AIRPORTS COUNCIL INTERNATIONAL

Aviation Operations During COVID-19 Business Restart and Recovery

2020 | 01

AIRPORTS COUNCIL INTERNATIONAL

ACI advances the collective interests of, and acts as the voice of, the world's airports and the communities they serve, and promotes professional excellence in airport management and operations.

DISCLAIMER

Copies of this publication are available from:

Publications Department
ACI World
800 rue de Square Victoria
Suite 1810, P.O. Box 302
Montreal, Quebec H4Z 1G8
Canada
Email: aci@aci.aero

Web: **www.aci.aero/publications**

Table of Contents

1 Introduction

COVID-19 has created an unprecedented global challenge, particularly to the aviation industry. The quick spread of the virus has caused governments to rapidly restrict travel and close borders in order to limit the spread. This had a drastic and detrimental effect on airports worldwide. A variety of new measures could become a necessity at airports, based on various phases of the pandemic, related medical criteria coming from recognized health authorities, and stages of business recovery. For airport operators, the main principles are to protect the health and welfare of travelers, staff and the public, to minimize the opportunities for dissemination of communicable diseases, and be able to maintain efficient operations.

This guidance document presents considerations in all aspects of airport management and operation to enable the restart of aviation operations while maintaining the confidence of staff and travelers. The objective of this guidance document is not to expect airports to use all the options provided, but rather give advice on implementation and best practice of measures that might be appropriate according to circumstance.

This is intended to be a living document with chapters added or amended as additional information becomes available. Each chapter may be read as a standalone document; each is subject to version control.

We can expect the return to business for the industry to take place in phases:

- Initial restart with limited number of passengers
- Recovery with a slow increase in passenger volume
- Gradual scale-up in capacity
- Return to more normal passenger volumes

This document focuses on best practices and guidance tailored for both the initial phases of this return to business (restart) and the longer-term recovery processes. It is important to note that required measures at airports will need to change and evolve through these phases, and eventually bring the industry to what we may call “the new normal” in terms of the longer term end-to-end travel process. Worldwide, States and industry regulators will therefore need to ensure to adapt airport processes to changing medical criteria and ensure that airport measures remain aligned with those deployed through other modes of transport and local infrastructures.

2 ACI World Guidance Principles (V1.0 21 May 2020)

ACI World has identified the following key guidance principles to encourage the implementation of practical, efficient and workable health-related and operational solutions for the air transport industry recovery.

Measures should be supported by medical evidence.

- All processes to be deployed to validate the acceptance of a passenger at departure or arrivals should be based on the medical evaluation of information and based on official medical expert evidence.
- All such measures should aim at limiting their potential impact on the overall passenger process.
    - For example, temperature screening has been shown to have limitations and may produce false positives and false negatives: The benefits should therefore be carefully weighed against the risk of creating uncertainty in the safety of the aviation system and additional bottlenecks in the passenger process.

On-airport measures for health screening should be avoided.

- Measures for health screening, if mandated and backed by medical evidence, should minimize interruptions to airport operations.
- Large-scale testing on-airport is likely to result in the creation of crowds, queues and additional dwell time. This would be counterproductive in terms of physical distancing, and also create unnecessary concerns about the safety of the aviation system, unnecessary security risks, and possible safety hazards.
- Alternatives such as self-declaration of health should be considered for passengers, preferably though electronic means and directly with government entities. In the short term, manual declarations may provide a simple alternative.
- Such measures should be mutually recognised by governments so that delays do not result on arrival.
- If entry and exit screening is mandated by governments, it should be carried out in a non-intrusive, walk-through manner. A common approach amongst governments is also necessary.

Measures should be risk-based and outcome-driven.

- Some countries, regions or routes may be considered “low risk” based on epidemiology and, therefore, may not require specific health measures.
- Design of measures should be outcome-driven rather than solution-driven. This means that alternative ways of achieving the same outcome (mitigation of the spread of disease) should be acceptable.
    - For example:
        - Not all equipment and processes will be necessary or practical for all types of operation.
        - The selection of one type of test to be used globally may result in the unavailability of that test, or an unnecessary burden on the health system.
- Alternative, equivalent measures leading to similar levels of protection should be considered.

- A multi-layered approach may be beneficial, combining elements such as self-declaration, physical distancing, use of Personnel Protective Equipment (PPE) for staff, and additional cleaning protocols.

Coordination between governments and clear communication for the traveling public are key.

- To the extent possible, measures should be consistent between countries.
- When measures differ by country, good coordination and clear communication to passengers will be critical to prevent passenger confusion and minimize the negative impact on passenger confidence.
- Uncoordinated measures will likely increase costs for airports, aircraft operators, and other stakeholders.
- Harmonisation of measures between governments will be essential to support restoration of international operations.

Measures should build consumer confidence and be regularly monitored using established benchmarking surveys to ensure that they meet or exceed customer expectations.

- Enhanced communications to raise awareness about reducing the spread:
    - Updated public websites
    - Installation of signage
    - Making routine public announcements

Protective measures should be simple and practical.

- Protective measures implemented at airports need to consider operational realities.
- Segregation of passengers, staff and/or crew may be possible in certain circumstances where supported by existing infrastructure.
- Measures may include:
    - Physical distancing. This may be possible in the short term but will depend on passenger volumes and terminal layouts. At the start of recovery, staggering the opening of kiosks, desks, bag drops and security lanes may be possible.
    - Additional cleaning and sanitization.
    - Wearing of PPE.
    - Limiting access to public areas.
    - Providing sanitization stations after each process point.
    - Encourage health culture, implement staff training.

Measures should be constantly reviewed for impact, suitability and effectiveness.

- Governments should take an incremental, flexible approach to requirements, and regularly reviewing and amending initial measures in response to changing circumstances.
- This will be especially important as passenger numbers increase, and measures such as physical distancing become challenging.
- When measures are implemented, criteria for their removal or replacement are needed.
- Longer-term solutions should incorporate new technologies, stand-off and touchless processes.
- Short-term measures should be removed as longer-term measures are implemented.

Effective collaboration will be key.

- Governments and industry should work collaboratively to identify opportunities to increase regulatory flexibility, minimize “touch points”, develop risk assessments and determine suitable measures based upon risk and operational realities.
- Collaboration will be needed between agencies (health, customs, immigration, transport), as well as between countries.
- Countries will need to cooperate to ensure a smooth and coordinated restart.

Responsibilities need to be clearly defined.

- When introducing measures, responsibilities need to be defined for purchasing equipment and supplies, carrying out processes and reporting. This includes processes for contact tracing, quarantining and health monitoring.
- Governments should be financially responsible for all health-related new measures and related costs.
- Airport and security staff should not be required to carry out tasks related to health screening.

Regulatory change should be accelerated.

- Looking to the future, governments should consider expedited revision of existing or implementation of new regulation to support processes that help reduce passenger touchpoints, such as the use of biometrics, home-printed bag tags, off-airport processing and greater use of e-gates.
- Longer-term changes to processes and regulations should take into account sustainable development of airports to meet climate change goals.

3 Management and Planning for Restart (V1.0 21 May 2020)

3.1 Business Continuity

The rapidly-evolving situation related to COVID-19 requires a robust response by airport operators to ensure the safety of passengers, staff, and air operations at airports. To achieve this, airport operators should implement existing health-related contingency plans, adapt them if needed, or develop new ones if non-existent.

Existing plans should take care of the immediate impact of the health situation on airport operations. However, with significant reductions in operations at many airports, business continuity management is necessary for airport operators to mitigate the financial impacts of such a prolonged crisis.

Business continuity can be viewed in several ways – on one hand, sustaining the operational aspects (aircraft movements and passengers management) of the airport and maintaining safe and efficient operating conditions and, on the other hand, the financial sustainability of the airport, and its business resilience and crisis management structure for addressing a prolonged crisis within the organization itself.

The COVID-19 crisis is affecting both the operational and financial stability of many airports, leading airport operators to identify measures needed to deal with both of these important aspects of the business. It is important to consider the airport as a system and not disassociate the operational aspects from the financial sustainability aspects of the business continuity.

Airport operators should consider the three following points regarding business continuity from an airport system perspective:

- Financial sustainability: Ensuring financial sustainability through various mechanisms available depending on the ownership structure and regulatory framework specific to the airport.
- Organizational resilience: Ensuring a resilient and sustainable structure and processes are implemented to address the crisis, as well as continue managing the organization in parallel.
- Operational continuity: Ensuring that the operating conditions of the airport system (airside/terminals/landside) are maintained in operation to a level commensurate with the scale and volume of operations by air operators.

Business Continuity Recommendation #1: Consideration should be given to all possible measures available to reduce operating, and possibly investment, costs as well as provide short-term liquidity to the organization, so as to deal with the current crisis.

Business Continuity Recommendation #2: Consideration should be given to level-appropriate decision-making processes and management of communications across the organization.
Business Continuity Recommendation #3: Consideration should be given to ensuring frequent system-wide coordination with all operational stakeholders.

3.2 Liaison and Coordination

Additional coordination and communication efforts will be required as, for an extended period of time, flight schedules will not be as stable and predictable as usual and many travel restrictions will still continue to apply in many countries that require a lot of special handling procedures and passenger segregation processes to be managed.

At the same time, airport capacity will only partially be available as apron areas, taxiways and, in some cases, runways are still being used for parking of aircraft of grounded fleets. Also, part of the terminal building might be temporarily closed or decommissioned to recover revenue losses through reducing staffing for maintenance, cleaning, security and customer services as well as saving energy consumption.

Adequate briefing and conference platforms between aircraft operators, other stakeholders and the Airport Operations Control Centre (AOCC)—either via telephone, videoconference or any other agreed means—ensuring that participating airline staff can make key management decisions, should be established.

Particular emphasis should be placed on maintaining an even closer than usual coordination with the Maintenance Operational Control Centre and the OCC of operators, which might involve daily dedicated telephone conferences to align the aircraft return to service plan.

NOTAMs in effect for temporary closure of taxiways or even runways need to be cancelled or adjusted and air traffic control (ATC) needs to be advised well in advance to ensure that temporarily closed runways are back into operation when demand kicks-in. It is also required that all critical stakeholders, service providers and government authorities are well advised in advance on ramp-up schedules and any plans to return temporarily closed facilities into service in order to give adequate advance notice so staffing levels can be adjusted accordingly.

Consider:

Coordination Recommendation #1: Hosting regular conference calls with the aircraft operators and ground handlers (biweekly, weekly, twice a week, etc.).
Coordination Recommendation #2: Issuing regular emails or advisory bulletins to communicate important information to aircraft operators and ground handlers.
Coordination Recommendation #3: Issuing Regular Schedule Update Notices to advise stakeholders on extra flights cancellations or schedule/equipment changes.

3.3 Airport Capacity Analyses

It is expected that airline traffic will recover gradually and that the pre-COVID-19 level of airport capacity will not be reinstated overnight. Airport infrastructure and services will reopen in phases as demand for air transport picks up. Additional processes may also need to be implemented in terminals to maintain physical distancing, with an impact on passenger throughput limits.

As such, it will be paramount to ensure that airport capacity recommissioning is in step with airline schedules and phased in an appropriate manner.

Capacity Recommendation #1: Airport operators should conduct a thorough analysis of their capacity.

Capacity analyses should be conducted on a regular basis and updated whenever airport facilities and services are being recommissioned, when there are changes in the patterns of demand, or when new operational processes are being implemented.

As a first step of planning for restart, airport operators need to thoroughly analyze the impact of additional processes related to COVID-19 mitigation on available capacity. For terminal operations, the need to maintain physical distancing during initial phases of recovery may impact passenger throughput capacity, with a ripple effect on other systems, including aircraft parking stands and airfield operations.

The capacity analysis should encompass, without being limited to:

1. runway capacity;
2. apron capacity;
3. terminal capacity, with sub-analyses for check-in, gates, boarding procedures, security, immigration, and baggage reclaim areas; and
4. operational and environmental limits (curfews, movement caps, noise, etc.).

In order to understand the full impact of COVID-19 mitigation measures, cross-departmental input and consultation with relevant stakeholders involved in daily operations, such as aircraft operators and ground services, will be essential.

Capacity Recommendation #2: Schedule-facilitated and slot coordinated airports should ensure that their capacity analysis informs the most adequate coordination parameters for allocation purposes.

Consistent with the Worldwide Airport Slot Guidelines (WASG), airport operators should ensure that their capacity analysis informs the declaration of the most appropriate coordination parameters, which represent the maximum capacity available for allocation at a given level of service considering the functional limitations at the airport.

Reduction in capacity at slot-coordinated airports could impact aircraft operators' historic schedules. In this context, it is important to ensure that Coordination Committees, where they exist, are consulted.

The coordination parameters establishing the scheduling limits that can be coordinated or facilitated in a specified period should then be provided to the slot coordinator/facilitator.

Capacity Recommendation #3: Information sharing between airports and aircraft operators regarding operations during recovery.

To make timely decisions regarding the recommissioning of facilities and services, ongoing dialogue between airport operators and aircraft operators will be crucial. Receiving reliable flight schedules and thorough information on the aircraft operators' recovery plans while be essential to ensure that the supply of airport capacity is aligned with airline demand.

There are several risks to airport operators not receiving flight schedules in a timely manner, with impacts that would mostly be felt by passengers and aircraft operators. Providing less capacity than actual airline demand may lead to unnecessary flight scheduling constraints, airport congestion and delays, while providing more capacity than actually needed would increase the cost base of airports and induce an avoidable upward adjustment of airport charges passed to aircraft operators and passengers.

Airports are designated based on a demand and capacity analysis. Depending on the duration of the crisis and on local circumstances, the fall in airline demand could incite some airport operators to consider a change of designation (e.g., from Level 3 to Level 2). The Coordination Committee, if it exists, should be consulted to evaluate the best option based local factors.

3.4 Care of Decommissioned Assets

As businesses, airports are characterized by high fixed costs associated with their infrastructure and other fixed assets. These must be managed and maintained continuously during their lifespan, to ensure that they remain usable even if they have been temporarily decommissioned.

3.4.1 Temporarily decommissioned assets

Airports continuously monitor every asset daily when in service, according to a detailed preventive maintenance plan, and it is no less important to inspect temporarily decommissioned assets. When decommissioning assets over a lengthy period, Asset Care Management would change from a maintenance approach to one of inspection and monitoring. For instance, building systems in terminal buildings that are not in use may deteriorate, and daily inspection of buildings and systems is required to prevent incidents when recommissioned. As another example, in colder climates, decommissioning without precautions could lead water systems to freeze which may cause major damage and create additional costs and delay when recommissioning the area. Continuous visits of all decommissioned sites are important to monitor any anomalies such as noise, water, heat and odors.

3.4.2 Restaurants and retail stores

The sudden closure of terminal businesses could precipitate some tasks that were planned at later dates. Restaurants and stores gas and electrical supply could necessitate the need to be shutoff throughout the closure and inspected before returning to operation. The cleaning of restaurants grease traps also needs to be tended to, immediately following the decision of a lengthy closure in order to prevent eventual risks of clogging or fire.

3.4.3 HVAC Systems

HVAC systems are not conceived to remain shut down, and it is important to activate them on a regular basis during inspections to avoid unnecessary repairs and disruption during the restart.

