



**SAIB:** NM-20-17

**Date:** November 4, 2020

**SUBJ:** Aircraft Interior Disinfection

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*This document contains information and recommended action. The contents of this document do not have the force and effect of law and are not meant to bind the public in any way. This document is intended only to provide clarity to the public regarding existing requirements under the law or agency policies.*

## **Introduction**

This Special Airworthiness Information Bulletin (SAIB) primarily advises owners and operators of **transport category airplanes** of important airworthiness information and guidelines with respect to disinfecting airplane interiors. The information and guidelines may also apply to other categories of aircraft.

At this time, the airworthiness concern is not an unsafe condition that would warrant an airworthiness directive (AD) under Title 14 of the Code of Federal Regulations (14 CFR) part 39.

## **Background**

As a result of the coronavirus disease 2019 (COVID-19) public health emergency, aircraft owners and operators may find it necessary to increase the frequency with which they disinfect aircraft interiors and to include additional areas of the aircraft not previously disinfected. Consistent with Centers for Disease Control and Prevention (CDC) guidance, FAA issued Safety Alert for Operators (SAFO) 20009, describing recommendations for occupational safety and health on aircraft. Although the SAFO notes that any disinfectants used should be compatible with the aircraft and approved by the aircraft manufacturer for use on board the aircraft, this SAIB focuses on the potential near term and long term implications for airworthiness, and is directed to all persons responsible for airworthiness.

Although disinfection is not directly related to aircraft airworthiness, too frequent or improper application could result in negative impacts, which could include the following conditions:

- Corrosion
- Embrittlement
- Increased flammability
- Electrical short circuit

Depending on the system or part affected, any of these conditions could create either an immediate or latent airworthiness issue.

FAA does not treat disinfection practices as “maintenance” under 14 CFR part 43 because disinfection is not necessary for the airworthiness of a part or system.<sup>1</sup> Similarly, such practices have not been addressed in the instructions for continued airworthiness under 14 CFR 23.1529, 25.1529,

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<sup>1</sup> Although the selection and use of improper chemicals and cleaning methods could damage the aircraft and affect its airworthiness, that possibility, in and of itself, does not make the activity maintenance or preventive maintenance. It follows that disinfection is also not maintenance. The FAA notes, however, that the manufacturer’s procedure for cleaning and disinfecting an aircraft may include tasks that might be classified as maintenance. These tasks might be required either before or after cleaning, or as the result of other maintenance tasks. Examples include pulling and tagging certain circuit breakers, and the installation of protective devices to protect sensitive areas.

27.1529, or 29.1529 because disinfection is not necessary to maintain airworthiness. However, the FAA advises that aircraft owners and operators should approach the disinfection process similarly to any maintenance or repair action for which improper execution may compromise airworthiness.

## **Recommendations**

FAA recommends that all owners and operators as well as any other person responsible for the airworthiness of affected aircraft implement the aircraft manufacturer's disinfection guidelines and be aware of the potential negative impacts of disinfectants. Aircraft manufacturers have published information on the products and methods they have evaluated and found acceptable from an airworthiness standpoint. Failure to follow the aircraft manufacturer's recommended practices on the use of materials for disinfection can lead to airworthiness issues. FAA notes that although the Environmental Protection Agency publishes a list of disinfectants effective at inactivating COVID-19, the majority of the products listed may not be suitable for use on aircraft, except in very limited and localized application.

In conjunction with the aircraft manufacturer's recommendations regarding the use of disinfectants, FAA offers the following additional guidance and information regarding potential negative impacts that may develop:

1. Make sure the disinfectant and the method of applying it are compatible. For example, certain disinfectants are suitable for wiping, but not suitable for spraying. Flammable disinfectants, such as those that are alcohol based, should not be fogged as this creates a dangerous atmosphere prone to sudden combustion. Note that alcohol containing wipes that are disposed of in bulk have the potential for any remaining alcohol to evaporate and collect in the disposal container, creating a similar sudden combustion risk, locally.
2. In general, fogging and misting allow the ingress of disinfectant into areas where disinfectants are not intended to be used (e.g., underlying structure, fan cooled electronic boxes, smoke detectors). Running aircraft ventilation will typically exacerbate this condition.
3. Protect structures and electrical systems from any disinfectants that have potentially corrosive elements. Consider increasing the frequency of inspections in areas of the aircraft where these disinfectants are used.
4. Avoid allowing liquids to pool, regardless of how they are delivered (e.g., wiped, sprayed, fogged) as liquids can more easily migrate into areas that are not suitable.
5. Be especially careful when using liquid disinfectants in the flight deck, particularly when attempting to achieve a long "dwell time" of the liquid disinfectant on the surface if recommended by the disinfectant manufacturer. Liquids can intrude into flight deck switches and seals. Excessive liquid intrusion can lead to electrical shorts in the near term and unexpected corrosion in the long term. Take care to prevent liquids from pooling or dripping in the flight deck. FAA emphasizes that owners and operators should follow, and not exceed, the disinfectant manufacturer's instructions for application of disinfectants identified as appropriate for the aircraft by the aircraft manufacturer.
6. Ethyl alcohol based<sup>2</sup> disinfectants can cause crazing on windows and window dust covers, and can damage thermoplastics. As a result, windows on certain aircraft types might not be able to continue to serve their intended purpose after multiple cleanings.
7. Electrostatic sprayers are different from electrostatic foggers, in that they provide more directional control (e.g., through particle size, pressure, or a combination of the two) of the disinfectant being dispensed. Although both electrostatic sprayers and electrostatic foggers are effective in getting the disinfectant to areas that might otherwise be difficult to reach, foggers can more easily transport charged particles into unintended areas that may be incompatible.

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<sup>2</sup> An ethyl alcohol based disinfectant may also be referred to as an ethanol based disinfectant.

Additionally, while FAA recommends electrostatic spraying over fogging, in general, using either technique with the ventilation system off will reduce the risk of unintended application. Note that airframe manufacturers continue to assess the implications of an operating ventilation system using specific disinfectants and may identify exceptions to this general advice.

8. Antimicrobial coatings have the potential to persist and be effective for much longer than a typical disinfectant surface treatment. However, while the rate of antimicrobial coating application may be less frequent, any alteration of the material properties of the surface upon which such coating is applied could be more immediate than another disinfecting treatment because the antimicrobial coating persists on the surface. Preliminary investigations by aircraft manufacturers indicate that most aircraft interior materials can be treated with antimicrobial coatings with no negative effects to flammability (specifically its heat release rate); but, such coatings should be assessed by the user regarding any other potential negative impacts before use. SAE provides two Aerospace Material Specifications (AMS) for disinfectant testing that may be useful in assessing certain possible impact: AMS-1452 and AMS-1453. These specifications apply to liquid disinfectants; however, many of the tests the SAE AMS documents reference and the effects considered are applicable to antimicrobial coatings.
9. FAA and some aircraft manufacturers are currently investigating other methods for disinfection, such as ultraviolet radiation and ionization, both for effectiveness as a disinfectant and potential effect on the aircraft. Therefore, FAA advises that owners and operators use caution with any method of disinfection, including ultraviolet radiation and ionization, and consider the potential short term and long term consequences, not just on the equipment and furnishings deliberately treated, but also on any equipment and furnishings that could be exposed during the disinfecting process. Be aware that these processes may create by-products that should also be evaluated for the effects on the aircraft and personnel.

### **For Further Information on this SAIB Contact**

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### **Related Information from Other Entities**

[International Civil Aviation Organization: Council Aviation Recovery Task Force, Take-Off Guidance, Aircraft Module](#)

[International Air Transport Association: Aircraft cleaning and disinfection during and post pandemic](#)

[European Union Aviation Safety Agency: Guidance on aircraft cleaning and disinfection in relation to the COVID-19 pandemic](#)

[CDC Updated Interim Guidance for Airlines and Airline Crew](#)