IFE Level 4 Certificate in Fire Service Operations and Incident Command

Qualification Specification

Qualification Number: 603/6614/X

About the Institution of Fire Engineers (IFE)

The IFE is the professional institution for those working in the fire sector. The IFE is a registered charity working for societal benefit. Founded in 1918, the IFE's mission is to promote, encourage and improve the science, practice and professionalism of fire engineering with the overall aim of protecting and saving lives.

Members of the IFE share a commitment to ensuring that the fire profession remains relevant and valued, protecting people, property and the environment from fire.

The IFE Awarding Organisation

The IFE's awarding organisation is non-profitmaking.

The aim of the of the awarding organisation is to encourage those who work in the sector to engage with, and develop, the critical understanding needed to operate effectively and safely and to the best professional standards so that they can protect and save lives. In doing this, the awarding organisation contributes to three of the IFE's (six) over-arching strategic priorities i.e.:

- Facilitate awareness of fire issues and developments through the communication of ideas, knowledge and information.
- Foster professionalism by establishing and maintaining pathways and recognised standards of fire professionalism and competency.
- Increase knowledge in the science, practice and professionalism of fire engineering.

All of the IFE's qualifications are designed for those working in the fire sector and to meet the above priorities. The qualifications and the associated assessments (examinations and practical activities/assignments) provided by the IFE are designed, assessed and quality assured by experts with extensive experience of working within the fire sector.

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Introduction
This qualification has been developed by the Institution of Fire Engineers (IFE) and representatives of the UK Fire and Rescue services. The content and structure of the qualification is designed to support those operating in the fire service in dealing with incidents effectively and safety.

This qualification focuses on the strategies and activities required to assess and resolve fire and rescue incidents in diverse, complex, and escalating situations. It covers incident management as well as technical expertise and post-incident de-briefs and reviews. Candidates will be required to apply detailed and technical understanding by assessing situations, determining hazards and risks and drawing conclusions as to the appropriate actions and control measures for the specific situation. They will need to be able to explain the rationale for decisions and to draw on technical understanding specific to the context.

This qualification is derived from unit 3: Fire Services Operations and Incident Command within the Level 4 Diploma in Fire Science and Fire Safety. It is directly equivalent to that unit in that the content and assessment remain exactly the same. Individuals who achieve this qualification may use it towards the achievement of the Level 4 Diploma in Fire Science and Fire Safety. For information, please see - https://www.ife.org.uk/IFE-Qualifications-with-Syllabus-Links

Target Audience
This qualification will be appropriate for individuals working in fire and rescue service roles. It is particularly suited for those who either hold, or are preparing for, roles such as a Station Manager or Area Manager.

Learning Outcomes
Candidates who achieve this qualification should be able to:

- assess incidents and determine appropriate strategies to resolve them
- understand the issues to be taken into account in evaluating and determining incident status, assuming responsibility and taking over command and control operations
- understand how to deploy firefighting equipment and other resources
- understand how to preserve the safety of firefighters and members of the public
- understand how to work with partners and multi-agency groups at complex incidents
- evaluate and develop policies and procedures relevant to the management of fire and rescue incidents

Membership of the IFE
Achievement of this qualification enables candidates to meet the academic requirement for membership of the Institution at **Technician (TIFireE) Grade**.

Achievement of **three Level 4 Certificates** enables candidates to meet the academic requirement for membership of the Institution at **Associate (AIFireE) Grade** or **Member (MIFireE) Grade**.

To achieve the full **Level 4 Diploma**, candidates must complete this qualification **in addition to** the following:

- The mandatory Level 4 Certificate in Fire Engineering Science
- The mandatory Level 4 Certificate in Fire Safety
- One additional IFE Level 4 Certificate

All four qualifications must be achieved **within a five-year period**.

Qualification Content
The content of the qualification is set out in the section entitled "Content" below. This section provides information on the range of topics that must be studied including the way that candidates need to show their understanding (Assessment Criteria) and the scope/range/contexts in which they can be tested (Knowledge and Understanding).

The syllabus content is very broad and deep and therefore not all topics can be tested in all examinations. Candidates are advised to prepare for the examination by covering all topics so that they are able to provide comprehensive responses.

Assessment
The assessment takes the form of one three-hour examination and provides a summative assessment of the full range of learning specified in the content below.

Examinations are provided in English only.

