
Examiners' Report

UNIT GC2: CONTROLLING WORKPLACE HAZARDS

SEPTEMBER 2017



For: **NEBOSH National General Certificate in Occupational Health and Safety**
NEBOSH International General Certificate in Occupational Health and Safety

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Introduction

NEBOSH (The National Examination Board in Occupational Safety and Health) was formed in 1979 as an independent examining board and awarding body with charitable status. We offer a comprehensive range of globally-recognised, vocationally-related qualifications designed to meet the health, safety, environmental and risk management needs of all places of work in both the private and public sectors.

Courses leading to NEBOSH qualifications attract around 50,000 candidates annually and are offered by over 600 course providers, with examinations taken in over 120 countries around the world. Our qualifications are recognised by the relevant professional membership bodies including the Institution of Occupational Safety and Health (IOSH) and the International Institute of Risk and Safety Management (IIRSM).

NEBOSH is an awarding body that applies best practice setting, assessment and marking and applies to Scottish Qualifications Authority (SQA) Accreditation regulatory requirements.

This report provides guidance for candidates and course providers for use in preparation for future examinations. It is intended to be constructive and informative and to promote better understanding of the syllabus content and the application of assessment criteria.

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General comments

Many candidates are well prepared for this unit assessment and provide comprehensive and relevant answers in response to the demands of the question paper. This includes the ability to demonstrate understanding of knowledge by applying it to workplace situations.

There are other candidates, however, who appear to be unprepared for the unit assessment and who show both a lack of knowledge of the syllabus content and a lack of understanding of how key concepts should be applied to workplace situations.

This report has been prepared to provide feedback on standard date GC2 examination sat in September 2017.

Feedback is presented in these key areas: responses to questions, examination technique and command words and is designed to assist candidates and course providers prepare for future assessments in this unit.

Candidates and course providers will also benefit from use of the 'Guide to the NEBOSH National General Certificate in Occupational Health and Safety' and 'Guide to the NEBOSH International General Certificate in Occupational Health and Safety' which are available via the NEBOSH website. In particular, the guides set out in detail the syllabus content for GC2 and tutor reference documents for each Element.

Additional guidance on command words is provided in 'Guidance on command words used in learning outcomes and question papers' which is also available via the NEBOSH website.

Candidates and course providers should also make reference to the GC2 'Example question paper and Examiners' feedback on expected answers' which provides example questions and details Examiners' expectations and typical areas of underperformance.

Unit GC2

Controlling workplace hazards

- Question 1** A large office building has been destroyed by fire. All occupants were safely evacuated. An initial investigation has identified electricity as the possible cause of the fire.
- (a) **Outline** how the fire could have been caused by electricity. (8)
- (b) **Identify** types of fire extinguisher suitable for a fire involving electricity. (2)
- (c) **Outline** features of the means of escape that enabled the safe evacuation of the occupants. (10)

This question assessed candidates' knowledge and understanding of learning outcomes 5.1: Outline the principles, hazards and risks associated with the use of electricity in the workplace; 6.4: Outline the appropriate fire alarm system and fire-fighting arrangements for a simple workplace; and 6.5: Outline the factors which should be considered when implementing a successful evacuation of a workplace in the event of a fire.

This question related to both the electrical and fire elements of the syllabus and covered electrical fires and precautions in the event of fire.

In part (a) candidates were required to outline how the fire referred to in the scenario could have been caused by electricity. Candidates who included reference to issues relating to defective equipment, incorrect protection, such as fuses and poor maintenance, with reasonable outlines would have gained the marks available. Many candidates did not give a sufficient number of reasons for this electrical fire and in many cases the answers given were limited in the depth required for an 'outline' answer.

Part (b) asked candidates to identify types of extinguisher that would be suitable for a fire involving electricity. Candidates who gave an answer including reference to carbon dioxide extinguishers and dry powder extinguishers would have gained the two marks available which was the case for a number of candidates. Candidates who referred to water or foam extinguishers did not gain any marks, although a few made reference to the type of water and types of foam extinguishers that could be used on electrical fires and gained marks accordingly.

