

IFE Level 4 Certificate in Fire Safety and Fire Science

Unit 3 – Fire Service Operations and Incident Command

Examiner Report – October 2019

Introduction

Candidates generally performed well with 50% of the candidates that sat the examination achieving a Pass. There were few high scoring scripts and most of the candidates that passed secured a D Grade (ie marks between 48 and 59).

Candidates generally performed best on questions 1, 4 and 5.

Where candidates were unsuccessful in the examination, this was usually due to the fact that they provided only brief responses to questions and failed to provide sufficient points to secure the marks available.

Question 1

The definition of a major incident is "an event or situation with a range of serious consequences which requires special arrangements to be implemented by one or more emergency responder agency".

- a) *Describe the main civil protection duties of the Fire and Rescue Service when attending major incidents. (6 marks)*
- b) *Explain the purpose of interoperability and intraoperability. (4 marks)*
- c) *State and describe the five key principles of joint working as set out in the JESIP framework. (10 marks)*

Examiner Feedback

This was one of the most popular questions.

Part a) was not well answered as few candidates appeared to understand the duties placed on fire and rescue services as Category 1 responders as required by the Civil Contingencies Act. Examples of points that would have secured marks are:

- The Civil Contingencies Act (CCA) places a duty on fire and rescue services as Category 1 responders to prepare for and respond to major incidents.

Category 1 responders should ensure that:

- their arrangements comply with the requirements of local/national governance and legislation.
- they carry out risk assessment both prior to the event by providing SSRI and by carrying out DRA
- they consider business continuity management (BCM) and restoration of normality

- they undertake emergency planning with agency partners and local government to bring the incident to a swift resolution
- they maintaining public awareness and arrangements to warn, inform and advise the public
- Fire and rescue services are responsible, under legislation and regulations, for developing policies and procedures
- FRS should provide information, instruction, training and supervision to their personnel about foreseeable hazards and the control measures used to reduce the risks arising from those hazards.

In responding to part b), most candidates were able to describe interoperability and intraoperability but few explained the underlying purpose of each. As a result, most candidates secured only half of the marks available. A small number of candidates confused interoperability and intraoperability and provided the explanations of their purposes the wrong way around.

Part c) was generally very well answered and candidates were able to attract good marks for their identification and descriptions of the JESIP principles i.e. Co-locate, Communicate, Coordinate, Jointly understand risk and Shared situational awareness. Many candidates scored most of their marks for question 1 via their response to part c).

Question 2

- a) *Describe the factors that Incident Commanders should take into account when completing an environmental risk assessment to identify the potential risks posed by Fire and Rescue Service actions on the environment. (8 marks)*
- b) *Describe the control measures that can be applied to reduce or, where possible, prevent environmental damage. (6 marks)*
- c) *Describe the issues specific to managing motorway and highway drainage. (6 marks)*

Examiner Feedback

This was, in general, not a well answered question.

Candidates were usually able to achieve a few marks for part a). However, the majority of candidates failed to provide enough factors to secure high marks. Examples of factors that could have been identified and described included:

- nearby population
- livestock
- location of local watercourses
- location of sssi/sensitive habitats and their proximity to the incident
- incident location in relation to sensitive groundwater.
- site drainage - local surface waters and/or groundwater and vulnerability
- polluting materials
- type of media being used

- quantity of firewater run-off being produced
- volume/properties of any spilt materials

In response to part b) some candidates were able to demonstrate an understanding of the Source-Pathway-Receptor model or the hierarchy of environmental control measures. These candidates often attained good marks.

Part c) was particularly poorly answered. The issues specific to managing motorway and highway drainage which could have been covered in responses included:

- the overall responsibility for managing motorways and trunk roads lies with the relevant highways agency
- there are three major objectives in road drainage:
 - to remove surface water quickly to provide safe roads and minimum nuisance
 - to provide effective drainage to maximise the life of the road
 - to minimise the impact of run-off on the receiving environment
- road drainage can be broadly classified into two elements: surface and sub-surface
- as it is important that water drains quickly from the road surface, it can be difficult to contain polluted run-off from an incident before it enters a local water body
- it may be necessary to call on additional environmental protection equipment and resources
- storage bins containing pollution control materials are located near many motorway slip roads. The storage bins are kept locked and keys are held by environment agency and highways agency traffic officers

Question 3

The Fire and Rescue Service retains responsibility for the health, safety and welfare of all persons (including multi-agency partners) working within the risk area.

