



Guidance for Air Operator through the COVID-19 Public Health Crisis

CAAT-GM-OPS-CPHC

Revision: 00

Date: 05 November 2021



The Civil Aviation Authority of Thailand

Intentionally Left Blank

Table of Contents

Table of Contents	3
Abbreviations	5
0. Introduction.....	6
0.1 Background.....	6
0.2 Purpose.....	6
0.3 Applicability (is subjected to)	6
0.4 Reference (Refer regulation)	6
1. Aircraft.....	7
1.1 Target audience	7
1.2 Passenger and Crew - General.....	7
1.2.1 Objective	7
1.2.2 Considerations.....	7
1.3 Disinfection – Flight Deck	8
1.3.1 Objective	8
1.3.2 Considerations.....	8
1.4 Disinfection – Passenger Cabin.....	10
1.4.1 Objective	10
1.4.2 Considerations.....	10
1.5 Disinfection – Cargo compartment	11
1.5.1 Objective	11
1.5.2 Considerations.....	11
1.6 Disinfection – Maintenance.....	12
1.6.1 Objective	12
1.6.2 Considerations.....	12
1.7 Hazardous Waste.....	13
1.7.1 Objective	13
1.7.2 Considerations.....	13
1.8 Air System Operations.....	14
1.8.1 Objective	14
1.8.2 Considerations.....	14
2. Crew	16
2.1 Target audience	16
2.2 Crew Members	16
2.2.1 Objective	16
2.2.2 Considerations.....	16
2.3 Flight Crew	19
2.3.1 Objective	19
2.3.2 Considerations.....	19
2.4 Cabin Crew.....	20
2.4.1 Objective	20
2.4.2 Considerations.....	20
2.5 Layover	21
2.5.1 Objective	21
2.5.2 Considerations.....	21
3. Cargo	23
3.1 Target audience	23
3.2 Road Feeder to Freight Reception & Freight pick up	23

3.2.1 Objective	23
3.2.2 Considerations.....	23
3.3 Within Cargo facility (Origin/Destination/Transit)	24
3.3.1 Objective	24
3.3.2 Considerations.....	24
3.4 Cargo facility to ramp (Origin/Transit/Destination)	25
3.4.1 Objective	25
3.4.2 Considerations.....	25
3.5 Aircraft Loading/Unloading	26
3.5.1 Objective	26
3.5.2 Considerations.....	26
4. Example of Forms.....	27
4.1 CREW COVID-19 STATUS CARD	27
4.2 AIRCRAFT COVID-19 DISINFECTION CONTROL SHEET	29
5. Example of Posters	30

Abbreviations

Abbreviations	Meaning
AOC	Air Operator Certificate
APU	Auxiliary Power Unit
GSE	Ground Support Equipment
HEPA	High Efficiency Particulate Air
IPA	Isopropyl Alcohol
MHE	Material handling equipment
OEM	Original Equipment Manufacturer
PCA	Pre-Conditioned Air
PLF	Public Health Passenger Locator Form
PRM	Passenger with reduced mobility
UPK	The Universal Precaution Kit
WHO	World Health Organization

0. Introduction

0.1 Background

The impact of the coronavirus disease (COVID-19) pandemic on the global air transport without precedent has a major impact to the Thai aviation industry, decreasing of passenger number, the operator's revenue and the number of tourists in Thailand.

To enable the safe return to high-volume domestic and international air travel for passengers and cargo. The approach introduces a core set of measures to form a baseline aviation health safety protocol to protect passengers and aviation personnel from COVID-19. These measures will enable the growth of global aviation as it recovers from the current pandemic.

Therefore, it is important to recognize that each stage of that recovery will need a recalibration of these measures in support of the common objectives, which are to safely enable air travel, incorporate new public health measures into the aviation system, as well as support economic recovery and growth.

CAAT recognizes the need to reduce public health risk while being sensitive to what is operationally feasible for the operators, airports and other aviation interests.

In developing the measures contained in the guidance, the following issues have been emphasized (or taken into account):

- a) Remain focused on fundamentals: safety, security, and efficiency;
- b) Promote public health and confidence among passengers, aviation personnel, and the general public; and
- c) Recognize aviation as a driver of economic recovery.

0.2 Purpose

To contribute the efficiency of safe, secure and sustainable transport by air of an increasing number of passengers and cargo also to minimize the risk of COVID-19 transmission between and among passengers, aviation personnel and the general public. This guidance material was developed to ensure the implementation of the measures which will facilitate and strengthen the aviation industry recovery from the COVID-19 pandemic. The guidance material covers specific areas as follows;

- a) Aircraft;
- b) Crew; and
- c) Cargo.

0.3 Applicability (is subjected to)

This document applicable to all Thai Air operators (AOC), Crew members, Freighters and ground handling operators.

0.4 Reference (Refer regulation)

Take-off Guidance for Air Travel through the COVID-19 Public Health Crisis (TOGD) Fourth Edition.

1. Aircraft

1.1 Target audience

International Commercial Air Transport – Aeroplane (Air Operator Certificate holder)

1.2 Passenger and Crew - General

1.2.1 Objective

Provide a safe, sanitary operating environment for passenger and crew.

