you remind us of the maximum capacity of the largest aeroplanes? How many people are on a big aeroplane now?

Martin Drake: You could end up with about 520 on an A380.

Q174 Mr Baker: So it is quite conceivable that a person deliberately dazzling a pilot could put that many people's lives at risk.

Martin Drake: Potentially, yes.

Q175 Mr Baker: With that factor in mind, I have tabled an amendment to probe the Government's position. It would double the term of imprisonment. The Bill sets out a term not exceeding five years; my amendment would take that to 10 years, because I had this point in mind. I should say that it is a probing amendment to provoke this conversation. What do you think the appropriate term of imprisonment should be for a deliberate attempt to dazzle at that point in the flight?

Martin Drake: You are very much into a catastrophic eventuality. Might I draw your attention to the aircraft that crashed on the threshold of Heathrow during the hours of daylight—the 777 that had the fuel issue? Had that occurred at night, the pilots would have really struggled to make the decisions that they made, and to get the aeroplane where they did. Had the pilots been dazzled or distracted by a laser, I very much doubt that that would have been successful as it was.

Q176 Mr Baker: In the circumstances—I ask this to the police officers—what is the appropriate maximum punishment?

Simon Bray: I would be reluctant to comment on what an appropriate sentence would be. We would recognise that it is being treated seriously and it is obviously a matter for the courts to determine how sentences given by Parliament should be dealt with on a case-by-case basis. We would not want to put a figure on it, to be honest—[*Interruption.*] My colleague mentioned that you are potentially talking about something in the region of manslaughter for that type of offence.

Q177 Mr Baker: Why only manslaughter? Why not murder, if somebody has deliberately used a laser as a weapon to dazzle pilots?

Richard Goodwin: If someone said, “Yes, I was trying to kill all the people on that plane and I did it,” then yes, absolutely.

Q178 Richard Burden: Commander Bray, you mentioned that you have written looking for a defined power for stop and search relating to lasers.

Simon Bray: Yes.

Q179 Richard Burden: For that to work, would it need to be predicated on a redefinition of lasers in some way as an offensive weapon?

Simon Bray: Not necessarily, no, in support of this Act, if we had a power—it would be sparingly used—to search individuals for lasers that had been used for the purposes of the offence under clause 22.

Q180 Richard Burden: If lasers were going to be defined in some way as offensive weapons, would the kind of laser need to be defined more closely?

Simon Bray: If some of these lasers were to be classified as an offensive weapon as a matter of course, we could use existing legislation to stop and search for them in any event.

Q181 Richard Burden: But if there were to be a reclassification to make them offensive weapons, would that reclassification somehow need to define the strength of laser involved?

Simon Bray: Yes.

Q182 Richard Burden: At the moment, there is no need to do that because the action of pointing a laser, however strong it is, at a vehicle is the offence. Presumably, without reclassifying them as offensive weapons, if you got your power of stop and search, that would be because of suspicion that the laser would be used for—or had been used for—that purpose. But if you were simply going to say that the possession of a laser could be the possession of an offensive weapon, would that need to define the strength of the laser?

Simon Bray: You would have to have the definition of what is an offensive weapon clearly in the process of stopping and searching or when trying to work out whether it is of that type. You would not know unless you had the laser tested afterwards to see whether it met the criteria.

Richard Goodwin: I am trying to rack my brains about reasonable excuse and lawful excuse, which is in the current offensive weapons legislation—why someone in a park at 10 o'clock at night has a laser in their pocket. I am slightly reluctant to go down the route of power because that is difficult for an operational officer

at the time to understand and define. Some lasers come in as one thing and then turn out, when they are tested, to be something completely different. For me it is more about what that person intends to do with any laser, rather than about some of the more high-powered ones.

Paul Watts: It is not necessarily the power that is causing the threat, but the dazzle and the distraction that we spoke about. That effect would come from a very large power range of lasers.

Q183 Tom Tugendhat: Given your point that the power is not entirely relevant because the dazzle is so important, can you talk about the other equipment that exists with lasers today? Surveyors use lasers, and presumably there is a risk, so they must be cautious about how they use them. Driverless vehicles are likely to use lasers in different ways and various autonomous measuring equipment is likely to use lasers. Can you talk about the dangers that they pose and how they might be mitigated?

Steve Landells: Public Health England says that lasers under about 20 milliwatts will not cause any eye damage—so, provided that they are not pointing up in the air, they are not going to dazzle and distract, and they will not cause eye damage if they happen to strike your eye. A normal blinking reaction will take into account a 20-milliwatt laser, but the problem is that the ones we are seeing now are 2,500 milliwatts or 4,000 milliwatts. They are the problem. Depending on the uses that they are put to—astronomers use them as well—and providing that they are at the lower end of the power range, if they are not being pointed in the air with driverless cars and things like that, maybe that is not an issue.

