

2 March 2021

GUIDANCE ON AIRCRAFT CLEANING AND DISINFECTION

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

2 CAAS Directives 9/2020 and 10/2010 require a Singapore and foreign air operator respectively 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 aviation use. A Singapore air operator must clean and disinfect the aircraft cabin and cockpit, if the aircraft is in Singapore for a base lay over.

General Principles and Guidelines

3 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 such as N95 masks, goggles or face shields, gloves and gowns 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 (*see paragraph 11*).

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 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.

10 Air crew who are not involved in the cleaning and disinfection should stay outside the aircraft when cleaning and disinfection are in progress within the aircraft.

11 The air operator should ensure that persons cleaning or disinfecting the aircraft carry out the following after the cleaning and disinfecting tasks are completed:

- (a) disinfect their gloves before removing them;
- (b) disinfect their hands after removing their gloves and gowns (if worn);
- (c) remove their face shields or goggles (if worn) only after (a) and (b) are carried out; and
- (d) clean their hands and other parts of their body that may have been exposed to contaminants with soap and water or with an alcohol-based sanitiser.

Note: Persons carrying out cleaning or disinfecting tasks should avoid touching their faces with gloved or unwashed hands.

12 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.

Cargo Flights

13 For aircraft carrying only cargo, the air operator may reduce the areas 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.

Disinfection of the Cabin after Carriage of Unwell Persons

14 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.

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

- (a) after all the passengers and air crew have disembarked, close the cabin doors and adjust the air-conditioning 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.

16 The air operator should also ensure that the air conditioner is switched off during the disinfection operation, and that the cabin is fully ventilated after disinfection.

Coordination with Other Parties

17 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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