



# **Preventing Spread of Coronavirus Disease 2019 (COVID-19)**

## **Guideline for Airlines**

### **(the 2<sup>nd</sup> Version)**

This guideline is written to provide infection prevention and control measures for crewmembers, management recommendations for ill passengers onboard, and cleaning and disinfection programs for aircraft, during the outbreak of COVID-19.

## **1. Temperature Screening**

Cabin attendants should be equipped with calibrated non-contact infrared thermometer to detect the passenger who has a fever.

## **2. Infection Control Measures for Crewmembers**

2.1 Cabin attendants should wear surgical mask with low exposure risk and medical protective masks (or N95 masks) with higher epidemic risks (e.g. passengers on board from areas like Hubei province). Alcohol wet wipes are recommended for hand disinfection. After disposing of the waste, cabin attendants should wash hands with soap and water before disinfection.

2.2 Upon contacting ill passengers (having symptoms such as fever, fatigue and dry cough), or treating body fluids (such as respiratory secretions, vomit, blood, diarrhea) or contaminated objects and surfaces, cabin attendants should wear personal protective equipment (PPE) found in the Universal Precaution Kit (UPK).

### **2.2.1 Gloves**

When contacting ill passengers as needed, cabin attendants should wear disposable rubber or nitrile gloves. When contacting different febrile passengers or glove wearing out, cabin attendants should conduct handwashing in time, change the gloves and perform hand hygiene.

### **2.2.2 Masks**

Cabin attendants should wear Medical protective masks (or N95 masks) and replace the mask with a new one after performing emergency treatment or masks are contaminated.

### **2.2.3 Goggles and protective clothing**

When contacting ill passengers, suspected or confirmed patients, cabin attendants should wear goggles and disposable protective clothing (replace by the protective apron in the UPK as an interim emergency measure). Reusable goggles should be disinfected and dried after use. Goggles with anti-fog film should not be wiped with disinfectant, but cleaned by water and then exposed to ultraviolet light for at least 30 minutes.

### 3. Aircraft Cleaning and Disinfection

Wet cleaning should be carried out before disinfection which is classified into preventive, concurrent and terminal disinfection.

#### 3.1 Aircraft Routine Cleaning

Different types of cleaning should be performed in accordance to the ground parking time. (See Table 1). If time does not permit completion of all of the above, lavatory and galley should be cleaned priority.

**Table 1 Aircraft Cleaning Types**

Area	Cleaning Items	Stopover Times (min)		Overnight
		<60min	>60min	
<b>Flight deck</b>	Clean crew tables and glass holders	On request	√	√
	Clean stowage areas and racks	On request	√	√
	Wipe seats	On request	√	√
	Clean floor/Vacuum carpet	On request	On request	√
	Clean flight deck windows inside	On request	On request	√
	Clean door and walls	On request	On request	√
	Empty ashtrays (if installed)	√	√	√
<b>Cabin</b>	Dispose of waste from closets	√	√	√
	Dispose of litter and newspapers	√	√	√
	Dispose of waste in seat pockets	√	√	√
	Clean tray tables	On request	On request	√
	Clean cabin crew seat tables	On request	On request	√
	Clean interphone surfaces	On request		√
	Clean cabin windows inside			√
	Vacuum cloth-covered seats		On request	√
	Wipe leather-covered seats		On request	√
	Clean overhead bins outside and latch handle surfaces	On request	On request	√
	Dispose of waste in overhead bins		On request	√
	Clean PVC floors			√
	Vacuum carpet		On request	√
	Replace pillows, headrest covers and blankets			√
	Clean in-seat monitors and service control unit panels			√
	Clean seats and armrests	On request	On request	√
	Remove passenger seat cushions and vacuum			√
	Remove stains from carpets			√
Clean seat rails, air inlets, ceiling, sidewalls, closets, bulkheads and magazine racks			√	
Empty waste bins and insert waste bags	√	√	√	

