



Guidance for Ground Handling during COVID-19

Ed. 3 24 April, 2020



DISCLAIMER

△ The information contained in this publication is subject to constant review in the light of changing government requirements and regulations. No subscriber or other reader should act on the basis of any such information without referring to applicable laws and regulations and without taking appropriate professional advice. Although every effort has been made to ensure accuracy, the International Air Transport Association shall not be held responsible for any loss or damage caused by errors, omissions, misprints or misinterpretation of the contents hereof. Furthermore, the International Air Transport Association expressly disclaims any and all liability to any person or entity, whether a purchaser of this publication or not, in respect of anything done or omitted, and the consequences of anything done or omitted, by any such person or entity in reliance on the contents of this publication

Contents

| | |
|---|-----------|
| 1. Introduction and scope | 3 |
| 2. Ground Handling in case of COVID-19 | 3 |
| 3. Ground handling recommendations | 4 |
| 3.1 Passenger check-in, transfer, and gate handling | 4 |
| 3.2 Baggage and cargo handling | 5 |
| 3.3 Ramp handling..... | 6 |
| 3.4 ULD handling..... | 7 |
| 3.5 Aircraft cleaning | 10 |
| 3.6 Catering handling..... | 10 |
| 4. GSE storage..... | 11 |
| 4.1 Preparation..... | 11 |
| 4.2 During storage | 13 |
| 4.3 Return to service | 15 |
| 5. Training..... | 17 |
| Inquiries and Feedback | 20 |

Insertions and revisions from the Edition 2 have been marked in the following way :

- – Insertion
- △ – Amendment

Please note that only content changes have been marked seeing as some of the sections have been rearranged for purposes of structure. Format changes were not marked as insertions or amendments as there has been no change in the content presented.

1. Introduction and scope

△ Following the disruption caused by COVID 19, various operators and ground handling providers have approached IATA seeking guidance on how to carry out ground handling during the COVID-19 outbreak as well as on how to deal with various operational challenges arising from the disruption.

This document provides a quick reference to the various governmental and industry material and updates on COVID-19 outbreak as well as an industry guideline specifically related to the ground handling industry.

This document and its future updates will be posted on www.iata.org/ground-operations

2. Ground Handling in case of COVID-19

COVID-19 spreads by respiratory droplets. These are breathed out particularly when the sick person coughs, sneezes or talks, and then they are either breathed in directly by someone else, or travel via the hands of the sick person to the hands of the well person, who then touches their face and breathes in the particles. Less efficiently, the virus may be passed from hands to hands via recently touched surfaces. Most of the spread has been from close contact with someone unwell at the time. Close contact is typically defined as being within 1-2 meters for 15 minutes. Source information from the CDC (Centre for Disease Control) on the Corona Virus Disease – COVID-19 can be found [here](#).

Based on the [Environmental Cleaning and Disinfection Recommendations from US CDC](#), "Transmission of novel coronavirus to persons from surfaces contaminated with the virus has not been documented. Transmission of coronavirus in general occurs much more commonly through respiratory droplets than through fomites."

IMPORTANT This implies that the principles of most operational procedures are un-changed, while cleaning, good hygiene measures and consistent use of appropriate personal protective equipment (PPE) is recommended. WHO and local regulations are to be reinforced during this time of handling with an outbreak of COVID-19.

△ Based on recommendations from the [OHSA regarding COVID-19](#) and [EASA Coronavirus 'SARS-CoV-2' Infections – Operational Recommendations](#). For all workers, regardless of specific exposure risks, it is always good practice to:

- (a) Frequently wash your hands with soap and water for at least 20 seconds
- (b) If soap and running water are unavailable, use an alcohol-based hand rub with at least 60% alcohol.
- (c) Always wash hands that are visibly soiled
- (d) Avoid touching your eyes, nose, or mouth with unwashed hands
- (e) Avoid close contact with people who are sick

□ Multi-layered approach

- (a) Face Masks: If a regulator recommends the use of face coverings for passengers along with suitable PPE for crew and other airline staff, then this is likely to form a useful element of a multi-layered protection strategy.
- (b) Physical distancing: The mainstay of interrupting the spread of COVID-19 is preventing people from having close contact with each other, since the most efficient method of spread is by inhalation of

exhaled droplets from an infected person. It is possible to modify airport check-in, immigration, security, departure and transfer lounges, boarding and arrival processes in such a way as to ensure such physical distancing

- (c) In the absence of any single measure which can achieve high levels of risk reduction, the alternative is to use a combination of the above approaches to mitigate the risk as far as practical and to include any other local regulations as proposed.

NOTE: A multi-layered approach will almost certainly be required in the initial stages of the recovery process.

3. Ground handling recommendations

In this part, the ground handling process is split into key operational areas. Each area includes references specific to each ground operation area (if available) and Q&A for questions arising from our stakeholders.

3.1 Passenger check-in, transfer, and gate handling

3.1.1 Document sources

- [Novel Coronavirus \(Covid-19\) Dangerous goods \(including alcohol based sanitizers\) guidance for Operators](#)

3.1.2 Guidelines

As much as possible practice "Physical distancing":

- (a) Expand stanchions to allow for broader spacing of passengers at check-in areas
- (b) Move portable boarding scanners for passengers to scan boarding cards, to avoiding the need for personnel to avoid handle boarding cards
- (c) Increased frequency of wiping down arm rests, seats, and backs of wheelchairs

NOTE: During preplanning, coordination is required for gating of flights to avoid side by side operations wherever possible and allowing guests more distance while in boarding lounges.

