



Roads, Vehicles & Equipment

10th Sept 2021

v2.0

ASDRVE_OSI_012

Operational Safety Instruction

Unit Load Device (ULD) Management and Dolly / Trailer Equipment Standards

It is the responsibility of all employers to ensure that relevant OSIs are brought to the attention of their staff. However, individuals remain responsible for their own actions and those who are in any doubt should consult their Supervisor or Manager.

1. Introduction

- 1.1 The demand for ramp equipment parking at Heathrow Airport dictates that ramp activities, including the storage and handling of Unit Load Devices (ULDs) are well managed so that the overall operation runs safely and efficiently.
- 1.2 Following consultation with the Airlines, Ground Handlers and manufactures a new minimum standard for baggage dollies operating Airside has been established. The technical specifications to achieve these new safety requirements are detailed in this OSI.
- 1.3 Red bars have been added to the side of the document to draw the reader's attention to where changes have been made. ASDRVE_OSI_012 V1.0 is hereby cancelled
- 1.4 This OSI is to be read in conjunction with the following OSIs:
 - i. ASGrOps_OSI_081 Airside Cleanliness FOD Management
 - ii. ASDRVE_OSI_005 Vehicles and Equipment Airside – Operation
 - iii. ASDRVE_OSI_087 Management of Airside Infractions
 - iv. ASDRVE_OSI_008 Vehicles and Equipment Airside – Requirements



2. Definitions

Abbreviation	Description
AOC	Airline Operators Committee
AOT	Airside Occurrence Ticket
AUC	Airport Users Committee
FOD	Foreign Object Debris
GOL	Ground Operating License
GSE	Ground Support Equipment
HAL	Heathrow Airport Limited
IATA	International Air Transport Association
ULD	Unit Load Device

2.1 ULDs referred to in this OSI relate to either:

- i. a containerised unit such as an AKH (LD3-45W), AKE (LD3) or DQF (LD8)



- ii. an aircraft pallet such as a PLA or PMC



- 2.1.1 This OSI also details the requirements for loose load trolley carts, sometimes referred to as a "Wessex".



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3. Background

- 3.1** HAL works with the Below Wing Airport Users Committee (AUC), and ground handlers to continuously improve the amount of space available for ULD storage airside.
- 3.2** Aside from causing operational issues the incorrect storage of ULDs can have a significant impact on ramp and airfield safety. ULDs left on the ramp use valuable space, are vulnerable to damage, and by nature of their lightweight construction, are susceptible to high winds and jet blast, potentially becoming FOD. Without careful management and supporting infrastructure, ULDs can become a major hazard.
- 3.3** Throughout this OSI, the airline operating the ULDs, or the ground handler charged with managing the ULDs on behalf of an airline, will be referred to as the Ground Handler, however overall responsibility for the ULD will remain with the airline.



3.4 Once locked into the hold of an aircraft a ULD becomes part of the airframe and must therefore be fully serviceable or it may be refused for use by the airline. Continual careful management of ULD stock on the airfield is therefore essential.

3.5 Each ULD has a unique identification number with the last two characters identifying the owner. For example; AKE12345BA for a British Airways container or PAG00123UA for a United Airlines pallet. ULD numbers that end in XH will be pooled equipment so identifying the owner will require further investigation.

4. Efficient management and storage of ULDs

4.1 ULDs must only be stored in manufacturer approved storage or transportation systems. These include:

- i. a single or multi-deck stillage
- ii. a ULD transport
- iii. dolly trailers with fully functioning locking devices to restrain the ULD while they are not being used

4.2 All ULDs that are not being used must be either:

- i. stored in the ground handler or airline designated stillage
- ii. held within the appropriate terminal for use on an allocated flight (providing this does not impact any other handlers' use of the facility's baggage make up area)

4.3 When placed onto baggage make up areas, all baggage ULD's must be secured using safety stops and pneumatic pads. ULDs must never be left unsecured.

4.4 It is only acceptable to leave a ULD stored on a correctly parked dolly if there is no space within the designated ground handler/airline stillage.