In part (c) reference to travel distances, route dimensions and features along the evacuation route such as fire doors and extinguishers would have enabled candidates to gain marks where an outline of these issues was provided. This part of the question was answered reasonably well by the majority of candidates with adequate attention to the 'outline' command word. A number of candidates made reference to issues that were not features of a means of escape such as the appointment of fire marshals, fire drills and emergency procedures, that were not relevant to the question and marks could not be awarded.

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- Question 2** (a) **Identify** health risks associated with exposure to wood dust. (2)
- (b) **Outline** control measures to help reduce the health risks from exposure to wood dust. (6)
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This question assessed candidates' knowledge and understanding of learning outcome 7.5: Outline the hazards, risks and controls associated with specific agents.

Wood dust is one of the specific agents referred to in the syllabus to the NEBOSH National General Certificate. In part (a) of this question candidates were required to identify health risks associated with exposure to wood dust which could have included reference to occupational asthma and nasal cancer. The majority of answers provided were far too general and responses such as 'cancer' and 'respiratory problems' would not have gained marks.

Part (b) concerned control measures to help reduce the risk from exposure to wood dust and was better answered. However, in many cases outlines of these measures were not sufficient. Candidates who provided outlines for issues such as local exhaust ventilation, hygiene facilities and appropriate personal protective equipment would have gained reasonable marks.

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- Question 3** **Outline** factors that could contribute towards the development of work-related upper limb disorders (WRULDs) among workers at a supermarket checkout. (8)
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This question assessed candidates' knowledge and understanding of learning outcome 3.1: Explain work processes and practices that may give rise to work-related upper limb disorders and appropriate control measures.

The majority of candidates gained few marks on this question. Candidates either focused on control measures to minimise WRULDs or related their answer to general musculoskeletal disorders (MSDs) rather than focusing on upper limbs. WRULDs are concerned with conditions that affect the region of the body from the finger tips to the shoulders and neck, so candidates who broadened their answers to include back, legs and circulation issues would not have gained marks.

Candidates who could relate WRULDs to the work of a supermarket checkout operator and made reference to factors such as repetition, postural issues and constraint of work equipment would have gained good marks.

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- Question 4** (a) **Identify:**
- (i) merits; (2)
 - (ii) limitations (2)
- of a hold-to-run control device, when operating machinery.
- (b) **Identify** other devices that could be used to stop a machine in the event that a person comes too close to a dangerous part. (4)
-

This question assessed candidates' knowledge and understanding of learning outcome 4.4: Explain the main control measures for reducing risk from machinery hazards.

In part (a) many candidates did not know what a hold-to-run device was. Many candidates who did recognise the term were only able to identify one merit and one limitation and marks were missed accordingly. The most common merit stated was that the machine will only run with the device activated and the limitation most mentioned was that one hand remains free.

In part (b) most candidates referred to an emergency stop control, with only a few candidates expanding their answer to include devices such as laser scanners and pressure mats. Some candidates displayed no knowledge of this element of the syllabus and made general references to fixed, interlocked and self acting guards, none of which were relevant and no marks could be awarded.

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- Question 5** **Outline** control measures that can be implemented in order to reduce the risk of violence to workers in an accident and emergency department of a hospital. (8)
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This question assessed candidates' knowledge and understanding of learning outcome 1.2: Explain the risk factors and appropriate controls for violence at work.

A number of candidates were able to give reasonable outlines to this question, although answers were mainly restricted to physical measures such as CCTV, barriers and alarms. There was a tendency for candidates to only state information, instruction and training without giving any substance to this or relating this to defusing violent behaviour. A few candidates gained better marks with outlines of control measures such as zero tolerance posters, drug security and design of the working environment.

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- Question 6** It is suspected that workers' exposure to a hazardous substance has exceeded an occupational exposure limit.
- (a) **Give** the meaning of the term '*occupational exposure limit*'. (3)
- (b) **Outline** ways in which the over exposure to the hazardous substance could have been identified. (5)
-

This question assessed candidates' knowledge and understanding of learning outcomes 7.2: Explain the factors to be considered when undertaking an assessment of the health risks from substances commonly encountered in the workplace; and 7.3: Explain the use and limitations of occupational exposure limits including the purpose of long term and short term exposure limits.

