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PREVENTING SPREAD OF CORONA DISEASE (COVID-19): GUIDELINES FOR AIRLINES AND CHARTER OPERATORS

PREAMBLE

WHEREAS the World Health Organization (WHO) has, on March 11 declared COVID-19 a pandemic, pointing to the over 118,000 cases of the coronavirus illness in over 110 countries and territories around the world and the sustained risk of further global spread;

WHEREAS the President of the Republic of South Africa has imposed a travel ban on foreign nationals from high-risk countries such as Italy, Iran, South Korea, Spain, Germany, the United States, the United Kingdom and China as from 18 March 2020;

WHEREAS the Minister of Cooperative Governance and Traditional Affairs has, on 15 March 2020 and in terms of section 27 of the Disaster Management Act, 2002 (Act No. 57 of 2002) issued a Declaration of a National Disaster and has classified COVID-19 as a National Disaster;

WHEREAS the Minister of Transport has, on 18 March 2020 and in terms of section 43(1)(h) of the International Air Services Act, 1993 (Act No. 60 of 1993) issued the International Air Services Regulations, 2020 (the Regulations) to deal with the prohibition of embarkation and disembarkation of foreign nationals at international airports designated as ports of entry; improved hygiene control and disinfection facilities on international airports designated as ports of entry operated by licensed airport operator, cargo handling facility, airports repair facilities, provider of airports maintenance or services, airport terminals, terminal operations and licensed airports operations; implementation of a tracking, tracing and monitoring system at airports and reporting and prohibition of holding of mass gatherings in and around airports;

AND WHEREAS the Minister of Transport has, on 18 March 2020 and under section 100(1)(a) of the Civil Aviation Act,2009 (Act No. 13 of 2009) made a Ministerial Order (the Order) for the South African Civil Aviation Authority to take all the necessary steps to give effect to the Order issued by the Minister, issue guidelines, monitor, oversee and enforce compliance with International Air Services (COVID-19 restrictions on the movement of Persons and Crew) Regulations, 2020;

WHEREFORE in order to ensure compliance with the Regulations in respect of the pandemic, COVID-19 and in the interest of aviation safety, the Director of Civil Aviation has, in terms of the Ministerial Order, issued the Guidelines hereunder to the South African Civil Aviation Industry:

1. BACKGROUND INFORMATION

1.1 COVID-19 TRANSMISSION

There are two main routes of transmission of the COVID-19 virus: respiratory and contact.

(a) Respiratory droplets are generated when an infected person coughs or sneezes. Any person who is in close contact with someone who has respiratory symptoms (for example, sneezing, coughing) is at risk of being exposed to potentially infective respiratory droplets.

(b) Droplets may also land on surfaces where the virus could remain viable; thus, the immediate environment of an infected individual can serve as a source of transmission (known as contact transmission). The risk of contracting the COVID-19 virus from the faeces of an infected person appears to be low.

WHO indicates that it is not certain how long the virus that causes COVID-19 survives on surfaces, but it seems likely to behave like other corona viruses. Based on a recent review, the survival of human coronaviruses on surfaces ranges from 2 hours to 9 days. The survival time depends on a number of factors, including the type of surface, temperature, relative humidity and specific strain of the virus. The same review also found that effective inactivation could be achieved within 1 minute using common disinfectants, such as 70% ethanol or sodium hypochlorite.

Any person who is in close contact (within 1 meter) with someone who has respiratory symptoms (e.g. sneezing, coughing, etc.) is at risk of being exposed to potentially infective respiratory droplets. Medical masks, surgical or procedural masks that are flat or pleated (some are like cups) can be used as preventative measures.

1.2 AIRFLOW ON-BOARD MODERN AIRCRAFT

All the air in modern aircraft cabins is, on average, completely changed every 3 minutes - even after taking into account of filtered and recirculated air. This is a much higher rate of flow than people experience in other indoor environments which means that passengers are provided with about 80 times as much air as they need to breathe.

The air in modern aircraft cabins is a mix of fresh air drawn from outside, and air that has been passed through extremely efficient filters, which remove particles in the air down to the size of microscopic bacteria and virus clusters (with an efficiency of better than 99.99 per cent). These filters – called High- Efficiency-Particulate Arrestors (HEPA) – have been shown in tests to provide air that meets the standards set for hospital operating theatres. Modern aircrafts have reported that HEPA air recirculation filters capture viruses such as the Middle East Respiratory Syndrome (MERS) Corona virus and COVID-19 with extremely high efficiency.

In normal operation, less than a half of the air is filtered and recirculated - the rest is fresh air drawn in from outside. None of the air that is supplied to aircraft toilets, galleys and cargo-holds is filtered and re-circulated –instead it is dumped directly overboard. The air supply to the cabin comes in at the level of the overhead stowage compartments – from above or underneath them, depending on the modern aircraft type – and is extracted at floor level, which means that it is drawn down rather than going up.

