

MIL-STD-3050A Q&A Panel

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Abstract

- MIL-STD-3050A was published in July 2022
- Went from covering just OBOGS systems to covering overall Aircrew Breathing Systems (ACBS)
- With this standard having been published for almost 1 year, many organizations have started to apply the standard to various ACBSs
- This panel will be a forum for feedback from both government and contractors who have been applying the standard, as well as an opportunity for participants to ask questions about the standard

History

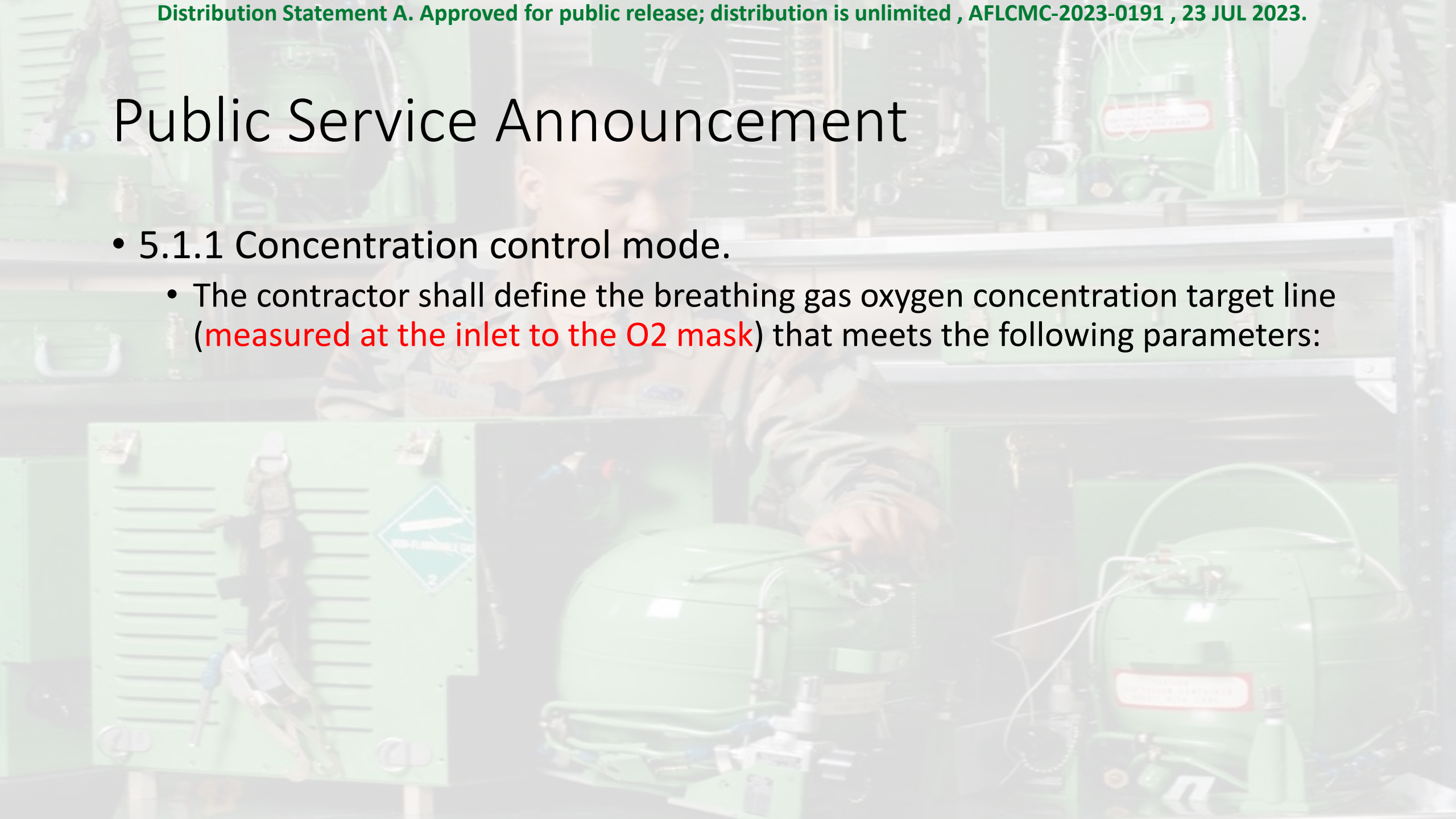
- MIL-STD-3050 published in 2015
- Draft 3050A writing begins ~August 2019
- Released for comments on ASSIST on 19 January 2021
- Comments closed out on 17 March 2021
 - Received 679 comments – Thank you all!
 - Adjudicated over the next several months
- Updated draft posted for comments in March 2022
- Adjudicated in May-June
- Published on 1 July 2022
 - ~80% solution, “immediately” start work on B version

