IFE Level 3 Certificate in Fire Service Operations and Incident Command

Qualification Specification

Qualification Number: 603/6610/2

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 their 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.

Contact Details
Email: exams@ife.org.uk

IFE House, 64-66 Cygnet Court, Timothy's Bridge Road, Stratford-upon-Avon, CV37 9NW
Tel: +44 (0)1789 261463 Option 2

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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 assessment focuses on the knowledge and understanding required to resolve diverse fire and rescue incidents. It covers incident command as well as fire and rescue operations and techniques. Candidates will be required to apply their 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 6: Fire Services Operations and Incident Command within the Level 3 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 3 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 roles. It is particularly suited for those who either hold or are preparing for Initial Incident Command roles. It is also relevant for those working in control rooms.

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

- assess fire and rescue incidents and identify appropriate actions to resolve the incident safely and with regard to environmental issues
- understand how to supervise activities at incidents including the management of sectors
- assess the scale of an evolving incident and know when and how to escalate/hand over to appropriate colleagues
- assess the requirements of diverse incidents involving fire and/or rescue in a wide range of contexts including incidents involving buildings, transport or open air
- explain the operation of firefighting equipment, knowing when to use equipment and how to manage risks associated with the use of different equipment
- evaluate risk and identify appropriate action in order to preserve the safety of emergency services personnel and members of the public

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

Completion of **three Level 3 Certificates** will meet the academic requirement and minimum credit criteria necessary for **Graduate (GIFireE) Grade** membership.

To achieve the full **Level 3 Diploma**, candidates must complete this qualification **in addition to** the following:

- The mandatory Level 3 Certificate in Fire Engineering Science
- The mandatory Level 3 Certificate in Fire Safety
- One additional IFE Level 3 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 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 3. Other types of qualifications that are set at Level 3 include GCE A/As levels, Level 3 NVQs and Level 3 Diplomas such as the IFE Level 3 Diploma in Fire Science and Fire Safety.

The qualifications regulator for England, Ofqual, has provided the following descriptors to illustrate the knowledge and understanding expected from those who hold qualifications at Level 3.

Level 3 Knowledge Descriptor
The candidate:

- has factual, procedural, and theoretical knowledge and understanding of a subject or field of work to complete tasks and address problems that, while well-defined, may be complex and non-routine.
- can interpret and evaluate relevant information and ideas.
- is aware of the nature of the area of study or work.
- is aware 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 below) and may include relevant 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 provided below.

Progression
Candidates who are successful in achieving this qualification may consider progression to Level 4. A Level 4 qualification in Aviation Fire Operations is available from the IFE.

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. Relevant literature relevant to fire and rescue service operations outside of the UK may also be included.

Candidates are 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.
- Fire and Rescue Manual Volume 2 Fire Service Operations Incident Command
- Principles for joint working
- The Joint Decision Model (JDM)
- Initial Operational Response (IOR) to Incidents Suspected to Involve Hazardous Substances or CBRN Materials
- Dealing With Persons In Crisis
- Fire and Rescue Service Operational Guidance 3.7, Fighting fires in refuse
- IFE Fire Service Operations and Incident Command Resources
- Euro Firefighter 2008 (Dr Paul Grimwood) EURO FIREFIGHTER 2008.pdf
- Euro Firefighter 2 (Dr Paul Grimwood 2017) EUROFIREFIGHTER 2.pdf
- Environmental Protection Handbook for the Fire and Rescue Service
- NFCC Code of Practice for the Provision of Premises Information Boxes in Residential Buildings
- FRS Operational Guidance Generic Risk Assessment 2.1 Rescues from confined spaces GRA 2.1
- FRS Operational Guidance Generic Risk Assessment 4.3 Incidents involving transport systems – Air GRA 4.3
- FRS Operational Guidance Generic Risk Assessment 5.8 Flashover, Backdraught and fire gas ignitions GRA 5.8
- 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 for incidents and assess the issues within different contexts	• Incidents to include: ♦ All fire situations ♦ All rescue situations ♦ Major incidents and incidents involving civil disturbance ♦ Natural disasters (e.g., wildfires, flooding) ♦ Incidents involving hazardous materials • Information gathering on local risks • Building construction • The safety of all emergency responders, non-emergency personnel working alongside and members of the public, including bystanders • The mitigation of environmental impact • Calculations with regard to resources, equipment, and personnel • Liaison with other agencies, key site personnel, responsible persons, government representatives and other external partners/stakeholders • Conforming to legal requirements • Working to meet policy and organisational objectives

