

## Captions on first page

### Main caption-

Progress on Vehicle Maintenance Workshops Charter Scheme

### Sub-captions-

Logo of the Workshops Charter Scheme outside the main gate of EMSD

Draft advertising design on the bus body

Promotional stickers on EMSD government vehicles

Promotional handbills listing the chartered workshops

Logo of the Workshops Charter Scheme

Draft advertising design on the exterior wall of EMSD

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### From the Editor

Progress on Vehicle Maintenance Workshops Charter Scheme

The Vehicle Maintenance Technical Advisory Committee began inviting workshop operators to participate in the Vehicle Maintenance Workshops Charter Scheme in June last year. The Vehicle Maintenance Workshops Charter was officially launched at a ceremony held at the headquarters of EMSD in January this year. One hundred and eleven workshops participated and became signatories to the charter. EMSD has received 400 applications since January and 315 workshops have successfully joined the charter scheme after vetting. Workshops in the charter scheme are issued with a certificate and logo by EMSD with their relevant information uploaded to EMSD website for public reference. The promotion of the charter scheme is in order to encourage trade members to abide by the Practical Guidelines for Vehicle Maintenance Workshops and improve their service quality and professional image. This will in turn add value to the Voluntary Registration Scheme for Vehicle Mechanics and pave the way for the implementation of the Voluntary Registration Scheme for Vehicle Maintenance Workshops.

EMSD will continue to launch publicity activities for the charter scheme in the second half of the year. Mega posters featuring the logo of the charter will be posted at EMSD headquarters. Advertisements for the workshops charter will be taken out in car magazines. The logo and slogan of the charter scheme will be advertised on buses, and handbills listing the chartered workshops will be distributed to motorists and car owners. These will further promote the charter scheme to the public and encourage participation by workshops and enthusiastic support of trade members.

**WONG Teck-sun**

**Chief Editor**

## **Sharing**

The Voluntary Registration Scheme for Vehicle Mechanics has attracted increasing numbers of participants since its launch several years ago. This is a reflection of the recognition of the professional status of vehicle mechanics and quality assurance for their employers and clients. I would like to take this opportunity to wholeheartedly thank the efforts of the advisory committee comprising of representatives from trade associations, academic institutions, other industries and individuals in promoting this scheme to trade members impartially and vigilantly. The charter scheme is being publicised by trade members themselves through various means to ensure that the message is more effectively communicated to improve safety standards of the trade as a whole. Its implementation according to plan has been thanks to the full support of EMSD.

Given the present economic situation of Hong Kong, our vehicle maintenance service will lose its competitive edge, or even lag behind that of our regional competitors, if there is stagnation in our professional standards and expertise. For example, at the national automobile market seminar which was held recently in Zhuhai, there was an appeal by a speaker for trade members on the Mainland to emulate the professionalism of Hong Kong's maintenance service industry. Should we feel flattered or start to worry? Should we set a good example for our vehicle maintenance service industry? Let us build a good image for our industry and support the registration scheme. Let us work hard for this goal.

Jacky Coke

## Latest Developments of the Registration Scheme

- 1 As at 31 October, EMSD received applications for joining the charter scheme from over 463 vehicle maintenance workshops, with 315 workshops successfully becoming signatories of the charter. Vehicle Maintenance Workshops Charter certificates and logos have also been distributed to the signatory workshops for display in the workshops and identification by customers.

(Certificate)	(Logo)
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Charter Certificate and Logo

- 2 Signatories of the Vehicle Maintenance Workshops Charter are listed on the EMSD website for public information together with information such as the service classes they provide.  
(About the Charter: [http://www.emsd.gov.hk/emsd/eng/sgj/vlntry\\_vmrs\\_chrtr.shtml](http://www.emsd.gov.hk/emsd/eng/sgj/vlntry_vmrs_chrtr.shtml))  
(Charter Subscriber List:  
[http://www.emsd.gov.hk/emsd/e\\_download/sgj/CharterWorkshop.pdf](http://www.emsd.gov.hk/emsd/e_download/sgj/CharterWorkshop.pdf))
- 3 With effect from 1 January 2013, all registered vehicle mechanics applying for renewal of registration must submit copies of their Continuing Professional Development (CPD) training

records (e.g., attendance certificates or in-house training records) together with the application form. To facilitate the recording of training information, registered mechanics may download a Record of Continuing Professional Development from the EMSD website. The completed and signed record form will suffice as documentary proof.