In part (a) of this question few candidates achieved more than a single mark, reflecting a limited understanding of the precise meaning of OEL. Points such as a concentration of a hazardous substances in air averaged over a time period were required which would have been awarded marks. However, the majority of candidates referred to an OEL as a time limit, few related an OEL to airborne exposure and some candidates related an OEL to workplace noise.

In part (b) many candidates could relate to health surveillance and the ill-health of workers, but few candidates could raise any further issues and marks were limited accordingly.

- Question 7** A vehicle traffic route needs to be established on a construction site.
- Outline** control measures that should be considered for a suitable traffic route. (8)
-

This question assessed candidates' knowledge and understanding of learning outcome 2.1: Explain the hazards and control measures for the safe movement of vehicles in the workplace.

For those candidates who focused their answers on the traffic route, as required by the question, the marks available could be gained by including points such as segregation, lighting and signage. Outlines were sometimes limited and therefore even for candidates who could give a broad range of correct control measures relating to a traffic route, full marks could not be awarded due to lack of depth of answer.

A significant number of candidates broadened their answers to include issues not relating to the traffic route such as the use of banksmen, timing of deliveries, or driver training, all of which were not relevant to the question and marks could not be awarded.

Question 8 Water bottles weighing 20kg are currently being stored in a basement and workers are required to carry them to a first floor office and place them on to a water dispenser.

Outline control measures to help reduce the risk of manual handling injuries associated with:

- (a) the task; (4)
 - (b) the load; (2)
 - (c) the environment. (2)
-

This question assessed candidates' knowledge and understanding of learning outcome 3.2: Explain the hazards and control measures which should be considered when assessing risks from manual handling activities.

Candidates who kept their answers relevant to each part of this question gained reasonable marks. However, those candidates who mixed up control measures associated with the task, load and environment restricted their marks accordingly.

Overall this was a reasonably well answered question with answers in part (a) relating to the use of mechanical aids and team handling, part (b) the use of smaller bottles and bottles with hand-holds and in part (c) unobstructed route, floor surfaces and lighting being popular answers.

Question 9 A road worker is operating a hand-held powered breaker to split concrete, subjecting hands and arms to heavy vibration.

Outline control measures that should be considered in order to help reduce the health effects from hand-arm vibration (HAV). (8)

This question assessed candidates' knowledge and understanding of learning outcome 8.2: Outline the health effects associated with exposure to vibration and appropriate control measures.

A number of candidates appeared to have little or no knowledge of vibration and gave an outline of a general hierarchy of control with no relevance to vibration nor the scenario in the question.

Those candidates who had some reasonable knowledge of this subject gained above average marks and included reference to providing tools with lower vibration, maintaining vibrating tools and the provision of health surveillance. Many candidates continue to include anti-vibration gloves as a control measure which, without reference to the main benefit of keeping the hands warm, would not gain the mark available.

Question 10 **Outline** control measures that should be taken when using a mobile elevated work platform (MEWP) to work at height. (8)

This question assessed candidates' knowledge and understanding of learning outcome 1.5: Explain the hazards and control measures for safe working at height.

This question caused a number of candidates difficulty as they confused the use of a MEWP with a mobile scaffold tower. Although marks would have been gained with reference to common issues such as ground condition and avoiding overhead obstructions, it was clear that those candidates either misread the question or had answered a different question that they had prepared for.

Overall, a reasonably well answered question by candidates who could provide a broad range of control measures with a suitable outline. However, a few candidates gave an outline of the hazards involved with the use of a MEWP, in which case marks could not be awarded.

Question 11 **Outline** factors that would help to determine the maintenance requirements of an item of work equipment. **(8)**

This question assessed candidates' knowledge and understanding of learning outcome 4.1: Outline general requirements for work equipment.

Although well answered by a few candidates, generally, answers given rarely attracted more than half marks and a few candidates did not answer it at all. Most answers focused on manufacturer's recommendations, age of the equipment and accident history, but did not include other determining factors.

