Department for Communities and Local Government

Fire and Rescue



# Operational Training Guidance - Breathing Apparatus

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# Foreword

Fire and rescue service personnel operate in dynamic and at times extremely hazardous environments e.g. incidents involving fire, chemicals, biological hazards, radiation and acts of terrorism. The wearing of breathing apparatus by personnel is one of the risk control measures likely to be employed within the overall operational plan for incidents of this type. Breathing apparatus enables the wearer to breathe safely in an otherwise irrespirable and/or toxic atmosphere.

The Fire and Rescue Operational Training Guidance – Breathing Apparatus - provides robust yet flexible guidance that supports the operational competency of personnel that are required to wear, manage or train others in the use of breathing apparatus in order to meet the requirements of a fire and rescue authority's Integrated Risk Management Plan. It aims therefore to provide a consistent approach throughout the fire and rescue service and forms the basis for common operational practices, supporting interoperability and resilience across fire and rescue services, other emergency services and where appropriate, industry.

The guidance has been prepared as a guide for fire authorities, chief fire officers, chief executives, and those persons within fire and rescue services with responsibility for firefighter safety. It is intended for use as a practical guide to the considerations they should make in meeting their duties and responsibilities. Accordingly, employee safety representatives should also find it helpful.

Whilst addressing the legislative requirements placed on duty holders, the main focus of this guidance is the health and safety at work of all fire and rescue service personnel required to use breathing apparatus. This guidance sets a benchmark in the form of good practice against which fire and rescue authorities can measure their existing management systems and arrangements.

The Health and Safety Executive, Trade Union Safety Representatives and others, such as independent auditors and operational assessment peer review teams, may also reference the guidance when auditing fire and rescue authorities arrangements for managing the health, safety and welfare of operational personnel.

This guidance has been developed with the support and input of the:

- Chief Fire and Rescue Adviser
- Health and Safety Executive
- The Fire Brigades Union and other representative bodies
- Chief Fire Officers' Association
- Devolved administrations
- Fire Service College

This guidance is issued by the Chief Fire and Rescue Adviser. Following this guidance is not compulsory and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law and service agreements. It has not been given the official status of an approved code of practice but it does set out guidance to fire and rescue services to assist them in applying health and safety legislation to the operational environment.

The Chief Fire and Rescue Adviser is grateful for the assistance in the development in this guidance from a wide range of external partners.

The drive toward common principles, practices and procedures supports the development of safe systems of work on the incident ground and enhances intra and inter operability and national resilience.

# Preface

Fire and Rescue Service Operational Training Guidance issued by the Department of Communities and Local Government promotes and develops good practice within the fire and rescue service and is offered as a current industry standard. It is envisaged that this will help establish high standards of efficiency and safety in the interests of employers, employees and the general public.

It is recommended that each service utilises this guidance and the Fire and Rescue Service Health, Safety and Welfare Framework to assure the breathing apparatus training and competence of their operational personnel.

It is a matter for each individual fire and rescue service whether to adopt and follow this Operational Training Guidance. The onus of responsibility for application of guidance lies with the user. Department of Communities and Local Government accept no legal liability or responsibility whatsoever, howsoever arising, for the consequences of the use or misuse of the guidance

# Section 3

## Introduction

## Purpose

This operational training guidance has been developed using the fire and rescue service Health, Safety and Welfare Framework and the principles of the Health & Safety Guidance 65 (HSG 65) Successful Health and Safety Management. It provides a framework for how a service can discharge its duty of care for the training and the assurance of competence for operational personnel who undertake one of the following roles:

- Breathing apparatus wearers
- Incident commanders / incident monitoring officers
- Breathing apparatus trainers / instructors

This guidance replaces a number of historic breathing apparatus operational training guidance (appendix 1) in the form of Fire Service Circulars and Dear Chief Officer Letters.

## Scope

This guidance presents a framework for the acquisition and maintenance of competence for breathing apparatus wearers, personnel responsible for the command and control of breathing apparatus at operational incidents and the personnel that develop and train others to be able to undertake these roles competently.

It aims therefore to provide a consistent approach across fire and rescue services and forms the basis for common operational practices, supporting interoperability across fire and rescue services, other emergency services and where appropriate, industry and other groups.

The drive toward common principles, practices and procedures supports the development of safe systems of work on the incident ground and enhances national resilience.

## Structure

This guidance provides services with a clear framework for each of the three breathing apparatus roles identified on page 8 and should be utilised to ensure operational personnel acquire and maintain the required level of competence for their role.

# Section 4

## Legal framework

# Introduction

Fire and rescue authorities need to be aware of the following legislation. It is relevant to the training and competence of operational personnel who either use or manage/monitor the use of breathing apparatus at operational incidents.

This section does not contain detailed legal advice about the legislation; it is just a summary of the relevant legislation, as applied to fire and rescue authorities, firefighters and breathing apparatus as an item of respiratory protective equipment. Fire and rescue authorities, may wish to seek further legal advice to confirm their compliance with this framework.

When considering this framework it is essential to recognise that any definitive interpretation of the legal roles and responsibilities imposed by legislation can only be given by a court of law.

## General Fire and Rescue Services legislation

**Fire and Rescue Services Act 2004**: this is the main Act which affects fire and rescue authorities. Amongst other things, fire and rescue authorities must (in section 7) secure the provision of the personnel, services and equipment (including breathing apparatus) that are necessary to meet all normal requirements and also to secure the provision of training for such personnel.