(The Record of Continuing Professional Development can be downloaded from [http://www.emsd.gov.hk/emsd/e\\_download/sgi/CPD\\_record\\_form.pdf](http://www.emsd.gov.hk/emsd/e_download/sgi/CPD_record_form.pdf))

- 4 The annual test was published in the RVM Newsletter Special Issue in April this year. Interested parties may refer to our previous issues for the areas covered in this test. Registered mechanics who provide four to six correct answers will earn one-hour worth of CPD, while those who provide seven or more correct answers will earn two-hour worth of CPD. The CPD test, published in the Special Issue, may also be downloaded from the following EMSD web page: [http://www.emsd.gov.hk/emsd/eng/sgi/vmrs\\_pub\\_news.shtml](http://www.emsd.gov.hk/emsd/eng/sgi/vmrs_pub_news.shtml).

(Gentle reminder: the deadline is 31 December 2013)

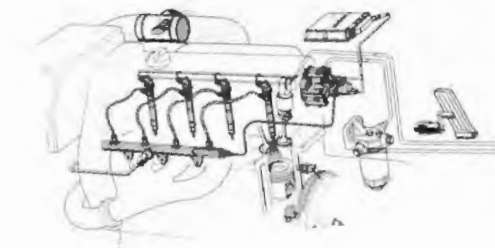
- 5 EMSD held a CPD Seminar at Tsuen Wan Town Hall on the evening of 24 July for vehicle mechanics who had not yet renewed their registration. They were briefed the requirements of CPD, ways to meet these requirements and tips on using the Record of Continuing Professional Development. The well-received Seminar was attended by a total of over 220 mechanics.

<b>Number of vehicle mechanics in the vehicle servicing sector in 2012</b>	<b>9,420<sup>1</sup></b>
Note 1 2012 Manpower Survey Report by Automobile Training Board	
<b>Number of registered vehicle mechanics (as of September 2012)</b>	<b>7,394</b>

### A Few Tips on Controlling the Pollution Caused by Tail Pipe Emission of Diesel Vehicles (II)

#### Controlling PM

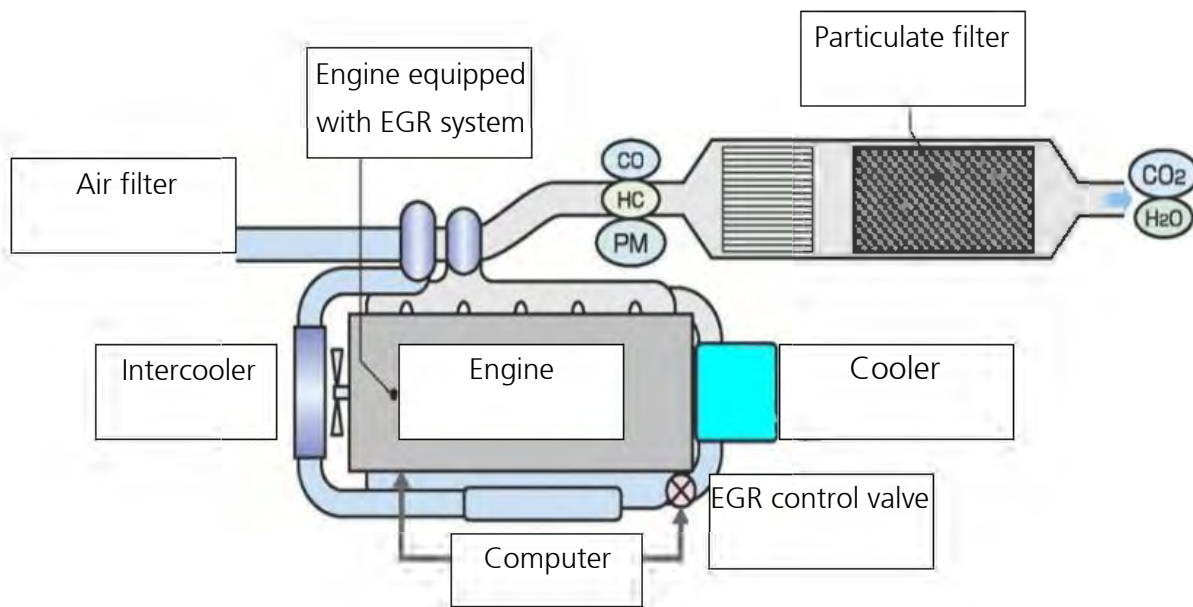
High pressure direct fuel injection with precision timing control, e.g. the common rail system, is an active method of control for achieving the highest fuel-burning efficiency, and used together with the passive method employed in the exhaust system, e.g. the after-treatment device like particulate filter, etc., the system can effectively control the emission of PM.