A number of candidates were not awarded any marks due to answering a different question, such as the features of an item of portable electrical equipment that should be inspected, or the control measure required for maintenance on an item of machinery.

Examination technique

The following issues are consistently identified as the main areas in need of improvement for candidates taking Certificate level qualifications:

Candidates misread/misinterpreted the question

Candidates misreading or misinterpreting the question is by far the most common cause of candidates not gaining the maximum marks available.

NEBOSH questions are systematically and carefully prepared and are subject to a number of checks and balances prior to being authorised for use in question papers. These checks include ensuring that questions set for the Certificate level qualifications relate directly to the learning outcomes contained within the associated syllabus guides. The learning outcomes require candidates to be sufficiently prepared to provide the relevant depth of answer across a broad range of subject areas. For example, a candidate could be asked about the causes of stress, or could be asked about the effects of stress. A question could require a response relating to the principles of fire initiation, or a question could require a response relating to the spread of fire. Therefore, a candidate should focus not only on the general topic area (eg stress, fire) but also the specific aspect of that subject to which the question relates.

Candidates must also pay attention to the command word. For example, a question could ask candidates to '**identify** the hazards associated with demolition work', or a question from the same element could ask candidates to '**outline** the control measures required during demolition work'. Candidates appear to focus solely on the object of the question (demolition) and do not pay sufficient attention to the subject (hazards or control measures in the examples given) or the command word ('identify' or 'outline' in the examples given). There is often some confusion between hazard and risk. If a question requires an outline of hazards for a given situation, candidates must be careful not to provide risks, or even in some circumstances precautions, as they will not be able to attract marks.

Examiners suggest that while many candidates do begin their answer satisfactorily and perhaps gain one or two marks, they then lose sight of the question and include irrelevant information. Although further points included in an answer can relate to the general subject area, these points are not focused on the specific learning outcome and marks cannot be awarded. However, some candidates appear to misread or misinterpret several questions. This situation is more likely due to candidates preparing for the examination with a number of memorised answers obtained through rote-learning, that again can provide answers that are loosely associated with the subject matter but do not provide answers specific to the question. Such an approach is clearly evident to an Examiner and demonstrates little understanding of the subject matter and marks are not awarded.

Candidates are advised to allow sufficient time to read and re-read the question in order to determine the key requirements prior to committing their answer to paper. Preparing a time plan before the examination will indicate how many minutes are available for each question and then part of this time allocation can be given to reading the question. Underlining or highlighting key words can assist in keeping focused on the salient points and simple mind maps or answer plans can also be useful. Maps and plans should be kept simple so as not to use up too much examination time.

Candidates did not respond effectively to the command word

A key indicator a question will be the command word, which is always given in **bold** typeface. The command word will indicate the depth of answer that is expected by the candidate and relates to the amount of detail that should be included in each point of the answer.

The learning outcomes in each element of all syllabus guides include the relevant command word that dictates the level of detail that should be covered in a course of study and the depth of answer that a candidate would be expected to provide in an answer to an examination question.

Examiners report that candidates continue to incorrectly observe the command words and therefore compromise their ability to gain the marks available. The majority of cases where command words are not observed relate to insufficient detail being given by a candidate in their examination answer. A significant number of candidates, irrespective of the command word given in the question, provide all answers in the form of a brief list of one or two words. This would normally not be sufficient to gain marks where the command word given was 'outline', 'explain' or 'describe', all of which require answers of more than one or two words.

Some candidates do provide too much information, which would not be required where a command word limits the expected answer to 'give' or 'identify'. Candidates would not be penalised for providing excessive detail but this would not be an efficient use of the time allocated.

Course providers should ensure that learning materials complement the command words in the syllabus guide and the NEBOSH guidance on command words and that sufficient time is given to advising candidates on suitable examination technique during a course of study.

Candidates unnecessarily wrote the question down

Developing a time plan is a key element in preparing for an examination. Advice included on Certificate question papers suggests that 30 minutes should be allocated for the answer to the long 20-mark question, and 90 minutes should be allocated to the answers for the remaining ten, 8-mark short questions. Therefore there are around 9 minutes available to answer an 8-mark question. This time will be required for reading the question properly at least twice, developing an answer plan, and then committing the answer to paper while regularly referring back to the question in order to maintain focus. Therefore any inefficient use of this time should be avoided.

