

IFE Level 3 Diploma in Fire Safety and Fire Science

Unit 4 – Aviation Fire Operations

Examiner Report – March 2015

Introduction

Candidate performance was in line with previous years with 32% of candidates achieving a Pass.

Those candidates that did not achieve a Pass usually provided only brief responses and failed to provide sufficient detail in their responses to secure a Pass. Candidates should be aware that they need to demonstrate in-depth understanding in the specialist aviation context.

Question 1

Detail the general apron (or ramp) safety management measures to be adopted during the fuelling and de-fuelling of an aircraft with passengers on board. (20 marks)

Examiner Feedback

The candidates that attempted this question generally demonstrated a good appreciation of the subject area and achieved high marks. Those candidates that did not achieve good marks failed to provide in-depth answers and/or omitted to take into account the fact that there were passengers on board.

Question 2

In relation to fixed wing aircraft, fully explain the concept of “Critical Area” including in your answer the formulas used. (20 marks)

Examiner Feedback

Those candidates who were able to explain the concept in detail and provide the relevant formulae achieved high marks. Some candidates provided only minimal information and therefore were not able to achieve high marks.

Question 3

- a) *State the five zones in a typical jet engine. (5 marks)*
- b) *Describe the hazards that may be encountered when dealing with fires in aircraft engines and describe the tactics and techniques to be used when dealing with this type of incident. (15 marks)*

Examiner Feedback

Some candidates were unable to identify the five zones in part a). The five zones are: compressor, combustion, turbine (exhaust), accessories and reduction gearbox.

In response to part b), some candidates provided only brief responses and failed to demonstrate the depth of understanding required at this level.

Question 4

The command and control of an aircraft accident will involve all of the emergency services. Three levels of command may be implemented. Describe the roles and responsibilities of each level of command. (20 marks)

Examiner Feedback

Few candidates attempted this question.

Those candidates who did attempt the question often provided good responses. However, some candidates confused levels of command (ie Bronze-operational, Silver – tactical, Gold – strategic) with the zoning of aircraft incidents and therefore failed to address the specific requirements of the question.

Question 5

- a) State the information which should be included on “Airport Crash Maps”. (4 marks)*
- b) The Emergency Planning Committee for an airport consists of both on- and off-airport agencies.
 - i) List the agencies that will be represented on this committee. (8 marks)*
 - ii) Briefly describe the responsibilities of the committee and give examples of the tasks undertaken by the committee. (8 marks)**

Examiner Feedback

This was a popular question and was generally answered well. The majority of candidates demonstrated good understanding of the roles of different emergency services but were less well informed about the way that the committee would operate.

Question 6

In relation to military “Fast Jets”:

- a) List the principal types of cockpit canopy design and explain the methods of entry into a cockpit canopy. (6 marks)*
- b) Describe the approach and positioning in relation to a military aircraft incident. (6 marks)*
- c) Identify and explain four hazards specific to an incident involving a military aircraft. (8 marks)*

Examiner Feedback

This was a popular option for candidates.

There were some excellent responses with candidates providing detailed information and some candidates supported their responses with diagrams.

Less successful candidates were unable to identify the three principal types of cockpit design (ie rear hinge canopy, side hinge canopy and sliding canopy) in response to part a). In response to part c), some candidates provided generic hazards rather than explaining hazards which are specific to the military aircraft context.

Question 7

Explain the factors specific to an incident involving a civilian aircraft carrying cargo that an Incident Commander would need to take into account when dealing with an incident of this type. (20 marks)

Examiner Feedback

This question was generally answered poorly. Although candidates often explored some of the issues around potential cargo, few candidates explored the issues related to the construction of the aircraft eg multi-floored/compartmentalised cargo areas, stronger and more robust undercarriage configurations, design of cargo doors and floor designs.

Question 8

Polymer Composite Materials / Man Made Mineral Fibres (MMMFs) are used extensively in the construction of modern aircraft.

- a) Describe the advantages of using these materials for aircraft manufacturers and give examples of where these materials may be found in civil fixed and rotary winged aircraft. (9 marks)*
- b) Explain the tactics for the Airport Rescue and Fire Fighting Services (ARFFS) when responding to an aircraft accident involving an aircraft known to have composites within its construction. (11 marks)*

Examiner Feedback

This was the most popular option for candidates with the majority of candidates attempting the question. Candidates were generally well-informed and provided good responses.

Question 9

- a) Describe what is meant by "liaison" in response to aircraft incidents. (8 marks)*
- b) Describe the areas of access that should be included in liaison visits and detail the information which should be included in local plans at airports for the responding Fire and Rescue Service. (12 marks)*

Examiner Feedback

This was the least popular option for candidates and those candidates that did attempt the question generally achieved only low marks. Candidates demonstrated limited understanding of the pre-planning context and performed particularly poorly on part b).

Question 10

- a) *List seven main properties of firefighting foams. (7 marks)*
- b) *What is meant by the "induction rate" (5 marks)*
- c) *Describe the five ways in which foams can help to knock down and extinguish fuel fires. (5 marks)*
- d) *There are the three main ingredients of finished foam whose amounts can be varied and so influence the behaviour of the foam when it is applied to a fire. What are these three ingredients? (3 marks)*

Examiner Feedback

Candidates generally demonstrated a good basic understanding of firefighting foams and the way that they operate.