



## Transport Committee

Oral evidence: [Vehicle type approval](#), HC 622

Monday 29 February 2016

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Members present: Mrs Louise Ellman (Chair); Mary Glendon; Karl McCartney; Stewart Malcolm McDonald; Mark Menzies; Will Quince; Iain Stewart; Graham Stringer; Martin Vickers.

### Questions 94-219

Witnesses: **Alex Burns**, Chief Executive Officer, Millbrook, **Tony Soper**, Technical Specialist, Homologation, Millbrook, and **Dr George Gillespie**, Chief Executive Officer, HORIBA MIRA, gave evidence.

**Q94 Chair:** Good afternoon and welcome to the Transport Select Committee. Would you give your names and company positions, please?

**Dr Gillespie:** I am George Gillespie, chief executive of HORIBA MIRA Ltd.

**Alex Burns:** I am Alex Burns, chief executive of the Millbrook Group.

**Tony Soper:** I am Tony Soper. I am the technical specialist for homologation at Millbrook Proving Ground.

**Q95 Chair:** Thank you very much. Could you explain to us the testing process that auto manufacturers go through for obtaining vehicle type approval?

**Dr Gillespie:** I will try to give you the simple version—apologies if it is too simple. There are four players in the ecosystem. There are the type approval bodies, one for every country in the EU. They appoint technical services, of which HORIBA MIRA is one. There are organisations that are approved to have tests witnessed and then there are the manufacturers. There are four bodies: type approval bodies; technical service organisations that actually do the work and provide the documentation to type approval; organisations whose facilities are used to have the tests done; and the manufacturers who are having their vehicles type approved through that process.

**Q96 Chair:** In terms of the work that your company does, how would the manufacturer engage with that?

**Dr Gillespie:** We are involved at two levels. We are a technical service, so we provide technical services to the VCA and to other leading type approval bodies like RDW, the Dutch type approval agency. We are a technical service and quite a number of our facilities are registered for the VCA to witness tests, so we do that. When we provide a

technical service to the manufacturers, it is a commercial arrangement. We price the project—how many engineers, what facilities and for how long; that costs a certain amount of money and we usually go into a commercial negotiation. It is a competitive marketplace across Europe to provide technical services.

**Q97 Chair:** Mr Burns, do you want to add to any of that or perhaps explain to us a bit more about the competitive marketplace?

**Alex Burns:** We are a similar organisation, I suppose, to HORIBA MIRA in that we perform services for the VCA. The VCA act as the technical service and we act to do tests on their behalf, which they then witness. We also act for RDW, who are another European type approval authority. In terms of marketplace, yes, manufacturers will want a homologation programme priced. They come to a number of different technical services and ask for pricing for a defined set of work, which would normally be a subset of all the tests that are required to homologate a vehicle. Those are suited to particular companies. We submit a pricing to them and they select one of the technical services to perform the services for them.

**Q98 Chair:** Mr Soper, you are in charge of homologation. How does that work and how does it relate to the work of the VCA?

**Tony Soper:** The requirement is that the vehicle manufacturers have to work within the framework directive 2007/46. That prescribes the regulatory acts with which their vehicles have to comply. Our role is to perform tests in order for them to demonstrate to their chosen approval authority that their vehicle complies with those regulatory acts. We engage with the vehicle manufacturer and provide pricing to conduct those tests. As has been explained, we work in two roles. When we are working with the UK approval authority, who are also the technical service, we are effectively providing laboratory services and completing the tests to demonstrate compliance.

**Q99 Chair:** How much would that process cost the manufacturer?

**Tony Soper:** The regulatory acts that have to be complied with are prescribed in annex IV of the framework directive. That contains in excess of 90 regulatory acts. The specific requirements depend on the category of vehicle and the approval route which is being applied for. There are a number of options open to manufacturers. They can apply for a European whole vehicle type approval, which is valid across all member states; a European small series approval, which has a limit of 1,000 registrations per year; or a national type approval, which is only valid in the specific member state that issues it. The cost very much depends on the approval for which they are applying. For some of the regulatory acts, compliance is demonstrated by an inspection by the technical service, so there may actually not be any testing at all. For others there is a significant amount of testing. Emissions tests and crash testing are quite complicated and there is a reasonable cost attached to them.

**Q100 Chair:** What sort of cost is involved? What would the manufacturer be paying to have those tests conducted?

**Tony Soper:** The cost is broken down. First of all, the manufacturer will have to perform a number of validation tests to make sure that his product actually complies. When you ask what the cost is, where do you draw the line on that cost? Do you include all the validation testing, or the final certification testing? The cost to the manufacturer is built up from his cost to produce all the documentation and his internal cost for people putting together and



managing the test programmes. There are the fees they have to pay to the approval authority and to a technical service to perform the tests. There is also the cost of the parts to be tested. It is very difficult to put a figure on it, but a certification programme can typically range from between £100,000 and £1 million. I would think that is a reasonable sort of figure.

**Q101 Chair:** That is a pretty wide range.

**Tony Soper:** Of course. It depends entirely on the category of the vehicle, the approval route for which you are applying and the content of the regulatory acts that you have to demonstrate compliance with.

**Q102 Chair:** There are two different measures or sets of regulations—EU regulations and UN regulations. How does that operate? Can manufacturers choose what type of regulation they are seeking?

**Tony Soper:** If we go back 10 years, the EC directives and UNECE regulations ran parallel to each other, and the technical content of each more or less mirrored the other. Within the last few years there has been a realignment, which means that many of the EC directives have been repealed and the EC now accepts compliance with UN regulations. Those are the regulatory acts that are called up within the framework directive, and a manufacturer has to approve the vehicle to each of those regulatory acts.

**Q103 Chair:** In the process, as you have described it, the manufacturers are doing a lot of choosing about who they go to and what road they go down. Does that mean that you are trying to please the manufacturers because they are your market? Could that in any way deflect from the standards that you are achieving?

**Alex Burns:** We are approved to do the test by a type approval authority, or by a technical service if we are contracted to them. We have to satisfy their requirements for test fidelity. That is the primary focus. The competitive element is quite different from that. We have to price a series of tests, if we are asked to quote for that, and obviously we are motivated to put forward a price on which we can make money and at which we think we can win the business. That is the tension within our business. However, once we are doing the tests, the motivation is entirely to do the tests to a high level of integrity so that we satisfy the type approval authority or the technical service that the test results they are getting are valid test results.

**Q104 Chair:** How does the Vehicle Certification Authority operate in designating laboratories as the technical service? What kind of assessments do they carry out and how often is that done?

