Chemical Waste Produced by Vehicle Maintenance Workshops – Disposal of Waste Batteries

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Proper Disposal of Chemical Waste ---- Waste Batteries

Mini Theatre of Environmental Protection

Conversation between Wah Gor, a garage owner, and Kwong Chai, a vehicle mechanic, at afternoon tea time at "a quarter past three"

Kwong Chai: Boss, I read in the newspaper that the Environmental Protection Department accused an unlicensed waste collector of illegally collecting waste car batteries!

Wah Gor: I've heard of it. It is against the law if we allow such collectors to collect batteries from our garage, whether paid or unpaid. You and other vehicle mechanics should bear in mind that the batteries are not to be casually given away. This is an illegal side hustle for earning extra income.

Kwong Chai: No worries. We have always been law-abiding vehicle mechanics. All types of chemical waste, such as batteries, lubricating oil and oil filters, are properly stored at designated areas with appropriate labels *(graphics/illustration)* to remind everyone to be cautious.

Wah Gor: Let me ask you a question then. How do we know if a waste collector is licensed?

Kwong Chai: It's easy. Firstly, when a company with a chemical waste collection licence collects waste, an environmental protection paper [trip ticket] will be provided for our signature. Also, instead of having just one driver to handle all the works, there will be a driver and an attendant. Moreover, the list of licensed chemical waste collectors is available on the website of the Environmental Protection Department*.

Wah Gor: That's right. According to the law, producers of waste batteries and spent lubricating oil shall be registered as chemical waste producers, and the waste batteries and spent lubricating oil shall be labelled and stored properly before engaging a licensed waste collector for waste collection. Our garage has been registered since the first day of business and we have always been operating in accordance with the law. You, as my apprentice, have done a good job in environmental protection aspects. However, you still have to brush up your professional skills in vehicle maintenance. (Chuckles)

Kwong Chai: In the news article, the Environmental Protection Department urged vehicle owners to engage registered vehicle workshop for replacement of lubricating oil or batteries.

Wah Gor: Well, our garage complies with the law and is well-ordered. That 's why our customers choose us for vehicle maintenance. Look! There's another customer at our door. Chop-chop. Get back to work!

Tips on Environmental Protection

Various types of chemical wastes, including waste batteries and spent lubricating oil will be produced in the operation of vehicle maintenance workshops. According to the Waste Disposal (Chemical Waste) (General) Regulation, producers of chemical waste shall register with the Environmental Protection Department (EPD) , and properly package, label and store chemical waste, as well as arranging for licensed chemical waste collectors to collect such waste for proper disposal. Chemical waste producers shall also keep the relevant trip tickets. Any person who produces chemical waste fails to register with the EPD or properly handle chemical waste is liable to a fine of $200,000 and to imprisonment for six months.

For enquiries, please contact the EPD on 2838 3111 or visit the EPD's Green Garage website at https://www.epd.gov.hk/epd/english/greengarage/index.html.

*List of licensed chemical waste collectors:
(https://cd.epic.epd.gov.hk/EPICDI/chemicalwaste/download/?lang=en)

The EPD's website: Chemical Waste Management in Hong Kong - Waste Lead-Acid Batteries (WLABs)
(https://www.epd.gov.hk/epd/english/environmentinhk/waste/prob_solutions/Waste_Lead-Acid_Batteries.html)

Environmental Protection Department

The Government of Hong Kong Special Administrative Region

4-5. Sharing of Hybrid Vehicle Technology

Since the 1990s, Hong Kong has seen the emergence of various types of parallel, series, power-split and plug-in hybrid vehicles, mainly in the private car market. These hybrid vehicles use more than one source of energy and are typically powered by electricity and petrol. Most of them are therefore equipped with a traction battery, an engine and at least one electric motor. While the engine converts the chemical energy in fuel oil into kinetic energy, the motor converts electrical energy into kinetic energy and vice versa. The traction battery is used to store electrical energy. As the motor working in tandem with the traction battery can recover kinetic energy during deceleration or braking, the kinetic energy of the vehicle will be converted into electrical energy and stored up for later conversion to kinetic energy in use when needed. Compared to conventional fuel-engined vehicles, hybrid vehicles can save 30% to 40% of fuel oil consumption when used in general urban areas. Hybrid vehicles can reduce emissions, save energy and lower operational costs, making them the ideal means of transport for public transportation, freight movement as well as daily commuting and occasional use.