Q184 Tom Tugendhat: Does the Bill affect people such as astronomers using them as you suggest?

Martin Drake: We do not think so. We have done quite a bit of research on the legitimate use of laser technology, and boy, is it useful. Eye surgery uses lasers; you said surveying. There is a whole list of them. The equipment that uses those sorts of laser is designed to use the laser in that way, and it tends to have safety functions, so that if the laser strays, it shuts down, and of course it is used by trained people. The people who have those lasers fully understand their dangers and how to use them, and the Bill does talk about legitimate use. We are not in any way, shape or form saying that there are not really good reasons for using a laser. However, when they are used irresponsibly at the powers of laser that we are seeing, that gives us cause for concern. Most legitimate lasers do not have the powers that we are seeing. I say “most” because some do, but most of them do not have the powers that we are seeing, which people can quite happily buy over the internet and have delivered to their home.

Simon Bray: There is a clear defence within the Bill, and that is something that we have been paying close attention to in terms of our investigations.

Q185 Alan Brown: We have heard that lasers are becoming more common, and you obviously support the proposed legislation. It is similar with drones, which are becoming more accessible and more common. Would you like to see proposals to ensure better regulation and safety with regard to the use of drones?

Steve Landells: From BALPA's point of view, we would certainly like to see more regulations and toughening up around drones. We understand that a lot of work is going on at the moment and there is a DFT consultation, but yes, it would be good to see drones in there.

Simon Bray: Likewise, whatever regulation comes out and whatever changes there might be to navigation orders and so on, we would like a simple set of regulations for the police to get involved with enforcing.

Q186 Andrew Selous: Chief Inspector Goodwin, I think you were expressing some concern about the increase in sales of lasers recently, and the possible need to regulate their sale. Do we have any figures on recent sales of lasers? Has there been a significant increase recently, and do we have any sense of the split in sales between legitimate use—such as for eye surgery, which we just heard about—and illegitimate use?

Richard Goodwin: I think what we are talking about is laser pens in particular. I suspect my colleagues from BALPA are probably better placed to go into the detail, because they have done some of their own market testing.

Martin Drake: Yes, indeed. When we realised that lasers were becoming an issue, we decided to spend some time looking at what was available. In some parts of the world—in fact, just down the road here—you can go into the local market and buy a laser that purports to be 500 milliwatts. We bought three of those and had them tested, and they varied between 280 and 650 milliwatts. They are about \$20, give or take, and they are readily available.

At the higher end—you tend not to be able to buy those on the street; you have to go to the internet—a quick search will show you that they are available. The price has fallen considerably. When we started 10 years ago, £700 would be what you would pay for the most powerful laser. You can buy a 5-watt laser today off the internet for around \$269. I do not think anyone has done the numbers, but experience tells me they are probably out there and being used.

There are certain countries where you cannot post a laser to over the internet; the USA springs to mind. You can only buy legitimate lasers from legitimate sources in the US. One of the companies we have investigated clearly says on its website: “We cannot post these products to the USA”. They are out there and they are relatively easy to buy. The advertising is up there and if you are of that mind, you can burst balloons, set fire to matches and do all these lovely things, make your cat chase around the room with it. They are up there. The advertising is there, so there is a market.

Q187 Andrew Selous: As a supplementary, if the legislation before us does not provide the redress that we are all urgently seeking, given the seriousness of this problem outlined by Mr Baker and others, what would be the appropriate follow-on action and within what timescale?

Martin Drake: We would like to see some import control on the recreational lasers, if I can refer to them as recreational lasers rather than legitimate lasers. That is possible; we restrict the importation of all sorts of things, so I think that is doable. We have got the problem of the ones that are here already, but that is something we can address.

Q188 Andrew Selous: Do I detect there is a slight sense of urgency on this and we probably want to see how this legislation goes and if there is not an improvement, you would be looking to Government to review the situation again, with a view to taking further action? Is that a fair summary?

Martin Drake: Absolutely. We started off with a laser that was about 1,200 milliwatts—we purchased one at 2,500 milliwatts. We sent it up to the University of Manchester and had both the power and collimation checked and it did what it said on the tin. We are seeing lasers today at 3.5 watts, 5 watts, and there is somebody claiming to sell you a 10-watt one. I am not quite sure how legitimate that particular advert is. Every so often, we are seeing the technology double—I am sure there is a rule for that. What gives us cause for concern is that as the power of these lasers goes up, the dazzle and distract effect on my colleagues could be such that you might not only incapacitate one pilot; you might incapacitate both of them. Then you have a problem on your hands.

