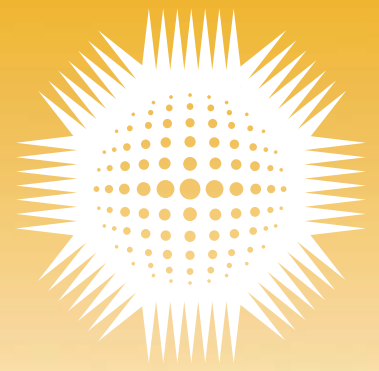


December 2008

Examiners' Report

NEBOSH National
General Certificate in
Occupational Health
and Safety (NGC2)



nebosh



Examiners' Report

NEBOSH LEVEL 3 CERTIFICATE IN OCCUPATIONAL HEALTH AND SAFETY

PAPER NGC2: CONTROLLING WORKPLACE HAZARDS

DECEMBER 2008



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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 over 25,000 candidates annually and are offered by over 400 course providers in 65 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 to be recognised and regulated by the UK regulatory authorities:

- The Office of the Qualifications and Examinations Regulator (Ofqual) in England
- The Department for Children, Education, Lifelong Learning and Skills (DCELLS) in Wales
- The Council for the Curriculum, Examinations and Assessment (CCEA) in Northern Ireland

NEBOSH follows the “GCSE, GCE, VCE, GNVQ and AEA Code of Practice 2007/8” published by the regulatory authorities in relation to examination setting and marking (available at the Ofqual website www.ofqual.gov.uk). While not obliged to adhere to this code, NEBOSH regards it as best practice to do so.

Candidates’ scripts are marked by a team of Examiners appointed by NEBOSH on the basis of their qualifications and experience. The standard of the qualification is determined by NEBOSH, which is overseen by the NEBOSH Council comprising nominees from, amongst others, the Health and Safety Executive (HSE), the Department for Education and Skills (DfES), the Confederation of British Industry (CBI), the Trades Union Congress (TUC) and the Institution of Occupational Safety and Health (IOSH). Representatives of course providers, from both the public and private sectors, are elected to the NEBOSH Council.

This report on the Examination provides information on the performance of candidates which it is hoped will be useful to candidates and tutors 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 always some 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.

In order to meet the pass standard for this assessment, acquisition of knowledge and understanding across the syllabus are prerequisites. However, candidates need to demonstrate their knowledge and understanding in answering the questions set. Referral of candidates in this unit is invariably because they are unable to write a full, well-informed answer to the question asked.

Some candidates find it difficult to relate their learning to the questions and as a result offer responses reliant on recalled knowledge and conjecture and fail to demonstrate any degree of understanding. Candidates should prepare themselves for this vocational examination by ensuring their understanding, not rote-learning pre-prepared answers.

Recurrent Problems

It is recognised that many candidates are well prepared for their assessments. However, recurrent issues, as outlined below, continue to prevent some candidates reaching their full potential in the assessment.

- Many candidates fail to apply the basic principles of examination technique and for some candidates this means the difference between a pass and a referral.
- In some instances, candidates are failing because they do not attempt all the required questions or are failing to provide complete answers. Candidates are advised to always attempt an answer to a compulsory question, even when the mind goes blank. Applying basic health and safety management principles can generate credit worthy points.
- Some candidates fail to answer the question set and instead provide information that may be relevant to the topic but is irrelevant to the question and cannot therefore be awarded marks.
- Many candidates fail to apply the command words (also known as action verbs, eg describe, outline, etc). Command words are the instructions that guide the candidate on the depth of answer required. If, for instance, a question asks the candidate to 'describe' something, then few marks will be awarded to an answer that is an outline.
- Some candidates fail to separate their answers into the different sub-sections of the questions. These candidates could gain marks for the different sections if they clearly indicated which part of the question they were answering (by using the numbering from the question in their answer, for example). Structuring their answers to address the different parts of the question can also help in logically drawing out the points to be made in response.
- Candidates need to plan their time effectively. Some candidates fail to make good use of their time and give excessive detail in some answers leaving insufficient time to address all of the questions.
- Candidates should also be aware that Examiners cannot award marks if handwriting is illegible.