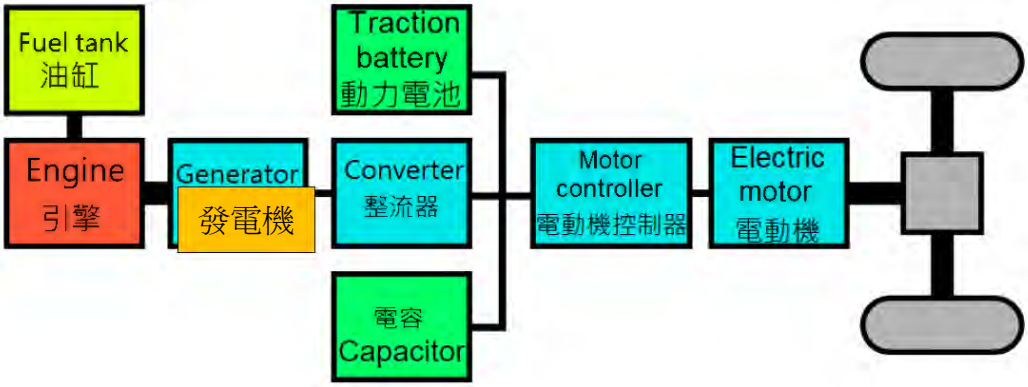

Fig1 Series driving mode

The hybrid driving mode put into use in recent years is a series mode, where the energy is derived entirely from the motor, and the engine only serves to generate electricity to charge the traction battery. Since the motor can also charge the traction battery during kinetic energy recovery, even a low-power engine is sufficient to maintain battery capacity. As the entire driving mode is based on the traction battery as the agent for energy buffer, the overall vehicle control and vehicle maintenance of series hybrid vehicles are much simpler, making them suitable for use as commercial vehicles.

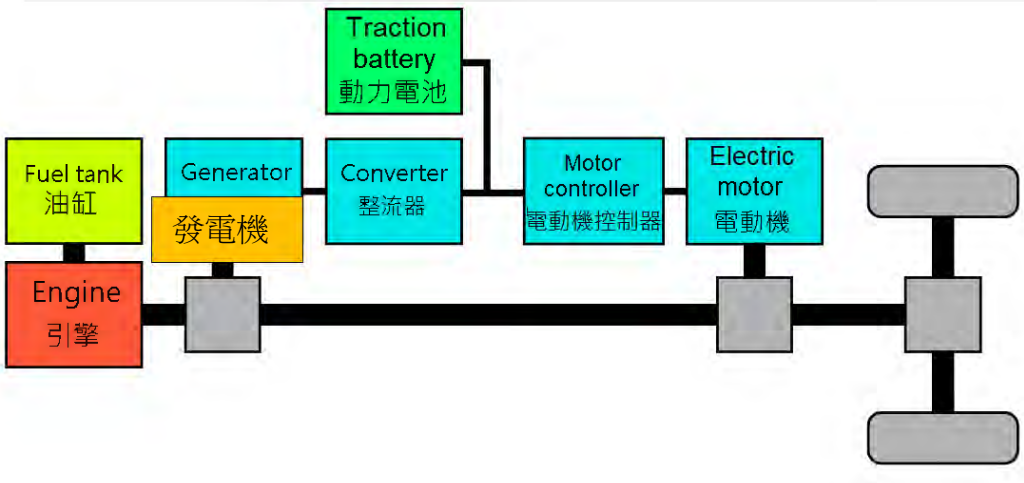

Fig 5 Power-split driving mode

Power-split mode is the most common and full-fledged hybrid vehicle driving mode nowadays. The propeller shaft is connected to both the engine and the motor, using two energy sources. The engine can either charge the traction battery, or, if required, be switched to provide direct output to the wheels to reduce the energy loss resulting from energy transformation, thereby enhancing driving performance. As the distribution of power under this drive mode is compact and flexible, a higher degree of precision is required in the design of vehicle controls in order to minimise fuel consumption. Given its more complicated transmission system and higher cost as compared to the series hybrid driving mode, the power-split mode is mainly used in private cars.

With the installation of a charging socket outlet and an on-board charger, a vehicle will become a plug-in hybrid vehicle. The main feature is that instead of relying solely on the engine for power generation, the traction battery is charged mainly by an external charging station. The engine will only be activated for power transmission when the traction battery has been used up. The vehicles will be charged at parking spaces with chargers, and the engine and petrol will serve as the back-up traction system and energy reserve respectively. By avoiding the use of fuel oil, plug-in hybrid vehicles can save up to 50% or more of fuel oil consumption as compared to conventional fuel-engined vehicles. In Hong Kong, electricity charges are far cheaper than fuel oil. Plug-in hybrid vehicles have great potential in commercial areas such as public transportation. However, the cost of conducting site search for construction of charging stations and the usage habits of commercial vehicle drivers may pose difficulties to the promotion of plug-in hybrid vehicles.