Candidates will be required to complete **six** questions from a choice of **eight** questions. There will be 20 marks available for each of the questions.

In order to achieve a Pass, candidates will be required to attain at least 48 of the 120 marks available to them via the six questions.

Candidates who answer fewer than six questions will be able to achieve a Pass as long as they achieve the minimum pass mark of 48. Should candidates answer more than six questions, they will not benefit as only the six best responses will be included in the final mark.

Certification
Results of examinations will be reported as follows:

Pass - this is awarded where candidates achieve a mark between the minimum pass mark of 48 marks and 71 marks.
Distinction - this is awarded where candidates achieve a mark of 72 or above.
Fail - candidates who achieve 47 marks or fewer will receive a result showing Fail. Where candidates receive 24 marks or fewer, the result will show as Fail (X).

Candidates who are unsuccessful in the examination may re-sit the examination. There is no limit on the number of times that candidates may re-sit.

Candidates will be issued with the mark achieved out of a total of 120.

Entry Requirements
There are no formal entry requirements.
As the examination is provided in English only, candidates will need to have a comprehensive understanding of the English language in order to access the examination questions.

Qualification Level
This qualification has been designed to enable candidates to demonstrate that they have attained knowledge and understanding at Level 4. Other types of qualifications that are set at Level 4 include Certificate of Higher Education (CertHE), Higher National Certificate (HNC) and Level 4 NVQs.

The qualifications regulator, Ofqual, has provided the following descriptors to illustrate the knowledge and understanding expected from those who hold qualifications at Level 4.

Level 4 Knowledge Descriptor
The candidate:

- Has practical, theoretical, or technical knowledge and understanding of a subject or field of work to address problems that are well defined but complex and non-routine.
- Can analyse, interpret and evaluate relevant information and ideas.
- Is aware of the nature of approximate scope of the area of study or work.
- Has an informed awareness of different perspectives or approaches within the area of study or work.

Candidates are advised to bear these descriptors in mind when preparing for assessment and when presenting responses to examination questions.

Qualification Learning Time
The length of time needed to prepare for this examination will vary depending upon the starting point for each candidate.

Total qualification time is 200 hours:

- 197 hours of learning/study. Study may be self-study (please see the section on recommended reading material below) and may include relevant CPD and fire and rescue service training programmes.
- 3 hours of assessment (directed time) i.e., one three-hour examination.

Most candidates prepare for IFE examinations via self-study or by drawing on training provided by their employer that covers aspects of the syllabus. Candidates are advised to cross-map their study/training against the content of the syllabus to ensure that all parts of the syllabus have been covered. Recommended reading materials are listed below.

Progression
Candidates who are successful in achieving this qualification may consider progression to specialist degree or Foundation Degree programmes.

Further Information
Further information on examination conditions is available on the IFE website.

Recommended Reading
This qualification covers an extensive range of contexts and candidates are advised to reflect this in their examination preparation.

Candidates are also advised to review past examination papers. Past papers, together with the associated examiner reports on the papers, can be downloaded, free of charge, from the IFE website - https://www.ife.org.uk/Qualifications/Past-Papers-and-Exam-Reports.

Candidates preparing for the examinations are advised to refer to the list below:

Fire and Rescue Incident Command: A Practical Guide to Incident Ground Management by Tony Prosser and Mark Taylor. ISBN: 978-1-912755-09-7

Fire & Rescue Manual Volume 2, Fire Service Ops
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7643/incidentcommand.pdf

Fire Service Manual Volume 3, Fire Safety

Protocol for the disposal of contaminated water and associated wastes at incidents - (Water UK, Environment Agency, NIEA, Natural Resources Wales, DWI, Fera, Defra's CBRN Recovery Team, NFCC National Resilience (Dept for the Environment, Food and Rural Affairs) https://www.water.org.uk/sites/default/files/wp/2018/11/Contaminated-Water-Disposal-Protocol.pdf

Principles for Joint Working Principles for joint working - JESIP Website

Joint decision making model The Joint Decision Model (JDM) - JESIP Website

Initial Operational Response (IOR) to Incidents Suspected to Involve Hazardous Substances or CBRN Materials Initial Operational Response (IOR) to Incidents Suspected to Involve Hazardous Substances or CBRN Materials - JESIP Website

Generic Risk Assessment (GRA), 4.3: Incidents involving air transport systems
Operational Guidance: Aircraft Incidents