Report passengers with:

△ Specific symptoms of fever (gives a history of feeling feverish, or has an actual measured temperature of 100.4°F [38° C] or higher) that has persisted for more than 48 hours, including:

Fever and one of the following:

- (a) Persistent cough
- (b) Difficulty breathing
- (c) Appears obviously unwell

□ 3.1.3 Carriage of Alcohol-Based Hand Sanitizer in Passenger and Crew Baggage

Carriage of Alcohol-Based Hand Sanitizer in Passenger and Crew Baggage Paragraph 2.3.5.1 of the IATA Dangerous Goods Regulations sets out the allowances for passengers and crew to have in their checked or carry-on baggage medicinal or toiletry articles, which may include articles containing alcohol as follows: 2.3.5.1 Medicinal or Toiletry Articles and Aerosols in Division 2.2 Non-radioactive medicinal or toiletry articles (including aerosols). The term "medicinal or toiletry articles" is intended to include such items as hair sprays, perfumes, colognes and medicines containing alcohols. Aerosols in Division 2.2, with no subsidiary hazard, for sporting or home use. Note: The total net quantity of all such articles carried by each passenger or crew member under the provisions of 2.3.5.1 must not exceed 2 kg or 2 L and the net quantity of each single article must not exceed 0.5 kg or 0.5 L. Release valves on aerosols must be protected by a cap or other suitable means to prevent inadvertent release of the contents. Alcohol-based hand sanitizer is acceptable under the provisions of 2.3.5.1, however, it should be noted that where passengers or crew wish to have the hand sanitizer in their carry-on baggage that the limit of 100 mL or equivalent per item for liquids and gels in accordance with the aviation security provisions applies.

3.2 Baggage and cargo handling

3.2.1 Document sources

- [IATA TACT Airlines Cargo Operations Status, COVID-19](#)
- [Action Cargo: COVID-19](#)
- [IATA Suspected Communicable Disease Guidelines for Cargo and Baggage Handlers](#)

3.2.2 Guidelines

3.2.2.1 Handling cargo from affected countries

The rationalized use and distribution of PPE when handling cargo from and to countries affected by the COVID-19 outbreak includes following these recommendations

- (a) Wearing a mask of any type is not recommended when handling cargo from an affected country.
- (b) Gloves are not required unless they are used for protection against mechanical hazards, such as when manipulating rough surfaces.
- (c) Importantly, the use of gloves does not replace the need for appropriate hand hygiene, which should be performed frequently, as described above.
- (d) When disinfecting supplies or pallets, no additional PPE is required beyond what is routinely recommended.

To date, there is no epidemiological information to suggest that contact with goods or products shipped from countries affected by the COVID-19 outbreak have been the source of COVID-19 disease in humans. WHO will continue to closely monitor the evolution of the COVID-19 outbreak and will update recommendations as needed.

□ 3.2.2.2 Human remains transportation

Please refer to the [Action Cargo: COVID-19](#) under the heading "Keeping air cargo flying" and then "Human remains transport".

3.3 Ramp handling

3.3.1 Document sources

- [IATA Emergency Response Plan](#)
- [FAA Temporary Parking of Overflow Aircraft](#)

3.3.2 Guidelines

3.3.2.1 General

Handling of GSE equipment should be done as normal. This is not considered to be a route of transmission of this disease. Similarly, the handling of water and toilet waste does not change. Sanitising and cleaning of passenger and crew buses should be done regularly using standard disinfectant agents such as 60% alcohol, hypochlorite or peroxide, and done on all high touch areas likely to be contacted by a person potentially unwell.

3.3.2.2 Aircraft arrival with suspected COVID-19 case

When an aircraft arrives with a possible COVID-19 passenger or with an affected passenger and Ramp Buses are required, assess the situation before-hand:

- (a) Provide and identify a limited number of buses for that service
- (b) Use the same buses for the whole disembarkation service and disinfect once the process is finalized
- (c) Limit the number of passengers in the bus

Define a communication protocol between the ground personnel and cock pit crew to avoid direct contact e.g., the Ramp Agent communicates with Cockpit through headsets to advise:

- (a) The stair/s at door have been securely placed
- (b) The Ramp Agent will confirm the stair is secured and safe for disembarkation. The sequence of disembarkation will depend on the location of the passenger relative to the doors and should be designed to minimize contact between that person and other passengers.
- (c) Ground crew and cabin crew will agree on number of passengers to disembark at the given time
- (d) A hand signal shall be provided by both the cabin crew and ground crew once the agreed limits are reached to maintain the "physical distancing":
- (e) Once the process is agreed the buses and boarding devices shall be disinfected prior use for the next process

This shall ensure:

- (a) The risk of infection is avoided between the ground personnel on the one hand and the passengers and crew from a flight with an infected person on the other hand
- (b) Disinfection is done thoroughly

3.3.2.3 Long term parking for aircraft

Depending on each airport emergency plan, the airport may require the aircraft to proceed to a designated bay, possibly a remote bay, according to its plans and requirements.