The efficient use of this time is essential in order to ensure that all questions can be answered within the 2 hours available. Many candidates feel it necessary to write out the question, in full, prior to providing their answer and although this practice will not lose marks it will lose valuable time. A significant number of candidates do not answer all of the questions in the time permitted and do not complete the question paper, some of whom obviously run out of time.

Candidates provided rote-learned responses that did not fit the question

It is clear that there are a significant number of candidates who seem to recite answers in the examination that have been rote-learned in advance and do not answer the question.

While knowledge of material forms a part of the study for a Certificate-level qualification, a key aspect being assessed is a candidate's **understanding** of the subject and reciting a pre-prepared and memorised answer will not show a candidate's understanding. In fact, if a candidate gives a memorised answer to a question that may look similar, but actually is asking for a different aspect of a topic in the syllabus, it shows a lack of understanding of the subject and will inevitably result in low marks being awarded for that answer.

Candidates repeated the same points but in different ways / Candidates provided the same answer to different questions

There are instances where candidates repeat very similar points in their answers, sometimes a number of times. This is easily done in the stressful environment of the examination. However, once a point has been successfully made and a mark awarded for it, that mark cannot be awarded again for similar points made later in the answer.

Candidates are advised to practise examination technique in their preparations to avoid this kind of pitfall. Writing an answer plan where points can be ticked off when made, or structuring an answer so that each point made is clearly shown, for example by underlining key points, can be of great use. This technique aids candidates and makes it much clearer in the stress of the examination for candidates to see which points have been made and reduce the chances of the same point being made several times.

Candidates did not answer all of the questions

It has been noted that a number of candidates do not attempt all of the questions and of course where a candidate does not provide an answer to a question, no marks can be awarded. This seriously affects the potential marks available and the possibility of achieving a pass. Course providers must emphasise the importance of attempting all questions in order to maximise the opportunity to attract marks.

There can be several reasons for this issue: running out of the allocated time for the examination, not knowing the answer to the question, or forgetting to answer a question.

Questions can be answered in any order and answers can be written in any order in the answer book provided. Candidates are advised to clearly keep track of questions they have attempted, such as

marking them on the question paper that would minimise the risk of inadvertently missing a question to answer.

If the subject of the question is unfamiliar or the answer is not known, then it will be challenging to provide an answer. This can result from rote-learning and preparing for an examination with a number of memorised answers, or simply not being adequately prepared for the examination across the breadth of the syllabus. There is always the risk of a candidate 'going blank' in an examination situation, in which case candidates should be prepared with some techniques to help. Rather than trying to remember what was taught or what has been read, ask yourself 'what would I do, in this situation?'. Reference to personal application or experience is sometimes enough to stimulate an answer that otherwise may have been missed. Alternatively, candidates can go back to first principles and break a question down into elements such as 'people', 'equipment', 'materials' and the 'working environment'. Approaching a question in small sections can minimise the risk of being overwhelmed by it as a whole.

Running out of time can be avoided by having an examination time plan and working to it. The question paper advises that you should spend 30 minutes on the long answer (question 1) and 90 minutes on the remaining ten short answer questions. This will provide around 9 minutes per short answer, follow the clock and when the time per question has expired, move on. Answering a question partly is better than not answering at all.

Candidates did not allocate enough time to the question / Time management

In a number of cases question 1 is left until last or later in the question paper and does not appear to be answered completely. Other candidates appear to rush the last one or two questions by providing very brief or bullet point answers, even when these questions require an outline. This indicates a lack of time management. It is advised that course providers and candidates spend time developing the skill of writing answers to questions bearing in mind the number of marks and time available. A 20-mark question requires significantly more detail than an 8-mark question.

Candidates might benefit from writing abbreviations to save time and to recognise that there is no need to write out the question at the beginning of their answer. Standard abbreviations such as HSE, RIDDOR, COSHH, PPE and DSE are acceptable.

