

Respiratory protective equipment - breathing apparatus – operational procedures

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1 Introduction

- 1.1 This policy details the procedures to be adopted when self-contained breathing apparatus (BA) is used. Respiratory protective equipment (RPE) will be used when personnel are committed to atmospheres with the potential to cause respiratory discomfort or injury. Incident commanders (IC) are to ensure that a sufficient level of control (both incident management and breathing apparatus control) is in place to support BA wearers and to prevent the uncontrolled use of BA resources. BA is the default level of RPE for fires and other incidents presenting an acute respiratory hazard.
- 1.2 This policy must be used in conjunction with other operational procedures in order to resolve incidents where respiratory protection is considered necessary.
- 1.3 The command details in this policy complement [policy number 238](#) - Incident command procedures and [policy number 408](#) - Incident command.
- 1.4 Technical guidance for standard duration breathing apparatus (SDBA) and extended duration breathing apparatus (EDBA) can be found in [policy number 476](#) - Respiratory protective equipment – breathing apparatus – Dräger PSS 7000 – technical information. Guidance for BA telemetry can be found in [policy number 760](#) - Respiratory protective equipment - Dräger PSS Merlin telemetry equipment – technical information.
- 1.5 For incidents requiring respirators see [policy number 759](#) – Respiratory protective equipment - Dräger FPS 7000 – respirator face mask – operational procedure and technical information.
- 1.6 This policy has been prepared by the RPE and Hazmat PPE Team. If you have any questions relating to this policy please email [RPE and Hazmat PPE](#) mailbox.

2 Purpose of BA procedures

- 2.1 The purpose of BA and associated control procedures is to reduce the risk of respiratory discomfort or injury to personnel and provide safe systems of work when BA is used. It is important that personnel who may be required to wear BA or undertake BA control duties understand and properly implement these procedures at all times.
- 2.2 This policy has regard to the following RPE legislation and approved codes of practice as well as other health and safety legislation:
 - National Operational Guidance Programme – Foundation for Breathing Apparatus.
 - National Operational Guidance Programme – Breathing Apparatus Training Specification.
 - Control of Substances Hazardous to Health Regulations: 2002.
 - Ionising Radiations Regulations: 1999.
 - Control of Lead at Work Regulations: 2002.
 - Control of Asbestos Regulations: 2012.
 - Dangerous Substances and Explosive Atmospheres Regulations: 2002.
 - Confined Spaces Regulations: 1997.
 - Reporting of Injuries, Diseases and Dangerous Occurrences Regulations: 2013.

3 Definition of terms

- 3.1 Acute respiratory risk – this type of risk will be associated with hazardous atmospheres with the potential to cause immediate respiratory injury if the face mask were removed.

- 3.2 BA sector – is a functional sector with a designated sector commander BA. This will support BA operations, resourcing and logistics and any other BA requirements (this is the new term for BA main control).
- 3.3 BA team – a number of BA wearers designated to work together in the risk area.
- 3.4 BA wearer – all personnel trained and nominated to wear breathing apparatus.
- 3.5 Communications operative (Comms-Op) – the person responsible for maintaining communications between BA teams and entry control point (ECP).
- 3.6 Distress signal unit (DSU) – an automatic or manually actuated alarm that indicates a BA wearer is in distress.
- 3.7 Entry control operative (ECO) – the person responsible for monitoring and maintaining the entry control board (ECB).
- 3.8 Entry control point (ECP) – the position for the command and control, deployment and monitoring of BA wearers into a risk area.
- 3.9 Entry control point supervisor (ECPS) – provides a greater level of control at an ECP and is appointed when Stage II entry control is used.
- 3.10 Entry point (EP) – point of entry into a risk area.
- 3.11 Incident commander (IC) – the person in overall command of an incident at a particular time (see [policy number 431](#) – Incident commander and monitoring officer). This term is used throughout the policy to identify the individual that has responsibility for ensuring the practices and procedures detailed in the policy are put in place and carried out. (the implementation of, and the functions within, the procedures may be delegated to another individual, but responsibility for them remains with the IC).
- 3.12 Low pressure warning – electronic or pneumatic warning that the safety margin has been reached.
- 3.13 New entry – the BA wearer is wearing BA for the first or second time, the BA set has cylinder contents at or above the minimum entry pressure of **240** bar when reporting to the ECO.
- 3.14 Re-entry – the BA wearer has closed down BA set and is redeployed to complete a specific task that does not include firefighting (**190** bar minimum and no longer than **15** minutes duration).
- 3.15 Safe air – an environment where the air is breathable and will not be harmful without the use of respiratory protection.
- 3.16 Time of warning –time at which low pressure warning actuates.
- 3.17 Time to warning – remaining working duration until actuation of low pressure warning.
- 3.18 Turn-around pressure (TAP) – the pre-determined cylinder pressure at which the BA team should commence withdrawal from the risk area so that the ECP is reached before the low pressure warning actuates. This TAP should be reviewed by the wearers, although the ECO must be informed of any change (for example where wearers reach their TAP but are working very close to their known exit).
- 3.19 Turn-around point – the pre-determined point at which the BA team will turn-around and withdraw from the risk area. This will be a location or landmark i.e. work and don't go beyond the top of the stairs.

- 3.20 Turn-around time (TAT) – the pre-determined time the BA team will begin to retrace their steps to withdraw from the risk area, timed and communicated by the ECO/ECPS i.e. to reduce BA team exposure to known extreme conditions.
- 3.21 Working duration – is the time between taking the first breath, and the actuation of the low pressure warning (electronic or pneumatic).

4 Wearing of BA

- 4.1 At any incident, the IC is responsible for ensuring that RPE is worn whenever there is a risk of personnel suffering respiratory discomfort or injury. Where **any** doubt exists as to the presence of a respiratory risk, the IC will give instructions for RPE to be used. BA is the default level of RPE for fires and other incidents presenting an acute respiratory hazard. Personnel are reminded that the products of combustion at car fires are particularly hazardous and BA must always be worn.
- 4.2 BA is normally worn on the authority of the IC; however, personnel can request to wear it for respiratory protection and such requests should be considered as part of the normal risk management process. There may be exceptional circumstances (safety reasons) where personnel may need to wear a BA set without obtaining the IC's permission first; justifiable examples include a sudden change of wind direction affecting a pump operator, where safety would be compromised if they were to leave the pump unattended). In such instances personnel should don BA and inform the IC and ECO of that decision as soon as possible.
- 4.3 Personnel are only to be committed to the risk area wearing BA on the instructions of the IC once the required level of BA entry control is in place.
- 4.4 BA teams must consist of a minimum of two BA wearers. The nominated BA team leader must have radio communications. BA teams should be kept as small as practicable.
- 4.5 Whilst larger BA teams can reduce workloads this may lead to difficulties in communications between BA team members. Good practice would be to use multiple BA teams of two who can, if required, work together.
- 4.6 Exceptionally, there may be operational circumstances where one BA wearer for firefighting would suffice. In these circumstances a minimum of BA stage I entry control will be applied. Examples of these circumstances include car fires, rubbish fires, hot cutting and working a monitor at the head of an aerial appliance.

This procedure can only be applied in the following circumstances:

- Operations are not within a building or structure. A single BA wearer is not to enter a building, structure or any other significant risk area alone.
 - The BA wearer is always in view of the IC or other nominated officer or crew member and can be quickly removed from the risk area.
- 4.7 Where a fire or risk of fire is still present BA teams must be committed with extinguishing media. The IC should ensure sufficient personnel are deployed to ensure BA teams do not have to separate for hose management whilst inside structures.
- 4.8 No search and rescue team should operate inside a structure that contains smoke filled compartments that have the potential for any form of rapid fire progression without the protection of suitable and sufficient fire extinguishing media (either carried by them or by another BA team).

5 Hazards

- 5.1 The hazards listed below can reasonably be expected to be encountered at incidents where breathing apparatus is worn.
- 5.2 This list is not exhaustive and the IC should be aware there may be additional hazards arising from the incident which are not specific to the use of breathing apparatus:
- Atmosphere – the atmosphere can be oxygen deficient, toxic or flammable or contain dust or particulates, heat and steam, bio-hazards, cryogenics, aerosols and/or radiation.
 - Temperature – heat (conducted, convected, radiated, steam contact and reactive chemicals) cold (cryogenic, decompressing gases, ice, cold water, wind chill and very cold metal objects).
 - Reduced visibility – smoke and any physical barrier screening another hazard.
 - Electricity – electrocution or electric shock.
 - Cables and structural failure – entrapment and or entanglement.
 - Environmental – weather, terrain, height, unsafe structures, confined spaces and topographical.
 - Hazardous materials – any materials covered by PN 796 – HAZMATS – fires and incidents involving hazardous substances.
 - Manual handling – SDBA weighs approximately 15.5kg and EDBA weighs approximately 22kg. Together with full firefighting personal protective equipment (PPE) this amounts to a significant additional load for the wearer.

Breathing apparatus wearer

6 Nominated BA wearer station duties

- 6.1 Ensure that personal competence and BPAs are kept up to date, if lapsed inform OiC.
- 6.2 When nominated as a BA wearer personnel shall:
- Carry out an 'A' test of the BA set and ancillary equipment (see Babcock BA 012 'A' test Core Skills and [policy number 476](#) - Respiratory protective equipment – breathing apparatus – Dräger PSS 7000 – technical information). An 'A' test is carried out, when taking over a BA set, following a cylinder change and when nominated to test any 'spare' BA set.
 - In exceptional circumstances (where personnel are unable to record the completed test results), verbally confirm with their watch officer that the BA set has been checked and is working satisfactorily. If committed to a risk area personnel will ensure that 'A' test not recorded' is entered onto the ECB by the ECO.
 - Report to the watch officer any defects and or missing equipment immediately.
 - Ensure a BA set that fails testing is not worn until the reason for the failure is rectified.
 - Inform the watch officer if the BA log book shows that a BA set has not been worn under controlled conditions (e.g. for any drill that does not involve real fire training) within the last 28 days and carry out a 28 day test as detailed in policy number 476.

7 Nominated BA wearer incident duties SDBA

Rigging

- 7.1 Nominated BA wearers must **not** get rigged in BA en-route to incidents.

Radio communications

- 7.2 Dedicated BA radio interface equipment (BARIE) provides BA wearers with effective communication and should be used whenever available. If dedicated BARIE sets are not available a minimum of one hand held radio per BA team must be carried.
- 7.3 The IC will undertake a risk assessment (RA) to determine the possibility of an explosive atmosphere being present (see [policy number 458](#) – Entel HX 480 1 Hand held incident ground radio).
- 7.4 In all instances where initial BA teams are deployed into compartments where a potentially explosive atmosphere may be present only BARIE sets can be worn, as they are the only radios that are intrinsically safe (hand held radios should be removed when replaced by BARIE sets in these circumstances).
- 7.5 Radio communications equipment must be worn by BA team leaders and **must** be tested prior to entering the risk area.
- 7.6 Information regarding the BA team's progress and any hazards identified should be regularly transmitted to the ECO or Comms-Op and recorded. Wearers should be aware that other BA teams will be using the same radio channel and therefore keep such messages concise.
- 7.7 If a BA team has an unexpected or sustained loss of communications with the ECO or Comms-Op, the team leader will decide whether to withdraw. If both telemetry and radio signal is lost the BA team **must** withdraw to a point where communications can be restored. This position should be landmarked for deployment of telemetry repeaters.
- 7.8 If there is unexpected or sustained failure of communications with any BA team, an assessment of risk should be undertaken by the person responsible for the ECP and they must decide whether a BA emergency team should be committed to investigate. If there is any doubt, the person responsible for the ECP must be immediately informed and a BA emergency team **must** be committed.
- 7.9 Standard communications discipline as used with main scheme radio should be maintained and, in any emergency, the message should be prefixed as 'priority'. If a BA team is unable to communicate on the BA channel (channel 6), they should use the general incident command channel (channel 1).
- 7.10 Where a radio leaky feeder is in use BA teams will be told to transmit on channel 5.
- 7.11 For further information see [policy number 593](#) – Entel ht981 intrinsically safe fireground radio.

Briefing from IC or sector commander (SC)

- 7.12 The whole BA team shall receive and confirm understanding of a briefing prior to deployment and, as a minimum, this should include:
- Where and how they are to enter the risk area.
 - Team objectives and their part in the ICs plan.
 - Any identified hazards.
 - Any limitations on wear duration (on instructions from the person responsible for the ECP).

Don and start

- 7.13 BA wearers must:
- Don and start in safe air (see Babcock BA 010 Donning, Starting and Closing down Core Skills and appendix 2 of this policy).

- Carry out buddy checks to ensure RPE and PPE are correctly fitted and that no skin is exposed.

Entry control point (booking in)

7.14 BA wearers reporting to an ECP shall:

- Ensure at least **240** bar pressure reading when reporting to the ECO. Calculate and select the required turn-around pressure (TAP) in agreement with the person responsible for the BA ECP and the BA team leader (see green TAP column on the ECB duration table).
- If detailed to use firefighting media ensure branch and water supply are checked by opening them for several seconds and testing the branch flow and jet pattern settings before entering the risk area.
- Confirm nominated radio channel and test communications equipment with ECO or Comms-Op. Establish and confirm a call sign with ECO or Comms-Op.
- Don BA set and hand BA tally to the ECO before entering the risk area ensuring the tally is placed in the ECB with the 'time in' completed.
- Ensure a BA telemetry signal is established prior to entering the risk area (unless informed that manual calculations are being used).
- Inform the ECO if they have already worn BA at the incident and ensure ECO records 'A/B test not recorded' on the ECB prior to entry.

Low battery warning (Bodyguard)

7.15 If the Bodyguard 'reduced battery level' icon and alarm actuates prior to booking in at the ECP, the wearer must:

- Withdraw from the ECP.
- Take BA set out of service and replace onto the appliance to recharge.

7.16 If the Bodyguard 'reduced battery level' icon and alarm actuates when the BA set is being worn in the risk area:

- Inform the ECO or Comms-Op immediately.
- The BA wearer can continue with deployment within the risk area.
- Following withdrawal from the risk area the BA set shall be taken out of service and replaced onto the appliance to recharge.

Deployment within the risk area and close personal contact

7.17 Immediately inform ECO or IC if circumstances mean the team have to change their objectives, briefed tasks or part in the ICs plan whilst deployed in the risk area.

7.18 Carry out safe movement at all times, utilising safe and effective search and rescue techniques (see Babcock BA 005 Safe Movement, BA 006 Search and Rescue Procedures Core Skills and [policy number 803](#) – Search and rescue procedures within structures).

7.19 Promote and maintain regular communication with BA team leader and other BA team members and update them regarding any relevant information.

7.20 When visibility is impaired, BA team members must maintain close personal contact. Close personal contact is necessary to ensure the safety of personnel, and to facilitate the exchange of information within the BA team.