1.3 FRESH/RECIRCULATION AIRFLOW MODERN AIRCRAFT

In general, the fresh air (from outside) is mixed with recirculated air in a mixer unit and then this air is supplied to the cabin, and all occupied areas within the fuselage. This means that there is no specific recirculation airflow entering the cabin that is separate from the fresh air flow.

1.4 CAN RECIRCULATED AIR SPREAD THE CORONA VIRUS?

It is unlikely that recirculated air can spread COVID-19. As mentioned above, the airflow induced by the recirculation system is mixed with fresh air in the mixer unit, and the combined air enters the cabin through the air outlets. This airflow passes over the occupants as it passes towards the floor level where it is extracted. This air will then go overboard via the pressurisation outflow valves(s) or will pass through a HEPA filter for injection back into the mixer unit. Therefore, because the HEPA filters have an extremely high efficiency in capturing the Corona virus, the recirculation airflow does not spread the Corona virus throughout the cabin.

1.5 SPECIAL OPERATING PROCEDURES

In reference to the information provided above, there are no special aircraft operating techniques recommended in relation to MERS or COVID-19 transmission on board the aircraft. It is not recommended to turn off the air recirculation fans for the duration of the flight order to minimise transmission.

2. FACTORS THAT AFFECT PROBABILITY OF DISEASE TRANSMISSION ON BOARD AIRCRAFT

(a) The mode of transmission of infection of the disease;
(b) Duration of exposure (Short vs Long-Haul Flights);
(c) Infectivity of index case (sick person) during flight in the symptomatic/pre-symptomatic (incubating) period;
(d) Airplane technical specs (Quality of cabin air);
(e) Effectiveness of exposure;
(f) Proximity to index case, laminal, longitudinal & horizontal; and
(g) Public Health Interventions such as early identification, containment and other measures.

3. AREAS THAT CAN PRESENT HIGH TRANSMISSION EXPOSURE

a) The waiting gate area;
b) Security gates before boarding the aircraft;
c) Waiting area before boarding the aircraft;
d) Jet ways or the bus used to transport passengers to the aircraft;
e) Aircraft itself (arm rest, toilet, others); and
f) Other crowded and confined spaces.

4. DOCUMENTS AND MEASURES REQUIRED FROM ALL THE AIRLINES IN ALL FLIGHTS

a) Airlines are required to ensure that there are Passengers Locator Forms on board an aircraft that will be issued to the suspected cases and the contacts surrounding the index case.
b) Airlines will be required to release the passenger manifest to the Department of Health or the Civil Aviation Authority with immediate effect, once required, to ensure that suspected cases are followed-up. These forms should be completed by the passengers while seated and collected by the Ports Health Authorities.
c) Airlines shall issue passengers from risk areas with the National Department of Health's Questionnaires for completion which shall be collected and analysed by the Ports Health Authorities.
d) Airlines are required to ensure that cabin crew are trained in identifying suspected cases of communicable disease and the management thereof.
e) Airlines are required to ensure that there is a Notifying Procedure stipulating the process to be followed between cabin crew, the pilot in command and the air traffic controller once there is a suspected case of a communicable disease.
f) Airlines, Airports and Air Traffic Controllers shall ensure that there is a Business Continuity Plan addressing the pandemic preparedness.

g) Airlines should ensure that airports provide sufficient measures such as additional air bridges to minimise traffic in highly populated areas.
h) Airlines shall develop and maintain Announcements and Updates Procedures about the COVID-19 and necessary actions required by Airlines.
i) Airline should develop a Procedure for cleaning of high-use areas.
j) Airlines may consider amendments to Schedules for meal services, inflight duty-free sales and amenities.

5. TEMPERATURE SCREENING

(a) Airlines should ensure that passenger handling personnel and cabin crew attendants are equipped with calibrated non-contact infrared thermometers to detect passengers who have fever.
(b) The temperature testing should take place at check-in and before boarding.
(c) Passengers with fever will be referred to the Ports Health Authorities for further investigation.

6. PRE-SCREENING MEASURES BY PASSENGER HANDLING AGENTS AND CABIN CREW ON BOARD AN AIRCRAFT

The following pre-screening measures shall be followed:
a) Visual Screening;
b) Brief History Taking; and
c) Temperature Measurement.

7. MANAGEMENT OF SUSPECTED CASES AT CHECK-IN-COUNTERS

a) Airline and Handling Agents must ensure sufficient personal protective equipment (surgical masks, gloves, sanitisers, etc.) for their staff, passengers and suspected cases.
b) Airlines and handling agents should ensure that check-in staff have a checklist available to provide guidance on how to identify symptoms and signs of suspected cases and personnel must be briefed daily on which passenger symptoms to be vigilant about, including the following:

(i) Fever 100.4 °F [38 °C] or greater;
(ii) Skin rash;
(iii) Difficulty breathing;
(iv) Persistent cough;
(v) Decreased consciousness or confusion of recent onset;
(vi) New unexplained bruising or bleeding (without previous injury);
(vii) Persistent diarrhea;
(viii) Persistent vomiting (other than air sickness);

(ix) Headache with stiff neck; or
(x) Appearance of being obviously unwell.

