Safety Information Bulletin

Operations

SIB No.: 2025-04

Issued: 28 May 2025

Subject: Use of Protective Breathing Equipment

Ref. Publications:

- Commission Regulation (EU) No 965/2012 of 05 October 2012.
- Commission Regulation (EU) No 1178/2011 of 03 November 2011.
- ICAO Manual 'Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods' (Doc 9481) 2025-2026 Edition.
- ICAO Circular 344, Guidelines on Education, Training and Reporting Practices related to Fume Events dated 2015.
- Federal Aviation Administration Advisory Circular AC 120-80B - Firefighting of General and High-Energy In-Flight Fires dated 16 March 2023.

Applicability:

National Competent Authorities (NCAs), aircraft operators, training organisations, and air crew protective breathing equipment (PBE) manufacturers.

Description:

PBEs are designed to protect the air crew members from smoke, carbon dioxide and other harmful gases. PBEs usually consist of a hood with gaseous or chemical oxygen generation and carbon dioxide extraction from a person's exhaled breath.

There are different types of PBEs; however, they all aim to protect air crew members from smoke and toxic fumes, and to provide a breathing atmosphere for a defined period of time. After this gas supply is terminated, the PBE must no longer be used, because the wearer is not provided with the oxygen supply inside the hood anymore, exposing air crew members to hypoxia or to hazardous carbon dioxide or contaminant concentration.

PBEs are necessary during firefighting processes where there is presence of smoke or gases, particularly in confined areas (e.g. lavatories). They can also be used in an event of smoke from an unknown source, while trying to locate the fire. PBEs might also be used in fume events and spillage/leakage involving dangerous goods.

As per CAT.IDE.A.245 of Commission Regulation (EU) No 965/2012, a PBE shall provide breathing gas for a period of at least 15 minutes at normal cabin altitude. The review of Operational Manual (OM) from various operators indicates that some models may provide additional protection capability (e.g. longer duration use beyond 15 minutes, use during cabin depressurization, use during emergency evacuation).

Although the PBE usage is not only beneficial but necessary in some cases, the crew should be made aware of the risks associated with its usage, and sufficiently informed and trained on all aspects of the PBE management.

The information on the duration of the oxygen supply or the use during excess cabin altitude situation should not be misleading, and it should not imply that a PBE can be used as first-aid oxygen, a supplementary oxygen supply or as a substitute to an oxygen mask during a depressurization event.

This SIB is published to raise awareness that proper information shall be provided on how and when the PBE can be retrieved, unpacked, donned, activated and removed. It should include information on leaving the area exposed to open flame and sparks to safe location to remove the PBE as, for example, some residual oxygen may remain in the hair and clothes of the crew member which could pose a risk of injury to the cabin crew member concerned.

At this time, the safety concern described in this SIB is not considered to be an unsafe condition that would warrant Safety Directive under Commission Regulation (EU) No 965/2012, Annex II, ARO.GEN.135.

Recommendation(s):

EASA recommends aeroplane operators and training organisations (for what concerns training recommendations) to:

- Ensure that the OM includes clear instructions and procedures, and that the training program on the use of the PBE also includes retrieval, unpackaging, donning, activating, and removal.
- Ensure that the OM lists events when the PBE should be used and specifies that the PBE shall be removed once the event is over or the oxygen is exhausted, whichever occurs first. In particular, the list should refer to:
    - Fire event: Use during the firefighting where there is presence of smoke or gases, particularly when using a firefighting agent in confined areas (e.g. lavatories).
    - Smoke events: Use when trying to find the source of the smoke.
    - In all other cases (toxic fumes events, spillage/leakage of dangerous goods, unknown source different from a fire, etc.), cabin crew should have the PBE available and assess its use, as considered necessary, according to the potential risk of toxicity.
- Ensure that the OM and crew training programme includes, as a minimum, information on:
    - When the PBE is not serviceable and must not be used.
    - How to unpack, with emphasis on the difficulties on removing it from a vacuum-sealed packaging, don, and activate the PBE.
    - How to identify proper activation and standard PBE operation.
    - How to overcome communication difficulties when wearing the PBE.
    - How to detect when the oxygen/breathing gas supply is over as per manufacturer instructions (e.g. condensation; lack of oxygen flow noise; end-of-service indicators, if available; increase of temperature; deflation of the hood, etc.).
    - When, where, and how the PBE shall be removed.

- Include, in the crew procedures and crew training programmes, that cabin crew members control the time of use of the PBE, particularly in cases where the PBE in use does not have any end-of-service indicators.
- Ensure that procedures are also suitable for single cabin crew operations, where applicable.
- Include, in the air crew training programmes, that, in case of any sign of physical weakness from the PBE user observed by other cabin crew members, the PBE user should be assisted and moved to a safe place, and the PBE should be removed as soon as possible, irrespective of the oxygen supply time duration.
- Inform air crew members of the risk of using the PBE beyond the indicated time (e.g. impaired awareness or loss of consciousness due to lack of oxygen).
- Ensure that, when air crews operate on different aeroplane types, fitted with different types of PBEs, the OM and training programmes cover all the types of PBE possibly used on these aeroplanes.
- Verify that any additional capabilities of the PBE recorded in the OM and reflected in the training (e.g. longer duration beyond 15 minutes, use during depressurization with or without workload, use during emergency evacuation) have been qualified by the equipment manufacturer.

EASA recommends NCAs to:

- Include information from this SIB in their oversight activities and recommend operators and organisations to follow the above-mentioned recommendations.

EASA recommends manufacturers of PBE to:

- Provide information on serviceability features and checks.
- Provide detailed information on how to detect that the PBE becomes unserviceable after its use, and when and how it must be removed.
- Clearly state on the PBE's box its time limit and the need to remove it when there is no breathing gas supply.
- Having an indication on the device on its status, to make the user aware of the end of oxygen production (e.g. visual or aural).
- Provide guidelines on how to manage a PBE once it has been removed, considering that it may still be producing oxygen.
- When additional capabilities (e.g. longer duration beyond 15 minutes, use during depressurization with or without workload, use during emergency evacuation) are mentioned in the user manual, provide information about their qualification.
- Consider issuing data on their PBE that can be used to assist operators in the development of their training programmes and operation manuals, focusing on the PBE key elements mentioned in this SIB.
- Consider developing 'training' PBEs that are reusable and simulate the key real use conditions and whose aspects are detailed in the above-mentioned manual.

Contact(s):

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