IFE Level 3 Diploma in Fire Safety and Fire Science

Unit 6 – Fire Service Operations and Incident Command (Zone 2)

Examiner Report – March 2019

Introduction

Performance was usually good with 71% of candidates achieving a Pass. Around 60% of the candidates that passed the examination secured grade D.

Candidates performed best on questions 1, 4 and 7. However performance on questions 2, 3 and 6 was also good. Candidates performed least well on questions 5 and 8 where the average marks achieved were below eight marks.

Question 1

a) You have been called to a serious fire involving multiple houses in a built-up environment. Upon your arrival it is confirmed that there are still persons unaccounted for. Describe your initial considerations when reviewing the situation. (12 marks)

b) Explain how a fire can spread externally. (8 marks)

Examiner Feedback

This question was the most popular option for candidates with all but seven of the candidates that sat the paper opting to answer this question.

Part a) was generally answered well and most candidates scored most of their marks for this question for their response to part a). Examples of the issues that could have been explored included:

- Location of the fire
- Number of people missing, their last known location, physical and mental capability of individuals unaccounted for
- Information on hazards including signs of structural failure
- Need to carry out rescues and relevant resource requirements
- DRA/ARA to be undertaken/reviewed
- Calculations with regard resources, equipment and personnel
- The mitigation of environmental impact
- Liaison with other agencies eg key site personnel, responsible persons, government representatives and other external partners/stakeholders
- Sectorisation
- Use of cordons

Part b) was less well answered. Some candidates confused internal spread with external. The types of points which should have been considered included:

- If a fire is sufficiently intense, it may breach the external envelope of the building wall
- External fire spread may interact with façade assemblies including cladding systems.
- The cladding system may contribute to the external fire spread
- Fire may spread through cavities. Cavities may exist as part of the cladding system, facade assembly or be created by damage, delamination or movement caused by fire or other factors.
- Flame within cavities will become elongated due to restricted space, and requirement for oxygen and fuel. The flame length may increase regardless of the materials used in construction.
- If there is external fire spread to a building that has a canopy, it is possible that heat could be retained under it and may become sufficient to affect nearby structures.
- There is the potential for fixings to fail during a fire.
- Falling debris from cladding systems, photovoltaic systems, glass or other building materials may cause fire to spread to floors below or structures adjacent to the original seat of fire.
- Thin, flat or curved, building components may travel or plane considerable distances from the originating building.
- Weather conditions, such as wind strength and direction, may impact external fire spread.

A good source of information on this subject is: *National Operational Guidance - Fires in Buildings Hazard Fire Spread*

Question 2

You are the Incident Commander called to a fire that involves a building under construction.

a) Describe the factors relevant to a construction site that can affect fire service operations. (12 marks)

b) Describe the control measures that you would implement when tackling a fire at a construction site. (8 marks)

Examiner Feedback

This question was often answered well and candidates generally scored marks for both parts of the question. The two main reasons for lower scores were that candidates either provided only a few points in their responses (and therefore the lack of information limited the marks that could be attained) or they provided sparse lists of words which did not give enough information to fully describe the points that they were making.

A good source of information on this subject is: *National Operational Guidance, Building Research Establishment supplementary information, incomplete buildings or structures page*

Question 3

a) Describe the factors that would be taken into account when pre-planning for an incident involving a merchant ship in port. (10 marks)

b) Explain the control measures that you would put in place if attending a merchant ship in a port with signs of a developing fire present. (10 marks)

Examiner Feedback

This question was not a popular option for candidates but those candidates that did answer the question often achieved high marks (particularly in respect of their responses to part a).

Candidates who applied their understanding of pre-planning to the context when responding to part a) usually secured good marks. Examples of areas that could have been considered and which would have secured marks included:

- access and security arrangements
- identification of hazard areas where dangerous substances will be stored within dockyard area
- availability of onsite firefighting and rescue teams or facilities and resources, ie; private mains, portable monitors, foam stocks
- availability of database of ships currently at birth and associated hazards
- plans for stability control etc
- arrangements for involving the Environmental Agency and Maritime Coastguard Agency (MCA) in the event of pollution from either firefighting actions or hazardous materials incidents
- RVPs and arrangements for meeting emergency services and in the case of large ports, escorting to location of incident
- attendance of interpreters
- control of shipping movements, closure of port, moving of endangered vessels etc

In responding to part b), some candidates resorted to providing lists of words/phrases without sufficient reference to the context to secure marks. Candidates should be aware that examiners have to be able to see sufficient understanding and detail in order to award the marks available.

