



HUMBERSIDE FIRE AND RESCUE SERVICE

# Service Delivery Support

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## Breathing Apparatus and Associated Equipment

<b>Owner</b>	<b>Director of Service Delivery Support</b>
<b>Responsible Person</b>	<b>Head of Fleet &amp; Equipment</b>
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## **1. INTRODUCTION**

HFRS will use Respiratory Protective Equipment (RPE) to ensure the safety of employees when the risk to personnel from irrespirable or hazardous atmospheres cannot be mitigated by other means. Since RPE will be incorporated in the Safe System of Work for many types of incidents and working practices, HFRS is committed to the provision of suitable and sufficient information, instruction and training in the use and maintenance of this equipment.

## **2. EQUALITY AND INCLUSION STATEMENT**

HFRS has a legal responsibility under the Equality Act 2010, and a commitment, to ensure it does not discriminate either directly or indirectly in any of its functions and services nor in its treatment of staff, in relation to race, sex, disability, sexual orientation, age, pregnancy and maternity, religion and belief, gender reassignment or marriage and civil partnership. It also has a duty to make reasonable adjustments for disabled applicants, employees and service users.

## **3. AIM AND OBJECTIVES**

To provide working procedures and to ensure safe operation of the Self Contained Breathing Apparatus (Interspiro S11) and ancillary equipment. And to ensure that all personnel have the necessary information, instruction and training to enable them to test and operate the equipment effectively.

## **4. USE OF RESPIRATORY PROTECTIVE EQUIPMENT**

### **Selection of Respiratory Protective Equipment**

RPE will be incorporated into many Safe Systems of Work for differing incidents and working practices, therefore the correct selection RPE is essential.

Within the hierarchy of control measures, RPE is considered as being the last control measure to be introduced. RPE should only be considered after all other reasonably practicable control measures have been considered, and following a suitable and sufficient Risk Assessment to identify the risks involved.

Where a Risk Assessment fails to identify an appropriate level of RPE required or where insufficient information is available to enable the completion of a suitable risk assessment, personnel attending operational incident should default to wearing Self Contained Breathing Apparatus (SCBA).

For general working practices, works should not commence until such time as the correct level of RPE can be identified.

All Risk Assessments should be completed and recorded in accordance with PGN 10\_3G Risk Assessment Arrangements.

## 5. INTERSPIRO SII SCBA

### Introduction

The compressed air breathing apparatus set currently in service with the Humberside Fire and Rescue Service is the Interspiro SII.

### Description and Use

A detailed description and use of the BA set can be found in the Interspiro SII Technical Guidance Note on the portal.

**Note:** Any other sets received into the Service and officially approved for loan or evaluation purposes must be used, tested and maintained in accordance with the particular set manufacturer's instruction manual.

### Standard Testing

Testing will be in accordance with HFRS standard test schedule.

### Routine Maintenance and Repairs

All repairs and routine maintenance will be carried out by ESFM Equipment Technicians or Interspiro Service trained technicians.

## 6. PERSONAL ISSUE INTERSPIRO FACE MASK

### Introduction

HFRS may from time to time employ firefighters who, due to differing facial contours, may be unable to obtain a satisfactory face seal with the standard sized facemask currently fitted to the Interspiro SII set. To overcome this a personal issue facemask will be issued to individuals as required to enable these individuals to obtain a satisfactory face seal.

### Identification

The facemask will be identified with:

- An 'S' or 'L' on the face seal rubber.
- A visor label identifying the NUMBER of the mask.

### Check Procedure

- On taking over a BA set, the wearer should remove the existing facemask and bag then place them in a suitable location (e.g. BA Room, Watch Office).

- Connect a personal issue facemask to the demand valve and carry out a general check in accordance with the test schedule for Breathing Apparatus - Interspiro SII.
- At the end of the shift, disconnect the personal issue facemask from the BA set demand valve and reconnect the original facemask to the BA set demand valve in readiness for the oncoming Watch.
- Secure the personal issue facemask in a suitable location after being dismissed from duty.

### **Monthly Test**

To ensure that personal issue facemasks are subjected to a monthly test, the wearers should:

- select a BA set that has already had a monthly test carried out,
- disconnect the original facemask from the demand valve,
- attach a personal issue facemask to the demand valve,
- Carry out part of the General check, as described in test schedule for Interspiro SII Breathing Apparatus, which refers to facemask checks.
- Record the result in the relevant log book and disconnect the mask from the demand valve, reconnect the original facemask to the demand valve.

### **Annual test**

It is the responsibility of the wearer to ensure that the personal issue facemask is available for annual testing as required.