**Tony Soper:** In general, the Vehicle Certification Agency also has a dual role as a technical service. For most of their work they act as the technical service. However, for areas that are outside their core expertise—a good example would be electro-magnetic compatibility, which is a very specialist area—they designate a technical service to perform that testing on their behalf. For most other subjects the VCA are the technical service, and they conduct a facility appraisal of the test laboratory that is performing the tests on their behalf and they physically witness the tests that are being conducted. The laboratory has to have ISO 9001 general quality standards and it has to work to the principles of ISO 17025.

**Q105 Chair:** Dr Gillespie, do you want to add anything?



**Dr Gillespie:** No, I would echo that. The one differentiation I would make is that, outside the UK, RDW, for example, which has been mentioned before, is both a type approval body and provides the technical service. It tends to appoint a lot more organisations that do technical service across the full range of the tests that need to be done, whereas the VCA has tended to do the majority of the technical service itself and only designates the EMC technical service—the one that was mentioned—which we do.

**Q106 Chair:** Has that changed recently? Have they been taking on more testing services than they used to?

**Dr Gillespie:** No, I have not seen significant change in the last two years.

**Q107 Iain Stewart:** I would be interested in your opinion on how the structure we have in the UK is replicated in other EU member states. Does each country have a broadly similar structure, or do we do it differently here?

**Dr Gillespie:** In my experience, it is roughly the same. You have a type approval body for each country, and they appoint technical services. Some of them do only type approval, and all technical services are appointed to other commercial organisations. Some will do both. The essential structure is more or less the same.

**Q108 Iain Stewart:** The reason I ask is that we have had some evidence from other witnesses that suggested that, because we have a system within the EU that if you get approval from one country for a particular vehicle that certification applies across the EU, it is easier in some countries to get approval. We had one suggestion that Luxembourg had a disproportionate number of approvals made. Are you satisfied that the high standards that you have are applied right across the EU?

**Dr Gillespie:** It is not really my place to cast aspersions or suspicions on other organisations when I do not know the detail of what goes on. However, I would say that I am satisfied that the VCA runs a rigorous organisation and type approval process. What would make a difference for me would be to have a rigorous and transparent audit process. With the technical service organisations that are providing the test work and the data that go up for type approval, you need to make sure that the standard is applied consistently across Europe. You can only really do that through a transparent audit process.

**Q109 Iain Stewart:** Do either of the other witnesses have a view?

**Alex Burns:** I would echo that. I think it is desirable to have clear delineation between what is a type approval authority and the technical service that is actually performing the test, and then potentially to have something above the type approval authority, at EU level, that ensures that type approval authorities maintain consistent standards across the piece. In terms of consumer confidence, as much as anything else, it is desirable to have that sort of system.

**Q110 Chair:** How do you see the VCA? Is it a partner or a competitor? How would you describe the relationship?

**Alex Burns:** Both actually. That is what is interesting about the way the VCA runs. Sometimes they are a customer to us because we are performing tests for them. Sometimes they are an approval authority to us because they are coming and auditing us to make sure that we are maintaining rigorous standards. In some cases, they may be a competitor because we are competing for test work.



**Dr Gillespie:** I would echo that. We see them as both a competitor and a partner.

**Q111 Chair:** Are there any auto manufacturers on your sites?

**Dr Gillespie:** At MIRA we run a technology park. You may not be aware of it, but we have 30 organisations based at MIRA, one of which is VCA, which is also at Millbrook. We have 30 organisations already based at MIRA and that includes major vehicle manufacturers, plus tier ones—people like Bosch and TRW, and so on.

**Alex Burns:** We have a smaller technology park. We have a small VCA office on site and we have a permanent presence from a couple of the vehicle manufacturers. Other vehicle manufacturers come and go on a more temporary basis.

**Q112 Chair:** You are in a competitive situation. Could you tell us a bit more about the market you are operating in? How big is it? How many competitors do you have? How does it operate?

**Alex Burns:** In terms of type approval for vehicles, the vehicle manufacturer will typically pick a type approval authority they want to work with, and then the pool of suppliers that they have. The market will depend on who has been approved by that particular type approval authority to do various different tests. The amount of competition for any piece of work will depend on which type approval authority has been chosen by the vehicle manufacturer as the person they want to issue the homologation for their vehicle. In general, we work across a pan-European market. Again, the number of competitors that we have depends on the type approval authority. We are always up against significant international competitive pressure. The number of people involved will vary with the top-level type approval authority that has been chosen.

**Q113 Chair:** Is there anything else that anybody wants to add?

**Tony Soper:** It is probably worth noting that vehicle manufacturers can perform the tests within their own facilities as well. They can have their facilities accredited by the approval authority they are working with and perform the tests within their own facilities. They do not have to use a technical service for many subjects.

**Q114 Chair:** They can do it themselves.

**Tony Soper:** When they are doing it themselves in their laboratories, it is witnessed by the approval authority.

**Q115 Chair:** Is it always witnessed?

**Tony Soper:** It is always witnessed. The whole basis of European type approval is that it is witnessed; the approval authority witnesses the test work. That is a different model, of course, from the north American model, which is essentially self-certification by vehicle manufacturers, coupled with punitive damages if you are found to have transgressed the regulations.

**Q116 Chair:** Who sets the fees for tests?

**Tony Soper:** In the UK, a statutory instrument prescribes the fees that the Vehicle Certification Agency can charge. Essentially, their fees are built up on a time and material basis with prescribed fees for certificates, depending on the approval that is being applied for. I do not know what it is in other member states.

**Q117 Chair:** It has been suggested that, because you are so dependent on income from the manufacturers, there is inherently a potentially unhealthy relationship. How would you respond to that? I can see that you are not going to agree with that, Dr Gillespie.

**Dr Gillespie:** Can I take that one?

**Chair:** Yes.

**Dr Gillespie:** You have touched on a really good question and it goes to the integrity of each of our organisations. At MIRA we do three things, if I can quickly explain. We are an engineering business. That is around 45% of our business. We design and engineer vehicles for companies around the world. We test vehicles and we run a technology park, which I touched on before.

In theory, you could say that the engineering business is in conflict with doing certification, but we have a very clear separation of responsibilities between our certification and technical service business and our engineering business. There are different reporting lines. We bring UKAS in to audit what we do; we ensure that we have a separate audit to make sure that we have that independence. Speaking for MIRA, I can say that there is no conflict. When we are doing the technical service, we uphold the rigours of the type approval process and are happy to be audited on that, which we are, regularly, by the type approval bodies.

**Alex Burns:** We are in a similar position. It is worth pointing out that we derive the majority of our income from vehicle manufacturers when we are helping them with testing to support the development of vehicles, as opposed to the certification of vehicles. A much bigger part of our business—it is the same at HORIBA MIRA—is to do with the development cycle that leads up to certification. Certification is the end of the development cycle, when a vehicle is signed off as fit to be sold in the market.