1.2.2 Considerations

- a) Adjust the boarding process. To the extent possible, and consistent with weight and balance considerations, the boarding and disembarking of passengers should be conducted in ways that reduce the likelihood of passengers passing in close proximity to each other.
- b) Seat assignment processes. When needed, seats should be assigned for adequate physical distancing between passengers. The operators should allow for separated seating arrangements when occupancy allows it. Passengers should also be encouraged to stay in the assigned seat as much as possible.
- c) Limit interaction on board. Passengers should be encouraged to travel as lightly as possible with all luggage checked-in except small hand luggage that fit under the seat. Newspapers and magazines should be removed. The size and quantity of duty-free sales may also be temporarily limited.
- d) Limit or suspend food and beverage service. Food and beverage service should be limited or suspended on short-haul flights or should be considered to be dispensed in sealed, pre-packaged containers.
- e) The use of non-essential in-flight supplies, such as blankets and pillows, should be reduced to minimize the risk of cross infection.
- f) Restrict lavatory access. When possible, one lavatory should be designated for crew use only, provided sufficient lavatories remain available for passenger use without fostering congregation by passengers waiting to use a lavatory. Passengers should be informed that closing the lavatory lid before flushing is an effective method to mitigate the spreading of potentially infectious particles.
- g) Also, to the extent practicable depending on the aircraft, passengers should use a designated lavatory based on seat assignment to limit passenger movement in flight, which reduces exposure to other passengers.
- h) Crew protection measures. Sharing of safety equipment used for safety demonstrations should be prohibited. Crew members should be instructed to provide service only to specific sections of the cabin. Additional means of protection, for instance plastic curtains or Plexiglas panels during the boarding process (to be removed once boarding is completed), should be explored.

Note: The following elements concerning disinfection contain the latest joint aircraft original equipment manufacturer (OEM) recommendations currently available. Users of this guidance should note that:

- These recommendations are based on evolving circumstances and technology.
- While every attempt was made to provide common recommendations for disinfectants usage on aeroplanes, there are differences between the products manufactured by each aircraft OEM. It is strongly recommended that the operator is familiar with OEM guidance and consults the OEM for any questions specific to that airframe.
- The intent of these guidelines is to provide operators with recommendations that are aligned with the aircraft product. It is the responsibility of the operator to ensure that the disinfectants are used per the manufacturer's instructions, that proper protection is employed by those using the disinfectant and that their use is in alignment with health organizations' recommendations for efficacy and in accordance with the label instructions of the disinfectant.

1.3 Disinfection – Flight Deck

1.3.1 Objective

Provide a safe, sanitary operating environment for crew and ground staff.

1.3.2 Considerations

- a) Frequency of cleaning of the flight deck should account for the separation of the flight deck from the passenger compartment as well as for the frequency of crew transitions.
- b) The flight deck should be cleaned and disinfected at an appropriate frequency to accommodate safe operations for the crew.
- c) Disinfection methods should be adopted in consultation with the aircraft manufacturer and based on an appropriate safety risk assessment. Any advice from WHO should also be taken into account. The risk assessment should be informed by recommendations from airframe manufacturers and reference instructions from appropriate health organizations on application to be effective against viruses.

- d) Aircraft manufacturers recommend:
 - i. the use of a 70% aqueous solution of Isopropyl Alcohol (IPA) as a disinfectant for the flight deck touch surfaces with specific care to be taken for application on leather and other porous surfaces;
 - ii. periodic equipment inspection to detect long-term effects or damage given the lack of data on the long-term effects of much more frequent application of disinfectants; and to contacting them for guidance on alternate disinfectants should damage be observed;
 - iii. considering enhanced inspection intervals or maintenance when employing aggressive or new disinfection techniques.
 - iv. following their instructions for ensuring proper application, ventilation and use of personal protection equipment; and
 - v. consulting them for more detailed recommendations or additional disinfecting chemicals noting the discrepancy in approvals for disinfection products in different States and in their availability.
- e) Surfaces should be cleaned of dirt and debris per instructions from the aircraft.
- f) Application to surfaces should be with pre-moistened wipes or single use wetted cloth and use limited bottle sizes on board to minimize the risk of spilling the IPA solution. Do not spray IPA in the flight deck. Do not allow the liquid to pool or drip into the equipment.
- g) IPA is flammable, so precautions should be taken around potential sources of ignition.
- h) UV irradiation does not replace normal manual cleaning procedures but could be used to supplement existing disinfection procedures. Where used, several important factors should be considered, including that UV disinfection is only effective if the virus is exposed to the UV light. Materials that are exposed to UV light may be damaged or discoloured. The Airframe OEM should be consulted to ensure that the device intended for use is compatible with aircraft materials.
- i) Given the increased likelihood that switch positions may be inadvertently changed during the cleaning or disinfection process, operators and flight crew should reinforce procedures to verify that all flight deck switches and controls are in the correct position prior to operation of the airplane.
- j) Some equipment on the flight deck may have additional disinfectant needs based on usage (e.g., oxygen masks) and procedures should be put in place accordingly.

1.4 Disinfection – Passenger Cabin

1.4.1 Objective

Provide a safe, sanitary operating environment for passengers, crew and ground staff.