Paper NGC2

Controlling workplace hazards

- Question 1** *Documents have been collected into sacks and are to be individually destroyed using a document shredder.*
- (a) **Outline** the mechanical and non-mechanical hazards associated with this task. (10)
- (b) **Outline** precautions that could be taken to minimise the risk of injury during this task. (10)

In considering the mechanical hazards associated with the task described, candidates should have referred to the possibility of the operators being cut by the shredder blades, being drawn into the blades and being crushed between the shredder and collection box. Non mechanical hazards would include damaged or exposed electrical cables; the manual handling of sacks; the need for excessive bending or twisting to carry out the operation; contact with hot surfaces on the shredder; noise from the machine and the presence of dust; trips and falls resulting from a poor standard of housekeeping and constant contact with the documents which could cause dermatitis. Some candidates quoted a long list of mechanical hazards without considering whether they were relevant to the equipment, others seemed unsure whether the scenario related to an office or an industrial shredder while a few confused mechanical and non-mechanical hazards.

For part (b), precautions that could be taken to minimise the risk of injury included the provision of guarding for the shredder blades together with trip devices and reversing controls; the introduction of a system for the regular inspection and maintenance of the machinery; the introduction of a breakdown procedure involving isolation of the machine from the power supply and the allowance of sufficient time for the shredder mechanism to cool down; the possibility of providing an automatic feed to the machine and if this was not possible the provision of mechanical handling aids such as trolleys or trucks; the provision of specific training to the employees in the operation of the shredder and in manual handling; ensuring the workplace was provided with adequate ventilation and lighting; the erection of barriers or screens to reduce noise levels; ensuring the operators were given frequent breaks with consideration being given to job rotation and providing personal protective equipment such as dust masks and gloves.

Many candidates lost marks in both parts of the question because they did not provide sufficient detail to satisfy an "outline" question.

- Question 2** *Identify the main hazards that may be present during the demolition of a building.* (8)

The main hazards associated with this type of work include falls from a height or on the same level; falling debris and premature collapse; use of explosives; contact with and noise from equipment and heavy plant; dust (possibly including asbestos); the presence of hazardous materials from previous uses of the building; the presence of cellars or vaults affecting the stability of adjoining premises; the possible presence of services such as electricity, gas and water; hot work and biological hazards from the presence of stagnant water and vermin.

Answers to this question were generally to a reasonable standard though only the better answers referred to hot work and the presence of cellars and vaults. A few did not read the question with sufficient care and spent time identifying both the hazards and the control measures that should be taken. They gained no marks for referring to the latter since it was not required.

Question 3 *Outline the factors to consider when selecting respiratory protective equipment (RPE) that would give suitable protection against exposure to solvent vapour.* **(8)**

In answering this question, candidates were expected to outline factors such as the degree of risk involved following completion of a risk assessment; the characteristics and hazardous nature of the solvent to be used and its workplace exposure limit (WEL); the amount and degree of the anticipated exposure and the intended frequency and duration of use of the equipment; the level of protection required with reference to the assigned protection factor (APF) given to the equipment by the manufacturer; the existence of a CE approval; the type and availability of the filter used in the equipment and the cost of replacements; the compatibility of the equipment with other personal protective equipment and the degree of comfort afforded to the wearer; the introduction of procedures both for initial fit testing and for subsequent inspection, maintenance and storage; the health of the employees who would be expected to use the equipment and the introduction of a programme of health surveillance; the provision of training in the use of the equipment and its limitations and finally the provision of adequate levels of supervision to ensure its continued use when required.

Most candidates were able to gain some marks in answering the question by referring to matters such as comfort, compatibility and the provision of training but there were few who demonstrated knowledge of the more technical issues such as APF, filter type and fit testing.

