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This circular is promulgated for information, guidance and necessary action.

PUBLIC HEALTH RISK MITIGATION MEASURES – AIRCRAFT

In the implementation of these measures, care should be taken to follow all applicable laws, regulations, requirements, standards, and guidance issued by relevant sub-national, national and international authorities.

Nothing in these guidelines is intended to supersede or contradict such requirements.

Foreign commercial air operators conducting flights to Seychelles during the COVID-19 pandemic must demonstrate compliance to the 'ICAO Council Aviation Recovery Task Force (CART) Take-off: Guidance for Air Travel through the COVID-19 Public Health Crisis' or any equivalent guidance publication prior to being issued with an operating permit, licence or authorization.

Applicable risk mitigation measures specific to the aircraft aspects of air transport.

This document contains specific guidance addressing boarding processes, seat assignment processes, baggage, interaction on board, environmental control systems, food and beverage service, lavatory access, crew protection, management of sick passengers or crew members, and cleaning and disinfection of the flight deck, cabin, and cargo compartment.

A. Passenger and crew – General

The objective of this element is to ensure that commercial air operators provide a safe, sanitary operating environment for passengers and crew.

1. Commercial air operators must ensure that all their operating crew members are aware of and take necessary precautions described below as part of their regulatory requirements of air operator management system:
 - Adjustment of the boarding process:

To the extent possible consistent with weight and balance requirements, board and disembark passengers in ways that reduce the likelihood of passengers passing in close proximity to each other.

- Seat Assignment Processes:

Where required, assign seats for adequate physical distancing between passengers. Commercial air operators should allow for separated seating arrangements when occupancy allows it.

- Limit interaction on board:

Encourage passengers to travel as lightly as possible with check-in of all luggage except small hand luggage that fits under the seat. Remove newspapers and magazines. The size and quantity of duty-free sales may also be temporarily limited.

- Encourage passengers to stay in the assigned seat as much as possible.

- Limit or suspend food and beverage service:

Limit or discontinue food and beverage service on short-haul flights or require dispensing in sealed, pre-packaged containers.

- 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. Also, to the extent practicable depending on the aircraft size and configuration, require passengers to use a designated lavatory based on seat assignment to limit passenger movement in flight, which reduces exposure to other passengers.

- Crew protection measures:

Prohibit sharing of safety equipment used for safety demonstrations. Instruct crew members to provide service only to specific sections of the cabin. Explore additional means of protection, for instance plastic curtains or Plexiglas panels during the boarding process (to be removed once boarding is completed).

Note: The following elements below (B through F) concerning disinfection contain the latest joint Aircraft 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 commercial air operators with recommendations that are aligned with the aircraft product. It is the responsibility of the commercial air operator to ensure that disinfectants are used as per the manufacturer's instructions, 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.*

B. Disinfection – Flight Deck

The objective of this element is to ensure that commercial air operators provide a safe, sanitary operating environment for crew and ground staff.

1. Commercial air operators must ensure that all their operations personnel are aware of and take necessary precautions described below as part of their regulatory requirements of air operator management system:
 - Frequency of cleaning of the flight deck should account for both separation of the flight deck from the passenger compartment and frequency of crew transitions.
 - Clean and disinfect the flight deck at an appropriate frequency to accommodate safe operations for the crew.
 - Airframe manufacturers recommend the use of a 70% aqueous solution of Isopropyl Alcohol (IPA) as a disinfectant for the flight deck touch surfaces:
 - Appropriate health organisations instruction on IPA should be referred to.
 - The original equipment manufacturer's instructions should be referred to ensure that the proper application, ventilation, and personal protection equipment is used.
 - For more detailed recommendations or additional disinfecting chemicals, further guidance must be sought from the specific Airframe Manufacturer.
 - Clean surfaces of dirt and debris before disinfecting to maximize effectiveness.
 - Apply 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.
 - IPA is flammable, so precautions should be taken around potential sources of ignition.
 - Because the frequency of disinfection has significantly increased due to COVID-19, and there is no data on the long term effects associated with this frequent application, the commercial air operator should periodically inspect the equipment to ensure that there are no long term effects or damage over time. If damage is observed, contact the OEM for guidance on alternate disinfectants. Specific care should be taken for application on leather and other soft goods.