4.5 If there is a temporary operational requirement to store ULDs on the ground permission must first be sought from:

Ramp / Apron areas	HAL Airside Compliance Officers	07514 938343	airside@heathrow.com
Baggage operational areas	APOC Baggage Service Manager	07711146323	lhr.bsm@heathrow.com



- 4.5.1** Without prior agreement any ULD's left on the ground will be subject to the infringement process as per ASDRVE_OSI_087 "Management of Airside Infractions".
- 4.6** During strong wind conditions, in extreme weather conditions, or in areas subject to jet blast, companies must be extra vigilant to ensure that ULDs are correctly secured.
- 4.7** Whilst not in use containerised ULDs must have either the door or flap secured in position to prevent movement.
- 4.8** It is the responsibility of The Ground Handler to ensure that the ULD stock level held at Heathrow Airport does not exceed the allocation agreed with HAL. It is a requirement for all ground handlers to advise Heathrow of their ULD stock count on a weekly basis. The ULD count should be a snapshot of total number of ULD's on station at the time of the count. This must be forwarded to airside@heathrow.com.
- 4.8.1** Exemptions to this stock level monitoring process may be granted in writing following consultation with HAL. For further information contact airside@heathrow.com.
- 4.9** Each Company that is in an ULD over-stock situation must inform HAL and detail their plans (including timeframe) to remove the additional units from airside. HAL may request that any ULD stock that is above the pre-agreed level must be immediately removed from airside. This is to be done by either shipping out on available aircraft or by removal to a landside location. Airlines have ultimate responsibility to ensure their ULD stock levels remain within their agreed allocation.
- 4.10** If airlines wish to change their agreed ULD allocation within the Terminal areas due to operational requirements, they must first contact airsidelicensing@heathrow.com.
- 4.11** Any ULD stock above pre-agreed allocation levels that remains airside after the time agreed for its removal will be considered an obstruction and therefore subject to the infringement process as per "ASDRVE_OSI_087 Management of Airside Infractions".
- 4.12** Containerised ULDs must not be stacked. If found an Airside Occurrence Ticket (AOT) will be issued for non-compliance.
- 4.13** If a fault develops with a stillage that prevents ULDs from being stored within it, then the person discovering the fault must report it via the appropriate process.
- i. Stillage owned and maintained by HAL must be reported to the One Engineering Help Centre reporting line on 0208 976 6555.
 - ii. Stillage owned and maintained by Airlines or Handlers must use their own agreed process.



- 4.14 If contingency arrangements are required for the safe storage of the ULDs, until the stillage fault has been rectified, then the Ground Handler must contact HAL Airside Compliance Officers on 07514 938343 or email airside@heathrow.com. An agreement can then be made between the Ground Handler and HAL.

5. Safe transportation of ULDs

- 5.1 Only ULDs that are in sound condition and are fully capable of being secured to trailers are to be used at Heathrow. The Ground Handler is required to regularly check the condition of their containers, pallets and dollies.
- 5.2 Daily pre-operational visual inspections should be undertaken by the user. This needs to include, but not limited to:
- i. Looking for damage
 - ii. Cracks or abnormal wear
 - iii. Locking mechanism and safety stops
 - iv. Safety barrier
 - v. Operation of the locking arm
- 5.3 When transporting ULDs all movable parts of the device must be secured or locked into place. All doors and/or curtains must be securely closed and fastened, and all straps and netting secured to the unit, so as to not strike or catch a person, equipment or piece of infrastructure.
- 5.4 Failure to correctly secure the ULD or the door, straps or netting of a ULD may result in the driver being stopped, and an AOT issued for carrying an insecure load. Faulty ULDs that are unable to be secured correctly must not be used.
- 5.5 It is the driver's responsibility to ensure any ULD is secure prior to moving.
- 5.6 If a ULD is dropped on the road network, aircraft stands or ULD storage areas it must be reported to Airside Operations immediately on 020 8745 6024 or internally, 656024. If a ULD is dropped in a baggage sortation area the Baggage Service Manager must be notified on 07711146323.