2. Incident Command and Management

Assessment Criteria	Knowledge and Understanding
2.1 Explain the key principles of the Incident Command System	• The three functional areas of the Incident Command System (ICS) • The three levels of management applied at operational incidents • The roles and responsibilities of other agencies within the ICS • JESIP and JESIP Principles • The common framework under which responders integrate at multi-agency incidents
2.2 Explain the roles and responsibilities of personnel within the incident command structure and explain the factors affecting structuring of incidents	• The role and responsibilities of the following: ♦ Operational Commander ♦ Tactical Commander (multi agency) ♦ Command Support Officer ♦ Command Support Team • The relationship between the different roles and the Incident Command system • Sectorisation • The progression of incident command from first pump attending to the arrival of a dedicated vehicle • Deployment of BA wearers • The responsibility for determining the cause of an incident

	• The range and the types of evidence available at an operational incident
2.3 Explain the requirements for the successful management of risk at operational incidents	• Definition of a hazard, risk, and control measure • The categories of risk assessment • The risk philosophy applied to the management of operational incidents • The Dynamic Risk Assessment • The hierarchy of control measures in relation to managing risks • Firefighter safety maxim • Hierarchy of pollution control • ERA or ARA
2.4 Explain the factors and processes that affect effective decision making at operational incidents	• Situational awareness • Decision control process (DCP) • Principles for joint working (JESIP) • Barriers to effective decision making • Decision making at multi-agency incidents - JESIP Joint Decision Model (JDM)
2.5 Describe the tactical mode options available at incidents and explain how they are implemented	• Modes: offensive mode, defensive mode, no overall mode • Factors determining mode and changes in mode
2.6 Explain the need for effective lines and methods of communication at incidents	• The lines of communication available at incidents in relation to an Incident Commander's span of control • The impact of poor or inappropriate communication • The methods of briefing of crews at operational incidents • IIMARCH briefing tool • Sectorisation utilised at operational incidents • Barriers to effective communication
2.7 Explain the principles for general control and tactics for resolving emergency incidents and explain when and how these principles should be applied to different contexts	• Need for, and management of, evacuation at fires • Strategy and tactics involved in rescue work • Objectives of ventilation at fires • Tactical ventilation procedures and control measures • Procedures for ensuring the safety of both personnel and public • Use of cordons at incidents • How to identify signs and symptoms of stress in relation to trauma and/or work-based activity and strategies to manage stress • Actions to reduce the exposure to and impact on operational personnel and casualties
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 & Rescue Procedures – Operations and Tactics

Assessment Criteria	Knowledge and Understanding
3.1 Explain the process and principles of fire development in relation to the procedures for extinguishing fires in different contexts.	• The identification of different types of burning material and the effects on building construction • Ways in which fires can spread detected and undetected both internally and externally • Flammable range • Properties of common fire gases • Principles and application of ventilation – natural, mechanical and technical • Flashover, backdraught and fire gas ignitions
3.2 Assess the operational response and tactics along with both general and specialist techniques that may be required for dealing with fires that occur in different contexts. *(Note: further amplification of the range of situations is provided in sections 5 and 6 below.)*	• Fires in the built environment including fires in: ♦ Buildings under construction and demolition or derelict ♦ Residential buildings ♦ High rise properties or buildings with atriums, basements, and 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, other sources of power ♦ Historical buildings and premises containing valuable artefacts including Heritage buildings, museums, galleries • Fires involving transportation by road, rail including trams, air including drones, and waterways, to include: ♦ Modes of transportation: road vehicles, rolling stock (rail), aircraft, vessels ♦ Infrastructure: roads, terminals, stations, tunnels, docks, marinas • Wildfires: rural areas, forests, heath land, wildland, crops, bush • Fires involving farms, farm buildings, agricultural processes, farm equipment

3.3 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 and restoration of normality • Environmental, community and business impacts of control burn strategies
3.4 Assess the operational response and tactics along with the specialist techniques and methodologies involved when carrying out rescue operations *(Note: further amplification of the range of situations is provided in sections 5 and 6 below.)*	• Rescues from the built environment, to include: ♦ Entry into, and searching of, buildings and collapsed structures ♦ Release of trapped persons from machinery, lifts, escalators • Rescues from sub-surface and confined spaces, to include: ♦ 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, and 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
3.5 Explain the risks associated with different hazardous materials and explain the safe systems of work required to protect people, property and the environment when responding to operational incidents in different contexts.	• The nature of specific hazardous substances and the risks posed to operational personal and the public • Factors to take into account when undertaking incidents involving specific hazardous substances and the implications for establishing safe systems of work • Hazardous material release by defect, natural occurrence or human act. • Storage of hazardous materials and implications for safety • Hazardous materials ♦ Explosive hazards ♦ Ammonium nitrate-based based fertiliser ♦ Gases under pressure ♦ Acetylene ♦ Liquefied petroleum gas (LPG) ♦ Natural Gas ♦ Carbon monoxide ♦ Hydrogen Cyanide ♦ Flammable hazards ♦ Flammable liquids