1.4.2 Considerations

- a) The cabin should be cleaned and then disinfected at an appropriate frequency to accommodate safe operations for the passengers and crew. The frequency should account for the operation of the aircraft and the potential exposure of the cabin to an infected person.
- b) Disinfection methods should be adopted in consultation with the aircraft manufacturer and based on an appropriate safety risk assessment. Any advice from WHO should also be taken into account. The risk assessment should be informed by recommendations from airframe manufacturers and reference instructions from appropriate health organizations on application to be effective against viruses.
- c) Aircraft manufacturers recommend:
 - i. the use of a 70% aqueous solution of Isopropyl Alcohol (IPA) as a disinfectant for the flight deck touch surfaces with specific care to be taken for application on leather and other porous surfaces;
 - ii. periodic equipment inspection to detect long-term effects or damage given the lack of data on the long-term effects of much more frequent application of disinfectants; and to contacting them for guidance on alternate disinfectants should damage be observed;
 - iii. following their instructions for ensuring proper application, ventilation and use of personal protection equipment;
 - iv. considering enhanced inspection intervals or maintenance when employing aggressive or new disinfection techniques.
 - v. consulting them for more detailed recommendations or additional disinfecting chemicals noting the discrepancy in approvals for disinfection products in different States and in their availability.
- d) Surfaces should be cleaned of dirt and debris per instructions from the aircraft.
- e) Application to surfaces should be with pre-moistened wipes or single use wetted cloth and use limited bottle sizes on board to minimize the risk of spilling the IPA solution. Do not spray IPA in the cabin. Do not allow the liquid to pool or drip into the equipment. (e.g. in-flight entertainment electronic boxes)

- f) IPA is flammable, so precautions should be taken around potential sources of ignition.
- g) UV irradiation does not replace normal manual cleaning procedures but could be used to supplement existing disinfection procedures. Where used, several important factors should be considered, including that UV disinfection is only effective if the virus is exposed to the UV light. Materials that are exposed to UV light may be damaged or discoloured. The Airframe OEM should be consulted to ensure that the device intended for use is compatible with aircraft materials.
- h) The operators may wish to review their operating procedures to minimize the number of personnel who need to contact high-touch surfaces such as access panels, door handles, switches, etc. For more detailed recommendations or additional disinfecting chemicals, reach out to the specific airframe manufacturer.

1.5 Disinfection – Cargo compartment

1.5.1 Objective

Provide a safe, sanitary operating environment for crew and ground staff.

1.5.2 Considerations

- a) The cargo compartment touch surfaces should be cleaned and disinfected at an appropriate frequency to accommodate safe operations for the ground staff.
- b) Disinfection methods should be adopted in consultation with the aircraft manufacturer and based on an appropriate safety risk assessment. Any advice from WHO should also be taken into account. The risk assessment should be informed by recommendations from airframe manufacturers and reference instructions from appropriate health organizations on application to be effective against viruses.
- c) Aircraft manufacturers recommend:
 - i. the use of a 70% aqueous solution of Isopropyl Alcohol (IPA) as a disinfectant for the flight deck touch surfaces with specific care to be taken for application on leather and other porous surfaces;
 - ii. periodic equipment inspection to detect long-term effects or damage given the lack of data on the long-term effects of much more frequent application of disinfectants; and to contacting them for guidance on alternate disinfectants should damage be observed;
 - iii. following their instructions for ensuring proper application, ventilation and use of personal protection equipment;
 - iv. considering enhanced inspection intervals or maintenance when employing aggressive or new disinfection techniques.
 - v. consulting them for more detailed recommendations or additional disinfecting chemicals noting the discrepancy in approvals for disinfection products in different States and in their availability.

- d) Surfaces should be cleaned of dirt and debris before disinfecting to maximize effectiveness.
- e) Application to surfaces should be with pre-moistened wipes or single use wetted cloth and use limited bottle sizes on board to minimize the risk of spilling the IPA solution. Do not spray IPA in the Cargo Compartment. Do not allow the liquid to pool or drip into the equipment. (e.g. smoke detector, electronic door operation equipment and fire extinguishing discharge nozzle).
- f) IPA is flammable, so precautions should be taken around potential sources of ignition. Pay particular attention to hidden ignition sources as many aircraft have electronic boxes mounted in the cargo compartment.
- g) UV irradiation does not replace normal manual cleaning procedures but could be used to supplement existing disinfection procedures. Where used, several important factors should be considered, including that UV disinfection is only effective if the virus is exposed to the UV light. Materials that are exposed to UV light may be damaged or discoloured. The Airframe OEM should be consulted to ensure that the device intended for use is compatible with aircraft materials.
- h) The operators may wish to review their operating procedures to minimize the number of personnel who need to contact high-touch surfaces such as access panels, door handles, switches, etc.

1.6 Disinfection – Maintenance

1.6.1 Objective

Provide a safe, sanitary operating environment for passenger, crew and ground staff.

1.6.2 Considerations

- a) The operators should be mindful of regular maintenance to both air systems and water systems to ensure they continue to protect the passenger and crew from viruses. The operators should refer to the Airframe OEM for specific maintenance actions and intervals.
- b) The operators should include access panels and other maintenance areas in their disinfection procedures to ensure a safe environment for the maintenance crews.
- c) The operators may wish to review their operating procedures to minimize the number of personnel who need to be in contact with high-touch surfaces such as access panels, door handles, switches, etc.
- d) The operators should establish maintenance procedures to be applied after disinfection procedures in order to check the Flight Deck, Passenger Cabin and Cargo Compartment for the correct positioning of control handle, circuit breakers and control panels' switches and knobs. Access panels and doors' closure also should be checked.

1.7 Hazardous Waste

1.7.1 Objective

To manage hazardous waste in order to protect human health and safety; minimize waste and its disposal.

1.7.2 Considerations

- a) Normal waste: Cabin wastes generated during flight operations where no passenger or crew member exhibits COVID-19 symptoms should be handled as normal waste, as recommended by WHO, and disposed of in line with the procedures for such waste applicable in the State of destination.