The Automotive Platforms and Application Systems R&D Centre is responsible for co-ordinating the funding application of automotive technology projects under the Innovation and Technology Fund. For more details, please visit the following website: http://www.apas.hk.

Mr Daniel SIU, Senior R&D Manager
Automotive Platforms and Application Systems R&D Centre

6-7. Programmes Offered by the Vocational Training Council (VTC) to Support Non-Ethnic Chinese for Joining the Local Vehicle Maintenance Trade

The Diploma of Vocational Training (Automotive Technology) programme is a highly sought-after programme among non-ethnic Chinese. In fact, the automotive industry in Hong Kong now supports a wide range of global brands. New entrants into the trade need to equip themselves with the knowledge and skills required, and being multilingual is a definite advantage.

Here are four non-ethnic Chinese trainees sharing their experience of attending the programme.

The four of us are currently enrolled in the first-year full-time programme of the Diploma of Vocational Training (Automotive Technology) offered by the Youth College. Although we are not of the same nationality as local students, we are given the opportunity to pursue studies at the Pro-Act. Being non-ethnic Chinese, we have been facing quite some challenges of studying and working in Hong Kong. Upon completion of the conventional secondary education or when seeking employment shortly after arriving in the territory, we often have difficulties in joining the trade and a much slimmer chance of getting promoted if we do not have vehicle maintenance knowledge and skills. We are so fortunate that we have enrolled in this programme since last year. The programme covers all aspects of vehicle maintenance, including basic principles and practical skills of vehicle systems, vehicle body repair, vehicle painting and related general knowledge and skills. We have joined the apprenticeship or/and vocational programme. Since the second academic year, apart from attending the part-time day programme (i.e. Certificate of Vocational Training (Automotive Technology)/Certificate of Vocational Training (Vehicle Body Repair), we also have the opportunity to participate in internship programme for putting what we have learned into practice. Receiving structured training at recognised institutes and organisations, trainees can greatly enhance their competitiveness in the vehicle maintenance trade. We are also eligible for registration as registered vehicle mechanics in Hong Kong in the future under the Voluntary Registration Scheme for Vehicle Mechanics. We would like to express our sincere gratitude to the instructors and organisations of the Pro Act for their guidance and instruction, which enable our community as non-ethnic Chinese to set a clearer goal and direction for our career path. Most of us received secondary education in Hong Kong. The medium of instruction is mainly English, but we also learn Chinese and develop our interest in language learning.

8. Latest Updates of Vehicle Maintenance Registration Unit

Voluntary Registration Scheme for Vehicle Maintenance Promotional Video Competition

Competition Content

Participants are required to produce a creative and compelling video (no longer than one minute) to introduce and promote the Voluntary Registration Scheme for Vehicle Mechanics or the Voluntary Registration Scheme for Vehicle Maintenance Workshops. The video may introduce the two schemes, their objectives and the benefits to the trade and the public. Slogan(s), chant(s) or song(s) may also be added to the video to further deliver the message.

Eligibility

Participants must be Hong Kong permanent residents and may enter the competition as an individual or a team of two to five members. Each participant or team may submit only one entry. Participants who submit multiple or incomplete entries will be disqualified, and all of their other submissions will be rendered void.

Details and Submission of Entries

Please refer to the website of Electrical and Mechanical Services Department:
https://www.emsd.gov.hk/en/supporting_government_initiatives/registration_scheme_for_vehicle_maintenance/index.html

✻ Results will be announced on the EMSD website in December 2021.

✻ Participants who, upon submission of entries, upload the submitted video on their personal social media platforms (e.g. Facebook, Instagram, etc.) may make an appointment with the VMRU of the EMSD at 2808 3545 to redeem a souvenir during office hours (from 9:00 am to 4:30 pm on Mondays to Fridays, except public holidays) on or before 30 November 2021. Participants will be required to present the information on their personal social media platforms for confirmation.

Prizes

Open Division Champion: cash coupons of HK$5,000 1st runner-up: cash coupons of HK$3,500 2nd runner-up: cash coupons of HK$2,000 3 Merit Awards: cash coupons of HK$1,000
School Division Champion: cash coupons of HK$5,000 1st runner-up: cash coupons of HK$3,500 2nd runner-up: cash coupons of HK$2,000 3 Merit Awards: book coupons of HK$1,000
Most Supportive School Award Book coupons of HK$3,500 and a trophy

✻ Each winner will be awarded a merit certificate

✻ Open division includes vehicle maintenance personnel and tertiary students.