(Figure 1) Layout of the Common Rail System

**The Common rail system (figure 1)** is an electronically controlled high pressure injection system suitable for direct injection engines. Injection pressure is constantly adjusted according to engine speed and engine load, ranging from 300 bar when the load is light to about 2000 bar or higher when the load is heavy. Since high pressure injection atomizes the fuel and makes it easier to achieve full combustion effect, the production of carbon particles can be avoided. The fuel is pressurised by a high pressure pump driven by the engine. Whereas the solenoid control valve, located at the pump discharge outlet, controls the instantaneous pressure of the fuel, fuel injection quantity is regulated by the pulse control signals of the injector.

Various types of **particulate filters (figure 2)** may be used for diesel vehicles. Exhaust gases, before entering the filter, will first undergo an oxidisation process in the internal catalyst, which reduces the size of particulate matters. An increase in the temperature of exhaust gases further reduces particulate matters. The filter retains the remaining particles and ashes and purifies tail pipe emission. If the engine works at low speed and low load most of the time, the filter is clogged up easily due to the low temperature of exhaust gases, hence the need to carry out cleaning procedures. The pressure difference between the two ends of the filter indicates the level of clogging. Some particulate filters require the engine to use low sulphur diesel as fuel to ensure filter efficiency.



(Figure 2) Layout of the EGR System and Particulate Filter

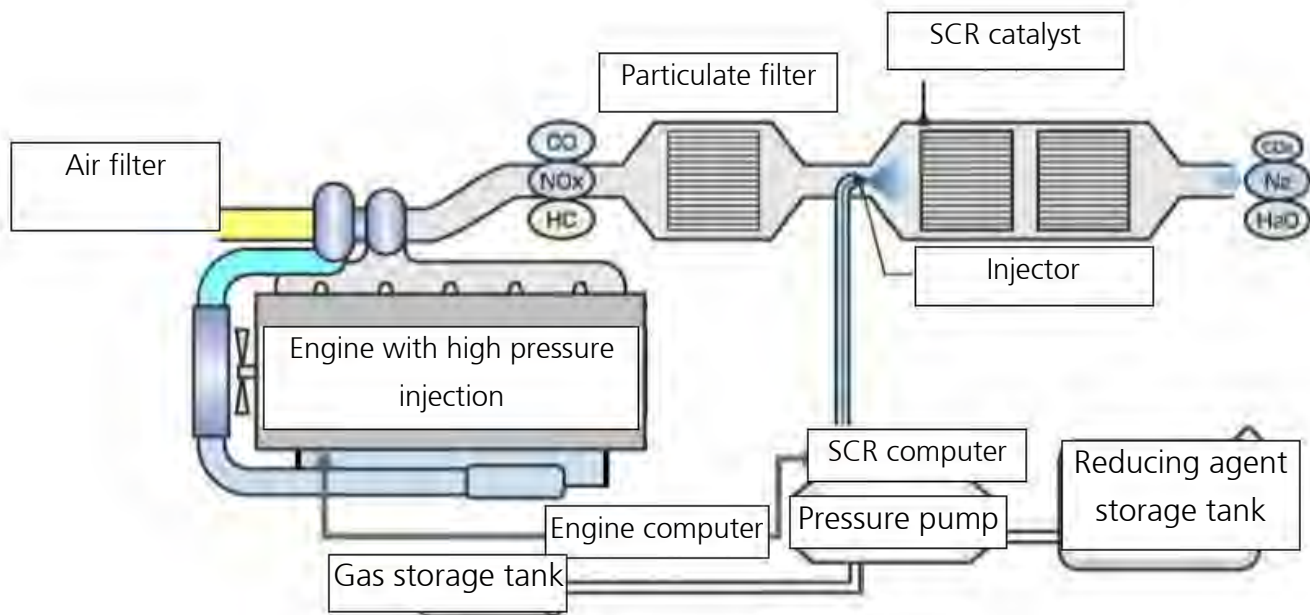
## Controlling NO<sub>x</sub>

There are two commonly adopted methods for restricting the emission of NO<sub>x</sub>. The active method of control is exhaust gas recirculation (EGR) (figure 2), which restricts the combustion temperature of diesel in the combustion chamber. **Selective catalytic reduction (SCR) (figure 3)** is a passive method of control. The reducing agent is injected into exhaust gases, which leads to chemical reaction in the catalyst, breaking down ammonia and nitrogen oxides and compounding them to form nitrogen and water.