Question 4 *Excluding welfare facilities, identify issues associated with the workplace that should be addressed to ensure that it meets the requirements of the Workplace (Health, Safety and Welfare) Regulations 1992.* **(8)**

For this question, Examiners were expecting candidates to identify issues such as the availability of natural lighting; the adequacy of the artificial lighting provided particularly for specific areas such as stairs and corridors and arrangements for the provision of emergency lighting in the event of failure of the primary supply; the provision of effective and sufficient ventilation; an adequate heating system to provide and maintain a reasonable temperature throughout the building; the condition of floors which should be suitable for the purpose and well maintained; the provision of suitable workstations and the avoidance of space constraints; the construction of transparent or translucent doors with safety glass and ensuring they were appropriately marked; ensuring that windows and skylights, designed to open did not project into an area where persons were likely to collide with them; ensuring that adequate arrangements were in place for cleaning windows and skylights in safety and checking that provision had been made to deal with the needs of disabled employees.

This question was generally not well answered and it was disappointing to note that candidates seemed to have little knowledge of the content of the Regulations apart from the requirements for lighting, heating and ventilation. Many referred to welfare facilities, the subject that was specifically excluded by the question. Many answers

included reference to issues outside of the scope of the specified regulations, including first aid provision, electrical safety, safety signs and fire requirements.

Question 5 ***Outline** the factors that should be considered when providing a means of escape in a workplace so that all employees are able to reach a place of safety in the event of a fire.* **(8)**

The subject matter of this question should have been familiar to most candidates irrespective of their place of work. In general, answers were to a reasonable standard though a few referred to the procedures that should be followed in the event of a fire rather than the factors that should be considered in the provision of a means of escape. Better answers referred to factors such as the number of employees and their location in the premises; the number of exit routes required; the width of the exit routes dependant on the fire risk; the travel distances involved depending on the fire risk and the number of exits with all escape routes leading to a final exit, the door of which should open quickly and easily and preferably outwards; the protection of fire exit routes with fire resistant materials and the fitting of self closing fire doors along corridors and protected routes; the provision of adequate signage for and emergency lighting along exit routes; the introduction of procedures for disabled persons including the provision of safe havens and fire fighting lifts; the location of fire fighting equipment along exit routes; the need to appoint responsible persons such as fire marshals and emergency services liaison personnel; and the means for raising the alarm which should have sufficient call points and be audible throughout the premises.

Question 6 *An electrically powered chemical pump, operating at 90°C, has developed a leak. **Outline** the control measures that should be taken for the repair of this item of machinery.* **(8)**

The operation described would normally be one for which a permit to work would need to be issued. This would ensure that control measures are taken such as isolating and locking off the electrical power to the pump; isolating pipelines to the pump by locking valves or inserting blanks; releasing stored energy by de-pressurisation and draining any chemical contained in the pump and decontaminating or neutralising it; allowing the pump if hot to reach room temperature; segregating the repair work by the provision of barriers and warning signs; providing safe access for those carrying out the repair such as scaffolding if the work had to be carried out at a height; using skilled and competent personnel to carry out the work and ensuring they were provided with and used personal protective equipment such as full face respirators, chemical suits and gauntlets; putting in place arrangements to deal with an emergency such as the control of spillage; ensuring the work area was provided with sufficient light and ventilation and arranging for adequate supervision and the constant presence of a stand-by person.

Answers to this question were generally to a reasonable standard though some candidates neglected to mention the importance of "locking off" while others appeared not to realise that the repair could involve hot work. A few went into great depth on the importance of issuing a permit to work to the exclusion of any other control measure.

Question 7 *Identify possible hazards that could cause employees to be injured when walking through an external storage area of the workplace.* **(8)**

This question required candidates to identify factors that may increase the risk of injury to pedestrians who need to walk through the external storage area of a workplace. These would include the condition of the floors with the possible presence of pot holes, loose coverings, oil and water; the presence of obstructions in the walkways; changes in levels such as ramps, kerbs or steps; a failure to provide barriers or fences around pits, voids or trenches; the possibility of being struck by moving vehicles because of a failure to segregate vehicles from pedestrians by the provision of suitable walkways; objects projecting or falling from racking; a lack of housekeeping; a poor standard of lighting; and prevailing weather conditions.