Ensure to check on:

- (a) Spacing and distance between adjacent aircraft
- (b) Park aircraft facing into the prevailing wind direction
- (c) Consider periodic engine runs for engine preservation
- (d) Available anchor points for high wind conditions
- (e) Grounding paths
- (f) Monitor snow accumulation
- (g) Prioritize parking on serviceable bay for aircraft planned for service to avoid repositioning
- (h) For surface conditions, the basics for hot climate regions is to prefer concrete areas rather than flexible (asphalt, bituminous) except high module asphaltic material. This will avoid indenting those areas during a long period of park.

A. Airbus specific - Aircraft Maintenance Manuals chapter 10 recommendations for parking, storage and return to service of the aircraft.

- Parking/Storage (Ref. ATA 10-10),
- Mooring (Ref. ATA 10-20),
- Return to Service (Ref. ATA 10-30).
- AMM Chapter 05-57 supplies information to ensure the stability of the aircraft when parked or stored.

B. Boeing specific - Aircraft Maintenance Manuals Chapter 10 recommendations for parking, storage and return to service of the aircraft.

NOTE: If further information, clarity or alternatives are needed, please contact the Boeing 24/7 Customer Response Centre. There is a dedicated team in place already addressing fleet wide grounding efforts and will offer them the most expedient response and support for all models within their fleet.

3.4 ULD handling

3.4.1 Document sources

- No specifics available

3.4.2 Guidelines

- (a) Before placing into storage, all rubbish and/or ancillary accessories not permanently attached to the ULD shall be removed from the ULDs
- (b) ULDs (except for forkliftable ULDs) shall never be stored directly on the ground but on a suitable ULD base support system
- (c) Containers shall always be stored base downwards and pallets horizontally
- (d) ULDs should be segregated by ULD Type Code
- (e) If ULDs of different airlines / ULD owners are stored, ULDs should be segregated by airlines / ULD owners
- (f) Container doors must be fully restrained

- (g) Pallet nets and cargo straps shall not be exposed to damaging environments such as direct sunlight (U.V.), water (humidity), and freezing temperature to prevent environmental degradation
- (h) ULDs shall be sheltered whenever possible
- (i) Storage area for unserviceable ULDs shall be clearly marked and the damaged units segregated from serviceable units and tagged in accordance with AHM 420 Attachment 'E'
- (j) Once placed into storage, all required locks or stops shall be engaged to prevent ULD from unintended further movement
- (k) Do not forget to update and maintain ULD stock control data accordingly

3.4.2.1 Loading ULDs into parked aircraft

Airlines shall perform a safety risk assessment and refer to instructions in the aircraft Weight and Balance Manual (WBM) even for parked aircraft.

- (a) The loading and installing of ULDs on board should only be performed by trained, experienced and authorized staff
- (b) Ensure only serviceable ULDs are loaded to avoid damages to the aircraft.
- (c) Follow the WBM requirements and ensure only ULDs that are approved for the intended aircraft are loaded
- (d) On parked aircraft, ULDs shall be empty.
- (e) In the case that the parked aircraft has to move (e.g. towing, pushback) and if the stored ULDs are not fully restrained, the ULDs may suddenly move not only causing ULD damages but also damages to the aircraft (e.g. cargo linings, ceiling). Therefore, airlines are encouraged to restrain all the ULDs as per WBM instructions.
- (f) In the case of Cargo Loading System malfunctions, airlines shall refer to WBM – Limitations.
- (g) Follow the WBM requirements and ensure ULDs are fully engaged with the Cargo Loading System (e.g. locks are raised) like installing ULDs for a departing flight.

*Exceptions - If the airlines can guarantee that the aircraft will remain complete parked without movement and/or can guarantee unrestrained ULDs will not cause any damage to the aircraft or personnel, unrestrained ULDs may be accepted on parked aircraft subject to the safety risk assessment performed by the airlines.

For Additional Information on ULD storage:

- Refer to ULDR Section 6, Operating Specification 6/00 for requirements for ULD Serviceability Check;
- Refer to ULDR Section 7, Standard Specification 40/3 as well as Appendix 'H' for standard formats of ULD Operational Damage Limits Notice (ODLN) and the illustration of the ULD components listed on a typical container ODLN

3.4.2.2 Stacking ULDs

In the case of loading and storing stacked pallets, stacked pallets shall be carried, as cargo items following WBM requirement, onto a base pallet under the following requirements: (see ULDR OS 6/01 Section 8.7)

- (a) The base pallet shall be serviceable and approved by the WBM
- (b) Only pallets of the same size or smaller size than the base pallet shall be stacked on the base pallet; if pallets of smaller size are stacked, these should all be of the same smaller size
- (c) An intermediate floor of wooden pallets shall be laid onto the base pallet in order to leave a free space all around, on a height of at least 10 cm (4 in), this being the interface area with aircraft CLS hardware

- (d) If nets of stacked pallets are not removed, the net of each pallet shall be disentangled and laid flat within its surface, without any part of it protruding, hanging out, or bearing on an edge rail
- (e) Refer to the aircraft WBM, WBM Supplement, or airlines' instructions based on it, for the restraint of the stacked pallets
- (f) Ensure a clearance of 51 mm (2 in) between the contour of the loaded pallet (pallet, pallet equipment and load items) and:
 - 1. The cargo door
 - 2. The adjacent ULD
 - 3. The cargo holds sidewalls and ceiling

NOTE: The clearance requirement does not apply to the distance between ULD baseplates.