Note: This includes non-medical and medical masks. Only non-medical and medical masks that have been used by a person suspected by the cabin crew of having COVID-19 or visibly soaked with blood or body fluids should be treated as biohazardous waste.

- b) Biohazardous waste: If a passenger or crew member exhibits COVID-19 symptoms, all waste materials including partly-consumed meals, beverages and disposable items as well as used paper towels, tissues and PPE (including non-medical and medical masks), generated whilst treating or supporting the passenger or crew member should be treated as biohazardous waste.
- c) Biohazardous waste should be placed in the biohazard waste disposal bag in the aircraft's UPK or double bagged in standard plastic waste bag. In accordance with WHO and other relevant guidelines the spraying or sprinkling of disinfectant into the contents of the biohazardous waste bags is not necessary to reduce the spread of COVID-19. The action of spraying chemical disinfectant may result in virus particles of becoming airborne, presenting an additional risk to passengers and crew. The bags should be labelled and sealed. The airport authority and aircraft service providers must be informed of the presence of biohazardous waste.
- d) The operators should prepare a written plan to share with stakeholders regarding their COVID-19 waste management procedures and communicate the information accordingly. Crew should be trained in the handling of biohazardous waste.
- e) Airports and/or the relevant waste handling stakeholders should identify potential options for the treatment and disposal of biohazardous cabin waste resulting from the pandemic and communicate the information accordingly. The relevant personnel should be trained in the handling of biohazardous waste.

1.8 Air System Operations

1.8.1 Objective

The aircraft manufacturers recommend maximizing total cabin airflow and care should be taken to avoid blocking air vents (particularly along the floor). These are general recommendations for cabin air considerations and there may be exceptions for specific aircraft models. It is strongly recommended that operators consult with the aircraft OEM for questions specific to an aircraft type.

1.8.2 Considerations

- a) Ground Operations (before chock-off and after chocks-on)
 - i. Operations without the air conditioning packs or external pre-conditioned air (PCA) source should be avoided. External air sources are not processed through a high-efficiency particulate air (HEPA) filter. Use of the aircraft APU should be permitted at the gate to enable the aircraft's air conditioning system to be operated, if equivalent filtration from PCA is not available.
 - ii. If the aircraft has an air recirculation system, but does not have HEPA filters installed, reference should be made to OEM published documents or the OEM should be contacted to determine the recirculation system setting.
 - iii. It is recommended that fresh air and recirculation systems be operated to exchange the volume of cabin air before boarding considering the following:
 - For aircraft with air conditioning, run the air conditioning packs (with bleed air provided by APU or engines) or supply air via external PCA source at least 10 minutes prior to the boarding process, throughout boarding and during disembarkation.
 - For aircraft with HEPA filters, run the recirculation system to maximize flow through the filters.
 - For aircraft without an air conditioning system, keep aircraft doors open during turnaround time to facilitate cabin air exchange (passengers' door, service door and cargo door).
- b) Flight Operations
 - i. Operate environmental control systems with all Packs in AUTO and recirculation fans on.
 - Valid only if HEPA recirculation air filters are confirmed to be installed.
 - ii. If non-HEPA filters are installed, contact the aircraft OEM for recommendations on recirculation settings.
 - iii. If the aircraft in-flight operating procedure calls for packs to be off for take-off, the packs should be switched back on as soon as thrust performance allows.

c) Minimum Equipment List (MEL) Dispatch:

- i. Fully operational air conditioning packs and recirculation fans provide the best overall cabin ventilation performance. It is recommended to minimize dispatch with packs inoperative. It is recommended to minimize dispatch with recirculation fans inoperative for aircraft equipped with HEPA filter.
- ii. Some aircraft have better airflow performance with all outflow valves operational. The OEM should be contacted about ventilation performance of the aircraft with outflow valves inoperative and the limitations associated with the dispatch in this situation.

d) High Flow (max bleed) Switch:

- i. If the aircraft has an option for high flow operation, contact the OEM for setting recommendations.

For example: Boeing recommends that the operators select High Flow Mode for 747-8, MD-80 and MD-90 aircraft, as this will maximize total ventilation rate in the cabin.

Note 1: This will increase fuel burn. However, for the 747-400 and 737, High Flow Mode should NOT be selected as this does not result in an increase in total ventilation rate. For all models, recirculation fans should remain on (when HEPA filters are installed).

Note 2: Sick passenger positioning guidance is contained in Cabin Crew element of the Crew module

e) Filter Maintenance:

- i. Follow normal maintenance procedures as specified by the OEM. Take note of special protection and handling of filters when changing them.
- ii. Contact OEM or refer to OEM published document to check if an additional sanitization procedure and/or personnel health protection is needed to avoid microbiological contamination in the filter replacement area.

2. Crew

2.1 Target audience

International Commercial Air Transport – Aeroplane (Air Operator Certificate holder)

2.2 Crew Members

2.2.1 Objective

Provide harmonised health protection and sanitation considerations applicable to crew members that can be implemented globally.