- 7.21 The BA team must risk assess the conditions and select the appropriate level of close personal contact used unless otherwise directed by the briefing officer. For example a higher risk may be found in large complex premises, or when there are significant indicators of fire and or extremely low visibility. A lower risk may be found in domestic premises, or during post-fire ventilation, damping down and cutting away operations, when the fire risk has been controlled and visibility has improved.
- 7.22 Depending on visibility and the perceived level of risk, a hierarchical approach to deciding which method to adopt should be taken, as per below:
- Attachment by short BA personal line.
 - Actual physical contact between each BA team member.
 - Within physical touching distance.
- 7.23 The effects of heat and physical exhaustion may impair wearer's decision making as time within the risk area increases. BA team members must therefore review the level of close personal contact used at regular intervals and consider the use of BA personal lines.
- 7.24 When BA teams encounter hazards such as stairs or vertical ladders they can briefly separate, although only to the minimum extent necessary and no more than the distance created by the hazard.
- 7.25 Regularly check pressure readings and monitor air consumption (and prompt other BA team members to do so) to allow sufficient duration to withdraw to the ECP before low pressure warning actuates. Pressure checks should be carried out more frequently when working hard, as this can have significant effect on air consumption rates and consequently duration times.
- 7.26 Regularly check for telemetry signal (flashing blue LEDs on front of Bodyguard and radio icon ticked on Bodyguard display). When out of signal contact ECP via radio communication to update on safety and wellbeing of the team.
- 7.27 Assist the BA team leader with brief and task, memorising route in and out of the risk area (take regular landmarks throughout movement), and pass radio messages to ECP if required to do so by BA team leader.
- 7.28 Constantly monitor conditions and re-evaluate risk, be especially observant with regards to signs of potential backdraught and flashover (paying particular attention to the colour, volume and pressure of smoke) and the integrity of the structure/compartments for signs of potential collapse.
- 7.29 Monitor conditions using thermal imaging camera (TIC) remember above, below and concealed (ABC).
- 7.30 Be aware of the signs and symptoms of heat stress and monitor the physiological effects for self and team. See section 25 and 26 of this policy and [policy number 284](#) - Metabolic heat stress.

Air management

- 7.31 Each wearer will consume air at a different rate and in relation to factors such as body mass, individual levels of fitness, work rate, environmental conditions and the wearer's reaction to the situation. Therefore, each wearer must:
- Carry out regular pressure checks to monitor their consumption (update ECP with readings when out of telemetry signal).
 - Inform BA team leader of their pressure readings on a regular basis so that work can be shared out evenly amongst the team in order to maximise the use of the remaining working duration (see team and task rotation in section 8).

- Carry out own 'turn around' calculations (see Babcock BA 023 Cylinder and Consumption rate Calculations Core Skills), and take responsibility for informing the BA team leader of the pressure at which the team will need to start exiting the risk area.
 - Return to the ECP before their low pressure warning begins to sound.
- 7.32 In assessing working duration, team leaders and wearers should take into account all aspects of the incident. These include:
- The air consumed to reach the scene of operations.
 - The potential for physiological and psychological stress and or distress as a result of environmental conditions or workload (e.g. high temperatures, humidity, casualty rescue etc.).
 - The physical conditions and/or depth of penetration into the risk area, such as any confined space. The likelihood that conditions on the exit route may have deteriorated.
 - Information received from the ECO or Comms-Op and other BA teams.
 - That consumption rates on the way out may be higher due to the natural effects of physical exertion or increased workloads (casualty rescue etc.).
 - Any relocation of ECP.

Team and task rotation

- 7.33 This is a technique used to ensure that all members of a BA team that are committed to a risk area consume approximately the same amount of air (especially important when wearing EDBA).
- 7.34 This is a simple method and involves all BA team members sharing tasks, roles and functions. Examples include:
- Rotating the BA team members through different positions when carrying equipment or a casualty on a stretcher.
 - All BA team members 'taking turns' at undertaking a specific task.
 - All BA team members rotating through the number one position and leading the BA team (the designated BA team leader will, however, always remain in command of the BA team).
- 7.35 BA team leaders must ensure that team and task rotation is applied although it is equally important that all BA wearers consider it's application and prompt the BA team leader if necessary.

Entry control point (booking out)

- 7.36 BA wearers exiting the risk area shall:
- Immediately report to the ECP, close down BA set and collect BA tally from the ECO.
 - Assist BA team leader with debrief (as required) ensuring that any information that may assist other BA teams entering the risk area, or the IC, is made known to the person responsible for the ECP. It may assist to draw a basic plan (or use plans available) to identify the route, any hazards, location of casualty(s), landmarks and clearly mark areas that have been searched to assist any further BA teams.

BA set testing (incident ground 'A' and 'B' test)

- 7.37 A BA wearer can only carry out one incident ground 'A' test on their BA set. The BA set is not to be used after the second wear unless a 'B' test has been carried out. If a BA set that has already been worn and is then allocated to another BA wearer a 'B' test must be completed. The operational support unit (OSU) with BA maintenance resource pack must be in attendance to enable a 'B' test to be carried out.

- 7.38 BA sets that have become heavily contaminated must be 'B' tested before being worn again.
- 7.39 Carry out all incident ground testing away from the risk area so that any DSU sound will not be heard by wearers in the risk area or interpreted as coming from inside the risk area.

Damping down and cutting away

- 7.40 During damping down and cutting away operations where fire compartments **remain hot/warm** the minimum RPE level is breathing apparatus. Unseen fire gases will still be present so therefore particulate filters will not provide the correct level of protection.

8 Nominated BA wearer incident duties EDBA

- 8.1 This section provides further guidance for EDBA, however wearers must be aware that standard BA procedures still apply.
- 8.2 EDBA is provided to give an enhanced duration where long travel distances or the conditions likely to be encountered make SDBA less effective, such as incidents below ground or when searching large buildings. It is **not** provided in order to increase the amount of work BA wearers can undertake within the risk area.
- 8.3 Due to the demands that wearing EDBA will place on wearers it is important that BA team leaders, IC or SC and wearers pay particular attention to their mental and physical well-being. Anyone who has doubts about their own or another's ability to withstand the demands placed upon them as EDBA wearers are to bring these to the attention of their watch officer and or IC.
- 8.4 EDBA wearers are only to be used for 're-entry' or 'second wear' in exceptional circumstances.
- 8.5 EDBA wearers and their watch officers have a responsibility to ensure they are fit to wear EDBA given the potential additional physiological demands that may be involved.
- 8.6 For specific technical information regarding EDBA see [policy number 476](#) – Respiratory protective equipment – breathing apparatus – Dräger PSS 7000 – technical information.

9 Nominated BA wearer post wear duties

- 9.1 On completion of a BA wear, ensure self and other team members are not suffering the effects of heat stress and on the instructions of a relevant officer relax PPE, allow to cool down, hydrate as soon as possible, rest and recuperate.
- 9.2 BA wearers must report any injury, safety or near-miss events to the IC.
- 9.3 As soon as possible after wearing BA clean and wash hands to reduce the risk of cross contamination from the risk area (see [policy number 707](#) – The control of infection and infectious diseases policy).
- 9.4 On return to station ensure that the appropriate testing and cleaning is carried out on BA set and ancillary BA equipment and appropriate log book and records are completed.

10 Nominated BA team leader incident duties

- 10.1 A member of the BA team will be nominated as team leader by the IC or SC. This must not be a firefighter on development.
- 10.2 The BA team leader should not perform all team tasks personally and tasks should be shared between team members i.e. use of TIC and operation of firefighting media.

10.3 The BA team leader is responsible for the BA team whilst in the risk area and when making decisions should consider:

- The IC or SCs risk assessment and briefing.
- Their knowledge and experience.
- Any information received from outside the risk area.
- Visual and other 'cues' inside the risk area (noise, temperature).
- Evidence gathered from situation, task and event using the decision making model (DMM).
- Information from equipment, such as Bodyguard and TIC.
- Information from other BA team members.

10.4 The duties of BA team leaders are to:

- Ensure the whole BA team is fully briefed by the briefing officer before deployment into the risk area and is debriefed on exit from the risk area and that any relevant information is passed to the ECO, IC, SC or other BA teams.
- Lead the team to complete allocated tasks and return to ECP.
- Promote and maintain regular communications within the BA team.
- Co-ordinate pressure and telemetry signal checks ensuring that the BA team return to the ECP before any BA set low pressure warning operates and having regard to limits previously agreed with the IC or SC to prevent undue exposure to known harsh conditions.
- Monitor working conditions to identify any adverse and changing conditions, such as temperature change/rise or change in smoke colour/pressure and assess their impact on BA team members and their working duration.
- Exchange information on pressure readings with the ECO if loss of telemetry signal occurs
- Regularly pass information on conditions, premises layout, hazards and BA team status to the ECO or Comms-Op.
- Ensure that BA wearers committed as a BA team remain together and exit at the same time and place. BA teams must **never** be split.
- Decide whether to continue to carry out operations if radio communications with the ECP fail, recognising that a BA emergency team may be committed to investigate.
- Prompt BA team members to undertake task rotation and air management. Objectives defined in pre-entry briefings should be re-assessed in the light of the prevailing conditions if necessary.
- Ensure that if it is felt necessary to deviate from the teams brief that this is communicated to the IC or SC prior to any change in tactics.
- Ensure all BA team members operate the withdrawal button (right button) on the Bodyguard when deciding to return to the ECP, this will be acknowledged by the ECO. It is good practice to contact the ECO by radio to confirm this operation.
- Ensure that any unintended actuation of the withdrawal button is communicated to the ECO. In this circumstance, the BA team may continue to complete their task.
- Provide feedback to person responsible for the ECP on exit from the risk area.

10.5 The BA team leader **must** withdraw the BA team and inform the ECO or Comms-Op if any of the following occur:

- Any BA team member has an uncontrolled loss of air.
- A BA set low pressure warning actuates.
- Any BA team member seems unwell or confused.
- Any BA team member's Bodyguard display becomes faulty or unreadable.
- A BA set DSU actuates within the team (ECO should also be alerted to this by the ECB).
- Any BA team member indicates they may have been exposed to an irrespirable atmosphere due to a dislodged or defective face mask.

- A sustained and/or unexplained breakdown of both radio and telemetry communications (withdraw the BA team to a point where communications can be restored).
 - Any BA team member reaches a pre-determined pressure reading set by the person responsible for the ECP, following an assessment of physiological risk and other relevant information. For example, in the case of chemical protective clothing (CPC), by determining sufficient time for decontamination procedures to be carried out within the 20 minute recommended wear time.
 - An emergency evacuation signal sounds and receipt is confirmed with ECO or Comms-Op (ACME thunder whistle, radio comms or telemetry).
 - Loss of firefighting media.
 - Conditions in the risk area have deteriorated to the extent that BA team members are exposed to an unacceptable level of risk.
- 10.6 In any of the above circumstances the team must withdraw together and the team leader must consider operating their DSU (if none are already actuating) to summon assistance from other BA teams and to alert the ECO via telemetry communication.
- 10.7 If the BA team are unable to withdraw they must immediately go into entrapped procedure and inform ECO or Comms-Op if possible.
- 10.8 If the decision is made to withdraw the BA team prematurely from the risk area inform the ECO or Comms-Op if possible.

11 BA emergency team

- 11.1 The IC must nominate a BA emergency team as soon as resources allow.
- 11.2 The BA emergency team shall be nominated and maintained throughout BA operations. This is a dedicated role and this team should only be used for other tasks in exceptional circumstances i.e. to save a saveable life.
- 11.3 The BA emergency team must be:
- Led by a minimum rank of leading firefighter (LFF).
 - At least as large as the largest BA team or teams working together on the same task.
 - Rigged to at least the same level of PPE/RPE as BA teams already committed.
 - Switched to the same radio channel as BA teams already committed to enable the emergency team leader to monitor and communicate with committed BA teams. The BA emergency team(s) will adopt call signs linked to the ECP 'alpha emergency team one', 'alpha emergency team two' and so on. A BA emergency team should consist of BA wearers who have not previously been committed to the risk area, unless the knowledge of those wearers is required to allow the team to be effective (e.g. their previous wear means that they know the route/layout in a complex building).
- 11.4 The IC should take into account the demands likely to be made on these BA wearers and should consider using them to only undertake specific functions, such as searching for missing BA wearers in a known area. If the BA emergency team is committed to locate a BA team, they should be briefed to locate the BA team and immediately report back (either by radio or physically) the condition and circumstances of the BA team.

Note: Resuscitators must **not** be taken into the risk area, consider 'second set' procedure.

12 Nominated BA emergency team incident duties

- 12.1 A nominated BA emergency team shall provide the following equipment to their nominated ECP:

- An additional ECB set up and annotated 'BA emergency team' for use by the BA emergency team if committed.
- One 'second set' (select ECO's BA set and include second set bag where available) carried by every two BA wearers in the BA emergency team (split tally from Bodyguard key and write 'second set' on the BA tally of the 'second set' and insert it into the ECB, bracketed together with the BA emergency team).
- A charged 45 mm second jet (if not already in place). Where resources allow this should be from an alternative pump and water supply.

12.2 Once established the BA emergency team should :

- Monitor briefing/debriefings for all other BA teams committed and exiting from that ECP.
- Monitor radio messages sent and received to and from that ECP.
- Familiarise themselves with building layout/construction and plan alternative emergency egress points.
- Plot the locations of BA teams already committed from that ECP.
- Provide a full brief to any relief BA emergency team sent to that ECP.

BA emergency team actions on locating distressed BA wearer(s)

12.3 Following the search and location of distressed BA wearer(s) the BA emergency team shall:

- Silence the distressed BA wearer(s) DSU to improve communications. Use 'second set' Bodyguard key to silence actuating DSU and then return key to the 'second set' so that BA wearer(s) Bodyguard remains active following silencing.
- If possible, get the distressed BA wearer(s) to confirm the nature of the emergency.
- Inform ECP that distressed BA wearer(s) have been located and request any further assistance that is required.
- Take pressure readings of both distressed BA wearers and the BA emergency team to assess if sufficient duration remains to withdraw and any requirement to supplement air.
- Render any on scene emergency assistance as required.
- Following assessment of risk, determine and implement a safe action plan to remove distressed BA wearer(s) from the risk area.

13 Cable entanglement

13.1 BA teams must use safe movement procedures at all times, as this will help to identify any fallen cables and enable BA team members to avoid entanglement.

13.2 Any BA wearer encountering fallen cables must immediately inform all BA team members, other BA teams and the ECO or Comms-Op of the location of cables encountered. The ECO must also ensure that the presence of this hazard is communicated to the IC or SC.

13.3 BA teams should risk assess the need to travel through areas where fallen cables are encountered, using alternative routes if available.

13.4 Where a BA team member becomes entangled and is unable to free themselves they must immediately:

- Inform all other BA team member(s) and remain as still as possible to prevent further entanglement.
- Carry out cable entanglement procedure (see Babcock BA 017 Emergency Procedures Core Skills and Cable entanglement training BPA appendix 5 of this policy).

13.5 If any BA team member is in distress as a result of cable entanglement their DSU **must** be actuated immediately.

- 13.6 On the release of an entangled team member, the BA team leader in consultation with BA team members must establish if they can continue with operations. They must inform the ECO of their decision and the ECO should convey this information to the IC or SC.

Note: If any DSU has been operated, the BA team **must** withdraw.

- 13.7 ECOs being informed of BA team entanglement must:

- Inform the person responsible for the ECP.
- Commit BA emergency team.

- 13.8 ICs or SCs being informed of BA team entanglement must:

- Consider declaring a "firefighter emergency" (see [policy number 496](#) - Firefighter emergency, emergency evacuation and tactical withdrawal).
- Consider isolation of electrical supplies.
- Commence accident investigation (all instances of cable entanglement are to be recorded).

14 Distress signals

- 14.1 A DSU must be operated **immediately** by a BA team member if they:

- Become lost or confused or are injured and in difficulty.
- Have problems with their BA set.
- Become distressed, trapped or disorientated.

Note: **Do not wait** – inform ECO or Comms-Op and then operate the DSU to summon assistance.

- 14.2 BA team(s) hearing a distress signal must advise the ECO or Comms-Op and must keep them informed of their actions.

- 14.3 On hearing a distress signal the team leaders of all BA teams are to direct their BA teams to investigate the source of the sound. Rendering assistance to a BA wearer in distress takes precedence over other tasks, subject to:

- Having sufficient reserves of air to enable effective assistance to be given.
- Whether the BA team is already undertaking a rescue or maintaining egress routes for other BA teams within the risk area.

- 14.4 The team leader of the BA team sounding the DSU should consider whether the team should withdraw or remain stationary until they are located by a responding BA team/emergency team.