3.4.2.3 Stacking ULDs of different types

- a) In cases of an excess of containers with smaller base size (mainly K-size base) such containers could also be loaded onto a larger size pallet and restrained by using the correct pallet net and/ or straps. For example, two AKE can be stored on top of a PMC if proper restraint devices are used.
- b) Before loading onto the aircraft, all rubbish and/or ancillary accessories not permanently attached to the ULD shall be removed from the ULDs. For long term storage of ULDs inside an aircraft the ULDs must be free of clutter and other items.
- c) Do not store ULDs that are not owned by the airlines on board the aircraft unless approved by the ULD owner. The last two alpha-numeric characters of the ULD ID Code indicate the owner of the ULD (see ULDR Section 4, Standard Specification 40/1; CSC Resolution 686).
- d) The normal ULD inventory procedures should be followed and ULD stock control data should be maintained and updated accordingly. It is recommended the ULD ID Codes associated with the respective aircraft as well as the ULD positions be recorded.

3.4.3 Q/A

1. Due to increasing number of grounded aircraft there has been a lack of ULD storage areas. While airlines / Ground Service Providers are trying to find additional ULD storage areas, what are the general requirements and guidance?

Answer: Any organization storing (permanently or temporarily) ULDs shall be responsible for providing and operating suitable and sufficient infrastructure as well as ensuring that only staff with the required training and qualifications handle the ULDs to prevent damage.

For additional information:

- Refer to the instructions of the airlines/ ULD owners as well as the general requirements in IATA ULD Regulations (see Section 9, 9.3) and Airport Handling Manual (AHM) 421.
- Refer to AHM 942 for minimum functional requirements for a storage rack for standard ULDs.
- Refer to AHM 911 for Ground Support Equipment requirements for compatibility with ULDs.

2. If dedicated a ULD storage facility is not available, would some exceptions be acceptable?

Answer: Subject to the safety risk assessment performed by the airlines/ ULD owners and agreed by the airlines / ULD owners, some exceptions may be acceptable provided all necessary precautions are taken to prevent ULDs from being damaged. (see ULDR Section 9, 9.3.5)

In addition, some examples of exceptional practices are listed below information:

- *Outdoor storage may be acceptable if provisions are made to prevent possible damaged by airport ground vehicles operations*
- *ULDs may be stored on dollies provided the dollies are compatible with the ULD base dimensions and ULDs are properly restrained*
- *Empty ULDs may be stored on ULD transfer/ support devices ("slave pallets" or suitable and sufficient dunnage (wooden runners, Euro Pallets, etc.) provided ULDs are properly restrained to prevent unintended further movement*
- *Where containers are stacked (except for containers bearing "No Stacking Symbol") they shall never be stacked more than 2 high and with sufficient spacers between upper and lower unit to permit lifting of the upper unit without damage to the lower unit*

3.5 Aircraft cleaning

3.5.1 Document sources

- [CDC Updated Interim Guidance for Airlines and Airline Crew: Coronavirus Disease 2019 \(COVID-19\)](#)
- [IATA Suspected Communicable Disease Guidelines for Cleaning Crew](#)
- [EASA Interim guidance on Aircraft Cleaning and Disinfection in relation to the SARS-CoV-2 pandemics](#)

3.6 Catering handling

3.6.1 Document sources

- No specifics available

3.6.2 Q/A

1. How should the loading and offloading of catering trolleys be handled?
2. Dealing with catering equipment used during flight. What is the process for cleaning / disposal of cutlery / crockery / glassware as well as the cleaning of catering carts in case of suspected communicable disease?
3. What are the precautions that catering staff should take to avoid contamination during catering handover to cabin crew?
4. Are there any special procedures that should be adhered to when securing or sealing catering trolleys?
5. Is it necessary to strictly use only disposable utensils for cutlery and dinnerware?
6. Any additional PPE for catering staff?

Answer to Questions 1-5: No change is advised to these procedures. The route of spread of this virus is through close contact with people who are unwell, either direct droplet inhalation. The spread via surfaces with delayed contact is theoretical but has not been a driver of this outbreak. Simple handwashing techniques and avoidance of touching the face, as all the public are being advised, are the key to prevention.

4. GSE storage

These procedures provide a quick reference and general guide for formally taking GSE Out of Operational Use (OOU), how to manage it while OOU and steps to return it to service.

4.1 Preparation

4.1.1 General principles

- (a) Parking GSE for a long time without taking certain basic steps can lead to potential problems and down-stream costs when it is needed again
- (b) The primary aim of the preparations is to preserve the active GSE fleet in a safe and fully functional condition, so that it is easy and quick to return to operation and safe to use, with least possible cost.
- (c) The first point of reference for correct storage procedures should be the equipment manufacturers' (OEM) guidelines. Most GSE OEM manuals have a section describing storage procedures (which might vary depending on the storage period) that users can reference. These supersede any content of this guideline.
- (d) If local regulations and procedures are more prescriptive or do not allow the application of these best practices, then they will have precedence over this guideline.