**Fire and Rescue Services (Emergencies) (England) Order 2007**: The Order obliges fire and rescue authorities to make provision for decontaminating people following the release of chemical, biological, radiological, nuclear (CBRN) contaminants (article 2) and also to make provision for freeing people from collapsed structures and non-road transport wreckages (regulation 3). The Order also obliges fire and rescue authorities to use their specialist chemical, biological, radiological, nuclear or urban search and rescue resources (which may include specialist breathing apparatus) outside their own areas to an extent reasonable for dealing with a chemical, biological, radiological, nuclear or urban search and rescue emergency (regulation 5).

**Civil Contingencies Act 2004:** Section 2(1) states, among other things, that fire and rescue authorities shall maintain plans for the purpose of ensuring that if an emergency

occurs or is likely to occur the fire and rescue authority is able to perform its functions so far as necessary or desirable for the purpose of preventing the emergency, reducing controlling or mitigating its effects or taking other action in connection with it.

**The Civil Contingencies Act 2004 (Contingency Planning) Regulations 2005**: fire and rescue authorities must cooperate with each other in connection with the performance of their duties under Section 2(1) of the Civil Contingencies Act 2004. In addition, the Regulations state that fire and rescue authorities may facilitate cooperation by entering into protocols with each other (regulation 7), that fire and rescue authorities may perform duties under section 2(1) jointly with one another and make arrangements with one another for the performance of that duty (regulation 8). Such arrangements can include the inter-operability of breathing apparatus equipment.

## Health and safety legislation

- **Health and Safety at Work etc Act 1974**
- **Safety representatives and safety committee regulations 1977**
- **Management of Health and Safety at Work Regulations 1999**
- **Provision and Use of Work Equipment Regulations 1998**
- **Personal Protective Equipment at Work Regulations 1992**

## Specific legislation regarding Respiratory Protective Equipment

- **Confined Spaces Regulations 1997**
- **Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995**
- **Control of substances hazardous to health 2002**
- **Control Of Asbestos Regulations 2012**
- **Control Of Lead Regulations 2002**
- **Ionising Radiations Regulations1999**

- **Dangerous Substances and Explosive Atmospheres Regulations 2002**

## Other guidance

- **Fire and rescue service Health, Safety and Welfare Framework**
- **National Generic Risk Assessments**
- **Integrated Personal Development System - Code of Practice February 2008**
- **Guidance and Compliance Framework for Compartment Fire Behaviour Training Fire Service Manual - Volume 4: Fire Service Training**
- **Guidance on the Management of the Risk of Heat Stress During Training Fire Service Manual – Volume 4: Fire Service Training**
- **5/2003: Physical Capabilities of Instructors at the End of Hot Fire Training**
- **FIRE SERVICE CIRCULAR 55 / 2004 - The Building Disaster Assessment Group – Key Research Findings**
- **Health & Safety Guidance 53 - Respiratory Protective Equipment at Work**
- **Health & Safety Guidance 65 - Successful Health and Safety Management**
- **Health & Safety Guidance 48 - Reducing error and influencing behaviour**

The Fire Service College maintain a bibliography of technical guidance to which Fire and Rescue Services can refer (Fire Service Manuals, Fire Service Circulars, Dear Chief Officer letters, technical bulletins, British and European Standards, Approved Codes of Practice, Health and Safety Executive guidance). In addition, technical guidance is available on the Department for Communities and Local Government website.

# Section 5

## Strategic role of operational guidance

# Strategic perspective

Fire and rescue authorities and strategic managers within fire and rescue services are responsible for ensuring their personnel are suitably trained and competent to undertake the roles identified within this guidance. Their legal duties and responsibilities are contained in Section 4 of this guidance.

**A service can achieve this by ensuring they have the following:**

- A breathing apparatus training policy (to meet the needs of their Integrated Risk Management Plan) that is clearly endorsed by strategic management that states the fire and rescue authority will ensure they have suitable and sufficient arrangements in place to provide both the training and the assurance of competence for those personnel undertaking the roles identified on page 8.
- A clearly identified management structure, together with the roles and responsibilities, of staff responsible for delivering the policy.
- Established minimum breathing apparatus training standards, the frequency of breathing apparatus training activity and assessment for the three breathing apparatus related roles identified in this guidance.
- Identify that breathing apparatus training, maintenance and assessment for the three identified roles will be undertaken based upon training needs analysis at a Service and an individual level.
- Clearly define how the fire and rescue service will measure the effectiveness of the breathing apparatus training policy and identify how and when the fire and rescue service will audit and review the breathing apparatus training policy, to ensure that it is current and enables continuous improvement based on local, regional and national developments.

**This will ensure the fire and rescue service has:**

- Established a systematic approach to breathing apparatus training encompassing the fire and rescue service Health, Safety and Welfare Framework.

## Values

The fire and rescue service expresses its values and vision of leadership in the form of a simple model. The model has been named Aspire and is fully described in the fire and rescue manual (Volume 2 Operations) – Incident Command. It has at its heart, the core values of the service; which are:

- diversity
- our people
- improvement
- service to the community.

These values are intrinsic to everything Fire and Rescue Services strive to achieve at an operational incident, where they routinely serve all communities equally and professionally, with the safety and well being of their crews at the forefront of their procedures and reflecting on how well they performed in order to be better next time. It is important that core values are recognised and promoted by all strategic managers and fire and rescue authority members.

This guidance has been drafted to ensure that equality and diversity issues are considered and developed and has undergone full equality impact assessment

## Operational guidance review protocols

This operational training guidance will be reviewed for its currency and accuracy three years from date of publication. The Operational Guidance Programme Board will be responsible for commissioning the review and any decision for revision or amendment.

The Operational Guidance Programme Board may decide that a full or partial review is required within this period.