There were many poor responses to part b) with few candidates scoring more than a few marks for their response. Types of control measures which could have been considered include:

- Welfare of staff taking into account the confined space, heat and humidity in the incident area
- Situational awareness related to cargo/load and associated hazards
- Advice from ship's responsible person
- Consider compartment boundary cooling using appropriate and effective fire-fighting media
- Containment/compartmentation - use of monitoring equipment i.e. bulk head thermometers
- Access fire control plans and ascertain if the plans are up to date, taking into account any changes to the vessel layout
- Identify and agree any tactical plan with the ship's master
- Communicate the fire plan to all deployed personnel

- Assess adjacent risks and protect accordingly
- When there is a vessel fire, consider using specialist trained personnel if available (fire and rescue marine response (FRMR) or marine firefighter trained)
- Consider using specialist ship/vessel firefighting equipment
- Concept of buoyancy and procedures for ensuring stability during firefighting operations
- Consider appointing a stability liaison officer and safety officers at fires involving vessels
- Check that all scuppers or freeing ports are free flowing and not blocked by debris
- Apply minimum amounts of firefighting water necessary and monitor volume
- Drain down water from upper to lower decks and empty partially full compartments
- Consider using bilge or high volume pumps to assist with managing vessel stability

A good source of information on this subject is: *National Operational Guidance - Transport*

Question 4

You are the Incident Commander at an incident that will require the use of foam as an extinguishing media.

a) Describe the seven properties of foams. (14 marks)

b) Identify six factors that affect the performance of foams. (6 marks)

Examiner Feedback

Although this was not a popular question, those candidates that did answer the question generally secured high marks for their response to part a) and successfully demonstrated understanding of the seven properties ie: expansion, stability, fluidity, contamination resistance, sealing and resealing, knockdown and extinction and burnback resistance.

Part b) was often poorly answered and it appeared that candidates often relied on their experience rather than detailed technical understanding. Points that could have been covered included:

- type of foam-making equipment used and the way it is operated and maintained.
- type of foam concentrate used.
- type of fire and the fuel involved.
- tactics of foam application.
- rate at which the foam is applied.
- quality of the water used.
- length of pre-burn

Question 5

a) Explain why an agreement between different agencies and Fire and Rescue Services is important in order to support effective working arrangements at incidents of all sizes. (5 marks)

b) Describe the five key principles of effective joint working as set out in the Joint Emergency Services Principles Joint Doctrine (JESIP). (15 marks)

Examiner Feedback

This was not a popular option for candidates. Candidates who had a clear understanding of the JESIP principles generally scored high marks for their response to part b). Some candidates wrote at length about the Joint Decision Model (JDM) as oppose to the principles. The five principles that were required were co-locate, communicate, co-ordinate, jointly understand risk and shared situational awareness.

Question 6

Describe the roles and responsibilities of the following:

a) Incident Commander (10 marks)

b) Safety Officer (6 marks)

c) Tactical Adviser (4 marks)

Examiner Feedback

This question was the second most popular option for candidates.

Most candidates were able to describe the roles and responsibilities of an incident commander but there appeared to be less understanding in respect of the role of safety officers and tactical advisers. Candidates usually secure most of their marks for their response to part a).

A good source of information for this subject area is: *The Foundation for Incident Command*.

Question 7

You are the arriving Incident Commander at an incident involving radioactive materials.

a)

i) Describe the hazards associated with radiation. (2 marks)
ii) Describe the three types of radiation. (6 marks)

b) Explain your considerations when developing your plan. (12 marks)

Examiner Feedback

This question was a popular option for candidates and nearly all candidates performed well – the average mark attained for this question was 10.

In responding to part a), candidates generally demonstrated a good understanding of radiation,

The main issue in responding to part b) was lack of information provided – either because candidates identified only a few points or because they failed to expand the information they provided beyond single words/short phrases.

Question 8

a) Define tactical ventilation. (2 marks)

b) Describe the factors that you would take into account when considering the use of ventilation. (12 marks)

c) Describe the techniques used when deploying tactical ventilation. (6 marks)

Examiner Feedback

This was the least well answered question with the average mark attained being 6.

Candidates often appeared to rely upon service practice rather than drawing on the full range of technical information available via materials such as National Operational Guidance. Candidates are advised to refer to the National Operational Guidance – *Fires and Firefighting*

In responding to part a), candidates often omitted key points from their definition. Candidates should be aware that tactical ventilation is: the planned and systematic removal of heat and smoke from the structure on fire and their replacement with a supply of fresher air to allow other firefighting priorities.

Part b) was often answered poorly with candidates unable to identify more than a few of factors that need to be considered. Candidates were often able to draw on experience when responding to part c) although descriptions sometimes lacked sufficient detail to secure marks. Taken together parts b) and c) often suggested that candidates had experience of tactical ventilation but that this was not fully underpinned with understanding of the principles and rationales behind the approach.

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