4.1.2 Planning and actions

4.1.2.1 Planning

GSE storage plans can involve either:

- (a) Complete deactivation
- (b) An "exercise" regime whereby units are started and moved according to a plan
- (c) A planned rotation of units to distribute the utilization of the fleet, or
- (d) Some combination of these strategies.

*It is recommended to develop a GSE fleet storage strategy and perform the activities described below (as applicable). Ideally, it is recommended to develop a return to service plan at the same time as the storage plan. In this scenario the storage actions are paired with the corresponding actions to return the unit to service.

Control of small items such as by-pass pins, tow-bar fuses etc. needs to be part of the storage plan.

4.1.2.2 Actions

- (a) \triangle Park GSE in a centrally controlled area and under cover and CCTV surveillance wherever possible.
- (b) Ensure all doors and windows are closed and secured
- (c) Ensure exposed operational panels are covered to protect them from various climatic conditions such as rain, sun and dust
- (d) Depending on climate, vents can be open to allow air to circulate but this should be weighed against the possibility of mould, fungus, infestations such as vermin / insects / birds, as well as ingress of sand, dust, snow, water
- (e) Secure all accessories and hoses, cables, covers etc.

- (f) Inflate all tires to the maximum recommended pressure – unless the unit is to be stored on blocks with wheels off the ground
- (g) Ensure all fluids are at the correct level unless the manufacturer's documentation indicates otherwise.
- (h) Where possible, chock the vehicle to prevent it rolling away. A parking brake can seize in the ON position if set. Decision to set the parking brake or not is to be guided by manufacturer documentation, experience with the specific piece of equipment, nature of the parking area in terms of slope etc.
- (i) Minimize exposed lengths of hydraulic cylinder rods by moving all platforms, booms, stabilizers etc. such that the rods are in the fully retracted position.
- (j) If possible, coat exposed hydraulic rams with a preserving fluid or grease
- (k) Protect unpainted metal surfaces such as roller chains, lift chains, sprockets with rust preventative
- (l) Drain air brake tanks of all water residue
- (m) If GSE is equipped with telematics, disconnect the main batteries to avoid draining the battery when in storage
- (n) Ensure all ignition / power systems are off or isolated
- (o) Protect against unauthorized usage by removing keys (if keyed ignition) or by appropriate kits to lock out/ tag out
- (p) For potable water truck tanks – Refer to [WHO](#) guidance and IATA IDQP policy - see Airport Handling Manual (AHM 440)
 1. Try to rotate the potable water trucks (based on a timescale that does not require the full scale taking into service procedures) or downscale operations by keeping only certain trucks in service while taking others OOU.
 2. Potable water trucks water tanks shall be kept empty and dried as much possible.
 3. Level indicators, if installed, shall be removed to be cleaned and dried and shall be kept dried in place.
 4. If stored filled, the tank shall be filled with water to maximum leaving no space for possibility of growth of any microbial agent. The water shall be dosed with adequate chlorine, chlorine dioxide or hydrogen dioxide.
 5. All vents should be closed/sealed tightly to avoid infestations such as vermin / insects / birds, as well as ingress of sand, dust, snow, water.
 6. All hoses and hose connectors must be end capped. Where no end cap is available, the hose shall be covered with a clean rag and plastic over the rag. Tie both, the rag and plastic to the hose tightly using safety wire. Hoses may be placed in disinfection solution provided the service provider has a replacement program as per the local procedures. If installed, all filters shall be removed, and filter support kept empty and dried
 7. All equipment shall be kept stored in a cool and dry place.
 8. All records, filter replacement records, replacement of disinfection solution records, shall be retained and be made available to the airline/authority if/when requested.
- (q) For lavatory unit tanks – these should be emptied, cleaned and left to air dry with hatch left partially open but covered to prevent ingress of any foreign objects
- (r) For fuel truck tanks – Refer to local safety regulations. Could depend on type of fuel stored. If tanks are emptied, they should also be degassed to remove any flammable gasses.
- (s) De-icing anti icing equipment – These are typically stored for the warm season(s) – unless otherwise directed, follow the OEM guidance for the normal storage season
- (t) For towbars, grease where appropriate (especially for moving mechanisms such as towbar head-locks pins, etc) and cover properly to avoid any corrosion.

*Caution: Plastic sheeting creates condensation which can lead to rust and pitting of metals as well as deterioration of electronic components and electrical contacts.

4.1.2.2.1 Equipment with internal combustion engines

- (a) Δ It is recommended to keep fuel tanks filled as this prevents condensation and micro-bacterial growth. However, this must be a local decision based on local regulations, climatic conditions (if seasons are changing from cold to hot weather, the fuel tank should only be partially filled to allow for expansion without overflow of fuel as temperatures rise), expected duration of OOU period and cost.
- (b) Disconnect the battery – after checking the manual for any specific precautions
- (c) Ensure DEF fluid does not freeze during prolonged periods of inactivity during cold weather. DEF fluid tanks could have heaters connected to the battery which can deplete the battery. Consider draining the DEF tank if the battery is to be disconnected
- (d) Check OEM manual for any specific measures to take regarding emissions equipment.