6. Removal of ULDs from Stands

- 6.1** Only during the turnaround of an aircraft whilst on stand can ULDs for that aircraft remain on the same stand. No ULDs are to remain on stand after the flight has departed.
- 6.2** HAL Airfield Operations conduct daily ramp inspections and will check for any non-complaint ULDs. An AOT can be issued for each non-compliance found and will be processed as per “ASDRVE_OSI_087 Management of Airside Infractions”.
- 6.3** When an Airport Official (HAL or their agent) observes a ULD obstructing an aircraft stand, clearway, airside road, walkway or other areas, the ground handler causing the obstruction will be given a warning that they are to remove the containers within 20 minutes to an approved area. For ULDs, the approved storage area is a designated stillage or approved area allocated to and operated by the ground handler. Failure to remove or relocate the obstruction or equipment within the requested timescale will result in HAL or their appointed agents removing the container(s) to a compound. An AOT will also be issued, under the “ASDRVE_OSI_087 Management of Airside Infractions”.
- 6.4** ULDs which have been left causing an immediate safety risk will be removed by HAL. HAL retains no responsibility for loss or damage in this process and the handler will be liable for any associated costs.

7. Dolly Maintenance

Maintenance of dollies must be undertaken at least once a year, with a safety check undertaken every 6 months. These records can be subject to an audit from the Airside Standards Team at any time.

8. Removal of unserviceable ULDs

- 8.1** Any ULD that is damaged, or that poses a risk of injury to a person or damage to an aircraft, must be safely removed by the airline within 14 days of notification by the Ground Handler.
- 8.2** It is for the Ground Handler to ensure they report any damage of a ULD to the airline. It is then the airline’s responsibility to ensure that the damaged ULD is repaired or disposed of within 14 days.
- 8.3** Damaged ULDs must be transported in such a way that they cannot cause harm to any person or damage to equipment/airport infrastructure.



- 8.4** When loading or unloading damaged ULDs onto an appropriate ULD transporter, it is important that the Ground Handler provides the operator with, and the operator uses, the correct PPE provided by the company.
- 8.5** Provision shall be made by the Ground Handler to store un-airworthy/unserviceable ULDs. The storage shall be clearly marked indicating that the area is designated for storing un-airworthy/unserviceable ULD's and must be agreed with HAL Airside Standards Team beforehand.
- 8.6** The ULD owner must make arrangements to send un-airworthy/unserviceable ULD(s) for repair or disposal. For further information on this requirement including timelines please refer to ASDRVE_OSI_005 "Vehicles and Equipment Airside - Operation".
- 8.7** If a ULD is deemed unserviceable the transferring of any cargo or baggage to a serviceable ULD must not take place on the road network. Once any contents have been made safe for travel the ULD must be returned to its build up area where its contents can be safely transferred to a serviceable container or pallet.
- 8.7.1** In the event of a cargo pallet being considered unsafe and requiring "breaking down" on the ramp or road network Airside Operations must be contacted on 020 8745 6024 or internally on 656024. They will monitor the decanting of any load as it is made safe for transport.
- 8.8** Details of penalties for non-compliance with these procedures are detailed in "ASDRVE_OSI_005 Operational Safety Instruction Vehicles and Equipment Airside - appendix B".

9. Control of Foreign Object Debris

- 9.1** In accordance with the Airside Cleanliness & FOD Management OSI ULDs must not contribute to or become themselves a FOD hazard.
- 9.2** ULD Containers must be kept free of debris at all times. This is to include old cargo packing and/or baggage items such as straps, tags, buggy wheels, etc.
- 9.2.1** Dedicated ULDs used solely for storage of ground equipment is a recognised practice but these ULDs must be labelled for storage and remain secure and free of FOD.
- 9.3** ULD Pallets may have additional potential hazards such as netting, straps, packing material and plastic covering that all present a FOD risk
- 9.4** ULD storage locations and ULD transport equipment must also be actively kept clear at all times to prevent accumulation of FOD.