<b>Galleys</b>	Clean doors, latches, ceiling and ventilation grids (air-conditioning vents)	On request	On request	√
	Clean faucets, sink and working surfaces	On request	√	√
	Clean retractable tables	On request	√	√
	Clean ovens inside and outside	On request	On request	√
	Clean service trolleys	On request	√	√
	Clean PVC floors	On request	On request	√
<b>Lavatories</b>	Empty waste bins and insert waste bags	√	√	√
	Clean toilet bowl and seat	√	√	√
	Clean basin, faucets and surfaces	√	√	√
	Clean mirror	√	√	√
	Clean change table	√	√	√
	Clean wall surfaces and interior and exterior door handles and locks	√	√	√
	Clean PVC floors	√	√	√
	Replenish soap dispenser	On request	√	√
	Replenish toiletry items	On request	√	√
	<b>Crew rest areas</b>	Dispose of waste from closets		√
Dispose of litter and newspapers			√	√
Remove sheets, pillows and blankets from each sleeping berth			√	√
Clean pillows and blankets			√	√
Clean controls (for lights and ventilation) and interphone surfaces			√	√
Vacuum carpet				On request
Clean any cabin crew seat tables			√	√
Clean any cabin windows inside			√	√

### 3.2 Aircraft Preventive Disinfection

Aircraft preventive disinfection should be conducted post-flight in accordance with the following principles:

3.2.1 Distinguish the rags and mops used in each area from different colors to reduce cross-contamination.

3.2.2 Avoiding to be detrimental to aircraft components, rub the surfaces with disinfectant for adequate contact time and remove it immediately.

3.2.3 Spray the floor from front to back before disinfection and then spray again in opposite direction.

3.2.4 Disinfect the key areas as noted below, begin at the top and proceed downward progressively working from clean to dirty areas.

- Aisle



Ceiling, overhead bins, reading lights, air outlets, sidewall panels, windows, seats (tray tables, armrests, passenger control units, decorative panels), cabinets/lockers, bulkheads, magazine racks, cabin attendant seats.

- Lavatory

The disinfection in lavatory should be progressed from contaminated to clean areas, as follow: toilet bowls, waste bins, basins, lavatory sidewall, ceiling, door assembly (door surfaces, doorknobs, ashtrays, if installed, and latches).

- Galley

Ceiling, ovens, water boilers, coffee makers, galley facilities, lockers/drawers, waste bins.

### 3.3 Aircraft Concurrent Disinfection

The cabin contaminated with body fluids/substances (such as respiratory secretions, vomit, blood, diarrhea,) should be disinfected timely according to the procedures in *Emergency Medical Equipment Installation and Training for Large Transport Aircraft* (AC-121-102R1 issued by CAAC).

3.3.1 Wear personal protective equipment (PPE). Put on medical masks, glasses, medical rubber gloves and impermeable aprons.

3.3.2 Prepare disinfectant. Take a tablet for surface disinfection into 250~500ml clean water.

3.3.3 Cover the respiratory secretions, blood, vomit, diarrhea and other contaminants evenly with absorbent disinfectant for 3~5 min to enable them solidified;

3.3.4 Use portable pickup shovel to shovel the solidified contaminants into the bio hazard waste bags;

3.3.5 Use absorbent tissues (towels) soaked in the disinfectant to wipe the contaminated objects and surfaces for 5 minutes and then clean by water. Finally put the tissues, towels, and other used disinfection materials into bio hazard waste bags;

3.3.6 Take off gloves and aprons, scrub hands with skin disinfection wipes, take off glasses and masks, and scrub hands again and other parts of bodies that are likely to touch contaminants;

3.3.7 Place all contaminated items inside a biohazard bag, tie the bag, stick tag of bio hazard waste on the seal.

3.3.8 Keep the tied bio hazard waste bag in a proper place temporarily to prevent it from missing, being damaged or contaminating meals on board.

3.3.9 Inform the destination ground departments to take over.



### 3.4 Aircraft Terminal Disinfection

After carriage of ill passengers, terminal disinfection should be conducted.

3.4.1 After all people get off the aircraft, close cabin doors, adjust the air conditioning to high-volume to complete all-round air exchange.

3.4.2 Clean all surfaces of ill passengers' seat-area and the lavatories, then other places in accordance with overnight cleaning procedures.

3.4.3 Disinfect cabin areas with chlorine-containing disinfectant complying with preventive disinfection procedures.

### 3.5 Disinfectants

Aircraft cleaning and disinfection products should obtain airworthiness approval (for specific products, see <http://www.fccc.org.cn/webs/xhg/list.aspx?classid=0202>), not be corrosive or otherwise detrimental to aircraft components.