At the moment, the laser normally comes through a side window and the pilot who happens to be sitting on that side is the one who takes the brunt of it and it is possible to hand over control to the other pilot and put some compensatory measures in place. We have shone the really bright ones at aircraft windows we have in the office—windows that have come off aeroplanes out of service—and it is really impressive to see what you can do even with the power of lasers that we have. We do see some urgency in this and we see the development going in the wrong direction. We would be seeking powers for the Government to do something.

Q189 Andrew Selous: Can I come to the police and the operational aspect of this? With the extra powers in this Bill, what confidence do you have as police officers in your colleagues' ability to swiftly apprehend culprits?

Simon Bray: There are limitations, come what may. There are delays between us getting the information from air traffic control through the pilots to being able to identify the people on the ground and the locations of the premises where people might be. It is difficult anyway, if you are in an aircraft coming at that speed and height, to identify specifically where that will be. That is why we have benefited from police helicopters getting involved. This will be a better reactive set of options than is currently the case. However, it does not allow us to be preventive and proactive in the way we would like. That is where we come into not just powers around stop and search—as I say, judiciously used—but also the whole bit about possessing these things and being able to access them in the first instance.

If our police officers come across a group of youths who have got these things, what are they there for? What are they going to be doing with these items? Playing with them, but in what way? There is potential harm among friends, let alone people they do not like. If they have got them, there is the potential use for damage and mischief.

Q190 Andrew Selous: Are you satisfied that the means you have to influence Government are sufficiently robust and flexible that if you were to speak to Ministers in a few months' time, or after this legislation has gone through, because it was still a problem, that the system would react with the degree of seriousness that you suggest it should?

Simon Bray: Both the Home Office and the Department for Transport have been keen to engage with us and to listen to what we say. They have worked with us closely on this, so I am confident that they will be listening and asking us questions.

Q191 Andrew Selous: My final question—I do not know if you have a copy of the Bill in front of you—is on clause 22(2), which is about the defence that could be offered if someone did not intend to commit an offence and was exercising all due diligence. I am struggling a bit to imagine an astrologer near an airport or a surveyor working late at night on some building project. Who do you think clause 22(2) has in mind? It is probably right that it is in the Bill, but I am struggling to see who might legitimately use that defence.

Paul Watts: We have seen lasers used in light displays. I could see a laser being used in a light display and someone not realising that it is in proximity to an aircraft flight path.

Q192 Andrew Selous: Does that happen often? Are there light displays that are permitted to take place near airports or flight paths?

Paul Watts: Not necessarily near airports, but certainly in cities and large urban areas. You would not expect them on the flight path into a major airport, but you do see lasers used by nightclubs and the like.

Q193 Andrew Selous: Are light displays a current issue for pilots?

Martin Drake: Generally speaking, no. The laser displays tend to be very broad beam—there is little collimation to the lasers. Displays tend to be licensed if they are close to airports, and we are usually told when they are there, so that is not really the issue. Paris has a laser that spins around the Eiffel tower, and Greenwich has one that goes up the Greenwich meridian at the moment. Those are not a problem to us at all. They tend to be low-level and pointed down across the heads of the crowd rather than up into the air.

One thing the measure would address is search and rescue. They have a thing called a laser flare, which has a fan of laser that, again, is not well collimated. The search and rescue aircraft can see those things for miles, so if someone is bobbing around in a little dinghy or is stuck on the top of a hill it is really useful. Obviously someone would not be intending to dazzle and distract—they would be intending to be rescued. I think there are legitimate uses that would be absolutely fine.

Steve Landells: Airliners tend to be going into a predictable place, whereas helicopter operators tend to operate in areas where you might not normally expect air traffic. It is probably not such a big issue for the airlines.

Simon Bray: But for people who, for example, have a laser and want to shine it on the clouds, the big question is whether they have exercised all due diligence and taken all reasonable precautions. That is going to be the crux of it at court.

Q194 Richard Burden: May I move on to another subject? In the previous panel I asked Mr Moriarty to comment on the fact that there is nothing in the Bill relating to the regulation of drones. It is an omission from the Bill that has been commented on in a number

of quarters. Do the rest of you have any observations on whether the Bill could be usefully extended to say something about drone safety? If so, what?

Steve Landells: From BALPA's point of view, we would like to see the Bill extended to include drones. The prime thing we would like to see is a mandatory registration process for drones. At the moment, anyone can buy a drone and fly it anywhere, and they do not have to take any responsibility for it. At the moment, if the police find a drone inside the environs of an airport or on the runway, they have no idea who that drone belongs to. We would really like to see a compulsory registration process.

Perhaps before first flight you would have to go online to get an unlock code. During that process we could get exposure to the rules and an online test for a drone operator. That would also mean that the operators would have an idea of what the rules were. A lot of the problems being caused by drones are through ignorance—17 near-misses were reported between manned aircraft and drones last year—so we need to educate the people flying the drones that there are rules and regulations in place. It is a dangerous thing to do, and we think that a compulsory registration scheme would address a lot of the problems.