3.4.4 Electromechanical equipment

Electromechanical equipment—such as boarding bridges, escalators and elevators—that are shut down must be inspected and periodically tested or started up. These requirements are different from the regular preventive maintenance plan due to issues such as lack of usage, humidity, etc.

Inspection of such decommissioned equipment is essential before returning them to service for passenger use, based on manufacturers' recommendations and National Building Codes.

Moreover, depending on the use of certain equipment such as escalators, either by the remaining passengers or employees, it is convenient to categorize them adequately. Maintenance protocols per category are to be defined and deployed, to make sure recommissioning goes smoothly. Thinking only of saving energy costs could be much more expensive if the minimum maintenance required is not performed.

In cooler and colder climates, it is imperative that power be maintained in all outdoor-based equipment such as jetways and pre-conditioned air units. This will maintain dryness and prevent humidity and condensation build up in the control box and avoid for the equipment to age prematurely. It is also important for escalators and elevators to be periodically inspected and put in function in order to prevent bearings and rollers from flattening.

3.5 Operational Readiness

Adequate planning is essential in preparation for the early days and weeks of restart of passenger flights, including constant attention to business continuity planning. This is equally true in the subsequent phases as operations build up.

Relationships with air carriers at an airport will be key, especially as their intentions may change rapidly. Liaison with contractors, unions, the air navigation service provider (ANSP) will also be important, as will issues of procurement of supplies, while the COVID-19 crisis continues.

Operational readiness assessment will also be a key topic. Lastly, for slot-controlled airports, capacity analysis and capacity declaration are also very important, as constraints and infrastructure closures are reduced.

When planning to restart aircraft movements and passenger operations on the airport, due to the COVID-19 crisis, much of the airport infrastructure and systems may be shut down or have undergone partial, restricted or no use for a prolonged period of time. In addition, in many cases, airport and service provider staff will not have been involved in normal operations for an equally prolonged period.

So as to adequately prepare for and manage this critical phase, airport operators should go through a thorough operational readiness assessment, similar to the process conducted when opening a new terminal, e.g., for all elements of the airport system that have not been engaged

in standard operations for a prolonged period of time. This process should be conducted as part of the overall ramp-up and restart plan that should be established by the airport operator.

Many methodologies exist to conduct this type of operational readiness testing. In practical terms, there are often two or three main stages to this process, as described in the table below. It is important to note that this process may have to be undertaken numerous times as the procedures and operating modes, related to the evolving health situation, are likely to continuously evolve over time.

Phase	Process	Description
1	Planning	This phase allows for the development of the operational assessment processes to be established and formalised, unless already existing. The assessment processes are most likely to be in the form of checklists to improve ease of use.
2	Execution and stabilization	This phase, which is to be initiated only once the operations are about to restart, includes a verification of the individual elements that are identified in the operational testing processes. Should any issues be identified, these would need to be addressed and stabilized allowing for a transfer to standard operations.
3	Operation	This phase is the result of the operational readiness testing and stabilization process whereby the normal operating conditions are regained, or as a minimum the modified operating conditions, for the specific element that is assessed.

Airport operators should consider applying an operational assessment process to all aspects of the airport system prior to recommencing normal operations. This assessment should be conducted on both infrastructures and systems (e.g., hold baggage sortation system, CUTE sets at check-in counters and gates, apron surfaces, runway lighting systems, potable water access points, etc.) that have not undergone normal operations for a period of time as well as on critical operational processes (e.g., rescue and firefighting (RFF), wildlife management, work site safety, etc.). All asset (infrastructure and systems) and process owners should be involved in the establishment of the testing check lists as well as participating in the field evaluation.

Given the number of stakeholders operating at airports, it is important that the airport operators coordinate operational readiness testing processes with them to be sure to have the overall picture of the airport system prior to restart.

4 Safety and Operations (V1.0 21 May 2020)

Assuring the safety of airside operations on the entire aircraft movement area (i.e., aprons, taxiways and runways) is a critical pre-condition for restarting operations and for the build-up of traffic thereafter.

At many airports in recent weeks, few aircraft operations (other than cargo) have taken place. Simultaneously, they have seen large-scale parking of unused aircraft which has brought its own problems.

The heavily reduced use of airside areas may have created gaps in the readiness of airside infrastructure, facilities, equipment and systems, which need to be restored to good condition. In addition, the staff providing airside services must be ready to resume operation, and re-trained if necessary.

On the positive side, the crisis may present an opportunity to increase airport operational safety, both on the airfield (manoeuvring area) and on aprons. If a minimum time separation of movements was enacted with increased physical distance between aircraft, this may translate into reduced collision risk. Discussions with ATC may enable such operational procedures to be introduced. Procedures could also be introduced for increased inspections of the movement area to reduce foreign object detection (FOD), wildlife and other hazards. Ground handlers may also be allowed more time per turnaround, resulting in less pressure on safety, in discussion with aircraft operators.

Opportunities also exist to focus on more environmentally friendly operations, which may also increase efficiency. For example, replacing the auxiliary power unit (APU) while the aircraft is at the gate by Aircraft Ground Energy Systems (AGES): this can save fuel consumption by aircraft operators, therefore reducing emissions and improving local air quality. ACI World Aircraft Ground Energy Systems Simulator (AGES-S) calculates both environmental and economic benefits supporting airports to develop a business case to invest in this type of infrastructure/equipment.

4.1 Safety Implications with Parked Aircraft

Long-term parking of aircraft may lead to risks to infrastructure and safety, including:

- damage from the use of pavement in a way not originally intended;
- aircraft damage, especially the risk of collision during parking manoeuvres with minimum clearances;
- runway or taxiway incursions; and
- issues around aircraft access and availability.

To provide advice on mitigation, ACI has produced an Advisory Bulletin on 24 April 2020 titled “Mitigating the risks created by overflow aircraft parking”: https://aci.aero/wp-content/uploads/2020/04/200423-Airfield-Parking-Advisory-Bulletin-FINAL_001.pdf

This section deals with safety risk assessments to make sure that all pavements that may have been used for parking (especially taxiways and runways which are not designed for parking) are safe for their intended purpose, before and after restarting operations.

What to consider before restarting operations:

- Assess pavement strength: It is important to assess the pavement strength to ensure the pavement can accommodate the loads that it is intended to. Airport operators to check Aircraft Classification Number (ACN) and Pavement Classification Number (PCN) compatibility.
- Monitor pavement condition: Airport Operations should complete a visual check of all surfaces that were used to park aircraft. In cases were aircraft were parked on taxiways and runways, Airport Operations should take photographs of the airfield while the aircraft are parked in the different locations and after the aircraft have been moved. These photos can be used later if there is some structural distress found in the pavement (if there is reason to bill a particular airline for that repair). The airport operations team should also conduct a specific check of the same area about one month after return to normal operations and check the areas to see whether there have been any changes to the pavement.
- Clean pavements: After aircraft have been moved off a taxiway or runway, the areas should be washed down and brushed or swept to remove any oils, grease or other chemicals that might have been deposited on the surface as a result of maintenance activity or leakage, and also remove any FOD that might have been deposited on the surfaces while they were being used as parking locations.
- Review procedures: Procedures to use, access, inspect and maintain infrastructure may have been changed during the COVID-19 outbreak. Airport operators should review all the related procedures and adjust them accordingly.
- Coordination: Planning for restarting operations requires enhanced coordination with all the stakeholders. Airport operators should ensure all their actions and safety risk assessments are coordinated with relevant stakeholders.

What to consider after restarting operations:

- Monitoring of pavement condition: Airport Operations staff should periodically conduct specific checks of the areas where aircraft were parked after normal operations to see whether there had been any changes to the pavement. It is recommended to repeat these checks at least twice a month, and a special continuous monitoring schedule should be set up for those areas. When inspecting the pavement, deterioration that should be documented includes, for example:

    - depressions on flexible pavements under wheels;
    - ripples and bumps;
    - puncturing; and
    - damage from fluid leakage.

4.2 Recommissioning Aircraft (in partnership with carriers)

When an aircraft is being returned to service after long-term parking or storage, the appropriate checks and tests to ensure airworthiness must be performed by its operator. All systems will be operationally tested according to the manufacturer's instructions and regulatory requirements. Airports are recommended to produce a coordinated plan for aircraft returning from long-term parking or storage. Some of the parked or stored aircraft will require taxi tests, engine ground run-ups and/or check flights before they can be returned to service. Some aircraft might require high-

volume defueling or fuel system flushing and tire replacements before they can be moved or towed.

The plan should focus on sequencing - which parked aircraft will be worked on and when, and what type of tests and facilities they will need before being returned to service. The plan should be initiated by the aircraft's operators (maintenance and flight operations) and coordinated with related stakeholders, including ATC and airport airside management. It should include an aircraft towing plan.

To complement the plan, it is recommended that airports issue a directive on aircraft returning to service after long term parking or storage.

4.3 Recommissioning Aprons, Taxiways, Runways, Lighting, Markings, Signs, Facilities, etc.

Airport operations should complete a visual check of all surfaces that were used to park aircraft and that may have been damaged by long-term parking. In cases were aircraft were parked on taxiways and runways, Airport Operations should take photographs of the airfield while the aircraft are parked in the different locations and after the aircraft have been moved. These photos can be used later if there is some structural distress found in the pavement (if there is reason to bill a particular airline for that repair). Airport Operations should conduct a specific check of the same area about one month after normal operations restart and check the areas to see whether there had been any changes to the pavement.

Specific recommendations are in four tables below: Generic (common to all areas); Aprons; Taxiways and Runways.

4.3.1 Generic

Problem	**Cause(s)**	**Possible Impact**	**Possible Solutions / Recommendations**
<u>Capacity</u> ➢ Aprons ➢ Taxiways ➢ Runways	Stored, unused aircraft	▪ Reduced capacity ▪ Reduced efficiency ▪ Increased turnaround times	*See specific sections*
<u>Maintenance</u> ➢ Aprons ➢ Taxiways ➢ Runways	Less resources due to low traffic volume and economic crisis Systems not used or disconnected	▪ Fewer maintenance personnel available to conduct works due to taking mandatory leave, absence and physical distance requirements ▪ Out of service of electric systems ▪ Increased safety risks in case of reduced	▪ Identify operational and safety risks prior to restarting operations. (Checklists should already be available for normal operations) ▪ Take mitigating measures plan to control risks ▪ Necessary (preventive) maintenance works to be completed prior to restoring operations

		performance of markings/signs/lighting ▪ Deterioration of surface due to long-term static loads ▪ Increased risk due to reduced inspection capability (resources) ▪ Increased risk of compliancy issues	▪ Maintenance planning and priorities to be re-evaluated, different scenarios considered (temporary/short/medium/long term) ▪ Obtain simplified authorization process with CAA if possible. If that works, propose to make that the new standard.
<u>Works</u> ➢ Aprons ➢ Taxiways ➢ Runways	Lack of resources	▪ Increased risk due to reduced inspection capability (resources) ▪ Risk of compliancy issues	▪ Identify operational and safety risks prior to restarting operations ▪ Take mitigating measures plan to control risks ▪ Consider temporary / quick vs long term / definitive solutions ▪ Obtain simplified authorization process with CAA if possible. If that works propose to make that the new standard.

4.3.2 Aprons

Problem	Cause(s)	Possible Impact	Possible Solutions / Recommendations
Capacity	Stored, unused aircraft	▪ Reduced apron capacity ▪ Less efficiency due to towing/manoeuvring ▪ Increase of turnaround times	▪ Plan availability with priority for contact stands and remote stands close to terminal to reduce the number of buses needed ▪ Priority to fully equipped apron parking stands (fixed electrical ground power, pre-conditioned air, fuel pit, airbridge) to increase handling performance, reduce turn-around times and reduce workload for ground-handlers ▪ Apply extra taxi/towing time if extra ground movements foreseen. May influence turnaround times ▪ Apply longer turnaround times and take this into account for capacity predictions/monitoring

			▪ Update target off-block time algorithms and make maximum efforts to update
Maintenance / Apron	*See Generic / Maintenance*	*See Generic / Maintenance*	*See Generic / Maintenance, plus:* ▪ Inspection of pavement condition ▪ Check of signs and markings ▪ Check of apron lighting
Works /Apron	*See Generic / Works*	*See Generic / Works*	*See Generic / Works*
Fuel systems	Specific maintenance required to restart fuel apron facilities	▪ Risk of interrupted fuel supply (due to fuel contamination or clogged filters)	▪ Check with HFS operator and fueller before restarting operations
Flight waste management	Risk of virus spread	▪ New measures could be necessary for aircraft waste management, catering, water supply, waste management infrastructures, systems or procedures	▪ guidelines or checklist to be checked and amended accordingly ▪ Awareness campaign for all stakeholders involved (e.g., GHs, airline crews, maintenance personnel) → *refer to local health regulations*
Potable Water	Specific maintenance may be required to restart potable water supply	▪ Risk of water contamination	▪ Check infrastructures and vehicles for quality including (bacterial) contamination

4.3.3 Taxiways

Problem	Cause(s)	Possible Impact	Possible Solutions / Recommendations
Capacity	Stored, unused aircraft	▪ Reduced taxiway/taxilane capacity ▪ Less efficiency due to towing/manoeuvring ▪ Increase of turnaround times	*See Generic / Capacity, plus:* ▪ Make impact assessment for normal and LVP operations • increased taxi/towing times • increased turnaround times
Maintenance / Taxiways	*See Generic / Maintenance*	▪ *See Generic / Maintenance*	*See Generic / Maintenance, plus:* ▪ Inspection of pavement condition ▪ Check of signs and marking ▪ Check of airfield lighting ▪ Check of energy supply systems ▪ Check of systems protecting for RWY incursions and ASMGCS ▪ Check presence of mobile obstacles ▪ Check presence of material interfering with (ILS) sensitive areas
Works / Taxiways	*See Generic / Works*	*See Generic / Works*	*See Generic / Works*

4.3.4 Runways

Problem	Cause(s)	Possible Impact	Possible Solutions / Recommendations
Capacity	Stored, unused aircraft	▪ Reduced runway capacity ▪ Apron management service, AMAN and DMAN change ▪ More staff for RFF services ▪ More staff for inspections and	*See Generic / Capacity, plus:* ▪ Plan availability with evaluation of RFF category needed ▪ Apron management in normal and Low visibility conditions in concert with ANSP ▪ Make impact assessment for normal and Low visibility operations • increased taxi/towing times

		Wildlife management	• increased turnaround times
Maintenance / Runways	*See Generic / Maintenance*	*See Generic / Maintenance*	*See Generic / Maintenance, plus:* ▪ Inspection of pavement condition ▪ Check of signs and marking ▪ Check of airfield lighting ▪ Check of energy supply systems ▪ Check of systems protecting for RWY incursions and ASMGCS ▪ Check presence of mobile obstacles ▪ Check presence of material interfering with (ILS) Sensitive areas ▪ Check NAVaids for unused runways during reduced operations period
Works / Runways	*See Generic / Works*	*See Generic / Works*	*See Generic / Works*

4.4 Bringing back Furloughed Staff

Airport staff may have been furloughed for short or longer periods of time. Consequently, skills ~~and~~ can be reduced or even forgotten when staff return to work, despite previous qualifications. Also, some airports might hire staff on temporary contracts to have an agile and flexible set-up in terms of up- or downscaling of operations.

Airports are advised to restart in a controlled environment, where the risk of safety incidents related to unpractised experience, for example, is reduced.