4.1.2.2.2 Electrically powered GSE

- (a) Batteries need to be kept in dry, cool, frost free conditions – extremes of heat and cold are not good for batteries
- (b) Where possible / available, follow the guidance of the battery manufacturer regarding storage
- (c) For lithium battery powered units
 1. The lithium battery should be kept with a reasonable charge
 2. Where possible leave plugged in
 3. Where not possible, turn off the master disconnect on the equipment
 4. If the lithium battery is provided with a power switch, that should be switched to OFF the position to prevent discharge from the battery's electronics
- (d) For lead acid battery powered units:
 1. Disconnect from the charger system unless otherwise advised.
 2. Turn off the master disconnect on the equipment.
 3. Chargers shouldn't need any attention but if not in use, should be shut off at main disconnect.

4.2 During storage

4.2.1 General

Follow your storage plan.

Example 1: If rotating the fleet, swap a parked serviceable GSE with another serviceable one in operation. Do this in an organized way according to the plan. This way you can distribute the utilisation evenly within your fleet.

Example 2: If “exercising” the fleet, start equipment periodically (once a week if possible), and, taking precautions, move it around to prevent flat spots developing on tyres, (this also applies for vehicles with solid tyres). Use the hydraulic and brake systems to circulate fluids and keep seals flexible.

GSE under different storage / parking regimes should be identified to ensure only those intended for use are used. This can be accomplished by means of tags, key controls, differentiated parking areas or similar control measures:

- (a) Fix units when they breakdown whenever possible. Try to avoid swapping a defective unit with a parked but serviceable one as this leads to situations where you may end up with all unserviceable units and it becomes difficult to identify which unit had what issue.
- (b) Avoid cannibalisation of parts, as much as possible. Only swap spare parts from another GSE if the equipment is absolutely critical for operation and the spare part is not in your stock (or the lead time is unknown). Cannibalising leads to uncontrolled repair activity and duplication of effort/labour.
- (c) If possible, under the local circumstances, consider using this time to catch up on maintenance and repairs.
- (d) If possible, check all stored units weekly for overall state of readiness
 1. Monitor for leaks, flat tires, nesting birds, mice, rats and other infestations such as ants, bees, wasps etc.
 2. Check for water infiltration in cabs / compartments after rain and prevent any development of mould, fungus etc.
 3. Check all drain holes are clear to prevent build-up of pools of water and accumulation of rotting vegetation leading to rust and mould.
- (e) If not already done as part of the Preparations phase, develop a return to service plan based on the storage plan. Ensure sufficient stock of fluids, filters and other spare parts is on hand at the commencement of return to service so the process can run smoothly and not cause service delays.

4.2.1.1 Lithium batteries

- (a) Depending on the condition of the batteries and the initial charge level, these batteries could be good for up to 6 months with no charging, after that they should be checked for charge levels.

4.2.1.2 Lead-acid batteries

- (a) Check water levels and freshen charge of the batteries at least every 3 months but more frequently if possible
- (b) Check lead-acid batteries for build-up of corrosive powders at terminals and around the battery cells, clean as necessary.

4.2.1.3 Fleet management systems and data

In terms of PMI (preventive maintenance and inspection) consider revising the maintenance schedule when GSE is placed in storage to account for it being out of use.

Calendar regulated services (e.g. monthly checks become irrelevant if units are not used for several months) could be stopped or moved over to time (typically hours) in use measures if the units are to be "exercised" regularly. For example, if a unit is stored today and is due a PMI in 6 weeks' time, then the PMI is either done upon reactivation or 6 weeks after reactivation or after a certain number of hours equivalent to 6 weeks of use has passed. This should be a local maintenance manager decision, in collaboration with regional fleet managers, based upon several factors including whether the unit has been started and exercised during the storage period, the number of available maintenance staff, climatic conditions and cost implications.

A record should be kept of all that was done to each unit when it was put into storage. Record should also be kept of each time the unit is exercised or rotated with another unit. This will facilitate a quick return to service with reliable equipment

△ 4.3 Return to service

4.3.1 Planning and preparation

- (a) The actions necessary to return GSE to full-time service depends on how long the unit was stored, how it was stored as well as whether or not it was rotated or “exercised” during the storage period.
- (b) If not already done, develop a GSE return to service plan based on the record of all actions taken as part of the storage plan as well as the expected ramp up of operations as the situation returns to normal.
- (c) Plan to start returning units to service ahead of actual return of air traffic so that there are enough units to meet initial days’ demand. Include in the plan the need to reinstate GSE maintenance staff early to enable timely completion of critical return to service activities.
- (d) At airports where there are significant numbers of parked aircraft, be prepared for the need for aircraft tow tractors / pushback tractors ahead of the return of air traffic.
- (e) Put in place measures to ensure cleanliness of high common use touchpoints on GSE
- (f) Ensure adequate supplies of parts and fluids that are expected to be needed to reinstate out of operational use (OOU) GSE are on hand prior to starting the return to service program.
- (g) Ensure Airside Vehicle Passes (AVPs) are valid for the GSE that are being returned to service. Where these are dependent on currency of preventative maintenance and inspection regimes, it is recommended that airport authorities recognize PMI schedules that have been adjusted to account for reduced usage (or no usage) of the equipment.
- (h) Ensure that all GSE personnel who will need operator / driver licences and access permits for the airside and the GSE storage areas will have these available in time or that arrangements have been made for validity extensions, before the start of the return to service program.
- (i) Ensure that all necessary training / recurrent training has been done and/or necessary arrangements have been made for validity extensions.