Candidates' handwriting was illegible

Sometimes Examiners have difficulty in reading the handwriting of some candidates. Although allowances are made for candidates under the pressure of an examination, course providers must remind candidates that their writing needs to be legible or valuable marks may not be picked up during marking.

There is a minimum literacy requirement for candidates on NEBOSH qualifications. As stated in the syllabus guides the standard of English required by candidates studying for Certificate level must be such that they can both understand and articulate the concepts contained in the syllabus.

NEBOSH recommends to accredited course providers that candidates taking this qualification should reach a minimum standard of English equivalent to an International English Language Testing System score of 6.0 or higher in IELTS tests in order to be accepted onto a Certificate level programme.

For further information please see the latest version of the IELTS Handbook or consult the IELTS website: <https://www.ielts.org/about-the-test/test-format>

Candidates wishing to assess their own language expertise may consult the IELTS website for information on taking the test: <https://www.ielts.org>

Course providers are reminded that they must ensure that these standards are satisfied or additional tuition provided to ensure accessible and inclusive lifelong learning.

Command words

Please note that the examples used here are for the purpose of explanation only.

Outline

The command word 'outline' is by far the most challenging for candidates. Referring to the NEBOSH guidance on command words available on the NEBOSH website, 'outline' means *"To indicate the principal features or different parts of"*.

Many candidates do not give sufficient detail in order to warrant an 'outline' answer. The NEBOSH guidance on command word states that *"an exhaustive description is not required. What is sought is a brief summary of the major aspects of whatever is stated in the question"*.

If the use of the command word in everyday language or conversation is considered it may help the candidate understand what is required. If asked to '**outline** the risks to an operator when manually closing a valve' an answer such as 'cuts, bruises, burns and strains' would be insufficient as this represents a listed answer. However, 'cuts from contact with sharp edges of the hand wheel, bruises from impact with adjacent plant items, burns from contact with adjacent uninsulated pipe work and strains from using excessive force' would be sufficient.

Explain

The command word 'explain' requires the candidate to provide an understanding of the subject of the question and will usually be used in conjunction with 'why' or 'how'. Such as '**explain** how an interlocked guard operates' or '**explain** why a forklift truck may overturn'.

Some candidates approach an 'explain' question the same as an 'outline' and provide a number of individual points rather than providing an explanation as to how something operates or why something occurs. While some candidates do answer such questions sufficiently and satisfactorily, other candidates have difficulty in explaining in a logical sequence and many repeat the same point.

Identify

'Identify' questions require the name or title of an item, such as, '**identify** the effects of electricity on the human body', or '**identify** the features of a vehicle route'. In most cases one or two words will be sufficient and further detail will not be required to gain the marks.

For example, if asked to '**identify** types of equipment found in an office' appropriate answers could be personal computer, printer, telephone, photocopier, etc. There would be no need to embellish those points with a description of the equipment or its function.

However, in contrast to 'outline' answers being too brief, many candidates feel obliged to expand 'identify' answers into too much detail, with the possible perception that more words equals more marks. This is not the case and course providers should use the NEBOSH guidance on command words within their examination preparation sessions in order to prepare candidates for the command words that may arise.

Describe

The command word 'describe' clearly requires a description of something. The NEBOSH guidance on command words says that 'describe' requires a detailed written account of the distinctive features of a topic such that another person would be able to visualise what was being described.

If asked to describe the clock in the examination room, a person would have little difficulty in doing so and would most probably refer to its shape, its size, the colour of the clock and the style of numerals. Answers to such a question would almost certainly not result in general unconnected information about clocks, the history of clocks, or an explanation of why the clock is present in the room. Candidates should consider the general use of the command word when providing examination answers.

Give

'Give' questions require a statement that is relevant to the subject asked for in the question but additional explanation is not required. Often, 'give' questions ask for the meaning of a particular term. While detailed explanation of the application of the term would not be required, a correct knowledge of the term itself is needed in order for the Examiner to award marks.

For additional guidance, please see NEBOSH's '*Guidance on command words used in learning outcomes and question papers*' document, which is available on our website: www.nebosh.org.uk/students/default.asp?cref=1345&ct=2.