# Section 6

## Breathing apparatus Role Related Training

# Breathing apparatus role related training

## Operational breathing apparatus related roles

To enable a fire and rescue service to effectively select and develop its personnel, in order to deliver the outcomes of its Integrated Risk Management Plan, it needs to identify what roles are required and who, within the fire and rescue service, will undertake those roles. With regards to the use of breathing apparatus as part of a fire and rescue authority's operational response commitment within its Integrated Risk Management Plan this guidance identifies three clearly defined roles:

- **Breathing apparatus wearer**

  Operational personnel that wear breathing apparatus and undertake the role of a breathing apparatus entry control operative as part of their operational role.

- **Incident commander / incident monitoring officer**

  Personnel that manage or monitor the use of breathing apparatus as part of their operational role; to include taking command of a breathing apparatus sector at a large or complex incident.

- **Breathing apparatus Trainer / instructor**

  Personnel that train, develop and assess the competence of personnel undertaking the roles above.



## Acquisition of breathing apparatus role related competence

It is recommended that the learning outcomes provided within this guidance are used by fire and rescue services to train and develop their personnel identified to undertake the three roles described within this guidance. This will promote a common approach to breathing apparatus training and support intra and inter operability and national resilience.

The use of compartment fire behaviour training can form part of an initial breathing apparatus development programme.

Due to the safety critical nature of breathing apparatus it is recommended that the delivery of initial breathing apparatus role related training be undertaken by competent breathing apparatus trainers/instructors.

## Maintenance of breathing apparatus role related competence

It is accepted that over a period of non-use knowledge and skills will decay affecting competence; this process is known as skills decay. Each fire and rescue service should have an established maintenance of competence system that clearly identifies when and how an area of competence is to be maintained. This maintenance of competence can be achieved through the use of both on and off station (local area/central training venue) continuation training. The training frequency identified by a fire and rescue service to maintain competence should take account of each individual's ability to acquire and maintain skills and the fire and rescue authority's risk profile to ensure their Integrated Risk Management Plans are effectively delivered.

This is done in order to minimise skills decay and ensure personnel are competent to undertake their role safely and effectively. The frequency of training, type of training and quality of training will directly impact upon the maintenance of breathing apparatus competence and firefighter safety. The learning outcomes identified within this guidance should be utilised by fire and rescue services to maintain the competence of their operational personnel.

Personnel delivering breathing apparatus training at station level may not be required to acquire and maintain all the learning outcomes identified for a breathing apparatus trainer/instructor. The decision regarding which of the breathing apparatus instructor learning outcomes are selected depends upon the fire and rescue services maintenance of breathing apparatus competence strategy and what breathing apparatus training will be delivered at station level. Some services discharge this through the use of watch/station based trainers/instructors, others through district/division breathing apparatus trainers/instructors that visit stations to deliver training.

## Active monitoring of breathing apparatus role related competence through assessment

The wearing of breathing apparatus is a safety critical control measure in hazardous operations and whilst wearing breathing apparatus or managing the use of breathing

apparatus at operational incidents assists in maintaining competence, it generally does not provide sufficient evidence to demonstrate continuing competence. Therefore, all operational personnel required to undertake the roles identified within this guidance need to be able to demonstrate competence against the respective learning outcomes.

To address this each fire and rescue service should have a system for actively monitoring breathing apparatus role related competence through assessment. This system should provide the fire and rescue service with assurance about the competence of its operational personnel so as to assure their health, safety and welfare and ensure their Integrated Risk Management Plans are effectively delivered.

The competence of personnel who undertake any of the breathing apparatus roles identified in this guidance should be assessed at least once within a two year period practically applying their knowledge and skills in realistic conditions. For example, personnel who undertake the operational breathing apparatus wearer role should do so in an environment that exposes them to heat and smoke.

## Reducing the risk to personnel engaged in breathing apparatus training

In 2003 the Fire Research and Development Group conducted research into the physiological capabilities of breathing apparatus trainers/instructors when operating in hot conditions **(5/2003: Physical Capabilities of Instructors at the End of Hot Fire Training)**. The research focused upon the capability of a range of breathing apparatus trainers/instructors to take part in a hot and humid training session and to subsequently be required to perform a rescue of a trainee. Though all of the breathing apparatus trainers/instructors were able to complete the rescue, the research identified that they were placed under significant physiological stresses whilst doing so. As a result the Fire Research and Development Group identified the importance of ensuring breathing apparatus trainers exposed to hot and humid conditions maintained a level of physical fitness commensurate with the role.

The **Guidance and Compliance Framework for Compartment Fire Behaviour Training** document recommends the following:

“ Brigades undertaking compliance framework for compartment fire behaviour training should satisfy themselves, in conjunction with their Occupational Health Advisor, that their recording and monitoring systems are effective and that medical assessment

arrangements are available for pre and post exposure for all personnel involved in compliance framework for compartment fire behaviour training".

Each fire and rescue service should identify how they will monitor, manage and reduce the risk to personnel engaged in breathing apparatus training in realistic conditions, as per the **Guidance on the Management of the Risk of Heat Stress during Training.**

Due to the potential for breathing apparatus instructors to be regularly exposed to breathing apparatus training in realistic conditions, fire and rescue authorities must consider more frequent health screening / monitoring as part of their occupational health and welfare arrangements.