- 14.5 The use of radio communications will assist the ECPS/ECO or IC/SC to determine the nature of the distress and assist in providing an appropriate response.

- 14.6 When making the decision to withdraw after actuation of a DSU, BA team leaders should consider:

- How close they are to the exit.
- How close they are to the fire or other hazard.
- Whether staying where they are puts them in further/greater difficulties/increased risk.
- Whether attempting to withdraw puts them in further/greater difficulties/increased risk.
- Proximity of and how other BA teams may be able to assist (communicate assistance required if appropriate).
- Impact of the fitness or condition of BA team members on their ability to withdraw.

- 14.7 It should be noted that some devices sound like a DSU. All such sounds should be investigated and, if it is not a DSU, inform the IC or SC (and other BA teams) via the ECO or Comms-Op.

14.8 If any member of a BA team has an accidental actuation of their DSU the BA team must take the following actions:

- Inform the ECO or Comms-Op by radio to confirm accidental actuation, so that a BA emergency team is not committed unnecessarily.
- Withdraw from the risk area and report to ECP.

The ECO must take the following actions:

- Inform other BA teams committed of accidental actuation.
- Instruct the BA team to stay under air when they report to the ECP.
- Cancel the DSU with the affected wearer's Bodyguard key taken from the ECB.
- Manually log off that BA wearer and then reinsert the BA tally into the same BA tally position on the ECB and release the BA team back into the risk area if appropriate (see section 31.9).

15 Entrapped procedure

- 15.1 The aim of the entrapped procedure is to allow a BA wearer to maximise the duration of the available air in their BA set in the event of becoming trapped or being unable to withdraw from the risk area.
- 15.2 The low pressure warning operates when sufficient air remains for 12 minutes duration at a consumption rate of 50 litres per minute for SDBA and 18 minutes duration at a consumption rate of 58 litres per minute for EDBA. These times can be greatly extended by reducing demand.
- 15.3 No provision exists to conserve the air supply for compressed air BA other than by the wearer moderating demand by reducing their breathing rate.
- 15.4 When the BA wearer becomes aware that it is not possible to exit the risk area the following actions should be taken:
- Contact ECO or Comms-Op by radio (if possible).
 - Operate one team members DSU (normally the member in distress/lowest pressure).
 - Relax as much as possible in the circumstances by assuming a reclined or seated posture.
 - Breathe calmly to minimise demand, stay in physical contact with other team members and conserve air by keeping verbal communication to a minimum.
- 15.5 Do not operate the additional flow button on the lung demand valve (LDV). Do not adjust the cylinder valve other than to ensure it is fully open.
- 15.6 Once the safety margin has been reached the low pressure warning will actuate. The electronic warning consumes no air and the pneumatic warning consumes a minimal amount. Consider exchange of air procedure.

16 Emergency exchange of air

- 16.1 The BA set is fitted with a 'second person connection' which allows exchange of air to be completed.
- 16.2 Where a BA team member becomes aware that they are low on air they must immediately:
- Inform all other BA team members.
 - Carry out exchange of air procedure (see Babcock BA 017 Emergency Procedures Core Skills) and appendix 2 of this policy.
- 16.3 Following exchange of air the donor must contact the ECO or Comms-Op with following information:

- BA team location.
- Whether or not they are adopting entrapped procedure.
- Whether or not they are exiting the risk area.
- That exchange of air has taken place and the BA wearers affected.

16.4 The recipient then activates their DSU.

16.5 The BA team will either exit the risk area or adopt entrapped procedure.

Exchange of air and gas tight suit (GTS)

16.6 In order to supplement the air supply to a GTS wearer without compromising the GTS it is necessary to use a second set. The second set must be packaged so that the second person connection is placed outside of the bag with the 1m rescue hose and back to back adaptor fitted. This can then be connected to the GTS external coupling at the wearer's left hip.

16.7 **If this is not immediately possible, use any method to get into the suit and connect to the BA wearer's second person connection.**

Exchange of air during GTS decontamination

16.8 GTS wearer's reporting for decontamination with a Bodyguard pressure reading of 100 bar or below must have their air supply supplemented by use of a 'second set' as per 16.6 above, this is supplied and connected by decontamination operative one (Decon Op 1-dirty).

16.9 When the wearer's GTS has been removed to waist level a Bodyguard reading must be taken. If the Bodyguard reading is 90 bar or below, Decon Op 2 (clean) provides another second set packaged as per 16.6 above and presents the wearer with the back to back adaptor. The wearer connects the BA set inline connection to the back to back adaptor and proceeds to ECP. Decon Op 2 (clean) will carry the second set for the wearer.

The ECO will monitor the cylinder pressure for the second set(s) in use. During the decontamination procedure remove tally from Bodyguard key and write 'second set' on the BA tally of the second set and insert it into the ECB prior to use.

17 Guidelines

Use of guidelines

17.1 Guidelines are only to be used on the instructions of the IC. It is recommended that guidelines are laid by EDBA teams.

17.2 They are used to provide a means by which a BA team entering and searching a risk area can retrace its steps. Guidelines also enable subsequent BA teams to make their way to, and return from the scene of operations with the minimum of difficulty.

- Stage II entry control procedure must be implemented when guidelines are used.
- Only one main guideline is to be laid along any single route from an ECP.

17.3 Main guidelines must be used:

- Where no other suitable means exist for tracing the way out of a risk area, such as when hose lines are submerged or tangled or premises layout is complex.
- To enter high expansion foam.

17.4 Branch guidelines are used:

- When there is a need to search off the main guideline a distance greater than can be achieved with the full length of a personal line (i.e. 6m).
 - Branch guidelines must not be extended.
- 17.5 No more than two main guidelines and four branch guidelines can be in use from any single ECP.
- 17.6 Where practicable guidelines should not be laid closer than 6m to one another as this may lead to confusion when BA teams are traversing them.
- Note. During the initial laying along a corridor from an EP this may be unavoidable until the guidelines split (if this is unavoidable, two guidelines must not be laid along the same wall).
- 17.7 When searching rooms that are known or discovered to be small the guideline should be gathered up and taken out of the room to shorten the route and use the guideline more efficiently. Update the ECO with this information via radio communications and on exit with the debriefing officer. It must be made clear to subsequent BA teams that this area has been searched.
- 17.8 The use of guidelines is covered in Babcock training note GL 001 Guideline Procedures and see appendix 3 of this policy for best practice assessment (BPA).

18 Bridgehead or forward BA entry control point

- 18.1 This may be implemented by an IC or SC when there is a requirement to provide an ECP at some distance from the initial point of access into a building or risk area, whilst still remaining in safe air, at incidents such as those involving high rise buildings or large, complex structures like shopping malls.
- 18.2 This allows the deployment of BA teams from safe air within a structure whilst being as close as practical to the scene of operations.
- 18.3 The location of the ECP in these circumstances will be determined by the IC or SC based on any site specific plan, the operational plan and the level of risk faced by BA teams.
- 18.4 A bridgehead or forward BA entry control point must be sited in safe air and with regard to the following factors:
- The potential for the incident to escalate.
 - Availability of access and egress points to the risk area.
 - BA team safety and welfare.
 - Availability of water supplies.
 - Effective communications with BA teams, IC and/or SC.
 - The level of supervision and support necessary for the ECO.
 - The distance from the initial point of access to the ECP.
- 18.5 See also [policy number 467](#) - Breathing apparatus sub surface procedure and [policy number 633](#) - High rise firefighting.

19 Working in high expansion foam (Hi-Ex foam)

- 19.1 Guidelines must be used whenever BA teams are committed into Hi-Ex foam.
- 19.2 Stage II entry control must be established and the ECO must ensure that the BA wearer's LDV outer rubber casing is pulled away from the LDV body (see [policy number 476](#) - Respiratory protective equipment – breathing apparatus – Dräger PSS 7000 – technical information, appendix 1 for details).

20 Chemical protective clothing

- 20.1 When GTS is being worn the ECO and the wearer should be aware that the recommended maximum period for wearing GTS is 20 minutes. Agreement for an extension to the wearing time must be agreed with each wearer, not with the team leader alone.
- 20.2 Working duration may be extended where the work rate is low or the weather conditions are cool or shortened where work rate is high or the weather conditions are hot. When a work time has been agreed between the IC and each wearer this information must be conveyed to the ECO and noted in the 'remarks' column of the ECB.
- 20.3 Working duration will always be subject to the over-riding consideration that the BA team **must be withdrawn immediately if any wearer shows symptoms of heat stress**. For this reason all personnel should be made aware of the symptoms of heat stress, (see [policy number 284](#) - Metabolic heat stress) and of the appropriate treatment for it, this is particularly relevant for EDBA wearers.
- 20.4 When Stage I BA entry control is operating, wearers must remain in sight of the ECO and Stage II entry control must be introduced if the wearers need to operate out of sight of ECO.

Low battery warning automatic distress signal unit (DSU)

- 20.5 If the Dräger Bodyguard 1000 DSU low battery warning signal actuates prior to booking in at entry control the CPC wearer must:
- Withdraw from the ECP.
 - Remove the Dräger Bodyguard 1000 DSU and resources permitting, have the unit replaced and continue with operations.
- 20.6 If the Dräger Bodyguard 1000 DSU low battery warning signal actuates while CPC is being worn in the risk area the wearer must:
- Inform the ECO or Comms-Op immediately.
 - The CPC wearer can continue with deployment within the risk area.
 - Following withdrawal from the risk area the DSU should be taken out of service until battery replacement has been completed.

21 Aerial appliances and ladders

- 21.1 Aerial appliances should not normally be sited and pitched in a position which makes it necessary for personnel to wear BA in the cage or at the head of the ladder.
- 21.2 When the IC deems it necessary for BA wearers to work from the head of aerial appliances they must be controlled through the appropriate stage of BA entry control. The ECO shall make an entry on the ECB of the location of the wearer and that they are working alone.
- 21.3 Where it is necessary for a BA team to enter a building or structure at or above ground level by use of turntable ladder or pitched ladder, an ECP should be established at ground level in a safe area adjacent to the ladder.
- 21.4 Personnel working at the head of an aerial appliance must only wear BA on the order of the IC or SC.
- 21.5 A BA wearer working at the head of an aerial appliance must:
- Use communications to remain in contact with the aerial operator and the ECO.
 - Stay on the ladder or cage.
 - Wear a safety harness and lanyard attached to an anchor point.

- 21.6 On all occasions where BA is being used on aerial appliances the base operator must ensure a clear view of the cage/head whenever possible. Should the cage/head be enveloped in smoke or be otherwise out of view, the base operator should confirm with the BA wearer that it is safe to continue operations, and should inform the IC or SC of the changed situation.
- 21.7 Aerial appliance cages must not be used as ECPs.
- 21.8 Where an aerial appliance is used to provide means of access for BA wearers, or where the cage is occupied by BA wearers whether or not they are aerial operators, the operation of the appliance will only be by means of the base console. This must be sited in safe air. The operator at the base console must not wear or need to wear any RPE as vision may be restricted by the face mask.
- 21.9 When an aerial appliance or ladder is used for access by BA teams it **must not** be repositioned under any circumstances until the BA teams have returned and been brought down to ground level.

22 Distress to wearer (DTW) procedure

- 22.1 If a DTW incident occurs the IC must inform Brigade Control, request the attendance of an senior accident investigator (SAI) and implement the procedure detailed on BA aide memoire No. 5 – Distress to wearer procedure (see appendix 1) and (see Babcock BA 007 BA Entry Control Procedures Core Skills).

Definition of DTW

- 22.2 Any malfunction of a BA set, which is likely to or has the potential to deprive the wearer of air or expose them to a contaminated atmosphere (this includes cosmetic smoke), and that is discovered or occurs during:
- Actual use (operational or training).
 - Any checks before use in a contaminated atmosphere (don and start or incident ground 'A' test).
 - When BA is being worn after leaving a contaminated atmosphere.
 - Where, due to restriction in the wearer's ability to operate the controls or remove the face mask, there is an actual or potential deprivation of air to the wearer.
 - Where a defective BA set harness prevents the set continuing to be worn by pulling on the face mask causing potential deprivation of air.
- 22.3 Malfunctions found during routine testing or maintenance is **not** reportable under Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR 1995).
- 22.4 If any malfunction or fault occurs that does not fall under the definition of a DTW although an examination of the BA set is required (due to a safety event or investigation) this will fall under the 'special examination' procedure.
- 22.5 BA sets that require 'special examination' should be forwarded to Operations Support Group (OSG) using the equipment impounding box to preserve evidence. It should be clearly stated on the transport form that the BA set requires special investigation.
- 22.6 The term malfunction does not include leakage into a face mask due to poor face fit or a failure arising from an external source, such as falling debris or entanglement.
- 22.7 For advice contact the respiratory protective equipment logistics officer (RPELO), who is available 24/7 and can be contacted via Resource Management Centre (RMC) or Brigade Control.

23 Working with other brigades

- 23.1 Other fire and rescue services (FRS) may use different operational procedures and types of BA equipment and it is therefore important that an LFB officer attends to liaise, communicate, and resolve operational differences.
- 23.2 BA wearers from different FRS may be committed at the same incident if:
- They only use the equipment from their own FRS.
 - They are under the control of an ECO/ECPS with ECBs from their own FRS.
- 23.3 BA teams must only consist of BA wearers from the same FRS. Where BA teams from more than one FRS have been committed to the same incident, each FRS will have its own ECB. Each ECP BA emergency team must support BA wearers from the same FRS and be equipped with the appropriate 'second set' as rescue equipment. This BA set must be the same BA set as that being worn by the BA team they are covering.

24 Working with other agencies

- 24.1 There are a number of other agencies using BA equipment (such as scientific advisor, police and ambulance services) that may be required to attend the same incident and memoranda of understanding (MOU) have been agreed to detail the arrangements in place for working with them.
- 24.2 The LFB via its training partner provides these agencies with initial and continuation training.
- 24.3 At incidents requiring other agencies to wear BA, where the LFB is in attendance, BA entry control procedures will be managed by LFB personnel.
- 24.4 Due to different consumption rates in use by other agencies, only London Ambulance Service Hazardous Area Response Team (LAS HART) EDDBA teams may be committed through LFB ECBs. Where they do, LAS must provide a Comms-Op who is in constant contact with their deployed BA teams. All other agencies must provide their own ECB.

25 Welfare of BA wearers

- 25.1 The welfare of BA wearers must be considered and monitored whenever BA is deployed.
- 25.2 Firefighting PPE is essential for personal protection. However, while providing a thermal barrier to protect the wearer from high temperatures, it also prevents the dissipation of body heat as the wearer starts to work and will contribute to a rise in core body temperature. This will increase the likelihood and onset of heat stress.
- 25.3 The selection of PPE for BA wearers must be appropriate for the environment into which they are to be deployed and tasks to be undertaken (e.g. CPC may not require firefighting PPE to be worn underneath).
- 25.4 It is imperative for all personnel to remain properly hydrated whilst on duty.
- 25.5 It is recommended that a BA wearer consumes 500ml of water within the 30 minutes prior to working in BA.