**Q118 Chair:** You say it is a much bigger proportion. What is the proportion?

**Alex Burns:** Less than 10% of our business is associated with certification work. The vast majority comes from development work—supporting the development of the vehicles themselves—rather than their certification.

**Q119 Mary Glindon:** Do you sell advice to auto manufacturers on how to pass tests and comply with regulations? If you do, can you say what that involves?

**Alex Burns:** We do some consultancy for them in terms of how to ensure that the vehicles are robust to pass the tests, yes—as part of the input to the development programme.

**Q120 Mary Glindon:** Would you conduct the same tests that you advise on to the industry?

**Alex Burns:** Not in the same group. We have separate groupings in the organisation that do that. You would not get the same person advising on how to pass a test and then doing the test itself. You would always make sure that there was clear delineation between those responsibilities.

**Q121 Chair:** You said there must be clear delineation. Who is responsible for making sure that is maintained? Is it something you do, or is an agency from outside asking you those questions?

*Alex Burns:* Ultimately I am responsible for everything that happens in the company. In this case there are also outside agencies that come to audit us to ensure compliance. We have a laid-down quality system where that delineation will be defined. Then we have external audits of the application of our quality system, to ensure that that is the case.

**Q122 Chair:** Is that something you have decided to do, or something that is required of you by an outside body?

*Alex Burns:* It will be required as part of our being appointed to do the tests. If we want to be able to do the tests, either as a technical service or in support of a technical service, then as Tony Soper pointed out, we have to have these approvals. We have ISO 9001, which covers the general quality system that we operate, and ISO 17025, which is much more specific to being a test facility.

**Q123 Will Quince:** You mentioned that you are not aware of what the testing fees are in Europe. Given the small number of testing facilities in this country, I would have thought that would be pretty important, as they are your competitors too, especially when it is a Europe-wide car market.

*Alex Burns:* We do not know exactly what our competitors charge. That is pretty normal in business, I would say. Customers will tell us that our competition is cheaper than us. That is part of the normal course of business in the negotiation of contracts. We do not have visibility of each other's pricing directly. I suppose we have a view on the pricing that we put forward that wins business, but we never know exactly how we compare with our competition on pricing.

**Q124 Will Quince:** On that basis, why do you think car manufacturers do not just use the cheapest available test facility in Europe?

*Alex Burns:* They start with a type approval authority. They have to select a type approval authority and then work within the pool of technical services nominated by that type approval authority, which changes the pool; it is not necessarily pan-European. The cost of the testing is only one of the things they would consider. There is also convenience, availability, the turnaround time that can be offered and probably, to a certain extent, their confidence in that technical service.

*Tony Soper:* For a large vehicle manufacturer, by far the most important thing is getting the approval at a date prior to their vehicle launch. The cost is a relatively minor thing.

**Q125 Will Quince:** On that basis, how important are relationships between you, as the supplier, and the car manufacturers?

*Alex Burns:* They are very important. The car manufacturers are our principal customers, so it is essential for us to maintain good relationships with them. I do not want to give the impression that that is somehow a cosy relationship, which is what might be being suggested. They come to us because of our technical competence and expertise as well as our pricing and availability. If they did not have confidence in our ability to deliver high-quality test results, they would not come to us.

**Q126 Will Quince:** I was not suggesting by any stretch of the imagination that there was a cosy relationship, but it would not be beyond the realms of possibility to suggest that you have an interest in winning business and therefore it is in your interest to have a good relationship with the car manufacturers; yet you are testing their products for the market.



There is a danger of that being seen as a cosy relationship. I was not suggesting that, but there is a danger that it exists. I was hoping for some reassurance from you about the process and the relationships you have with the car manufacturers.

**Alex Burns:** It is not in the car manufacturers' interests to have vehicles passing tests that should not pass tests. That is just storing up trouble for the future.

**Q127 Graham Stringer:** Do you believe that?

**Alex Burns:** I do believe that, yes. Certainly in my experience I have never come across a car manufacturer pushing to get a substandard vehicle through a test, because, if that comes out, they will potentially have hundreds of thousands of vehicles out in the pool that they are going to have to recall. The product recalls that we have seen recently—

**Q128 Graham Stringer:** But that is exactly the situation we have, isn't it?

**Alex Burns:** If you look at the product recall situation that a number of manufacturers have had in recent years, it is a major headache for the manufacturers if something goes out that is not to the required standard or comes below the required standard. It costs them billions.

**Tony Soper:** Also, in many cases the manufacturer's own standard will exceed the regulatory requirement. Crash performance is a good example. Generally they design their vehicles to pass the prescribed crash requirements easily because they have a higher internal standard.

**Q129 Will Quince:** Is it fair to say that if a vehicle manufacturer asks you to help them to pass the test—maybe through consultancy, as you mentioned previously—it is in your interests and their interests for that to happen?

**Alex Burns:** The overarching interest is to have high-quality test results in which our customers, and their customers, can place their confidence. It does not serve anybody's interests if we issue substandard results. It does not do our reputation for integrity, which is absolute, any good at all, and in the end it does not help a manufacturer who is selling the product to consumers.

**Q130 Will Quince:** We have all heard of MOT testing where someone comes back and says, "Oh, you're a particularly harsh marker" or "You really pushed that to the nth degree." It is not in your interests to do that and be harsh markers, because the car manufacturers—who in some cases have facilities within your facility—would rightly come to you and say, "Come on guys, why are you pushing this so hard? Why aren't you doing just the bare minimum to pass this test?"

**Chair:** It does look as if the relationship there is too close.

**Alex Burns:** I understand. That is why I wanted to raise the fact that we have quite a broad relationship. It is not only about certification. In the day-to-day practice of operating good relationships there is no pressure like that at all. We have test engineers dealing with test engineers on the test results. There is not a lot of grey in these tests: either you pass or you fail. They are not the sort of people to exert pressure. They are the sort of people who want to know what the test result is, and if the test result is not what they are expecting, they have to go back, look at why that is and correct it.





**Q131 Graham Stringer:** You completely failed, didn't you? You did not detect when Volkswagen were fiddling the system. They certainly got high-quality test results, but the test results did not represent what was really happening because they were fiddling them, and you failed.

**Tony Soper:** First of all, those test results and approvals were not issued in the UK. No UK technical services were involved in those cases.

**Q132 Graham Stringer:** I do not understand that. Are you saying that using the devices that were fiddling the levels—where computers were changing the system—never happened in the United Kingdom?

**Tony Soper:** You mentioned Volkswagen. Those vehicles were tested and approved in Germany and not in the UK.

**Q133 Chair:** But couldn't something like that happen here? The situation as you have described it shows a very close relationship between yourselves and the manufacturers. You say that people want to pass the test. Well, yes, they do, but maybe you know ways they can pass the test when really they should not be passing the test.