# Appendices

## 1. Record of obsolete or superseded previous breathing apparatus operational training guidance

**National Guidance relating to breathing apparatus training deemed obsolete, due to their being earlier repealed or superseded, or now deemed not operationally or technically relevant, and hereby withdrawn:**

- Fire Service Circular 11/83 Exposure to firemen to smoke during training
- Dear Colleague Letter 3/84 Exposure of firemen to smoke during training (item C)
- Dear Colleague Letter 3/84 Training in the use of high expansion foam (item D)

**National Guidance relating to breathing apparatus training deemed obsolete and withdrawn, by virtue of being subsumed into or superseded by this guidance:**

- Fire Service Circular 17/1970 breathing apparatus training; Breathing Apparatus training of wholetime men
- Fire Service Circular 2/1971 breathing apparatus training; Breathing Apparatus training of part time (retained) men
- Fire Service Circular 22/1974 Training of firemen in breathing apparatus
- Dear Colleague Letter 87/1976 Fire Service Technical College Brigade Instructor's Courses 1977/78
- Dear Colleague Letter 14/1980 Training of firemen in breathing apparatus
- Fire Service Circular 8/1981 Training of firemen in breathing apparatus
- Fire Service Circular 11/1981 Analysis of Fire Service training – objectives for the breathing apparatus instructor's course
- Fire Service Circular 18/2009 Firefighter safety at operational incidents (Section 2 – 2.6 – 2.9 & Section 3 3.1 – 3.2)
- Fire Service Circular 9/89 breathing apparatus & fire training premises
- Fire Service Circular 3/95 Use of breathing apparatus in confined spaces

- Dear Colleague Letter 3/95 The use of breathing apparatus in confined spaces (item B)

## 2. Breathing apparatus role related learning outcomes and assessment criteria

This section details the learning outcomes and assessment criteria for the following three roles:

- **Breathing apparatus wearer**
- **Incident commander / incident monitoring officer**
- **Breathing apparatus trainer / instructor**

# Operational Breathing Apparatus Wearer

## Use breathing apparatus for respiratory protection in risk areas

| **Learning Outcome**<br><br>The individual will: | **Assessment Criteria**<br><br>The individual can: |
|---|---|
| 1.<br>Understand the anatomy and physiology of respiration | 1.1 Explain the breathing process<br><br>1.2 Describe the composition of inspired and expired air<br><br>1.3 Explain the effects of exertion in relation to consumption of air and the use of breathing apparatus |
| 2.<br>Understand the breathing apparatus set | 2.1 Explain how the breathing apparatus set manages inspired and expired air<br><br>2.2 Explain:<br><br>1. the capabilities and limitations of the breathing apparatus set<br>2. ancillary equipment<br>3. communications equipment<br>4. breathing apparatus entry control recording equipment<br><br>2.3 Calculate:<br><br>1. cylinder capacity<br>2. full duration<br>3. working duration<br>4. safety margin<br>5. turnaround points |
| 3.<br>Understand how to use a breathing apparatus set | 3.1 Explain:<br><br>1. the psychological effects of working in breathing apparatus and their impact on air consumption<br>2. how psychological effects may be controlled and managed<br><br>3.2 Explain what testing and checks apply to the breathing apparatus set and its ancillary equipment<br><br>3.3 State the responsibilities of a breathing apparatus wearer<br><br>3.4 Explain how risk is managed through the systems of breathing apparatus control |

| | |
|---|---|
| 4.<br>Be able to look after a breathing apparatus set and ancillary equipment | 4.1 Use the correct procedures to move the breathing apparatus set and its ancillary equipment<br><br>4.2 Follow the correct procedures to store the breathing apparatus set and its ancillary equipment<br><br>4.3 Test and check the breathing apparatus set and the ancillary equipment<br><br>4.4 Record and report breathing apparatus set and ancillary equipment defects, faults and deficiencies |
| 5.<br>Be able to commence use of a breathing apparatus set for respiratory protection | 5.1 Follow the correct procedures to:<br><br>1. don a breathing apparatus set<br>2. start up a breathing apparatus set |
| 6.<br>Be able to work in risk areas when wearing breathing apparatus | 6.1 Check in through the breathing apparatus entry control as designated by incident commander<br><br>6.2 Enter into the risk area as a team member<br><br>6.3 Use techniques to move within the risk area with the team<br><br>6.4 Communicate progress/liaise with the team, other teams and breathing apparatus entry control<br><br>6.5 Use the pressure gauge to determine when to withdraw from the risk area and return to breathing apparatus control before time of whistle with the team<br><br>6.6 Exit the risk area and checkout through the breathing apparatus entry control with the team<br><br>6.7 Provide feedback to the breathing apparatus entry control operative and relevant incident commander |
| 7.<br>Be able to complete the use of a breathing apparatus set | 7.1 Follow the correct procedures to remove the breathing apparatus set<br><br>7.2 Confirm that the breathing apparatus is available for future use |

# Operational Breathing Apparatus Wearer

## Use breathing apparatus for compartment fire behaviour and firefighting response

| Learning Outcome<br><br>The individual will: | Assessment Criteria<br><br>The individual can: |
|---|---|
| 1.<br>Understand the chemistry of combustion | 1.1 Explain the chemistry of combustion<br><br>1.2 Explain different types of combustion<br><br>1.3 Explain the processes and products of combustion |
| 2.<br>Understand compartment fire behaviour | 2.1 Explain the principles of compartment fire behaviour<br><br>2.2 Explain the key stages and processes in the development of a compartment fire<br><br>2.3 Explain the factors which affect the development and spread of a compartment fire |
| 3.<br>Understand the hazards and risks associated with compartment fire | 3.1 Explain the hazards and risks of the combustion process<br><br>3.2 Explain the hazards and risks in relation to the products of combustion<br><br>3.3 Explain the signs and symptoms of, and hazards and risks associated with flashover and backdraughts |
| 4.<br>Understand how to extinguish compartment fires | 4.1 Explain the theory and methods of extinguishing compartment fires |
| 5.<br>Be able to enter a compartment to extinguish a fire as a member of a breathing apparatus team | 5.1 Check in through the breathing apparatus entry control point with own equipment and crew<br><br>5.2 Demonstrate how to apply the appropriate cooling techniques in compartments adjacent to the fire compartment<br><br>5.3 Demonstrate how to apply the appropriate techniques to prevent further pyrolosis<br><br>5.4 Demonstrate how to enter into a fire compartment, and use the appropriate extinguishing techniques within the fire compartment<br><br>5.5 Monitor own breathing apparatus pressure gauge to determine own withdrawal time |

| | |
|---|---|
| | 5.6 Update the relevant persons of progress throughout<br><br>5.7 Check out through the breathing apparatus entry control point with own equipment and crew |