Assessment of retraining or recertification of staff is required, depending how long they have been away from the job is highly recommended. For staff training and during initial phases of recovery, use of online and virtual classrooms should be maximised when possible.

Airports are advised to map safety critical functions, the associated and mandatory skills and qualifications, and the criticality of those. Permanent as well as temporary staff should be given necessary training corresponding with those requirements and obtain status on the defined training before being tasked with safety critical work.

Based on criticality—staff working in critical zones of the airport such as essential maintenance and/or inspections on the manoeuvring area, or with asset management of critical CNS/MET infrastructure, for instance—should be given high priority and should hold status on defined, mandatory skills and qualifications before any task is conducted. Given the circumstances, an additional proficiency check could be considered a useful method in a controlled recovery process.

Limited access to the manoeuvring area for safety reasons could be considered another effective measure in terms of reducing the likelihood of an unsafe event during the phase of recovery.

Expiration of licenses is a topic that airports might want to discuss—and consider potential extenuating circumstances for—with their civil aviation authorities (CAAs). In preparation for this dialogue, it is recommended to support any proposed changes to defined requirements and/or timeframes with the results of a Safety Risk Assessment.

4.5 Human Factors in Airside Safety Management

Airport operators and users' staff find themselves in an abnormal situation. Airports are advised to take human factors into consideration, since mental distractions can affect staff behaviour in various ways, for example:

- The consequences of the epidemic might cause concerns related to short-term and long-term perspectives related to employment, health and safety of colleagues, family and relatives, etc.
- Airports are encumbered by parked aircraft in various locations not normally used for that purpose. As a result, some airports have seen an increase in aircraft/airport damages due to human factors.

Awareness campaigns are highly recommended as a mitigation, promoting the importance of mental fitness and awareness of how mental distractions can affect safety behaviours and create risks.

4.6 Rescue and Firefighting (RFF)

4.6.1 Planning

Preparations for opening the aerodrome should be communicated at least one month prior to full operations. The following recommendations apply when resuming RFF operations after a full or partial shutdown. The plan should cover RFF activities for the protection level to be provided, including the items listed below.

ICAO Annex 14 and ICAO Doc 9137, Part 1 require that the level of protection must be commensurate with the fuselage length and size, and frequency of aircraft operating to the aerodrome, which leads to determination of the RFF Category and the number of vehicles required for that category. Notification of any change in Category should be communicated to ATC.

Planned aerodrome movement activity should be provided as early as possible to the Rescue and Firefighting Service (RFFS), to identify the number of staff required at a time to maintain the level of protection for the operated aerodrome RFF Category.

Sufficient rescue and firefighting staff should be available during operational hours to be able to operate vehicles and equipment at its capacity, meet response times, and discharge the required number of agents. The operational hours for duty shifts should be scheduled such that there is enough time for shift rotation.

4.6.2 Staff

On returning to work, all staff should be briefed on the activities to be performed with regard to RFF Category as well as their responsibility and operational hours. Staff who were asked to stay off duty should undergo validation of their skills and competence.

All RFF personal protective equipment should be inspected and cleaned prior to use.

4.6.3 PPE and Cleaning

As with other staff and facilities, new measures should be implemented to assist with the prevention of the spread of viruses. These include:

- hand-washing facility with running water and soap;
- provision of alcohol-based hand sanitizers;
- maintaining physical distancing; and
- for staff and teams working on shifts, encouraging contact-free handovers, i.e., via telephone, videoconference and electronic logs.

4.7 Equipment

Prior to restart, serviceability and equipment inspection and maintenance should be conducted on all equipment and appliances. This should include:

- All fire tenders to be tested to guarantee their acceleration and speed tests.
- Checking of rescue equipment on appliances. Ladders, firefighting PPEs, self-contained breathing apparatus (SCBA) and media, etc. to be checked.
- All aircraft emergency response procedures to be reviewed.
- Ensure that reserve of foam concentrate is equivalent to double the quantities identified in Table 2-3 of ICAO Doc 9137 is available for vehicle replenishment purposes. Complementary agents should be equivalent to 100%.

4.8 Aerodrome Inspections

Where areas of an airport have been unused, inspections should be carried out, including:

- Emergency access route/gate inspection
- Serviceability of perimeter roads
- Inspection of critical rescue and firefighting access area (CRFFAA)
- Inspection of water hydrants and supply systems, including pressure flow test

4.9 Wildlife

Daily operations at airports have been dramatically reduced and some airports have even closed down temporarily. This may lead to increased presence of wildlife on and around the airport and increased risk of wildlife related incidents.

Wildlife hazard management during changed operational circumstances should include risk assessment, mitigation actions, recovery planning (resumption) and stakeholder management. What follows is basic guidance material, and subject to change depending on the local circumstances of airports (i.e., geography, climate, presence of local species, etc.).

a) Resumption: What to consider preparing for return to normal?

- Revise/update Safety Risk Assessment and related control measures:
    - If necessary, adapt control measures based on the revised Safety Risk Assessment.
    - If there have been limited wildlife management activities during the outbreak, pay special attention to consequences such as:
        - risk of increase of (especially high risk) species;
        - habituation: species becoming accustomed to the absence of dispersal activities; and
        - bird nests might occur, especially during their mating season.
- Maintain and act according to regular safety procedures after a runway is put back into use.
- Regular safety procedures should include detailed inspections to check for (remains of) wildlife.
- Stakeholder management—What to communicate and with whom?
- Inform home carrier, other operational aircraft operators and relevant stakeholders about wildlife measures taken.
- Ask aircraft operators (technicians) that make use of parking stands, on runways, taxiways and the APRON for instance, to pay extra attention to possible bird nests at the aircraft including in the engines if these are not covered, noting that crow and pigeon species might try to build nests. Look out for birds flying to and from parked aircraft.

b) Mitigation action: Preparing for increased operations:

- Continue active wildlife control in line with Wildlife Hazard Management Plan (WHMP). Do not give wildlife any change to establish itself on the runway, taxiway, APRON, equipment or buildings.
- Continue regular wildlife counts (business as usual). Keep collecting data and guard liability of previous data by systematically continue counting/logging.
- Pay special attention to the removal of nests of territorial birds that come back yearly to nest in the same area, e.g., lapwings.
- Execute mowing activities while there is little risk of attracting wildlife that is a potential threat to incoming or departing aircraft.
- After mowing activities, give birds of prey the opportunity to land on and clean the meadows (needs to be managed by experienced staff).
- Take time for detailed inspections, searching for possible “hotspots” that attract wildlife, especially in areas where access during normal operations is limited.
- Log every habitat hotspot (preferable on a digital device), produce and manage an overview that is up to date.
- Prevent the return of undesirable flora that might attract wildlife.
- Pay special attention to the growth of bushes at edges of meadows, around tunnels and emergency exits on and around airside—remove bushes carefully preferably including roots.
- Search for standing water, weeds (e.g., hogweed), soil irregularities (that might attract wildlife in any way (e.g., burrows of moles and rabbits).
- Take time to repair fences to keep wildlife out.

- Take time for detailed inspections of water bodies and remove water plants, overgrowth, etc., according to local environmental law.
- If necessary and legal, it may be a good moment to make use of lethal methods, making sure to remove carcasses to avoid scavengers.

4.10 Protection of Airside Operations Staff

Measures taken during the crisis should be continued as possible and as long as needed. These may include:

- Limiting on-site operations and maintenance staff to those required for safety-critical functions or to those carrying out functions that cannot be done remotely (use teleworking where possible).
- Reducing exposure of employees by using virtual communication where possible.
- Limiting contact between operations teams at shift changeover times.
- Physically separating the operations team by using a backup operations control centre (if existent) as well as the main operations centre. This can avoid a whole team being out of operation because one person has become unwell.
- Operations shift teams should not be mixed; shift rotations should retain the same team members so that one sick person can only affect one team. Solo working, rather than working in pairs should also be considered. The congregation of staff in break rooms should also be reduced.
- Keeping physical distance between individuals within teams.
- Reducing hard-copy document sharing.
- Every manager or team leader should have a replacement who does not meet face to face with him/her.
- Airports should have a pool of individuals who are at home but on call in case of need.
- Increased cleaning of work areas and equipment.
- Any member of staff showing signs of a cold or flu must stay home until medically evaluated.
- Permitting staff to use car parking closer to terminals and the work location—avoiding the need for staff to be in close proximity on buses.

4.11 Ground Handling on Apron Areas

See section on Aprons above and also refer to International Air Transport Association (IATA) guidance at https://www.iata.org/en/programs/ops-infra/ground-operations/

4.12 Actions

- Assess pavement, aprons, runways, facilities and equipment
- Work with air carriers towards planning for recommissioning aircraft
- Plan for recommissioning furloughed staff, including training and certification requirements
- Plan for restart of rescue and firefighting services
- Consider measures pertaining to wildlife management
- Plan for physical distancing and protection of operations staff

5 Airport Operations Control Centre (AOCC) (V1.0 21 May 2020)

5.1 Coordination

The business recovery phase after the unprecedented shut-down of global aviation in the course of the COVID-19 pandemic crisis will pose a considerable operational challenge for airports worldwide and the main burden for ensuring a controlled and coordinated ramp-up will be placed on the centralized operational unit, or Airport Operations Control Centre (AOCC) when applicable, as the centralized coordination cell of the stakeholder community of an airport.

If an airport does not have an AOCC in place, the creation of a centralized coordinating unit for managing recovery is recommended, with clearly defined communication channels and responsibilities as described below.

Below are some recommendations to ensure the business continuity of the AOCC during a crisis.

5.2 Secondary Location of the AOCC

Some airports, as part of their pre-COVID-19 business continuity plan, may already have established a secondary location in the event that the primary AOCC location must be evacuated. Because of the criticality of the AOCC continuous operation, consideration for a backup/secondary AOCC is paramount.

In the event of the AOCC primary location must be evacuated, a standby team/plan should be triggered in order to activate the AOCC backup location. All health and safety measures in place at the AOCC should also be applied to the backup location (i.e., PPE, cleaning/disinfectant products, etc.).

Other considerations:

- Split the AOCC team's and functions between the primary and backup location. Measures to prevent cross-contamination between the primary and backup location should be in place.
- Backup AOCC should be active prior evacuating the primary AOCC.
- Establishing a second backup location in the event that the first backup option is not accessible or available.

Any backup location should be equipped to sustain at least 72 hours of operations.

5.3 Aircraft Operators, AOCC and other Stakeholders' Communication

Additional coordination and communication effort will be required, as for an extended period of time, flight schedules will not be as stable and predictable as usual, and many travel restrictions will still continue to apply in many countries that require a lot of special handling procedures and passenger segregation processes to be managed.

At the same time, airport capacity may only be partially available as apron areas, taxiways and in some cases, runways may still be blocked for parking of stored aircraft of grounded fleets. Also, part of the terminal building might be temporarily closed or decommissioned in order to recover revenue losses through reduced manpower effort for maintenance, cleaning, security and customer services as well as in order to save energy consumption.

An adequate briefing and use of conference platforms between aircraft operators, other stakeholders and the AOCC ensuring that participating airline staff can make key management decisions, should be established on a regular basis.

Particular emphasis should be placed on maintaining an even closer than usual coordination with the Maintenance Operational Control Centre and the Operations Control Centre of home-based operators, which might involve daily dedicated telephone conferences to align on the aircraft return to service plan.

NOTAMs in effect for temporary closure of taxiways or even runways need to be cancelled or adjusted and ATC needs to be advised well in advance to ensure that temporarily closed runways are back into operation when the demand is there. It is also required that all critical stakeholders, service providers and government authorities are advised in advance on ramp-up schedules and any plans of the airport operator to return temporarily closed facilities into service. This will give adequate advance notice to adjust staffing levels accordingly.

5.4 Stakeholders' Responsibilities

Aircraft operators: As health regulations for cleaning aircraft will vary from country to country, it is the aircraft operator's responsibility to notify the AOCC of these requirements in a timely manner so that the AOCC can assess if those requirements can be provided or not. Based on the outcome, the AOCC will coordinate gate assignment and other common use terminal equipment. Aircraft operators should also advise on special cleaning or disinfection measures applicable on their aircraft that may affect turnaround times or Precision Time Schedule (PTS).

Ground handlers: Should notify the AOCC of any capacity limitations to handle aircraft turnaround.

ATC: Should notify the AOCC of any pilot-reported issues related to COVID-19 of all incoming/outgoing flights.

Customs and Immigration: Should advise on any manpower shortages or any health-related documentation procedures during immigration and customs procedures.

Law Enforcement / Security Team: Should advise on any specific requirements or procedure changes.

Local Health Authority / Port Health Authority: Should advise on local/national health restrictions or procedures applicable for travelers from all origins or for travelers arriving from certain origins as well as commonly applicable measures imposed on airports or other public buildings that need to be followed.

AOCC: Communicate all new/updated processes that could impact any stakeholder in a timely manner. This should consider decisions from higher authorities (government, operators, executive level, etc.).

5.5 New Requirements and AOCC (parking assignment)

In the business recovery phase, the traffic patterns and characteristics might change dramatically over the seasonal schedule and short notice variations need to be expected on a daily basis. This may result in more manual updates and, therefore, a greater risk of errors in flight data management and resource allocation. Special procedures to be applied for certain flights related to local restrictions and rules applicable for particular destinations might significantly constrain the flexibility and capacity in resource assignment.

The following scenarios should be considered:

- Unusual traffic patterns as many ad hoc flights complement regular services or will in an unusual way even feed scheduled services.
- Private, government aircraft, executive jets, will feed long haul scheduled flights, which might require that general aviation flights need to be accommodated on the main commercial airport instead of a nearby general aviation reliever airport to facilitate transfer in times when multiple immigration restrictions still apply.
- At some hub airports, those charter flights will connect with scheduled services. Often special arrangements need to be made in order to facilitate the transfer from charter to scheduled services, which entails that certain operators or types of traffic might need to be allocated to other terminals than usual or in some instances require even tail-to-tail transport of passengers to be arranged.
- Special approvals from State authorities need to be obtained in due time.
- Special pre-departure measures.
- Special arrival measures, if an incoming flight is suspected not compliant with your government measures.
- Identify where new technology/equipment (such as thermal screening, testing, PPE, etc. required by other States) might be supplied or where certain arrangements for storage and dispensation of PPE can be made or where other special procedures can be performed.
- The instability of the schedule most likely needs to be expected to persist over the reminder of the entire flight schedule season or even beyond as travel restrictions in effect in many countries will only gradually be relaxed and the business life in many countries will only gradually recover which makes it very difficult for aircraft operators to predict demand.
- Airline bankruptcy and/or or fleet size and network reductions.
- Very instable schedules and a many of ad hoc changes such as one-off charters, cancellations, service reinstatements, aircraft type and rotation changes, and even schedule changes.
- Special hygiene and disinfection procedures will require extended ground times of aircraft that are arriving from high-risk countries which might affect schedules or result in aircraft changes,
- Unusual traffic patterns as many ad hoc flights complement regular services or will in an unusual way even feed scheduled services.

