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**1.2.4** In addition, the aircraft specific rules, including those concerning ULDs, are contained in the aircraft Weight & Balance Manual, approved by the Authorities as part of its Type Certificate, and must at all times be complied with by the Operator (carrier).

**1.2.5** The IATA ULD Regulations contain all the applicable requirements of the ICAO as well as national CAAs (EASA and FAA) Regulations and Weight & Balance Manual rules that are common to all or most civil transport aircraft types. IATA has included additional requirements to reflect applicable International Standards, industry standard practices, and the indicated operational considerations. Nothing in the IATA ULD Regulations is intended to, nor shall be interpreted as, substituting or superseding regulatory requirements.


**1.2.6** Most regulations listed above do not specifically apply to ULDs, but are applicable to all aircraft parts, which ULDs are during flight. To date, the only Civil Aviation Authority publication specifically addressing ULDs is U.S. FAA Advisory Circular AC 120-85, Air Cargo Operations, containing detailed guidance and recommendations concerning ULDs, and which is based on analysis of aircraft fatal accidents (crashes) resulting from improper ULD operations. The AC 120-85A revision is applicable since 2015. The IATA ULD Regulations systematically conform with the AC 120-85A guidelines, and it is strongly recommended that carriers and their service providers use this AC when determining their internal organization, operating instructions, training requirements and quality control.

## 1.3 Application of these Regulations

STATE VARIATIONS

OPERATOR VARIATIONS

### 1.3.1 Applicability


 The IATA ULD Regulations are applicable to:

- all carriers (Operators) which are Members or Associate Members of IATA;
- all carriers (Operators) which are party to the IATA Multilateral Interline Traffic Agreement–Passenger or Multilateral Interline Traffic Agreement–Cargo; and
- all parties, whether independent or contracted, of the supply chain which design, produce, maintain, prepare, build-up, handle or transport ULDs for air transportation.
- any other parties holding a responsibility in relation with ULD design, repair, ownership, handling or related equipment and facilities.

Within these Regulations, the words “shall” and “must” are used to indicate a mandatory requirement. The words “should”, “may”, and “can” indicate a preferred requirement and are not binding: equivalent alternate methods may be used.

Within these Regulations, where a requirement is recommended but intended to become mandatory by a given date in order to allow e.g. use of existing inventories or necessary preparation and training, it is signaled by the text in grey shaded background with the indication of “Effective date/month/year”.

### 1.3.2 Relationship to ICAO and National Legislations

 The ICAO Annexes and Airworthiness Manual are applicable for the transport of ULDs by air from, to or through the Member States of ICAO. In addition, the more detailed airworthiness codes and Regulations, such as EASA and FAA, are applicable to any aircraft certified under one of these Regulations, regardless of the Operator and location of the flight.

Compliance with the IATA ULD Regulations provides parties a presumption of conformity with the legal requirements of ICAO and aircraft and carrier certification Regulations listed in [Table 1.2](#).

### 1.3.3 Exceptions

The IATA ULD Regulations are not applicable to:

- packagings;
- “non-aircraft” containers as defined by ISO 668 (“an article of transport with an internal volume of 1 m<sup>3</sup> (35 ft<sup>3</sup>) or more”), which do not directly interface with aircraft ULD handling and restraint systems, and require being carried on board aircraft as bulk load, or on or in approved ULDs. They shall not be designated or marked as ULDs;

- demonstrated proper understanding and application of the training;
- accumulated exceptional outsize and overweight cargo loading experience on the freighter aircraft type(s) they are qualified for;
- been approved for this task on the aircraft type concerned by the carrier (Operator).

Loadmasters must be subject to field spot checks by the carrier's (Operator's) Cargo Engineering Office (COE) for qualification assessment and verification. An individual qualification record/logbook must be kept for each loadmaster, listing the key characteristics of successfully completed outsized/overweight cargo palletizations and loadings.