# Operational Breathing Apparatus Wearer

## Use breathing apparatus during structural firefighting and rescue operations

| Learning Outcome<br><br>The individual will: | Assessment Criteria<br><br>The individual can: |
|---|---|
| 1.<br>Understand how to use breathing apparatus during structural fires | 1.1 Explain the capabilities and limitations of the following when used in conjunction with breathing apparatus:<br><br>1. personal protective equipment<br>2. rescue equipment<br>3. communications equipment<br>4. breathing apparatus ancillary equipment<br>5. navigational techniques and equipment<br><br>1.2 State the responsibilities of a breathing apparatus team leader<br><br>1.3 Explain the actions to be followed in the event of a team member having a 'Distress to wearer' event<br><br>1.4 Explain the methods that a fire-fighter and the team can apply to return along a path of entry |
| 2.<br>Understand the risks and hazards associated with structural fires | 2.1 Explain the hazards and risks associated with extinguishing fires and rescuing casualties within burning buildings<br><br>2.2 Explain the actions to take to deal with the hazards and risks associated with entering a burning building to extinguish a fire and rescue casualties |
| 3.<br>Understand how to extinguish structural fires | 3.1 Explain the application of extinguishing media for dealing with structural fires |

| | |
|---|---|
| 4.<br>Be able to navigate when wearing breathing apparatus in a limited visibility environment | 4.1 Check in through the breathing apparatus entry control<br><br>4.2 Move with purpose using assessment of risk and as a member of a team<br><br>4.3 Use approved methods to search for fire and casualties and communicate findings to own team leader<br><br>4.4 Use navigational techniques and equipment to meet a specific casualty search objective and return to breathing apparatus entry control<br><br>4.5 Use pressure reading to determine when to withdraw from the risk area and return to breathing apparatus control before the time of whistle<br><br>4.6 Checkout through the breathing apparatus control<br><br>4.7 Provide feedback to the breathing apparatus entry control operative |
| 5.<br>Be able to lead a team when wearing breathing apparatus in a limited visibility environment | 5.1 Check in through the breathing apparatus entry control<br><br>5.2 Lead the team to move a hose and branch to extinguish a fire, rescue casualties and return to breathing apparatus control<br><br>5.3 Use communications equipment to communicate with relevant people throughout the operation<br><br>5.4 Lead the team in order to withdraw from the risk area and return to breathing apparatus entry control<br><br>5.5 Checkout through the breathing apparatus control<br><br>5.6 Provide feedback to the breathing apparatus entry control operative |
| 6.<br>Be able to deal with emergencies when wearing breathing apparatus in a limited visibility environment | 6.1 Follow the correct procedures in the event of becoming entrapped<br><br>6.2 Prepare as a member of an emergency crew<br><br>6.3 When committed, rescue a colleague whilst wearing breathing apparatus |

# Operational Breathing Apparatus Wearer

## Carry out the duties of a breathing apparatus entry control operative

| Learning Outcome<br><br>The individual will: | Assessment Criteria<br><br>The individual can: |
|---|---|
| 1.<br>Understand the breathing apparatus control systems and their application | 1.1 Explain the capabilities and limitations of breathing apparatus entry control procedures<br><br>1.2 Explain what testing and checks apply to breathing apparatus control boards<br><br>1.3 Explain the responsibilities of a breathing apparatus entry control operative |
| 2.<br>Be able to operate a breathing apparatus control | 2.1 Establish a breathing apparatus entry control point<br><br>2.2 Check in breathing apparatus wearers through a breathing apparatus entry control point<br><br>2.3 Checkout breathing apparatus wearers through a breathing apparatus entry control point<br><br>2.4 Monitor feedback from breathing apparatus teams<br><br>2.5 Record feedback from breathing apparatus teams<br><br>2.6 Provide the relevant incident/ sector commander with up-to-date information<br><br>2.7 Implement emergency procedures when necessary<br><br>2.8 Support breathing apparatus sector operations<br><br>2.9 Carry out the additional duties appropriate to each level of breathing apparatus entry control such as:<br><br>1. guidelines and branchlines<br>2. communications equipment<br>3. synchronisation of clocks<br>4. telemetry<br>5. radiation monitoring equipment |

# Operational Breathing Apparatus Wearer

## Using positive pressure ventilation (PPV) during a fire and rescue response

| Learning Outcome<br><br>The individual will: | Assessment Criteria<br><br>The individual can: |
|---|---|
| 1.<br>Understand the practicalities of positive pressure ventilation in relation to fire and rescue incidents | 1.1 Evaluate the advantages and disadvantages of positive pressure ventilation equipment<br><br>1.2 Explain the practices that should be applied when using positive pressure ventilation at various stages<br><br>1.3 Describe the procedures to be adopted on discovery of a backdraught compartment whilst positive pressure ventilation is in use<br><br>1.4 Explain the factors to consider when siting positive pressure ventilation units<br><br>1.5 Explain the health and safety considerations in relation to using positive pressure ventilation<br><br>1.6 Explain the importance of effective communication between teams and outside operations when positive pressure ventilation is in use |
| 2.<br>Be able to use positive pressure techniques to support fire and rescue operations | 2.1 Apply required health and safety procedures in relation to use of positive pressure ventilation in fire and rescue incidents<br><br>2.2 Apply inlet/outlet and air flow management techniques to support fire and rescue operations<br><br>2.3 Apply entry and air control techniques into fire compartments to support fire and rescue operations<br><br>2.4 Apply sequential ventilation techniques in multi-compartment buildings<br><br>2.5 Apply ventilation to a sealed compartment following approved procedure<br><br>2.6 Apply the procedures to be adopted on discovery of a backdraught compartment whilst positive pressure ventilation is in use |