- Aircraft of home-based carriers that are stored on other airports are repositioned to their base airport where they undergo extensive maintenance prior to re-entry into service and need to be accommodated along operational and stored aircraft.
- Many towing movements need to be coordinated by AOCC as required to unlock return into service operational aircraft that are locked—in by aircraft that are still in long term storage and in order to facilitate various maintenance activities including engine runs as required before an aircraft may return to service.
- Ensure that resource allocation rules in Resource Management IT systems are being reinstated after they have been temporarily overridden or deactivated to accommodate stored aircraft in denser non-standard parking configurations.
- Adjacency restrictions, e.g., wing-tip clearances of temporary contingency parking stands with regular parking stands need to be observed.
- Additional stand and gate allocation rules might need to be generated in the database of the Resource Management tool in order to reflect new public health related requirements as physical distancing or segregation of passengers or other measures as thermal scanning. Examples are certain destinations or origins only to be accommodated at specifically equipped gates or certain aircraft to be exempted from certain gates as the hold room capacity may not be adequate in accordance to new physical distancing standards, etc.

For an AOCC, this means an increase of manual effort of flight schedule updates which might result in a higher probability of errors and increased manpower requirements, as well as an increased need for coordination.

The AOCC also has a pivotal role to ensure that temporarily closed down terminal and apron capacity is reinstated, in line with the resumption of demand, and hereby ensuring that adequate capacity is supplied to accommodate demand while maintaining newly imposed physical distancing demands at bottlenecks.

A very critical phase for the AOCC will be when aircraft operators are gradually reinstating stored aircraft back into service, as for a prolonged time the ratio between operational and storage parking stands needs to be carefully balanced and conflicts between operational and stored aircraft should be avoided in order to ensure adequate supply of capacity and for the safety standards not to be compromised.

5.6 Managing Stranded Connecting Passengers

As countries start to relax travel restrictions, transfer and transit operations will be reactivated in most airports. However, due to volatile or incorrect information, transfer passengers may be stranded in the airport if their connecting flight is cancelled or their onward travel is not permitted by the destination country.

Additional constraints such as immigration procedures might not allow for certain passengers to enter the country, thereby limiting access to a hotel outside of the terminal building. The AOCC might need to advise concerned parties (Terminal Operations, Airport Duty Manager, Immigration, Welfare Services, etc.) on the presence of stranded passengers in order for the airport, in collaboration with the aircraft operator, to either facilitate exceptional restrictions from immigration rules or to ensure that passengers will be appropriately treated in the transit area. For example, certain locations equipped with foldable cots or in areas where food can be supplied as even F&B outlets at the airport may still be closed or only be in limited operation.

Upon notification from the aircraft operator of such cases, the AOCC will coordinate the handling and respond according to local health regulations and appropriate operation procedures. During this pandemic situation, the health condition of the transfer passenger will be closely monitored on top of other established procedures to handle stranded transfer passenger.

5.7 Inside the AOCC

5.7.1 Reduce staff contact

The AOCC is usually a compact working place with staff working closely together. To reduce the risk of infection, measures to reduce the number of staff and gathering in the centre could be considered, such as:

- activate backup centre to spread out the workforce;
- reassign tasks to other office locations if possible;
- stagger shift handover time of different teams or sections;
- reduce or scale down briefings and meetings; and
- workplace physical distancing with the use of plastic dividers, more spaced out workstations, etc.

5.7.2 Working from home for the AOCC

Depending on regulations and restrictions of the AOCC, working from home arrangements for some duties or tasks could be considered, such as:

- telephone or hotline call receiving centre stand;
- gate or arrival baggage reclaim belt assignment planning for next day; and
- recording function, administrative tasks and complication of statistics and reports.

5.7.3 PPE for AOCC personnel

While the AOCC may be in a different part of the airport, the access to the AOCC is restricted to authorized staff. Therefore, the chance of contact with the general public is minimal when compared with other airport staff. Nevertheless, the provision of suitable PPE for AOCC staff is still recommended. This could include requesting all AOCC staff to wear a face mask at work. Provision of disinfection gels or sanitizers in AOCC should also be considered.

For AOCC staff that may be required to carry out tasks in the terminal building or other areas where contact with passengers or the general public is expected, refer to your country's ministry of health directives. Additional PPE, such as gloves, goggles, face shield, caps and gowns, or shoe covers, will be required based on local health recommendations.

5.7.4 Additional Restriction Measures to Access the AOCC

On top of the normal restrictions of access to the AOCC, additional measures could be imposed. These measures could include:

- under certain conditions (for example staff with fever/high body temperature, a direct family member or roommate in shared accommodation testing positive to the virus, etc.) access to the AOCC should be denied;

- non-critical maintenance, refurbishment or renovation work in the AOCC should be postponed;
- visits, trainings and presentations in the AOCC should be suspended;
- office equipment, pantry supply, PPE delivery, mail delivery and consumables supply should be centralized to reduce the frequency and access by logistics personnel; and
- airport staff without PPE should not enter the AOCC.

5.7.5 Shift Patterns

To reduce the safety risk for the staff working at the AOCC, some best practices should be implemented. Alternating teams should be formed and contact with members of the opposite team should be limited to avoid possible contamination.

A reserve team could also be considered, to be activated if one of the alternating teams must quarantine. A reserve team would be assigned at a safe place (working from home, for example). This could also support the team on duty by performing some support functions, administrative work, or undergoing training from home. The reserve team should be kept informed on all activities and operational developments of the AOCC to ensure they are updated and ready to take-over when necessary.

5.7.6 Common use equipment in the AOCC (mouse, keyboard, etc.)

There is much common use equipment and facilities in the AOCC such as computer keyboards, mouse, telephone set, hand-held TMR/VHF equipment, CCTV control board, mobile phone, keys, working console and seating, etc. The cleanliness and hygiene condition of such equipment is essential to the health of all AOCC staff. An increase in the cleaning frequency and disinfection of this equipment and facilities should be arranged. After each changeover of shift, common use equipment should be thoroughly disinfected with the appropriate products.

Some airports are using a second set of common equipment (such as keyboard, mouse, etc.) to speed up the changeover of shift.

5.7.7 AOCC response for a confirmed team member with COVID-19

The AOCC is an enclosed working place with long working hours and close working proximity. Depending on local health regulation, when one of the AOCC team members has tested positive, quarantine measures may need to be applied to the whole team. To fill the deployment gap, a backup plan or backup team will be needed to replace the team being put under quarantine. Contact tracing for other staff the team member has been in contact with may also be required.

There may also be local health regulations to thoroughly clean and disinfect the centre after a staff member testing positive. In that case, the backup centre will need to be activated to take over the operation and function of the closed AOCC. Advance health checks and readiness of the backup centre should be in place.

5.7.8 AOCC Response to a confirmed pax with COVID-19

The handling of a passenger (departure, arrival, transfer/transit) confirmed with COVID-19 will follow the local health regulations. The AOCC should have established and maintained a close liaison with the local Health Department as the centre to receive such information. The AOCC will

then disseminate the information and details to the relevant airport organizations and staff to implement their own response and precautionary measures.

These measures could include:

- inform airport staff that may have had close contact with the passenger, such as aircraft operators, handling agents, passenger services, security, immigration, customs, border control, police, etc.;
- clean and disinfect public places where this passenger had contact, such as toilets, seating areas, boarding gates, transfer points, security points, telephone kiosks, etc.;
- inform owners and operators of places where this passenger had contact, such as restaurant or food courts, airline lounges, duty free or retail shops, etc.; and
- for some airports, there may be relevant sections in their Emergency Planning Manual or Operations Manual to deal with such situation. The AOCC will then coordinate and implement the procedures accordingly.

5.8 Emergency Operations Centre (EOC)

It is recommended that the EOC remains functional during the pandemic crisis and during the immediate restart phase. Although the current crisis might be the top priority of all airport stakeholders, the risks of other disastrous events remain. Due to drastic drops in volume, the likelihood of such events has been reduced but the requirement or expectation to perform during such events remains.

These other emergency situations (such as aircraft accidents or acts of terrorism) require a solid command, control and communication structure that can cope with a fast-paced, evolving situation. In such instances, the EOC and Mobile Command Post remain the best tools to mitigate the impacts.

If the EOC will be activated (although maybe in an alternate location), this should be communicated to the stakeholders. The special protective measures related to the pandemic crisis should also be applied to the EOC.

5.9 Actions:

- Consider a secondary location of the AOCC.
- Provide adequate, frequent communications with aircraft operators, ground handlers, and all stakeholders to disseminate important information. Work with aircraft operators to have a plan in place for transiting or transferring passengers who could become stuck due to onward travel restrictions. This plan should focus on passengers who may not be allowed to leave the terminal and should include access to beds or cots, and food and beverage.
- Reduce staff contact within the AOCC through divided workstations, a back-up centre, and the reallocation of tasks to a different location.
- Provide basic PPE (face mask, hand sanitizer) for all AOCC staff.
- Disinfect all common use equipment and working stations within the AOCC, or provide a secondary set of equipment to ensure a faster changeover.
- Consider creating a Reserve Team for the AOCC, working in a location separate from the AOCC. This Reserve Team could be activated should one of the primary teams become quarantined.

6 Employees and Human Resources (V1.0 21 May 2020)

The COVID-19 pandemic has been primarily a health and human issue, but it has far-reaching financial and economic ramifications that affect the health (physical and mental) and well-being of employees and their families.

As we airports restart and resume a “new normal” of operations, they will need to maintain the highest health and safety standards. Organizations should develop a proper plan of how to manage the post-closure (reduced operations) issues with all concerned parties such as trade unions, individual airport departments, and contractors. Additionally, airports must show consideration for their employees, building trust, improving morale and demonstrating confidence.

6.1 Employee Experience

Since the customer experience is mainly about encounters between humans, they all need to be in the best state of mind to get the most of these interactions. Unfortunately, passengers and staff will likely worried about their own health and that of their families. The fear factor and physical distancing are causing an increase in stress and anxiety. During these challenging times, caring for customers starts with thinking first about employees and stakeholders. A big risk for airports would be to focus on recovery and customer experience strategies while taking employees for granted.

As this self-awareness around keeping healthy is increasing and in order to act to satisfy the customer, airport employees need to have the right tools and guidance to perform their job safely during the crisis. Employers (airports or stakeholders) must provide new tools, remote training, and support to enable employees to deliver superior customer experience in a new environment.

6.2 Employee Health and Wellbeing

Organizations should always be concerned with employee health and wellbeing, but it is especially important in times like these. Due to the current situation, in addition to being stressed over their own health and the health of their families, many employees are outside of their comfort zone and have lost the possibility of meeting socially with friends and family, in many cases, which could have an impact on mental health and physical wellbeing. When available through an airport employee assistance program, it is important to offer psychological support and counselling.

For staff temporarily sent home or working remotely, a prerequisite to a smooth recovery is that the airport provides frequent news and updates and the direct manager has regular communications with their employees in order to keep them engaged with the airport. Regular remote meetings and discussions are also a great opportunity to ask them how they feel, if they are isolated, or feel anxious and check if they are well installed and safe at home.

6.3 Employee Experience Pre-recovery

An airport must provide training and information about any new processes introduced as a result of COVID-19. A refresher about customer experience might be very useful. It is also an effective way to communicate airport customer experience and recovery strategies.

Listening to the voice of employees during this time is paramount to maintaining employee engagement and buy-in. Means such as virtual suggestion boxes, surveys and remote work groups are ways to engage employees and maintain or increase their commitment, making them feel they are part of the solution to recovery. Virtual task forces dedicated to engage employees with the changing expectations for customer experience are recommended.

Communication will be key to keep airport and stakeholder employees engaged. Transparency in the messages to gain trust and enhance relationships is important. The communication must also start to answer employees' basic needs, such as security and health.

Airports and stakeholders' leaders must pay particular attention to employees that are vulnerable (+65 years old). Until a vaccine is available, interaction with older generations may be severely restricted or perceived as high risk.

6.4 Gathering Feedback

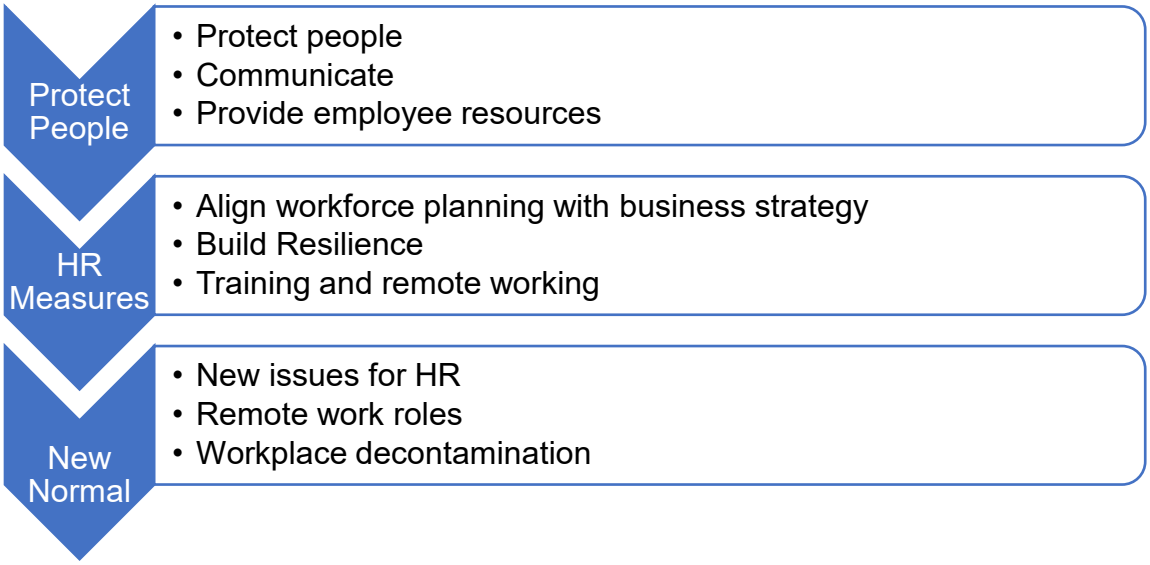
It is important that airports listen to employees' opinion during the recovery phase. Frontline employees are a company's eyes and ears on the ground. Soliciting and collecting employee feedback about how customers are feeling and how daily interactions are changing is a good way to help airports listen to the voice of employees and help them to innovate.

If not done during the pre-recovery phase, employees should be asked what they need to do their work and monitor their level of engagement. Getting the voice of employees will help measuring the employee engagement and experience and plan various initiatives to improve.

6.5 Measures and Tools

Below are some examples of measures and tools to ensure an engaged and healthy workforce.[1]

[1] These recommendations and practices are based on a document developed by the ACI Asia-Pacific Human Resources Committee with inputs from the ACI North America, ACI Africa, ACI Latin America HR Committees and ACI Europe Leadership Forum for consideration of the airport HR community.



6.5.1 Protect People

- Help employees stay safe and healthy, whether at work or at home.
- Champion wellness, including mental health. Point employees toward resources that can help them navigate through the crisis, including the benefits airports may offer, such as counselling or stress management.
- Review cleaning and sanitation protocols with the administration team and adjust workspaces to comply with any physical distancing guidelines.
- Provide the protective equipment employees may need, such as gloves and masks, and consider installing new protective measures where applicable, such as plexiglass shields between customer-facing employees and customers.