A loadmaster of suitable qualification for the task on hand can be required at either palletization or aircraft loading, or both, as specified by the carrier's (Operator's) Cargo Engineering Office (COE) according to load characteristics.

### 1.6.8 Competency Based Training and Assessment

Competency-based training and assessment should be used in accordance with the general provisions of Chapter 2 of the ICAO *Procedures for Air Navigation Services—Training* (PANS-TRG, Doc 9868), as illustrated in its Attachment, and commensurate with the tasks and responsibilities of the trainees.

## 1.7 ULD Security

STATE VARIATIONS

OPERATOR VARIATIONS


### 1.7.1 General

This Sub-section addresses the security responsibilities of carriers (Operators), shippers and others involved in the transport of ULDs.

ICAO Annex 17 to the Convention on International Civil Aviation provides requirements for implementation of security measures by States to prevent unlawful interference with civil aviation or when such interference has been committed. In addition, the *Security Manual for Safeguarding Civil Aviation against Acts of Unlawful Interference* (Doc 8973—Restricted) provides procedures and guidance on aspects of aviation security and is intended to assist States in the implementation of their respective national civil aviation security programs.

The current edition of the IATA Security Manual contains guidance material directed at industry entities such as Operators and airports. The requirements in this Sub-section are intended to supplement the requirements of ICAO Annex 17 and to implement measures to be taken to minimize misuse of ULDs that may endanger persons or property. The provisions of this Sub-section do not supersede the requirements of ICAO Annex 17 and mandatory elements of the associated documents.

### 1.7.2 General Security Provisions

 All persons engaged in the transport of ULDs should consider the security requirements for the ULDs commensurate with their responsibilities.

ULDs should only be offered for use to Operators or shippers that have been appropriately identified.

### 1.7.3 Security Training

The training specified in [Subsection 1.6](#) should include elements of security awareness.

Security awareness training should address the nature of security risks, recognition of security risks, methods to address and reduce such risks and actions to be taken in the event of a security breach. It should include awareness of security plans (if appropriate) commensurate with the responsibilities of individuals and their role in implementing security plans.

**Note:**

*Persons who have received security training in accordance with the requirements of a National Security Plan or other security requirements that fulfill the elements of [1.7.2](#) need not receive additional training.*

Such training should be provided or verified upon employment in a position involving transport of ULDs. Recurrent training should take place to ensure knowledge is current.

## 2.4 Compatibility Limitations

Limitations to the operation of ULDs also result, for combination (pallet and net) ULDs, from their compatibility or incompatibility with each other.

Pallets and nets are, or are not, compatible with each other depending on their respective airworthiness certification configuration designation. See [Section 5 SS 50/5](#) for detailed requirements.

Operators must establish the compatibility chart for the types of pallets and nets they operate, based on their certification, and provide it as part of the Operator's Instructions to all personnel and parties authorized to install a net on a pallet.

### **Note:**


*This requirement may be waived when the net was permanently attached to the pallet under Operator control and according to its instructions.*

Where the combined pallet and net have different certification configurations, the lowest limitations of the two configurations, if different, i.e. the lowest maximum gross mass, apply. See [Section 5 SS 50/5](#).

Verification of pallet and net compatibility is part of the serviceability check to be performed prior to ULD build-up (see [2.8](#)).

## 2.5 Restricted Use Limitations

A ULD certified under the TSO procedure (see [3.2](#)) has no restrictions of compatible aircraft type, providing the Weight & Balance Manual of the aircraft allows carriage of TSO approved ULDs of its approval configuration (see [3.2.4](#)).

 A ULD certified under a Supplemental Type Certificate (STC) or another procedure usually is approved only and specifically for (an) identified aircraft type(s), and may have other restrictions of use as part of its certification. Any such restriction of use shall be entered by the carrier (Operator) in its Operator's Instructions and strictly complied with.

The airworthiness approval status of a ULD must therefore be checked before its loading on a given aircraft type, through reading the mandatory manufacturer's data markings (usually a metal plate in a bottom corner of a container, an engraving on the edge rail of a pallet, and a sewn label on a pallet net), as part of systematic serviceability check (see [2.8](#)).