**Tony Soper:** In those sorts of cases such a defeat device would not necessarily be identified by us as a technical service—or rather as a laboratory; in our relationship with the VCA we are a laboratory and not a technical service. It is then the VCA that would have responsibility as a technical service for detecting that there was a defeat device fitted. If there was a defeat device fitted in the VW case, it was a failing of the technical service that was performing or supervising those tests.

**Q134 Graham Stringer:** You told us before that standards across Europe were fairly consistent. We do not know whether Volkswagen are the only company that has done this—probably not—but they got their cars through the European system and you said that is the same as here, so you would fail if they sent individual cars to be tested here, wouldn't you?

**Tony Soper:** If there was such a defeat device hidden in the operating strategy of the vehicle, such that the technical service could not detect it, yes, that could happen again.

**Q135 Graham Stringer:** But it is not just the defeat devices, is it? It is suspected, if not known, that the cars sent for testing are better than the cars that you would go to a showroom and buy. They are set up to perform as well as they possibly can.

**Tony Soper:** They will be prepared in accordance with the regulation.

**Q136 Graham Stringer:** That is rather missing the point of my question. The cars are being prepared precisely for you, and are being prepared differently from the car that would be sold to me if I went to a showroom.

**Chair:** We have been told that it is fairly common practice for certain cars to be prepared in such a way, as Mr Stringer says, that they are likely to pass the test and that they do not relate to other cars that are meant to be the same and which are actually going to be on the roads. Is that something that you are aware of?

**Dr Gillespie:** No. We receive a vehicle from the manufacturer if we are doing the technical service. We review that vehicle against its criteria—that this is supposed to be the case—and, if it meets the criteria, we will test it. If it does not, we do not continue with the test.

**Q137 Graham Stringer:** I understand that, but like Mr Soper you are missing the point of the question. I am saying that the vehicle you are testing has been specially prepared because it is going in for a test and it will be different from the vehicles that are sold to me.

**Tony Soper:** The vehicle itself is not different.

**Q138 Chair:** They are called golden vehicles. Have you ever heard of such a phrase?

**Tony Soper:** They may well be prepared in a slightly different way.

**Q139 Chair:** Mr Soper, have you ever heard of such a thing? I am told they are called golden vehicles—vehicles specially prepared for tests.

**Tony Soper:** I have seen the term in various correspondence on this group, which I have looked at previously, but it is not common parlance within the automotive industry. The vehicle itself will be the same as a production intent vehicle. To give you an example, it may be prepared such that the oil level is at the lower end, at the bottom of the dipstick rather than at the top of the dipstick. That is perfectly acceptable within the emissions regulations, and it will result in a small advantage in frictional losses. Those are the sorts of special preparations that have been made in the past to such vehicles. Looking forward, such things will not occur. With the changes in the emissions regulations and the introduction of a requirement to demonstrate conformity with real driving emissions, those concerns will go away.

**Q140 Chair:** But they have been happening now and you are aware of that.

**Tony Soper:** The vehicles have been tested in accordance with the regulations. If there were such things, they were still compliant with the regulation and really it is the regulation that was at fault.

**Q141 Graham Stringer:** You said previously that none of the Volkswagen cars with defeat devices was tested in this country, which I had not realised; so it is very useful information. Will the next round of Volkswagen cars be tested in this country or will it be entirely left to Germany?

**Tony Soper:** I do not know. Volkswagen is a German company.

**Q142 Graham Stringer:** I mean the UK part of Volkswagen.

**Tony Soper:** Yes, but that is a sales company rather than the manufacturer or engineering sector. The vehicles are approved in Germany. I do not know but I think that most of the testing for those cars is done in Germany.

**Q143 Chair:** Were Skoda or Audi cars tested here, as far as you know?

**Tony Soper:** No, they were not tested in the UK, or were certainly not tested through us.

**Dr Gillespie:** We did not test any of those vehicles, no. Could I just add a little bit of flavour to your questioning? I agree with what my colleagues said. The vehicles have to meet the specifications of the test before going forward. There is an additional cross-check, which is conformity of production testing. That takes a limited number of vehicles off the line—vehicles that you buy—and those are tested subsequently down the line as an audit process. You have that as a background check later.

**Q144 Stewart Malcolm McDonald:** I want to go back to the term golden vehicles, and how cars are set up to pass tests. I understand that certain things are allowed to happen within the rules. Mr Soper, could you talk me through some of the things that are allowed to



happen within the rules? These are things like charging the battery, taping up windows and air-conditioning units and all that sort of stuff. Talk me through why you would do that.

**Tony Soper:** Taping up windows and so on does not happen. Part of the emissions test is performed on a chassis dynamometer. It is a driven test and the chassis dynamometer has to be programmed with data that replicate the vehicle's frictional losses and its air resistance.

**Q145 Stewart Malcolm McDonald:** What would charging the battery do?

**Tony Soper:** Charging the battery would mean that the alternator does not have to work as hard, so there is less parasitic loss from the engine.

**Q146 Stewart Malcolm McDonald:** Are there other ways that the vehicle can be optimised?

**Tony Soper:** Tyre pressures. Higher tyre pressure will reduce the frictional losses.

**Q147 Stewart Malcolm McDonald:** All of which is within the rules.

**Tony Soper:** Yes.

**Q148 Stewart Malcolm McDonald:** Is that honest?

**Tony Soper:** You would have to speak to our emissions expert.

**Q149 Stewart Malcolm McDonald:** What do you think?

**Tony Soper:** If it is allowed within the emissions regulation, it is acceptable.

**Q150 Stewart Malcolm McDonald:** Would you say it is the letter of the law but perhaps not quite the spirit?

**Tony Soper:** Absolutely. It is the letter of the regulation, not necessarily the spirit.

**Q151 Stewart Malcolm McDonald:** How do you think the public feel about that?

**Tony Soper:** I do not know; I cannot comment on that.

**Q152 Stewart Malcolm McDonald:** Quite outraged is how they feel about it. I think there is a really cosy relationship between testers, regulators and manufacturers. I will go further than Mr Quince and say that the relationship is far too cosy. Can you talk me through how involved the manufacturer is in the testing? When you are discussing how you are going to optimise a vehicle for testing, how involved is the manufacturer?

**Tony Soper:** We do not optimise the vehicle; we test what we are given. The manufacturer will give us a test piece and we then perform the test as witnessed by the approval authority.

**Q153 Stewart Malcolm McDonald:** What would you be trying to improve the results of?

**Tony Soper:** It is in our interest as a testing organisation for the vehicle to fail, because then we would do more tests. There is no incentive for us—

**Q154 Stewart Malcolm McDonald:** Would it just be emissions or would it be to pass safety regulations and things like that? Would it be tyre pressure? Would it be trying to pass a safety element rather than an emissions element?