6.5.2 Communicate effectively in uncertainty

- Lead with responsive, empathetic communications and policies.
- Engage employees with real-time, personal, consistent communications about health and safety, policy updates and guidance from leadership.
- Be transparent about the financial health of the airport and any plans to take workforce actions, especially the possibility of furloughs or layoffs.
- Centralize communication channels: Create an internal portal or “hub” with policies, news updates and FAQs, so employees have a resource to get answers quickly.

6.5.3 Maintain continuity of work

- Provide employees with resources and support they need to be productive.
- Continue to evaluate which employees in critical roles should remain on site versus those that can work remotely. These policies may change over time.
- Support secure and efficient remote working capabilities that may include developing and implementing new technologies or workflows to help employees maintain productivity, as well as providing coaching on how to lead a remote team.

- Accelerate new ways of working through digital upskilling, e.g., online or virtual classroom.
- Give adequate considerations for recurrent training/ new health requirements training.

6.5.4 Specific HR measures to help resume full airport operations

Preparing for recovery

- Align workforce planning with business strategy to ramp up for recovery.
- Draft the “new normal” re-entry guidelines to help address safety issues when on-site work resumes.
- Phase into full staff in the office/terminal while remaining fiscally responsible.
- Manage workforce data to help keep track of employees’ locations, any mobility or technology issues they may be experiencing, their daily work status and other relevant issues.
- Refresh the workforce strategy, clearly defining critical capabilities, locations and resources mix.
- Closely monitor statistics in the area to ensure that there are no significant resurgences of cases. If this occurs, we should be ready to redeploy employees to work from home.
- Review and renew airport business continuity plans (BCP). If there are deficiencies, identify root causes, whether it is timeliness of action, lack of infrastructure, labour shortages, or external environment issues.
- Consider putting new internal guidelines in place based on lessons learned, as well as solid contingency plans to build resilience and better respond to future crises.

Health practices

- Continue to reinforce the physical distancing in the office as well as during meetings.
- Post signs in bathrooms/kitchen to indicate that no more than two people should occupy the space at any one time.
- Continue to support TEAMS or other platforms meetings to provide space for physical distancing in meeting rooms.
- Supervisors/managers must reinforce the physical distancing and employees should feel comfortable to inform others to stay six feet apart.
- Parking (if applicable)—if temporarily provided near the terminal/ office—continue to manage expectations about changes that will come when employees move back to the surface lot and buses or light rail.
- Create a system to manage visitors to the office and reinforce physical distancing protocols—in the beginning visitors should be strictly limited.
- For the time being, you may want to consider shutting off the ice machine, coffee makers, etc. or providing sanitary wipes to wipe down those “high touch” surfaces.
- Equipment that is shared or being touched by more than one employee should be disinfected after each employee (IT staff should be aware of this as they are assisting employees on a regular basis, also the front desk and printer/copy machines).

Ramp up training and investment in remote working

- Train to employees on how to successfully work remotely.
- Train managers on how to manage a remote workforce.

- Find new ways to create engaging experiences which are experiential and fun, incorporating more gamification, virtual reality, and augmented reality for corporate learning.
    - During initial business recovery phases, encourage the use of online and virtual classroom training.

6.6 Preparing the Airport Workforce for the New Normal

As the airport prepares to deal with the new normal, these are some pertinent questions that could provide insight to readiness:

- Can the airport operate with 25% or greater absenteeism?
- If illness causes high absenteeism, are employees cross-trained and able to perform multiple duties?
- Can employees work remotely?
- What infrastructure support is needed to support a shift to an “at home” workforce?
- What assurances to provide to employees so they feel safe at work?
- What procedures are in place to decontaminate working environment and its heating, ventilation, air-conditioning systems, electronic equipment and other areas?
- Are there escalation procedures to get additional resources?
- Is there a trained and representative crisis management team that includes on-call employees, and do those team members?

6.7 Actions:

- Help employees stay safe and champion wellness.
- Provide employees with the resources and support they need to be effective.
- Build resiliency in the face of the new normal, and communicate effectively.

7 Health (V1.0 21 May 2020)

The responsibility for management of the risk of communicable diseases at airports rests primarily with the local, regional and national public health authorities. However, all stakeholders, including airport operators and aircraft operators, need to collaborate and play a role for the safety of passengers and staff members.

Airports should work together with the local, regional, national public health authorities to support measures where required. In order to reduce the spread of communicable diseases and viruses at airports during operations, airports can consider the initiatives below.

7.1 Cleaning

Cleaning and disinfection of terminal infrastructure and all equipment should be done on a regular basis, and its frequency should be increased as required due to traffic and use.

- Take into consideration enhanced hygiene, cleaning and disinfecting requirements and adjusting the number of staff allocated for cleaning based on flights and passenger volume.
- Ensuring the sufficient supplies of recommended cleaning and disinfecting products are available.
- Update and adapt cleaning and disinfecting processes, schedules and products to be used and ensure all cleaning staff are aware of such new guidance. This information needs to ensure staff are utilising products effectively.
- Ensure that areas that are most likely to be contaminated are cleaned frequently, such as:
    - carpets at the entrance of the terminal;
    - airport information desks, passengers with reduced mobility (PRM) desks, check-in areas, boarding areas, etc.;
    - escalators and lifts;
    - washrooms and baby changing areas;
    - luggage trolleys and collection points: cleaned with dispensable wet wipes or sanitizers. Ensuring that disposal bins are made available to throw away wipes;
    - seating areas prior to security screening and in boarding areas;
    - parking shuttle buses and airside buses; and
    - stair handrails and lift push buttons.
- Clean down and disinfect more frequently all passenger process touch points, such as:
    - check-in and self-service bag drop kiosks;
    - security lanes;
    - e-Gates;
    - immigration kiosks; and
    - vending machines and water fountains.

7.2 Facilities

During the initial restart phase, the following measures should be considered to limit crowds and therefore reduce risks of transmission:

- Increase the use of air conditioning to keep air clean and increase ventilation.

- Segregate high-risk flight arrivals into separate or closed off areas of the airport.
- Implement shoe sole disinfection carpet or alternatives, where feasible.
- Implement posters and signage about health information in prominent locations throughout the terminal.
- Temporarily close or enhance monitoring of certain areas, based on phases of mitigation measures such as:
    - self-service buffet food;
    - café seating, or multi-purpose seating;
    - smoking areas; and
    - children's play areas.
- Prioritise and adjust scheduling of all maintenance and repair work in public areas, possibly postpone non-essential work.
- Maximize usage of available floor surfaces to facilitate deployment of physical distancing measures while maintaining operational efficiency.

Airport Terminal access

- According to each airport specificities and the national legislation in place, airport terminal access may be restricted to workers, travelers and accompanying persons in situations such as for passengers with disabilities, reduced mobility or unaccompanied minors in an initial phase, as long as it does not create crowds and queues, which would then enhance risks of transmission as well as create a potential security vulnerability.

Facilities for Passengers

- Ensure multiple hand sanitizer stations are available throughout the airport with adequate signage for passengers, including digital/mobile wayfinding if available.
- Prior to passengers or staff approaching security screening points or other processing points such as kiosks and boarding gates, hand sanitizers and disinfection products should be provided.
- Install touch-free equipment in toilet facilities, such as:
    - automatic toilet flushing system;
    - taps and soap/hand sanitiser dispensers;
    - automated hand towel dispensers; and
    - hand dryers.
- Airports and aircraft operators should encourage passengers to use self-service contact-free digital options that are available to them, and States should encourage such regulatory changes that may be required to make them available, such as:
    - Web and off-site check-in;
    - self-tagging and service bag-drops;
    - mobile 2D boarding pass;
    - self-scanning; and
    - Automated Border Control (ABC),

7.3 Physical Distancing

Physical distancing may be an important component **during the initial restart phase** of the industry and while passenger volumes remain limited. As the industry moves to a Recovery phase with increasing number of passengers, physical distancing measures will need to be re-evaluated

based on medical criteria and local guidance from State authorities (and should be consistent with other local modes of transport, in particular, urban public transport used for access to/from airports).

Define distancing requirements

- Physical distancing should target reaching at least one (1) meter between all individuals (as per World Health Organization (WHO) guidance), and in line with directions given by local authorities.
- It is recommended that passengers should wear masks where physical distancing measures cannot be fully observed at all times.
- Distancing may be required at locations where queues build, such as at check-in, security screening lanes, border control, immigration, escalators and retail outlets.
- Airports may provide signage, temporary floor markings and announcements via PA system to encourage physical distancing measures in place. The airport can support communication of key prevention messages from health authorities through audio messages and signs at key touchpoints of the passenger journey.

Queuing

- Airport may choose to open/close certain desks, kiosks, or security lanes to ensure space between passengers. This should be closely monitored to ensure that sufficient facilities are opened to prevent queues arising.
- Optimal spacing in queues can be achieved by increasing retractable stanchions and barriers spacing, and by providing clear positions in the queue to maintain appropriate distancing.
- Set up queue areas to allow for the safe distancing measures to be enforced.
- Increase signage on the floor to indicate the proper distance and provide passengers a visual representation of where they should stand.
- An orderly boarding process will be necessary to ensure limit direct physical contact between passengers, especially once load factors start increasing. Close cooperation between the aircraft operator, airport and government is vital. Airports will need to assist in redesigning gate areas, and governments will need to adapt any applicable local rules and regulations. The increased use of automation, such as self-scanning and biometrics should be facilitated.
- Use retractable stanchions and floor markings to encourage physical distancing at the baggage carousel as a temporary measure.
- Maximize use of available arrival baggage carousels in order to limit the gathering of passengers within limited areas.

Staff interactions

- For staff, ensure that guidelines can be met, including at all interaction points throughout the terminal:
    - This may involve providing enough distance between co-workers as well as between the passenger and staff using a physical barrier such as retractable stanchions or protective transparent screens.
    - Based on the risk of exposure (e.g., type of activity) and the transmission dynamics (e.g., close contact or droplet spread), employees may be equipped

with PPE, which could include gloves, medical masks, goggles or a face shield, and aprons.
    - Hand sanitisers should be made easily accessible, especially at passenger processing points.
- For staff and teams working shifts, conduct contact-free handovers, i.e., via telephone, videoconference, electronic logs, or at a minimum, through physical distancing.
- Providing adequate protection for staff members. Needs should be evaluated case by case, based on local government/State recommendations and health criteria. Such protection may include: PPE, health screening programme for staff, scheduling (targeting to keep group of staff in steady teams and shifts), easy hand sanitizer access, specific staff process prior and after completing a shift, and physical distancing plan for workstation.
- For staff training, maximise use of online training and virtual classrooms.

7.4 Measures to Implement Health Screening or Monitoring at Airports

Should health screening measures be necessary, they should be introduced as upstream as possible in the passenger process, while minimizing impact on operations. It is preferable for passengers to arrive at the airport “ready to fly”. Likewise, and for international travel, it is preferable for admissibility to be determined at the point of departure.

If measures for on-airport health screening are deployed—if mandated and backed by medical evidence—they should be delivered in a way that minimizes disruption of airport operations. Large scale testing on-airport is likely to result in the creation of crowds, queues, and additional dwell time. This would be counterproductive in terms of physical distancing and create unnecessary concerns about the safety of the aviation system, unnecessary security risks, and possible safety hazards.

If health screening is required by local authorities, or is the preferred option of an airport, a variety of options are available. These are generally designed to prevent symptomatic passengers from traveling and, therefore, further spreading the virus to staff and other passengers.

There is no perfect health screening solution and, if required, it is usually a combination of measures that tends to provide best results. This gives the opportunity to use a risk-based approach, using results from several processes to identify when additional secondary health checks are required and contribute in reassuring the traveling public.

Below are specific initiatives and examples of such measures that airports may decide—or be required—to temporarily implement with the support of other stakeholders.

7.4.1 Passenger questioning

As early as possible in the passenger journey, ideally through an e-Self Declaration process, passengers can be asked about their health in the 14 days prior to travel, including standard questions about symptoms. Such information should be provided by the passenger directly to the local State authority. Further questions about a passenger’s lifestyle in the last 14 days could be raised to determine whether the passenger should be referred for a secondary assessment by local health authorities and possibly denied boarding. Some governments are implementing Health Declaration solutions that can be set-up on a web portal. For those States that already

have a platform to collect visa and electronic travel authorization information, these could be customized to accommodate the collection of such information.

During the online check-in process, questions surrounding health may also be implemented by the aircraft operators. If passengers answer against the expected outcomes, this could, for example, automatically deny the online check-in process and require further investigation by local health authorities.

7.4.2 Implementing a "Just-Health" culture

Raising awareness to all staff (airport, handling agents, aircraft operators, etc.) on what to look for regarding health symptoms when observing passengers is also important. This will allow the staff member to identify possible cases of passengers not fit to fly or not well enough to travel. Staff should be encouraged to report their observations, including about other staff members if they appear to look unwell. A health culture can be a major asset in tackling the spread of the virus. Much like implementing a security culture, or a safety culture, a health culture is a proactive way in mitigating health issues.

Some examples of how an airport can implement a "Just Health" culture are:

- provide an open line of communication between all levels of staff at airports and aircraft operators; and
- raise awareness and training on physical signs to watch for in passengers and colleagues.

7.4.3 Entry – Exit thermal screening

This has not been proven to be effective in delaying or mitigating a pandemic due to the low sensitivity of the systems used to detect mildly symptomatic infections and their inability to detect cases during the incubation period (false negatives).

These measures may however play a useful role in reassuring the traveling public and act as a deterrent for travel in case of suspicion of infection. For this reason, governments should apply a common approach on this matter to ensure consistency.

If required for such purposes, temperature screening should be implemented:

- under conditions which minimize impact on operations at the airport and the passenger experience—in particular as regards passenger throughput across key terminal processes;
- by professional medical staff; and
- early on in the passenger process.

Smart thermal cameras can be installed at airports or used by operators to scan the temperature of multiple passengers rapidly and unobtrusively. Thermal screening is a process of detecting radiation, where the amount of radiation generated increases temperature. Thermology allows to see variations in body temperatures. If a passenger or staff member activates a higher than normal body temperature, they can be referred to secondary health assessment or denied boarding after being given medical attention by local authorities. Airports should be aware that

more investigation need to be done before implementing thermal measures, as high ambient temperatures may affect the body temperature, especially when applied outside in the sun.

7.4.4 Temperature screening

On-site medical staff can have contactless thermometers available to monitor a passenger's health on departing or arriving flights. This method may be considered as an alternative option to thermal screening, although it is not designed for mass screening and may rapidly cause queueing and slowdown of the passenger process. This measure is therefore recommended to be implemented for passengers sent to secondary health assessments.

7.4.5 Self-service screening

There are trials underway for self-service technology that can detect a series of indicators such as passenger's temperature, heart rate and ask a series of questions from a distance of 1.5 m. These technologies can be deployed at airport passenger process touchpoints such as a check-in desk, self-check-in kiosk, self-bag drop, security checkpoint, self-boarding e-gate or immigration kiosk. This enables the self-service device to act as a screening station for potential symptoms. The self-service station can also be used without a passenger touching the screen, therefore reducing the virus transmission.

7.4.6 Health Declaration / Health Passport

Some governments are implementing a Health Declaration solution that can be integrated with the existing processes, such as national databases, electronic visa or travel authorization applications prior to departing flights. The same forms can also be included in mobile applications, thereby eliminating the need for expensive touch-based equipment such as kiosks. Touchless Health Declarations can also be integrated into immigration kiosks at arrival airports or through more traditional paper forms handed for passengers to fill in prior to arrival (paper transactions should however be avoided when possible). The information that will need to be ascertained includes details about a passenger's health in the 14 days prior to travel, any symptoms shown and countries or areas they have visited. This may help officials evaluate each passenger and whether they will need to be referred to secondary assessment.