# Operational Breathing Apparatus Wearer

## Use breathing apparatus to deal with hazardous substances and rescue response

| Learning Outcome<br><br>The individual will: | Assessment Criteria<br><br>The individual can: |
|---|---|
| 1.<br>Understand the equipment used to deal with hazardous substances, incidents and the signage identifying such substances | 1.1 Explain the capabilities and limitations of the specialist equipment used for hazardous substance incidents<br><br>1.2 Explain the reasoning for shortened working durations for wearers of personal protection suits at hazardous substance incidents<br><br>1.3 Interpret hazardous substance signage and information |
| 2.<br>Be able to look after chemical incident equipment | 2.1 Follow the correct procedures to move the chemical incident equipment<br><br>2.2 Test and check the chemical incident equipment and chemical protection suits<br><br>2.3 Identify chemical incident equipment and chemical protection suit defects, faults and deficiencies<br><br>2.4 Record and report chemical incident equipment and chemical protection suit defects, faults and deficiencies |
| 3.<br>Be able to commence use of breathing apparatus and chemical protection equipment | 3.1 Follow the correct procedures to don and start up a breathing apparatus set and chemical protection suit |

| | |
|---|---|
| 4.<br>Be able to work in a hazardous chemical environment while wearing breathing apparatus and chemical protection suit | 4.1 Check in through the breathing apparatus entry control<br><br>4.2 Move with purpose using assessment of risk and as a member of a team<br><br>4.3 Communicate progress with the team and breathing apparatus control, whilst maintaining physical contact with own team throughout<br><br>4.4 Capture and communicate hazardous substance information to enable an incident response to be determined<br><br>4.5 Use the pressure gauge reading to determine when to withdraw from the risk area and return to the decontamination area with the team<br><br>4.6 Enter the decontamination area with the team and checkout through the breathing apparatus entry control<br><br>4.7 Provide feedback to the decontamination team and relevant incident commander<br><br>4.8 Implement emergency procedures when necessary<br><br>4.9 Clean/replenish equipment to ensure it is available for use |
| 5.<br>Be able to complete the use of breathing apparatus and chemical protection equipment | 5.1 Follow the correct procedures to remove breathing apparatus and chemical protection equipment<br><br>5.2 Ensure that the breathing apparatus and chemical protection equipment is available for future use. |
| 6.<br>Be able to decontaminate people and resources | 6.1 Set up a decontamination area as part of a team<br><br>6.2 Check in through the breathing apparatus entry control<br><br>6.3 Communicate the details of the decontamination process to those requiring decontamination<br><br>6.4 Decontaminate:<br><br>1. a contaminated person rescued from an incident;<br>2. an exiting chemical protection suited team;<br>3. contaminated resources<br><br>6.5 Augment the air supply for exiting team members who are low on air<br><br>6.6 Implement emergency procedures when necessary |

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| | 6.7 Close down a decontamination area with own team<br><br>6.8 Checkout through the breathing apparatus entry control<br><br>6.9 Clean/replenish equipment to ensure it is available for use |

# Incident commander / incident monitoring officer

## Command, control, monitor and support personnel at operational incidents where Breathing Apparatus is used

| Learning Outcome<br><br>The individual will: | Assessment Criteria<br><br>The individual can: |
|---|---|
| 1.<br>Understand the breathing apparatus set and its ancillary equipment | 1.1 Explain how the breathing apparatus set manages inspired and expired air<br><br>1.2 Explain the capabilities and limitations of the following when used in conjunction with breathing apparatus:<br><br>2. personal protective equipment<br>3. rescue equipment<br>4. communications equipment<br>5. breathing apparatus ancillary equipment<br>6. navigational techniques and equipment, such as breathing apparatus guide lines<br>7. Thermal image cameras |
| 2.<br>Understand the duties of a breathing apparatus wearer | 2.1 State the duties of a breathing apparatus wearer<br><br>2.2 State the duties of a breathing apparatus team leader<br><br>2.3 Explain what testing and checks apply to the breathing apparatus set and its ancillary equipment<br><br>2.4 Explain the terms:<br><br>1. cylinder capacity<br>2. full duration<br>3. working duration<br>4. safety margin<br>5. Turnaround pressure |
| 3.<br>Understand the chemistry of combustion | 3.1 Explain the chemistry of combustion<br><br>3.2 Explain different types of combustion<br><br>3.3 Explain the processes and products of combustion |
| 4.<br>Understand compartment fire behaviour | 4.1 Explain the principles of compartment fire behaviour<br><br>4.2 Explain how the combustion process within a compartment can be affected by:<br><br>1. different fuels and fuel loading<br>2. ventilation<br>3. elements of structure, such as walls and ceilings |