3.5.1 Preventive disinfection. It is recommended to use compound quaternary ammonium salts, double-quaternary ammonium, hydrogen peroxide or chlorine-containing disinfectants. The concentration of hydrogen peroxide should not exceed 3%, for 20 min; the effective concentration of chlorine between 250~500mg/L, for 10 min.

3.5.2 Terminal disinfection. Hydrogen peroxide or chlorine-containing disinfectants are recommended. The concentration and reaction time of hydrogen peroxide is the same as that in preventive disinfection; the effective concentration of chlorine is 1000mg/L, for 30 min.

## 4. On-board Emergency Quarantine Measures

The ill traveler (passenger or crewmember) should be quarantined on-board by the following methods:

4.1 The last 3 seat rows of the cabin should be designated for relative emergency quarantine. If possible, the ill traveler should be seated in the right window seat, by which the breath exhaled could be exited the cabin directly to the largest extent.

4.2 The right rear lavatory should be specifically designated for quarantine purpose.

## 5. Quarantine Management for Crewmembers

Crewmember recommended quarantine precautions should be performed complying with the following principles:

### 5.1 Exposure Risk Assessment

5.1.1 In the case of any crewmember having specific symptoms (such as fever, fatigue and dry cough) and exposure event, all crewmembers who have been assigned in the same flights within the last 14 days should be quarantined.

5.1.2 The crewmember on duty having specific symptoms (such as fever, fatigue and dry

cough), should be quarantined immediately following the on-board emergency quarantine procedures. If having exposure event, the crewmember should be arranged in private transport after the flight segment to the designated healthcare facilities after the deplaning of the passengers and the other crewmembers. And the other crewmembers should be quarantined as above.

5.1.3 The cabin crew member designated to look after the ill passenger with exposure event, should minimize close contact with other crewmembers, and be arranged in private transport and quarantined with those assigned in the same zone after the flight segment. While the other crewmembers need monitor health condition instead of quarantine.

5.1.4 Crewmembers performing charter flights outside Hubei Province need monitor health condition instead of quarantine.

5.1.5 Crewmembers assigned to provide transportation support to Hubei Province should adopt the infection control measures. And except for special emergencies, the following principles should be abode by upon landing:

- No deplaning of crewmembers (ground personnel should be requested for external inspections, refueling etc.);
- No enplaning of ground personnel;
- Closing the doors and returning immediately upon completion of the transfer of medical personnel and materials, without cleaning, watering and waste disposal.
- Upon landing in Hubei Province, operators must minimize the contact between flight crew and local ground personnel. When an item of equipment can be released inoperative by MEL but which with maintenance(M) procedures, an evaluation by both crewmembers and maintenance personnel must be done before flight back to the home base if the (M) procedure be done in a simplified equivalent way; Subsequent flight segments with the MEL item inoperative which with operational(O) procedures should be conducted provided that the (O) procedure has been accomplished as feasible;
- Conducting terminal disinfection after returning to the home base.
- Notifying crewmembers of above principles mentioned through the pre-landing message from the dispatcher.

Crewmembers should not be quarantined complying with above mentioned principles. But if an overnight or a longer period of stopover is necessary in Hubei Province Crewmembers should be quarantined.

5.1.6 Crewmembers should be quarantined after carriage of confirmed, suspected or asymptomatic patients within the last 14 days.



## 5.2 Quarantine Period

Crewmembers should be released from quarantine until 14 days after the last unprotected contact with confirmed, suspected, or asymptomatic patients. If the suspected patients are excluded, crewmembers can be released.

## 5.3 Quarantine Measures

5.3.1 The quarantined Crewmembers should report their temperature and health condition to the medical department of airline every morning and evening.

5.3.2 The quarantined crewmembers should stay away from other people in a specific room which should be cleaned and disinfected regularly.

5.3.3 The quarantined crewmembers should not go out.

5.3.4 The records of the health condition of the quarantined crewmembers should be kept by airline.

5.3.5 Once the quarantined crewmember is found to have any symptoms (such as fever, chills, cough, expectoration, nasal congestion, runny nose, sore throat, headache, fatigue, muscle aches, breathing difficulties, dyspnea, chest tightness, conjunctival hyperemia, nausea, vomiting, diarrhea, abdominal pain etc.), the airline should report to the local health authority immediately and send the isolated crewmember to the designated medical care facility.

5.3.6 The quarantined crewmember should be released after 14 days without above symptoms.

**Note: The English edition is translated from the original Chinese version.**