7.5 Health Screening Locations in Airports

Health screening in airports may be required for both departing and arriving flights. This needs to be based on local state authority guidance. The financial cost of screening should also be borne by local State authorities. If required by local authorities, airports might consider creating certain triage areas for those who might show symptoms consistent with the virus. This should be done in a way that avoids creating any slowdown to the flow of passengers.

7.5.1 Departures

Pre-flight and off-airport passenger self-declaration information should be encouraged to reduce potential health impact to other passengers as well as on airport flow and throughput. Additional health screening measures, as described in the previous section, may also be deployed to enhance health screening capability, especially during the initial restart phase of our industry. The recommendation is to avoid health screening processes on every passenger. This would not be operationally viable to sustain through any significant business recovery in passenger and flights

volume. The general “80-20” rule is recommended, where the major part of the passenger flow is maintained, and an enhanced health screening process may be deployed and only applied for those that have been identified as showing a higher health risk.

7.5.2 Arrivals

- Where declarations are required on arrival, governments should consider electronic options (mobile applications and QR codes) to minimize human-to-human contact.

- For customs formalities, where possible green/red lanes for self-declarations are recommended.

- Appropriate sanitary measures must be taken at secondary screening points to protect passengers and staff.

- It is suggested that governments should simplify border control formalities, by enabling contactless processes (e.g., relating to the reading of passport chips, facial recognition etc.), setting up special lanes, and training their agents to detect signs of unwell passengers.

- Possible redesign of immigration halls needs to be coordinated between the airport, aircraft operators and the government.

- Some governments already conduct risk assessments of flights arriving from specific countries and will accordingly limit or prohibit aircraft operators from flying high-risk routes.

- For those targeted flights, arriving passengers could be questioned by officers (most likely immigration or health officers) or requested to fill out a questionnaire for evaluation (recommended to then use a digital tool). This process is most likely suited for a centralized immigration area, as all passengers arriving from international destinations would be subjected to immigration and customs checks. A separate facility or area for further secondary health assessments could be set up to maintain the main general flow of passengers. Temperature screening can be conducted prior to the immigration hall to capture the highest footfall of passenger traffic and make best use of resources. This would be part of the evaluation process to identify passengers required to be directed to secondary health assessments.

- For higher-risk flights from areas where there are more reported outbreaks, officers can be waiting at decentralized locations near the boarding bridges, to evaluate passengers as they disembark. This may be a more effective way of containing high-risk passengers prior to entering larger facilities in the airport.

7.6 Health During Airport Recovery Phase

The immediate measures presented in this guidance document are short-term options for the restart phase of the industry, to help reduce the spread of the virus that is currently in a pandemic phase. As the world shifts to the recovery phase, health measures will need to change and ensure to adapt airport health-related processes to changing medical criteria. Increasing flight operations will require a multi-layered collaborative approach, a focus on a health culture, preventative

measures, and risk-assessment approach, with the option for seamless health screening that can avoid potential direct impact on airport operations.

ACI World encourages wider adoption of health measures to reduce risk to passengers and staff, adapt such measures based on the related phase of health risk criteria and related passenger volumes, ensure health measures follow scientific evidence guidance, and deployed in ways which make operational and business sense.

7.7 Actions:

Implement actions to reduce the spread of communicable viruses, such as:

- More frequent cleaning with the appropriate products and provision of hand sanitizer for passengers at strategic processing points for the short-term.
- Design and plan the use of terminals to incorporate adequate physical distancing measures during initial business recovery phases.
- Implement health screening measures, if required, as upstream as possible in the passenger process. If certain measures need to be introduced at the airport, they need to minimize the impact on operations and could include passenger questioning, cultivating a health culture amongst employees, thermal screening technology and others.

8 Security (V1.0 21 May 2020)

Airports around the world have seen a substantial drop in passenger traffic. This has resulted in the reduction of operations such as security at airports, a reduction in staff, and disruption to ongoing training of personnel and certification of equipment. It is expected that once the pandemic phase of COVID-19 begins to subside, governments will begin relaxing restrictions on civil aviation and therefore airports will be open to traffic again. The recovery phase centers on restoring normal operations, repopulating public and secure areas, and ensuring that staff members and other impacted individuals have confidence that they are safe.

Additionally, recovery provides opportunities to reflect on the event that has occurred and work in collaboration with senior leaders and those affected to improve services and implement new processes and procedures to identify a post COVID-19 operation.

This guidance is aimed towards security operations and various areas to focus on when upgrading operations from a reduced mode to recovery mode to fully operational mode.

8.1 Operational Continuity

At a reduced capacity, security operations have had minimal staff on hand to maintain the checkpoints and access control points during the pandemic. However, as restrictions to travelers begin to ease, the operation will need to have adequate resources to handle the return of increased volumes of passengers. The Airport Security Committee (ASC) is an operational committee, normally chaired by the airport operator, that holds frequent meetings with various airport tenants to discuss various matters including:

- Review of the prevailing threat to airport security
- Coordination among the stakeholders of the implementation of airport security
- Provision of a forum for the discussion of aviation security matters
- Review and provision of advice on plans for new or modified facilities as well as new or modified operational processes

The ASC should hold a special meeting with the stakeholders involved to discuss a comprehensive plan on the timelines the airport plans to implement with regards to operations.

The meeting should include the following representatives:

- Appropriate authority for aviation security
- Airport operator
- Airport security manager
- Airport security service providers
- Manager of contracted security provider
- Law enforcement authority
- Emergency response units and/or first responders
- Other government agencies
- Aircraft operators
- Airport tenants
- Border control authorities such as customs and immigration
- General aviation agencies

- Handling agents
- Catering operators

The topics of discussion that should be discussed could include the following areas:

- Security providers will require reliable estimates from the airport operator on the capacity that will be required and timings
- Timeframes of return to operations. The return to operation will occur in stages and the duration of these stages should be mentioned
- Processes to prepare for the anticipated busier season with a focus towards recruitment and extra training sessions, and potentially use remote training options
- Planning of manpower required for the staged timeframes
- Review of the contract between the airport authority and the contractor, as changes in the operation may influence contractual conditions during this time
- In conjunction with possible review of contract, a review of the SLA's and KPI's that may require temporary changes to adjust in passenger throughputs
- Additional training for security staff on new health measures and guidance when conducting their security duties

8.2 Access Control Measures

As employees return to the airport to support the recovery efforts, steps should be in place to ensure that all employees will be able to access their respective workplaces on airport property.

Airport identity cards are the most common use of access control for airports. As a security measure, it is common that passes that are not being used would be de-activated and, in some cases, passes returned to the respective airport pass control office. The airport pass office will experience an influx of employees that were temporarily laid off during the pandemic and therefore available resources to handle such increased demand will be challenging.

Airports should work with the appropriate authority responsible for airport passes, to determine the volume of expired or suspended passes and agree a plan for reinstatement.

Measures might include:

- Identifying processes to ensure efficient operation such as scheduling of appointments and online interviewing
- Work with airport operations teams to identify highest priority staff for return to work
- Consider measures such as separate locations for temporary pass issuance offices with additional staff
- If possible, work with the local regulator to consider extending the validity of the airport pass for the population by 1 year to reduce the need for immediate processing post-recovery
- Any security awareness training and tests related to airport passes should be conducted online if possible

This will have to apply for applicants who have new passes as well any renewals for passes. With new applicants, processes outside of the pass office control such as background checks and reference checks could cause additional delays. Background check priorities should be placed on those individuals who handle sensitive security information, perform sensitive security functions,

and/or have access to security restricted areas (SRAs). The order in which background checks for new hires should occur should be based upon a needs' assessment conducted by the appropriate authority.

8.3 Training

Security training is required at several different levels, including recurrent basic training for all staff, additional training for those with access to SRAs or with security roles, and specialized training for security screeners.

8.3.1 Planning

Training and certification need to be up to date according to specific job roles. Airports should review training records for current and returning staff and contractors to identify training that is missing or out of date due to the furlough of staff or suspension of training during the COVID-19 crisis. A plan should be created to ensure the rapid training (and recertification where required) of staff, focusing on the most critical resources. This should be aligned with the access control planning above.

8.3.2 Training options

Since restrictions on physical distancing are anticipated to be in effect for an undetermined period, all training should be conducted online through virtual classroom or e-learning, as much as possible. To create such programmes, content developers may require up to six months, and therefore need to be considered when looking at providing e-learning platforms. In some cases, distance learning may not be permitted due to regulations in place. Security providers should coordinate with their respective airport authorities and CAAs to allow for exemptions to regulations with regard to training and re-training security officers.

It is important that security trainers evaluate current courses that are available to security staff and consider the following:

- identify which classroom training could be developed for online delivery, and determine how to recreate interactions and questions that will engage students; and
- ensure content is focused on essential information for skill and knowledge enhancement.

Online learning is best utilized to ensure specific safety, security, operational, or financial content is provided to enhance skills of workers. Independent online can be effective in assessing knowledge and information recollection versus traditional classroom and workshop training.

Airport operators and security screening providers will need to engage closely with their appropriate authority for security. It is recommended that a dialogue is initiated with the respective authority in order to redesign common certification and training processes for security agents, in particular in relation to x-ray operations, allowing the implementation of effective and adequate distance-learning training and initial/recurrent certification measures. Such processes, through the implementation of specialized security training systems, allows for effective supervision and control by CAAs.

Also, a minimum extension period for certification and recertification processes of x-ray operators should be discussed. Such examples of this training could include blending online training with

web-enable video person-to-person sessions for complex, dynamic topics that require conversational answers not suited for online skills training content.

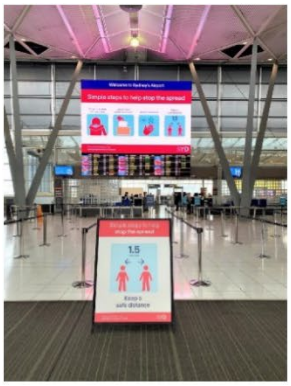
8.4 Procedural Changes

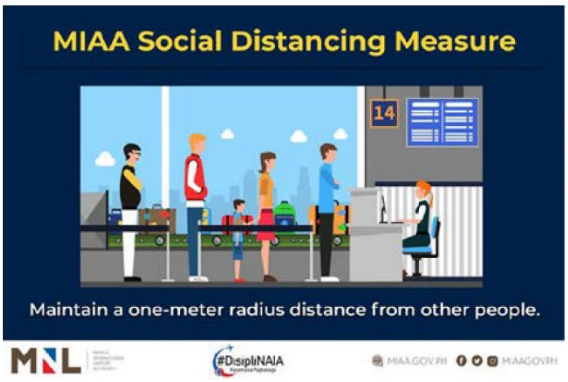
During the restart and recovery phases, procedural changes may be required to maintain health protocols, such as physical distancing, reduce manual pat-downs and face-to-face contact, and changing alarm resolution procedures. Airports and screening service providers need to agree new standard operating procedures (SOPs) with their appropriate authorities and ensure that they are reflected in airport SOP documentation, the airport security plan, security training and quality assurance activities.

8.4.1 Physical Distancing

In the immediate future when recovery operations are underway, there will likely be a need to continue a form of physical distancing for people waiting in the queueing lines for security screening. This will only be sustainable in the short term. Security providers should establish markings on the ground within the queueing area to indicate the proper distancing recommended by the appropriate authorities. Passenger preparation officers should be deployed to ensure passengers are prepared for the divestment requirements as well as ensuring physical distancing measures.

To assist this, signage should be provided at the entrance of checkpoint queueing, for example:





If secondary screening needs to be conducted, similar physical distancing measures should be applied. The secondary screening rooms should have protective shields installed like plexi-glass to separate the screening agent and passenger being screened.

Other areas of focus would include staff breakrooms and training rooms. These rooms should be marked and possibly outfitted to support physical distancing guidelines. It should be made known that these rooms are not areas to remove or discard PPE. Procedures and possible specific rooms for removing PPE when completed use should be considered for staff.

8.4.2 Cleaning and disinfection

In line with operations during the pandemic, screening staff or an appropriate agency should conduct routine cleaning and disinfecting of frequently touched/exposed surfaces and security screening equipment, including trays at the security checkpoint and baggage areas. Airports

should consider disinfectant carpets as part of minimizing the spread of the virus. Consideration should be taken that staff operating screening stations will need to exercise physical distancing guidelines and, therefore, processing times could be longer than usual.

8.5 Security Screening

A key concern that security operators need to evaluate is the capacity of the checkpoint areas using health measures during recovery. Physical distancing will create new constraints on security checkpoints currently in place and, therefore, airports should conduct overall evaluations on not just the capacity of the security checkpoint but in various parts of the airport. In addition, checkpoint layouts may need to be modified to meet physical distancing requirements, adding to the capacity constraints involved. Security staff should be familiarized on the new layout, distancing requirements and hygiene measures of the checkpoint prior to restarting security screening.

Further information on how to evaluate capacity, understand impacts through simulation and other physical modifications to checkpoints can be found in the ACI Europe's Off The Ground Working Paper under Chapter IX – Phase 1 Limited Operations.[2]

8.6 Restarting Security Checkpoints

Following a prolonged shutdown, a significant portion of security screening equipment will have been offline and will need to be reactivated prior to reopening of the checkpoint.

For security equipment that has been unused, maintenance checks should be performed, updates of any software and algorithms implemented, equipment recalibrated and tested prior to reopening. Boarding card scanners or automated gates will need to be tested and ensure that the correct flight schedules are uploaded into the AODB. Any crowd management software or queue monitoring solutions need to be calibrated and will be vital to ensure that groups of passengers are not congregating in the security checkpoint. All of this should be conducted in sufficient time prior to start-up to make adjustments and engage with suppliers if needed.

The security checkpoint will need to be deep cleaned and disinfected prior to opening, especially frequently touched surfaces and trays. This cleaning will need to be periodic and consistent throughout the hours of operation.

8.6.1 Hand Searches

In an effort to reduce the spread of the virus as possible, screeners should minimize the use of hand searches, if allowed by the appropriate authority. Screeners should reinforce communication with passengers in front of screening equipment, so they have properly divested and are less likely to cause an alarm. Consider minimizing resolution needed and reduce random search only if the regulator agrees to such measures after conducting a threat and risk assessment concerning them. Hand searches can be supplemented by explosive trace detection (ETDs) and hand-held metal detectors (HHMDs), where the appropriate authority agrees, reducing the hand contact.

[2] Further detailed information can be found by contacting ACI Europe/ACI World.

8.6.2 PPE

During recovery efforts, screeners will most likely be required to wear protective equipment while on shift. When security inspection personnel are on duty, disposable gloves should be provided to the staff as a minimum.

Attention should be paid to the following points:

- hands should be disinfected before wearing PPE;
- protective masks should be changed every four hours;
- caps should fully cover all hair, including shock hair on the hairline;
- long hair should be fastened tightly on top the head and put into the cap, and the edges of caps should fit close to the sides of ears ;
- protective equipment needs to be replaced immediately when exposed to a passenger's blood, vomit, and other potentially contagious body fluids ;
- hands should not touch faces when taking off protective equipment; and
- the removed disposable protective equipment should be put into medical waste bags.