**Tony Soper:** No. The tyre pressure would be set according to the requirements of the regulation, but the vehicle manufacturer is free to specify the tyre pressure. We would then



set it to that specified by the vehicle manufacturer. As a testing laboratory, we are only setting up the vehicle as per the regulations, and testing what is given to us by the manufacturer. All of that is supervised by the technical service.

**Q155 Will Quince:** You said you have no interest, but you also said that you sell consultancy to the car manufacturers. What do they get for that?

**Tony Soper:** The consultancy would be identifying the tests that the vehicle has to comply with, rather than actual vehicle design. Typically, we represent the manufacturer in his negotiations with the technical service, identify the tests that have to be done and project manage it for him on his behalf.

**Q156 Will Quince:** Can you categorically say that you have never advised a car manufacturer to optimise a vehicle pre-testing?

**Tony Soper:** Absolutely. We test what we are given by the vehicle manufacturers, but we advise them on the content of the regulation so that they are testing within the letter of the regulation. That is overseen by the technical service.

**Q157 Will Quince:** Just to be clear, have you advised them to optimise a vehicle within the regulations, or not?

**Tony Soper:** No.

**Q158 Will Quince:** That is helpful, but nevertheless you are still advising people as a paid consultant and then testing those vehicles as well.

**Tony Soper:** Yes.

**Will Quince:** That seems incredibly cosy to me.

**Q159 Chair:** Can you explain a bit more how this actually works, Dr Gillespie?

**Dr Gillespie:** Clearly, the regulations themselves are quite complex. As part of the consultancy—we perform similar roles—you are advising the manufacturer for the particular vehicle, “Here are the bounds within which you must test the vehicle for that test to be a proper test.” Within those bounds, as we discussed earlier, the oil level has to be between X and Y. You can set it wherever you wish but it has to be between X and Y. Those conversations go on within our engineering department. As soon as a vehicle turns up to be tested, it is an entirely different group of people. We have a separate organisation with a separate reporting line because we recognise the perception that you are clearly catching hold of. We have a separate organisation with separate people and a separate reporting line that will come in and do the test. It will not involve the engineering team at all. That is why we have UKAS audit us on our independence internally.

**Q160 Will Quince:** There still seems to be very limited independence. You would not have teachers in a school setting the exam and adjudicating as well. You have an independent body.

**Alex Burns:** Just to be clear, we do not set the exam. We are not involved in any way. The exam is the regulation that is set.

**Q161 Chair:** How often are you audited?

**Will Quince:** Chair, they are still marking it, though. It is the same principle. You are just not setting the requirements.



**Alex Burns:** The exam certificate, if you like, is issued by the type approval authority and that is not us.

**Will Quince:** It is semantics though.

**Alex Burns:** Not really, no, because they are the ones who have to oversee the integrity of the system and ensure that they have confidence that the test results that are being issued to support an application for certification are test results that are valid and demonstrate that a vehicle is passing the regulations, which is the exam question.

**Q162 Chair:** How often are they involved in doing that?

**Alex Burns:** Constantly.

**Dr Gillespie:** They are there for every test, but we are formally reviewed every year and we are audited every two years.

**Q163 Mark Menzies:** On the same point, we keep hearing the phrase that you only test the vehicle you are given by the manufacturer. How much variance is there between the vehicle you are given by the manufacturer and, for example, a brand new vehicle from a showroom with the same spec and of the same model?

**Dr Gillespie:** If the manufacturer's manufacturing process is in control, which it should be, it will be within the bounds of the regulations. If we stick with the oil level, because it is an easy one, if you buy a vehicle it should be between the two limits in the regulation. The vehicle will have been tested, and if their manufacturing process is in control it should be within those bounds.

**Q164 Mark Menzies:** Even if the manufacturing process is in control, there is a possibility—indeed a likelihood—that the vehicle you are being given is at the top end and a brand spanking new vehicle of the same model could be at the bottom end of that range.

**Dr Gillespie:** Because of the vagaries of testing there are plus and minus limits on various parameters. Yes, you could have a vehicle tested at one end and you could buy a vehicle at the other end.

**Q165 Mark Menzies:** Have you ever done that? Have you ever tested a vehicle you have been given and then tested a brand spanking new vehicle, the same model and same spec, to see what the variance is?

**Dr Gillespie:** No, we have not.

**Q166 Mark Menzies:** On the same line of thought, that is a brand spanking new showroom vehicle. Again we are talking about our constituents and the people who look at these figures and drive those vehicles. If we took a random vehicle off the street—for example, 12 months old, regularly serviced and in good nick because the person takes care of the car—what would be the expected variance between the vehicle you are given and the typical model with that spec that people think they are driving? What is the level of variance between the two?

**Dr Gillespie:** If you were to run that vehicle through the same suite of tests, if it has been manufactured and serviced properly, it should fall within the bounds of those limits.

**Q167 Mark Menzies:** We are into these magical phrases—bounds of limits. If you are a normal person looking at the details in an advert and buying a car based on those details, you think that is what you are getting, not bounds of limits. Have you ever challenged



a vehicle manufacturer that the vehicle they have provided you with—the vehicle given—is not a representative model?

*Dr Gillespie:* Absolutely.

**Q168 Mark Menzies:** Give me an example of the last time.

*Dr Gillespie:* A simple thing is that we may get a vehicle and the tyres may not be the tyres that are being tested and regulated. Those tyres may have the potential to have lower fuel economy because there is a different tread pattern. When you are checking the vehicle you have been given to test, you have to go through a huge checklist. If it does not comply, we will not test it. That is a relatively regular event.

**Q169 Mark Menzies:** Who is the manufacturer?

*Dr Gillespie:* It is not for me to tell you who that is.

**Q170 Mark Menzies:** Is this normal behaviour among manufacturers? Is it the same person behaving that way or are they all at it?

*Dr Gillespie:* No. There is one particular manufacturer that has created a real problem with the VW issue. In my experience of 30 years in this industry, typically the vast majority of manufacturers are trying to do the right thing. There is a set of rules and they play within those rules to meet the rules. Typically, it is not a chronic situation.

**Q171 Mark Menzies:** Tell us about your experiences, Mr Soper, of manufacturers presenting vehicles that are not representative.

*Tony Soper:* I do not have any experiences of such vehicles. In general, by the time we come to test them the manufacturer knows that they will pass. They have done so much validation testing in their own laboratories that when it comes for us to do the final certification test they know what the result is going to be.

**Q172 Chair:** You are at a different end of the process, aren't you?

*Tony Soper:* Yes. Personally I have not had that experience, no, but I do not work in the emissions laboratory. It would be our emissions department.