10. Minimum standards of Baggage Dollies

- 10.1** Heathrow has worked with the Ground Handlers and manufactures to introduce the following minimum requirements for any baggage dollies operating Airside.
- 10.2** Parking Brake: The trailer is equipped with a manual tow bar actuated parking brake. To activate the parking brake, raise the tow bar to the vertical position until it latches.
- 10.3** Equipped with a locking collar, which prevents the rear hitch from inadvertently opening unless the pin is rotated to the appropriate position. Heathrow recommends that locking pins should be used over locking hocks.
- 10.4** All new dollies from 1st April 2022, are required to be fitted with an over centre locking pin to lock the ULD into the correct position, finger stops, and gravity stops are deemed unsuitable. Heathrow recommends that gravity stops should only be used as a secondary device to stop ULD's.
- 10.5** As per ASGrOps_OSI_92 "Baggage Operational Safety Standards" personnel must never pass between baggage dollies. From the 01st April 2022, any new dollies coming on the airfield are required to have a physical barrier to discourage people from walking in between each dolly. See appendix A and B for examples of current recognised barrier systems.
- 10.6** All 4 corners and safety devices painted a predominate colour.
- 10.7** A service colour code/month for easy identification showing the month of the last service. The dolly should be maintained a minimum of every 6 months.
- 10.8** All baggage dollies must meet the IATA ULD base tolerances when in operation. See table below for further details.

Base dimension tolerances:				
Base Sizes	Certification tolerance interval application to new ULD		Maximum tolerance interval applicable to in-service ULD	
	mm	inch	mm	inch
K, L, P, Q	+ 0 - 1.5	+ 0 - 0.06	+ 0 - 6.3	+ 0 - 0.25
A, B, M, N, S	+ 0 - 2.5	+ 0 - 0.10	+ 0 - 6.3	+ 0 - 0.25
G width, R	+ 0 - 4.8	+ 0 - 0.19	+ 0 - 4.8	+ 0 - 0.19
G length	+ 0 - 6.3	+ 0 - 0.25	+ 0 - 6.3	+ 0 - 0.25

- 10.9** Retractable stops must be operable by one individual from both sides of the dolly.



- 10.10** The stops must be designed to safely accommodate a fully loaded container towed at maximum allowable speeds.
- 10.11** The dolly must be fitted with a suspension system for a quieter (softer) ride and towing capability.
- 10.12** Every dolly must have a 'red zone' with mandatory signage warning "Danger, do not walk or stand" on the towing arm.

11. Cargo Dollies

- 11.1** Due to the size and weight of the ULDs carried by cargo dollies their requirements differ from those of a baggage dolly. Some of the safety features of a baggage dolly are dealt with by alternative methods in a cargo unit such as a locking arm being replaced by a separate handbrake.
- 11.2** Daily pre-operational visual inspections are still to be undertaken by the user. This needs to include but not limited to:
 - i. Handbrake (parking brake)
 - ii. Brake lights operating (if fitted)
 - iii. Looking for damage
 - iv. Cracks or abnormal wear
 - v. Locking mechanism and safety stops
- 11.3** Cargo dollies are not required to have a locking collar to prevent inadvertent opening of the rear hitch but must be equipped with a mechanical device to prevent detachment.
- 11.4** For further information on the safe transportation of cargo ULDs and driver responsibilities please see section 5.



12. Containerised ULD Stillage

- 12.1** ULD Stillage allows the storage over multiple levels of a large number of containers when not in use. There are a number of stillage locations airside that are each allocated to a handler or handlers by the Heathrow Airside Standards and Assurance Team. For stillage locations please see Appendix C.



