

IFE Level 4 Certificate in Fire Safety and Fire Science

Unit 3 – Fire Service Operations and Incident Command

Examiner Report – March 2019

Introduction

186 candidates entered for the examination.

As in previous years, many candidates failed to provide responses that demonstrated the depth of understanding required at Level 4. It was common for candidates to provide brief responses containing only three or four key points when responding to questions where high marks were available. 28% of candidates that sat the examination achieved a Pass.

Candidates who failed the examination did so as a result of the lack of information provided in their scripts. The IFE awards one mark per relevant point so scripts with minimal information did not provide sufficient points to secure high marks.

Candidates generally performed best on questions 1, 2 and 5. They performed least well on questions 3 and 7.

Question 1

You are the Tactical Commander called to attend a fire on-board a cargo vessel alongside. With regards to developing a firefighting strategy:

- a) Explain the tactical considerations you would take before selecting the appropriate firefighting measures. (10 marks)*
- b) Describe the firefighting options available and detail the specialist firefighting equipment and on-board systems that may be available or in operation. (10 marks)*

Examiner Feedback

This was one of the least popular options for candidates. However, those candidates who did attempt the question often scored well and this question had the highest average score across all questions.

Candidates often performed particularly well on part a) with many candidates able to reference factors such as:

- Obtaining a thorough brief from the vessel's master to ascertain any prior and ongoing firefighting actions taken by on board teams
- Assessing any single compartment, multiple compartments or primary containment boundary from all six sides of the cube where physically possible.
- Identifying the cargo and the presence of hazardous materials on board
- Liaising with the vessel's master/personnel and carrying out an analytical risk assessment with regards to the decision to re-open sealed fire compartments

- Managing actions relating to the movement of cargo and salvage operations with regards to free surface effect that may affect vessel stability.
- Assessing the availability of fixed installations and suppression systems
- Managing the vessel's auxiliary/ventilation systems in conjunction with the vessel's personnel
- Monitoring stability – need to be careful about not sinking ship with weight of firefighting water

In response to part b), some candidates demonstrated good understanding of the fixed installations available (inert gases, foam, water mist sprinkler systems, dry powder, fire boat) and/or of the firefighting options available in this context ie:

- Using fixed installations.
- Sealing the compartment and adopting a temperature monitoring strategy of adjacent bulkheads/decks and deck heads.
- Boundary cooling or starvation
- Compartment flooding
- Compartment smothering via lockdown/starvation
- Committing fire and rescue service personnel in breathing apparatus equipped with conventional hose lines and hand control branches to a compartment involved in the fire

A useful source of information for this question is National Occupational Guidance: Fires on board vessels.

Question 2

Adopting operational discretion may ultimately increase the risk to personnel, equipment and/or the environment.

a) Describe the circumstances where the use of operational discretion may be appropriate. (3 marks)

b) Explain the tactical considerations and strategic implications that must be considered before implementing any operational discretion. (17 marks)

Examiner Feedback

This was the most popular option for candidates with 95% of candidates attempting it.

Many candidates achieved full marks for part a). However, when responding to part b), candidates often failed to demonstrate a clear and in-depth understanding of the strategic implications to be considered before applying operation discretion, relying instead on the more practical aspects of operational discretion. Those that gave good answers considered the wider aspects of policy limitations and the need to undertake a review as part of their strategy. Candidates often knew when it should be used but were not able to describe or explain what they would consider whilst implementing it.

Good sources of information for this question are the National Occupational Guidance – Incident Command and the Foundation for Incident Command.

Question 3

You are the Tactical (Silver) Incident Commander ordered to attend a fire that involves a building with large complex floor spaces.

- a) *Detail the key features and issues related to this type of building and explain how they would affect the tactical plan. (16 marks)*
- b) *Assess the inherent hazards posed by a fire that occurs within a building with large floor spaces. (4 marks)*

Examiner Feedback

Part a) of the question required candidates to assess the features and issues relevant to buildings with large, complex floor spaces. Many candidates took a narrow focus and considered only travel distances and BA procedures; others focused on fire phenomena such as backdraught and flashover which could have applied to any incident rather than aligning their response to the specific context. Those candidates that provided good responses that took into account a range of relevant factors considered issues which affected the tactical plan such as:

- Some buildings, such as those which are sprinklered, single storey, fire engineered, or which are offices may not be subdivided by fire resisting construction.
- Buildings with large floor areas which are not subdivided by fire resisting construction have the potential for increased potential for fire spread across and between floors.
- Large undivided floor areas can allow a smoke layer to cool and descend as it travels away from the fire seat of the fire reducing visibility.
- Complex internal layouts, partitions, gantries, storage, equipment and machinery can further extend travel distances and make way-finding difficult.
- Where fire engineered solutions have been adopted to support large open areas, these can rely on other fire safety systems such as smoke control, control of fire loading, or sprinklers to control fire and smoke spread.
- Complex buildings with a large floor area, often have refuge areas or floors which are protected by fire resisting construction and allow the occupancy to temporarily remain within the building.
- Multi-storey buildings with a large floor area commonly incorporate firefighting shaft for firefighting access.
- Older buildings may have been extended or connected to increase the overall floor area.
- There could be a variety of construction methods within the same area which could perform differently in a fire event.

In responding to part b), some candidates failed to identify four inherent, relevant hazards. Examples of relevant hazards follow:

- As area increases so does the potential fire size,
- Access and travel distance issues increase
- As area increases, the potential complexity of the building increases
- In buildings with larger floor area, the seat of the fire may be difficult to locate
- Particularly if there is a lack of ventilation
- Smoke cooling could reduce tenability in areas remote from the seat of the fire

- Firefighting shafts may not be provided
- This may reduce hose reach coverage to all areas of the floor area

A good source of information for this question is: National Operational Guidance – Fires in buildings and BRE supplementary information, Atrium.

Question 4

Heritage buildings present unique hazards, having been built in a period with no fire safety regulations and being built using traditional materials and construction methods. Describe the specific hazards associated with heritage properties that may be encountered and which need to be considered when devising a tactical response. (20 marks)

Examiner Feedback

Some candidates provided excellent responses to this question and some high marks were awarded. However, there were also some scripts where candidates wrote about generic hazards and operational procedures without addressing the specific context – this limited the marks that could be awarded. Some candidates focussed on the building’s architectural features and artefacts and went into detail about salvage requirements rather than focussing on specific hazards. A few candidates referred to a control burn as an appropriate tactical response.

Examples of the types of specific hazards that would have secured marks follow:

- Narrow streets, gated or arched entrances and unconventional paving materials may affect positioning of appliances.
- Available water sources may be limited
- During a building’s lifetime, it may have been altered or extended, using different materials and methods which can cause the structure to behave in unexpected ways.
- Layouts of buildings may be complicated, with hidden access points and sections of the property that have been blocked off or obscured.
- Some buildings may have compartments or floors such as old servants’ floors that are not accessible by all staircases.
- Floor heights that vary with no external windows; this may make identification of additional floors difficult.
- Chimneys may service several hearths, splitting over floors or across levels. This can allow fire or smoke to spread across levels unchecked
- Height and depth of tread, available head clearance and width, and structural integrity of staircases may vary, making travel on staircases hazardous.
- Materials used in construction, period furnishings and wall coverings are more likely to be flammable.
- Glass in heritage buildings is unlikely to be heat treated or laminated and is more likely to melt or shatter when subjected to heat; and affect fire development.
- Window frames may form part of structural integrity of walls and likely to affect rate of collapse.
- Asbestos may be present.

- Fire may travel in hidden voids, such as behind facades and in cavities to unexpected sections of the building. Vaults and ducts can cause unchecked firespread underfoot.
- Lack of fire stopped compartmentation can cause fires to spread to additional rooms.
- Some heritage buildings may not have fixed installations that conform with modern standards such as dry risers or sprinklers.

A good source of information for this question is the National Operational Guidance – Fires in buildings.

Question 5

With regards to Environmental Protection, the principle of containment is the preferred approach when managing incidents where polluting liquids or materials have been generated by on-site activities including firefighting.

- Describe the hierarchy of containment including the appropriate actions to be taken in each stage. (10 marks)*
- Explain the tactical and strategic considerations of dealing with contaminated fire water run-off. (10 marks)*

Examiner Feedback

There were many good responses to this question.

A number of candidates obtained full marks for part a); although some incorrectly categorised the hierarchy, marks were awarded where an adequate description was provided.

In response to part b), many candidates were able to identify the various items of operational equipment, but not all candidates rationalised the approach by considering the limitations and extent of tactics in such environments. Again, there were many scripts that relied on knowledge of basic operational procedures which didn't attract many marks.

A good source of information for this question is National Operational Guidance – Environmental protection.