The attending check-in counter personnel should notify the supervisor and if the supervisor upon observation, shares the same concern, then medical advice should be requested for medical clearance. The passenger should be denied boarding and should be asked to obtain medical clearance in accordance with the airline's policy. If the sick passenger is coughing, they must be requested to wear a face mask. If a passenger cannot tolerate the mask, they should be requested to cover the mouth and nose when coughing, sneezing or talking.

8. MANAGEMENT AND PASSENGER AID UNIT (PAU)

If assistance is required to escort a sick passenger, airlines should provide a Passenger Aid Unit (PAU) and escort. The following personal protective equipment should be provided to passenger aid unit escorts and they should be trained to identify symptoms and signs of COVID-19:

a) Surgical Masks;
b) Disposable gloves; and
c) Hand Sanitiser.

9. PERSONAL PROTECTIVE EQUIPMENT FOR CREW AND PASSENEGRS

a) Cabin Crew should wear medical protective masks (N95 masks) when managing suspected cases of communicable disease on board.
b) Alcohol wet wipes and hand sanitisers are recommended for hand disinfection and should be made available on board.
c) Airlines should make hand sanitisers available for passengers and crew prior to boarding an aircraft.
d) Airlines must ensure that there are available hand sanitisers for the suspected case and the passengers who are seated two rows in front and behind the suspected case for disinfection.
e) After disposing of the bio-hazardous waste, cabin crew should wash their hands with soap.
f) On contact with symptomatic passengers, or treating body fluids (such as respiratory secretions, vomit, blood, diarrhoea) or contaminated objects and surfaces, cabin crew should wear personal protective equipment (PPE) found in the Universal Precaution Kit (UPK).
g) Airlines should ensure that the gloves available are either rubber or nitrile gloves.

h) Cabin Crew should change gloves and perform hand hygiene on contact with different symptomatic passengers or in the event of a glove wearing out.

9.1 UNIVERSAL PRECAUTION KITS ON BOARD AN AIRCRAFT

Airlines should ensure that there are Universal Precaution Kits on board all aircrafts in line with Part 121.05.3 of the South African Civil Aviation Regulations, 2011 and associated Technical Standards. The Universal Precaution Kits should be used for the management of suspected cases of communicable diseases on board an aircraft. A Universal Precaution Kit should include the following:

a) Dry powder that can convert small liquid spill into a sterile granulated gel;
b) Germicidal disinfectant for surface cleaning;
c) Skin wipes;
d) Face /eye mask (separate or combined);
e) Gloves; and
f) Non-Mercury Thermometer.

9.2 FIRST AID KITS & MEDICAL DOCTORS' BAGS

Airlines should ensure that there are First Aid Kits and Medical Doctors' bags on board all aircraft in line with Part 121.05.3 of the South African Civil Aviation Regulations, 2011 and associated Technical Standards.

9.3 GOGGLES AND PROTECTIVE CLOTHING

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

9.4 PERSONAL PROTECTIVE EQUIPMENT

Airports must recognize that there is no personal Protective Equipment that provides 100% protection. The type of PPE will depend on the route of entry, contamination and the characteristics of the biological agent and proper use is critical. The relative ability of each component of IPC is shown by the size

of the circle screening and triage (administrative controls are most important). Environmental controls are important to ensure that the PPE is effective. There are different types of PPEs.

9.5 N95 RESPIRATOR

It is a filter which traps infectious particles and stops them from being inhaled and Health Care workers should ideally wear the mask. These masks are called 'particulate filter respirators'. These masks are generally used by the Health Care Professionals. Filter efficiency should be 95% and the mask has a tight seal. The letter N stands for non-resistant to oil. N95 respirators will not work if:

(a) They are not properly fitted and if the wearer has facial hair (beard) preventing a proper fit.
(b) They are damaged or crushed and if they are saturated (reused until the filter capacity has been exceeded).
(c) They get wet (even if they dry again should not be reused).

9.6 SURGICAL MASKS

A surgical mask has only 50% filter efficiency and it only stops 50% of particles. It lacks a tight facial seal and it is useful to capture infectious particles coming from the person who is wearing the mask. Surgical masks stop surgeons 'spitting' into the operating field and offers barrier protection against large-particle droplets. Surgical masks are primarily used to protect patients and healthcare workers from people who may have a respiratory infection and they are not designed or certified to prevent the inhalation of small airborne contaminants. Their ability to filter small particles varies significantly based on the type of material used to make the surgical mask. COVID-19 is larger, or is as large as, the influenza A virus, so it is likely to be blocked by the filter layer. In addition, using a surgical mask will help prevent touching of the face which may spread the virus from contaminated hands.