✻ School division includes secondary and primary students

Submission Deadline

29 October 2021 (Friday)

9. Latest Updates of Vehicle Maintenance Registration Unit

Vehicle maintenance works have to be carried out at suitable fixed premises

It has recently come to the attention of the Vehicle Maintenance Registration Unit that there are advertisements publicising vehicle maintenance services offered in public places or car parks.

In fact, carrying out vehicle maintenance works in public parking areas may contravene the following legislation:

(1) Section 4 of the Fixed Penalty (Traffic Contraventions) Ordinance (Cap. 237) - Obstruction on Roads by Motor Vehicles; and

(2) Section of 27 of the Road Traffic (Parking) Regulations (Cap 374C) - Repair of Vehicles on Roads.

Meanwhile, repairing a vehicle in a car park space may be in breach of the relevant land lease conditions.

Generally speaking, vehicle maintenance workshops and vehicle mechanics are required to carry out vehicle maintenance work at suitable fixed premises, except for emergencies. In other words, vehicle maintenance work should not be carried out in public areas or car parks.

10. Latest Developments of the Registration Schemes

1. Registered vehicle mechanics who have switched to work in another vehicle maintenance workshop should notify the VMRU by e-mail (vmru@emsd.gov.hk) or fax (3968 7646) the name, address and telephone number of the new workshop.

2. If there is any change in the information of the vehicle maintenance workshop (such as name of the workshop, registration number of the workshop, address, contact number and business registration certificate, etc.) or alteration in the type of workshop being registered, the person-in-charge of the workshop must, within 14 working days of such change, notify the VMRU of the change in writing, and submit the relevant documents for processing.

Information on the Voluntary Registration Scheme for Vehicle Mechanics:	
Total number of vehicle mechanics	10 303 Note1
Number of registered vehicle mechanics (as at end-April 2021)	8 160
Information on the Voluntary Registration Scheme for Vehicle Maintenance Workshops:	
Total number of vehicle maintenance workshops	2 783 Note 2
Number of registered workshops (as at end-April 2021)	2 052

Note1: 2019 Manpower Survey Report (updated on 13 January 2020) by the VTC and the Automobile Training Board

Note2: Database of the VMRU (updated in July 2019)

If you wish to help protect our environment by receiving the electronic version of RVM Newsletters and leaflets, please send us the completed reply slip by e-mail: vmru@emsd.gov.hk or WhatsApp: 9016 3185. We will contact you by means of e-mail or mobile communication as far as possible.

Reply Slip

I/My company would like to receive the RVM Newsletters and other information leaflets by

e-mail／ WhatsApp

Please provide the relevant contact details for the above selected means of communication:

E-mail address: _____ WhatsApp: _____

The electronic version of the RVM Newsletter is also available on the EMSD website:

https://www.emsd.gov.hk/en/supporting_government_initiatives/registration_scheme_for_vehicle_maintenance/publications_and_circulars/rvm_newsletter/index.html

* Please note that starting from 15 July 2018, new application for registration as Type Four workshop (i.e. a workshop situated at a residential building or a composite building with domestic part) is no longer accepted. Furthermore, requests for conversion from a registered Type One, Type Two or Type Three workshop to a Type Four workshop will not be entertained.

New Online Self-learning Continuing Professional Development Platform

New training materials has been released via the Online Self-learning Continuing Professional Development Platform since 1 May. By reading training materials and answering questions, vehicle mechanics can earn continuing professional development (CPD) hours online for registration or renewal purposes. The theme for this quarter is occupational safety and the training is available to vehicle mechanics, regardless of whether the registration is valid, expired or not yet completed. The quizzes for this quarter will close on 31 July.

Mechanics can visit the following website or scan the QR code to access the CPD platform
https://sites.google.com/view/vmru-cpd

11. Prize Quiz Issue No. 33

Q1. According to the Waste Disposal (Chemical Waste) (General) Regulation, producers of chemical waste shall register with the Environmental Protection Department. How should they handle the chemical waste before arranging for licensed chemical waste collectors to collect and dispose of it properly?

A. Package the chemical waste properly
B. Label the chemical waste
C. Store the chemical waste
D. All of the above

Q2. Which of the following is not a driving mode that have been in use since the 1990s?