26 Dealing with physiological effects of working in hot and humid conditions

- 26.1 The IC or SC must take account of the effects that working in hot and humid conditions can have on the body. All personnel must be aware that physiological stress may occur at any time and not just when wearing BA.
- 26.2 BA wearers may be subjected to heat in three different ways:
- Environmental conditions – heat generated by the environment in which a BA wearer is working. This is absorbed by the BA wearer increasing core body temperature.
 - Metabolic heat generation – this is the heat created by the BA wearer through normal functions. This increases substantially when the BA wearer starts to work harder.
 - Psychological stress – may also increase the rate of metabolic heat generation.
- 26.3 Wherever possible personnel intended to be used as BA wearers should not be used for other tasks requiring high levels of physical effort (such as transporting equipment upstairs during high-rise incidents) as this will raise their core body temperature potentially leading to the early onset of heat stress and a loss in effectiveness whilst wearing BA.
- 26.4 ICs, SCs, BA wearers and ECOs must take all possible steps during an incident to mitigate the build-up of BA wearers' core body temperature before committal. Research has identified that there are various methods to limit heat build-up, and to ensure that these effects are minimised. Where possible:
- IC or SC to establish a shaded holding and recovery area, away from the immediate risk area, where BA wearers can muster and rest.
 - BA wearers within the holding and recovery area should relax their firefighting PPE to allow their body to cool as normal (Where emergency teams are standing by at the incident, they are to remain fully rigged).
 - Drinking water must be available at the holding and recovery area to allow personnel to rehydrate, use of personal water bottles should be encouraged (At hazardous materials incidents drinking water is only to be allowed under the direction of the HMEPO or SA).
 - Recognise the stresses of the tasks that BA wearers are required to complete. Ensure that BA teams are relieved at appropriate intervals.
- 26.5 To optimise recovery between BA wears and maximise performance and safety before being redeployed, BA wearers should be given a period of time to rest and rehydrate. Paragraph 26.6 below details guidance on rest and rehydration periods; however, the time given should be based on the task undertaken, duration and conditions encountered by wearers. If wearers are not going to be redeployed in BA they can undertake other work subject to the IC's or SC's risk assessment.
- 26.6 Following BA wears within the risk area the minimum rest and recovery periods are:
- Following ambient BA wear 30 minutes rest and consume 500ml of cool water.
 - Following hot and humid BA wear 60 minutes rest and consume 1000ml of cool water.
- These rest and recovery periods will only be shortened in exceptional circumstances i.e. to save a saveable life when no fresh BA wearers are available.
- 26.7 Once the recovery period has elapsed or clearance has been given to leave the rest area, personnel will report to the IC or SC for redeployment.
- 26.8 See [policy number 284](#) - Metabolic heat stress.

BA entry control

27 BA entry control procedures

- 27.1 The purpose of BA entry control procedures is to provide a consistent method for the safe and effective command, control and management of BA operations.
- BA control procedures must be used whenever BA is worn.
 - There are two stages of BA entry control, Stage I and Stage II.
 - The highest stage of BA entry control in use at any one ECP will be adopted by all other ECPs in use at the same incident.

28 Stage I BA entry control

- 28.1 This is the minimum level of BA entry control necessary whenever BA is used:
- Incident requires a limited number of BA wearers over a limited period of time.
 - Incident and any structures involved are small and not complex.
 - Limited to **six** wearers deployed into the risk area at any one time.
 - Limited to one ECP.
 - The IC must nominate a BA emergency team as soon as resources are available.
 - When resources permit the IC will nominate a Comms-Op.

29 Entry control operative (ECO)

- 29.1 An ECOs responsibility is for the control and management of the ECP as described in the remainder of this policy. An ECO is not responsible for supervising the tasks allocated to BA teams. This responsibility rests with the IC or SC.
- 29.2 The ECO must not be involved or allocated any other tasks.

30 Nominated ECO station duties

- 30.1 Ensure personal competence and BPAs are kept up to date, if lapsed inform OiC.
- 30.2 When nominated by a watch officer an ECO (or nominated person for CU only equipment) is responsible for the examination and testing of the following:
- Ensure the ECB and its telemetry functionality is fully tested (see [policy number 760](#) - Respiratory protective equipment - Dräger PSS Merlin telemetry equipment – technical information).
 - ECO surcoat.
 - Chinagraph pencils (black for SDBA or respirator tally and white for EDBA tally).
 - Evacuation whistle.
 - Main guide line tallies A+B and branch guide line tallies 1-4 (FRU only).
 - BA aides memoire set of twelve.
 - BA guidelines.
 - IEC pack (resuscitator).
 - ECB tripod and bracket.
 - Thermal imaging camera
 - Telemetry repeaters (FRU and CU only).
 - Telemetry leaky feeder (FRU only).
 - Ensure that the 'second set' carrying bags are available (FRU, CU, OSU only).

- 30.3 ECO (or nominated person in the case of the CU) must report to the watch officer any defects and or missing equipment immediately.

31 Nominated ECO incident duties

- 31.1 BA aide memoire No. 1 is provided for incident ground use (see appendix 1).
- 31.2 The ECO is responsible for one ECB only, and a maximum of **six** BA wearers.

Setting up ECP

- 31.3 The ECP is the position for the command and control, deployment and monitoring of BA wearers committed to a risk area and should be sited under the direction of the IC or SC.
- 31.4 The ECO will:
- Set up ECB on tripod, complete ECB information panel and ensure correct time is displayed (ECP can consist of more than one ECB, only one alphabetical call sign will apply to an ECP).
 - Don 'ECO' surcoat.
 - Provide IEC pack (resuscitator).
 - Switch incident ground radio to BA channel (if BA Comms-Op is nominated switch to command channel).
 - Prompt IC to provide BA emergency team when resources permit.

Briefing and debriefing

- 31.5 The ECO is not responsible for the briefing and debriefing of BA teams and this should be undertaken by the IC or SC.
- 31.6 The ECO should confirm their own understanding of the briefing and debriefing given to BA teams with the briefing officer and update the ECB with key information.

First wear (new entry)

- 31.7 BA wearers reporting to the ECO must have at least **240** bar cylinder pressure (minimum entry pressure) and the ECO enters new entry records onto the ECB.
- 31.8 The ECO will:
- Check BA team are correctly rigged in RPE/PPE with no exposed skin.
 - Receive BA tallies, check wearer and cylinder pressure information are correctly entered (pressures must be at least **240** bar) and enter 'time in' using the ECB clock.
 - Enter BA tallies into ECB ensuring telemetry signal is achieved (if manual calculations are required see aide memoire No. 11) and bracket BA team together.
 - Enter BA team location in 'location' column of ECB.
 - Enter task, extinguishing media (including weight of attack), turn around pressure (TAP), turn around time (TAT) when appropriate and any appropriate resources in the 'remarks' column of the ECB.
 - Inform BA team(s) of ECP call sign.
 - Confirm BA team(s) call sign and record in 'remarks' column of ECB.
 - Carry out radio communications check with BA team(s).
 - Check wearer's electronic personal dosimeter (EPD) as they enter suspected/confirmed radiation incidents and record the reading in the 'IN' section on the back of the BA tally.
 - When committing BA wearers to Hi-Ex foam the ECO must ensure that the BA wearers LDV outer rubber casing has been unclipped from the lug and lifted clear of the LDV housing. This

is to prevent the build-up of foam behind the rubber casing causing the LDV to go into free flow.

- 31.9 Where a BA team temporarily withdraws but does not remove their face masks (for example to collect equipment) they can immediately return to the risk area without fresh records or amendments being made. The Bodyguard withdraw button would not be pressed in this case.

Communications to IC, BA teams and other ECP

- 31.10 In the absence of a BA Comms-Op the ECO must:

- Maintain communications with BA teams operating inside the risk area.
- Inform the person responsible for the ECP of any prolonged breakdown in communications with BA teams (prompt IC or SC to consider use of telemetry repeaters).
- Inform other ECPs if any BA teams report to the ECP that are not under your control.
- Forward on information to the person responsible for the ECP of any relevant update from BA teams and record this time of update in the 'remarks' column of the ECB.
- Inform BA teams if there is any relocation of the ECP.

- 31.11 Advise BA teams of the location and tasks of adjacent BA teams during operations and record the information so that it is available for briefing or debriefing of BA teams.

Monitor ECB

- 31.12 The ECO must monitor the telemetry signal displayed on the ECB (solid green radio icon against each BA tally position). The ECO must make immediate radio contact with any BA team(s) when loss of telemetry signal is identified to confirm the safety and wellbeing of the team and, if radio contact fails, inform the person responsible for the ECP and commit a BA emergency team to investigate. The IC or SC must consider if circumstances require a 'Firefighter Emergency' to be declared.

- 31.13 If telemetry signal loss is prolonged and cannot be re-established (BA team welfare has been confirmed by radio contact), the ECO must inform the IC or SC who shall consider deploying telemetry repeaters or leaky feeder. This decision will be dependent upon the nature and type of incident, i.e. complexity of task, numbers of BA teams committed and whether the incident is sub-surface or likely to be protracted.

- 31.14 For more detailed information on the use, deployment and methods of boosting the signal strength of telemetry equipment through the use of telemetry repeaters or leaky feeder, see [policy number 760](#) - Respiratory Protective Equipment - Dräger PSS Merlin telemetry equipment – technical information.

Withdrawal of and close down of BA teams

- 31.15 The ECO will:

- Inform IC or SC if BA teams are being withdrawn prematurely.
- Ensure all BA wearers have closed down and purged their BA set prior to removal of BA tally from ECB (BA wearers will not be logged off from ECB unless this sequence is carried out).
- Return BA wearers' tallies as they pass back through ECP and direct them to report to the IC or SC for debriefing.
- Check wearer's EPD as they withdraw from suspected/confirmed radiation incidents and record the reading in the 'OUT' section on the back of the BA tally. Note and inform the IC or SC of any change in the reading.

- 31.16 When a BA wearer requires decontamination after exiting from the risk area, the decontamination director may request the BA wearer's DSU key to deactivate the unit when removed from the wearer (see [policy number 584](#) – Firefighter decontamination).
- 31.17 If a BA tally fails to log off from the ECB, the ECO can perform a 'manual log-off' (see BA aide memoire No. 10).

Re-entry

- 31.18 This occurs following withdrawal and closing down, if the BA team is required to re-enter the risk area to perform a specific task, such as equipment collection or a simple ventilation task like opening a window.
- 31.19 If after withdrawing and closing down, a BA team can re-enter the risk area to perform a specific task (other than firefighting) provided that:
- The BA team have remained under the control and supervision of the ECP.
 - There are no doubts about the fitness and wellbeing of any BA wearer for the task to be undertaken.
 - All BA team members have a cylinder content of at least **190** bar. Pressures in excess of **190** bar will be recorded on the BA tally as **190** bar for the purposes of the task and for control of the BA team.
 - The task will be of short duration and the IC or SC considers the BA wearers have sufficient air to complete it and return to ECP before the low pressure warning actuates. The 'time in' will be recorded on the BA tally and a time of warning (TOW) for **15** minutes later entered into the 'location' column. The words 're-entry' and the task being performed must be entered in the 'remarks' column (the BA team **will be** recommitted using manual calculations).
- 31.20 Other than in exceptional circumstances EDBA wearers should not be used for 're-entry' tasks.

Second wear (new entry)

- 31.21 In exceptional circumstances i.e. to save a saveable life the IC or SC can recommit BA wearers for a second wear at the same incident if no fresh BA wearers are available.
- 31.22 The IC or SC must carry out an assessment in consultation with the BA wearers in order to be satisfied that the BA team are rested, re-hydrated and fit for a subsequent entry. Fresh ECB records are required. See section 26 Dealing with physiological effects of working in hot and humid conditions for the minimum rest and recovery periods between BA wears.
- 31.23 Except in exceptional circumstances EDBA wearers should not be used for a 'second wear' in either SDBA or EDBA.
- 31.24 In addition to 31.8 above the ECO will:
- Record 'second wear' in the 'remarks' column of the ECB.
 - Record 'A/B test not recorded' in the 'remarks' column of the ECB.

Committing BA emergency teams

- 31.25 It is essential that the ECO notifies the person responsible for the ECP that a BA emergency exists prior to committing BA emergency team(s).
- 31.26 BA emergency teams must be committed using an additional ECB set up and annotated 'BA emergency team'. An additional ECO must be nominated to operate the emergency team ECB as soon as resources allow.

31.27 The ECO must commit a BA emergency team when:

- A BA team or wearer has not returned to the ECP by their time of low pressure warning and cannot be contacted to confirm their safety and wellbeing.
- A DSU is heard to have been actuated or is indicated to have been actuated on the ECB.
- Where audible or visual indications suggest a BA team or wearer appear to be in distress or imminent danger.
- A prolonged and unexplained breakdown in communications has occurred.
- A BA team or wearer has requested assistance.

Distress to wearer (DTW)

31.28 If a DTW is reported (see section 22 above), notify the IC or SC who will nominate an officer to impound the BA set. Give the nominated officer BA aide memoire No. 5.

Manual calculations of duration

31.29 Manual calculations are not intended as a replacement for the loss of telemetry signal once BA operations have started, the deployment of telemetry repeaters and leaky feeder equipment is provided to restore signal loss.

31.30 The equipment providing the telemetry function is extremely robust and provided with back-up battery power supplies. This means that telemetry system failure is very rare and any loss of signal is most likely due to intentional blocking i.e. counter-terrorism measures.

31.31 Manual calculations will only be used on authority of the IC or SC. They will be used when:

- All BA wearers are unable to log onto the ECB and achieve a BA telemetry signal when starting BA operations.
- An ECB display fails (clock must still operate) and no replacement ECB is available.

31.32 Guidance on how to use manual calculations can be found in BA aide memoire No. 11 – Using manual calculations of duration (from ECB pouch) and Babcock BA 023 Cylinder and Consumption rate Calculations Core Skills.

Committing BA teams using manual calculations of duration

31.33 If on starting BA operations all BA wearers are unable to achieve telemetry signal, the ECO on the authority of IC or SC will commit BA teams using manual calculations.

31.34 The ECO will:

- Check BA team are correctly rigged in RPE/PPE with no exposed skin.
- Receive BA tallies, check wearer and cylinder pressure information are correctly entered (pressures must be at least **240** bar) and enter 'time in' using the ECB clock.
- Enter BA tallies into ECB, calculate TOW (see BA aide memoire No. 11) and bracket BA team together and write lowest TOW outside the brackets in the 'location' column of the ECB.
- Enter BA team location in the 'remarks' column of the ECB.
- Carry on as per section 31.8 fifth bullet above.

Manual calculations of duration for BA teams already committed

31.35 If during operations an ECB display fails (clock must still operate) and no replacement ECB is available the ECO will:

- Use radio communications to contact and verify BA team safety and wellbeing, request status and pressure readings.

- Inform IC or SC that ECB failure has occurred and that BA team welfare has been established, then prompt the IC or SC that BA teams should be withdrawn from the risk area unless risk assessment allows the BA team to carry on with task.
- Using original 'time-in' from BA tallies entered into ECB, calculate TOW (see BA aide memoire No. 11) and write lowest TOW outside the brackets in the 'location' column of the ECB.
- Use radio communications to inform BA team of TOW and request regular pressure reading updates from BA team leader.

31.36 BA entry control operations will either be telemetry or manual (calculations) and will not be mixed on any one ECB (other than the use of re-entry as per 31.19 above).

32 Stage II BA entry control

32.1 Stage II BA entry control should be used to meet the demands of larger and or more complex incidents.

32.2 The entry control point supervisor (ECPS) must be appointed when Stage II BA entry control procedures are used, this rank must be a minimum of LFF.

32.3 Stage II procedures are to be used when **any** of the following apply:

- More than one ECP is required.
- More than **six** wearers are deployed into the risk area at any one time.
- The incident and structures involved are complex and or the increased deployment of BA, plus the increased risks associated with BA operations, demand a greater degree of control and supervision.
- BA operations are likely to be protracted.
- Guidelines are required.
- The risks presented to BA teams demand a higher level of BA emergency provision, involving the need for BA emergency teams.
- EDBA is required.
- BA telemetry repeater(s) or leaky feeder is deployed.
- Confirmed basement fire (where size and layout indicate Stage II is appropriate).
- BA emergency team(s) have been committed.
- When chemical protective clothing wearers are out of the line of sight of ECP.
- When committing BA wearers to Hi-Ex foam.
- When other agencies are being committed in BA.

Note: Both emergency and relief BA teams must be established at Stage II.