In the EGR system, the restricted exhaust gases are piped into the inlet manifold. Since the volume of the combustible mixed gases decreases and part of the heat generated by combustion is absorbed by carbon dioxides, the combustion temperature lowers and the speed of NO formation is restricted. However, low combustion temperature will reduce the engine's power output and at the same time produce more PM. Therefore, the system only works when the engine is operating at a medium speed. Controlling the temperature of recirculating exhaust gases will prevent an excessive reduction in the engine's power output. When the engine is operating at a low speed, the combustion temperature is relatively low, so there is no need to restrict the formation of NO. When the engine is operating at a high speed, the EGR function will be stopped so as to maintain the engine's highest power output even though more NO will form. The EGR control valve of the system is used to restrict the amount of exhaust gases recirculating into the inlet manifold. The amount is controlled by the pressure parameters of the inlet and exhaust manifolds. In addition, electronic control is adopted in more advanced systems to give more precision to the amount of recirculation.

High temperature of exhaust gases is one of the basic requirements for the operation of SCR system. If the temperature of exhaust gases is not high, there cannot be effective chemical reactions in the

catalyst, which may result in ammonia slip. When that happens, no reducing agent will be injected into the exhaust pipe to mix with the exhaust gases. However, the pressure pump in the system will continue to work so that the reducing agent will keep circulating, thus cooling the electronically controlled injector located at the upstream of the catalyst. The quantity of reducing agent being injected is adjusted according to the amount of exhaust gases and NO<sub>x</sub> concentration, so as to ensure effective chemical reactions. The reducing agent is usually a mixture of urea and soft water. The amount of usage is about 3 to 5 % of diesel.



(Figure 3) Layout of the SCR System

## Conclusion

According to current legal requirements for tail pipe emission, the above-mentioned systems are sufficient to reduce the production of PM and NO<sub>x</sub>. However, the effectiveness of these systems can only be guaranteed when they are well-maintained and properly operated. It is necessary to engage professionals with profound knowledge and experience and to use appropriate equipment in order to build an environmentally friendly, efficient transport system.