	♦ Flammable solids ♦ Oxidising hazards ♦ Biological or infectious agents/hazards ♦ Materials containing asbestos ♦ Corrosive hazards ♦ Radioactive materials
3.6 Explain the procedures and operational techniques to be followed when BA is in use	• Procedures/operational techniques prior to donning BA • Entry procedures • Search and rescue procedures • Procedures for working with other equipment • Procedures for different contexts • Procedures for emergencies

4. Post-Incident Actions

Assessment Criteria	**Knowledge and Understanding**
4.1 Explain how to close down the operational phase of an incident.	• Measures to hand over control of an incident to the appropriate person, agency or authority • Actions to identify and mitigate hazards and associated risks within operational restraints
4.2 Explain the principles, and the value of debriefs, and apply these principles to different contexts.	• How to contribute to a post-incident debrief appropriate to the type and scale of the incident • Types of debrief: hot, cold, critical incident • How to gather all relevant information from internal and external sources • How to engage crews in debriefing and to review crew welfare and learning issues • How to implement remedial measures to improve future practice and performance • Effects of critical incidents on the personal resilience of attending personnel and taking steps to manage staff welfare
4.3 Determine the requirements for scene preservation when required for further investigations	• Types of investigation: ♦ Fire Investigation ♦ Fire Safety Investigation ♦ Health and Safety Investigation ♦ Criminal Investigation ♦ Internal Investigation including lessons learned • How to identify, preserve, gather, and present potential evidence identified at the incident to support a subsequent investigation

5. Incidents Involving Buildings

Assessment Criteria	Knowledge and Understanding
5.1 Assess the hazards presented and the implications for firefighting and rescue operations on the incident ground due to building structure and the behaviour of different elements of structure.	• Building methods: ♦ Framed and unframed buildings ♦ Steel and concrete frame ♦ Concrete construction methods ♦ Composite and Modular construction ♦ Portal frame and Glulam construction ♦ Traditional heritage ♦ Modern methods of 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: ♦ Load bearing and compartment walls ♦ Columns and Beams ♦ Floors and frames ♦ Enclosed protected shafts and staircases
5.2 Assess the effects of building facilities in relation to fire spread and explain how fixed installations may be utilised to progress firefighting operations and assist with business continuity.	• Building facilities: ♦ Heating and Air Conditioning systems ♦ Ventilation and smoke handling systems ♦ Stairwell and pressurisation systems ♦ Lifts and Escalators ♦ Service utilities such as electricity, gas, oil, and water ♦ Photovoltaic panels • Fixed installation: ♦ Sprinkler, drencher, 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 hazards and actions that should be considered when working with ships/boats and marine infrastructure	• 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 hazards and actions that should be considered when working with railways and rail infrastructure	• Hazards and risks when working: ♦ Alongside railway lines, sidings, crossings and at other rail premises. ♦ On or within trains and rolling stock • Design features of railways and types of 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 hazards and actions that should be considered when working with vehicles and on roadways	• Hazards and risks when working: ♦ On roadways and motorways ♦ With vehicles including cars, electric and hybrid powered vehicles, large goods vehicles and specialist vehicles • General features of road networks • Identification of freight including signage of goods and information retrieval systems • Fuel systems • Man-made mineral fibres (MMMF) • Supplementary Restraint System (SRS). • Firefighting and emergency procedures for incidents on roadways
6.4 Explain the hazards and actions that should be considered when working with aircraft and at aerodromes	• 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

7. Fire and Rescue Equipment

Assessment Criteria	**Knowledge and Understanding**
7.1 Explain how and when to deploy appropriate firefighting equipment and other resources	• Select and use appropriate equipment, resources, and specialist skills to meet the needs of the incident
7.2 Assess the provision and operational use of water supplies for firefighting purposes and determine tactics to resolve issues	• Provision of supplies of water for firefighting purposes • Operational use of water from its supply for firefighting purposes
7.3 Assess the provision and operational use of various types of foam and foam making equipment and determine tactics to resolve issues	• Production and application of foam for firefighting purposes • Properties of the various foams and foam concentrates • Expansion rates of foam • Factors to be taken into account when using foam to extinguish a fire

7.4 Explain the use of ladders and the procedures for safe working at height	• General principles and precautions when working with all ladders and aerial ladder platforms
7.5 Explain the performance requirements and the procedures for using Breathing Apparatus (BA) and associated equipment	• Management, control, and safety procedures for using Breathing Apparatus • Associated equipment: ♦ Communication Equipment ♦ Personal Lines ♦ Guidelines ♦ Telemetry Equipment ♦ Resuscitation equipment
7.6 Explain the selection of detection, identification and monitoring equipment used in relation to radiation incidents	• Operating principles of Radiation measuring equipment, Personal Protective Equipment and Decontamination equipment • General maintenance and safety precautions applicable to all detection identification and monitoring equipment
7.7 Describe the performance requirements and use of thermal imaging cameras	• Use of drones in fire and rescue operations • Facilities provided by drones • Advantages and limitations of thermal imaging cameras