Note: SDBA and EDBA teams can be entered onto the same ECB however all BA team members must be equipped with the same type of BA (either SDBA or EDBA) and emergency teams rigged to the highest level of RPE in use e.g. EDBA.

33 Entry control point supervisor (ECPS)

33.1 An ECPS responsibility is for the control and management of the ECP and the personnel designated to the support tasks under Stage II entry control procedures.

33.2 The nominated ECPS is to supervise BA procedures at their allocated ECP. The ECPS should not normally record details of BA wearers onto an ECB and should use an ECO for that purpose.

33.3 A Stage I ECO who has handed over to a Stage II ECPS will remain at the ECP to carry out the ECO role.

34 Nominated ECPS incident duties

34.1 BA aide memoire No. 2 is provided for incident ground use (see appendix 1).

34.2 When nominated the ECPS will:

- Don 'ECPS' surcoat (insert available from CU).
- Ensure each ECB has a dedicated ECO.
- Ensure ECPS's name is recorded on the ECB below that of the ECO.
- Nominate Comms-Op for the ECP and hand them BA aide memoire No. 4.
- Switch your incident ground radio to the incident command channel.
- Ensure that the clock on any additional ECBs are synchronised with the initial ECB before they are brought into use.
- Nominate BA emergency team and have them standing by at the ECP (see section 11 and 12).
- A BA emergency team must be at least the size of the largest BA team committed from the ECP, and rigged to at least the same level of PPE and RPE. The BA emergency team must have one 'second set' per two wearers
- Ensure an additional ECB has been supplied by the initial BA emergency team.
- A BA emergency team that is committed must be replaced immediately.
- Nominate an EDBA emergency team and have them standing by at the ECP before committing an EDBA team.
- Inform IC or SC of the number of BA wearers committed and when additional BA wearers are required.
- Ensure that briefing of BA teams takes place at least five minutes before they are due to be committed.
- If a BA team(s) exit the risk area and report to an ECP different from the ECP that they were committed through, the committing ECP must be informed and the BA team(s) sent back to their original ECP to collect their BA tallies.

BA sector

- Inform BA sector of the number of BA wearers committed and when additional BA wearers are required.
- Ensure that briefing of BA teams takes place at least five minutes before they are due to be committed. Record the time of the request on the ECB.
- Ensure exiting BA teams return to BA sector for further instruction following de-brief.

34.3 If BA guidelines are used the ECO under the supervision of the ECPS will:

- Attach main guideline tallies to main guideline(s) and, if used, branch guideline tallies to branch guideline(s) and ensure that the tabs indicate the correct egress direction.
- Ensure main guideline(s) is secured at the ECP and that details are entered on the appropriate ECB.
- Confirm that all BA teams are made aware when a main or branch guideline is in use or is to be laid.

35 ECO post incident duties

35.1 On return to station the ECO must ensure that:

- The appropriate testing is carried out on ECB and ancillary equipment as per section 30.
- Any defective equipment is removed from service and that defects and or missing equipment is reported to the watch officer.

36 BA communications operative (Comms–Op)

- 36.1 BA aide memoire No. 4 is provided for incident ground use (see appendix 1).
- 36.2 An ECO will initially also perform the role of the BA Comms-Op. When resources permit, the role of the ECO and the BA Comms-Op should be separated and this must be considered by the IC or SC if the incident escalates or the level of risk increases.
- 36.3 The BA Comms-Op will report to and take instruction from the person responsible for the ECP and work alongside the ECO.
- 36.4 The function of the BA Comms-Op will be to send and receive messages between BA teams and the ECP. Communications will be undertaken in liaison with the ECO and the person responsible for the ECP. The ECO/ECPS will be responsible for communications between the ECP and the IC, SC and other ECPs dependant on the stage of BA entry control.
- 36.5 The duties of a BA Comms-Op are to:
- Don the 'BA Comms-Op' surcoat (insert available from CU).
 - Switch incident ground radio to the channel being used by BA teams.
 - Stay next to and liaise with the ECO(s) and ECPS for their respective ECP.
 - Verify call signs and test communications with BA team(s) prior to entry into the risk area.
 - Monitor BA team progress within the risk area.
 - Inform and update the person responsible for the ECP of any relevant information received relating to the progress of BA operations or hazards encountered.
 - Pass messages relating to status changes of BA teams to the ECO, for recording onto the ECB. Consider use of BA communications board at four pump incidents and above (carried on OSU).
 - Only communicate with BA teams committed from their ECP.
 - Respond immediately to priority messages.
 - Prompt BA teams to take regular pressure readings if required (e.g. if BA team have gone out of telemetry signal range or have been committed using manual calculations).
 - Inform BA teams if there is any relocation of the ECP.
- 36.6 In an emergency or where a distress signal is heard or indicated on the ECB, the BA Comms-Op must inform the ECO and ECPS (under Stage II) of the emergency and attempt to:
- Identify and locate the BA team in distress.
 - Assist the ECO or ECPS and IC or SC to co-ordinate rescue operations using BA emergency teams and BA teams already committed.
- 36.7 The BA Comms-Op will not be allocated or undertake any other BA entry control duties.

Officer in charge, incident or sector commander

37 Officer in charge (OIC) station duties

- 37.1 Ensure personal competence and BPAs are kept up to date for self and watch personnel.
- 37.2 Maintain an understanding of the duties of a BA wearer, BA team leader, ECO, ECPS and BA Comms-Op.
- 37.3 At the start of each duty period the OIC is responsible for the following:
- Nominate suitably qualified and competent personnel to wear BA for each appliance and update with any changes required during shift.

- Nominate suitably qualified and competent personnel to assume the duties of ECO and update with any changes required during shift (this nomination should take into account any other specific duties any personnel may have at an operational incident).
 - Allocate BA radio communications sets. This should be to nominated team leader where possible.
 - Ensure that unallocated BA sets are tested and the cylinder pressure recorded on the BA tally. In the name section, the word 'spare' is to be inserted. The BA log book is to be completed by the tester.
 - Ensure that the appropriate tests of BA and associated equipment are carried out, and that the test records are accurately maintained. The name of the ECO(s) and the nominated wearers of BA sets and communications equipment are recorded on StARS along with the nominated CPC wearers.
 - Ensure that BA sets and associated equipment are maintained in a clean, safe and serviceable condition and are available for operational use.
 - Ensure equipment reported as being defective has been removed from service, defects are reported and POMS orders raised for replacements.
 - Ensure equipment reported as missing is investigated and POMS orders raised for replacements.
- 37.4 Every effort should be made to ensure that the full complement of BA sets for every appliance is maintained at all times. The servicing and replacement of BA sets is a priority to be carried out at the earliest opportunity. Appliance commanders must inform Brigade Control their appliance is not available for mobilising whenever less than two BA sets are available. Contact logistics manager at RMC on extension 88321 for 'urgent' replacement of BA set(s).
- 37.5 During visits carried out under section 7(2) d of the Fire and Rescue Services Act 2004 consider premises that may require the use of telemetry repeaters and or telemetry leaky feeder to maintain telemetry signal with BA teams, this should where possible also indicate suitable locations for repeaters or leaky feeder to be placed during use.

38 Incident and sector commander incident duties

- 38.1 The generic role of the IC with regard to command and control is described in [policy number 431](#) – Incident commander and monitoring officer. This section of the policy deals with the specific responsibility of the IC with regard to BA when in use at an incident.
- 38.2 The IC on the basis of a suitable and sufficient risk assessment shall decide whether BA is required to deal with the incident. The IC may delegate the deployment of BA wearers to SCs.
- 38.3 The circumstances of the incident, such as the number and urgency of any rescues, will determine what resources are committed and when. However sufficient resources to achieve an objective should be available prior to resources being committed. If necessary, objectives should be limited to fit the available resources. Sufficient resources should be requested as soon as possible.
- 38.4 The outcome of the risk assessment will be used to determine appropriate procedures and the level of BA command and control to be used for all ECPs in operation.
- 38.5 All personnel should be made aware of what stage BA control is in operation.
- 38.6 The IC or SC will be responsible for the number of ECPs and will identify a suitable ECP location which must be in safe air and sited:
- To minimise background noise.
 - As near to the scene of operations as possible.

- To take into consideration weather conditions (wind direction).
- In such a position that it should not be necessary to reposition the ECP if the incident escalates.

38.7 The IC or SC will:

- Concentrate effort and resources into maintaining a high degree of command and control during BA operations.
- Consider what resources are available prior to committing BA teams.
- Nominate a person to be responsible for each ECP, confirming the role and responsibility of the ECO, who shall manage and monitor the implementation of BA entry control procedures.
- Ensure arrangements are in place for communicating with the persons responsible for the ECPs.
- Nominate BA team members. Where possible the team leader should lead team members drawn from their own station.
- Determine and communicate the appropriate structural search procedures (see [policy number 803](#) – Search and rescue procedures within structures).
- Consider the provision of BA emergency teams during the initial stages of operations and nominate a BA emergency team as soon as resources allow.
- Be aware that securing a separate water supply as specified in 12.1 should be seen as best practice but this may not always be possible e.g. at some high rise incidents.
- Consider and make arrangements for BA wearer welfare requirements (where BA sector commander has not been appointed).
- Ensure appropriate provision of 'relief' BA teams at ECPs in a timely fashion.
- Assess the need for the use of BA guidelines.

38.8 The IC will assess the need to appoint a BA sector commander.

38.9 Where the IC or SC has determined the need to deploy EDBA above that already in attendance, the following message should be sent: "From..... at.....; EDBA required; tactical mode....." in accordance with appendix 1 of [policy number 518](#) – Messages from incidents. This will result in Brigade Control mobilising three FRUs for EDBA along with three EDBA support pumps.

38.10 If telemetry signals are lost and telemetry repeaters are required they are available from any attending CU. If telemetry leaky feeder is required at an incident where an FRU is not already in attendance they should be requested as an 'assistance' message through Brigade Control (e.g. "One FRU required for telemetry leaky feeder").

Briefing and debriefing of BA teams

38.11 A BA team must be fully briefed by the IC or SC (not the ECO) and confirm their understanding before they are deployed into the risk area.

38.12 The IC is to ensure that the ECO is made fully aware of the BA team's brief/plan/objective and outcome following debrief.

38.13 The IC or SC will make arrangements to record and store all briefing and debriefings for use at performance review of operations (PROs), performance review of the command function (PRCs), safety events and inquiries. The forward information board (FIB) carried on all pumping appliances will perform this function during incidents (see policy number 820 – Forward information board).

38.14 The IC or SC should consider and include the following points when briefing and debriefing.

Briefing

- Brief the whole BA team not just the team leader (include BA emergency teams if established).
- Brief them before starting up.
- Confirm radio communication availability and call signs.
- Define allocated tasks, such as firefighting equipment and tactics, search and rescue, identifying hazards and ventilation.
- Define any restrictions on what they can do, such as duration limits to prevent over exposure of BA teams during known severe conditions see 38.15).
- Define the location of where:
 - They will be working and the route they should take, where possible making reference to a site or building plan to help the team to visualise their route and area of responsibility.
 - Any persons that may be involved were last known to be.
 - The fire is known or suspected to be.
 - Other BA teams are working and what they are doing.
- The nature and frequency of progress reports required.
- Location and nature of any known hazards.

38.15 Under certain circumstances, the person responsible for ECP may stipulate that BA teams must return to ECP at an earlier pre-determined time. This will be determined on the basis of an assessment of risk, contingent on the tasks BA team(s) are expected to undertake, the conditions under which they are expected to work and any physiological considerations.

Debriefing

- Debrief immediately after BA teams close down (include BA emergency teams if established).
- Obtain an update on all of the elements in the original briefing so that a developing picture can be obtained.
- Obtain information about the heat, smoke and fire conditions. Some of the danger signs are heat damaged and or steaming PPE on exiting, signs of exhaustion and air consumption significantly above the normal consumption taking into account the tasks undertaken.

38.16 It is essential that all information obtained from the debriefing is brought to the attention of the IC or SC and used to inform and update the overall plan.

39 OIC post incident duties

- 39.1 Ensure the BA wearers' welfare with regards to rehydration and recovery.
- 39.2 On return to station ensure personnel carry out the appropriate testing and inventory checks of BA sets and ancillary equipment and complete appropriate records.
- 39.3 Ensure personnel remove from use any equipment reported as defective.
- 39.4 Ensure POMs orders are raised to replace any defective and or missing equipment.

40 BA sector

- 40.1 This is not a separate stage of control although it is set up in addition to Stage II, in order to co-ordinate and support BA resourcing, logistics and operations at incidents where a large number or additional BA resources are required.
- 40.2 The BA sector will be commanded by a BA sector commander and is appointed by the IC (minimum rank of station commander – SC). Responsibility for BA sector may, on the instruction of the IC, be passed to a more senior officer as the incident develops. The officers must ensure

that a comprehensive brief takes place when responsibility is transferred. The officer handing over must remain with the senior officer to assist as this is a command support function of the BA sector. The BA sector assistant will wear the 'BA sector assistant' surcoat.

- 40.3 The BA sector commander is responsible to the IC for establishing additional control to co-ordinate all BA requirements.
- 40.4 The BA sector function should be supported by the crew of a pumping appliance and command unit.

41 BA sector commander incident duties

- 41.1 BA aide memoire No.3 is provided for incident ground use (see appendix 1).
- 41.2 The duties of a BA sector commander are to:
 - Don 'BA sector' commander surcoat (available from the CU).
 - Set up a BA communications network with each ECPs and the IC. Ensure incident ground radio is switched to the incident command channel. Do not use the BA channel.
 - Ensure the BA sector board clock is synchronised with the initial ECB clock.
 - Identify the location of each ECP, record the name of each ECPs on the BA sector board/CSS.
 - Ensure Stage II control is applied to all ECPs and that all ECPs are correctly resourced.
 - Regularly update the IC with an accurate assessment of BA resources, requirements and operational activities.
 - Establish and record the requirements for relief BA teams required by ECPs.
 - Record and update the information on the BA sector board. Maintain suitable and sufficient resilient records.
 - Have available sufficient BA wearers to provide relief teams required by each ECPs and dispatch them to arrive at the ECP in sufficient time before they are required.
 - Provide BA emergency team to stand by at each Stage II ECP. In addition, a reserve BA emergency team should standby at BA sector when resources permit.
 - Establish and monitor a BA equipment pool.
 - Be responsible for BA wearer welfare and establish an appropriate area for hydration, rest and recuperation.
 - Recommit SDBA (for second wear only) wearers if no fresh BA wearers are available, ensure they have had the minimum rest and recovery period specified in paragraph 26.5 and there is no reason to doubt the wearer's fitness. **EDBA wearers must only be used for a 're-entry' or 'second wear' in exceptional circumstances.**
 - Set up a BA maintenance area away from the scene of operations (ensure BA maintenance resource pack is available – RPE resource pack number 11 on OSU).
 - Ensure any 'DTW' procedures and notifications are followed.
 - Use an additional BA sector board to record other Brigade's/agencies' BA commitment/availability at the incident.

42 Respiratory protective equipment logistics officer (RPELO)

- 42.1 The duty RPELO is drawn from personnel of the Operations Support Group (OSG) and provides on call assistance, advice and incident support on a 24/7 hour basis.
- 42.2 The RPELO can be contacted via the logistics manager in RMC or Brigade Control.
- 42.3 The main roles of the RPELO are to:
 - Co-ordinate the operations of OSG and manage its resources in the event of a major or catastrophic incident.