2.2.2 Considerations

Unless specified as flight crew or cabin crew, the term “crew” refers to all crew required on board for the air operator to support the flight, including those that maybe required to position before or after a duty. This element applies to all crew.

a) Facilitation

- i. Crew members operating passenger aircraft with cargo only, for example, should ensure that the correct notification has been sent to all agencies, to ensure that there is no confusion, or that crew members carried on board such as loadmasters, engineers, and cabin crew are correctly recognised and designated on the crew manifest.

b) Health monitoring

- i. Crew members should monitor themselves for fever or chills, cough, shortness of breath or difficulty breathing, loss of taste, or other symptoms of COVID-19 according to the ministry of public health guidance. The public health ministry cut off point for fever is 37.3 °C or higher.
- ii. Crew members should take their temperature at least twice per day during duty periods and at any time they feel unwell.
- iii. Crew members should stay at home or in their hotel room, notify their employers’ occupational health programme, and not report for work if they develop a fever, shortness of breath, or other symptoms of COVID-19. They should not return to work until cleared to do so by the employers’ occupational health programme and public health officials.

c) Examples of crew exposure concerns, include the following:

- i. Are within a mandated period of quarantine related to previous travel and/or duty.
- ii. A passenger testing positive for COVID-19 regardless of symptoms.
- iii. Know that they have been exposed to a person showing symptoms of COVID-19.
- iv. Are experiencing any symptoms of COVID-19.
- v. Have recovered from COVID-19 symptoms but have not been assessed by the employers’ occupational health program and public health authority.

d) During Flight:

- i. If a crew member develops symptoms during flight, the crew member should stop working as soon as practical, put on a medical mask, notify the pilot in charge, and maintain the recommended physical distance from others, when possible, to do so. Upon landing, individuals should follow up with the operator medical and public health officials.
- ii. Guidelines for managing a passenger developing symptoms during flight are set out in the Cabin Crew module.

e) Health protection

- i. To protect the health of crew and others, including co-workers, crew members should:
 - Maintain recommended physical distance from others where possible, when working on the aircraft e.g., while seated on the jump seat(s) during take-off or landing, during ground transportation and while in public places.
 - Wash their hands regularly. If hands are not visibly dirty, the preferred method is using an alcohol-based hand rub for 20–30 seconds using the appropriate technique. When hands are visibly dirty, they should be washed with soap and water for 40–60 seconds using the appropriate technique.
 - Be reminded to, along with frequent hand washing/sanitization, avoid touching their face including while wearing disposable gloves.
 - Wear a non-medical or medical mask while around other people, especially in situations where the recommended physical distance from others cannot be maintained.
 - Non-medical, medical masks and disposable gloves should not impact the ability to carry out normal, abnormal and emergency safety procedures, such as the donning of oxygen masks, carrying out firefighting procedures etc.

Note: A non-medical mask should not replace the use of medical masks or other PPE provided in the universal precaution kit (UPK) when interacting with a sick traveller on board an aircraft.

- Inspect the integrity of the UPKs before each flight. Sealed kits need not be opened as it can be assumed that the contents will be as labelled. Crew members should follow existing air carrier policy and procedures regarding the use of PPE in the UPKs if needed to provide care to a sick passenger on board.
- Follow the guidance and precautions of the ministry of public health and relevant health authorities related to COVID-19.
- Participate in their national vaccination programmes recognising that vaccination offers personal protection from infection and can assist in recovery of global connectivity.

- f) Additionally, the operator should;
 - i. Provide sufficient quantities of cleaning and disinfectant products (e.g. disinfectant wipes) that are effective against COVID-19 for use during flight.
 - ii. Consider providing non-medical or medical masks to crew members for routine use when on duty, if these do not interfere with PPE, while carrying out job tasks and when it is difficult to maintain the recommended physical distance from co-workers or passengers.
- g) Use of lavatories
 - i. Ideally, one or more lavatories should be reserved for crew use, in order to limit the potential for infection from passengers.
- h) Crew rest compartments
 - i. To minimize any possibility of cross infection, pillows, cushions, sheets, blankets or duvets, where provided, should not be used by multiple persons unless coverings are disinfected.
 - ii. Some operators issue each crew member with their own provisions and the cabin crew members are responsible for ensuring that they are removed and bagged after use.
 - iii. Other the operators provide bulk loading for crew rest area bedding items. Where this is the case, crew members should install their own bedding items before their rest period and remove them hygienically afterwards.
- i) Training devices
 - i. The same health protection and monitoring measures that apply to flight crew operating aircraft should be applied to the use of flight simulators and other training devices.
 - ii. The frequency of routine cleaning of flight simulators and training devices and other training aids, or equipment used during training (including oxygen masks) should be reviewed regularly against the risks and adjusted accordingly. Cleaning products used should be COVID-19 disinfectants that are compatible with the materials being cleaned.

2.3 Flight Crew

2.3.1 Objective

Provide harmonised health protection and sanitation considerations applicable to Flight Crew which can be implemented globally.

2.3.2 Considerations

- a) Access to the flight deck should be limited to the greatest extent possible.
- b) Flight crew members should only leave the flight deck for short physiological breaks and scheduled rest.
- c) In the case of flight crew at controls displaying symptoms, flight crew should don medical masks and the operator should consider whether removal from the flight deck is an appropriate mitigation within their risk assessment and refer to established procedures to identify whether a diversion is needed.
- d) Non-medical or medical masks, as defined by the operator, should be worn by flight crew and by others who enter the cockpit. The operator or operating Flight Crew will complete an appropriate risk assessment before determining if masks will be removed after the flight deck door has been closed. Masks should be used whenever they leave the flight deck.
- e) The operators should ensure that non-medical or medical masks worn by crew, can be removed rapidly so that oxygen masks can be placed unhindered on the face, properly secured, sealed, and supplying oxygen on demand and that crew are provided with the correct guidance on how to do so. When leaving the flight deck, all items should be stowed, personal items removed, and flight deck made ready for cleaning and disinfection.
- f) Prior to each cockpit crew change, the flight deck should have been fully cleaned and disinfected.
- g) In-person interactions with the cabin crew should be reduced to a minimum.
- h) If possible, only one person should be designated to be able to enter cockpit when necessary.
- i) Only one member of the flight crew or technical crew should be allowed to disembark the aircraft to complete the external inspection, refuelling, etc. In such case direct contact with the ground crew should be avoided.