Pushed to 3050B

- Real-time performance and/or health monitoring and feedbacks for implementing automation control, etc.
- ABOS Timing After PBGS “resumes”
- Safe-to-Fly letter or similar review process (Safety Review Board)
- Reliability/Maintainability

Public Service Announcement

- 5.1.1 Concentration control mode.
 - The contractor shall define the breathing gas oxygen concentration target line (**measured at the inlet to the O2 mask**) that meets the following parameters:



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FOREWORD

1. SCOPE

1.1 Scope

2. APPLICABLE DOCUMENTS

2.1 General

2.2 Government documents

2.2.1 Specifications, standards, and handbooks

2.2.2 Other Government documents, drawings, and

2.3 Non-Government publications

2.4 Order of precedence

3. DEFINITIONS

NOT MEASUREMENT
SENSITIVE

MIL-STD-3050A
1 July 2022

SUPERSEDING
MIL-STD-3050
11 May 2015

DEPARTMENT OF DEFENSE DESIGN CRITERIA STANDARD

AIRCREW BREATHING SYSTEM (ACBS)



AMSC N/A

FSG 15GP

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General (Top Level) Requirements

4.1 Background

4.1.1 ACBS oversight, integration, development, acquisition, and verification

4.2 General design concepts

4.3 Design guidelines

4.3.1 ACBS principles

4.4 ACBS architecture

4.4.1 Primary breathing gas system (PBGS)

4.4.2 Auxiliary breathing gas system (ABGS)

4.5 ACBS materials

4.6 ACBS criticality

Detailed Requirements

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5.1.1 Concentration control mode

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5.2 ACBS volumetric flow requirements

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5.3 Breathing flow and pressure

5.3.1 Normal operations

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5.3.3 PBG

5.3.4 Mask pressure during rapid decompression (see Figure 2b)

5.3.5 Regulator outlet safety pressure

5.3.5.1 Safety pressure

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Detailed Requirements (Cont.)

5.4 Auxiliary breathing gas system (ABGS)

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5.4.1.1 Backup oxygen system (BOS)

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5.4.1.3 Ejection Oxygen System

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5.5.2 Breathing gas quality

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5.5.2.2 OBOGS used as PBGS

Detailed Requirements (Cont.)

5.5.3 Temperature

5.5.4 ACBS monitoring, warning, and recording

5.5.5 Advisories, cautions, and warnings

5.5.6 Built-in test functionality (BIT)

5.5.7 Materials and components

5.5.8 Human factors

5.5.9 High pressure oxygen storage

5.5.10 Oxygen concentrator waste gas venting

5.5.11 Validation and verification of ACBS

Appendices (Mandatory, Advisory)

APPENDIX A - Physiological Reference Information and Calculations of Respiratory Loads Imposed by A Breathing System

APPENDIX B - ACBS Integration Readiness

APPENDIX C - Contractor Verification and Validation of ACBS

APPENDIX D - Government Verification and Validation of ACBS

APPENDIX E - Procedures for Sustainment/Maintenance for ACBS

APPENDIX F - Calculating Alveolar Partial Pressure and Oxygen Concentration at A Desired Altitude

APPENDIX G - Supplemental Information Used to Establish ACBS Requirements

Notes/Action Items