- Provide support and resources to the incident ground such as bulk supplies of air and/or hot cutting oxygen cylinders.
 - Provide guidance in matters relating to RPE.
 - Manage and deploy the OSG personnel recall system.
 - Assist accident investigators with RPE related safety events.
 - Resolve issues relating to correctly fitting RPE (face-fit testing).
- 42.4 The RPELO can be identified on the incident ground by a yellow surcoat with the word 'RPELO' on the back and front.
- 42.5 An RPE support unit crewed by OSG personnel, carrying bulk supplies of cylinders and related equipment can be mobilised by the duty RPELO or on request from an incident. When attending incidents these personnel are identified by a yellow surcoat with the words 'RPE Support' on the back and front.
- 42.6 The RPE support unit provides an emergency response and has an approximate maximum attendance time of 60 minutes during normal working hours and 90 minutes at night and at weekends.

43 Additional reading – other documents national and policy

- National Operational Guidance Programme – Foundation for Breathing Apparatus.
- https://www.ukfrs.com/foundation-knowledge/foundation-breathing-apparatus?utm_medium=email&utm_campaign=Foundation%20for%20Breathing%20Apparatus&utm_content=Foundation%20for%20Breathing%20Apparatus+CID_de8773a38b0b9e774abecf0dbdb8add2&utm_source=NOG%20Newsletter&utm_term=Foundation%20for%20Breathing%20Apparatus
- National Operational Guidance Programme – Breathing Apparatus Training Specification.
<https://www.ukfrs.com/training-specification/breathing-apparatus?bundle=section&id=19447>
- Control of Substances Hazardous to Health Regulations: 2002.
- Ionising Radiations Regulations: 1999.
- Control of Lead at Work Regulations: 2002.
- Control of Asbestos Regulations: 2012.
- Dangerous Substances and Explosive Atmospheres Regulations: 2002.
- Confined Spaces Regulations: 1997.
- Reporting of Injuries, Diseases and Dangerous Occurrences Regulations: 2013.

44 Training notes

- BA 001 Introduction to Respiratory Protective Equipment.
- BA 002 PSS 7000 BA Set.
- BA 003 Cylinder and Ancillary Equipment.
- BA 004 Wearer's Guidance.
- BA 005 Safe Movement: Doors, Stairs and Land Marking.
- BA 006 Search and Rescue Procedures.
- BA 007 BA Entry Control.
- BA 008 BA Entry Control – Telemetry.
- BA 009 'B' Test.
- BA 010 Donning, Starting and Closing Down.
- BA 012 'A' Test.
- BA 017 Emergency Procedures.
- BA 018 BA Communications Equipment.
- BA 022 Emergency Procedures – Second Set.
- BA 023 Cylinder and Consumption rate Calculations.
- BA 027 Respirator Face mask.
- GL 001 Guideline Procedure.
- HAZ 002 Gas Tight Suits.

Glossary RPE generic

• ADSU	-	Automatic distress signal unit.
• BA	-	Breathing apparatus.
• Comms	-	Communications.
• Comms-Op	-	Communication operative.
• CPC	-	Chemical protective clothing.
• CU	-	Command unit.
• DSU	-	Distress signal unit (automatic or manually operated).
• DPFM	-	Dual purpose face mask.
• EDBA	-	Extended duration breathing apparatus.
• ECB	-	Entry control board.
• ECO	-	Entry control operative.
• ECP	-	Entry control point.
• ECPS	-	Entry control point supervisor.
• EMU	-	Electronic monitoring unit.
• ESA	-	Einheit stecken anschlussfilter (meaning standard plug-in connection).
• FC	-	Filter cartridge.
• FPS	-	Face protection system.
• FRU	-	Fire rescue unit.
• GTS	-	Gas tight suit.
• HMEPO	-	Hazardous materials and environmental protection officer.
• HSE	-	Health and Safety Executive.
• IC	-	Incident commander.
• IS	-	Intrinsically safe.
• LCD	-	Liquid crystal display.
• LED	-	Light emitting diode.
• LPW	-	Low pressure warning (can be electronic or pneumatic in operation).
• LPM	-	Litres per minute.
• LTS	-	Liquid tight suit.
• OiC	-	Officer in charge.
• OSU	-	Operational support unit.
• POMS	-	Purchase and ordering management system.
• PSS	-	Personal safety system.
• RA	-	Risk assessment.
• RPE	-	Respiratory protective equipment.
• RPELO	-	Respiratory protective equipment logistics officer.
• SA	-	Scientific advisor.
• SAI	-	Senior accident investigator.
• SDBA	-	Standard duration breathing apparatus.
• TAP	-	Turn-around point.
• TAT	-	Turn-around time.
• TM	-	Telemetry module.
• TOW	-	Time of warning (audible and visual warnings to indicate end of working duration).
• TTW	-	Time to warning (end of working duration and the start of safety margin).
• USAR	-	Urban search and rescue.

Appendix 1 – BA board aides memoire 1, 2, 3, 4, 5, 10, 11, 12 and 13

(Note: aide memoire number 6 can be found in [policy number 376](#) - Cylinder procedure, aide memoire 7 is no longer in use, aide memoire numbers 8 and 9 can be found in [policy number 759](#) - Dräger FPS 7000 respirator face mask).



Aide Memoire No.1

BA–Stage I: Entry Control Operative Duties

The Entry Control Operative (ECO) is responsible for one Entry Control Board (ECB) only and a maximum of six BA wearers.

Setting up Entry Control Point (ECP)

1. Establish ECP under direction of IC or SC. Set up ECB, complete information panel, ensure correct time is displayed. Don 'ECO' surcoat.
2. Provide IEC pack (resuscitator).
3. Switch radio to BA channel (if BA Comms-Op is nominated switch to command channel). For Comms-Op duties, see aide memoire No.4.
4. Prompt IC to provide BA emergency team when resources permit.
5. Record the key information from BA team briefing/debriefing onto ECB.

First wear (new entry)

6. Check BA team RPE/PPE no exposed skin. Receive BA tallies, check wearer and cylinder pressure (min **240** bar) and enter 'time in' using the ECB clock.
7. Enter BA tallies into ECB ensuring telemetry signal is achieved (if manual calculations are required see BA aide memoire No.11) bracket BA teams.
8. Enter BA team location in 'location' column of ECB. Enter task, extinguishing media/resources in 'remarks' column of ECB.
9. Inform BA team(s) of ECP call sign. Confirm BA team(s) call sign and record in 'remarks' column of ECB. Carry out radio comms check with BA team(s).
10. At suspected/confirmed radiation incidents record EPD reading in the 'IN' section on the back of the BA tally.
11. For Hi-Ex foam the ECO must ensure that the BA wearers LDV outer rubber casing has been unclipped from the lug and lifted clear of the LDV housing.

Withdrawal of and close down of BA teams

12. Inform IC or SC if BA teams are being withdrawn prematurely.
13. Ensure BA wearers have closed down/purged BA set prior to return of BA wearers' tallies and direct them to report to the IC or SC for debriefing.

Aide Memoire No.1 continued

14. At suspected/confirmed radiation incidents record EPD reading in the 'OUT' section on the back of the BA tally. Inform IC or SC of any change.
15. BA wearer requires decon, decon director may request wearer's DSU key.

Re-entry

16. After withdrawing and closing down, a BA team can re-enter to perform a specific task (other than firefighting) provided that:
 - BA team members have at least **190** bar. Pressures in excess of **190** bar will be recorded on the BA tally as **190** bar.
 - Record 'time in' on BA tally and 'Time of Warning' (TOW) for **15** minutes later entered in 'location' column. Words 're-entry' and task performed entered in 'remarks' column (the BA team **will be** recommitted using manual calculations).

Second wear (new entry)

17. In exceptional circumstances BA wearers can be used for a second wear if no fresh BA wearers are available.
18. In addition to 'first wear (new entry)' procedure above, the ECO will:
 - Record 'second wear' in the 'remarks' column of the ECB.
 - Record 'A/B test not recorded' in the 'remarks' column of the ECB.

Committing BA emergency teams

19. It is essential that the ECO notifies the person responsible for the ECP or IC that a BA emergency exists prior to committing BA emergency team(s).
20. BA emergency teams must be committed using an additional ECB annotated 'BA emergency team' and operated by an additional ECO.
21. ECO must commit a BA emergency team if:
 - BA team/wearer has not returned to ECP by TOW and cannot be contacted.
 - DSU is heard or is indicated to have been actuated on the ECB.
 - Where indications suggest, BA team or wearer are in distress or danger.
 - Prolonged and unexplained breakdown in communications has occurred.
 - BA team or wearer has requested assistance.

DTW/BA defects

22. If a BA wearer reports a BA set defect or a DTW occurs, inform IC/SC and give nominated officer BA aide memoire No.5.

F5995 August 2017



Aide Memoire No.2

BA –Stage II: Entry Control Point Supervisor Duties (minimum role: Crew Manager)

Stage II procedures are to be used when any of the following apply:

- More than one ECP is required.
- More than six wearers deployed into the risk area at any one time.
- BA operations are likely to be complicated or protracted.
- Guidelines are required.
- Risks presented demand a higher level of BA emergency provision, involving the need for BA emergency teams.
- EDBA is required.
- BA telemetry repeater(s) or leaky feeder is deployed.
- Confirmed basement fire (size/layout indicate Stage II is appropriate).
- BA emergency team(s) have been committed.
- CPC wearers are out of the line of sight of ECP.
- When committing BA wearers to Hi-Ex foam.
- When other agencies are being committed in BA.

Entry Control Point Supervisor (ECPS) duties

1. Stage I ECO handing over to ECPS will remain to carry out ECO role.
2. When nominated the ECPS will:
 - Don 'ECPS' surcoat (insert available from CU).
 - Ensure each ECB has a dedicated ECO.
 - Ensure ECPS's name is recorded on the ECB below that of the ECO.
 - Nominate Comms-Op and hand them BA aide memoire No 4.
 - Switch your incident ground radio to the incident command channel.
 - Ensure that the clock on any additional ECBs are synchronised with the initial ECB before they are brought into use.

Aide Memoire No.2 continued

- Nominate a BA emergency team and have them standing by at ECP.
- Ensure that a BA emergency team is at least the size of the largest BA team committed and rigged to at least the same level of PPE and RPE. The BA emergency team must have one 'second set' per two wearers
- Ensure that an additional ECB is supplied by the BA emergency team.
- Ensure that the BA emergency team committed is replaced immediately.
- Nominate EDBA emergency team and have standing by before committing an EDBA team.
- Inform IC or SC of the number of BA wearers committed and when additional BA wearers are required.
- Ensure that briefing of BA teams takes place at least five minutes before they are due to be committed.
- Ensure that if a BA team(s) exit the risk area and report to an ECP different from the ECP that they were committed through, that the committing ECP must be informed, and the BA team(s) sent back to their original ECP.

BA sector

- Inform BA sector of the number of BA wearers committed and when additional BA wearers are required.
- Ensure that briefing of BA teams takes place at least five minutes before they are due to be committed. Record the time of the request on the ECB.
- Ensure exiting BA teams return to BA sector for further instruction following de-brief.

BA guidelines

If BA guidelines are used, the ECO under the supervision of the ECPS will:

- Attach main guideline tallies to main guideline(s) and, if used, branch guideline tallies to branch guideline(s).
- Ensure main guideline(s) is secured at the ECP and that details are entered on the appropriate ECB.
- Confirm that all BA teams are made aware when a main or branch guideline is in use or is to be laid.

F5995B August 2017



Aide Memoire No.3

BA – BA sector officer duties

(minimum role: Station Manager)

1. Responsibility for BA sector may, on the instruction of the IC, be passed to a more senior officer as the incident develops. In these circumstances the initial BA sector commander will remain with the senior officer to assist.
2. The BA sector function should be supported by the crew of a pumping appliance and command unit.
3. The duties of a BA sector commander are to:
 - Don 'BA sector commander' surcoat (available from CU).
 - Set up a BA communications network with each ECPS and the IC. Ensure fire ground radio is switched to the incident command channel. Do not use the BA channel.
 - Ensure the BA sector board clock is synchronised with the initial ECB clock.
 - Identify the location of each ECP, record the name of each ECPS on the BA sector board/CSS.
 - Ensure Stage II control is applied to all ECPs and that all ECPs are correctly resourced.
 - Regularly update the IC with an accurate assessment of BA resources, requirements and operational activities.
 - Establish and record the requirements for relief BA teams required by ECPS.
 - Record and update the information on the BA sector board. Maintain suitable and sufficient resilient records.
 - Have available sufficient BA wearers to provide relief teams required by each ECPS and dispatch them to arrive at the ECP in sufficient time before they are required.
 - Provide BA emergency team to stand by at each Stage II ECP. In addition, a reserve BA emergency team should standby at BA sector when resources permit.

Aide Memoire No.3 continued

- Establish and monitor a BA equipment pool.
- Be responsible for BA wearer welfare and establish an appropriate area for hydration, rest and recuperation.
- Re-deploy or rest and recommit BA wearers who have already been committed to the incident.
- Recommit SDBA (for second wear only) wearers if no fresh BA wearers are available, they have had the minimum rest and recovery period (following ambient BA wear 30 minutes rest and consume 500ml of cool water; following hot and humid BA wear 60 minutes rest and consume 1000ml of cool water) and there is no reason to doubt the wearer's fitness. **EDBA wearers must only be used for a 're-entry' or 'second wear' in exceptional circumstances.**
- Set up a BA maintenance area away from the scene of operations (ensure BA maintenance resource pack is available – RPE resource pack number 11 on OSU).
- Ensure any 'DTW' procedures and notifications are followed.
- Use an additional BA sector board to record other brigade's/agencies' BA commitment/availability at the incident.

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Aide Memoire No.4

BA Communications Operative

1. The duties of a BA Comms-Op are to:
 - Don the BA Comms-Op surcoat (insert available from CU).
 - Switch incident ground radio to the channel being used by BA teams.
 - Stay next to and liaise with the ECO(s) and ECPS for their respective ECP.
 - Verify call signs and test communications with BA team(s) prior to entry into the risk area.
 - Monitor BA team progress within the risk area.
 - Inform and update the person responsible for the ECP of any relevant information received relating to the progress of BA operations or hazards encountered.
 - Pass messages relating to status changes of BA teams to the ECO for recording onto the ECB. Consider use of BA communications board at four pump incidents and above (carried on OSU).
 - Only communicate with BA teams committed from their ECP.
 - Respond immediately to priority messages.
 - Prompt BA teams to take regular pressure readings if required (e.g. if BA team have gone out of telemetry signal range or have been committed using manual calculations).
 - Inform BA teams if there is any relocation of the ECP.
2. In an emergency or where a distress signal is heard or indicated on the ECB, the BA Comms-Op must inform the ECO and ECPS (under Stage II) of the emergency and attempt to:
 - Identify and locate the BA team in distress.
 - Assist the ECO or ECPS and IC or SC to coordinate rescue operations using BA emergency teams and BA teams already committed.
3. The BA Comms-Op will not be allocated or undertake any other BA entry control duties.