### **Facemask Faults**

Should any faults or defects occur to facemasks, the individual must inform the Officer in Charge (OIC) that they are unavailable to wear BA until a replacement mask can be sourced. Spare facemasks (including small ones) can be obtained from the Stores department.

All repairs and routine maintenance will be carried out by ESFM Equipment Technicians and/or Interspiro Service trained technicians only.

## **7. EASE PACK**

### **Introduction**

The EASE pack has been developed for use in an emergency situation where a breathing apparatus wearer is in distress, a malfunction of their BA set occurs, or extending the working duration of a BA wearer due to decontamination.

### **Description and Use**

A detailed description and use of the EASE pack can be found in the EASE pack Technical Guidance Note on the Portal.

### **Standard Testing**

Testing will be in accordance with HFRS standard test schedule.

### **Faults**

Should any faults or defects occur to an EASE pack, the individual must inform the Officer in Charge (OIC) that the EASE pack is unavailable to allow them to make an informed risk assessment on placing BA wearers within the risk area. A replacement pack should be sourced. Spare packs can be obtained from the Stores department.

### **Routine Maintenance and Repairs**

All repairs and routine maintenance will be carried out by ESFM Equipment Technicians or Interspiro Service trained technicians.

## **8. BREATHING APPARATUS PROCEDURES**

### **Operational Procedures**

Firefighters required to wear BA must maintain the area of the seal free from hair (facial or head). Failure to do so will impair the efficiency of the seal and create an avoidable safety hazard to the BA wearer.

The area of the face to be maintained free from hair is outlined in Facial Hair section below.

- A copy of the current edition of the 'H.O Operation Guidance, Breathing Apparatus' can be found on the Portal is available to all stations/sections and must always be kept available for personnel to consult.
- ALL PERSONNEL MUST COMPLY FULLY WITH THE GUIDANCE ABOVE WHENEVER BREATHING APPARATUS IS WORN except in the following circumstances:
- In the case of specific risk assessments, where revisions to these procedures must be evolved and that as a result of pre-planning. (This would only apply in exceptional circumstances) and during decontamination procedures when the control procedures described in Decontamination SOP 5.3.1 should be followed.

### **New BA wearers**

All new wearers must carry out a 'facemask seal test' as described within the standard test for Breathing Apparatus, as per Interspiro QSII.

New BA wearers are considered to be new employees, inter-service transfers, personnel returning to operational duties after a significant period of time involved in non-BA duties, (see Service Policy SP2\_3 Return to Operational Duties), personnel whose facial features have altered significantly through weight change, dental work or similar and where the Service's BA supplier changes.

### **Malfunctions of Breathing Apparatus**

(a) Paragraph 9 of Schedule 2 Part 1 of the 'Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995', (RIDDOR 1995), describes the circumstances in which malfunctions of breathing apparatus are reportable to the Health and Safety Executive as follows:

Any breathing apparatus malfunction should be reported provided that the malfunction occurred whilst the set:

- was in use; or
- during testing immediately prior to use in such a way that had the malfunction
- occurred whilst the apparatus was in use it would have posed a danger to the health and safety of the user.

Malfunctions which arise during routine maintenance or testing of BA sets are not reportable under RIDDOR. The term 'malfunction' does not include leakage into the face mask due to poor face fit or a failure arising from an external source, such as falling debris or entanglement.

(b) When a RIDDOR reportable malfunction occurs, the following procedure must be carried out:

- The apparatus and any other relevant equipment and records must be impounded.

**Note:** The BA Tally and BA set log book must be included.

- THE CYLINDER VALVE OF THE APPARATUS SHOULD BE FULLY CLOSED AND THE NUMBER OF COMPLETE AND THEN PARTIAL TURNS REQUIRED TO CLOSE IT NOTED.

The impounded equipment must be sealed appropriately, labelled and transported directly by duty FDS officer to the BA Manager in the Fleet & Equipment Section of the Internal Services Directorate, Service Headquarters, for urgent investigations.



**Note:** Under no circumstances must any person interfere with the BA set, equipment or log book without approval from the Health and Safety Executive inspector.

The occurrence must be investigated and reported using the procedure detailed in Service Policy SP10\_3 Planning Implementation.