10. TRAINING OF CABIN CREW AND OTHER PERSONNEL ON INFECTION CONTROL MEASURES

a) Crew will be trained on the infection prevention control procedures for management of suspected case on board an aircraft.
b) The role of each crew member will be clearly defined.
c) Crew will sign a declaration to state that they were trained on the Infection Prevention Control Procedure.

d) Procedures and training for testing should be made available to the employee who will be conducting testing.

e) Airlines should ensure that cabin crew are trained in line with Part 64 of the South African Civil Aviation Regulations and associated Technical Standards.

f) Training will include, but not limited to:

(i) Hand hygiene;
(ii) Use of Personal Protective Equipment;
(iii) Respiratory etiquette;
(iv) Cleaning of toilets;
(v) Environmental cleaning; and
(vi) Temperature and physical examination.

11. PROCEDURE FOR THE MANAGEMENT OF A SUSPECTED CASE OF COMMUNICABLE DISEASE BY CABIN CREW ON BOARD AN AIRCRAFT

Airlines should make available both a surgical mask for suspected case and a medical protective mask(N95) for cabin crew.

a) Cabin Crew shall:

(i) exercise universal precaution in order to minimise risk of acquiring a communicable disease (Universal Precaution Kits);
(ii) Wash hands often with soap and water for at least 20 seconds after assisting sick travellers or touching potentially contaminated body fluids or surfaces;
(iii) Use an alcohol-based hand sanitiser (containing at least 60-70% alcohol) if soap and water are not available;
(iv) Designate one crew member to assist the sick person;
(v) Minimise contact between passengers and cabin crew and the sick person and if possible, separate the sick person from others (1 meter apart);
(vi) Offer a facemask if the sick person can tolerate it and if a face mask is not available or cannot be tolerated by the sick person, request the sick person to cover their mouth and nose with tissues when coughing or sneezing;
(vii) Treat all body fluids (such as respiratory secretions, diarrheal, vomit, or blood) as if they are infectious; and
(viii) Wear a Medical protective mask (or N95 mask) and replace the mask with a new one after performing emergency treatment or if mask is contaminated.

12. MANAGEMENT OF ON-BOARD EMERGENCY QUARANTINE MEASURES

The sick passenger or crew member should be quarantined on-board the aircraft by the following methods:

a) The last 3 seat rows of the cabin should be designated for relative emergency quarantine;
b) If possible, the ill traveller should be seated in the right window seat, such that the breath exhaled exits so that the crew can have easy access;
c) The right rear lavatory should be specifically designated for quarantine purpose;
d) The cabin crew member designated to look after the sick passenger, should minimise close contact with other crew members and quarantined in the same zone after the flight segment;
e) Designated quarantine transport should be arranged for the sick passenger, close contacts and crew member;
f) Non-exposed crew members will need to monitor their health condition immediately after travel, instead of being quarantined;
g) Exposed crew members should be quarantined after carriage of confirmed positive case (whether symptomatic or asymptomatic) or after contact with suspected patients within the last 14 days; and
h) Once the quarantined crew member is found to have any symptoms, the airline should report to the local health authority immediately and send the isolated crew member to the designated medical care facility.

13. STANDARD DISINFECTION PROCEDURES ON BOARD AN AIRCRAFT BY CABIN CREW

13.1 Should a passenger on board an aircraft present with vomiting or there is a spillage of other bodily fluids, then the following disinfection procedure should be followed:

(a) Put on protective gloves;
(b) Wear eye protection if a danger from splashing exists;
(c) Open a biohazard bag and place it near the site of contamination; and
(d) If a biohazard bag is not available, label a regular waste bag as "biohazard";

13.2 The following surfaces should be cleaned and then disinfected:

(a) The seat of the suspected case(s);
(b) Adjacent seat(s) in the same row;
(c) Adjacent row(s) and other areas, as noted below:
  i. Seat area;
  ii. Armrests;
  iii. Seatbacks (the plastic and/or metal part);

iv. Tray tables;
v. Seatbelt latches;
vi. Light and air controls, cabin crew call button and overhead compartment handles;
vii. Adjacent walls and windows;
viii. Individual video monitor(s); and
ix. Clean the area of soil (remove solids and soak up liquid waste).

14. PROCEDURE FOR ONBOARD CLEANING OF THE AIRCRAFT LAVATORIES

The lavatories should be cleaned every 2 hours by a crew member and immediately cleaned if there is a sick passenger on board.

The following areas should be focused on:

(a) Door handle;
(b) Locking device;
(c) Toilet seat, faucet (tap);
(d) Washbasin; and
(e) Adjacent walls and counter.

The crew shall allow adequate contact time between the disinfectant and the surface for destruction of microorganisms.

The crew shall adhere to any safety precautions as directed (e.g. ensure adequate ventilation in confined areas such as lavatories, and avoid splashing or generating unintended aerosols, flush with a closed toilet lid).