Answers varied in quality with many lacking depth and dealing only with the ground conditions while others detailed control measures rather than possible hazards. Better answers distinguished between the different hazards that might arise when walking during the day or night or in summer or winter.

Question 8 *Outline practical measures that reduce the risk from electricity when using a portable electrical appliance.* **(8)**

In answering this question, candidates were expected to outline practical measures such as; the use of undamaged and properly routed cables; the fitting of fuses of the correct rating; the use of reduced voltage by means of a 110v step down transformer centre tapped to earth; the use of double insulated (class II equipment) or battery operated (cordless) equipment; the use of the appliance in association with a residual current device protecting individuals by rapidly disconnecting the power in the event of a fault occurring; ensuring earth continuity; ensuring the equipment is tested frequently and records kept; avoiding the use of the equipment in wet weather and carrying out regular visual inspections and user checks.

Whilst there were some good answers provided, there were some candidates who appear not to be able to grasp the basics of electrical safety and suggested measures involving the wearing of personal protective equipment such as rubber boots.

Question 9 *In order to minimise the risk of injury when undertaking a manual handling operation:*

(a) *identify **FOUR** types of mechanical aids that can be used to assist the manual handling operation;* **(4)**

(b) *other than using mechanical aids, **outline** ways to reduce the risks that could be presented by the load.* **(4)**

In answering part (a) of the question, candidates could have identified mechanical aids to assist manual handling operations such as trolleys, hoists, chutes, levers, conveyors, goods lifts, fork lift trucks, wheel barrows and handling devices such as

hooks or suction pads. Some candidates included cranes and MEWPs – without reward.

For part (b), candidates were expected to outline ways of reducing the risks that could be presented by the load such as; lightening the load by splitting it; providing handles for the load; covering or removing sharp edges; making the external cover less slippery and easier to grip; marking the weight of the load; indicating the position of the centre of gravity; wearing gloves and using team lifting.

Some candidates did not read the question with sufficient care and wrote on all aspects of a manual handling assessment instead of concentrating on the load as was required.

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- Question 10** (a) **Identify** the possible effects on health that may be caused by working in a hot environment. (2)
- (b) **Outline** the measures that may be taken to help prevent the health effects identified in (a). (6)
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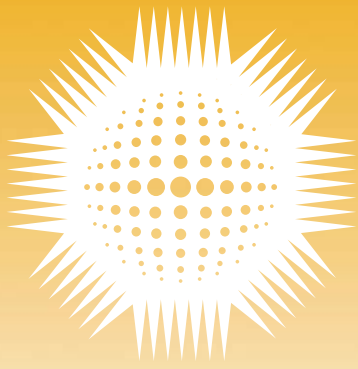
Candidates who identified such effects as skin burns from radiant heat, dehydration and muscle cramps, heat cataracts and heat stress and exhaustion, tiredness and fatigue were awarded both the marks available for part (a).

For part (b), a selection of control measures that might be taken include: the provision of screens to protect against radiant heat; minimising the exposure time of employees by providing regular work-breaks; providing and encouraging the consumption of cool refreshments; increasing ventilation; decreasing humidity by, for example, controlling the escape of steam; and the provision of suitable clothing. Better answers also referred to other measures such as health surveillance and the need to allow new workers to acclimatise gradually to the environment.

This question was well answered by many candidates.

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- Question 11** **Identify** the information that should be included on a manufacturer's safety data sheet supplied with a hazardous substance. (8)
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Most candidates seemed familiar with manufacturers' safety data sheets and were able to identify a wide range of issues in their answers to this question. The information that is typically contained on a data sheet includes: details of the manufacturer or supplier; the name of the substance; its physical properties and chemical composition; the nature of the hazard and the risks presented such as health effects and toxicological data; relevant standards such as workplace exposure limits and risk and safety phrases; precautions to be taken in its transport, handling and use for example, the use of personal protective equipment and ventilation requirements; measures to be taken in an emergency such as spillage or accidental exposure including first-aid treatment and fire-fighting measures; and the requirements for safe disposal.



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