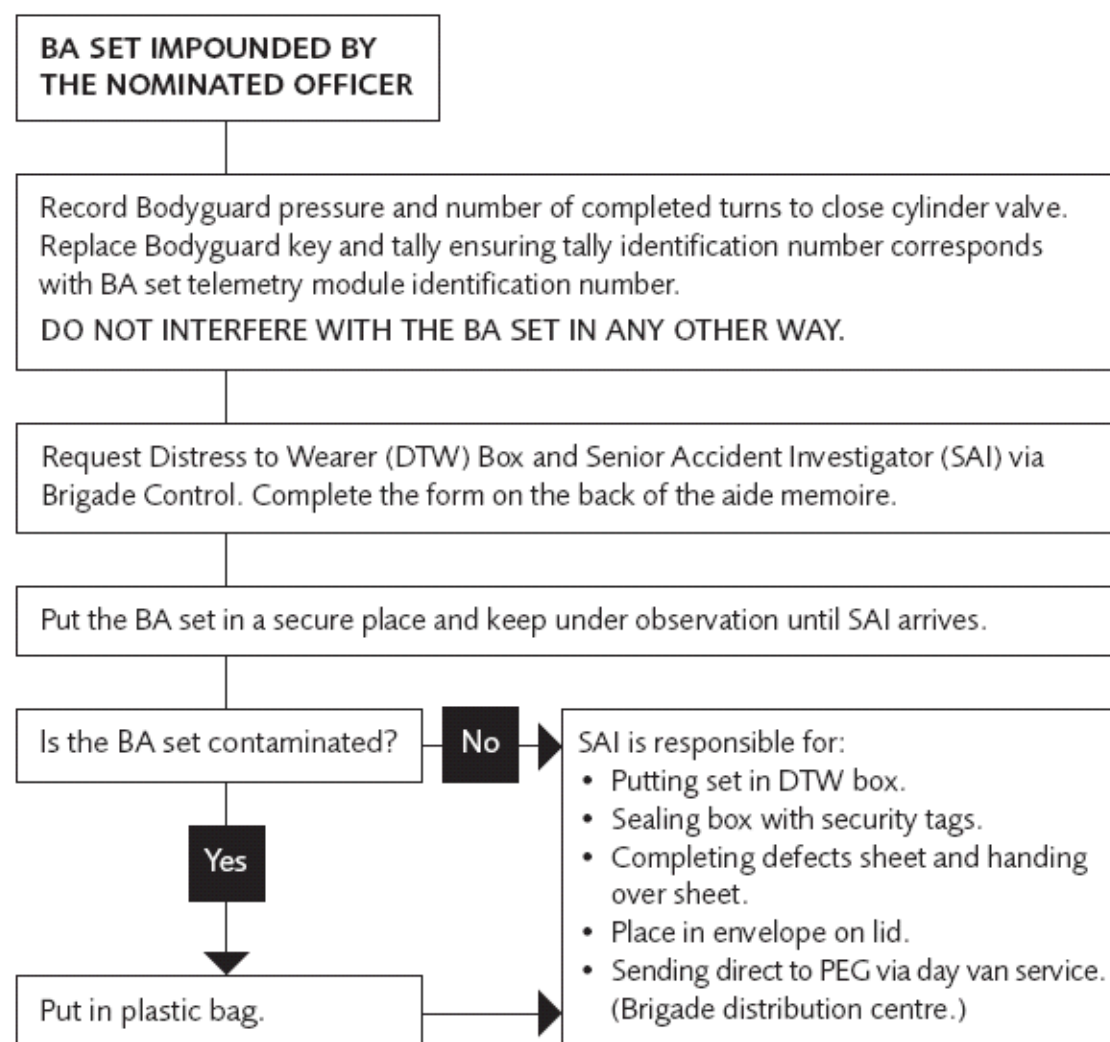
F5995 August 2017



Aide Memoire No.5

BA – Distress to Wearer Procedure

To be applied when a BA wearer suffers distress



Aide Memoire No.5 continued**Details of officer completing form:**

Role _____

Name _____

Signature _____

BA Set No: _____

Wearer details:

Role _____

Name _____

Defect discovered:

Date _____ Time _____

Brief details of defect and how discovered _____

Incident address/training venue: _____

No. of complete turns required to close cylinder valve: _____

Record cylinder pressure displayed on Bodyguard: _____

FORM 5995 18 January 2012



Aide Memoire No.10

BA Entry Control Manual Log On and Off

Manual log on (suspected BA tally transponder fault)

An unsuccessful log on is identified by an initial momentary display of fault code 'Et' followed by the display changing to 'E:00' (time elapsed count). A single audible beep alarm is emitted until the manual log on is started.

The ECO shall carry out the following manual 'log on' procedure:

1. To acknowledge the 'Et' fault code, press the BA tally channel Evacuation/Acknowledgement button. The red LED above the button will begin flashing.



2. Enter the BA tally number, using the keypad.



3. Press the Enter key.

The BA tally channel screen momentarily displays the BA tally number and then changes to Time of Warning/Whistle (TOW).

The ECB green telemetry signal radio icon illuminates continuously, confirming a successful telemetry signal with the BA set.

NOTE: If the above is not achieved this indicates that either the BA set or the BA tally is defective and should be taken off the run.

Aide Memoire No.10 continued

Manual log off


The ECO shall carry out the following manual 'log off' procedure:

1. Press and then release the Enter key  on the keypad. The status display changes to show QUIT.



2. Press the No.2 or No.8 key on the keypad to display LOGOFF and then press the Enter key.



3. Press the Evacuation/Acknowledgement button  for the BA tally channel to be logged off. The BA tally channel number will be entered automatically on the display.
4. Press the Enter key. The display changes to the selected BA tally channel with the N (No) symbol flashing. Use the No.2 or No.8 key to scroll Y (Yes).



5. Press the Enter key.

NOTE: If the BA tally has not been removed, the display will not scroll between N and Y.

NOTE: If the BA set Bodyguard does not switch off following manual log off procedure, press both buttons simultaneously to override and switch off the Bodyguard (this will prevent the telemetry module searching for an ECB).



Aide Memoire No.11

BA – Using Manual Calculations of Duration

Committing BA teams using manual calculation of duration

1. If, on starting BA operations, all BA wearers are unable to achieve telemetry signal, the ECO on the authority of IC or SC will commit BA teams using manual calculations:
 - Check BA team are correctly rigged in RPE/PPE with no exposed skin.
 - Receive BA tallies, check wearer and cylinder pressure information are correctly entered and enter 'time in' using the ECB clock.
 - Enter BA tallies into ECB, calculate 'Time of Warning' (TOW) and bracket BA team together, and write lowest TOW outside the brackets in the 'location' column of the ECB.
 - Enter BA team location in the 'remarks' column of the ECB.
 - Carry on as per BA aide memoire No.1.

Manual calculations of duration for BA teams already committed

2. If during operations an ECB display fails (clock must still operate) and no replacement ECB is available the ECO will:
 - Use radio communications to contact and verify BA team safety and wellbeing, request status and pressure readings.
 - Inform IC or SC that ECB failure has occurred and that BA team welfare has been established, then prompt the IC or SC that BA teams should be withdrawn from the risk area unless risk assessment allows the BA team to carry on with task.
 - Using original 'time-in' from BA tallies entered into ECB, calculate TOW and bracket BA team together and write lowest TOW outside the brackets.
3. Use radio communications to inform BA team of TOW and request regular pressure reading updates from BA team leader.

Aide Memoire No.11 continued

- BA entry control operations will be telemetry or manual (calculations) and will not be mixed on any one ECB.

How to use manual calculations

- Use pressure reading entered on BA tally and cross reference with the duration table (below). Take note of the 'MINS' against that pressure shown under 'BAR' column.
- Add the 'MINS' noted to the time displayed on the ECB clock and write this TOW against wearers BA tally in the 'Location' column of the ECB, bracket BA team together and write lowest TOW outside the bracket. For example SDBA pressure reading 300 bar and ECB time 1200hrs = 1200hrs + 31 minutes. TOW = 1231hrs.

	SDBA		EDBA	
	SINGLE – 2160 LITRES		TWIN – 3672 LITRES	
	BAR	MINS	BAR	MINS
	300	31	300	45
	290	29	290	43
	280	28	280	41
	270	26	270	39
	260	25	260	37
	250	24	250	35
MIN ENTRY	240	22	240	32
RE-ENTRY	190	15		

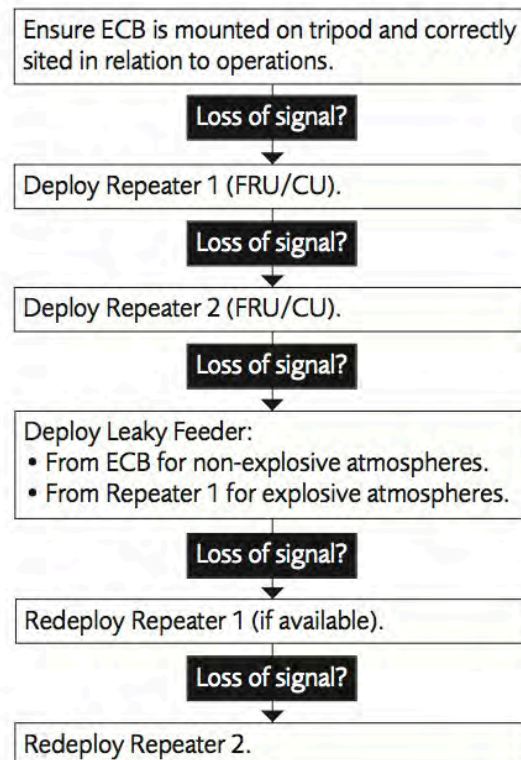
F5995 August 2017



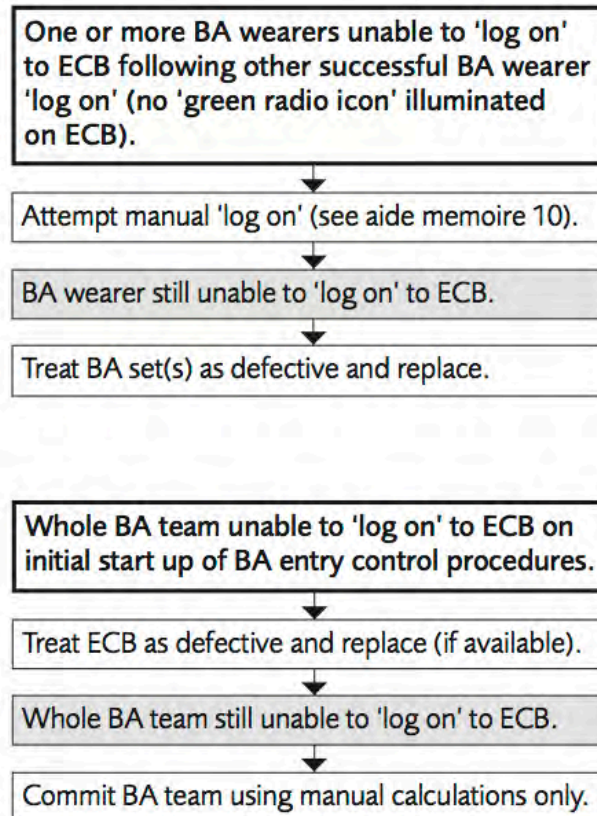
Aide Memoire No.12

BA – Maintaining Telemetry Signal – Deployment Options

Loss of signal following successful 'log on' to Entry Control Board (ECB)



Aide Memoire No.12 continued

How to resolve initial BA set telemetry 'log on' failure(s)**NOTE:**

- ECO must contact BA teams via radio when telemetry signal is lost and BA teams should withdraw if both radio and telemetry signals are lost.
- Basements and sub-surface structures have the potential to severely reduce the telemetry signal propagation.
- Stone construction structures have the potential to severely reduce the telemetry signal propagation.
- Premises found to have telemetry signal propagation issues during incidents/visits should have this information entered on Operational Risk Database for future use.
- Respiratory Protective Equipment Logistics Officer (RPELO) is available via RMC for telemetry signal related advice during large or protracted incidents.

FORM 5995 1 July 2012



Aide Memoire No.13

Emergency Firefighter Decontamination

Personnel in firefighting PPE

TASK	OPERATIVE
Nominate roles: <ul style="list-style-type: none"> • Decontamination director – minimum crew manager. • Two decontamination operatives. • One support officer – as a minimum. 	Incident Commander/ Decontamination Director
1. Don FPS 7000 facemask with P3 filter and Neoprene gloves (minimum level of PPE) – if time permits, don LTS.	Decontamination Operatives
2. Lay out a salvage sheet beside the wearer to provide a 'clean path' onto which to stand. Also provide a charged hose reel set on flush.	Support staff
3. If the wearer is donned in BA, maintain the facemask seal and remove the BA set from the wearers shoulders – one operative should continue to support the weight of the BA set whilst the second operative continues the disrobe process.	Decontamination Operatives
4. Remove wearers helmet and gloves and place clear of wearer – instruct wearer not to touch contaminated firefighting PPE with unprotected hands, even in an attempt to assist the disrobe.	Decontamination Operatives
5. Unfasten Velcro on fire tunic and then unfasten zip. Remove tunic from shoulders – ensuring tunic is turned inside out as removed.	Decontamination Operatives
6. Grasp the cuff of the tunic and instruct the wearer to withdraw their arm – remind them of the need to work their thumb out of the thumb loop and then place their arm across their chest without coming into contact with contaminated clothing. Repeat with other arm.	Decontamination Operatives

FORM 5995 1 July 2015

Aide Memoire No.13 continued

TASK	OPERATIVE
7. Keep tunic inside out and place clear of the wearer.	Decontamination Operatives
8. Pull firehood over the head (back to front) being careful not to dislodge BA facemask. Allow firehood to remain looped around the supply hose of the BA set.	Decontamination Operatives
9. Provide disrobe pack and wearers footwear if available.	Support staff
10. Remove overtrouser braces from shoulder and allow to fall to waist.	Decontamination Operatives
11. Roll down leggings – inside out – to boot level. Grasp each boot, in turn, and instruct wearer to step from boot onto salvage sheet.	Decontamination Operatives
12. Remove wearers facemask and reset first breath button.	Decontamination Operatives
13. Move away from decontamination zone for assessment by Incident Commander (or HMEPO).	Wearer
If wearer reports any discomfort, such as irritation or burning sensation to the skin then continue to disrobe and shower using hose reel.	Incident Commander/ Decontamination Director
14. Dry and re-robe – use the re-robe pack provided (if available).	Decontamination Operatives
Consider medical attention for wearer dependent on level and type of contaminant and any reported signs or symptoms.	Incident Commander
15. All firefighting PPE should be double bagged and labelled 'for examination by SA' when resources permit. BA to be double bagged.	Decontamination Operatives
16. If any cross contamination is suspected from wearer to decontamination operative(s) then disrobe decontamination operative(s) as above.	Decontamination Operatives

Appendix 2 - Don, start, exchange of air and close down BPA

Best Practice Assessment Review Sheet(s)	Dräger PSS 7000
Name: _____ Pay No: _____ Base: _____ Date: _____	

Dräger PSS 7000 Breathing Apparatus – DON and START UP			
EV	CHECK IN ORDER	P	NYP
1	REMOVE fire helmet.		
2	PLACE face mask loop over head. DON BA set		
3	PLACE face mask on retaining stud.		
4	ADJUST shoulder straps and secure waist belt buckle. REPLACE fire helmet.		
5	OPERATE first breath button.		
6	FULLY open cylinder valve, check for minimum pressure of 240 bar.		
7	PLACE gloves into left leg pocket.		
START UP			
EV	CHECK IN ORDER	P	NYP
8	REPORT to the committing officer for briefing.		
9	REMOVE fire helmet.		
10	DISCONNECT neck loop retaining stud and DON face mask, adjust straps (lower two first, then middle two and top one if required). BREATHE normally.		
11	TEST the constant flow of air to face mask by briefly operating the additional flow button on the front of the LDV once only.		
12	TAKE a deep breath and hold, listen for any leakage from face mask (approximately 8 seconds) and adjust face mask if required.		
13	ENSURE all PPE is worn and face mask neck loop is placed inside fire hood.		
14	CHECK that your partner/team are ready (PPE and RPE buddy check)		
15	REPORT to ECO and hand in BA tally, ensure you have telemetry signal before entering risk area. Note: If <u>all</u> BA team members are unable to achieve initial telemetry signal then use ECB manual duration tables.		

