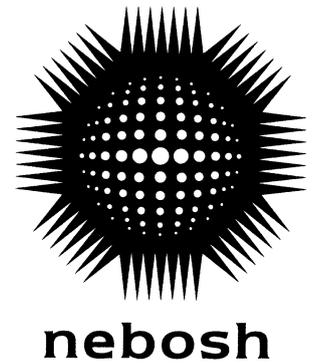


NEBOSH

**DO – CONTROLLING WORKPLACE HEALTH ISSUES
(INTERNATIONAL)**



UNIT ID2:

**For: NEBOSH International Diploma for Occupational Health and Safety
Management Professionals**

Guidance to learners

This assessment is not invigilated, and you are free to use any learning resources to which you have access, eg your course notes, or the HSE website, etc.

By submitting this completed assessment for marking, you are declaring it is entirely your own work. Knowingly claiming work to be your own when it is someone else's work is malpractice, which carries severe penalties. This means that you must **not** collaborate with or copy work from others. Neither should you 'cut and paste' blocks of text from the Internet or other sources.

The examination begins with a realistic scenario to set the scene. You will then need to complete a series of tasks based on this scenario. Each task will consist of one or more questions.

Your responses to **most** of these tasks should wholly, or partly, draw on relevant information from the scenario. The task will clearly state the extent to which this is required.

The marks available are shown in brackets to the right of each question, or part of each question. This will help guide you to the amount of information required in your response. In general, one mark is given for each correct technical point that is clearly demonstrated. Avoid writing too little as this will make it difficult for the Examiner to award marks. Single word answers or lists are unlikely to gain marks as this would not normally be enough to show understanding or a connection with the scenario.

You will have 4 weeks (20 working days) to complete the assessment.

Please refer to your registration confirmation email for the upload deadline.

Please note that NEBOSH will be unable to accept your assessment once the deadline has passed.

You **must** use the available answer template.

SCENARIO

Hapford Garage is a small, independent, motor vehicle repair workshop, situated on a busy industrial estate, close to the centre of a small town. The Garage is jointly owned by the two lead mechanics, who recently went into partnership together to buy the business. Two other mechanics are also employed, both have worked at the Garage for many years; one works full-time, the other is semi-retired, working part-time, two days a week. Recently a 17-year-old apprentice mechanic has started work; they also attend college on a day-release basis as part of their apprenticeship. A yardperson keeps the workshop and yard area clean and tidy, moves vehicles when required and other general duties. There is also an office worker based in the reception area.

The Garage building is of brick construction with a corrugated metal roof. A central roof vent (with two fans beneath) helps provide ventilation. The building consists of a large open space workshop with full width metal concertina doors opening out from one end of the building onto the concrete yard area. The yard is open to the road with no perimeter fencing, and although compact, has sufficient parking spaces (which are clearly marked out) for customer cars, along with room to manoeuvre. A small extension to the back of the building houses the reception area, toilets and rest room. Customers are not permitted to enter the workshop; they enter the building via an external door directly into the reception area. Customer seating is provided in the reception area, along with a viewing window where customers can safely watch work being carried out on their vehicle if they wish. Double doors, between reception and the workshop, enable easy access between areas for the workers.

To the left hand side of the workshop is a vehicle inspection pit, edges are clearly marked and it is covered when not in use. To the centre and right of the workshop are two, four-post vehicle lifts. Standing against the left-side wall of the workshop are storage cupboards for tools, equipment, and materials, and on the right-side wall is a large sink for hand-washing. Relevant safety data sheets for all materials used are displayed on the back wall.

Some organisations on the industrial estate operate on a 24-hour basis, Hapford Garage opens from 08.30 - 17.30, six days a week. Both lead mechanics are usually on site from 07.00 each day, to help ensure they are prepared for the day ahead. To avoid too many late finishes, they share the responsibility of counting the money taken and securing the site at the end of each day. This process takes over an hour. One of the lead mechanics may occasionally continue to work after 17.30 before carrying out the close-of-day activities.

The majority of the work carried out involves servicing of vehicles, and mechanical repairs to cars and small vans. Although some welding and bodywork repairs (including panel beating) are done on site, all paint spraying is outsourced to a local body repair shop.

While diagnosing engine problems, it is often necessary to have an engine running. Many of the vehicles serviced at the Garage have diesel engines, so diesel engine exhaust emissions (DEEE) are produced. DEEE contain a complex mixture of gases, vapours, liquid aerosols and particulate substances. The components of DEEE include carbon monoxide, carbon dioxide, oxides of nitrogen and sulphur and a number of organic materials.

During opening hours, the workshop's large concertina doors are usually left open for ventilation, (unless the weather is particularly bad). There is an emergency exit door to the left-hand side of the workshop, with a window above (this window is fixed and does not open). The workshop external walls contain six air-bricks that provide some additional ventilation.