**Q173 Chair:** Mr Burns, what about your experience?

*Alex Burns:* It is a subset of Mr Soper's. I have been at Millbrook just over two years. I have not had reports coming to me of vehicles having to be rejected at the point of test because they are not compliant.

**Q174 Mark Menzies:** But what about challenged—not rejected? Have you said, “This vehicle is not representative of the vehicle you would find in the showroom”?

*Alex Burns:* That is a question of market surveillance. We undertake conformity of production testing on a regular basis for manufacturers, where a random vehicle is selected from the end of the production line and brought to our facility to be tested. That is a service that we undertake for the market surveillance authority.

**Q175 Mark Menzies:** Just as an exercise, and in order to make sure that you are in the clear, why don't you go out and pick a random vehicle to test to see if it is representative against—

*Tony Soper:* The responsibility for that is the technical service and not the testing laboratory. You should be putting that question to the Vehicle Certification Authority.

**Q176 Mark Menzies:** So that you can go to bed at night saying, “The organisations that we run, the testing that we do and the way in which we operate is representative to the general public of what we say it is,” why don’t you go out and pick a random vehicle?

**Alex Burns:** Our responsibility is to ensure that the testing we do is in accordance with the regulations and the requirements of the type approval authority. That is what keeps me awake at night.

**Q177 Chair:** Are you saying that it is not your responsibility—it is the VCA’s?

**Alex Burns:** It is not our responsibility. Our responsibility is to conduct the tests to ensure that the quality of the test result is representative of the vehicle that is the subject of the test.

**Q178 Iain Stewart:** Following that line of questioning, given all the concerns we have been exploring this afternoon, do you not think that a more robust and transparent system would be to move to the US model, where manufacturers self-certify their vehicles and then there is a random audit of vehicles to check that they are complying?

**Dr Gillespie:** Personally, no, I do not think that is the right way to do it. In that case, you might end up in the Volkswagen situation, where the horse has bolted from the stable and you have closed the door. It is better to have a robust and rigorous process—to use some of your words—where vehicles are tested through an independent chain with the type approval body against a set of standards. I would argue that we need to make sure that the auditing of that process is robust and transparent. That is a much better way than going with self-certification.

**Q179 Iain Stewart:** Why is the US system deficient, given that it was they who identified the Volkswagen problem?

**Dr Gillespie:** In truth, it was not the US regulatory authorities that identified the problem. It was an independent laboratory at the University of Virginia that identified the problem. The system did not catch Volkswagen; it was an independent body that found that.

**Tony Soper:** The north American model of self-certification only applies to safety regulations; for emissions there are witness tests conducted by the EPA and CARB.

**Q180 Iain Stewart:** I am not necessarily saying that we should adopt the US model exactly, but perhaps we should move to a general approach where there is self-certification, and your companies could be involved in giving the manufacturers that certification, but then to have some independent body that can take a vehicle at random and conduct all the safety and emissions tests that we want to see them meet, and check that they are meeting them.

**Alex Burns:** That is the role of the market surveillance authority in the EU. That exists in the EU.

**Q181 Iain Stewart:** Is it working?

**Alex Burns:** If you look back, this is one of the common misconceptions about the VW case. If a vehicle is fitted with a defeat device, which is illegal, that defeat device will operate to defeat a test, whether the test is done on a vehicle that is submitted for the initial certification or a vehicle that is pulled off the street and submitted to an emissions test as a random sample. It still has to be conditioned for a test.

**Q182 Chair:** Looking at the systems for testing that Mr Stewart is talking about, as Dr Gillespie said, the system in the States did not find the problem. Do you find that surprising?

**Dr Gillespie:** To be honest, I am not experienced enough in the detail of the US system to know how rigorous their cross-checking or real-world checking of the vehicle fleet is, so I could not really comment.

**Q183 Stewart Malcolm McDonald:** Very briefly, going back to the pre-test consultancy, how normal is that service from testers across Europe? Is it quite common?

**Dr Gillespie:** I would say it is entirely common, yes.

**Q184 Stewart Malcolm McDonald:** For how long has it been common?

**Dr Gillespie:** I have been in this industry for the best part of 30 years and, while I have been aware of it, that is typically what happens.

**Q185 Stewart Malcolm McDonald:** It has always been the case.

**Dr Gillespie:** Yes.

**Tony Soper:** It is worth saying that most of the consultancy we do is with smaller vehicle manufacturers—niche vehicle manufacturers and vehicle converters who do not have their own in-house capability and in-house expertise. Large vehicle manufacturers have all that capability in-house and they do not need our consultancy.

**Alex Burns:** The consultancy is helping them to understand the thousands and thousands of pages in the regulations with which they must comply.

**Q186 Graham Stringer:** The purpose of the regulations is to make automobiles and what automobiles emit safer for the public. The system has clearly failed, hasn't it? What would you suggest is a better system?

**Alex Burns:** One of the causes of the failure of the system in this case is that the test cycle we use for the tests has been in place for many years and is no longer representative of the way people drive cars today. That means that the emissions test that is done is only really covering a subset of the driving styles that people have in real life. There have been moves in the industry for quite a long time to adopt a new cycle that is more representative of the way we drive today, which maybe was not the case in the 1970s when the current cycle was set. That new cycle will come into place next year. It will certainly help, because it will mean that the vehicle manufacturers have to develop vehicles that comply with the emissions regulation over a much broader set of driving parameters than they do today.

**Q187 Graham Stringer:** Do you think those new standards will really replicate the real driving experience?

**Alex Burns:** The cycle that will be run on the dynamometers is a better representation of a typical drive cycle and the way people drive.

**Q188 Graham Stringer:** From what we have seen it could not be a lot further away, could it? Would it not be better, rather than to set up tests that try to replicate the real-world driving situation, to actually use the real-world driving situation?

**Alex Burns:** That is the second part, which I was coming to—the real driving emissions part of it. It is proposed that from September next year new vehicles submitted for





certification have to go through what is called a real driving emissions test, whereby at the test facility we install on the vehicle portable emissions test equipment. We take the vehicle out and drive it around a prescribed and approved route on the public roads, keeping up with the traffic and within certain boundaries. That then introduces a lot more uncertainty as to exactly what is going to happen during the test. It makes developing a defeat device much more difficult, and it will subject the vehicle to a much broader set of environmental conditions; for example, the weather conditions, the temperature and the traffic conditions may vary within boundaries. If you go outside the boundaries the test is no longer considered valid, because you cannot compare one with the other. That will introduce a lot more uncertainty to the certification tests and therefore the vehicle manufacturers will have to develop vehicles that comply in that more uncertain world.

