

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 16 March 2017

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

All aerodromes are required to have an emergency plan in place. This plan should set out how an emergency situation or incident will be managed in order to minimise the effects that the incident may have on life, property and aerodrome operations.

- a) Describe how the plan should make best use of the appropriate available resources to achieve these aims.

(4 marks)

- b) Describe the minimum information that should be contained within the emergency plan.

(11 marks)

- c) An aerodrome emergency plan should include provision for a fixed emergency operations centre and a mobile command post to be available for use during an emergency. Describe the roles of the emergency operations centre and the mobile command post.

(5 marks)

Question 2

Explain the requirements regarding provision of equipment and extinguishing media for offshore helidecks on installations and vessels.

(20 marks)

Question 3

Management and command of a serious aircraft incident will require effective liaison with other agencies to achieve desired outcomes.

- a) Explain how the Senior Airport Fire Officer (SAFO) will ensure effective liaison both prior to and during incidents.

(7 marks)

- b) The use and compatibility of radio systems and technology is key to achieving effective liaison at incidents. However, Airport Rescue and Fire Fighting Services (ARFFS) personnel should be aware of the radio traffic demands on the Airport Incident Commander. State the agencies and individuals that the Airport Incident Commander should be in communication with during an incident.

(7 marks)

- c) Describe the specific requirements for aeronautical radio equipment that allows fire officers to communicate directly with an aircraft flight deck.

(6 marks)

Question 4

The Managing Director of the airport at which you are the Senior Airport Fire Officer (SAFO) has informed you that due to an increase in commercial activity at the airport, the airport operating authority is in the process of purchasing a small private aerodrome. The intention of the airport operator is that this aerodrome will be licensed to operate all of the existing low category aircraft.

Describe the requirements for Airport Rescue and Fire Fighting Services (ARFFS) at an ICAO Aircraft Category 2 Aerodrome with regards to the following:

- a) Minimum scale of services to be provided. (3 marks)
 - b) Extinguishing agents including Performance Level B and Level C foam. (7 marks)
 - c) Minimum number of staff designated as Airport Rescue and Fire Fighting Services (ARFFS) personnel. (2 marks)
 - d) Vehicles and ancillary equipment. (5 marks)
 - e) Training. (3 marks)
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Question 5

The level of Airport Rescue and Fire Fighting Services (ARFFS) protection to be provided at an airport should be based on the dimensions of the aeroplanes normally using the airport as adjusted for their frequency of operations. Either a take-off or a landing constitutes a movement.

- a) Explain how the frequency of operations may affect the ICAO Aircraft Category promulgated by an airport. (6 marks)
 - b) Describe in detail the critical area concept for fixed wing aircraft. (14 marks)
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[Please turn over]

Question 6

a) Explain the procedures that airport managers should put in place to deal with fatalities due to an aircraft incident.

(15 marks)

b) In the aftermath of an aircraft accident, it is often necessary to provide psychological treatment for the survivors. However, the mental and psychological well-being of emergency responders such as Airport Rescue and Fire Fighting Services (ARFFS) personnel who may suffer from post-traumatic stress disorders should also be considered. Explain how Critical Incident Stress affects ARFFS personnel and describe the approaches available for dealing with this.

(5 marks)

Question 7

Describe the following areas of an airport, explaining the main activities that occur at these locations and the challenges that these areas may present to the Local Authority Fire and Rescue Service personnel who attend incidents on airports but who are not familiar with the rules and regulations applied in airports.

a) Apron

(5 marks)

b) Airside

(5 marks)

c) Landside

(4 marks)

d) Emergency Rendezvous Points

(6 marks)

Question 8

As a Senior Local Authority Fire and Rescue Officer you have been approached by the Station Commander of a local military aerodrome who wishes to improve the interoperability arrangements between the on-site rescue firefighting service and the local emergency responders.

Identify the five principles for joint working and describe the actions required to ensure that each of the principles are met.

(20 marks)
