ASHRAE AIRCRAFT AIR QUALITY STANDARD
DESCRIPTION OF THE AIRCRAFT STANDARD &
POINTERS FOR PUTTING IT TO GOOD USE

ASHRAE is an American engineering association which publishes recommended ventilation and thermal standards for indoor environments. In 2007, it published its first air quality standard for aircraft (Standard 161-2007). The committee that wrote this standard has a long and colorful history, and AFA has been active on that committee since its beginnings in 1995. AFA remains active to this day because the standard (although published) is continually being revised, with the most recent version published in 2018, and an accompanying guideline document (Guideline 28) that most recently published in 2016.

This standard does propose some real improvements to cabin air quality. We want you to know what they are so that you can make every effort to get them implemented at your carrier. To be clear: it is a voluntary standard so airlines do not have to do anything. However, it represents the best current consensus and has the stamp of approval of the expert body within ASHRAE that included Boeing, Airbus, Honeywell, and others, as well as airlines, crewmember unions, and passenger representatives. It provides free advice to the airlines on how to improve cabin conditions in a reasonable and effective manner. Here are the highlights:

**Temperature (Section 5.2):** Cabin temperature should be between 65-75°F and shall not exceed 80°F. The only exception is if all in-flight entertainment systems (IFE) are turned on during ground operations, then 85°F is the maximum allowable temperature. We know that 80°F is still too hot, but this at least helps prevent extreme conditions during ground operations. The standard also includes provisions to control cold drafts from leaky doors. Plus, if thermal complaints – as evidenced by an aircraft maintenance log entry - are received on two or more flights in a row or on the same day, then the airline must resolve the problem. So, it is essential that complaints get into the pilot log book, otherwise they will not get logged by maintenance and do not count, per this standard. The standard also requires manufacturers to install gaspers at each galley work station and crew rest bunk or seat, and “super gaspers” at each jumpseat, all intended to provide you with some control to cool your work space.

**Ventilation (Section 6):** In Section 9.2 Airflow Determination, the standard says that air quality complaints from passengers and/or crewmembers that make it into the aircraft-maintenance or cabin-log on a given aircraft on two or more flights in a row or within 24 hours require the airline to ensure that the ventilation requirements in Section 6 are met. The ventilation requirements are not strict, but it is still worth documenting “complaints” (reports) to get them investigated.

**Contaminant monitoring (Section 7.2):** The standard requires that sensors be installed in the air supply system to monitor for chemicals indicative of oil or hydraulic fluid contamination. The sensors are intended to alter the pilot of abnormal conditions and to assist maintenance workers in their troubleshooting procedures after landing. If contaminant levels exceed an agreed upon level, then the sampling data must be entered
into the aircraft technical log and made available to crewmembers who experience symptoms consistent with exposure to such fumes within 60 days after the flight. This will provide proof of exposure to affected flight attendants in order to assist their physicians in diagnosis and treatment. We also hope this proof of exposure will help to motivate airlines to prevent contamination events from occurring.

**Measures to prevent and remedy exposure to airborne chemicals (Section 8):** A long list of general and specific measures is included in Section 8, addressing concerns with exposures to deicing fluid, exhaust fumes, fuel, hydraulic fluid, oil, ozone, infectious agents, pesticides, lavatory fluids/odors, carryon bags, and dry ice. Section 8.10 on pesticides is especially strong, promoting the non-chemical means of disinsection that AFA supports and requiring the cabin to be dry and odor free before crew members board post-spraying.

Is the published standard perfect? No. For starters, the recommended ventilation rates are lower than we think they should be. Still, the document has buy-in from all of the industry and labor members of the committee and that will make it easier for us to justify getting airlines to act. So, why should your airline address heat stress conditions, for example? Because the ASHRAE standard – with industry approval – says so. Keep on reporting and documenting conditions in the cabin, but make sure you add something to the end of your report like, “Section XXX of the ASHRAE standard says that this is what is should be.”

If you have additional questions, please contact Judith Anderson in AFA’s Air Safety, Health, & Security Department (206-932-6237 or Judith@afanet.org).