

Air Force Life Cycle Management Center
Engineering and Technical Management/Services Directorate

Providing the Warfighter's Technical Edge

MIL-STD-3050B Ideas



Mr. John A. Plaga
Life Support Technical Expert
AFLCMC/EZFC



Abstract

MIL-STD-3050A was updated from covering just OBOGS systems to Aircrew Breathing Systems (ACBS). One of the goals of 3050A was to publish a Standard in a reasonable amount of time so that it could begin to be used for new and future ACBSs, which resulted in an "80% solution". As the standard was being updated, research on human physiology and the response to various oxygen/pressure environments was on-going. The intent of 3050B is to include information gained from this recent research and to include other relevant information that was not able to be included in 3050A. This presentation will identify possible changes and additions that may be included in 3050B, as well as be a forum for feedback on suggestions from members of OSCG.



Disclaimers

- **These are MY initial ideas, they do not reflect the AF or the MIL-STD-3050 update committee**
- **This is intended to be a working session/brainstorming session**



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**



Top Level Areas of Consideration

- **Correct errors (Table F-1, Fig 3, etc.)**
- **Update based on latest physiological & engineering data**
- **Data processing and analysis methods**
 - Data validation
 - Data accuracy (error bars?) & tolerances
 - Tie analysis to physiology (e.g. O2 concentration withing a breath)
 - Sample rates and Filtering
- **Subsystem (e.g. regulator, mask) testing/verification**
 - Contribution by each subsystem
- **Non-mandatory Appendix on Test Methods**
- **Move non-mandatory things into MIL-HDBK?**



Latest Physiological & Engineering Data

- **Variations in O2 concentrations**
 - Better definition in terms of frequency and magnitude
 - ABOS Timings
 - Studies using human subjects on what is tolerable
- **What CAN current systems do?**
- **Feedback** from initial application of 3050A (gov. & industry)
 - Q&A in panel session next
- **Ideas from audience**
 - **A**
 - **B**
 - **C**



Other/Additional Ideas

- **Talking breathing patterns?**
- **Address modified ACBS or component upgrades for existing aircraft**
- **Minimum rates of change of inspiratory and expiratory flow**
 - **AGARD-AG- 286**
- **Surveillance details**
- **Correlate test conditions with examples of where they would be encountered**
- **Aircrew monitoring**



Other/Additional Ideas



Way Forward

- **Identify “full time” 3050B committee members**
- **Identify “part time” Subject Matter Experts**
- **Formally kick-off committee**
 - **12 October during the SAFE Symposium?**
- **Determine scope of effort**
- **Determine tentative timeline**



Questions???