4.3.2 Return to service safety and functional check

As a minimum, it is strongly recommended that all GSE that is returned to service should have a full safety and functional check completed by qualified and competent GSE maintenance staff. The check should include:

- (a) Where available and the storage period was long enough to trigger it, utilize the Equipment Pre-operational Checklist or similar document from the manufacturer.
- (b) Walk around the equipment, check for nests, blocked intake and exhaust pipes, flat tires, chewed wires, hoses, fuel lines, evidence of leaks and any other obvious signs that the equipment is not ready for use.
- (c) Ensure battery terminals are correctly connected in terms of polarity.
- (d) Check the OEM manual before “jump starting” or boosting the battery from an outside power source to avoid possible costly damage to electronic systems due to voltage spikes / surges. Where possible charge the battery with an external charger.
- (e) Before starting / moving the equipment, check tire pressures, and all fluid levels. Remove blocks if GSE was stored with wheels off the ground.
- (f) If the engine, transmission and / or hydraulic systems were treated for long term storage, follow the reinstatement to service procedures specified by the preservative protocol / OEM manual.
- (g) Clean off any sliding surfaces such as rams etc. that have been coated with preservatives.
- (h) If the vehicle/equipment is fitted with sensors these will need to be cleaned to ensure proper functionality.

- (i) Check OEM manuals regarding towing procedures prior to towing any disabled GSE – some modern transmissions / drivetrains do not allow for towing or can only be towed within very limited speed / distance parameters – the consequences of not following the OEM precautions can be expensive transmission / drivetrain failures.
- (j) Once the unit is started, allow the brake system to build up to operating pressure (air brakes).
- (k) Move off very slowly and apply brakes within a meter or so to ensure brakes are working.
- (l) During a short drive, check for unusual noises, unusual smells (e.g. burning), pulling to one side during pull off / driving / braking, erratic power delivery, amongst others. Stop and check for any leaks, smoke etc.
- (m) For GSE fitted with any proximity sensing and warning systems, check that these are operating correctly before servicing an aircraft.
- (n) Start and run air conditioning units (ACUs) to atmosphere and air supply units (ASUs) in bypass mode before connecting to an aircraft to ensure no debris (e.g. bird nests etc.) that might have entered the hoses or ducts, gets blown into the aircraft ducts.
- (o) As GSE is returned to service, ensure the GSE parking / storage area is cleared of all debris such as improvised chocks, discarded materials etc. so that the area is not a source of FOD.
- (p) The return to service safety and functional check should be recorded in the maintenance record system.
- (q) Reinstate the normal PMI program as units return to operation.
- (r) For procedures on returning fuel trucks to service, please refer to [JIG - Bulletin No 128 - Placing equipment into care as part of pandemic response](#)

4.3.2.1 Potable water truck tanks

For potable water truck tanks, the following guidelines and references have been provided by the IATA Drinking-Water Quality Pool (IDQP):

- (a) All tanks, hoses and accessories shall be cleaned according to the usual procedures in effect under normal operations.
- (b) Ensure all devices are re-installed on the vehicle e.g. level indicator, filter support.
- (c) Water sampling shall be done and passed according to usual procedures in effect under normal operations.
- (d) Re-instate the normal record keeping regime.

5. Training

5.1 Introduction

Our industry is undergoing a massive reduction of manpower on a temporary or permanent basis due to traffic reduction caused by the COVID-19 outbreak. We are not only losing a huge portion of industry knowledge as a result but also the significant investment which companies have made into personnel training, development and into the building of strong brands. The impact of COVID-19 is felt across all of the industry and ground handling service providers is not to be underestimated.

To keep an employees' training current, provide training under current conditions as well as ensure that we will have enough staff to handle aircraft once traffic resumes, is one of the most difficult challenges our industry is facing. Training is even more important as our remaining employees face such uncertainty. The potential loss of expertise and skilled and highly trained staff permanently or temporarily will make the industry poorer in human capability, add substantial costs to the whole aviation industry, may increase the risk of health and safety issues both to personnel and to aircraft or equipment, and create major skilled workforce gaps which will hinder operations at an airport, impacting on serviceability, and customer service. Loss of skilled and highly trained personnel will negate all the advances gained in the past decade and will take several years to recover.

This section was developed in cooperation with training experts with the aim to provide general guidelines based on the Airport Handling Manual Ch. 11 (AHM Ch.11), share best practices as adopted by our ground handling community as well as to address various inquiries received from our stakeholders in the absence of existing industry guidance. The common goal must always be not to lower any safety standards in order to protect air transport, the employees of companies and aircraft.

IMPORTANT: An organization shall not allow an untrained person to perform a task which they hold no record of training for.

△ 5.2 Human performance

Our staff is our biggest asset and every company has a duty to protect them and support them during these difficult times. It is important to remember that many people are worried about their health, reduced hours, employment uncertainty - all while they are conducting an operational task, which might have been changed due to the COVID-19 measures or new tasks they have not performed before e.g. parking of aircraft in close proximity. In order to mitigate and reduce the likelihood of any unwanted event during both routine and non-routine operations a risk-based approach is recommended.