- 12.2** The use of the stillage equipment is restricted to those who have had appropriate training.
- 12.3** At a minimum the following safety guidelines must be followed whilst using any stillage:
- i. When moving internally around the system always use the walkways and handrails provided
 - ii. Do not walk directly on the roller lanes, always use the walkways provided while manoeuvring ULD(s) into the storage positions
 - iii. When the deck is in use the pads and stops should always be left in the engaged position to ensure all ULDs are secure
 - iv. Under no circumstances should any ULD(s) be stored on the castor decks along the loading edge as these do not provide a secure method of storage
 - v. Laden ULD(s) must be emptied prior to being stored on the system
 - vi. When a deck is not in use, the pads and stops should always be left in the retracted position
 - vii. No personnel should enter the area underneath the scissor lift table at any time during operation. Should access to the area be required, always engage the safety/maintenance chocks, and isolate the electrical supply. This must only be undertaken by Heathrow Engineering
 - viii. Under no circumstances should an operator ride on the scissor lift
- 12.4** For fault reporting process see 4.13.



- 12.5** If an operational change requires an increase (or decrease) in ULD storage capacity any requests for stillage use must go through the HAL Airside Standards and Assurance Team - airside@heathrow.com.

13. Using forklift on ULDs

- 13.1** Containerised ULD's shall not be handled with forklifts unless specially designed for this purpose, or, unless the forklift tines have specially designed attachments and the forklift driver holds the relevant driving licences.
- 13.2** Forklifts must not be used to load any containerised ULD's into the hold of an aircraft.
- 13.3** Containerised ULDs cannot be pushed along the ground by a forklift.
- 13.4** All organisations must ensure that their forklift drivers are familiar with the requirements of section AHM 421 of the IATA Airport Handling Manual. Deviation from these industry best practice guidelines could result in unsafe ULD handling leading to potential injury and/or aircraft damage.
- 13.5** In addition to holding a valid forklift licence forklift drivers must hold an Airside Driver Permit to operate airside on the road network, on stands, in baggage sortation areas and in Heathrow Cargo locations.

14. Loose Load Trolley Cart ("Wessex") requirements

- 14.1** A platform to be equipped with a fixed headboard and adequate means of securing the load
- 14.2** The empty cart weight shall be as low as possible. The design of the cart shall allow for one-person handling
- 14.3** The cart shall be designed to withstand rough handling
- 14.4** Tow bar shall be fitted at the front end and a tow hitch at the rear, both of sufficient strength to allow a minimum of 4 fully loaded carts to be towed in a train
- 14.5** Placeholder card slot
- 14.6** Parking Brake: The trailer is equipped with a manual tow bar actuated parking brake. To activate the parking brake, raise the tow bar to the vertical position until it latches
- 14.7** Partially or fully enclosed loading area with access from one or two sides
- 14.8** Padded upper corners.



- 14.9 As per ASGrOps_OSI_92 “Baggage Operational Safety Standards” personnel must never pass between baggage dollies. A physical barrier must be in place to discourage people from walking in between each cart.
- 14.10 All 4 corners and safety devices painted a predominate colour.
- 14.11 Non-compliance with these requirements will result in a Vehicle Defect Notice being issued as per “ASDRVE_OSI_005 Operational Safety Instruction Vehicles and Equipment Airside”.

15. Structure of a dolly

- 15.1 The dolly steering system shall be such that, when the dollies are towed in a train, they follow a true line.
- 15.2 The roller platform height shall be 508 mm (top of the rollers) when an empty ULD is placed on top.
- 15.3 The overall dimension of the dolly shall be kept to a minimum.
- 15.4 The dolly shall have a tow bar fitted at the front and tow hitch at the rear, of significant strength to allow for a minimum of 4 fully loaded dollies to be towed in a train.
 - 15.4.1 For individual Terminal dolly train limitations refer to ASDRVE_OSI_008 “Vehicles and Equipment Airside” – “Requirements”.
 - 15.4.2 Dollies for use with cargo pallets and containers with a 317.5cm / 125 inch base (such as PMCs, ALFs, LD26s) are not required to have this capability.