**Q189 Graham Stringer:** You may not be able to answer this question, but what percentage of vehicles that are currently on the market will be able to pass that real-life driving cycle?

*Alex Burns:* Real driving emissions today? I would not hazard a guess. It is a subset; certainly not all.

**Q190 Graham Stringer:** Can you just give a ballpark figure? Is it 10%, 50% or 80%?

*Alex Burns:* I would not like to put a figure on it. I do not really have the data to put a figure on that.

**Q191 Graham Stringer:** But you have a lot of professional experience. You must have a sense of it. There is such a difference between the tests you have been doing within the regulations and the real driving situation that you must have a sense of it. Which? have done studies on it recently and produced a report showing a huge variation in both carbon dioxide and NOx between the real driving experience and the tests you are doing. You must be at least aware of that, but I guess you have more experience than Which?.

*Alex Burns:* It is broadly acknowledged within the industry that developing vehicles in order to pass the real driving emissions test when it comes in is a significant technical challenge for vehicle manufacturers, which implies that they would not pass it today in many vehicles. Some would, but not all.

**Q192 Graham Stringer:** Maybe a majority.

*Alex Burns:* I do not know whether it is a minority or a majority.

*Dr Gillespie:* Like Alex, I would say there are no absolute data. My experience would suggest that it would be the majority of them. Some will. There are certainly some vehicles that we think will be able to run the same calibration and pass.

**Q193 Graham Stringer:** What was surprising about the Which? results was that even hybrid vehicles were failing. Were you surprised by that?

*Dr Gillespie:* I am not aware of that report, so I should not comment on it.

**Q194 Will Quince:** You said that the industry did not spot the Volkswagen scandal and that it was actually a third party—a university. Do you have concerns that other car manufacturers are still using any kind of cheat device?



**Dr Gillespie:** I am not aware of any other manufacturer who is using a cheat device anything like the Volkswagen thing. I will be surprised if another one comes out, quite honestly.

**Alex Burns:** I would give the same response. I would be very surprised if another one is found. Most of the vehicle manufacturers have now made public statements that they have done their own internal audits and checked that they do not have a defeat device in place, and have said that they have not. I think that gives a certain amount of confidence.

**Q195 Will Quince:** We have already had one witness in an evidence session who suggested that there was a potential safety issue with regard to tyre pressures and computer systems within the car, potentially giving a false reading. Do you have any concerns at all about safety issues with the current testing regime or things that could be bypassed or cheated?

**Dr Gillespie:** With the information I have I can say no, I am not aware of anything. To be honest, I would not have all the detail but there is nothing that I am aware of.

**Alex Burns:** There is nothing we are aware of that would give cause for a safety concern. If there were, we would definitely raise it with the VCA.

**Q196 Chair:** I want to press you a bit more about the Commission's proposals and the real driving emissions test. Is that going to answer all the problems, or how would you like to see those proposals changed?

**Alex Burns:** It is a step forward because it brings in a level of uncertainty, which makes it difficult for a manufacturer just to develop to the regulation. Typically there is always a tendency to try to develop to the regulation. The role of regulation is to drive development in a certain direction. Manufacturers tend to do that because they have to pass the certification tests at the end of the development process. It is partly the real driving emissions and partly the new cycle that will come in that will definitely drive a lot of development over a broader range of operation of vehicles. That is desirable in terms of making consumers understand what is being emitted from their vehicles and that it is being communicated to them. People have lost confidence in the current regulation because of the inadequacies of the current test cycle.

**Q197 Chair:** Mr Soper, do you have any views?

**Tony Soper:** No, Alex summed it up very well.

**Dr Gillespie:** I agree with what Alex said. It is not the absolute silver bullet. At the end of the day, it is still going to be a real-world driving test under certain parameters, so it will not replicate all conditions. Consumers will not get exactly the same fuel economy as you might see in the test. They might get more or they might get less, but it will certainly be much closer to the real world.

**Q198 Chair:** It has been suggested that the conformity factors for real driving emissions have been set to meet the needs of the manufacturers rather than looking at environmental or safety concerns. Do you think that is a fair point?

**Alex Burns:** Generally, the manufacturers would say that they have a lot of work to do to meet the proposed conformity factors as they are today. The use of a conformity factor gives the regulator the opportunity to continue to drive development of less polluting vehicles. You will see that with the proposed reduction in the conformity factor for 2020.



**Q199 Chair:** Do you agree with that view, Mr Burns?

*Alex Burns:* I do. As I said before, it is going to be a challenge for a lot of the vehicle manufacturers to meet the 2017 levels as they have been set, with a 110% conformity factor, and then to meet the 50% that comes in three years later. That is a big step, and a lot of work has to be done.

**Q200 Chair:** How much of a challenge is it really?

*Alex Burns:* It is huge. It is one of the most significant technical challenges in the automotive industry now.

*Dr Gillespie:* I would agree with that. Bear in mind that the minimum development cycle for a vehicle is three years, and possibly more for an engine—maybe more like five years. There is a huge amount of work to be done. If the current vehicles have a conformity factor that is higher than 110%, there is a huge amount of work to be done. I think it is a great challenge for the industry.

**Q201 Chair:** You spoke earlier about VCA doing surveillance or auditing of what is done. Was Millbrook awarded the contract for that work of emissions surveillance?

*Alex Burns:* In the past Millbrook has done work for the VCA on surveillance. We do not currently do that.

**Q202 Chair:** How often is that done across the EU, as far as you know?

*Tony Soper:* Part of the requirements for type approval are that the manufacturer submits an example of the type to be approved and the approval authority places conformity production requirements on the manufacturer. There will be an agreement between the approval authority and the manufacturer about the frequency of testing that he has to conduct in order to demonstrate ongoing conformity of production. That is one side of it: there is an agreement between the approval authority and the manufacturer. In addition, the approval authority may do conformity of production testing outside that agreed schedule. It could be argued that that side—the market surveillance—has been weak in the last few years. Of course, it requires funding from the approval authority to do conformity of production testing.

**Q203 Chair:** How has it been weak?

*Tony Soper:* It is fair to say that not much of it has been done by the approval authorities.

**Q204 Chair:** Can you elaborate on that a bit?

*Tony Soper:* I think the last time we were asked by an approval authority to do some conformity of production testing for emissions was perhaps five years ago. We have not seen the work, but there is a limited number of emissions laboratories in the UK, so either it is being done by other laboratories or it is not being done.

**Q205 Will Quince:** It is interesting that you say that. Do you think that car manufacturers, including Volkswagen, were aware that this testing was not being done, or certainly not being done to a high enough standard?

*Tony Soper:* I cannot comment.