15. MANAGEMENT OF MEDICAL WASTE AND DISPOSAL

Procedure for disposal of bio-hazardous material for crew and ground staff shall be clearly communicated to all crew, ground staff and service providers at all stations (any base where aircraft lands).

A crew member will be designated to ensure that the following takes place:

(a) All contaminated items are carefully placed inside a bio-hazard bag (or plastic bag labeled "bio-hazard" if none available);
(b) All waste or other materials used by the sick passenger should be stored separately in a bio-hazard bag and identified for handling and disposal upon arrival;
(c) The bio-hazard bag must be tied or taped securely to avoid leaking;
(d) The bio-hazard bag must be kept in a secure designated place until it can be safely collected for disposal; and

(e) The waste material must be handed over to the competent Port Health Authority on arrival for disposal.

16. PROCEDURE FOR THE PILOT-IN-COMMAND TO NOTIFY THE AIR TRAFFIC CONTROLLER

The airline shall ensure availability of a notification procedure in line with Part 91.07.21, which stipulates that the pilot in command shall notify the en-route air traffic-controller of a suspected communicable disease, who in turn will notify the airport management.

The following information is be communicated:

a) Aircraft Callsign (ID);
b) Departure Aerodrome;
c) Destination Aerodrome;
d) Estimated Time of Arrival;
e) Number of persons on board;
f) Number of suspect cases; and
g) Nature of public health risk.

17. ACTIVATION OF STAKEHOLDERS

(a) The air traffic controller shall inform the designated airport of the reported case in line with Part 172.03 .12 of the CARs in order to ensure that Port Health Authority is activated, and a designated ambulance/hospital are ready for the passengers.
(b) The airport will allocate a designated parking and symptomatic travellers and their contacts shall disembark the aircraft according to instructions from the competent authority in order to minimise the risk for spreading the disease.
(c) Symptomatic travellers shall be assessed for their condition and exposure at the designated facility of the airport and if they fulfil the definition of a suspect case they shall be transferred to a designated hospital.
(d) The contacts will receive information about the COVID-19 infection, including the symptoms, who to contact in case they develop symptoms such as fever, cough or difficulty in breathing.

The following stakeholders, amongst others, are involved:

(a) Airport;
(b) Fire Services;
(c) Customs;
(d) Immigration;
(e) Security;
(f) Police;
(g) International Relations; and
(h) Others.

18. POST-FLIGHT INFECTION CONTROL MEASURES

The Airline shall properly dispose of contaminated items and notify cleaning crew of areas contaminated with bodily fluids or bio-hazard materials, thus needing more than routine cleaning or possible removal.

For example:

(a) Soft materials (e.g. seat cushion);
(b) Hard surfaces like arm rests and tray tables; or
(c) Bathroom(s) used by sick traveler.

19. INFECTION CONTROL FOR CARGO AND BAGGAGE HANDLERS

The following are general guidelines for cargo and baggage handlers who handle cargo or baggage transported by an aircraft arriving from an affected area or carrying a suspected case of communicable disease.

Cargo and baggage handlers should apply the following preventative measures to ensure infection control:

a) Proper hand hygiene, as recommended to all workers;
b) Wear gloves; and
c) Use hand sanitisers if soap and water not available.

20. PROCEDURE FOR CHANGING HEPA FILTERS

There is no need to change HEPA filters in an aircraft that has carried a suspected case of communicable disease. HEPA filters should rather be changed at the intervals recommended by the filter manufacturer.

When replacing HEPA filters:

a) Wear disposable gloves;
b) Avoid hitting, dropping or shaking the filter. If that cannot be achieved, wear a surgical mask;
c) Do not use compressed air to try and clean a filter (it may create an aerosol);
d) The used HEPA filter should be disposed of in a sealed plastic bag. A specific bio-hazard bag may be required;
e) Place the used disposable gloves in the same plastic bag;
f) Wash hands with soap and water when the task is finished; and
g) Use hand sanitiser if soap and water is not available.

21. DISINFECTION OF THE AIRCRAFT

Disinfection is defined as *the procedure whereby measures are taken to control or kill infectious agents on a human or animal body, on a surface or in or on baggage, cargo, containers, conveyances, goods and postal parcels by direct exposure to chemical or physical agents.*

Every aircraft undergoes cleaning based on a standard cleaning procedure (SOP) prior to the next departure. In case of a suspicious or confirmed passenger suffering from a highly infectious disease, additional disinfection of the aircraft is mandatory. For this purpose, all used disinfectants must be aircraft component compatible, OEM approved and must not have any negative effects on individual parts or the structure of the aircraft, while also fulfilling national healthcare requirements.

Aircraft disinfectant attributes include but are not limited to:

a) Safety of active ingredients for humans;
b) Environmental safety spectrum of micro biocidal activity;
c) Transport, storage and inventory control directions for use;
d) Speed of activity (affect release of the aircraft); and
e) Other considerations.

