IONIZATION SYSTEM REMOVES PATHOGENS FROM CABIN AIR

News / Business aviation

Refinements to **ionization** techniques have allowed Aviation Clean Air (ACA) to develop a **system** that promises to remove harmful **pathogens**, allergens and unpleasant odors from aircraft of just about any size. The U.S.company already holds STCs to fit the system on Boeing Business Jets and the Gulfstream G550 and is now looking to offer it more widely to other corporate and private aircraft.

ACA has adapted the bi-polar cold plasma ionization applied for some time in buildings such as hospitals to clean both the air and the surfaces inside aircraft. The Aviation Ion Generator is built around an ion generator weighing just 1.34 pounds that can be discretely installed near the aircraft bleed air/cabin air systems. It continuously removes volatile organic compounds, odors, pathogens and allergens from the cabin and cockpit.

According to the Pooler, Ga.-based company, the system significantly reduces the risk of health threats such as E.coli, tuberculosis, avian flu, swine flu, Sars, staph, mold spores, the common cold and seasonal flu. It presented findings from independent, certified laboratory tests showing

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reductions in harmful pathogens as follows: E.coli (99 percent removed from surfaces in 15 minutes), tuberculosis (69 percent in 60 minutes), C.diff (86 percent in 30 minutes) and MRSA (96 percent in 30 minutes).

“Ionization has been around for a long time, but the problem has been that it has created ozone, which is harmful to the lining of lungs and is especially serious for people with asthma,” explained ACA partner Tom Davis. “Our product has a low ozone level well below the maximum levels permitted.”

Until now, HEPA filters and UV lights have been used to kills bugs in aircraft cabins, but ACA asserts that these solutions are by no means completely effective. “Our bi-polar ionization goes out into the aircraft interior space and kills pathogens wherever they are,” said Davis. “It doesn’t have to drag pathogens back through a filter.”

The system creates both positive and negative ions. Working in conjunction with the environmental control system, the system disperses these ions throughout the aircraft, where they surround harmful pathogens and sever the hydrogen bonds that hold them together at a molecular level. This stops the pathogens from mutating, growing or reproducing, and kills them quickly.

Essentially, the 28-volt system eliminates pathogens, allergens and odors in much the same way that nature does. The process does not produce any chemicals.

The solid-state hardware has been tested to Do-160 standards. ACA says that the system’s established track record with ground-based applications promises a high mean time between failures and simple, on-condition maintenance. Unlike other systems with the same purpose, says ACA, this one has no filters to change or charged plates to be cleaned.

In addition to its existing U.S. STCs, the manufacturer was close to getting European approval for the technology by the end of last month, and it already holds the approval of Bermudan authorities. ACA will be offering maintenance providers the chance to install the system through STCs or for individual aircraft under the FAA’s field approval Form 337. It has already been fitted to a Falcon 2000 and a G650.

For a G550, the cost of the system installed is approximately $55,000 (with two units required). The equipment is fundamentally the same for all aircraft types, with some adaptation required to accommodate the smaller air ducts on Citations.

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