- (c) If a BA set malfunction occurs during any use not falling within the definition in paragraph (a), or where a BA wearer suffers illness or injury, then:
- The BA set and relevant equipment must be impounded.
  - THE CYLINDER VALVE OF THE APPARATUS SHOULD BE FULLY CLOSED AND THE NUMBER OF COMPLETE AND THEN PARTIAL TURNS REQUIRED TO CLOSE IT NOTED.
  - the impounded equipment must be sealed in bags, labelled and transported directly by FDS officer to the BA Officer in the Fleet & Equipment Section of the Internal Services Directorate, Service Headquarters.
  - The BA officer in the Fleet & Equipment Section, ESFM workshops and the Health and Safety Section must be informed so that the relevant investigations and reporting procedures can be carried out, (see Service Policy SP10\_3 Planning Implementation).
- (d) **Where the investigations described in paragraphs (b) and (c) above are to be carried out, the BA manager in the Fleet & Equipment Section will arrange for the set to be returned to Interspiro for inspection.**

### **Breathing Apparatus Control Procedures for Over the Border Incidents**

When attending over the border incidents involving the use of breathing apparatus by Humberside Fire and Rescue Service personnel, the following control measures will apply:

On entering the risk area, the BA tallies of Humberside Fire and Rescue Service breathing apparatus wearers will only be inserted into a BA entry control board used and controlled by personnel from Humberside Fire and Rescue Service using current Service procedures.

### **Respiratory Physiology**

All Breathing Apparatus wearers must be fully conversant with this important subject and in particular must appreciate the effects of heat and humidity on the body. Information can be gained from Fire Service Training Manual Volume 4.

## Facial Hair



**A GOOD SEAL WILL ONLY BE OBTAINED IF THE SKIN IN THE REGION OF THE FACE SEAL IS SMOOTH AND WITHOUT HAIR. THIS INCLUDES BEARD STUBBLE.**

**ALL PERSONNEL WHO ARE REQUIRED TO WEAR BA SHOULD ENSURE THAT THE AREA OF THE FACE SEAL IS KEPT SMOOTH AT ALL TIMES.**

The information above has been taken from HSG53 'Use and maintenance of RPE'

Also see PGN1\_15E Hairstyles, Facial Hair, Jewellery and Tattoos.

## **9. BREATHING APPARATUS ANCILLARY EQUIPMENT**

### **Introduction**

Breathing Apparatus Ancillary Equipment in use within the Service will comply with the Appendices of the Technical Bulletin 1/97, except where specifically mentioned in this Section where other additional information is provided when appropriate.

All other breathing apparatus ancillary equipment must be used, tested and maintained in accordance with the Service Inspection and Testing schedule of Operational Equipment.

### **Breathing Apparatus Tallies**

BA Tallies have been designed to comply as closely as practicable to the requirements of Home Office Technical Bulletin TB1/97. They are to be used in line with the procedures within that document.

### **Breathing Apparatus Stage One, Two and Rapid Deployment**

Combined Entry Control Boards in Service have been designed to comply as closely as practicable to the requirements of Home Office Technical Bulletin TB1/97.

- (a) A technical guidance note relating to the Combined Entry Control Board and its use can be found on the Fleet & Equipment area on the portal.
- (b) The nominated Breathing Apparatus Entry Control Officer (BAECO) of the crew, must examine the board and verify the clocks are serviceable at the start of every shift.
- (c) Due to the intrinsic nature of the wiring contained within the boards, batteries will be replaced at regular intervals or when required by the Service BA Technician. On no account should individuals attempt to change them.
- (d) Only chinagraph pencils should be used for writing on boards, cleaning should be done with a suitable dry cloth. Under no circumstances must solvents be used to clean the writing surface.
- (e) When used under Stage 1 or 2, the information at the top/centre must be completed i.e. BAECO name, location, start time and stage.

### **Breathing Apparatus Retractable Personal Lines**

- (a) BA Retractable Personal Lines have been designed to comply with the Technical Bulletin 1/97.
- (b) The retractable personal line incorporates a stainless-steel karabiner fitted with a captive eye. The technical guidance note for the line can be found on the Fleet & Equipment area on the portal.

## **10. BREATHING APPARATUS COMMUNICATIONS EQUIPMENT H**

### **Introduction**

The following is a description of the BA Communications Equipment, general check and donning procedure.

### **Description**

- Each set consists of:

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- One Motorola DP4601 intrinsically safe radio with spare battery
- One radio pouch
- Spirocom Voice Communication System (one per BA mask).
- Generic' voice communication system radio adapter (one per radio)

### **Attaching the Equipment to the BA Set**

The radio pouch is attached onto the right-hand side of the BA set waist belt using the two securing loops.

### **General Check**

A communications general check should be carried out by each crew member nominated as the BA wearer.

This should be done in conjunction with the general check for the breathing apparatus set.

### **The check must include the following:**

- Visually examine the radio and all accessories for wear and tear, e.g. damaged insulation or end caps missing from antenna.
- Ensure that all components are secure and the radio pouch is correctly attached to the BA set waist belt.
- Ensure the Spirocom unit is secured to the BA facemask.