Dräger PSS 7000 Breathing Apparatus – EXCHANGE OF AIR PROCEDURE			
EV	CHECK IN ORDER	P	NYP
16	Recipient holds up Bodyguard towards the Donor stating: 'I NEED AIR' .		
17	Donor checks own Bodyguard to ensure they have sufficient air to assist.		
18	Donor informs Recipient: 'I CAN GIVE YOU AIR' .		
19	Donor removes protective blank cap from own second person connection.		
20	Recipient takes deep breath and disconnects their own in-line connection.		
21	Recipient connects to Donors second person connection and breathes normally.		
22	Recipient removes the second person connection hose from the clips of the donors BA set. The donor can assist if required.		
23	Recipient operates DSU.		
24	Recipient links arms with Donor.		
REVERSE ROLES OF BA TEAM MEMBERS AND CONTINUE			
25	Recipient holds up Bodyguard towards the Donor stating: 'I NEED AIR' .		
26	Donor checks own Bodyguard to ensure they have sufficient air to assist.		
27	Donor informs Recipient: 'I CAN GIVE YOU AIR' .		
28	Donor removes protective blank cap from own second person connection.		
29	Recipient takes deep breath and disconnects their own in-line connection.		
30	Recipient connects to Donors second person connection and breathes normally.		
31	Recipient removes the second person connection hose from the clips of the donors BA set. The donor can assist if required.		
32	Recipient operates DSU.		
33	Recipient links arms with Donor		
RECONNECT WEARER TO THEIR OWN SET - ENSURE THAT PROTECTIVE BLANK CAP IS REPLACED			

EV	CONFIRM VERBALLY WITH INDIVIDUALS	P	NYP
34	If sufficient air is available , team will leave incident and report to the ECO.		
35	If sufficient air is unavailable , team to adopt the entrapped procedure.		

CLOSE DOWN			
EV	CHECK IN ORDER	P	NYP
36	REPORT to ECO and when instructed to close down remove fire helmet then gloves and pull down fire hood.		
37	HOLD breath, operate first breath button, release sliding buckles, remove face mask by pulling head harness over top of head.		
38	REPLACE fire helmet.		
39	EXTEND all straps, attach face mask to retaining stud.		
40	CLOSE cylinder valve, operate additional flow button. The BA set must be closed down with all pressure removed to ensure BA set is logged off the ECB correctly.		
41	COLLECT BA tally from ECO. Replace key into Bodyguard		
42	REPORT to the committing officer for debrief.		
43	RETURN the BA set to the appliance, PLACE ON CHARGE , REMOVE face mask from retaining stud and RESTOW face mask in bag.		

Assessors Notes (Don, Start and Close Down)

EV 3, 6, 8, 12, 13, 15, 36, 39, 40, 41 and 42 (shaded NYP) are risk critical evolutions.

Candidate failure to address these areas correctly must initiate urgent training and reassessment.

EV 1, 2, 4, 5, 7, 9, 10, 11, 14, 37, 38, and 43 (un-shaded NYP) are non-risk critical evolutions.

Candidate can be prompted by the assessor.

Assessors Notes (Exchange of Air)

EV 17, 20, 21, 23, 26, 29, 30 and 32 (shaded NYP) are risk critical evolutions.

Candidates failure to address these areas correctly must initiate urgent training and reassessment.

EV 16, 18, 19, 22, 24, 25, 27, 28, 31, 33, 34 and 35 (un-shaded NYP) are non-risk critical evolutions.

Candidates can be prompted by the assessor.

Note: When a BA set has been used for the sole purpose of demonstrating this don, start, exchange of air and close down the wearer will not have to complete a 'B' test. If pressure has dropped below **270** bar, carry out a cylinder change followed by an 'A' test.

Appendix 3 - Guideline team leader BPA

Best Practice Assessment Review Sheet(s)

Name: _____ Pay No: _____ Base: _____ Date: _____

LAYING THE GUIDELINE			
EV	CHECK IN ORDER	P	NYP
1	CHECK that the guideline bag is located on the correct side for laying.		
2	CHECK that additional guideline bag is located on team members 'D' ring.		
3	IDENTIFY suitable tie off points and demonstrate appropriate knots.		
4	COMMUNICATE effectively with team members.		
5	DEMONSTRATE the correct method when extending the guideline BKO .		
6	DEMONSTRATE the correct method when leaving a guideline bag OKB .		
NAVIGATION ALONG THE GUIDELINE			
EV	CHECK IN ORDER	P	NYP
1	IDENTIFY key features in order to retrace a route in limited visibility.		
3	COMMUNICATE clear & concise instructions on landmarks/direction changes.		
4	DEMONSTRATE the correct procedure when passing teams on the guideline.		
5	IDENTIFY guideline tabs and branch tallies.		
SEARCHING OFF A GUIDELINE			
1	DEMONSTRATE correct search patterns and techniques.		
2	REMAIN within six metres of the guideline.		
3	IDENTIFY hazards through correct safe movement.		
4	LOCATE casualties through the correct search procedure.		
5	DEMONSTRATE correct actions in accordance with safe casualty handling and removal.		
6	IDENTIFY guideline tabs and branch tallies to enable safe egress.		

Note: For additional information see Babcock training note GL 001 Guideline Procedures.

Appendix 4 - Entry control operative BPA

Best Practice Assessment Review Sheet(s)			
Name: _____ Pay No: _____ Base: _____ Date: _____			
ENTRY CONTROL OPERATIVE – BEST PRACTICE ASSESSMENT			
PC	CHECK IN ORDER	P	NYP
1	Test function of entry control board (ECB) using ECB test aide memoire (if required). Q: State the testing frequency. A: On receipt, daily, after use and monthly.		
2	Demonstrate setting ECB time or date using ECB test aide memoire (if required).		
3	<p>"Set up Stage I entry control and book the following BA wearers in, the pressure entered on to the BA tallies agree with that displayed on the Bodyguard for the purpose of this assessment".</p> <p>Notes: Location is fire station name.</p> <p>Prepare BA tallies, enter details on simulator and activate BA wearers. Hand BA tallies to ECO.</p> <p>BA tallies must be inserted into the ECB in the same order as displayed on simulator.</p> <p>Team 1 "Call sign XXX PL3":</p> <p>LFF Smith 300 Bar – Breathing rate 50 l/m. FF Jones 300 Bar – Breathing rate 50 l/m. Brief, "Ground floor, fire fight, search and rescue LHW with 45mm jet".</p> <p>Increase LFF Smith's breathing rate to 120 l/min. Do not inform ECO.</p>		
4	Demonstrate filling out BA wearer details on ECB correctly (Bracket BA team members together and enter location in the 'Location' column, other details in 'Remarks' column).		
5	<p>Prepare BA tallies, enter details on simulator and activate BA wearers. Hand BA tallies to ECO.</p> <p>One of which should be the DEFECTIVE TALLY for FF Ball, enter details on simulator, hand both BA tallies to ECO. Confirm to ECO that pressure is as on the BA tally.</p> <p>Team 2 "Call sign XXX P3":</p> <p>LFF Krinsky 260 Bar – breathing rate 50 l/m. FF Ball 270 Bar – Breathing rate 50 l/m.</p> <p>Brief, "First floor, fire-fight search & rescue RHW with 45mm jet".</p>		
PC	CHECK IN ORDER	P	NYP

6	Demonstrate 'Manual Log On' using BA aide memoire No. 10 (if required).		
7	Ask ECO to scroll through the ECB and identify each BA team's time of warning (TOW), time to warning (TTW) and cylinder pressure.		
8	ECO should identify that LFF Smith's TOW has reduced and explain the likely reasons for the increased breathing rate (<i>BA wearer is working hard</i>). Q: What would ECO actions be? A: Contact the BA team and ask if they are ok and why their breathing rate has increased, consider task rotation.		
9	Take BA team 2 (LFF Krinsky & FF Ball) 'Out of Range'. Confirm that the ECO recognises this and is able to tell how long the BA team has been out of range for. Q: What actions would ECO take when BA teams go out of range? A: Contact the BA team by radio, if appropriate consider the use of telemetry repeaters/leaky feeder. Place BA team 2 (LFF Krinsky & FF Ball) back 'In Range'.		
10	Press the voluntary withdraw button for LFF Krinsky & FF Ball. Q: Confirm with ECO what icon means and actions they would take? A: Voluntary withdrawal icon, ECO acknowledges transmission and will contact BA team. Q: Confirm with ECO what action BA wearers take to send the voluntary withdrawal message? A: Each BA team member must press and hold the right button on Bodyguard.		
11	At this point the below 10 minutes to TOW warning for LFF Smith should start. Q: Confirm that ECO identifies this and states what their actions would be: A: Contact BA team to advice of proximity to TOW. Q: Confirm with ECO what occurs if the BA wearer reaches their TOW. A: The ECB will give an audible warning.		
12	Operate either the manual DSU or ADSU of LFF Krinsky. Q: Confirm that the ECO identifies what actuating icon means, what are the differences between DSU and ADSU icons and what their actions should be? A: Try to contact BA team by radio, inform IC and commit BA emergency team.		

PC	CHECK IN ORDER	P	NYP
13	<p>Instruct ECO to carry out an emergency evacuation of BA team 1 (LFF Smith & FF Jones).</p> <p>The ECO should press the emergency evacuation buttons of both BA team members.</p> <p>Acknowledge the emergency evacuation for BA team 1 (LFF Smith & FF Jones).</p> <p>Q: Describe what is seen and heard on the Bodyguard to signal an emergency evacuation?</p> <p>A: 'Running person' icon is displayed and audible alert is sounded.</p> <p>Q: How does a BA wearer acknowledge this and how does the ECO identify that BA wearer has acknowledged evacuation instruction?</p> <p>A: BA wearer presses right hand button on Bodyguard; red LED for wearer on the ECB will stop flashing and remain illuminated.</p>		
14	<p>Instruct ECO to: "Carryout an emergency evacuation of all BA teams".</p> <p>Q: What actions should the ECO make?</p> <p>A: Press the 'emergency evacuate all' button (top left of the ECB) and ensure each BA wearer acknowledges the withdrawal by pressing right hand button of the Bodyguard.</p>		
15	<p>Inform ECO that, "All BA teams are now confirmed out of the incident".</p> <p>De-activate all BA wearers except FF Ball, ask ECO to return BA tallies for each BA team.</p> <p>FF Ball details will remain on ECB.</p>		
16	Demonstrate 'manual log off' using BA aide memoire No. 10 (if required).		
17	<p>Q: How to do you identify the battery charge level on the ECB?</p> <p>A: Using the number of dashes.</p>		
18	<p>Q: What is the length of operational battery life on a fully charged ECB?</p> <p>A: 8 hours.</p>		
19	<p>Q: What are the minimum requirements for a 'Re-Entry'.</p> <p>A: 190 bar and 15 minutes duration entered on ECB, enter 'TOW' in 'Location' column and 'Re-Entry' in 'Remarks' column and write the specific task being carried out.</p>		

PC	CHECK IN ORDER	P	NYP
20	<p>Q: Why do BA wearers need to close down the cylinder valve and 'purge' the air from their BA sets before returning to the ECO to retrieve their BA tally?</p> <p>A: To ensure that the Bodyguard will turn off once the Bodyguard key is inserted and that the BA set logs off the ECB.</p>		
21	<p>Q: What must be done to the BA set and ECB when they are returned to the appliance?</p> <p>A: Both must be placed on charge.</p>		
22	Demonstrate 'manual entry control' using BA aide memoire No. 11 (if required).		
23	<p>Q: What is the criteria for committing BA teams using manual calculations?</p> <p>A: <u>All</u> BA wearers are unable to log onto the ECB and achieve a BA telemetry signal when starting BA operations and on the instructions of the IC or SC.</p>		
24	<p>Q: Can the ECO commit BA teams using telemetry and manual entry on the same ECB?</p> <p>A: No BA entry control operations will either be telemetry or manual (calculations) and <u>will not</u> be mixed on any one ECB.</p>		

Notes: Blue type indicates telemetry simulator actions, red type indicate instructions to ECO.

Personnel may consider wearing hearing protection for comfort purposes when carrying out ECB testing during this BPA.

Appendix 5 - Cable entanglement – training BPA

EV	CHECK IN ORDER
1	Entangled clearly states: ' I AM ENTANGLED IN CABLES '.
2	Rescuer clearly states: ' STAY STILL AND CROSS YOUR ARMS AT CHEST HEIGHT '.
3	Entangled crosses arms at chest height to protect BA set hoses.
4	Rescuer to approach with caution using safe movement procedures to identify any cables and prevent becoming entangled.
5	Rescuer to locate cables by completing a head to toe sweep using the backs of hands.
6	Rescuer use their own cable cutters to cut cables if unable to remove cables by hand. Note: Caution must be taken to avoid cutting BA set hoses.
7	Rescuer repeat above process until all cables are removed.
8	Rescuer restow cutters.
9	On release the BA team leader in consultation with BA team members, must establish if they can continue with operations. They must inform ECO of decision. ECO should convey this information to the Incident Commander. Note: If DSU has been operated, the BA team <u>must</u> withdraw.
10	If wearer cannot be released by their BA team member the ECO must be informed (information should be provided to assist the emergency team i.e. location, conditions, Bodyguard pressure reading) and the entangled wearer's DSU must be operated.

Note: Ensure as part of this procedure that BA wearers are aware of ECO's actions as per section 13 above.

ECO's being informed of BA team cable entanglement must:

- Inform person responsible for the entry control point.
- Commit emergency team.

Document history

Assessments

An equality or sustainability impact assessment and/or a risk assessment was last completed on:

EIA	04/07/2016	SDIA	04/07/2016	HSWIA	07/07/2016	RA	08/07/2016
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Audit trail

Listed below is a brief audit trail, detailing amendments made to this policy/procedure.

Page/para nos.	Brief description of change	Date
Throughout	Full rewrite to align policy with National Operational Guidance	14/02/2018
Page 29 para no 34.3	Wording added for ECO to 'ensure that the tabs indicate the correct egress direction.	08/03/2018
Page 54 appendix 2	Don and start up section updated to include placing personal line karabiner and gloves into leg pockets.	03/04/2018
Page 24 para no 31.8	Updated to include turn around pressure (TAP)	05/04/2018
Page 26 para no 31.26	Wording updated for emergency team ECO	20/04/2018
Page 62 appendix 5	Cable entanglement training BPA added	23/04/2018
Page 32 para no 30.2	'Check date and time' wording against thermal image camera deleted.	25/04/2018
Page 24 para no 31.8	Updated to include turn around time (TAT)	30/04/2018
Throughout Page 4, para 3.2 and 3.18 Page 13 para 12.1 Page 19 para 21.3 Page 32 para 38.7 and 38.9 Page 33 para 40.2 Page 56 appendix 2	This policy has been reviewed as current with the changes made. BA sector reword and turn around pressure (TAP) additional wording. Second jet reword. Aerial appliance changed to read turntable ladder. Water supply additional bullet added and EDBA reword. BA sector additional wording. Close personal contact note added to BPA. Please re-read the content to familiarise yourself.	22/05/2018

Page/para nos.	Brief description of change	Date
Page 22, para 26.5	New paragraph inserted to provide more clarification on optimising recovery for BA wearers.	21/06/2018
Throughout Page 7 para 7.2 Page 8, 9 and 57 Para 7.20 – 7.23 and note Page 21 para 23.2	Minor amendments made throughout. Placing radio on centre loop of tunic wording deleted. Close personal contact additional information added. Separate sector requirement removed.	05/02/2019
Page 21, para 24.1	Examples of other agencies added.	29/08/2019
Throughout	Links and references to PN431 – Incident commander and monitoring officer now updated due to policy amendment.	31/10/2019
Page 8, para 7.14 Page 55, appendix 2 Throughout	TAP on ECB information added. Requirement to place karabiner in pocket removed due to the new retractable lines being issued. Note re EV 7 also removed. Role to rank updates (note: aides memoires 2 and 3 will be updated on next hard copy change).	12/12/2019

Subject list

You can find this policy under the following subjects.

Level 1	Level 2
Incident Management	Incident Type
Assets	Equipment

Freedom of Information Act exemptions

This policy/procedure has been protectively marked due to:

Considered by: (responsible work team)	FOIA exemption	Protective marking descriptor