Simon Bray: We would not disagree with that. We are mindful that there need to be restrictions around particular locations, as there are currently. However, in the case of aircraft, it matters not hugely where you put in those restrictions; it is the whole bit about the flight paths in and out that we have concerns about.

Q195 Kit Malthouse: I have a couple of quick questions. I was slightly concerned about the definition of a vehicle. In the Bill it says that it means

“any thing used for travel by land, water or air”.

Do you think it might be sensible to extend that slightly to include vehicles that are not used for travel such as bulldozers and very tall cranes in the scope? Does a police horse used for travel count as a vehicle? If a police horse in a public order situation were to be dazzled by lasers, should it be included? The definition is quite specific, so do you feel it might benefit from being widened a little?

Simon Bray: I think it would be worth looking at. Things like police horses could be dealt with in different ways—cruelty to animals, assault of the police officers riding them and so on. It would be worth looking at that to ensure that the definition is suitably inclusive of some of the things you just mentioned.

Q196 Kit Malthouse: I do not know if you have had instances of people in tall cranes being dazzled, but tall construction cranes heave tons of stuff and could be quite dangerous. We have seen collapses in the past if someone has been distracted and got the angle wrong. It might seem obscure, but the purpose of the law is sometimes to deal with obscure situations.

Simon Bray: Yes, indeed.

Q197 Kit Malthouse: It might be worth having a look. The other issue was on the definition of an aircraft being in flight. The Bill defines an aircraft as being in flight from

“the moment when it first moves for the purposes of take-off”.

Presumably that is from push-back and includes taxiing to the runways. However, it then says “ending with the moment when it next comes to rest after landing.”

There can often be quite a lot of taxiing after it comes to rest. It waits five minutes for its gate to come free and then it taxis for 10 minutes—or 25 minutes if it is the wrong end of Heathrow airport. Do you think that definition is a problem? Obviously taxiing is not as dangerous, but it is a dangerous moment as well.

Martin Drake: We did discuss that. The issue with taxiing is that you tend to taxi aircraft at a maximum speed of 10 to 15 mph and, if you do get dazzled, you can put the brakes on and stop. At that point, you can bring the whole thing to a graceful halt.

The definition of flight is a tricky one. If you look into it, I think there are about seven or eight definitions of flight. The current one that I think the International Civil Aviation Organisation accepts is doors closed for the purposes of a service to doors open at the end of that service. I think that covers all aspects of what you are considering.

Q198 Kit Malthouse: It might be easier to say “Any vehicle that is moving.”

Martin Drake: It might very well.

Q199 Kit Malthouse: As you say, with a stationary vehicle there are dangers, but at the moment it moves and there is danger, there is a problem.

Martin Drake: Indeed. I take on board what you said about the cranes. That is something that had not occurred to us, I must confess. In our research we have come across train drivers being lasered—apparently it is great fun to let them go through a red light and watch the brakes come on. The Seacat, coming into Holyhead harbour, was lasered a couple of years ago. Again, I do not know why. They were trying to hit the bridge.

Q200 Kit Malthouse: Yes, hovercraft are covered as a vessel.

Martin Drake: Yes. These are not in the scope of the Bill, but we have come across goalkeepers being lasered when an important penalty is to be taken, and we have heard of referees being lasered. It is a transport Bill, so it is not within the scope of that, and I know the police have powers to deal with it, but it is a growing problem.

Q201 Mr Baker: Captain Drake, you mentioned that you have got windows in your office from which you have had spectacular effects when you have shone lasers at them. For the purposes of public education, have you considered letting some videos go out there to wherever to show us what happens?

Martin Drake: We have, yes. There is some nervousness about publicising what happens because countries where that has been done have seen a spike in events. That may be a cost we have to bear: we may have to see a spike in events then to see a contraction. We could do that—it is a very sensible idea.

Q202 Mr Baker: It is sensible, apart from the side effect that we know there might be spikes afterwards, so we might need to think about it again.

Martin Drake: Yes, indeed.

The Chair: There are no further questions from members of the Committee. I thank the witnesses for their evidence, time and co-operation. That has been most helpful. I ask you to remain seated for just a moment while I invite the Whip to move the Adjournment. Line-by-line consideration of the Bill will begin at 11.30 am on Thursday in Committee Room 10.

Ordered, That further consideration be now adjourned.—(*Jackie Doyle-Price.*)

5.1 pm

Adjourned till Thursday 16 March at half-past Eleven o'clock.

Written evidence reported to the House

VTAB 01 Calor

VTAB 02 British Airline Pilots Association (BALPA)

VTAB 03 Alliance of British Drivers

VTAB 04 Institute of the Motor Industry