A method should be put place to collect the discarded gloves and masks as they may be considered hazardous material.

To reduce transmission, the installation of Perspex covering should be considered at stations where passengers spend more time at the process, such as the bag searching area. If the airport uses a remote screening room, workstations should be distanced and ensure at least 1.5 m in between each viewing station.

8.6.3 Service Level Agreements

Procedural changes will affect the capacity and throughput of the checkpoint which may require a change in service level agreements and should provoke a discussion with all affected stakeholders on the lead time required for passenger to check in. The checkpoint spatial requirements could be different with physical distancing requirements.

Areas of impact could include:

- Queue area – Staff may be required to manage queue and physical distancing. If capacity permits, airports should not open two lanes together but should open single standard lanes in order to prevent a congregation of passengers in proximity.
- Preparation area – Passengers may congregate in this area, and if capacity permits, the airport should consider closing off areas that do not allow for adequate physical distancing during preparation.
- Boarding passes and other travel documents presentation to security personnel should be done, to the extent possible, without the need of physical contact and in a way that will minimize face-to-face interaction. Passenger wayfinding and signage should be deployed to clearly inform them of each steps of the process. It is recommended to offer a self-scanning process of the boarding pass at entrance of the screening area.
- Divestment area – If multiple divest stations are used, there could be a need to maintain the physical distance spacing. To prevent passengers from mixing, there may be a need to consider only serial passenger divestment or by closing off one in every two divest stations if using parallel loading.

- Where regulation allows, consider equivalent screening methods that reduce face to face or physical contact.
- Re-check – With this procedure, staff will be required to wear PPE and may even consider sanitizing gloves. Some screening equipment such as ETD swab holders may need to be sanitized after each use due to contact with passenger belongings.
- Redress area for packing should also provide physical distancing arrangements.

All of the above changes could have significant impact on spatial requirements at the checkpoints.

8.7 Actions:

- Support the ASC in meeting with various stakeholders to discuss timelines for the predicted return to normal passenger volume.
- Work with appropriate authority to agree any new protocols, training, background checks and pass issuance.
- Conduct maintenance checks and testing on equipment that was offline for a significant amount of time.
- Update SOPs and Airport Security Program as needed.
- Provide ground markings in the short term at security checkpoints, to encourage physical distancing in the short term and as required.
- Conduct routine cleaning and disinfecting of frequently touched/exposed surfaces and security screening equipment, including trays at the security checkpoint and baggage areas.
- Provide adequate PPE to security screeners, and evaluate the spatial needs of security areas in order to implement new physical distancing measures.
- Evaluate the ability of the airport pass control office to deal with the influx of temporarily laid off employees returning to work, requiring their badges.
- Have a plan in place for the security training according to job role and criticality.

9 Airport Experience Management (V1.0 21 May 2020)

The COVID-19 outbreak and pandemic has required airport customer experience and customer service teams to rethink the meaning of customer care. (See also Human Resources and Employees for Employee Experience.)

Experience management in an airport is a very complex business with a lot a people involved from different airport teams and other stakeholders, such as aircraft operators, retailers, governments and more. To manage the customer experience, the airport operator has to also manage employee and stakeholder experience.

It is important for airports to understand during the crisis how it may affect passenger behaviour, their expectations, and their satisfaction in the future. Airports will need to understand what might prevent people from traveling again, and if there are new drivers of satisfaction in order to ensure that when people are traveling again, their expectations can be met which will, in turn, encourage others to travel. This information will be crucial, especially when the airport enters the period of recovery, to adapt the experience to the potential new passenger needs.

9.1 Passenger Experience

Customer experience management is the practice of designing and reacting to customer interactions to meet or exceed customer expectations and, thus, increase customer satisfaction, trust, loyalty and advocacy.

The increased levels of stress experienced by the employees applies to the passengers as well. Passengers who will start traveling again will arrive at the airport with a whole new set of expectations. In preparation for the recovery, it is mandatory to have a good understanding of what these new expectations and behaviors will be.

The airport operator and all the stakeholders must rapidly design an entire new experience for the passenger based on the new COVID-19 reality.

Some of these new experiences can be determined by the following means:

- The voice of customer surveys allow airports to understand what was driving the satisfaction in the past and anticipate the new drivers. Measures should build consumer confidence and be regularly monitored using established benchmarking surveys to ensure that they meet or exceed customer expectations and to manage passenger perception.
- Passenger personas and segmentation, when available, allow airports to humanize the interaction with the customer and to make the design of the post COVID-19 experience more concrete and accurate.
- The journey mapping, when available, is a precious tool to adapt the experience. It provides an overview of the full journey, with a specific focus on customer touchpoints or moment of truths. Thus, the airport can design a new moment of truth according to the new reality (physical distancing, physical operations touch free, sanitization, etc.).
- Key performance indicators (KPIs) to track the efficiency of actions and, if needed, adapt rapidly.

9.2 Where to Start?

Before the COVID-19 pandemic, airport customer experience management was focused on promoting and fostering positive customer emotions and perceptions through all interactions with an airport community. Airport staff used to be a key component in delivering a memorable experience and making the passenger journey as enjoyable as possible. They remain significantly important for the passengers but during the recovery, their focus will have to be safety, sanitation and building trust.

According to governmental authorities, the recovery is likely to start first with an increase in domestic travel followed by international flights. This situation will accelerate the recovery of two regions—North America and Asia Pacific—where the proportion of domestic traffic was higher than other regions.

	Africa	Asia Pacific	Europe	Middle East	North America	Latin America/ Caribbean
Domestic	49.5%	74.3%	30.0%	18.3%	80.6%	40.7%
International/ Transborder	50.5%	25.7%	70.0%	81.7%	19.4%	59.3%

Source: ACI Airport Service Quality Departures, 2019

While redesigning the passenger experience, efforts should be made according to the passengers' profiles. During the recovery phase, it is expected to have more business than leisure travelers. While this target is not the most significant in terms of number of passengers (22.6% of travelers in 2019 according to ASQ data), they remain highly important since:

- they are the most frequent flyers (55.6% travelled 6+ times in the past 12 months, compared to 24.3% for leisure travelers); and
- 63.7% of business travelers are traveling domestically.

Therefore, their experience must be adapted in order to be efficient without compromising their safety. Africa is the region with the highest proportion of business travelers (36%), followed by North America (27.6%).

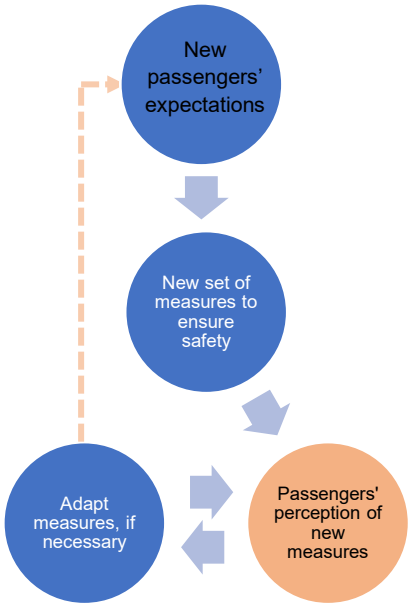
According to ASQ data, passengers over 65 years (who are more vulnerable to the virus) represent only 7.1% of travelers in 2019, and they are among passengers that travel less frequently.

9.3 New Set of Expectations, New Measures

Whether passengers expect sanitation measures, contactless journeys, physical distance with other travelers or clear instructions on how to stay safe, the implementation of measures to meet those needs can be done in various ways.

The main objective is to ensure passengers' safety, but also, it serves as important visual cues to reassure the passengers. Therefore, it is critical to not only have the right measures in place, but also to deliver those measures with the optimal approaches.

How to ensure that the right measures are put in place and are delivered according to passengers' expectations? First, effectiveness of the initiatives must be technically proven to support a high level of passenger security and health, that is, to eliminate as much as possible the risk of spreading the virus. Second, passenger perception must be evaluated to ensure that the level of stress and anxiety is decreased – making their overall journey reassuring and more pleasant. Perception of efficiency will vary according to regions and cultures – while employees with full personal protection equipment might be the minimum requirement in some cultures, it might be overwhelming in others – increasing the level of stress and discomfort.



A negative evaluation of the experience might be an indication that not all expected measures have been implemented or that there is a lack in communication regarding the delivery of those measures. It will be the opportunity for an airport to adjust or explore new initiatives to increase passengers' level of trust. Passengers should be provided with extra information, guidance and support to navigate a new set of challenges, and reassurance that all measures are in place to keep them and their families safe. They want a resource they can trust, that can make them feel safe in uncertain situations, and that offers support when so much seems to be overwhelming. Information and guidance provided before their visit to the airport through websites and social media will also contribute to increase their level of confidence before they experience the journey.

For passengers travelling for the first time since the virus outbreak, it will be critical to provide reassurance that the airport is a safe environment. Airports must be ready with measures adapted to the passengers' expectations, but also ready to collect feedback and adjust their strategy in a timely manner. Depending on the speed of the recovery, passenger expectations will likely evolve over time. Airports will have to keep track of this evolution and adapt their strategies accordingly in order to get the most out of their passengers' feedback.

9.4 Actions:

- Seek to understand how this crisis will affect passenger behaviour, expectations and satisfaction.
- Emphasize the importance of your employees and their satisfaction, including the integral role that will have on passenger satisfaction.
- Provide new tools, remote training, and support to enable employees to deliver superior customer experience in a new environment.
- If possible, offer counselling services for employees as part of the employee assistance programme.
- Managers are encouraged to continue to check in with their team and promote discussions around wellness.

- Engage employees and maintain their commitment through suggestion boxes, surveys and remote work groups.
- Use benchmarking surveys in order to be able to anticipate the needs of the future passenger, create a strategy and adapt to the new needs.

10 Waste Management (V1.0 21 May 2020)

Efficiently managing waste may minimize the spread of the disease across the lifecycle, stakeholders and touchpoints of waste management. Primarily, local health authority guidance and regulation should be implemented. Airport operators are encouraged to meet with local health authorities to agree on the waste management procedures.

Applicability of the measures described below depends on their alignment with the recommendations/regulations of the local authority and adaptability to the airport practices. In addition, the knowledge on COVID-19 transmission and associated risks have been constantly updated. It is recommended that while using this material, the original sources are consulted regularly for updates and further understanding the context they were based on. Although currently there is no scientific evidence proving that waste is a vector of COVID-19 transmission, additional measures should be implemented to protect staff while handling contaminated waste.

10.1 Risk-based Approach

It recommended that a risk assessment is performed, based on a source-pathway-receptor approach in a continuous basis (as often as needed/possible) to re-evaluate the situation and scale up or down the measures, as required. The airport operator could choose to seek specialist advice, where appropriate, to determine the necessary measures and evaluate their effectiveness.

The approach for managing contaminated waste should be consistent with the following risk management steps:

- Identify the risk
- Isolate the risk when possible
- Provide appropriate training to personnel
- Use personal protective equipment when applicable
- Sign post whenever possible: bins, bags, signposts for travelers
- Increase frequency and thoroughness of personal hygiene and equipment sanitization

10.2 Deplaned Domestic/International Waste Management

Waste from international flights in several jurisdictions, including the United States, Canada, New Zealand and Australia, among others, are already treated as biohazard waste. Therefore, no extra measures would be required. Some States could start to implement similar rules due to the pandemic.

The WHO recommends that all waste from ill/symptomatic passengers be separated and treated as biohazard waste and be identified for handling and disposal upon arrival. Cleaners/ground handlers should be alerted prior to landing that special handling and/or disinfection (and, rarely, decontamination) may be required. All biohazard and waste contaminated by body fluids are recommended to be handled and disposed through appropriate hygiene services according to national or local authority guidelines for hospital waste management. In this particular case, there is no differentiation between domestic or international flights.

According to IATA, differentiated waste treatment should only be given in flights with symptomatic passengers and/or crew, for which all materials, including partially consumed meals, beverage containers and disposable items, including used paper towels, tissues and PPE generated while treating or supporting the passenger or crew, be placed in the biohazard waste disposal bag (Universal Precaution Kit) and sealed for specialized treatment[3]. Service providers, including cleaning and catering companies, the airport operator and the local health authority should be informed. If no biohazard disposal waste bag is available, it is recommended to place the waste into an intact plastic bag, seal it, and consider it "biohazard" waste; wash hands with soap and water (preferred) or alcohol-based hand rub. The bag can be marked with a "biohazard" inscription and the flight details to facilitate tracking.

10.3 Building Waste Management (terminal, airline, tenant & cargo)

As with deplaned waste, it is recommended that the airport follows the local health authorities' advice with regards to the management of contaminated terminal waste. Below are some general recommendations for minimizing the risk of cross-contamination or spread of disease through waste handling regarding the disposal of PPE or any other waste contaminated by ill or symptomatic passengers, or by airport staff coming into contact with them.

10.3.1 Personal Protective Equipment at the Airport

Airport operators, aircraft operators and local authorities might make it compulsory for passengers to wear masks while on board of the aircraft and at the airport. These masks may be disposed in the terminal or around the airport. Items from symptomatic or ill passenger/staff should be differentiated and their place for disposal should be clearly defined.

PPE and waste from ill/symptomatic passengers/staff and health authorities conducting health screening on site are generally considered infectious waste.

It is important that passengers and staff know where they can dispose of these masks, especially if they are showing symptoms or are ill. Airport operators and other stakeholders, in coordination, should consider messaging this information to arriving/departing passengers by posting passenger-facing signage in check-in areas, passenger boarding bridges, hold rooms and beyond to the greatest extent practicable.

The WHO recommends that airport operators provide lined waste bins with a lid for disposing of medical masks and tissues of ill passengers and a plan for disposal of this waste, in accordance with infectious waste regulations. Airport operators should provide specific collection points for such waste, in order to avoid being mixed with general or recyclable waste. If this measure is taken, it is recommended to signpost this collection point and other organic, recyclable and non-recyclable bins to discourage ill/symptomatic passengers from disposing of masks or other health and safety-related waste into the wrong bin.

If health authorities are conducting health screenings, including COVID-19 tests, onsite the airport, the symptomatic passengers, their PPE and waste should also be treated separately. The

[3] IATA Guidance for Cabin Operations During and Post Pandemic, Edition 2 – 07 May 2020. Available: https://www.iata.org/contentassets/df216feeb8bb4d52a3e16befe9671033/iata-guidance-cabin-operations-during-post-pandemic.pdf

US Centers for Disease Control and Prevention (CDC) recommend treating all body fluids (such as respiratory secretions, diarrhea, vomit or blood) as infectious, and to properly dispose of gloves and other disposable items that came in contact with the sick person or body fluids in biohazard bag or a secured plastic bag labeled as “biohazard”.[4]

Airports that use waste autoclaves to sanitize waste, or that incinerate on site (or any similar practices like waste to energy), might have fewer concerns with regards to biohazard risks than airports that do not follow such practices. Depending on the risk, the waste might need to be taken directly from the aircraft to the incinerator/autoclave to limit cross-contamination with other waste. National regulation generally defines special treatment for international waste and these requirements may already include some recommendations/options made above.

PPE from asymptomatic passenger/staff (social distancing waste) could be treated as regular municipal waste, unless otherwise stated by the local authority.