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| | 4. building materials and modern methods of building construction |
| 5. Understand the risks and hazards associated with structural fires | 5.1 Explain the hazards and risks associated with extinguishing fires and rescuing casualties within burning buildings<br><br>5.2 Explain the actions to take to deal with the hazards and risks associated with entering a burning building to extinguish a fire and rescue casualties |
| 6. Understand how to control and extinguish structural fires | 6.1 Explain the theory and methods of extinguishing structural fires<br><br>6.2 Explain the effects of extinguishing agents and techniques on structural fires<br><br>6.3 Explain the appropriate firefighting and tactical ventilation techniques necessary to attack and extinguish a structural fire. |
| 7. Understand the duties of a breathing apparatus Entry Control Operative | 7.1 Explain the duties of a breathing apparatus Entry Control Operative<br><br>7.2 Explain the capabilities and limitations of breathing apparatus entry control procedures<br><br>7.3 Explain how risk is managed through the systems of breathing apparatus control |
| 8. Understand how to manage breathing apparatus emergencies | 8.1 Explain the methods that a firefighter and the team can apply to return along a path of entry to the breathing apparatus entry control point<br><br>8.2 Explain the actions to be followed in the event of a team member having a 'distress to wearer' event<br><br>8.3 Explain the emergency procedures for rescuing a breathing apparatus wearer in distress |
| 9. Understand the equipment used to deal with hazardous substances, incidents and the signage identifying such substances | 9 Explain the capabilities and limitations of the specialist equipment used for hazardous substance incidents<br><br>9 Explain the reasoning for shortened working durations for wearers of personal protection suits at hazardous substance incidents<br><br>9 Interpret hazardous substance signage and information |
| 10. Understand the role of the breathing apparatus sector commander | 10 Explain the role of a breathing apparatus sector commander |

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| 11.<br>Be able to undertake the role of a breathing apparatus sector commander | 11.1 Identify the location of each breathing apparatus entry control point and establish communications with them<br><br>11.2 Establish and record the availability of breathing apparatus, associated equipment and personnel at the incident<br><br>11.3 Ensure relief teams are provided at least 5 minutes before required at an entry control point<br><br>11.4 Provide breathing apparatus emergency team resource requirements for the incident<br><br>11.5 Maintain suitable and sufficient resilient records |

# Breathing Apparatus Trainer / Instructor

## Theory

| Learning Outcome<br><br>The individual will: | Assessment Criteria<br><br>The individual can: |
|---|---|
| 1.<br>Understand the use of a breathing apparatus set and ancillary equipment | 1.1 Summarise the component features of the breathing apparatus set and ancillary equipment<br><br>1.2 Explain the breathing apparatus set and ancillary equipment in terms of:<br>1. use<br>2. limitations<br><br>1.3 Describe the operation of breathing apparatus set and ancillary equipment<br><br>1.4 Explain the testing requirements for breathing apparatus set and ancillary equipment |
| 2.<br>Understand the safety procedures relating to breathing apparatus instruction | 2.1 Explain risk assessment in relation to planning breathing apparatus sessions<br><br>2.2 Summarise the legislation and service operating procedures relating to breathing apparatus set and ancillary equipment<br><br>2.3 Explain:<br><br>1. typical hazards<br>2. risks<br>3. control measures in a breathing apparatus learning environment<br><br>2.4 Define incidents in the learning environment which are reportable under Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR)<br><br>2.5 Explain health, safety and welfare procedures relating to breathing apparatus instruction |
| 3.<br>Understand the effects of the breathing apparatus instruction environment | 3.1 Describe the physiology of respiration in relation to wearing breathing apparatus<br><br>3.2 Explain the impact of the working environment on the breathing apparatus wearer<br><br>3.3 Distinguish typical signs of stress in those involved in breathing apparatus practical sessions |

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| | 3.4 Diagnose the symptoms<br><br>3.5 Specify the treatment of heat-related illnesses |
| 4.<br>Understand how to facilitate breathing apparatus sessions | 4.1 Justify the health and safety factors to be managed in setting up a breathing apparatus session<br><br>4.2 Explain the control measures needed for breathing apparatus sessions<br><br>4.3 Explain how to set realistic session conditions to achieve specific training objectives |

# Breathing Apparatus Trainer / Instructor

## Practical

| Learning Outcome<br><br>The individual will: | Assessment Criteria<br><br>The individual can: |
|---|---|
| 1.<br>Be able to plan breathing apparatus practical sessions | 1.1 Conduct risk assessment appropriate to planned breathing apparatus session<br><br>1.2 Carry out safety checks of environment and equipment prior to breathing apparatus session<br><br>1.3 Secure sufficient, appropriate resources to achieve specified learning outcomes<br><br>1.4 Ensure emergency safety procedures are in place relevant to the breathing apparatus session<br><br>1.5 Ensure health monitoring procedures are in place relevant to the breathing apparatus session |
| 2.<br>Be able to lead familiarisation with breathing apparatus set and ancillary equipment | 2.1 Explain features and purpose of breathing apparatus set and ancillary equipment to learners<br><br>2.2 Demonstrate operation of breathing apparatus set and ancillary equipment<br><br>2.3 Demonstrate procedure for checking condition and operational servicing of breathing apparatus set and ancillary equipment |
| 3.<br>Be able to facilitate practical breathing apparatus sessions | 3.1 Deliver relevant health and safety brief prior to breathing apparatus session<br><br>3.2 Brief all those involved on objectives of the breathing apparatus session<br><br>3.3 Monitor progress of individuals and teams in the breathing apparatus session<br><br>3.4 Monitor the welfare of all individuals involved in the breathing apparatus session<br><br>3.5 Manage the progress of the breathing apparatus session<br><br>3.6 Intervene at appropriate points to reinforce the learning objectives<br><br>3.7 Respond to emergencies which arise during |

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| | breathing apparatus sessions |
| 4.<br>Be able to debrief those involved in the breathing apparatus session | 4.1 Review outcomes of the breathing apparatus session with those involved:<br><br>1. individuals<br>2. groups<br><br>4.2 Identify lessons learned from the breathing apparatus session:<br><br>1. for self<br>2. for participants<br><br>4.3 Provide feedback on team and individual performance in the breathing apparatus session<br><br>4.4 Provide opportunities for the those involved to give their own feedback on the breathing apparatus session |