- 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 aeroplane.
 - Some equipment on the flight deck may have additional disinfectant requirements based on usage (e.g. oxygen masks) and procedures should be put in place accordingly.
2. Means for uniform implementation
- OEM communication through ICCAIA and OEM communication with operators.
 - **Associated policy, procedures and training are developed and effectively implemented to reinforce the importance of these guidance and considerations.**
 - Use the 'ICAO Council Aviation Recovery Task Force (CART) Take-off: Guidance for Air Travel through the COVID-19 Public Health Crisis' – Aircraft COVID-19 Disinfection Control Sheet (PHC Form 2) or a similar one where appropriate.

C. Disinfection – Passenger Cabin

The objective of this element is to provide a safe, sanitary operating environment for passengers, crew and ground staff.

1. Commercial Air Operators must ensure that all their operations personnel are aware of and take necessary precautions described below as part of their regulatory requirements of air operator management system:
- Clean and disinfect the cabin 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 an infected person.
 - Airframe manufacturers recommend the use of a 70% aqueous solution of Isopropyl Alcohol (IPA) as a disinfectant for the touch surfaces:
 - Appropriate health organisations instruction on IPA should be referred to.
 - The original equipment manufacturer's instructions should be referred to ensure that the proper application, ventilation, and personal protection equipment is used.
 - For more detailed recommendations or additional disinfecting chemicals, further guidance must be sought from the specific Airframe Manufacturer.
 - Clean surfaces of dirt and debris before disinfecting to maximize effectiveness.
 - Apply 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 equipment (e.g. In-Flight Entertainment electronic boxes).

- IPA is flammable, so precautions should be taken around potential sources of ignition.
- Because the frequency of disinfection has significantly increased due to COVID-19, and there is no data on the long term effects associated with this frequent application, the operator should periodically inspect the equipment to ensure that there are no long term effects, colour shift or damage over time. If damage is observed, contact the OEM for guidance on alternate disinfectants. Specific care should be taken for application on leather and other soft goods. The operator should validate disinfecting agents for Buyer Furnished Equipment (e.g. Seats and IFE) with the manufacturer.
- It is recommended that commercial air operators 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, further guidance must be sought from specific Airframe Manufacturer.

2. Means for uniform implementation

- OEM communication through ICCAIA and OEM communication with operators.
- **Associated policy, procedures and training are developed and effectively implemented to reinforce the importance of these guidance and considerations.**
- Use the 'ICAO Council Aviation Recovery Task Force (CART) Take-off: Guidance for Air Travel through the COVID-19 Public Health Crisis' – Aircraft COVID-19 Disinfection Control Sheet (PHC Form 2) or a similar one where appropriate.

D. Disinfection – Cargo Compartment

The objective of this element is to provide a safe, sanitary operating environment for crew and ground staff.

1. Commercial air operators must ensure that all their operations personnel are aware of and take necessary precautions described below as part of their regulatory requirements of air operator management system:
 - Clean and disinfect the cargo compartment touch surfaces at an appropriate frequency to accommodate safe operations for the ground staff.
 - Airframe manufacturers recommend the use of a 70% aqueous solution of Isopropyl Alcohol (IPA) as a disinfectant for the touch surfaces:
 - Appropriate health organisations instruction on IPA should be referred to.
 - The original equipment manufacturer's instructions should be referred to ensure that the proper application, ventilation, and personal protection equipment is used.

- For more detailed recommendations or additional disinfecting chemicals, further guidance must be sought from the specific Airframe Manufacturer.
- Clean surfaces of dirt and debris before disinfecting to maximize effectiveness.
- Apply 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 contact critical equipment (e.g. smoke detector, electronic door operation equipment and fire extinguishing discharge nozzle).
- 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.
- Because the frequency of disinfection has significantly increased due to COVID-19, and there is no data on the long term effects associated with this frequent application, the commercial air operator should periodically inspect the equipment to ensure that there are no long term effects or damage over time. If damage is observed, contact the OEM for guidance on alternate disinfectants.
- It is recommended that commercial air operators 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.

2. Means for uniform implementation

- OEM communication through ICCAIA and OEM communication with operators.
- **Associated policy, procedures and training are developed and effectively implemented to reinforce the importance of these guidance and considerations.**
- Use the 'ICAO Council Aviation Recovery Task Force (CART) Take-off: Guidance for Air Travel through the COVID-19 Public Health Crisis' – Aircraft COVID-19 Disinfection Control Sheet (PHC Form 2) or a similar one where appropriate.

E. Disinfection – Maintenance

The objective of this element is to provide a safe, sanitary operating environment for passengers, crew and ground staff.

