

L4C4



THE INSTITUTION OF FIRE ENGINEERS
Founded 1918 • Incorporated 1924

IFE Level 4 Certificate in Fire Science and Fire Safety

Unit 4: Aviation Fire Operations (K/505/5934)

Thursday 8 March 2018

14:30 – 17:30

Instructions to Candidates

1. The time allowed for this examination is **THREE** hours.
2. Candidates must answer **SIX** questions from the total of **EIGHT** questions set for this examination.
3. All questions carry equal marks and may be answered in any order. Candidates should follow the instructions provided in the question when composing their responses.
4. Candidates should record all of their answers in the answer book provided.
5. The question paper must be handed in with the answer book.

Question 1

The importance of ensuring that Airport Rescue and Firefighting Service (ARFFS) personnel maintain operational readiness to perform all operational firefighting and rescue tasks expected at the scene of an aircraft incident cannot be over-emphasised. This is achieved by ensuring that a carefully planned and rigorously followed programme of training is in place.

Describe the training programme that should be established at an aerodrome. (20 marks)

Question 2

One of the airport's customers has requested permission to use a Boeing 737-900ER aircraft for 10 flights (inbound/outbound) daily. Currently, the biggest aircraft operating from the airport is a Boeing 737-600 aircraft.

The Boeing 737-900ER aircraft length is 42Mtrs long with a fuselage width of 3.76Mtrs. The ARFFS provision is currently ICAO 6 utilising two Major Foam Vehicles each carrying 11,000Ltrs of Water, 1000Ltrs of Level B Foam (6%) and 200Kg of Dry Powder. These vehicles are staffed by a total of six ARFFS personnel.

Describe the actions that need to be carried out to ensure that the ARFFS provision meets the requirements of this new aircraft. (20 marks)

Question 3

Describe the factors to be considered during the selection of Airport Rescue and Firefighting Service (ARFFS) vehicles. (20 marks)

Question 4

Following any significant incident involving an aircraft, a full and robust review of the incident should be carried out.

a) Explain the process to be followed. (12 marks)

b) Describe the evidence that will be required from the fire and rescue service to assist the post-crash management group with an investigation. (8 marks)

Question 5

It is essential for the successful outcome at all incidents for all attending emergency services to have a strong communications plan. This plan should be identified within the Aerodrome Emergency Plan and frequently tested.

- a) Describe the key information that should be provided by the incident commander to attending emergency services to enable them to react to the incident in the most effective way.
(6 marks)
 - b) Describe the communications and alerting systems that must be provided for use by Airport Rescue and Firefighting Services (ARFFSs).
(9 marks)
 - c) Describe the information that Air Traffic Control will be able to provide to the ARFFS incident commander and the fire and rescue service mobilising centre from the outset of the emergency.
(5 marks)
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Question 6

Cordon control is vitally important in reducing exposure to hazards by ARFFS personnel. Cordons keep this exposure to a level that is as low as is reasonably practicable.

- a) Explain the factors that incident commanders attending an aircraft crash should consider when setting out a cordon.
(7 marks)
 - b) Explain why safety distances for military aircraft vary, giving reasons for the different cordon distances at incidents involving military aircraft.
(5 marks)
 - c) Describe the two types of cordon used to secure the scene after the initial cordon has been established.
(8 marks)
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[Please turn over]

Question 7

Fire and rescue services must plan for all incidents that have the potential to occur within their area of responsibility.

Aircraft incidents may be split into three different aircraft categories: fixed wing, rotary wing (helicopters) and military aircraft. For each of these categories, describe the specific safety factors that should be considered when planning for incidents:

a) fixed wing (7 marks)

b) rotary wing (7 marks)

c) military aircraft (6 marks)

Question 8

As the senior officer, you have been called to act as the Tactical (Silver Level) Commander at the scene of a helicopter crash.

a) Describe what you must do immediately upon your arrival at the incident. (4 marks)

b) Once a decision has been made to take over as incident commander, describe what you must consider. (10 marks)

c) Describe the precautions that should be employed at an incident of this type. (6 marks)