FUNG Man-keung

## Lapel / Sleeve Badge Design Competition for Registered Vehicle Mechanics 2013

EMSD held a Lapel / Sleeve Badge Design Competition for registered vehicle mechanics in July 2013. A total of 35 entries were received by the deadline on 30 August. Many registered mechanics participated in the competition. Apart from the credit of three Continuing Professional Development (CPD) hours awarded to each participating registered mechanic, prizes will be given to the winning registered mechanics. The adjudicating panel has evaluated the entries and selected the following winning designs in September:

<b>Champion:</b>	<b>First Runner-up:</b>	<b>Second Runner-up:</b>
(Badge)	(Badge)	(Badge)

<b>Merit Awards:</b>
(Badges)

Awards	List of Winners		Prizes
	Name/Registration No. of the Mechanics		
Champion	NG Kwok Fai	VM0008660	HK\$3,000 coupon
First Runner-up	CHAN Yun Ki	VM0067211	HK\$2,000 coupon
Second Runner-up	CHAN Kwok Hung	VM0041073	HK\$1,000 coupon
Merit Award	PANG Wai Shing	VM0097328	HK\$300 coupon
Merit Award	LI Sze Yeung	VM0105415	HK\$300 coupon
Merit Award	PUN Kin Fan	VM0037182	HK\$300 coupon
Merit Award	MAK Ka Lun	VM0095400	HK\$300 coupon
Merit Award	LEUNG Yiu Wa	VM0057360	HK\$300 coupon
Merit Award	LEE Ka Hang	VM0000953	HK\$300 coupon
Merit Award	LO Wing On	VM0037104	HK\$300 coupon
Merit Award	CHAN Siu Wo	VM0103575	HK\$300 coupon
Merit Award	LAI Wai Kwong	VM0022742	HK\$300 coupon
Merit Award	HO Chi Ming	VM0089817	HK\$300 coupon



## Prize Quiz

- Q1 How many vehicle maintenance workshops have successfully become signatories of the Vehicle Maintenance Workshops Charter Scheme as at 31 October?
- ☐ A 111 ☐ C 285  
☐ B 220 ☐ D 315
- Q2 According to EMSD guidelines, which of the following can be included in the CPD record?
- ☐ A Automobile product promotion ☐ C Talk on occupational safety  
☐ B Corporate in-house training ☐ D All of the above
- Q3 How many mechanics attended the CPD Seminar held by EMSD at Tsuen Wan Town Hall?
- ☐ A 195 ☐ B 208 ☐ C Less than 150 ☐ D Over 220
- Q4 In what year was the Euro V emission standard for diesel heavy vehicles implemented?
- ☐ A 2003 ☐ B 2005 ☐ C 2008 ☐ D 2011
- Q5 When is the deadline for entering the annual quiz of the RVM Bulletin for which participants may earn CPD hours?
- ☐ A 31 August 2013 ☐ C 31 December 2013  
☐ B 10 December 2013 ☐ D No deadline

## How to participate?

Please complete the form below, circle the correct answers, and send it to the Vehicle Maintenance Registration Unit by fax or email (fax: 3521 1565 or email: [vmru@emsd.gov.hk](mailto:vmru@emsd.gov.hk)).  
Deadline: 10 December 2013.

Question	Answer			
1	A.	B.	C.	D.
2	A.	B.	C.	D.
3	A.	B.	C.	D.
4	A.	B.	C.	D.

5	A.	B.	C.	D.
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Name:

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Vehicle Mechanic Registration No.: VM

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Email Address:

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Contact Telephone No.:

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Each winner will receive a souvenir. As there are ten souvenirs in all, the winners will be decided by lottery if more than 10 participants give correct answers to all the questions.

- Only registered vehicle mechanics with valid registration may participate, each not more than once in each quiz.
- The decision of the Vehicle Maintenance Registration Unit on the quiz answers will be final.
- The correct answers and list of prize winners will be announced in the next issue of the RVM Newsletter. Prize winners will also be notified by the Vehicle Maintenance Registration Unit individually.