IFE Fire Service Operations and Incident Command Resources MyIFE > Home > Events and resources > Articles

National Grid Guidance for UK Fire and Rescue Services National-Grid-Guidance-for-UK-Fire-and-Rescue-Services-03-2018.pdf

National Operational Guidance (NOG) *Currently available only to NFCC members.*

Content

1. Pre-planning

Assessment Criteria	Knowledge and Understanding
1.1 Explain the purpose of pre-planning and inter-agency liaison for all emergency incidents and assess the pre-planning requirements for any specified emergency	• Incidents: ♦ All fire situations ♦ All Rescue situations ♦ Major incidents and incidents involving civil disturbance ♦ Natural disaster ♦ Incidents involving hazardous materials • Information gathering on risks and data capture from predictive modelling such as weather forecasts, tides, and seasonal risks in forestry areas, etc. • The safety of all emergency responders, non-emergency personnel working alongside and members of the public • The mitigation of environmental impact • Calculations with regard resources, equipment, and personnel • Liaison with other agencies, key site personnel, responsible persons, government representatives and other external partners/stakeholders • Conformation with legal requirements • Working to meet policy and organisational objectives
1.2 Evaluate training requirements and explain activities to ensure that personnel remain competent in role	• Definition of occupational competence • Organisational responsibilities • The planning of training and development and its implementation: ♦ Training needs analysis ♦ Planning and evaluating training activities within the workplace ♦ Assessing strategic performance in line with organisational targets ♦ The involvement of multi-agency, partners, and stakeholders in strategic planning ♦ Suitability of training venues, use of equipment, personal protective equipment, and emergency arrangements ♦ Management of training and development events and activities

2. Incident Command and Management

Assessment Criteria	Knowledge and Understanding
2.1 Explain the purpose and scope of key roles within a command structure and assess the level of responsibility and limits to authority	• The role and responsibilities of the Incident Commander at Tactical/Strategic level and limits to authority • The performance criteria involved in leading, monitoring and supporting people to resolve operational incidents • The role and responsibilities of Command Support at Tactical/Strategic level incidents, including the role of Command Support Officer • Liaison and working with multi-agency response, local government, and stakeholders at Tactical/Strategic level
2.2 Explain and evaluate the importance of successful leadership and the application of effective decision making during operational incidents	• The need for effective decision making • How to select and apply a range of tactics and strategy to resolve different types of operational incidents • The term “situational awareness” and its relevance to the role of Incident Commander • The key elements of leadership within the role of Incident Commander • Awareness of when to work outside of policy (Operational discretion) • Effects of decision making on business continuity for the premises, recovery and restoration of normality
2.3 Explain and evaluate the principles of successful risk management at operational incidents	• Minimising and controlling risks to operational personnel • Dynamic Risk Assessment • Analytical risk assessment process • Identification and control of risk appetite
2.4 Explain and evaluate the benefits of inter-operability and the contribution of other agencies to the provision of specialist advice and support	• Purpose and value of effective liaison with other agencies • The provision of information to other agencies which may assist in their decision making • The benefits of inter-operability • Principles for joint working (JESIP) • Decision making at multi-agency incidents - JESIP Joint Decision Model (JDM)
2.5 Explain and assess the principles of command and control, tactics, and strategy necessary to resolve emergency incidents	• Objectives and principles of ventilation at fires • Strategy and tactics involved in rescue work and how they are used in practice • Procedures for ensuring the safety of personnel and the public • The need for evacuation at fires, emergency incidents and major disasters and how this can be achieved • Firefighting procedures and tactics in fires

	involving hazardous materials including hazmat identification systems and hazard tactical systems • Inter-relationship of logistics operations and technical support at incidents • Purpose and value of media communications strategy at developing incidents • Aims of salvage/damage control operations and the principles and technicalities involved
2.6 Explain how to deploy equipment and other resources to resolve incidents including fires and other emergencies	• Different types of firefighting media and equipment and its operational use • Selection and deployment of resources • Capabilities and limitations of personnel, appliances, special appliances, and equipment • Use of specialist advisors and teams
2.7 Evaluate the communication systems available both at incidents and remotely	• Importance of effective communication in recognising poor or inaccurate information and taking action to rectify • Types and methods of communication available to an Incident Commander • Implications of the need to communicate with multiple agencies at large incidents • Range of mobile data terminals and remote information sources available • Role of Command Support in establishing effective communications at incidents • Requirement to ensure timely and regular briefings that involve relevant agencies and individuals
2.8 Explain the potential damage fires and firefighting can have on the environment and describe the actions that can be taken to minimise damage	• Potential damage to lakes, water course, drainage systems, sensitive and fragile habitats • Pollution caused by fire run-off water, firefighting foam, smoke plumes, polluting materials • Pollution control hierarchy