A. Parallel driving mode
B. Inductive charging driving mode
C. Series driving mode
D. Power-split driving mode

Q3. Working in tandem with the traction battery, when can the motor of a hybrid vehicle recover kinetic energy, convert it to electrical energy and store it for later conversion to kinetic energy in use when needed?

A. During deceleration or reversing
B. During acceleration or braking
C. During deceleration or braking
D. During acceleration or steering

Q4. Power-split mode is the most common and full-fledged hybrid vehicle driving mode nowadays. Which of the following are connected to the propeller shaft for usage of two energy sources?

A. Engine and motor
B. Battery and motor
C. Engine and generator
D. Generator and battery

Q5. Series hybrid driving mode has been put into use in recent years and the energy is derived entirely from the motor. Which of the following is/are the function(s) of the engine?

A. Cooling function for cooling of the hybrid system
B. Auxiliary Power function to provide additional power
C. Electricity generation function for charging of traction battery
D. All of the above

How to participate (Issue No.33)

Please scan the QR code and submit the answers directly on the following website https://forms.gle/7dYq4MjQD1Sgfpan7. Vehicle mechanics may also complete the form below, circle the correct answers, and send it to the VMRU by fax (3968 7646) or e-mail (vmru@emsd.gov.hk).

Deadline: 31 July 2021

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.

Name: _____

Vehicle Mechanic Registration No.: VM _____

E-mail Address: _____

Contact Tel. No.: _____

- Participants who answer all the questions correctly will earn one CPD hour and be notified by the VMRU individually.
- Only registered vehicle mechanics with valid registration may participate, each not more than once in each quiz.
- If there are duplicate submissions, only the last answers submitted before the deadline will be accepted.
- The decision of the VMRU on the quiz will be final.
- The correct answers will be announced in the next issue of the RVM Newsletter.

The answers for RVM Newsletter Issue No. 32 are as follows:

Question	1.	2.	3.	4.	5.
Answer	D	D	B	C	D

12. Training InstitutesTraining Institutes Providing Continuing Professional Development Courses for Vehicle Mechanics (in random order)

Name of Training Institute	Website/Contents	Enquiry Tel. No.	QR Code
Traffic Services Employees Association	http://www.facebook.com/tseahk	2575 5544	
Pro-Act Training and Development Centre (Automobile)	https://www.proact.edu.hk/proact/html/en Certificate in Vehicle Mechanical Repair#, a programme run by the Pro-Act Training and Development Centre (Automobile) may serve as another means for qualifying as registered vehicle mechanics. Mechanics who are interested in enrolling in the above programme may visit the website of the Centre. # For details and latest developments of the programme, the information issued by the Pro-Act Training and Development Centre shall prevail.	2449 1310	
The Institute of the Motor Industry Hong Kong	http://www.hkimi.org.hk/en/ The Institute of the Motor Industry Hong Kong (IMIHK), formerly known as the Institute of the Motor Industry (IMI) - Hong Kong Branch, brings the mission and vision of the IMI to the Hong Kong automobile industry. After the reunification in 1997, the IMI - Hong Kong Branch applied to be renamed the IMIHK in Hong Kong. Eligible members of the trade are welcome to join the IMIHK or enroll in its courses or talks.	2625 5903	
Hong Kong Vehicle Repair Merchants Association Limited	https://www.facebook.com/HKVRMA/	2399 7977	
Hong Kong Vehicle Repairing Industry Employee General Union	http://www.vrunion.hk	2393 9955	
Occupational Safety and Health Council	http://www.oshc.org.hk The course of Safe Handling of Chemicals aims to provide employees with basic knowledge of the safe handling of chemicals. The course content includes hazards of chemicals, labelling of chemicals, safety precautions, personal protective equipment, emergency procedures, etc. For more course details, please contact the Occupational Safety and Health Training Centre.	2311 3322	
The Society of Operations Engineers (Hong Kong Region)	http://www.soe.org.hk	2617 0311	

Qualifications Framework recognised courses	http://www.hkqr.gov.hk	2836 1700

Gentle Reminder

The contents in each issue help you catch up on the development of the registration schemes and enhance the quality of service. Please stay tuned! Each issue is available for downloading on the EMSD website:
http://www.emsd.gov.hk/en/supporting_government_initiatives/registration_scheme_for_vehicle_maintenance/publications_and_circulars/rvm_newsletter/index.html

For enquiries on the contents of the RVM Newsletter, please contact the VMRU of the EMSD.
Fax No.: 3968 7646
E-mail Address: vmru@emsd.gov.hk
Tel. No.: 2808 3545

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