

## CAAS Circular 2021/17 Rev 2

7 October 2021

### **GUIDANCE ON AIRCRAFT CLEANING AND DISINFECTION**

This Circular provides guidance on the implementation of the aircraft cleaning and disinfection requirements stipulated in CAAS Directives 9/2020 and 10/2010 (“the Directives”) applicable to Singapore and foreign air operators, to reduce the risk of transmission of COVID-19 to ground personnel, crew and passengers.

2 This Circular takes effect from 8 October 2021 and supersedes CAAS Circular 2021/17 R1 issued on 9 June 2021. In addition to previously issued guidance, this Circular recommends crew members to remain outside the aircraft when cleaning and disinfection of the aircraft is in progress and also that cleaning personnel be supervised to comply with local personal protection requirements at all times while in the aircraft.

#### **General Principles and Guidelines**

3 The Directives require an air operator to clean and disinfect all high-touch places and surfaces of the aircraft cabin using materials known to be effective against COVID-19 and suitable for aircraft use and have been recommended by the aircraft manufacturer. In selecting the appropriate cleaning and disinfecting agents (e.g. Calla 1452), the air operator should take into consideration the effects of the agents on human health, or on aircraft electronics, avionics, aircraft structure, cabin interiors, and sensors. The air operator should refer to the aircraft or equipment manufacturer’s instructions on the choice of cleaning agent or disinfectant, and the proper application of these cleaning agents and disinfectants for an effective disinfection.

4 Given the increased frequency of cleaning and disinfection, the air operator should periodically inspect the aircraft equipment to ensure that there are no long-term effects or damage over time. If damage is observed, the air operator should contact the manufacturer for guidance on alternate cleaning agents or disinfectants, and safety actions if necessary.

#### **Training of Personnel**

5 The air operator should ensure that the persons performing the cleaning and disinfecting tasks are properly trained on the donning and doffing of personal protective equipment (PPE).

6 To guide personnel cleaning or disinfecting the aircraft, the air operator should establish procedures for its personnel, which should include at least the following:

- (a) having such persons wear appropriate PPE while carrying out the cleaning and disinfecting tasks;
- (b) ensuring adequate ventilation while working in confined areas such as lavatories;
- (c) designating persons to:
  - (i) clean or disinfect designated sections of the aircraft using separate cleaning tools to prevent cross-contamination of cleaning areas; or
  - (ii) perform specific tasks to clean or disinfect the aircraft to prevent cross-contamination of cleaning equipment;
- (d) establishing recommended procedures on cleaning and disinfection;
- (e) minimising occupational health and safety risks that a person may face when cleaning or disinfecting aircraft; and
- (f) ensuring proper removal of PPE after completion of the cleaning or disinfecting tasks.

### **Recommended Procedures and Practices**

7 The air operator should ensure that cleaning and disinfection personnel adhere to the general principle of thorough disinfection from outer ring-to-centre, top-down and all-around approach. The key areas of focus are high-touch areas, which should be cleaned and disinfected from the top (ceiling) and moving progressively downwards (floor), working from clean-to-dirty areas.

8 The high-touch areas and surfaces of the aircraft cabin are:

- (a) Galleys;
- (b) Meal trays;
- (c) Inflight seat monitors;
- (d) Passenger seats (including arm rests and seat belt buckles);
- (e) Window shade covers;
- (f) Overhead bins; and
- (g) Lavatories.

9 For aircraft carrying only cargo, the air operator may reduce the high-touch areas in the cabin to be cleaned and disinfected to those used by the crew (such as the galley and lavatory), as no passengers are carried onboard the aircraft.

10 Based on its risk assessment and taking into account the size and ground time of the aircraft, the air operator may consider extending the cleaning and disinfection to other areas of the aircraft, and at such frequency as practicable.

11 When the cabin is being cleaned, the air operator should keep the cabin ventilated by turning on the aircraft ventilation system.

12 The air operator should adhere to the aircraft or equipment manufacturer's instructions, if any, regarding the use of the aircraft ventilation systems during disinfection (for example by electrostatic spraying) of the aircraft.

13 The air operator should also disinfect the cargo and baggage in the cargo hold, and the cargo carried in the cabin if so carried, before allowing the cargo and baggage to be unloaded.

14 The air operator should also establish and implement procedures to verify the correct positioning of control handles, circuit breakers, control panels, switches and knobs in the flight deck and cabin after cleaning or disinfecting.

15 Additionally Singapore air operators should ensure the following:

- (a) That crew members remain outside the aircraft (but not enter the terminal area of the airport) when cleaning and disinfection of the aircraft are in progress. If that is not possible, crew members should stay away from the locations where cleaning and disinfection are in progress (for example, pilots to remain in cockpit while cleaning of the cabin is in progress).
- (b) A non-crew personnel be assigned to supervise the cleaning and ensure that the cleaning personnel comply with the local personal protection requirements (“PPE”) at all times while they are in the aircraft.

### **Disinfection of the Cabin after Carriage of Unwell Persons**

16 In the case of heavy contamination of the aircraft cabin areas or surfaces with body fluids or secretions (e.g. vomitus or mucus), the air operator should:

- (a) remove the contaminants from the contaminated areas or surfaces by using an absorbent material or absorbent disinfectant;
- (b) ensure that the excess contaminant be solidified;
- (c) dispose the absorbent material or disinfectant appropriately;
- (d) treat the contaminated areas or surfaces with disinfectant;
- (e) remove contaminated carpet and/or seat covers and place them in a sealed plastic bag labelled as “bio-hazard”;
- (f) launder the carpet and/or seat cover in accordance with manufacturer’s recommendations, or where laundering is not possible, to dispose of the contaminated carpet and/or seat cover appropriately; and
- (g) remove the underlying upholstery and carry out disinfection, in the case where the contaminants have penetrated the seat cover.

17 An air operator may use the following cleaning and disinfection process:

- (a) after all the passengers and crew have disembarked, close the cabin doors and adjust the aircraft ventilation system to maximum airflow until there is a complete exchange of air in the cabin;
- (b) disinfect the sitting area of the unwell person;
- (c) clean thoroughly all the seats within two rows the unwell person, including:
  - (i) armrests;
  - (ii) seatbacks;
  - (iii) tray tables;
  - (iv) seat belt buckles;
  - (v) light and air ventilation controls;
  - (vi) cabin crew call buttons;

- (vii) overhead compartment handles;
- (viii) sidewall panels, windows and window shades;
- (ix) portable electronic devices provided to the passenger; and
- (x) individual video monitors, touchscreens and remote controls;
- (xi) oxygen masks, if used;
- (d) disinfect and thoroughly clean the lavatory that had been designated for the use of the unwell person, including:
  - (i) door handles;
  - (ii) locking devices;
  - (iii) toilet seat;
  - (iv) faucet;
  - (v) basin; and
  - (vi) sidewall panels; and
- (e) disinfect and thoroughly clean any other areas that may have been possibly contaminated based on the air operator's risk assessment.

18 The air operator should also ensure that the cabin is fully ventilated after disinfection.

### **Coordination with Other Parties**

19 The air operator should coordinate aircraft cleaning and disinfection efforts with the engaged ground handling agents, as well as the airport operator, to minimise any implication on workflow for aircraft handling, especially for turnaround flights which are time-critical.

Alan Foo  
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