# Glossary of terms

| Term | Definition |
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| | |
| Air Consumption Rate - Actual | The actual rate at which compressed air is used by a Breathing Apparatus wearer using self-Breathing Apparatus during operational (or training) activity. |
| Assessment | The measurement of performance against an acknowledged standard; the act of collecting evidence of performance, comparison with the appropriate standard and the making of a judgement regarding the level of performance attained. |
| Assessment criteria | The assessment criteria specify the standard required by an individual to achieve the learning outcome. |
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| Breathing Apparatus | Self contained respiratory protective equipment. |
| Breathing Apparatus Team | A number of Breathing Apparatus wearers designated to work together in the risk area. |
| Breathing Apparatus Guideline | The term "Guideline" defines the special line which is used either as a "Main Guideline" for initial search and to indicate a route between the Entry Control Point and the scene of operations, or, alternatively, as a "branch line", where it is necessary to traverse or search deeply off a main guideline. |
| Breathing Apparatus Sector | A Functional Command Support Sector, designated as part of the Command Support structure, to support Breathing Apparatus operations, resourcing and logistics and any other Breathing Apparatus requirements. |
| Breathing Apparatus Sector Commander | An individual designated by the Incident Commander to take responsibility for the Functional Command Breathing Apparatus Sector, designated as part of the Command Support structure. This officer will report to the Incident Commander or the Command Support Officer, as required, and will take responsibility for all Breathing Apparatus resourcing and logistics particularly when operations are expected to be protracted. This individual will therefore, liaise directly with Sector Commanders and Entry Control Operatives, as required and any other officers considered necessary. |

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| Breathing Apparatus Set | Comprises any equipment that is integral to the Breathing Apparatus set. This will necessarily include the Distress Signal Unit and the personal line. |
| Breathing Apparatus Ancillary equipment | Equipment that is not integral to the Breathing Apparatus set, but which may be used in conjunction with Breathing Apparatus command and control procedures and/or Breathing Apparatus operations, to enhance the safety and/or effectiveness of fire and rescue service operations. This may include, for example, a torch/lamp for illuminating the scene of operations, telemetry, radio communications, thermal imaging camera, etc. |
| Breathing Apparatus Team Leader | A Breathing Apparatus wearer designated to lead a team of Breathing Apparatus wearers. |
| Breathing Apparatus Wearer | An individual nominated to wear Breathing Apparatus. |
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| Donned (in Breathing Apparatus) | Where the Breathing Apparatus wearer is both 'rigged in Breathing Apparatus' and 'under air'; the Breathing Apparatus wearer is therefore, breathing air from the Breathing Apparatus set. |
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| Emergency Team | A number of Breathing Apparatus Wearers designated to stand by at the entry control point(s) for emergency purposes. |
| Entry Control Operative | An individual under the command and direction of either the Incident Commander or Sector Commander, nominated to monitor the wearing of Breathing Apparatus through an Entry Control Point, complete Breathing Apparatus Entry Control Point records, follow and implement appropriate procedures as directed, and notify the officer responsible for the Entry Control Point of any relevant information, issues or significant events. |
| Entry Control Point | The position for the command and control, deployment and monitoring of Breathing Apparatus wearers in a risk area. |
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| Full Duration | The period during which Breathing Apparatus is expected to provide respiratory protection from the moment the cylinder valve is opened, and the first breath taken until the cylinder is exhausted. |

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| Generic Risk Assessment | A fundamental element of the Fire and Rescue Service Risk Assessment process. To support Fire and Rescue Authorities in satisfying their regulatory requirements, under the Management of Health & Safety at Work Regulations 1999 (MHSWR), a series of Generic Risk Assessments have been produced by Government. |
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| Hazard | A hazard is anything that may cause harm. |
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| Learning Outcome | The learning outcome sets out what an individual knows, understands or is able to do as a result of a process of learning. |
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| Point of Entry | That part of the fireground or incident through which a Breathing Apparatus Team under air enter a structure, compartment or otherwise designated risk area, on the instructions of the Entry Control Point. |
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| Rigged in Breathing Apparatus | Where the Breathing Apparatus wearer has the Breathing Apparatus Set in place on the body and is not 'under air', but is ready to go 'under air' on instruction to do so. The individual is therefore, breathing air from the environment, rather than from the Breathing Apparatus Set. |
| Risk | Risk is the chance, high or low, that somebody could be harmed by these and other hazards, together with an indication of how serious the harm could be. |
| Risk Assessment | Refer to Generic Risk Assessment Guidance |
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| Safe Air | An environment where the air is breathable and will not be harmful without the use of respiratory protection. |

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| Safety Margin | The period during which the low pressure warning whistle/device operates. This period should equate to 20% of the full cylinder charge and is reserved for emergency use. |
| Self-Contained Breathing Apparatus | Breathing Apparatus where the breathing gas supply is carried by the wearer.[1] |
| Skill decay | The deterioration of skills over a period of non-use, also known as skill fade. |
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| Telemetry | Telemetry is that technology that allows for remote measurement, reporting and recording of information. In the context of the deployment of Breathing Apparatus, Breathing Apparatus wearer information is transmitted to the Breathing Apparatus Entry Control Point. |
| Turn-Around Pressure | The pre-determined cylinder pressure at which the Breathing Apparatus Team should commence their withdrawal from the risk area, so that the Entry Control Point is reached before the low pressure warning whistle operates. |
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| Working Duration | The period during which Breathing Apparatus is expected to provide respiratory protection from the moment the first breath is taken or breathing commences until the moment at which the low pressure warning device starts to operate. |



[1] From EN 132 1999