At a multi-agency incident:

- Describe the key factors that should be considered when reviewing or devising an evacuation plan. (16 marks)*
- Explain how a tactical withdrawal differs from an evacuation. (4 marks)*

Examiner Feedback

This was a popular question that was, in general, well answered.

In response to part a), many candidate demonstrated understanding of evacuation signals, cross-agency working, the informative messages to be sent to control and the need to hold roll calls; however, few candidates recognised the need to evacuate people at highest risk while protecting escape routes or the fact that the tactical mode will still be Offensive as crews will still be in the hazard area during the evacuation.

In response to part b), some candidates failed to explain that an important difference between a tactical withdrawal and an evacuation is that when a tactical withdrawal has taken place there will not be an evacuation signal or full incident roll call.

Question 4

Detail the pre-planning arrangements that need to be considered within the Emergency/Disaster Plan for a largescale fire at a petrochemical storage facility. (20 marks)

Examiner Feedback

This was not a popular question but those candidates that tackled it often secured high marks. However, some candidates failed to appreciate that the availability of 20 marks meant that 20 points were required to secure all of the marks and they provided only short responses.

Most candidates identified that the arrangements should include details of key contacts, the determination of an adequate pre-determined attendance and the availability of maps for oncoming fire appliances and crews, highlighting entrances, routes, communication points, marshalling/holding areas, RV points and control points etc.

Other points that would have secured marks included:

- firefighting facilities and staff on-site and how to engage with these
- types of mobile/fixed installations on-site and arrangements for auxiliary supply by Fire and Rescue Service if required
- location of water supplies and foam compounds
- foam compound requirements - although all petrochemical sites maintain a stock of foam concentrate, it is essential that emergency planning considers how, and from where, additional foam supplies can be obtained and the resources required to transport the foam to designated areas
- maps should also be provided for informing on the layout of processes, hazards and facilities on site, i.e. types, numbers and location and contents of storage tanks, the locations of
- contact details of specialist advisors and meteorological forecasting
- provisions for communications between FRS personnel and petrochemical staff around the site.
- arrangements for personnel protective clothing and specialist equipment and advice to crews working within risk areas.
- identification of specific training for crews to enable them to deal with hazards and risks relevant to the site include site visits
- potential effects on surrounding area and relevant planning eg in case of evacuation

Question 5

a) When subjected to fire some buildings under construction or demolition may collapse suddenly. Describe the factors prior to the fire that may affect the integrity of the structure. (4 marks)

b) Describe the factors that can affect the rapid spread of fire in a building under construction. (10 marks)

c) Describe the specific challenges encountered at building sites. (6 marks)

Examiner Feedback

This question was a popular option and was often answered well. Candidates often provided good answers to parts a) and c) of this question but failed to identify many of the factors required in part b).

Factors that could have been discussed in responding to part b) included:

- any lack of fire compartmentation or fire stopping may result in rapid fire development
- any localised collapse or demolition work could either leave slender sections of the structure vulnerable to wind or other loads, or could result in the weight of upper parts being redistributed, which in turn can lead to further overload and progressive collapse.
- fire can spread rapidly through voids and cavities or to external parts of the building, affecting the cladding and glazing systems of buildings.
- glass (glazing) or other flat panels or lightweight systems, such as rain screens used for cladding, may travel significant distances from the building when falling from height, particularly in windy conditions.
- collapse may not be limited to the building or structure itself, as scaffolding or tower cranes, for example, may be affected by intense radiated heat, putting them at higher risk of collapse.
- the potential spread of the fire may be significantly larger than that of the building or structure itself.
- structural timber buildings under construction are particularly vulnerable to rapid fire spread, which may lead to early collapse.
- structural steel elements are vulnerable during the construction phase because fire protection elements such as intumescent coatings, sprays and boards may not yet have been installed.
- inappropriate storage of combustible materials on-site, if not carefully managed, can increase the risk of fire spread.