*Alex Burns:* It is worth pointing out that, if a manufacturer is fitting a defeat device to their vehicle, it will defeat a certification test and also defeat a conformity of production test. It is not necessarily a test for a defeat device. It is a test to make sure that the standard



of production of cars being sold to consumers is representative of the standard of vehicle submitted for the initial certification.

**Q206 Will Quince:** That is not necessarily true, is it, if the cheat device is attached only to the golden vehicle but not to the roll-out in the end product, which I understand may have been the case in the UK models?

**Alex Burns:** I did not know that. The fact that there are so many cars fitted with the defeat device is probably evidence to the contrary. It would suggest that the defeat device was in all the cars. There were 11 million of them—that is not just cars submitted for certification but cars that have been put through general production.

**Q207 Will Quince:** There is a difference between the US and the UK. In the UK it is just a computer fix as opposed to anything practical.

**Tony Soper:** It depends on the engine. Different engines have different fixes as to whether it is a software change or a change to after-treatment.

**Q208 Chair:** Do you know why that surveillance programme ended so abruptly?

**Tony Soper:** I do not know that.

**Q209 Chair:** Does anybody know?

**Tony Soper:** You will have to put that question to the Department for Transport.

**Q210 Chair:** You must hear things. You must have wondered yourselves, when you were not asked to do any more.

**Tony Soper:** Maybe it was for financial reasons.

**Q211 Chair:** What would a good surveillance system look like? If there was in-house surveillance as part of a system, how should it operate?

**Tony Soper:** Do you mean conformity of production test surveillance by a manufacturer or surveillance by an approval authority or member state?

**Chair:** Either. I am trying to assess what was actually going on and if authorities were doing what they were meant to do and testers were doing what they were meant to do.

**Tony Soper:** For market surveillance for an approval authority or a member state, they should have a programme that is looking at the top-selling vehicles, because they are the vehicles that are having the most effect, and performing that market surveillance. It is difficult for an approval authority that has not issued the approval. If we stick with the UK, many of the vehicles on UK roads have been approved outside the UK. Our approval authority may well be able to identify some deficiencies in other vehicles, but they cannot necessarily do anything about it. They would have to approach the approval authority in the member state that issued the approval and ask them to investigate it further.

**Q212 Chair:** Are there any other thoughts on how it could work? When you were doing this work were you fully equipped to do it, or was there anything else that could have happened?

**Tony Soper:** Again, when we were doing it we were just providing laboratory services. The vehicles to be tested were selected by the approval authority. I do not know where they sourced them. Sometimes they were hire vehicles or they were procured by the



vehicle manufacturer from their list of owners, and the vehicles were delivered to us and prepared for test. We conduct the test and provide the test report.

**Q213 Chair:** You are in a competitive situation and trying to get business. What is your pitch? What do you say to get the business? Is it that you can do things cheaper than someone else or better than someone else?

**Alex Burns:** We stress three key things at Millbrook. They are values that run throughout the organisation, and are things that we promote to our staff and customers. First and foremost is safety, because some of the testing we do is dangerous; and then customer service and technical excellence. That is the absolute mantra that we have all the time. It is safety first; then it is about customer service, which is turnaround time and making sure that we deliver what we say we are going to deliver when we say we are going to deliver it; and then technical excellence, which is making sure that we do an extremely good job and that our test results are very high fidelity. We do not pretend to be a low price leader in any way. We pride ourselves on the integrity of our test results and we sell on that.

**Q214 Chair:** How important is price to the manufacturers?

**Alex Burns:** It is a part of the total cost of doing a certification programme. One manufacturer will be more price-sensitive than another. It is probably not top of their list. In general, service is top of their list because time to market is absolutely critical for those organisations. They have to get their new models into the market quickly, and in order to do that they need to get test results quickly.

**Dr Gillespie:** I would use one of the words that Alex used, which is integrity. Everything we have is integrity. We have to be able to demonstrate that, and manufacturers are looking for it. They are looking for an organisation where they know they can trust the results that we are going to deliver. Price is a factor, but at the end of the day it is whether you can ensure that you will get the test done when you said you will and that you will provide quality data with no errors, so that type approval can go ahead on the date it is supposed to go ahead, because production is waiting for that type approval.

**Q215 Chair:** Clearly a lot of changes are going to take place. From your experience and where you are, what is the biggest change you want to see?

**Dr Gillespie:** We have these new test regimes coming in, with the new test cycles and RDE. That will be a real challenge for the industry, and we will all have to work very hard to keep the flow of approved vehicles going through. It is going to be challenging. Beyond that, I come back to something I said way back at the start. You can dream up all the test cycles in the world that you want, but if you do not ensure that we have a robust and transparent process across Europe for that, you are shooting yourself in the foot. It is really important that the type approvals body has a responsibility not only to issue type approvals but to audit that process.

**Alex Burns:** In addition, the market surveillance needs to be strengthened. One way of strengthening the entire process, including the original certification, and ensuring that vehicles continue to conform to the certification standard, is to encourage different member states to appoint market approval authorities that then do market surveillance tests on vehicles that they have not originally certified. That will then potentially feed back and make sure that the type approval authorities are doing a robust job in making sure they get good test results from technical services.

*Tony Soper:* I have nothing to add.

**Q216 Chair:** You mentioned technical services. The European Commission wants the power to suspend or withdraw the designation of technical services that are underperforming. Is that power needed?

*Alex Burns:* It should not be, because it should be under the authority of the type approval authority, which should be able to do that. It is jumping the type approval authority to go from EU level directly to technical service. It would be better if they were doing that through the type approval authority, because then we would know where we are; the technical services would know where they are. They have to know to what standard they are expected to comply and who is auditing them.

**Q217 Chair:** You do not agree with the proposal.

*Alex Burns:* I am not saying that I disagree, but it probably demonstrates some lack of confidence in some type approval authorities.

**Q218 Chair:** Is it a justified lack of confidence?

*Alex Burns:* Not in our experience in the UK, I would say, but I am not experienced in dealing with all the type approval authorities across Europe. We deal with VCA in the UK and RDW in the Netherlands, both of whom are pretty robust organisations. If there is an issue with the type approval authorities, that should be fixed rather than moving through to go to particular technical services.

*Tony Soper:* It is fair to say that some of the European approval authorities are quite small organisations and the depth of their technical competence may be questioned. They rely very heavily on their appointed technical services to operate, so there could be a weakness.

**Q219 Graham Stringer:** In a country like Croatia where there is no proper separation between the judiciary and politics, and it is riven with corruption, it would be unlikely, wouldn't it, for something like vehicle testing to be free of that corruption?

*Tony Soper:* It is outside my experience, I am afraid.

**Graham Stringer:** It is just a common-sense observation.

**Chair:** Do members have more questions? Thank you very much, gentlemen. You have helped us to be better informed about what is happening and how the system works.