

IFE Level 3 Diploma in Fire Safety and Fire Science

Unit 4 – Aviation Fire Operations

Examiner Report – March 2017

Introduction

37% of candidates achieved a Pass. This was a slight improvement on 2016.

A few candidates achieved either a B or an A grade but the majority of candidates that achieved a Pass secured a D Grade. There were some very poor scripts and it appeared that some candidates had not prepared for the examination.

Candidates generally performed best on questions 2 and 4. Questions 7 and 8 were the least well answered.

Question 1

- a) *Jet engine fires most commonly occur in the accessories section of the engine. Briefly describe the location of the accessory section and identify the components that can be found within it. (6 marks)*
- b) *Detail the hazards and risks to Airport Rescue and Firefighting Services (ARFFS) crews when dealing with jet engine fires and describe the control measures that you would put in place. (14 marks)*

Examiner Feedback

This question was a popular option for candidates but responses were generally poor with around half of the candidates who attempted the question attaining fewer than 8 marks.

In order to secure a high mark for part a), candidates needed to demonstrate basic knowledge of a jet engine. This should have been core subject matter for candidates and it was disappointing that so few candidates were able to secure a reasonable mark.

Responses to part b) were generally better than responses to part a). However, points made were often generic and some candidates appeared to have only limited understanding of the specific context.

Question 2

- a) *Identify the various fuel storage and distribution systems to be found at civil airports. (5 marks)*
- b) *Identify three different types of fuels used in commercial aviation. Describe the use and characteristics of each type of fuel. (15 marks)*

Examiner Feedback

This was a standard question for this type of examination and covers basic knowledge for airport firefighters. Although there were some excellent responses and some candidates were able to attain high marks, just over half of the candidates that attempted the question secured fewer than eight marks.

A number of candidates were unable to describe fuel and distribution systems in an airport. Some candidates were able to identify only re-fuelling tankers and failed to describe other systems such as supply pipelines/underground fuel hydrant systems.

In response to part b) candidates were often able to identify fuels but few candidates demonstrated a full understanding of use and characteristics of the different fuels.

Question 3

- a) *With regard to helicopters, describe the main features, use and hazards associated with:*
- i) *flotation devices (7 marks)*
 - ii) *automatic deployable emergency locator transmitters (ADELT) (8 marks)*
- b) *Explain the categorisation of heliports. (5 marks)*

Examiner Feedback

This question was poorly answered; only a third of the candidates that attempted the question achieved 8 marks or above.

In response to part a), few candidates demonstrated detailed understanding of the water-actuated devices specified in the question. Without understanding of the operation of the devices, candidates were unable to identify potential hazards.

Part b) was also answered poorly. Some candidates omitted to respond to this part of the question.

Question 4

- a) *Outline the hazards and risks faced by the Airport Rescue and Firefighting Services (ARFFS) when responding to a "High Speed" off-airfield incident. (10 marks)*
- b) *Following an incident of this type, an investigation will be required. Identify the issues to be considered by the Incident Commander when managing the incident in order to enable a full investigation to take place. (10 marks)*

Examiner Feedback

This was a popular option for candidates. Many candidates demonstrated a good level of knowledge and over 60% of the candidates that attempted the question achieved 8 marks or more.

Question 5

- a) *Describe the considerations of an Incident Commander when approaching an aircraft incident. (12 marks)*

- b) *Explain the purpose and use of cordons and describe the considerations when establishing inner and outer cordons at an aircraft accident. (8 marks)*

Examiner Feedback

Part a) was not answered well. Many candidates failed to focus on the specific context ie the approach to an aircraft incident. Factors that could have been included in responses included: avoiding debris, being aware of casualties that may have been thrown from the aircraft, parking to avoid the danger of free flowing fuels and smoke plumes, reviewing terrain and wind direction and consideration of hazards.

Part b) was generally answered well. However, some candidates provided only brief responses and therefore lost the opportunity to attain more of the 8 marks available.

Question 6

- a) *Describe the function of a Rendezvous Point (RVP) at a commercial airport and describe the facilities which should be provided. (10 marks)*

- b) *Detailed local plans should be prepared and available to enable responses to incidents at an airport. Outline the information which should be included in these plans. (10 marks)*

Examiner Feedback

Responses to this question were generally poor.

Candidates could usually describe the function of RVPs as designated central points for all responding emergency services attending the airport. However, few candidates were able to set out the sorts of facilities that should be available. Facilities that could have been referenced included hard standing suitable for the weight of responding service vehicles, immediate access to airside areas via an access gate or equivalent, shelter/control room facilities, radio communications with the airport fire service/air traffic control, detailed airport crash maps etc

Part b) focused on pre-planning information. There were many points that could have been included but candidates often appeared to struggle to identify even a few valid points. Examples of the types of information that could have been referenced in responses included:

airport topography including airport crash maps, access gates and points to different areas of the airport/aircrafts, tunnels/roads/bridges that may restrict access due to height/width or weight restrictions, water supplies and drainage systems, airport firefighting resources and information about hazardous areas at airport eg fuel supplies/cargo areas

Question 7

- a) Describe the design features found in civilian cargo aircraft and explain the hazards these may pose to the Airport Rescue and Firefighting Services (ARFFS). (8 marks)
- b) At any aircraft incident the early identification of any cargo carried is very important in managing the incident safely. Explain the methods of cargo identification and verification available to the incident commander. (4 marks)
- c) Describe the hazard labels (including the colour) used to classify the following types of dangerous goods. You may use diagrams to support your response.
- i) Flammable Solid
 - ii) Oxidiser
 - iii) Dangerous When Wet
 - iv) Explosives Division 1.6

(8 marks)

Examiner Feedback

This question was not a popular choice for candidates. When responding to parts a) and b) few candidates demonstrated understanding of aircraft construction or of the transportation of cargo and hazardous materials. Individuals working in firefighting roles in airports should be fully aware of these issues.

Part c) presented significant problems for candidates. Only one candidate provided a full response to this question. Candidates often omitted one or more parts of the question.

Question 8

- a) Identify the symbols depicted below as seen on military aircraft. (4 marks)



- b) Describe in detail the “defence suites” which may be found on some military aircraft types and explain the hazards associated with them. (16 marks)

Examiner Feedback

This was the least popular option for candidates with only 17 candidates attempting the question. Only four of these candidates attained 8 marks or more.

In response to part b), few candidates recognised that the defence suites required were Chaff (which is a defence against missiles) and Flares (which are a defence against infrared, heat seeking missiles). Some candidates wrote at length about ejector seats and armaments without appreciating that the question was not focused on this aspect of military aircraft.