2.4 Cabin Crew

2.4.1 Objective

Provide harmonised health protection and sanitation considerations applicable to Cabin Crew which can be implemented globally.

2.4.2 Considerations

- a) Cabin crew who are in contact with a passenger or a colleague suspected of being infected should not visit the flight deck unless it is unavoidable.
- b) Crew members should continue to assist passengers who become ill in-flight.
- c) In the case of someone suspected of having COVID-19, a crew member is to be designated to care for the passenger. That crew member must don the PPE provided in the UPK before engaging in close contact with the ill passenger. The ill passenger should be fitted with a medical mask and provided with appropriate assistance. Separate the ill person from the other passengers by a minimum of 1 metre. Where possible, this should be done by moving other passengers away. Depending on cabin design, 1 metre is usually two seats left empty in all directions. If possible, assign one toilet for use only by the ill passenger. The designated crew member(s) should comply with decontamination procedures established by the operator before resuming other duties.
- d) A passenger who develops symptoms in-flight should be assessed by the local public health authorities after landing and prior to disembarking the aircraft following national protocols.
- e) While limiting the number and frequency of physical flight crew checks, an alternative method of checking on flight crew welfare such as regular interphone calls should be implemented.
- f) The use of PPE should not impact the ability to carry out normal, abnormal and emergency safety procedures, such as the donning of oxygen masks, carrying out firefighting procedures etc.
- g) Safety demonstration equipment should not be shared to the extent feasible to reduce the likelihood of virus transmission. If it must be shared, alternate means of demonstration without the equipment should be considered or the equipment should be thoroughly sanitized between use.
- h) Safety demonstrations should highlight to passengers that non-medical and medical masks should be removed before donning emergency oxygen masks, should they be needed. Note that this could be achieved by an additional announcement after screening of the safety video.

2.5 Layover

2.5.1 Objective

Ensure that all crew that need to layover or transit at an outstation are aware of the measures necessary to reduce the risk of transmission of COVID-19.

Reference should be made to the ICAO Electronic Bulletin EB 2020/30 or as amended for the most up-to-date guidance.

2.5.2 Considerations

a) Layover/transits

Crew members who are involved in flights with a layover, should not be medically quarantined or detained for observations while on layover or after returning, unless they were exposed to a known symptomatic passenger or crew member on board or during the layover.

If crews need to layover or transit at an outstation, air operators should ensure compliance with relevant public health regulations and policies together with measures identified by a risk assessment conducted by the operator that takes account of specific local conditions.

b) In the absence of a risk assessment, air operators should implement the following:

- i. Commute arrangements (between airport and hotel, if needed): The air operator should arrange for the commute between the aircraft and the crew's individual hotel rooms ensuring hygiene measures are applied and the recommended physical distancing, including within the vehicle, to the extent possible.
- ii. At accommodation:
 - At all times, the crew must comply with relevant public health regulations and policies.
 - There should be one crew member per room, which is sanitized prior to occupancy.
 - The crew, taking account the above, and insofar as is practicable, should;
 - Avoid contact with the public and fellow crew members, and remain in the hotel room except to seek medical attention, or for essential activities including exercise, while respecting physical distancing;
 - Not use the common facilities in the hotel;
 - Dine in-room, get take-out or dine seated alone in a restaurant within the hotel, only if room service is not available;
 - Regularly monitor for symptoms including fever; and
 - Observe good hand hygiene, respiratory hygiene and physical distancing measures when needed to leave the hotel room only for the reasons specified in (i), (iii) or in emergency situations.

- iii. Crew members experiencing symptoms suggestive of COVID-19 during layover or transit should:
 - Report it to the aircraft operator and seek assistance from a medical doctor for assessment of possible COVID-19.
 - Cooperate with the assessment and possible further monitoring for COVID-19 in accordance with the evaluation procedure implemented by the State (e.g. assessment in the hotel room, or an isolation room within the hotel, or alternative location).
- iv. If a crew member has been evaluated and COVID-19 is not suspected in accordance with the above procedures implemented by the State, the air operator may arrange for the crew member to repatriate to base.
- v. If a crew member is suspected or confirmed as a COVID-19 case by the State and isolation is not needed by the State, such crew member could be medically repatriated by appropriate modes of transport; if there is agreement to repatriate the crew member to home base.

3. Cargo

3.1 Target audience

The operator, freight forwarder, trucker, ground handler (cargo terminal operator)

3.2 Road Feeder to Freight Reception & Freight pick up

3.2.1 Objective

Protect cargo handling staff and truckers during the handover points for physical freight (in warehouse) and documentation (often office).