COVID-19 has an envelope and is susceptible to being destroyed by 70% alcohol solutions such as quaternary ammonium compounds. After disinfection, the aircraft will be released by the Port Health Authorities in line with Part 91.07.36 of the Civil Aviation Regulations.

22. PERSONAL PROTECTIVE EQUIPMENT FOR DISINFECTION OF THE AIRCRAFT

A disinfection procedure should include the following steps:

a) Put on protective gloves;
b) Wear eye protection if a danger from splashing exists;
c) Open a bio-hazard bag and place it near the site of contamination. If a biohazard bag is not available, label a regular waste bag as "bio-hazardous"; and
d) Bio-hazard bag should be handed over to the competent Port Health Authority for disposal.

23. PROCEDURE FOR DISINFECTION OF THE AIRCRAFT

Operation of the aircraft's environmental control system should continue running at least until the suspected passenger has disembarked or until the disembarkation process is complete in order to prevent transmission of communicable diseases to unaffected passengers.

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

a) Distinguish the rags and mops used in each area using different colours to reduce cross-contamination;
b) To avoid being detrimental to aircraft components, rub the surfaces with disinfectant for adequate contact time and remove it immediately; and
c) When disinfecting the key areas as noted below, begin at the top and proceed downward progressively working from clean to dirty areas.

The following surfaces should be cleaned and then disinfected at the seat of the suspected case(s), adjacent seat(s) in the same row, adjacent row(s) and other areas, as noted below:

a) Seat area;
b) Armrests;
c) Seatbacks (the plastic and/or metal part);
d) Tray tables;
e) Seatbelt latches;
f) Light and air controls, cabin crew call button and overhead compartment handles;
g) Adjacent walls and windows;
h) Individual video monitor;
i) Aisle; and
j) Ceiling, overhead bins, reading lights, air outlets, sidewall panels, windows, seats (tray tables, armrests, passenger control units, decorative panels), cabinets/lockers, bulkheads, magazine racks and cabin attendant seats.

24. LAVATORY

The disinfection in lavatory should be progressed from contaminated to clean areas, as follows:

a) Toilet bowls;
b) Waste bins;
c) Basins;
d) Lavatory sidewall;
e) Ceiling; and
f) Door assembly (door surfaces, doorknobs, ashtrays, if installed, and latches).

Lavatory or lavatories used by the sick traveller should be given special disinfection attention considering the following: door handle, locking device, toilet seat, faucet (tap), washbasin, adjacent walls and counter.

25. GALLEY

Disinfection of the ceiling, ovens, water boilers, coffee makers, galley facilities, lockers/drawers, waste bins.

26. CLEANING MEASURES OF AN AIRCRAFT

Clean the soiled area (remove solids and soak up liquid waste) and apply the disinfectant (see below) according to procedures approved by the original equipment manufacturer and as instructed on the disinfectant manufacturer's label.

Once the area is wet, use paper towels to clean the area, and discard paper towels into the bio-hazard bag. Ensure adequate contact time between the disinfectant and the surface for destruction of microorganisms.

Adhere to any safety precautions as directed (e.g. ensure adequate ventilation in confined areas such as lavatories and avoid splashing or generating unintended aerosols), including the following:

a) Change gloves that become visibly soiled;
b) Remove any affected portion of carpet;
c) Rinse the surface with water, and dry;
d) Put all paper towels into the bio-hazard bag;
e) Remove gloves and place them into the bio-hazard bag;
f) Seal the used bio-hazard bag and ensure its proper transportation and final disposal;
g) When cleaning and disinfecting is complete, and gloves have been removed, immediately clean hands with soap and water or an alcohol-based hand sanitiser;
h) Avoid touching the face with gloved or unwashed hands;
i) Do not use compressed air and/or water under pressure for cleaning, or any other methods that can cause splashing or might aerosolize infectious material; and
j) Vacuum cleaners should be used only after proper disinfection has taken place.

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

After all passenger disembark the aircraft, close cabin doors, adjust the air conditioning to high-volume to complete all-round air exchange.

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

In the event of a confirmed case of Covid-19, the Port Health Authorities may have to enforce an additional and rigorous deep-cleaning and disinfection protocol.

Port Health Authorities are responsible for the release of the aircraft back to service post disinfection.

27. GUIDANCE FOR SA CREW IN MODERATE TO HIGH RISK AREA

The Airline shall:

a) Advise the crew to avoid public transport unless it is unavoidable.
b) Ensure that the hotel rooms are sanitised in advance of the crews' arrival.
c) Provide crew with at least a 60% alcohol-based hand sanitiser.
d) Encourage crew to minimize going out into the general population, and to maintain social distancing (approximately 2m, if possible) whenever out in public.
e) Encourage crew to avoid crowds, stores, sporting or mass entertainment events, and other situations likely to attract large numbers of people.
f) Remind crew members to immediately report any symptoms.
g) Check in with crew members periodically to make sure they continue to self-monitor and are not symptomatic.

