

**Administration's Responses to Dr. Law Chi Kwong's Enquiries dated 12.11.99 on Action to Improve Air Quality**

Enquiries	Reponses
<b><u>Maintenance</u></b>	
1. What measures will the government adopt to make the repair manuals available to the public? What is the time for implementing it?	The Administration is aware of the concerns raised by the transport trades and the vehicle maintenance trades that the lack of vehicle maintenance manuals has made it difficult for them to fix a vehicle's emission problems. We are asking all vehicle suppliers to make available their vehicle maintenance manuals which are necessary for maintenance purpose. In parallel, we are discussing with the Vocational Training Council on the feasibility of establishing a database on repair manuals.
2. Who are the members in the working group on improving the maintenance service standard? What are the short term and long term objectives of the working group? How often does the group hold the meeting? Any objectives of the working group would like to achieve before asking the LegCo to increase fine for smoke belchers? Is the government planning to introduce a licensing system to the garage business to keep the maintenance services up to standarad? Will the working group put it into agenda?	<p>The Working Group on Vehicle Maintenance Trade Development comprises representatives from:</p> <p><b>Government side</b></p> <ul style="list-style-type: none"> <li>Tranport Bureau</li> <li>Planning, Environment and Lands Bureau</li> <li>Environmental Protection Department</li> <li>Transport Department</li> <li>Electrical and Mechanical Services Department</li> <li>Other relevant bureaux/departments on a need basis</li> </ul> <p><b>Non-government organisations</b></p> <ul style="list-style-type: none"> <li>Vocational Training Council</li> <li>Institute of the Motor Industry Hong Kong</li> <li>Hong Kong Institution of Engineers</li> <li>Service Managers Association</li> <li>Hong Kong Vehicle Repair Merchants Association Ltd</li> <li>Environmental Vehicle (Taxi) Repairers Association</li> <li>Other relevant bodies to be considered</li> </ul> <p>The objective of the Working Group is to look into ways that could help to raise the standards of service of the vehicle maintenance trade. The first Working Group meeting is scheduled in early January 2000 and the terms of reference will be finalised by that time. Tentatively, issues that will be studied include the possibility of a licensing/certification scheme for the maintenance trade, ways to help the vehicle maintenance trade to obtain the necessary vehicle maintenance data.</p>
3. How can the working group achieve their objectives? Can they make vehicle dealer release the technical	Such issues will be considered in details by the Working Group.

<p>specifications on all components? Can repair workshops afford to buy the necessary diagnostic equipment?</p>	
<p>4. How and when will the government assist the garages to upgrade their maintenance services standard? How can the government ensure that the garages catch up with the new technology Euro III diesel vehicles in 2001? Will VTC provide the necessary training on a continuous basis?</p>	<p>The government has been taking the following measures to assist vehicle maintenance trades to upgrade their maintenance services standards:</p> <ul style="list-style-type: none"> <li>● To help the maintenance trade to better understand the operation of a dynamometer test, EPD has stationed staff at the emission testing centres to provide on the spot advice and demonstration on proper engine tuning practice to those who failed the test.</li> <li>● EPD, in conjunction with HKPC and VTC, has conducted a number of seminars and workshops for transport trade and vehicle mechanics on the proper engine repair to reduce smoke emissions and to understand the dynamometer smoke test. EPD intends to organise at least 12 similar seminars for around 1,000 members of the trades over the next 6 months. If necessary, more seminars could be held to allow all vehicle workshops that are interested to send at least one of their mechanics to attend them.</li> <li>● VTC also plans to organise short courses for vehicle mechanics on the use of dynamometer for better vehicle maintenance in addition to their existing vehicle mechanics programme. We will seek the widest participation in these courses by members of the trade, and publicise its attendance certificate, which can help vehicle owners choose suitable vehicle mechanics to rectify the smoke emission problems of their vehicles</li> <li>● We are asking the vehicle suppliers to make available their vehicle service manuals which are necessary for maintenance purpose</li> <li>● to raise awareness among vehicle operators of the importance of preventive maintenance to reduce smoke emissions, the Transport Department conducted in late September 1999 a four-week programme to provide free smoke emission tests at its Kowloon Bay vehicle examination centre. A local oil company, in conjunction with a green group, is also providing free smoke emission tests at three petrol filling stations from October to December 1999. The operator of the existing vehicle emissions testing centres is offering the use of their dynamometers at a fee during Sundays to the vehicle maintenance trades for tuning of vehicle engines. We will continue to encourage these initiatives to promote preventive care of vehicles; and</li> <li>● all smoky vehicles testing in test centres will</li> </ul>

progressively adopt dynamometer method, and at the same time the testing procedures and standards will be harmonized.

- We are setting up a working group to consider ways to assist the trade to raise the standards of vehicle maintenance.