△ 5.3 Daily briefs and updates

It is recommended that suitable information and appropriate updates are provided to the work force at a suitable frequency to both maintain engagement and promote safety awareness. . It should include but not be limited to:

- □ changes introduced by new regulations on COVID-19
- organizational and management changes / updates.
- new or amended procedures during the COVID-19
- health and safety actions

- hygiene routines reminders
- human factors
- safety tips
- safety stand down modules for "Attention to Detail and Distraction Management"
- injuries, accidents
- emergency responses

5.4 Initial training

No person may perform a task for which they do not hold a record of training. There shall not be any exemption or reduction in content and initial training needs to be conducted in full as per the company training program or, as a minimum, according to the ground operations training program as specified in AHM Ch. 11. It is unlikely in the current circumstances that companies will be hiring new employees, but when return to operations is notified it shall mean any new hire employees shall require the training to perform their tasks for they have been employed.

△ 5.5 Recurrent training

Where a competent authority defines recurrent period then this shall be met as a minimum. Where a recurrent period is not defined, it is recommended to apply the industry standard as per AHM Ch. 11 and the recurrent training shall take place within the next 36-months at the latest.

A company should track the training validity on a daily or weekly basis for staff on duty, off-duty as well as for staff on reduced hours and temporary leave to be able to monitor and evaluate the training needs and provide training sessions in due time.

Each company should prepare a training plan, taking into consideration the type of employment regime employees are subject to as well as current and future manpower needs. To ensure sufficient trainer availability for the station's needs, each organization should review trainer resources vs. manpower.

It is recommended to keep training current for as many staff as possible. For employees currently working as part of a reduced workforce it, should be the ambition to maintain these employees training as "current" where there are resources to do so.

△ 5.6 Recurrent training extension

The primary aim shall be to keep the qualification valid where staff is still actively involved in aircraft handling. If this is not feasible due to inability to travel, absence of trainer etc., an organization may, based on its own safety risk assessment of specific function(s), decide on a longer recurrent training interval, provided that such recurrent training interval shall comply with the regulatory requirements.

Any training which is required and timed under national law such as dangerous goods, security, can be only alleviated by the competent national authority. While IATA lobbies on behalf of its members with various regulators, it is essential that companies seek any exemption from this type of training directly with their national authority. The list of States that issued a temporary extension for the Dangerous Goods training can be found on here.

The extension period varies between 3 to 6 months, depending on the type of training, and risk assessment done by an organization or a regulator according to their Safety Management Systems. This exception from a

standard procedure needs to be documented. In some countries, such extension might require approval by the national authority per their guidelines.

After the extension period is over, it is recommended to continue to follow the original qualification interval. If a training that expired in 04/2020 is extended and the recurrent training is only conducted in 07/2020, the next recurrent would follow the original schedule and be due again in 04/2023 - not 07/2023.

5.7 Training methods

The biggest focus should be given to alternative methods of training such as: online (web) training, virtual training concluding with an online test, training provided via smart phones and other types of distance learning, in order to keep as many personnel qualified as possible. These methods allow complete training remotely (e.g. from home), at any time, on any time zone and it reduces demands on trainers' availability. If companies set up such training in advance, it will help them to manage the expected big training demand for newly hired staff once traffic starts to return. However, it is important to stress that these methods will not replace the practical element of the training and On the Job Training, competence assessment etc. that will need to take place as our personnel return to work.

5.8 Absence from work

Many staff are on various types of leave. Once they return to work, it is a company's duty to bring all employees up to speed and ensure their competency and operational readiness.

△ Staff on temporary or other type of leave of absence should be treated in the normal Return to Work manner as highlighted in AHM Ch 11 para 6, Period of Absence Table. It includes briefs, On the Job Training, requalification training and depends on the period of absence.

| Period of Absence | Action |
|--------------------------|---|
| Up to 3 months | Brief the employee on any procedural, organizational, or equipment/infrastructure updates/changes that might have occurred during their absence. The briefing shall be documented and filed accordingly. |
| Between 3 and 12 months | Brief the employee on any procedural, organizational, or equipment/infrastructure updates/changes that might have occurred during their absence. The briefing shall be documented and filed accordingly. Additionally, deliver On Job Training to ensure competence has been maintained. Should any gaps in competence be identified, a period of requalification training shall be initiated. |
| Between 12 and 24 months | Brief the employee on any procedural, organizational, or equipment/infrastructure updates/changes that might have occurred during their absence. The briefing shall be documented and filed accordingly. Additionally, deliver requalification training, including a documented, formal assessment of competence, as per initial training, in order to confirm the employee remains competent to perform that role. |
| More than 24 months | Initial training program(s) to be delivered. |

5.9 Training for cargo transported in passenger cabin

Many of the operators are changing passenger aircraft to cargo aircraft or are transporting cargo in the passenger cabin. It is important that load control personnel, as well as cargo and ramp staff are properly trained for these operations. Such training should come from the relevant operator, based on their own procedures. For more information, please see [Guidance for Safe Transportation of Cargo in Passenger Cabin](#) posted on [IATA Ground Operations page](#).

Inquiries and Feedback

This document intendeds will be updated regularly as we receive input and updates from our stakeholders. Please send any further questions, recommendations or inquiries to groundops@iata.org