3. Fire and Rescue Procedures – Tactics and Strategy

Assessment Criteria	Knowledge and Understanding
3.1 Explain and evaluate organisational compliance to relevant national legislation	• Personal responsibilities under relevant national legislation • Operational responsibilities under national or government legislation • Legal, moral and financial consequences of non-compliance
3.2 Explain how fire development affects the tactics and strategy employed for extinguishing fires in different contexts	• Different types of burning material and the effects on building construction • Interruption to business continuity and implications on infrastructure • Ways in which fires can spread detected and undetected both internally and externally • Principles and application of ventilation • Flashover, backdraught and fire gas ignitions
3.3 Identify and explain the tactics and strategy required when dealing with fires that occur in different contexts and explain relevant specialist techniques *(Note: further amplification of the range of situations is provided in sections 5 and 6 below.)*	♦ Fires in the built environment: ♦ buildings under construction and demolition or derelict ♦ residential buildings ♦ high rise properties ♦ buildings with atriums, basements, and/or tunnels ♦ leisure facilities, camp sites and temporary structures ♦ waste sites (including renewable energy facilities) ♦ retail and leisure facilities ♦ commercial premises and industrial/petrochemical processes ♦ hospitals, health care and educational establishments ♦ prisons and places of lawful detention ♦ places of research and laboratories ♦ premises used for the generation, distribution, storage or supply of gas, LPG, electricity, solar panels, and other sources of power ♦ historical buildings and premises containing valuable artefacts including Heritage buildings, museums, and galleries ♦ Fires involving transportation by road, rail including trams, air including drones, and waterways, to include: ○ modes of transportation: road vehicles rolling stock, aircraft, and vessels ○ infrastructure: roads, terminals (air/rail/light rail), stations, docks, marinas ♦ Wildfires: rural areas such as forests, heath

	land, wildland, crops, bush, etc ♦ Fires involving farms, farm buildings, agricultural processes, and equipment
3.4 Evaluate the benefits of salvage operations and controlled burn strategies	• Salvage considerations to prevent avoidable damage and mitigate the effects of fire and firefighting operations • Subsequent effects on business continuity, recovery, community impact and restoration of normality • Environmental, community and business impacts of control burn strategies
3.5 Identify and explain the tactics and strategy along with the methodologies of both general and specialist rescue operations required in different contexts. *(Note: further amplification of the range of situations is provided in sections 5 and 6 below.)*	• Rescues from the built environment: ♦ entry into and searching of buildings and collapsed structures • Release of trapped persons from machinery, lifts, escalators, • Rescues from sub-surface and confined spaces: ♦ entry into, and searching of, tunnels and shafts ♦ vat, silo, sewer, trench, pit, chimney • Rescues from transportation incidents: ♦ extrication of persons from vehicles, trains, aircraft, ships, boats • Rescues from height: buildings, cranes, shafts, cliffs, leisure facilities • Rescues from water and unstable ground: ♦ people, property, and vehicles from flood water ♦ incidents involving still and fast flowing water ♦ incidents involving ice, mud, and other free flowing solids • Large animals and humanitarian rescues • Rescues from incidents involving hazardous materials: hazmat release by defect, natural occurrence, or human act

4. Post-Incident Action

Assessment Criteria	Knowledge and Understanding
4.1 Explain and evaluate the principles and the value of debriefs, applying these principles to different contexts	• How to conduct post-incident debriefs held at the appropriate level dependant on the type and scale of the incident • Types of debrief: hot, cold, critical incident • How to facilitate debriefs through open and constructive discussion and review • How to gather and review all relevant information from internal and external sources • How to implement remedial measures to improve future practice and performance • How to identify trends and their implications on

	future practice and performance • The feedback process involved to rectify organisational strategic issues
4.2 Evaluate the effects and consequences of incidents	• Indirect socio-economic consequences of fires, other emergency incidents and major disasters • Environmental effect and control measures in relation to fires and emergency incidents • Legal responsibilities and the potential for organisational change • Financial costs and litigation issues • Critical incidents and ongoing emotional/welfare support of employees
4.3 Explain the principles of carrying out investigations along with determining the requirements for scene preservation, the collection of evidence and all post-incident actions	• Further investigation to include: ♦ Fire Investigation ♦ Fire Safety Investigation ♦ Health and Safety Investigation ♦ Criminal Investigation ♦ Internal Investigation including lessons learned • Investigative techniques of emergency incidents and major disasters • Collation of factual information and the preparation of documents to present at formal proceedings such as post-mortems, public and judicial enquiries • The involvement of external agencies and legal compliance