Requirements for passengers and staff to wear masks at the airport/onboard the aircraft may cause high volumes of masks being disposed at the terminal or airport surroundings, like parking lots. Airport operators should consider measures to facilitate passengers’ identifying where they can be safely disposed to avoid littering.

PPE from asymptomatic passengers/staff could potentially be disposed and treated as regular municipal waste, unless national/local regulation states otherwise. According to the WHO, “routine operating procedures for cleaning aircraft, managing solid waste and wearing PPE should be followed in those cases”.

10.3.2 Sustainable PPE equipment

Airport operators could consider incentivizing the use of re-usable masks if appropriate and approved by the local health authority to diminish the amount of waste produced by disposable masks.

10.3.3 Managing waste

According to the United States Department of Labour’s Occupational Safety and Health Administration (OSHA), other solid waste, including recyclables, should be collected and handled taking the basic precautions that all staff would normally take. This advice is in line with the Solid Waste Association of North America (SWANA), which for the moment recommends no extra precautions to protect waste workers from COVID-19 other than those measures which should already be in place. This includes wearing disposable gloves and masks and doing proper hand cleaning with soap and water for at least 20 seconds after handling the materials. Bags should be securely closed and should not be pressed with the hands to make additional space.[5]

---

[4] Centers for Disease Control and Prevention (CDC), "Updated Interim Guidance for Airlines and Airline Crew: Coronavirus Disease 4 March 2020 (COVID-19)," CDC Available: https://www.cdc.gov/quarantine/air/managing-sick-travelers/ncov-airlines.html, 2020

[5] Solid Waste Association of North America, SWANA, "Guidance on Coronavirus (COVID-19)," SWANA, available: https://swana.org/docs/default-source/advocacy-documents/guidance_on_coronavirus-2020_03_06.pdf?sfvrsn=fee6b88a_4, 2020

10.3.4 Increasing personal hygiene and disinfection

Personal hygiene and the disinfection of the workplace surfaces and vehicles should be intensified. According to the International Waste Association (ISWA), “the source of danger and cross-contamination is in the interface between the generator - considered to be an individual discharging or depositing their recyclables and waste into a public system - and the handler - the professional who is doing something with the recyclable materials or the residual waste, so proper equipment and intensified sanitizing is recommended to protect operators that have contact with the waste, and also avoid the spread of COVID-19.” [6]

Some extra recommendations for waste handling are given below:

- Strict adherence to enhanced hygiene norms, including appropriate replacement and cleaning (if appropriate) of PPE and professional clothing
- Replacing protective gloves in the event of breakage or any incident of potential contamination
- Regularly sanitizing waste management facilities, vehicle cabins and other equipment
- If applicable, workers should remove masks and gloves without touching them. This means using correct techniques for putting PPE on and taking it off
- Social distancing between the workers should be encouraged
- Training staff on how to use, wear and remove PPE

Some airports suggest disinfecting and cleaning the truck used to transport waste after transporting contaminated substances. Under no circumstances should the bags be pressed or squeezed—to avoid rupture or air escaping the bag at high velocity. Additional training for truck drivers and waste collectors might be required. The same consideration could be given to the cleaning of waste containers.

10.4 Recyclable Material

Recycling can be kept during this pandemic and could help alleviate the pressure on the waste handlers dealing with the increase in hazardous waste coming from health care facilities.

However, during an outbreak, recyclable material may get contaminated, either by infected used items (e.g., a water bottle used by an ill passenger) or by misplaced waste (e.g., an infected face mask thrown in the recycling bin). For this reason, hygiene measures should be intensified while also ensuring staff is using the appropriate PPE when handling recyclables. See section on managing waste for more detail.

SARS-CoV-2, the virus responsible for the Coronavirus disease COVID-19, can survive up to several hours (or days) in certain surfaces depending on the humidity content, the room temperature and the surface in which the virus is, amongst other factors. It could be considered to store the recyclables for a given period of time—around 72 hours, if space is available—to reduce the risk of contaminating staff. If this approach is taken, it is recommended to mark the bags with the collection date, and keep them properly stored on a closed room, including considerations on pest control.

---

[6] I. S. W. A.-. ISWA, "Waste management during the COVID-19 pandemic, ISWA's recommendations," ISWA-Available: https://www.iswa.org/iswa/covid-19/#c7983, Rotterdam, 2020.

10.5 Single-use items

During the pandemic, a temporary relief (or a postponement of implementation) of existing/new regulations which control single-use items may be observed in different jurisdictions. An assessment on the impact of such measures is recommended by the environment departments, including means of transitioning back to the safe use of reusable items.

10.6 Landfill waste

Consider the general recommendations on the other sections of this document. In addition, if the airport disposes waste to landfill and has an autoclave available on its premises, it could consider sterilizing the waste from PPE used to handle ill passengers and waste contaminated with body fluids of ill passengers by means of a waste autoclave before it is disposed. Advance coordination with the stakeholders involved, regarding landfill disposal, is recommended for handling potentially contaminated waste at airports which do not have autoclave or sterilizing capabilities in their premises. If the autoclave is not onsite, coordination with the waste hauler is recommended to manage the extra potentially contaminated waste.

10.7 Waste Services and Reduction Targets

Some local authorities have limited recycling during the pandemic. These measures, combined with the reduction of traffic, could impact waste reduction or associated recycling targets or KPIs. Therefore, it may be advisable to reassess those based on the current situation. Environmentally-friendly alternatives to reduce costs of waste management due to a reduced amount being handled are encouraged to be discussed with relevant stakeholders.

10.8 Engagement and Communications

Stakeholder engagement and collaboration are encouraged. Airports should have a written plan for specific recommendations on waste management that should be shared with all stakeholders and constantly updated, as well as relevant information disseminated to all stakeholders across the waste management lifecycle to ensure the new or reviewed waste management process is implemented successfully.

This can include cleaning staff, custodians/janitors, concessionaires, waste contract managers, waste haulers and management, cabin cleaning crew and management, FBOs and aircraft operators, and many others. For instance, additional facilities or resources may be required to differentiate recyclables during collection, separation and disposal processes. Examples of engagement include development and issuance of guidelines and checklists, joint site visits, regular meetings and joint demonstration runs at the initial stage of the operation phase. Airports should also have a written plan to share with stakeholders regarding their waste management procedures.

Joint trainings of staff involved in the process should be considered. As tenants may need to hire new or re-hire laid off staff, support with (re)training on handling and disposing waste could be considered.

Airports at a national/regional level are encouraged to collaborate to develop consistency of approaches. This could help aircraft operators in their planning for handling of aircraft waste and encourage common best practices at national levels.

Communications can support implementation of measures and build passenger and staff confidence.

To maintain employee morale and build passenger confidence, an airport should consider communicating to the public all initiatives which have been implemented to prevent the spread of COVID-19 and to protect passengers and staff. Communicating new/additional initiatives on handling of waste and its disposal could be included, even if it is temporary and risk-based. This should be done in coordination with all stakeholders involved in waste management at the airport and should be audience-specific (of messaging, delivery, formats and locations).

Consider also educating passengers with clear signage on where to dispose PPE or other relevant types of waste to avoid littering at and around the airport. Where existing waste management signage is in place, consider adding visuals of these items to reduce passenger and staff confusion and increase health and safety by maximizing proper disposal.

10.9 Actions:

- Consider measures to protect staff while handling contaminated waste.
- Follow the region/local-specific guidelines, including those from the local health authorities, and constantly monitor their development.
- Develop airport guidelines/procedures that:
    - are risk-based, outcome-driven and be supported by medical/scientific evidence;
    - are simple and practical;
    - balance the need for reassuring staff and passenger safety with managing associated risks should be promoted; and
    - are constantly reviewed for impact, suitability and effectiveness.
- Coordinate and collaborate with all stakeholders responsible for any step of waste handling, disposal, communications, and training

11 Recovery and Restart Communications (V1.0 21 May 2020)

Airports must have robust and tested plans and procedures in place to ensure that clear and regular communication with passengers, the media and stakeholders can be maintained under all circumstances.

Airport communications teams should work closely with their colleagues in operations and senior management to anticipate the kinds of issues that may occur, plan how they should respond to these issues, and, crucially, practice and test the execution of these plans to hone skills and continually seek improvement.

These plans and procedures are of even greater importance during and after incidents and operational disruption.

The way the impacts and effects of the COVID-19 pandemic unfolded across the world, however, has placed unprecedented pressure on airport communications teams.

11.1 Airports and public health

The COVID-19 outbreak began as a public health issue for airports, requiring them to consider the adoption of measures to protect the health and welfare of travelers, staff and the public, and to reduce the opportunities for dissemination of the virus.

Initially, measures were introduced to protect against the transmission of the virus. Communications were designed and planned to support the effort to reduce exposure at airports and to improve the response to the health-related emergency.

To support this, communication links should be established by the airport with internal and external partners. It is important that close links are developed with local government, regulators and public health bodies so that information provided by these bodies, or developed in close collaboration with the public health authorities, can be communicated to passengers, staff and stakeholders, and partners.

To ensure public confidence, airport operators should be prepared to explain to passengers, as fully as possible, the reasons for any necessary health-related measures.

These communications networks should, include:

1. Internal
    - Aircraft operators
    - Ground handling agents
    - Air traffic management or air navigation service providers
    - Local hospital(s) and health providers
    - Airport medical service providers
    - Emergency medical services
    - Police
    - Customs and immigration
    - Security providers
    - Airport retailers and food and beverage services
    - Information/customer relations services, and

- Other stakeholders as necessary.

2. External
   - Local/regional/national governments, regulators and public health authorities
   - Travelers (before, during, and after the airport experience)
   - Other airports in same region or network
   - Travel agents and hotel associations
   - Tourism organizations
   - International organizations involved with migration, where appropriate, and
   - Press and media

Through social media, airport websites and the press, and direct communication to passengers and staff through announcements, physical and digital displays and email, communications teams should provide information on hygiene and sanitation, and any new health procedures, such as early examples of health screening.

11.2 Operational Restrictions

As the outbreak unfolded, national regulators and health authorities reacted to the spread of the virus by introducing measures directly affecting aviation, including travel bans and restrictions. These measures, coupled with decisions taken by aircraft operators to reduce traffic, dramatically affected airport operations. As the pandemic continued to unfold, airports around the world began to reduce capacity by closing infrastructure such as terminals, concourses, piers and parts of the airfield.

To support this, airport communications teams were then focused on communicating to passengers, staff and stakeholders on the changes in operations and reductions in services, as well as the closure of terminals and infrastructure so that those who were still required to work or needed to travel could navigate the new arrangements.

Airports have had to ensure that they remain equipped to continue to communicate effectively with passengers, the media, and partners and stakeholders as the COVID-19 pandemic developed. Special consideration has been given to how communication can be maintained in the event that staff have been required to work remotely.

As the industry prepares to plan for restart and recovery, airports will need to work out how best to communicate to staff and passengers how any reopening of infrastructure or resumption of services will be delivered.

11.3 Preparing for Recovery and Restart

To address public concern over travel and the spread of COVID-19, it is likely that governments and public health authorities will supplement airport practices with new passenger and staff processing procedures. Airports will have an important role to play in rebuilding the trust that aviation and travel is safe and does not pose a risk to public health—and communications will be at the forefront of this.

Any recovery and restart of operations is likely to be gradual and staggered, and governments and public health authorities may introduce new procedures for passengers and staff to facilitate the reintroduction of operations.

Critical to the success of any restart and recovery will be the communication links that have been established by the airport with internal and external partners and with local government, regulators and public health bodies (outlined above). These networks will allow information provided—or new procedures advised—by these bodies or developed in close collaboration with the public health authorities, to be communicated to passengers, staff and stakeholders and partners swiftly, clearly and consistently.

Airport communications teams will need plans in place to help ensure that the requirements to meet these new procedures are understood before staff and passengers arrive at the airport, if possible.

The purpose of this communication will be to:

- Keep passengers, staff and stakeholders updated on restart and recovery timelines, highlighting when services will return or when facilities will be reopened.
- Help ensure that passengers and staff are aware of any new processes or procedures whether they relate to actions that individuals need to take themselves prior to traveling ore returning to work, or are new processes that have been introduced at airports that will have an impact on the airport experience.
- Reinforce public health authorities' messaging and information on the efficacy and reason for new procedures—or new approaches—to facilitate air travel to reassure passengers and staff that their health and safety remains the priority.
- Provide passenger and staff information as to any changes in the physical access to the airport or infrastructure (changes to surface access, for instance).
- Provide clear information on any new airport procedures, requirements, or restrictions that they will need to understand—and submit to—if they wish to travel.

It is important to note that airports are diverse and sophisticated communities that bring together different players across many sectors. As restrictions on travel are lifted and connectivity begins to return, communication will play an important role in bringing the entire airport community together to understand and meet the challenges of restart—not just in communicating with staff employed directly by the airport, but also with all partners across the campus.

This will help to ensure consistent communication with all staff employed at the airport and, crucially, that passengers will receive the same message from each of the service providers that they come into contact with at the airport before, during and after their journey.

In striving to ensure that passengers are aware and cognizant of any changes to the way they travel, direct communication to passengers has included, but is not limited to, direct email communication through regular updates and newsletters, social media activity, announcements through public address systems, displays on digital information screens within the airport, and through customer assistance staff on the ground.

As regards indirect communication, it is also crucial that clear messages are provided to the press and broadcast media through regular updates and appropriately timed press conferences with senior management where necessary.

Of critical importance in this process is the internal relationships between the corporate, communications, commercial and operations teams. It is important that the communications team knows and has access to key people at every level of the operation and that, crucially, these

operations teams know and trust the communications staff—the lines of communication need to be two-way and respected.

The process of ascertaining operational information and approving and issuing communications needs to be well-understood and teams well-drilled. Airports need to have systems and controls in place to ensure the fast transfer of information and the swift approval of communications so that the most up-to-date and relevant information can be provided swiftly.

11.4 Flexibility and Responsiveness

The way that the effects of the COVID-19 pandemic unfolded showed the value of flexibility and responsiveness in the face of an evolving and persistent crisis. This is a lesson that will need to be carried through as airports plan for recovery and restart.

Communications teams will need to have prepared flexible plans so that they can be scaled up or down as the recovery and restart escalates and, potentially, de-escalates. Communications teams should explore potential scenarios in advance.

This will allow for basic messaging, communications lines and collateral, and media statements to be drafted and approved ahead of time so they can be quickly amended with information specific to the restart and issued swiftly. This will reduce the time taken to provide the critical first response to issues as they happen, and teams can then remain flexible and fleet-of-foot to stay in control as things unfold.

11.5 Actions:

- Establish communication links between the airport and internal as well as external partners.
- Utilize the channels available to provide information on health and sanitary measures, as well as new health procedures.
- Ensure that staff is equipped to communicate effectively to stakeholders even when working remotely.
- Create an internal communications plan to help ensure that the requirements to meet new health procedures are understood before staff and passengers arrive at the airport.
- Create a clear, swift pathway to approve communications for dissemination.

AIRPORTS COUNCIL INTERNATIONAL

ACI World
Suite 1810
800 Rue du Square Victoria
Montreal, Quebec, H4Z 1G8
Canada

www.aci.aero

For more information or to access comprehensive airport data analysis and reports, please visit **aci.aero/publications/new-releases**