Noise levels in the workshop are variable throughout the day. Certain tasks generate high levels of noise. For example, during the use of pneumatic tools such as air saws and air compressors for inflating tyres. Noise is also generated by the use of a bench grinder, orbital sanders and angle grinders. These are only operated for short periods of time. Other tools such as hammers also generate significant levels of noise. At other times, the only noise will be from the radio playing in the background and people talking, both in person and on the phone.

As a single large open space, with brick walls and high ceiling, sound reverberates around the workshop. Noise from the workshop can also be heard, to a lesser degree, in the reception area. The workers are provided with several forms of hearing protection; a pair of earmuffs (which are rather grimy) are located on a hook next to the storage cupboards in the workshop (for use by any of the workers), and a box of single-use ear plugs are kept in a drawer in the reception area. Hearing protection is rarely used in practice, as the workers prefer to be able to hear conversation going on around them.

The part-time mechanic is competent, but can be very untidy, and has to be reminded to clear away equipment and clean up oil spills. Overalls are provided (each worker taking their own overalls home to wash). The part-time mechanic does not wash their overalls very often; they regularly look dirty with oily rags seen protruding from their pockets. All workers use disposable, single use, nitrile gloves. Sometimes there are not enough gloves available, so workers tend to wear them for long periods, sometimes re-using them.

Eight weeks ago the part-time mechanic began to experience itchy, red, inflamed skin on their upper thighs. Since then, it has gradually worsened, affecting a much larger area. They also have dry, cracked skin on their hands. They have not mentioned this to anyone at work as they do not consider it to be relevant. They are convinced it will get better by itself in time, so have not seen their doctor about the problem. Constantly feeling itchy and sore, they are miserable at work. One of the lead mechanics has noticed the part-time mechanic has not been their usual self and takes them to one side to ask if they are okay. The worker reluctantly mentions the 'itchy rash' but does not go into any detail. The lead mechanic thinks that the worker may have had an allergic reaction to something and urges them to go to see their doctor about the problem. Later that day, the lead mechanic unpacks a case of hand soap, and finds a poster about skin care in the box. Thinking back to the earlier conversation, they put the poster up on the noticeboard in the rest room for information.

A few days later, the part-time mechanic brings a doctor's letter into work which states the worker is suffering from dermatitis, most likely caused by contact with used engine oil. Both lead mechanics are shocked, but are keen to help. They discuss what changes they can make and decide upon the following immediate actions:

- To use a contract laundry service to wash all workers' overalls.
- To remind workers to read the safety data sheet for engine oil.

The young apprentice mechanic is very keen to learn, works hard, and gets on really well with everyone at the Garage. Outgoing (and sometimes a little over-confident) they are happy to challenge their more experienced colleagues if they think something is not being done 'like they have been taught at college'. In the college workshop, each vehicle exhaust is directly coupled to a hose that forms part of an extraction system, venting to open air outside. In Hapford Garage, they are reliant on natural ventilation, assisted by two ceiling fans. The apprentice tells the lead mechanics they are putting everyone's health at risk by not having an extraction system 'like the one we use at college'. The lead mechanics laugh, their immediate reaction being "Stop being so dramatic! We don't have anywhere near the number of vehicles in here that you have in college!"

However, the apprentice's comment starts the lead mechanics thinking about their current arrangements for ventilation. They are both aware that prolonged exposure to diesel fumes presents a risk to health (coughing, increased sputum production and breathlessness). Also, long term repeated exposure increases the risk of lung cancer. They also know that exposure to DEEE in the workplace requires assessment and control. Deciding they may have dismissed the apprentice's concerns too quickly, both agree it would be a good idea to investigate installing a better ventilation system.

SUPPORTING DOCUMENTS

1. Work Schedule
2. Ventilation arrangements at Hapford Garage
3. Extract from insurance company newsletter
4. Extract from the HSE Noise exposure ready-reckoner (Daily exposure)
5. Extract from the HSE Vibration exposure ready-reckoner (Daily exposure)

Task 1: Noise exposure and control

- 1 **Supporting document 1** is a work schedule for **ONE** day, for **ONE** worker, that indicates the duration of each task they carry out, and the estimated time they spend using tools that generate significant amounts of noise.
- (a) (i) Based on the information provided in **supporting documents 1 and 4**, calculate the daily personal noise exposure for this worker. **(8)**
- Notes: You should only consider the noise exposure of this **one** worker from the tools they are using.*
- You **must** include your working out.*
- (ii) Local legislation states that no worker should be exposed to noise levels above the exposure limit value (ELV) without their employer taking immediate action to reduce this exposure.
- Taking into account the daily personal noise exposure calculated for this worker, explain the immediate actions necessary to comply with this local legislation. **(7)**
- (b) Explain why the **actual** daily personal noise exposure of this worker might differ from that calculated in your answer to question 1(a)(i). **(10)**
- (c) Discuss how **EACH** of the following approaches could be used to reduce noise exposure at Hapford Garage.
- (i) Control at source. **(10)**
- (ii) Control along the transmission path. **(10)**
- (iii) Control at the receiver. **(10)**
- Note: You should support your answers in (a), (b) and (c), where applicable, using relevant information from the scenario.*