5. Incidents involving Buildings

Assessment Criteria	**Knowledge and Understanding**
5.1 Assess how a fire or collapse situation has compromised a building's integrity or stability, determine the hazards present and the implications for firefighting and rescue operations on the incident ground	• Building methods to include: ♦ Framed and unframed buildings ♦ Steel and concrete frame ♦ Concrete construction methods ♦ Composite and Modular construction ♦ Portal frame and Glulam construction ♦ Claddings and fixing methods ♦ Staircases ♦ Roofs, ceilings, and roof lights ♦ Flooring and fixing methods ♦ Doors and windows ♦ Non load bearing walls and partitions • Elements of structure include: ♦ Columns and Beams ♦ Load bearing and compartment walls ♦ Floors and frames ♦ Enclosed protected shafts and staircases
5.2 Assess the implications of	• Heating and air conditioning systems

building facilities in relation to fire spread and firefighting/rescue operations	• Ventilation and smoke handling systems • Stairwell and pressurisation systems • Lifts and escalators • Service utilities such as electricity, gas, oil, and water • Photovoltaic panels
5.3 Assess the design features of fixed installations and how they may be utilised to progress firefighting operations and assist in business continuity	• Sprinkler, drencher, and water spray projection systems • Rising mains, falling mains • Foam and flooding systems including gas/vapour and dry powder systems • Automatic fire detection and alarm systems • Communication and security systems

6. Incidents Involving Transportation

Assessment Criteria	Knowledge and Understanding
6.1 Explain the principles of construction of ships/boats and assess the hazards and actions that should be considered when working with ships/boats and marine infrastructure	• Design and construction of ships including: ♦ General cargo ♦ Container ♦ Chemical and gas carriers ♦ Bulk carriers ♦ Passenger vessels including Liners ♦ Warships • Hazards and risks when working: ♦ Alongside waterways, docks, harbour, and marina infrastructure. ♦ On or within ships and boats • Measures incorporated into ships to assist firefighting and provide fire protection • Concept of buoyancy and procedures for ensuring stability during firefighting operations • Factors relevant to ship firefighting both in ports and at sea
6.2 Explain the principles of construction in relation to railway systems and assess the hazards and actions that should be considered when working with railways and rail infrastructure	• General features of railway networks and infrastructure • Types, design, and construction of trains and rolling stock • Hazards and risks when working: ♦ Alongside railway lines, sidings and at other rail premises. ♦ On or within trains and rolling stock • Rail and train power systems • Identification of freight including signage of goods and information retrieval systems • Firefighting and emergency procedures for railway incidents
6.3 Explain the principles of construction in relation to all types of vehicles and assess the	• Vehicle design, to include: ♦ Motor cars ♦ Light and heavy goods vehicle

hazards and actions that should be considered when working with vehicles and on roadways	♦ Buses and coaches ♦ Unconventional and specialist vehicles • Hazards and risks when working: ♦ On roadways and motorways ♦ With vehicles including cars, electrical and hybrid vehicles, large goods vehicles (LGV), and specialist vehicles • General features of road networks • Identification of freight including signage of goods and information retrieval systems • Fuel systems • Materials involved in vehicle construction • Supplementary restraint systems • Firefighting and emergency procedures for incidents on roadways
6.4 Explain the principles of construction of aircraft and assess the hazards and actions that should be considered when working with aircraft and at aerodromes	• Design of aircraft to include: ♦ Civil and military aircraft ♦ Passenger and freight aircraft ♦ Both fixed wing and rotary wing aircraft • Hazards and risks when working: ♦ At aircraft crash sites both on and off an aerodrome ♦ With civil and military aircraft, including fixed wing and rotary wing aircraft • Firefighting and emergency procedures for incidents involving aircraft and/or airports