28. TRANSPORTATION OF SPECIMENS OF CORONAVIRUS (COVID-19) BY AIRLINES

The World Health Organization (WHO) has advised that so far, the transport of specimens to laboratories for analysis is working well, although there have been some delays caused by doubts in the classification of specimens of Covid-19 as UN 3373, biological substance, Category B, where there has been an opinion that the specimens should be UN 2814, i.e. Category A.
Based on the experience of shipping specimens of SARS, swine flu, MERS and other similar types of viruses, WHO and national health authorities such as the US Centre for Disease Control (CDC) are advising Health Authorities to ship specimens of Covid-19 as UN 3373, biological substance, Category B.
To ensure that the global response to suspected cases of Covid-19 is as rapid as possible, it is important that specimens be transported to laboratories for analysis without delay.
The airlines are urged to assist in this response by facilitating the movement of specimens offered as UN 3373 and packaging in accordance with PI 650.

The outbreak COVID-19 has caused the health officials worldwide to be on the alert to ensure that any suspected cases are isolated and managed according to appropriate national health protocols. Packaging of specimen and the use of sanitisers should be applied using Regulation 92.00.10.

29. ADDITION OF ALCOHOL-BASED HAND SANITISER AS AIRCRAFT EQUIPMENT

The use of alcohol-based hand sanitiser as an alternative to washing hands with soap and water is one of the recommendations from the WHO to prevent the spread of COVID-19.

To ensure that the risk of infection of crew members is minimised, many airlines are looking to add into the items carried in the galley or installed in aircraft lavatories alcohol-based hand sanitisers. However, alcohol-based hand sanitisers are classified as dangerous goods and are not specifically permitted by the IATA Dangerous Goods Regulations and ICAO Technical Instructions for the Safe Transportation of Dangerous goods by Air (Technical Instructions) under the provisions for dangerous goods in operator's property (DGR 2.5, ICAO Technical Instructions Part 1;2.2).

Airlines that wish to add alcohol-based hand sanitisers to the items carried in galleys or installed in lavatories will need to request authorisation from the Civil Aviation Authority (State of the Operator) in accordance with the provision that is set out in Part 1;2.2.1 a) of the ICAO Technical Instructions, which reads as follows:

30. EXCEPTIONS FOR DANGEROUS GOODS OF THE OPERATOR

The provisions of these instructions do not apply to the following:

(a) Articles and substances which would otherwise be classified as dangerous goods but which are required to be aboard the aircraft in accordance with the pertinent airworthiness requirements and operating regulations or that are authorized by the State of the Operator to meet special requirements;

It is recommended that the request for authorization address the following:

(a) The classification and UN number of the hand sanitiser. For example, UN 1987, Alcohols, n.o.s. (ethyl alcohol mixture), UN 1170, Ethanol solution. The safety data sheet from the manufacturer of the hand sanitiser should be checked for the classification;

(b) The quantity of hand sanitiser in each container and the number of containers to be carried on the aircraft;

(c) Steps that will be taken to ensure that the hand sanitiser is kept away from sources of heat or ignition;
(d) Provision of information to crew members on the carriage of the hand sanitiser. For example, that crew members will be advised on the procedures through a bulletin or other appropriate method.

31. CARRIAGE OF ALCOHOL-BASED HAND SANITISER IN PASSENGER AND CREW BAGGAGE

Paragraph 2.3.5.1 of the IATA Dangerous Goods Regulations sets out the allowances for passengers and crew to have in their checked or carry-on baggage medicinal or toiletry articles, which may include articles containing alcohol as follows:

31.1 MEDICINAL OR TOILETRY ARTICLES AND AEROSOLS IN DIVISION 2.2

a) Non-radioactive medicinal or toiletry articles (including aerosols). The term "medicinal or toiletry articles" is intended to include such items as hair sprays, perfumes, colognes and medicines containing alcohols. Aerosols in Division 2.2, with no subsidiary hazard, for sporting or home use.

b) The total net quantity of all such articles carried by each passenger or crew member under the provisions of 2.3.5.1 must not exceed 2 kg or 2 L and the net quantity of each single article must not exceed 0.5 kg or 0.5 L.

c) Release valves on aerosols must be protected by a cap or other suitable means to prevent inadvertent release of the contents.

d) Alcohol-based hand sanitiser is acceptable under the provisions of 2.3.5.1, however, it should be noted that where passengers or crew wish to have the hand sanitiser in their carry-on baggage, the limit of 100 mL or equivalent per item for liquids and gels in accordance with the aviation security provisions applies.

32. BUSINESS CONTINUITY PLANS FOR AIRLINES

Business continuity plans for airlines should ensure that the following measures are applied:

a) Plans are tested through simulation exercises;
b) COVID-19 Awareness Training is conducted;
c) Provision of Personal Protective Equipment;

d) Measures are in place to address shortage of personnel; and
e) Other measures.