Task 2: Management of work-related health issues

- 2 Evaluate the effectiveness of the lead mechanics' approach to managing the worker's dermatitis issue.
- In your evaluation you should consider
- (a) areas of good practice **(8)**
- (b) weaknesses **(10)**
- (c) realistic improvements that could be made. **(12)**
- Note: You should support your answers, where applicable, using relevant information from the scenario*

Task 3: Vibration assessment and risk control

- 3 (a) The Towlson Insurance newsletter indicates that they can provide competent advice on hand-arm vibration (HAV) risk assessment.
- Based on the scenario and **supporting document 1**, describe the specific advice the insurance company should give Hapford Garage on what to consider when carrying out a suitable and sufficient risk assessment for HAV. (25)
- (b) In the insurance company's newsletter, it states
'Using a common tool like an orbital sander for an hour and a half a day could contravene legislation.'
- Using numerical information from **supporting documents 1, 3 and 5**
- (i) evaluate this statement. (10)
(ii) comment on the relevance of this statement to Hapford Garage. (15)
- (c) Comment on the following statement in the insurance company's newsletter
'Tool timers are a helpful way of assessing your worker's exposure to vibration.' (8)
- (d) Health surveillance is an important part of managing risks associated with hand-arm vibration syndrome (HAVS). Hapford Garage are proposing to ask Towlson Insurance to help them carry out health surveillance.
- With reference to the British HSE's guidance document L140, review the requirements for HAV health surveillance that Hapford Garage should consider. (10)
- (e) Workers at the Garage are unclear and anxious about the proposed health surveillance. Prepare a short briefing note to explain to workers
- (i) the symptoms of HAVS. (6)
(ii) how health surveillance is carried out for HAV. (10)
(iii) why HAV health surveillance is important. (2)
- (f) As a result of the health surveillance, one worker is diagnosed with the early stages of HAVS. Outline what steps Hapford Garage must now take to manage this situation. (4)

Note: You should support your answers, where applicable, using relevant information from the scenario and the relevant supporting documents.

Task 4: Ventilation and Diesel Engine Exhaust Emissions (DEEE)

- 4 (a) (i) Explain why a risk assessment for exposure of workers to DEEE is required at Hapford Garage. (5)
- (ii) What should be considered when making a *suitable and sufficient* risk assessment for exposure of workers at the Garage to DEEE? (23)
- (b) Ventilation is an important control measure to reduce exposure to DEEE.
- (i) Describe how the air movements provide ventilation in **Figure 1 (supporting document 2)**. (10)
- (ii) Consider how the ventilation in **Figure 1 (supporting document 2)** affects the exposure of workers to DEEE. (5)
- (c) Hapford Garage are considering installing the type of ventilation system shown in **Figure 2 of supporting document 2**.
- (i) Describe the features of the ventilation system shown in **Figure 2 (supporting document 2)**. (10)
- (ii) Outline the arrangements Hapford Garage would need to put in place for *this* type of ventilation system to maintain effectiveness. (7)

Note: You should support your answers, where applicable, using relevant information from the scenario and relevant supporting documents.

Task 5: Managing the risks from lone working

- 5 (a) Comment on the extent to which workers at Hapford Garage are at risk from lone working. (20)
- (b) What changes could the lead mechanics make to existing working practice to reduce the risks from lone working? (10)

Note: You should support your answers, where applicable, using relevant information from the scenario.

Task 6: PPE

- 6 (a) The workers at Hapford Garage use a range of personal protective equipment (PPE) including disposable nitrile gloves, hearing protection and overalls. Some workers are reluctant to use this PPE and others do not use it correctly.
- (i) Describe the content of a PPE training programme that will encourage workers to use **all** types of PPE correctly. (10)
 - (ii) Outline a range of practical measures, *other than training*, that could be taken to encourage the use of **all** types of PPE. (5)
- (b) Comment on the following statement in the insurance company's newsletter about hand-arm vibration (HAV)
- 'Using anti-vibration gloves can help.' (8)
- (c) The hearing protection in use at Hapford Garage was selected using the following information
- | | |
|--|----------|
| Estimated Sound Pressure Level | 93 dB(C) |
| Single number rating (SNR) for selected hearing protection | 29 |
- Using **only** this numerical information determine a realistic estimate of the A-weighted sound pressure level entering the ear of a worker wearing this hearing protection. (5)
- (d) Explain why using a contract laundry service for overalls, instead of home laundering, reduces the exposure to hazardous substances. (7)
- Note:** You should support your answer, where applicable, using relevant information from the scenario.

End of examination

Now follow the instructions on submitting your answers.