### Result of the prize quiz in RVM Newsletter Issue No. 5

The answers of the prize quiz in RVM Newsletter Issue No.5 are as follows:					
Question	1	2	3	4	5
Answer	A	B	D	C	B

The ten winners who gave correct answers to all the questions and drawn by lottery are:

CHOW Chi Ho	(VM0098468)	LEUNG Tak Ting	(VM0083346)
LAW Wing Sau	(VM0100211)	YIP Chi Man	(VM0001275)
LAM Shing Man	(VM0037171)	LEUNG Wai Man	(VM0045604)
WONG Kwok Kin	(VM0030128)	LEE Chi Keung	(VM0014753)
TANG Tak Sang	(VM0013179)	LO Wai Man	(VM0065768)

Some of the Training Institutes Providing Continuing Professional Development Courses for Vehicle Mechanics (in random order)

Name of training institute	Website	Enquiry Tel. No.
Traffic Services Employees Association	<p><a href="http://www.facebook.com/tseahk">http://www.facebook.com/tseahk</a></p> <p>Courses for October and November 2013 are now open for enrolment. Topics covered: operation of the power system of environment-friendly electric vehicles, operation of the full pneumatic brake system, evolution of gearbox and application of new maintenance techniques, basic operating principles of Euro-IV and Euro-V power systems, conducting research online for new information on vehicle maintenance techniques, and basic operating principles of the intelligent brake system. For details, please visit the above website or call the enquiry telephone number.</p>	<p>2575 5544</p> 
Pro-Act Training and Development Centre (Automobile)	<p><a href="http://www.vtc.edu.hk/vtc/web/template/yc_course.jsp?fldr_id=458&amp;lang=tw">http://www.vtc.edu.hk/vtc/web/template/yc_course.jsp?fldr_id=458&amp;lang=tw</a></p>	<p>2449 1310</p> 
The Institute of the Motor Industry Hong Kong	<p><a href="http://www.hkimi.org.hk">http://www.hkimi.org.hk</a></p> <p>The Institute is organising a series of automotive e-Learning courses in conjunction with the Electude Company of the Netherlands. Enrolments will be called for every month. Online guidance and assessments are available during the learning period. Participants will receive a CPD certificate on completion of a course. For details, please visit the above website or call the enquiry telephone number.</p>	<p>2625 5903</p> 

## Hong Kong Vehicle Repair

Merchants Association  
Limited

<http://www.hkvrma.com.hk/training/index.html> 2399 7977



Hong Kong Vehicle  
Repairing Industry  
Employee General Union

<http://www.VrUnion.hk>

November: Technical seminar on lubrication oil

December: Course series on automobile  
electronics

2393 9955



Hong Kong Productivity  
Council

<http://u.hkpc.org/vehicle>

Vehicle Repair Workshop Emission Reduction  
Technology Seminar

2788 5716

Date: 21 November 2013

Time: 19:00-21:00

The Society of Operations  
Engineers  
(Hong Kong Region)

<http://www.soe.org.hk/events.asp>

3188 0062



## Gentle Reminder

Please watch out for each issue: it helps you catch up on the development of the registration scheme, acquire hours of continuing professional development, and enhance the quality of service.

Each issue can be downloaded from the EMSD website at:

[http://www.emsd.gov.hk/emsd/eng/cgi/vmrs\\_pub\\_news.shtml](http://www.emsd.gov.hk/emsd/eng/cgi/vmrs_pub_news.shtml)

For enquiries, please contact the EMSD Vehicle Maintenance Registration Unit

(Fax: 3521 1565; Email: [vmru@emsd.gov.hk](mailto:vmru@emsd.gov.hk); Tel: 2808 3867 or Government Hotline: 1823)

## Editorial Board Members:

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Mr WONG Yiu-kwong, Miss MAN Yuen-ling, Mr TAI Tak-chung and Mr LAW Ko-ming.