1. Commercial air operators must ensure that all their maintenance personnel are aware of and take necessary precautions described below as part of their regulatory requirements of air operator management system:

- Commercial air 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. Airlines should refer to the Airframe OEM for specific maintenance actions and intervals.
- It is recommended that commercial air operators include access panels and other maintenance areas in their disinfection procedures to ensure a safe environment for the maintenance crews.
- It is recommended that commercial air operators 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.
- It is recommended that commercial air operators establish maintenance procedures to be applied after disinfection procedures to check flight deck, passenger cabin and cargo compartment for correct positioning of control handle, circuit breakers and control panels switches and knobs. Access panels and doors closure also should be checked.

2. Means for uniform implementation

- OEM communication through ICCAIA and OEM communication with operators.
- **Associated policy, procedures and training are developed and effectively implemented to reinforce the importance of these guidance and considerations.**
- Use the 'ICAO Council Aviation Recovery Task Force (CART) Take-off: Guidance for Air Travel through the COVID-19 Public Health Crisis' – Aircraft COVID-19 Disinfection Control Sheet (PHC Form 2) or a similar one where appropriate.

F. Disinfection – Air System

To minimize human generated contaminant concentrations during ground and flight operations, the aircraft manufacturers recommend maximizing total cabin airflow and avoid blocking of 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 commercial air operators consult with the Aircraft OEM for questions specific to an aircraft type.

1. Ground Operations (before chocks-off and after chocks-in)

- Avoid operations without the air conditioning Packs or external Pre-Conditioned Air (PCA) source. The aircraft APU should be permitted to be used at the gate to enable the aircraft's air conditioning system to be operated, if equivalent filtration from PCA is not available.

Note: External air sources are not processed through a high efficiency particulate air (HEPA) filter.

- If the aircraft has an air recirculation system, but does not have HEPA filters installed, refer to OEM published documents or contact the OEM to determine the recirculation system setting.

- It is recommended that fresh air and recirculation systems be operated to exchange the volume of cabin air before boarding.
 - For those aircraft with air conditioning, run the air conditioning packs (with bleed air provided by APU or engines) or supply air via external Pre-Conditioned Air (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 those aircraft without air condition system, keep aircraft doors open during turnaround time to facilitate cabin air exchange (passengers' door, service door and cargo door).

2. Flight Operations

- Operate Environmental Control Systems with all Packs in AUTO and recirculation fans on.

Note: This is valid only if HEPA recirculation air filters are confirmed to be installed.

- If non-HEPA filters are installed, contact the Aircraft OEM for recommendations on recirculation settings.
- 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.

3. MEL Dispatch:

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

4. High flow (max bleed) switch:

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

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

Note: 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).

5. Positioning of passengers with suspected COVID-19 symptoms:

Separate the passenger from other passengers by a minimum of 1 meter (usually about two seats left empty in all directions, depending on the cabin design) from the seat occupied by the suspected case. Where possible this should be done by moving other passengers away.

6. Filter Maintenance:

- Follow normal maintenance procedures as specified by the OEM. Note should be taken of special protection and handling of filters when changing them.
- Contact OEM or refer to OEM published documents to check if an additional sanitization procedure and/or personnel health protection is required to avoid microbiological contamination in the filter replacement area.

7. Means for uniform implementation:

- OEM communication through ICCAIA and OEM communication with operators.
- **Associated policy, procedures and training are developed and effectively implemented to reinforce the importance of these guidance and considerations.**
- Use the 'ICAO Council Aviation Recovery Task Force (CART) Take-off: Guidance for Air Travel through the COVID-19 Public Health Crisis' – Aircraft COVID-19 Disinfection Control Sheet (PHC Form 2) or a similar one where appropriate.

G. Reference and Guidance Documents

1. ICAO Council Aviation Recovery Task Force (CART) Take-off: Guidance for Air Travel through the COVID-19 Public Health Crisis.
2. EASA Safety Information Bulletin Coronavirus COVID-19 Pandemic — Operational recommendations.
3. IATA Guidance for Cabin Operations During and Post Pandemic.
4. COVID-19 Aviation Health Safety Protocol Operational guidelines for the management of air passengers and aviation personnel in relation to the COVID-19 pandemic.
5. EASA Guidance on aircraft cleaning and disinfection in relation to the COVID-19 pandemic

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A handwritten signature in blue ink that reads "C. Maria". The signature is written in a cursive style with a horizontal line underneath the name.

Mrs. C Maria.

For: General Manager (ANS)
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