

# L4C4



**THE INSTITUTION OF FIRE ENGINEERS**  
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## **IFE Level 4 Certificate in Fire Science and Fire Safety (HL)**

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

**Thursday 10 March 2016**

**14.30 – 17.30**

#### **Instructions to Candidates**

1. The time allowed for this examination is **THREE** hours.
2. Candidates should 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

When calculating the minimum number of qualified/competent personnel required to deliver an effective Airport Rescue Fire Fighting Service (ARFFS) to deal with an aircraft incident/accident, it is essential that a Task Resource Analysis (TRA) is carried out.

Describe the stages that should be considered by an airport operator when carrying out a TRA to determine the minimum number of qualified/competent personnel required to deliver an effective ARFFS.

(20 marks)

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### Question 2

An integrated emergency plan is an essential pre-requisite for any flying display or air show and the Fire and Rescue Service is often invited to participate in the planning process.

a) Detail the different timescales for an event organiser to notify the emergency services of such an event taking place.

(3 marks)

b) Describe the specific Fire and Rescue Service requirements/recommendations that an event organiser should consider in the emergency plan for a large air show.

(12 marks)

c) The production of the event safety plan will involve risk assessment. Explain how you would apply the five stages of the risk assessment when developing the event safety plan.

(5 marks)

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### Question 3

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.

(5 marks)

b) Once a decision has been made to take over as Incident Commander, describe what you must consider.

(10 marks)

c) Detail the specific hazards associated with helicopters that both the Incident Commander and all attending Airport Rescue Fire Fighting Service (ARFFS) personnel must consider.

(5 marks)

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#### Question 4

High Reach Extendable Turrets (HRET) and other recently-introduced technologies are becoming more common. Explain the benefits that can be gained from utilising HRETs and other new technologies along with any challenges/issues that they may present.

(20 marks)

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#### Question 5

The airport manager has confirmed that as part of the airport expansion plan, finances have been allocated to enable the building of a new fire station. Studies of the operational requirement have emphasised the importance of correctly sited fire stations as a pre-requisite for the immediate and effective response by Airport Rescue Fire Fighting Service (ARFFS) personnel.

Identify and explain the factors that you would take into account when deciding the design and construction of your new fire station.

(20 marks)

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#### Question 6

a) A co-ordinated communication network is of vital importance to any major operation involving multiple agencies at an emergency incident. Describe the requirements for communication networks for aerodromes.

(10 marks)

b) An Emergency Operations Centre should be available to deal with emergency situations at each airport. Certain emergency situations will require a mobile command post at the scene, normally under the direction of the airport's on-scene Incident Commander. Describe the main features of mobile command posts.

(10 marks)

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#### Question 7

The method of determining the rescue and firefighting requirements for aircraft is based on the concept of a critical area to be protected in any post-accident fire situation to enable the evacuation of the aircraft occupants.

a) Describe in detail the concept of critical area for a heliport.

(10 marks)

b) Define the meaning of "response times" for firefighting and rescue personnel at all types of heliports.

(5 marks)

c) Helicopter crashes present situations that differ from those presented by fixed wing aircraft. Explain the particular features of helicopter crashes.

(5 marks)

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**[Please turn over]**

### **Question 8**

Information compiled during the investigation following an aircraft incident attended by the Airport Rescue Fire Fighting Service (ARFFS) personnel can be useful in a number of ways.

Provide examples of information that would be recorded after an aircraft incident involving a passenger-carrying aircraft that crashed on a runway threshold following an unsuccessful landing. Explain how this information could be used throughout the ARFFS sector.

(20 marks)

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