3.2.2 Considerations

- a) Onsite biosafety principles:
 - i. Proximity for document handover should be minimized, floor markings should be indicated and / or appropriate PPE should be worn.
 - ii. Wherever possible, hand washing stations or alcohol-based hand sanitizer should be placed on entry.
 - iii. Surfaces (e.g. handles, kiosks) should be regularly cleaned and disinfected
 - iv. Alcohol-based hand sanitizer should be made available for users of kiosks, etc.
 - v. Area(s) for donning and doffing of appropriate PPE as needed should be identified.
- b) Physical handover of goods (truck offload):
 - i. Drivers should stay in vehicle cabin until instructed (as per relevant procedures).
 - ii. Physical distance should be kept between driver and facility staff where possible.
 - iii. Close contact of personnel should be limited, appropriate PPE should be worn where appropriate.
- c) Documentation handover (office):
 - i. Digital document systems and data exchange should be implemented wherever possible.
 - ii. Physical distancing of at least 1 metre should be kept between all parties where possible, floor markings indicated or the appropriate PPE worn.
 - iii. Where physical documents need to be signed, each signatory should do so with their own pen.
 - iv. Physical barriers (transparent) should be installed at counters and reception.
 - v. Alcohol-based hand sanitizer should be made available when entering or exiting common areas.

- d) Material handling equipment (MHE) usage (e.g., forklifts, hand carts):
 - i. To avoid cross contamination, MHE should be cleaned and disinfected after use.
 - ii. Employees should be educated and should practice personal hygiene principles.
 - iii. Appropriate PPE should be worn where necessary.

3.3 Within Cargo facility (Origin/Destination/Transit)

3.3.1 Objective

Protect Cargo facility (warehouse) staff during business operations such as build-up, breakdown, repositioning and documentation handling.

3.3.2 Considerations

- a) Onsite biosafety principles:
 - i. Physical distance should be kept at all times when operational safety is not compromised.
 - ii. Close proximity for handover minimized (e.g. drop zones) or appropriate PPE should be worn.
 - iii. Ground personnel rotations should take into account the need to avoid cross-infection.
 - iv. Alcohol-based hand sanitizer should be placed on entry into common areas.
 - v. Regular cleaning and disinfection of surfaces (e.g. handles, mobile devices, kiosks) should be established.
 - vi. Sanitizer should be made available for users of kiosks, shared mobile devices, and other shared devices.
- b) Physical handling goods:
 - i. Physical distance should be kept when operational safety is not compromised;
 - When not possible (e.g. 2 person lift needed for heavy cargo) appropriate PPE should be worn.
 - ii. Appropriate PPE should be worn where necessary.
- c) Material handling equipment (MHE) / ground support equipment (GSE) usage:
 - i. To avoid cross contamination MHE and GSE should be cleaned and disinfected between uses.
 - ii. All employees should be educated and should practice personal hygiene principles.
 - iii. Appropriate PPE should be worn where necessary.

3.4 Cargo facility to ramp (Origin/Transit/Destination)

3.4.1 Objective

Protect staff during the Cargo facility handover to/from ramp crews in preparation for aircraft loading and unloading.

3.4.2 Considerations

- a) Onsite biosafety principles
 - i. Physical distance should be kept at all times when operational safety is not compromised or appropriate PPE should be worn.
 - ii. Regular cleaning and disinfection of surfaces (e.g. handles, kiosks) should be established.
 - iii. Alcohol-based hand sanitizer should be made available for users of kiosks, shared mobile devices, etc.
 - iv. Close proximity for handover should be minimized (e.g. drop zones) or appropriate PPE should be worn.
 - v. Ground personnel rotations should take into account the need to avoid cross team infection.
- b) Physical handover of goods
 - i. Physical distance should be maintained, and cargo drop zones used where possible.
 - ii. Close contact of personnel should be limited, and appropriate PPE should be worn where necessary.
- c) Ground support equipment (GSE) usage
 - i. To avoid cross contamination, GSE should be cleaned and disinfected between users.
 - ii. All employees should be educated and should practice personal hygiene principles.
 - iii. Appropriate PPE should be worn where necessary.

3.5 Aircraft Loading/Unloading

3.5.1 Objective

Protect ramp handling staff during the loading and unloading of the aircraft, which is usually performed by multiple crews of 3 to 4 persons depending on the operation.

Ensure enhanced public health safety when the number of close contact personnel rises during manual loading of the passenger cabin.

3.5.2 Considerations

- a) Onsite biosafety principles
 - i. Physical distance should be kept at all times when operational safety is not compromised or appropriate PPE should be worn.
 - ii. Alcohol-based hand sanitizer should be placed on entry into common areas.
 - iii. Regular cleaning and disinfection of surfaces (e.g. handles, kiosks) should be established.
 - iv. Alcohol-based hand sanitizer should be made available for users of kiosks, shared mobile devices, etc.
 - v. Close proximity of staff for loading should be minimized or appropriate PPE should be used particularly for passenger cabin loading.
 - vi. Ground personnel rotations should take into account the need to avoid cross team infection.
- b) Physical Loading of goods
 - i. Physical distance should be kept when operational safety is not compromised (encourage single person operations).
 - ii. Close contact of personnel should be limited, and appropriate PPE should be worn where necessary.
 - iii. For “human chain” loading, appropriate PPE should be used (non-medical or medical masks and disposable gloves) and hygiene principles should be applied between operations.
- c) Material handling equipment (MHE) / ground support equipment (GSE) usage
 - i. To avoid cross contamination, MHE/GSE should be cleaned and disinfected between users.
 - ii. All employees should be educated and should practice personal hygiene principles.
 - iii. Appropriate PPE should be worn where necessary.