Question 6

You have been called to a fire on a farm involving several out-buildings and have been given the responsibility for organising the evacuation of a large number of farm animals. Detail the considerations and actions required to organise this evacuation effectively and safely. (20 marks)

Examiner Feedback

This question was a popular option for candidates but few candidates scored high marks. The average mark awarded to this question was 6.

Candidates often provided brief responses that included only a few relevant points despite the fact that 20 marks were available and therefore lengthier responses were required to score high marks.

Many candidates appeared to rely upon common knowledge when answering this question and most were able to achieve a few marks for the most obvious considerations; however, the lack of specific and substantial knowledge limited the marks that could be attained

Candidates are advised to refer to the National Operation Guidance on Incidents involving Animals.

Question 7

- a) *You are called to manage an incident where a civil aircraft has made a forced landing on farmland. Describe the control measures that you would put in place. (10 marks)*
- b) *Describe the actions you would take to preserve the scene. (10 marks)*

Examiner Feedback

This was a popular question.

Few candidates achieved good marks for part a). Many candidates prioritised the rescue and welfare of farm animals that may have been present on the land where the aircraft had made a forced landing. Many others ignored the fact that the question asked candidates to describe the **control measures** that they would put in place; instead, these candidates concentrated on operational procedures.

Examples of the control measures that could have been referenced included:

- approach with caution considering potential debris and casualties
- consider deploying appropriate firefighting media including the use of foam blanketing
- request specialist assistance for the isolation of aircraft engines
- ensure personnel remain at a safe distance from running or damaged aircraft engines
- provide appropriate firefighting equipment strategically around the scene of the incident
- consider deploying safety officers especially if personnel are working in the hazard area
- only commit personnel to the hazard area associated with the aircraft undercarriage if it is essential to do so
- brief personnel on the hazards when working near deployed or undeployed evacuation slides

Part b) of this question was generally well answered.

Question 8

- a) *Explain the incident command protocols that would operate when attending incidents within prisons or other places of lawful detention and explain how the Fire and Rescue Service would work with other relevant organisations during and immediately after the incident. (8 marks)*
- b) *Explain the safety precautions specific to attending incidents within prisons or other places of lawful detention. (12 marks)*

Examiner Feedback

This question was often answered well with some candidates appearing to have prepared well.

In responding to part a), candidates often recognised that in a prison establishment the person in charge of the establishment will assume the role of Prison Service Incident Commander and will remain in overall control throughout the duration of the incident. Candidates also recognised factors with regards to communication protocols, liaison arrangements and the need to ensure the safety of fire crews by ensuring that areas which fire crews are required to enter have previously been secured by the on-site authority or by the police and that sufficient on-site staff are available to protect and guide fire crews, for example to unlock gates/doors and provide information regarding cell layout etc.

Part b) was usually answered well although some candidates repeated the same points over and over again and some candidates presented only a few points rather than writing to the level of detail required by a 12-mark question. Examples of points which could have been covered include:

- on the approach to a premises, and whilst manoeuvring within the precincts of the establishment, both visual and audible warning devices must be cancelled
- a forward control point must be established as fire ground control and will be responsible for co-ordinating all fire and rescue activities at the incident scene
- fire crews must not be permitted to enter and operate in situations where there is an unacceptable risk of physical abuse by detainees
- a thorough safety brief prior to deployment of all personnel who are required to be within the hazard zone must be carried out which includes contingency plans, areas for safe evacuation and decontamination arrangements
- all personnel must be fully briefed on specific risks of violence/missiles, risk of infection from dirty protests, bodily fluids etc
- communication of new or changed risks must continue throughout the incident
- on no account must doors or gates be locked behind fire crews during an operational incident unless this is to secure safety
- secure and safe egress must be maintained at all times during the operational activity.
- consideration must be given to crews reporting back to the Incident Commander or entry control officer at a greater frequency than is standard
- when searching or firefighting in a cell, one member of the crew must remain at the cell door to prevent it from closing and trapping crews inside

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