33. SAFELY MANAGING WASTEWATER AND FAECAL WASTE FROM THE AIRCRAFT

There is no evidence to date that the COVID-19 virus has been transmitted via sewerage systems with or without wastewater treatment. Furthermore, there is no evidence that sewage or wastewater treatment workers contracted Severe Acute Respiratory Syndrome (SARS), which is caused by another type of coronavirus that caused a large outbreak of acute respiratory illness in 2003. As part of an integrated public health policy, wastewater carried in sewerage systems should be treated in well-designed and well-managed centralised wastewater treatment areas. Workers should wear appropriate Personal Protective Equipment (PPE), which includes:

a) protective outerwear;
b) gloves;
c) boots;
d) goggles or a face shield; and
e) a mask.

Workers should perform hand hygiene frequently; and they should avoid touching eyes, nose and mouth with unwashed hands.

34. PREPARING FOR PANDEMICS AND SECURING BUSINESS CONTINUITY

To secure business continuity it is indispensable to have a deep knowledge on all processes and interrelations as well as to identify key risks to the continuity of operations. Factors such as human resources, business processes and functions, infrastructure, stakeholders, and communications have to be addressed. Respective risks, their consequences and likelihood of occurrence have also to be determined in order to be able to prioritise possible actions. A structured risk assessment is needed to protect critical functions as well as to develop a crisis recovery and a business continuity plan to survive in the market during critical times.

35. IDENTIFICATION OF POTENTIAL RISKS RELATED TO THE COVID-19 PANDEMIC

Any pandemic will pose one of the greatest threats to viability of aviation business. Business success depends on both a strong demand and sound economic structure. In case of a pandemic, the whole industry would be affected by issues like a decline in passenger numbers or lack of human resources. Airport would be especially affected by operations and supply disruptions, such as restricted access

to buildings, reduced operational capacity and loss of business. Employees may stay away from the workplace for days or even weeks, due to their own illness, illness of family members, public health guidance or even out of fear of infection. Mortality rate in relation to the pandemic's intensity may further impact on employees. Any business continuity plan has to take into account a possible unavailability of personnel and contingency measures to keep business running with a decimated number of employees.

It is essential to consider different percentages of absenteeism, especially during a pandemic's peak time of about 2 weeks. However, it has to be kept in mind that the consequences of the pandemic on personnel will last for many weeks. With the absence of employees, it has to be considered, that the remaining staff will be working under unusual conditions and will be subjected to increased stress levels. Medical risks and implications are directly correlated with the pandemic's severity. The preservation of employee's health and the respective costs has to be prioritised.

Unavailability of medical personnel also poses a risk. The existing airport medical personnel cannot handle a pandemic and all the prevention measures alone. In case of a pandemic outbreak, it is vital to mobilise and assign additional trained medical personnel and equipment to the airport. The consequences and an unspecified amount of additional costs related to necessary medical procedures such as quarantine, decontamination and disinfection procedures, allocation of rooms for passengers and patients during the crisis and vaccination must also be considered.
All airlines are required to develop an operational personnel continuity plan during COVID-19 outbreak in order to ensure business continuity which should include the following:

a) Identify the number of personnel required to maintain operations at a predetermined service level (minus 10 %,30%,50% of personnel) over the disruption period.
b) Ensure that adequate additional personnel are available to be called upon to manage the operation if necessary.
c) Monitor the number of personnel affected by the disruption.
d) Involve Airline Human Resources/Personnel department; Business Process owners; Personnel Representatives (Unions) and Airline Operational Management.
e) Gather input from Business Partners on their contingency plans and the demands they may place upon the airport's personnel plans.
f) Include operational personnel, security personnel, engineering and maintenance operatives, contractors and senior managers required for crisis management roles.

g) Study legislation to address remuneration levels and extra time workload for individuals and groups (specific to operating company) to guarantee required personnel numbers over the disruption period.
h) Collate total personnel numbers required by function/department in order to eliminate duplication and double counting.
i) Consider back up personnel (ex-employees, retired people, student).
j) Implement crisis intervention team if needed and implement care team for employees.
k) Implement telephone hotline.
l) Review prioritisation of Business Processes and balance them against personnel numbers required.
m) Implement the Operational Continuity Plans.
n) Conduct series of validation drills and exercises to ensure efficacies of these plans in close cooperation with public health authorities.
o) Establish a regular schedule of drills and exercises to train all parties in relation to the plans as well as ensure that the plans continue to be viable over time.

36. EFFECTIVE DATE AND AMENDMENT

These Guidelines are effective immediately on date of approval by the Director of Civil Aviation and are subject to change at the discretion of the Director of Civil Aviation.

Director of Civil Aviation
South African Civil Aviation Authority

19 MAR 2020