4. Example of Forms

4.1 CREW COVID-19 STATUS CARD

CREW COVID-19 STATUS CARD	
Purpose of this card: Information to be recorded by crew prior to departure to confirm their COVID-19 health status and to facilitate processing by State's Public Health Authorities. Notwithstanding completion of this card, a crew member might still be subjected to additional screening by Public Health Authorities as part of a multilayer prevention approach e.g. when recorded temperature is 37.3 C° (99.14 F°) or greater.	
1. During the past 14 days, have you had close contact (face-to-face contact within 1 metre and for more than 15 minutes or direct physical contact) with someone who was suspected of having COVID-19 or had been diagnosed with COVID-19?" <div style="text-align: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></div>	
2. Have you had any of the following symptoms during the past 14 days: Fever Yes <input type="checkbox"/> No <input type="checkbox"/> Coughing Yes <input type="checkbox"/> No <input type="checkbox"/> Breathing difficulties Yes <input type="checkbox"/> No <input type="checkbox"/> Sudden loss of sense of taste or smell Yes <input type="checkbox"/> No <input type="checkbox"/>	
3. Temperature at duty start: Temperature not recorded due to individual not feeling/ appearing feverish Temperature in degrees C° <input type="checkbox"/> / F° <input type="checkbox"/> : _____ Date: _____ Time: _____ Recording method: Forehead <input type="checkbox"/> Ear <input type="checkbox"/> Other <input type="checkbox"/> _____	
4. Have you had a positive COVID-19 test during the past 3 days? <div style="text-align: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></div> Attach report if available	
5. Have you received a COVID-19 vaccine? Yes <input type="checkbox"/> No <input type="checkbox"/> Date of most recent vaccination: _____ Have you completed the vaccination according the ministry of public health recommendation? <div style="text-align: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></div>	

Crew member Identification:

Name:

The operator/ aircraft operator: Nationality and Passport No: Signature:

Date:

4.2 AIRCRAFT COVID-19 DISINFECTION CONTROL SHEET

AIRCRAFT COVID-19 DISINFECTION CONTROL SHEET

Aircraft Registration: _____

Aircraft disinfection was made in accordance with the recommendation of the World Health Organization, at a frequency determined by the National Public Health Authority and in accordance with approved products and application instructions of the aircraft manufacturer.

Date (dd/mm/yy)	Time (24hr - Coordinated Universal Time (UTC))	Airport (ICAO code)	Remarks	Disinfector name
Aircraft areas treated		Disinfectant material	Comments	Disinfector signature
Flight deck <input type="checkbox"/> Passenger cabin <input type="checkbox"/> Cargo compartment(s) <input type="checkbox"/> Other: _____				
Date (dd/mm/yy)	Time (24hr -UTC)	Airport (ICAO code)	Remarks	Disinfector name
Aircraft areas treated		Disinfectant material	Comments	Disinfector signature
Flight deck <input type="checkbox"/> Passenger cabin <input type="checkbox"/> Cargo compartment(s) <input type="checkbox"/> Other: _____				
Date (dd/mm/yy)	Time (24hr -UTC)	Airport (ICAO code)	Remarks	Disinfector name
Aircraft areas treated		Disinfectant material	Comments	Disinfector signature
Flight deck <input type="checkbox"/> Passenger cabin <input type="checkbox"/> Cargo compartment(s) <input type="checkbox"/> Other: _____				

5. Example of Posters

RECOMMENDED MASKS			
COVERING/MASK	Efficiency at filtering Large Droplets	Efficiency at filtering Aerosols	Use in Aviation
 Medical respirators e.g. N95, N99, FFP2 or FFP3 masks	99.9%	95%	Not routinely recommended, unless required by national health authorities. For use in healthcare and other occupational settings
 Medical/surgical masks	98.5%	89.5%	Recommended
 Non-medical/fabric masks	99.5%	82%	Recommended 3 layers in accordance with WHO specifications
NOT RECOMMENDED MASKS			
 Tea Towel or Dishcloth	98%	72.5%	Not Recommended
 100% Cotton T-shirt	97%	51%	Not Recommended
 Silk or Lace	56%	54%	Not Recommended
 Scarf or Bandana	44%	49%	Not Recommended
 Masks with Built-in Valve or Vent	90%	90%	Not allowed due to risk of transmitting the virus

Based on Source: Democritus University of Thrace; Duke University; Journal of Hospital Infection; Public Health England; University of Chicago; University of Illinois at Urbana-Champaign



ICAO

HOW TO SELECT, WEAR, AND CLEAN YOUR MASK

DO choose masks that:



DO NOT choose masks that:



Gaiters & Face Shields



Special Situations: Children

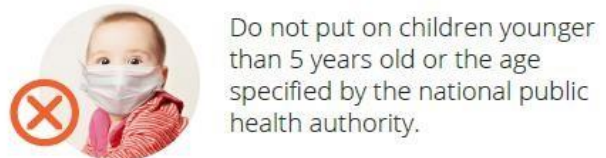
If you are able, find a mask that is made for children

If you can't find a mask made for children, check to be sure the mask fits snugly over the nose and mouth and under the chin



Special Situations: Glasses

If you wear glasses, find a mask that fits closely over your nose or one that has a nose wire to limit fogging



Based on Source: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/about-face-coverings.html>



ICAO

DO wear a mask that:

- Covers your nose and mouth and secure it under your chin
- Fits snugly against the sides of your face

For more information, visit our [How to Wear Masks](#) web page.



How NOT to wear a mask:



Around your neck



On your forehead



Under your nose



Only on your nose



On your chin



Dangling from one ear



How to take off a mask:

1



Carefully, untie the strings behind your head or stretch the ear loops

2



Handle only by the ear loops or ties

3



Fold outside corners together

4



Be careful not to touch your eyes, nose, and mouth when removing and wash hands immediately after removing

Based on Source: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/about-face-coverings.html>



| ICAO