The TGN for the Spirocom and Adapter can be found can be found on the Fleet & Equipment area on the portal.

### **Recommended Donning Procedure**

- Open the radio pouch and ensure channel 3 has been selected. Switch on the radio and set the volume control to three quarters of maximum.
- Don the BA set without starting up and adjust the straps.
- Re-seal the radio pouch.
- Ensure connection is established to the Spirocom unit.
- Before being committed to the incident, the team leader should make a test call to BAECO.

**Note:** A reasonable distance should be kept between radios to avoid feedback on transmission.

## **Incident Ground Communications**

For further guidance on B.A. communications procedure see Procedure and Guidance Note PGN 7\_3B Incident Ground Communications.

## **11. BA COMPRESSORS**

### **Introduction**

Breathing Air Compressors in HFRS comply with the relevant legislation and guidance, and are distributed around the Service as follows.

<b><u>Location</u></b>	<b><u>Charging Rate</u></b>	<b><u>Max Charging Pressure</u></b>
Service Headquarters	1100 l/min	300 bar
Clough Road (H 02)	1100 l/min	300 bar
Calvert Lane (H 03)	680 l/min	300 bar
Beverley (H 04)	680 l/min	300 bar
Bridlington (H 10)	680 l/min	300 bar
Peaks Lane (H 17)	680 l/min	300 bar
Immingham West (H 32)	1100 l/min	300 bar
Scunthorpe (H 23)	680 l/min	300 bar
Goole (H 24)	680 l/min	300 bar
Melton (BA Service)	680 l/min	300 bar

### **Use of Compressors**

The BA Manager Fleet & Equipment is responsible for ensuring the maintenance and testing of HFRS Breathing Air Compressors.

Emergency Response Managers must ensure that a suitable and sufficient Risk Assessment has been completed for the use of compressors and is displayed at each compressor location.

Personnel who use compressors to charge breathing apparatus cylinders must be competent in their use. Operating instructions must be displayed at each compressor location.

Before charging cylinders, ensure that a daily check has been carried out on the compressor and complete if necessary. Daily checks must be recorded as per instructions below under

### **Compressor Maintenance.**

All cylinders must be Inspected for any signs of damage prior to charging. If damage is suspected the cylinder must not be charged.

When charging cylinders always ensure that the minimum number of cylinders are charged at once.

On completion of cylinder charging all details must be recorded on the compressor log sheet. Completed log sheets must be retained on the station and available for inspection. ([See Appendix A](#))

### **WARNING:**

UNDER NO CIRCUMSTANCES ARE CYLINDERS TO BE CHARGED ON COMPRESSORS WITH OUTLET PRESSURES RATED HIGHER THAN THE MAXIMUM CHARGING PRESSURE OF THE CYLINDER.

### **Daily Checks**

Before charging cylinders for the first time in the day:

- A daily check must be carried out in accordance with the operating instructions for the relevant compressor.
- Enter the details on the compressor log sheet.

### **Annual Service and Other Repairs**

HFRS' compressors undergo an annual service carried out by specialist engineers. If a fault develops with the compressor, report via the Service Tranman system, this will create a log for ESFM and then they will make arrangements for any necessary repairs to be carried out.

On completion of the annual service or any repairs. **All** service reports left by the service engineer must be forwarded to the **ESFM Equipment Technicians.**

### **Storage of Breathing Apparatus in Compressor Rooms**

Breathing Apparatus and spare rubber and neoprene components for breathing apparatus must not be stored in the same enclosure as an air compressor powered by an electric motor due to the additional risk from fire.

**Recharging of Non-Fire Brigade Cylinders**

Non-Service / Private Cylinders **must not** be **charged** / re-charged on Service compressors.

**Air Purity Tests**

The quality of compressed air produced by the Service's compressors must conform to EN132 and is to be tested monthly. The purity of air will also be tested following a change of filters **this will be done by the ESFM Equipment Technicians.**

Headquarters and stations listed in the introduction of this section **must** ensure air purity sample cylinders are submitted on a monthly basis for test to the **ESFM Equipment Technicians** via Stores where records will be kept by ESFM.

The Management and recording of Air Purity Testing will be the responsibility of ESFM Technicians.

**If anyone requires any further guidance / information regarding this document please contact the Fleet & Equipment Section.**

**APPENDIX A**



**Cylinder Charging Log**

<b>Date</b>	<b>Cylinder Numbers Charged / Daily Test Record</b>	<b>Service No</b>



## Version History

Date of Amendment	Responsible Person	Details of Amendment	Consultation Required	Director Approval	Comments
1/4/2021	A Day	Removal of East Hull compressor	No	L Plunkett	