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Guidance Document on Aircraft Cleaning and Disinfection

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FOREWORD

This document was prepared by RTCA Special Committee 241 (SC-241) and EUROCAE Working Group WG-121 and approved by the RTCA Program Management Committee (PMC) on December 16, 2021. This document is technically equivalent to EUROCAE ED-287A.

RTCA, Incorporated is a not-for-profit corporation formed to advance the art and science of aviation and aviation electronic systems for the benefit of the public. The organization functions as a Standards Development Organization and develops consensus-based recommendations on contemporary aviation issues. RTCA's objectives include but are not limited to:

- coalescing aviation system user and provider technical requirements in a manner that helps government and industry meet their mutual objectives and responsibilities.

- analyzing and recommending solutions to the system technical issues that aviation faces as it continues to pursue increased safety, system capacity and efficiency.

- developing consensus on the application of pertinent technology to fulfill user and provider requirements, including development of minimum operational performance standards for electronic systems and equipment that support aviation; and

- assisting in developing the appropriate technical material upon which positions for the International Civil Aviation Organization and the International Telecommunication Union and other appropriate international organizations can be based.

The organization's recommendations are often used as the basis for government and private sector decisions as well as the foundation for many Federal Aviation Administration Technical Standard Orders and several advisory circulars.

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EXECUTIVE SUMMARY

The COVID -19 global pandemic began spreading around the world in early 2020, and its enormous effects have been felt directly or indirectly by every government, industry, country and person. The aviation industry has been particularly hard-hit, with staggering financial losses estimated at more than $118 billion for the 2020 calendar year and total lost revenue of more than $500 billion. Beyond passenger concerns for their health and safety during air travel, government actions to prohibit, restrict or require quarantines of individuals traveling from one region or country to another has greatly dampened the demand for air travel.

The commercial aviation industry adopted a proactive stance to address passengers' health and safety concerns using social distancing, mask-wearing requirements, taking passengers' temperatures, encouraging unwell passengers to stay home, increased cleaning and sanitization measures, and other measures. Studies have demonstrated that air travel is very safe due to these measures and others, including aircraft cabin air filtration systems, which are not matched by other transportation sectors.

To further increase airline travel safety, however, it was determined that a document containing best practices and technologies for aircraft cabin and flight deck cleaning/disinfecting would be beneficial for use by all aircraft operators. Accordingly, RTCA established Special Committee (SC) 241, Cockpit and Cabin Cleaning Committee in July 2020, to bring government, industry and labor organizations together to create this document. Although the guidance is intended specifically for airline use, it could also be beneficial to large charter operators, corporate and fractional ownership operators, and general aviation operators. It is intended to be a "living" document to be updated in the future as best practices and technologies improve, and so be useful for protection against this and any future pandemics.

The guidance results from shared expertise and international coordination and cooperation, as is demonstrated by the membership list. The Committee reviewed and cites the work of numerous health and industry organizations from around the world which have published guidance on pandemic health and safety measures.

In this document, the Committee emphasizes the need for safety risk assessments (SRA) to evaluate the benefits and hazards associated with any type of cleaning or disinfecting products and techniques, plus the requirement for a safety management system which will support the SRA with valuable data from front-line workers. Other general considerations include occupational safety and health, personal protection equipment, and education and training for employees.

The Committee examined two broad types of virus disinfection/neutralization measures: chemical and non-chemical. Use of chemicals necessitates a selection and approval process, understanding the potential effects of chemicals on aircraft interiors and components, evaluating the effectiveness of the process utilized, and use of personal protective equipment. The non-chemical measures examined are HEPA air filtration systems, ionization, ultraviolet light and thermal systems, all of which are capable of neutralizing or eliminating viruses using different technologies. Each of these measures has its own unique implementation and usage considerations.

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1.1 Introduction

This guidance document was developed as a response to the COVID-19 pandemic which has decimated the global aviation industry, and whose harmful effects are still being realized. The aviation industry recognizes that the development and adoption of guidance on the cleaning and disinfecting of aircraft can make positive contributions to the safety and wellbeing of aircraft occupants, and help increase confidence in air travel as a mode of transportation in response to current COVID-19 pandemic and possible future health events.

The target audience of this guidance document is aircraft operators and any third party contractors that provide cleaning, and disinfection trained personnel, equipment, products, or services for aircraft interiors. Its purpose is to provide an internationally agreed upon set of principles for the proper cleaning, sanitization and disinfection of commercial aircraft and covers aircraft interiors such as passenger cabin, galleys, lavatories, crew rest areas, cargo compartments and the flight deck.

The guidance summarizes the aviation industry's current best practices, known technologies, and options for equipment for eliminating pathogenic germs (e.g. viruses, bacteria, etc.) in the air and on contact surfaces. This guidance provides valuable information for development of appropriate procedures and applicable training for cleaning personnel, maintenance personnel, and pilot and flight attendant crewmembers.

While this guidance covers aircraft cleaning and disinfection in general, in-flight disinfection practices will involve consideration of additional factors not explicitly addressed in this document.

Note: Please refer to available industry guidance in Appendix A for the additional information on in-flight cleaning and disinfection: US CDC Preventing Spread of Disease on Commercial Aircraft: Guidance for Cabin Crew Preventing Spread of Disease on Commercial Aircraft: Guidance for Cabin Crew, IATA Suspected Communicable Disease Guidelines for cabin crew

The guidance is intended to be updated in the future as new and improved methods of eliminating pathogens are developed.

1.2 Assumptions

This guidance document does not and is not intended to describe all of the measures to be used to kill pathogens in the air or on contact surfaces. Rather, it provides a description of additional measures which operators and labor can use in this regard as part of a layered approach to mitigate the harmful effects of a pandemic or seasonal viruses, such as influenza. It builds upon recommendations of the World Health Organization and individual State health and safety organizations to combat viruses, such as COVID-19, including physical distancing, wearing a mask, washing hands frequently, and not traveling when feeling ill. Vaccines, if available, may also be utilized.