16. References

ASGrOps_OSI_081 Airside Cleanliness FOD Management
ASDRVE_OSI_005 Vehicles and Equipment Airside – Operation
ASDRVE_OSI_087 Management of Airside Infractions
ASDRVE_OSI_075 Airside Driving – Penalty Points System

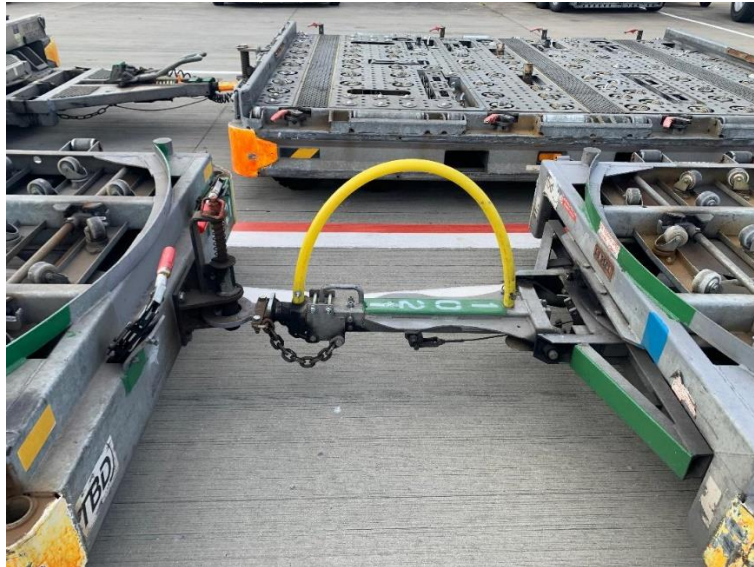
17. Enquiries

Any further questions regarding this Instruction should be directed to HAL Airside Operations (airside@heathrow.com).



18. Appendices

Appendix A



Baggage dolly safety barrier / safety hoop

Appendix B



Damaged Baggage dolly safety barrier / safety hoop – dolly not to be used

Appendix C

ULD Stilage Locations Heathrow			
Terminal	Location	ULD Capacity	HAL Engineering Maximo Reference
1*	114 Adjacent to T1 FCC	250	18954
1*	116 Corner of Stand 122	120	11147
1*	118 Old Stand 118	180	18955
1*	Adjacent Gemini 2	135	11148
1*	139 Adjacent Euro-pier Connector & Stand 139	192	11146
3	313A First unit (left end)	72	18948
3	313B Second unit (centre)	120	18948
3	313C Third unit (east end)	220	18948
3	318A Left unit (near uncontrolled crossing)	210	18949
3	318B Right unit (adjacent Lima 18)	294	18949
3	335 Port side of 335 / head of 342	96	18951
3	351	30	n/a
3	311 Under Pier 7 Connector, adjacent stand 311	80	18947
3	313D Port side of blast screen	180	n/a
3	334 Between Pier 6 & stand 334	96	18950
4	404 Adjacent 461 clearway	150	14433
4	412A Adjacent 412 clearway	120	14434
4	412B Adjacent 412 clearway	150	14434
4	450/2 Head of stands	24	18953
4	463 – 1 Port side of Stand	66	14435
4	463 - 2	256	n/a
4	430 Parking area head of stand 430	16	n/a
4	431 Parking area head of stand 430	14	n/a
4	432 Parking area head of stand 432	12	n/a
4	412D Head of stand 414	96	n/a
5	T5A NAA Adjacent 501 / CP18**	n/a – see note	n/a
5	T5A North South of 501/ CP18	45	n/a
5	T5A South Between CHSS & CP19	75	n/a
5	T5B North Between stands 553 & 554	90	n/a
5	T5C South Head of Stand 568	78	n/a
5	T5C North Opposite 561/2	90	n/a
5	CHSS Adjacent T5 Energy Centre (south)	12	n/a
Cargo	Building 553 Corner of Cargo Rd & Cargo Rd West	60	n/a
Cargo	Stand 612	60	n/a

* Previous Terminal 1 location

** Holds other airlines and damaged ULD's