VTC found in a manpower survey in March 1998 that there were 5,575 vehicle mechanics. Although the survey did not provide the number of mechanics working on diesel vehicle engines, VTC opines that the number of required upgrading training is likely to be around 1,000. Our intention is to target our efforts on these mechanics and help them to raise the overall standards of service over the next 6 months.

As to the need of training on new types of vehicles, VTC has been providing courses to suit the need of the industry and will continue to do so. Technically, Euro II/III diesel vehicles do not differ greatly from pre-Euro vehicles in terms of servicing skills. Most of the emission improvement is achieved at the design stages to reduce the generation of NO<sub>x</sub>, better combustion, etc. However, proper scheduled preventive maintenance is of prime important to keep the vehicles under good working conditions. Otherwise, even Euro II/III vehicles may emit excessive harmful gases/particulates.

<b>Emission Control</b>	
<p>1. Making the dynamometer easily accessible will encourage diesel vehicle owners to check their vehicle condition and also provide incentives to those garages to upgrade their service standard. Will the government consider introducing two additional dynamometers for commercial vehicles to have better testing? What is the charge of the testing and who should be responsible for the charge? How can the government assist the repair trade to properly identify problem components?</p>	<p>We estimate that the setting up of a dynamometer testing centre for this purpose is likely to require a capital expenditure of up to \$1.8M (including the costs of a dynamometer of \$0.5M to \$1M depending on its size and the other ancillary facilities of \$0.8M) if the dynamometer is installed in an existing government premises, and a recurrent cost of at least \$1.2M per annum. The capital cost will be much higher if a new centre is to be built. We believe that the most cost-effective way in using dynamometers for the purpose of promoting proper maintenance is to utilise the existing dynamometers now available in the designated emission testing centres. In the next month, the number of designated emission testing centres using dynamometer will increase from 3 to 5. There is likely to be spare testing capacity at these centres. We are considering a pilot scheme in conjunction with the existing emission testing centres to allow vehicle owners to test the smoke emissions of their vehicles on their own initiatives. Based on the findings of the pilot scheme, we will assess the need of the transport trade in this respect and consider the way forward.</p>
<p>2. Does EPD lower the standard of the advanced smoke test (by means of a dynamometer) in order to increase the passing rate? If yes, could you please let us know what the problem is and when will the EPD review the revised standard? What has the EPD done over the last two years on the dynamometer test research?</p>	<p>EPD lowered the power requirement from 60% to 50% of rated engine power. The relaxation is a transitional measure to help the maintenance trade to get used to the test because they have difficulties in making the quantum improvement in their maintenance skill as demanded by the original requirement for engine power. We would review the need for the transitional arrangement early next year.</p> <p>Indeed, even if the relaxation were implemented in Day One, we would not see the improvement in passing rate. In fact, the increase was mainly due to our demonstration sessions, seminars and workshops, all of which were designed to help the maintenance trade understand the sort of maintenance required to pass the dynamometer test.</p> <p>The two pilot schemes conducted in the last two years indicated that vehicles properly maintained and repaired can meet the smoke emission standard.</p>
<b>Particulate Trap</b>	
<p>It is widely-known that having regular cleaning of the particulate trap is the most crucial factor in reducing smoke and</p>	

particulates. Will the government inform us:	
1. What is the cost of a particulate trap?	The trap is expected to be less than HK\$1,000.
2. What is the current cost of cleaning a trap filter? 3. Where and how the trap filter can be cleaned? 4. Have the government considered the following suggestion? ● To provide two trap filters to the drivers for substitution, and ● To allocate some space in gas stations for the collection of old filters and the storage of clean filters for the drivers to exchange, and ● To contract out the cleaning work of the filters 5. How can the government ensure all drivers will clean their trap properly? 6. What is the cost and benefit (cost to reduce PM per tonne) each year? How much PM (tonnes) could be trapped each year? 7. How often should the trap be cleaned? 8. Is it necessary to introduce new equipment to conduct the smoke testing of the vehicles with traps?	In collaboration with the Hong Kong Polytechnic University, we are putting the particulate traps and diesel catalysts on trial. The study is ongoing and we will be in a better position to reply questions (2) to (8) when the study is completed in the first quarter of next year.
<b><u>Diesel Catalytic Converter</u></b>	
1. What is the cost of a diesel catalytic converter?	HK\$6,500 for a vehicle over 4 tonnes and HK\$12,000 for larger diesel vehicles.
2. What is the percentage of respirable suspended particulates could be reduced by a diesel catalytic converter?	25% on average.
3. Will condition of vehicles and quality of fuel play a big role of effectiveness of diesel catalytic converter?	The condition of vehicles will impact on the emission level and the durability of the catalyst which are warranty for 250,000 km. Modern diesel catalysts can work with diesel of high sulphur content. Overseas experience indicates that they can tolerate diesel sulphur content as high as close to 1 %. There will not be any increase in toxic emissions. Although higher sulphur dioxide or sulphates will be emitted, it is solely due to a higher fuel sulphur content and has nothing to do with catalysts.