Question 6

Acute stress can affect Incident Commanders or members of their teams and subsequently may jeopardise the safety of operations. Strategic and Tactical Commanders should understand and recognise the effects of acute stress in themselves and others.

- Identify the four categories/types of indicators of stress, explain their impact and give examples of the signs and symptoms. (12 marks)*
- Explain how strategic managers can build team resilience to deal with, and function under, stressful conditions. (8 marks)*

Examiner Feedback

This subject is very topical, which was evident in the way that candidates approached the matter.

In response to part a), some candidates gave detailed lists of the 'causes' of stress in the workplace, rather than the indicators; this meant that responses were largely irrelevant and examiners did not have the opportunity to award many marks. Many candidates failed to categorise the types of stress but marks were awarded for relevant examples. There was a vast range between those that gave very good answers and those that provided only a very vague response.

Candidates that were familiar with the area were able to identify and outline eight relevant strategies in response to part b). However, some candidates provided only vague lists and omitted to provide the supporting description needed to secure additional marks. Marks were available for describing strategies such as:

- Building awareness of stress indicators
- Building shared knowledge, understanding and expectations
- Building team flexibility and adaptability
- Building good communication skills
- Building a comprehensive knowledge base
- Building confidence

A good source of information for this question is National Occupational Guidance – Foundation of Incident Command.

Question 7

You have been appointed to carry out a review of your organisation's policy with regards to gathering Site Specific Risk Information (SSRI). Explain the rationale along with the strategic actions that must be considered so that this policy is effective and reflects national guidelines. (20 marks)

Examiner Feedback

This question was the least popular option for candidates and those that did attempt it often focused only on the information that was collected rather than considering why it was collected and how to address issues that arose (via relevant actions) or how it should align with best practice national guidelines. This meant that only limited marks could be awarded.

Very few candidates were able to include examples of specific guidance, such as BASIS, NAMOS, COMAH etc.

Examples of issues that could have been covered in responses follows:

- Fire and rescue authorities must make arrangements to obtain necessary information for the purposes of:
 - Extinguishing fires and protecting lives and properties from fires in its area

- Rescuing and protecting people from harm at road traffic collisions in its area
- Dealing with any other emergency function other than fires and road traffic collisions in its area
- Developing mutual understandings with building developers, owners and occupiers.
- Gaining local specialist advice on specific risk from relevant partner agencies and other organisations so it is available if needed in the future
- Assessing the nature and magnitude of the risk to plan and enable a proportionate response.
- Planning for an operational response sufficient to allow relevant safe systems of work to be implemented.
- Assessing the hazards and risks relating to hazardous materials and preparing to comply with associated legislation and national guidelines, eg
 - Dangerous Substances and Explosive Atmospheres Regulations (DSEAR)
 - Manufacture and Storage of Explosives Regulations (MSER), enforcement notices, prohibition notices etc.)
 - Notification and Marking of Sites (NAMOS) inspections and information
 - British Agrochemicals Safety Inspection Scheme (BASIS) inspections and pre-plans
 - The asbestos register
 - Significant Control of Substances Hazardous to Health (COSHH) assessments
 - Control of Major Accident Hazards (COMAH) plans and information
 - CBRN(E) site-specific plans
- Incorporating information on pollution, prevention and control where a risk to the environment is identified at an incident.
- Ensuring that familiarisation visits and exercises involving premises or sites are carried out that involve all relevant parties and agencies.
- Embedding a quality assurance programme and systems for keeping information up to date.
- Ensuring information is made available to operational personnel to help successfully plan for and resolve operational incidents, including neighbouring brigades.
- Identifying specific operational knowledge, skills and understanding which may need to be incorporated into local training plans.
- Considering specific equipment and training in relation to buildings identified as specific risks within the area of the service.

A good source of information for this question is: National Occupational Guidance – Operations.

Question 8

When dealing with wildland fires, it may be difficult for team look-outs to gain a full appreciation of what is happening across the whole incident ground, particularly in relation to unseen fire behaviour and spread. You have been appointed as tactical lookout. Describe your responsibilities and considerations in this role. (20 marks)

Examiner Feedback

The responses to this question were generally good.

Candidates were often able to cite the LACES protocol and to structure their considerations around the protocol (Lookouts, Awareness, Communications, Escape routes, Safety zones). Many candidates considered emerging technology such as drones.

Some candidates, however failed to include reference to the wildfire prediction system that is available or to consider fire behaviour in relation to topography.

A good source of information for this question is National Occupational Guidance – Operations.

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