## 2.6 Continuing Airworthiness Limitations

Whenever a part or component installed on an aircraft requires airworthiness approval, Civil Aviation regulations require its continuing airworthiness be maintained and checked throughout its service life (see ICAO Annex 8 Part II Chapter 4 and Airworthiness Manual (Doc. N° 9760) Part III Chapter 4, EASA Part M, FAA 14CFR Part 43). This sets limitations on aircraft ULDs in different manners as per [2.6.1](#), [2.6.2](#) and [2.6.3](#), and their repairs, as per [2.9](#). See [2.7](#) for non-certified ULDs or ULD accessories.

### 2.6.1 Performance Degradation

When a material used in the construction of a ULD or ULD accessory is liable to exhibit degrading performance throughout time, e.g. due to influence of environment factors, the material must be tested by the manufacturer to determine the extent of such degradation, and, on the basis of these tests' results, an expiry date after which the required ULD or ULD accessory performance may not be expected to be maintained must be determined, marked onto the unit concerned, and complied with.

### 2.6.2 Allowable Damage

The ULD manufacturer must demonstrate to the airworthiness approval Authority the amount of damage that the unit can withstand while maintaining the required performance. This is recorded as part of the airworthiness approval's documentation as "maximum allowable damage", entered in the ULD manufacturer's Component Maintenance Manual (CMM). It must be marked on the Operational Damage Limits Notice (ODLN, see [Section 7, SS 40/3](#) and [40/4](#)) and taken into account at ULD serviceability check (see [2.8](#)). A ULD presenting damage in excess of this level is not deemed airworthy anymore and may not be used

- (b) Fire protection capability (14CFR Part 25/CS-25 paragraph 25.857, or equivalent):
- class B cargo compartments are the main deck compartments of “Combi” aircraft, equipped with a fire detection system and where firefighting is to be conducted by crew;
  - class C cargo compartments are all the lower deck compartments capable of accepting ULDs, which are equipped with fire detection and fire extinguishing systems;
  - class E cargo compartments are the main deck compartments of freighter aircraft, which are equipped with a fire detection system and means to shut off ventilation, but not with a fire extinguishing system;
  - class F cargo compartments will be the main deck compartments of future “Combi” aircraft, defined by EASA CS-25.857 (f), intended FAA 14CFR 25.857 (f), and currently draft FAA AC 25.857-X of July 2014. No aircraft type was yet certified to new class F. The use of Fire Containment Covers (FCC, see [SS 70/1](#)) or Fire Resistant Containers (FRC, see [SS 50/8](#)) will be one of the allowable means to meet future class F compartments certification.

As regards ULDs, compartment restraint classification per a. above determines their acceptability (type 1 or type 2 certified, non-certified). Fire protection classification per b. above does not, in the present regulatory environment, affect ULDs, for which the flammability requirements (see [6.1 of SS 50/0](#)) do not depend on compartment classification. However, this is meaningful as regards potential use of Fire Containment Covers (FCC) or Fire Resistant Containers (FRC), mostly intended for use in class B or E cargo compartments.

## 3.2 Certified ULD Approval

Airworthiness approval (certification) of a given type of aircraft ULD is obtained by its manufacturer from a Civil Aviation Authority, in accordance with the general provisions of ICAO Annex 8 Part I Sub-part D, *Design and construction*, Section D1, through the applicable national regulations.

Approval can in principle be obtained under different procedures, the detailed requirements of which are listed in e.g. U.S. FAA 14CFR Part 21 or European EASA Part 21 regulations:

### 3.2.1 TSO Approval

By far the most commonly used procedure is Technical Standard Order (TSO) approval, materialized by issuance to the manufacturer of a TSO Authorization. A TSO can also be a Chinese TSO (CTSO), European TSO (ETSO), Japanese TSO (JTSO), etc., but in all instances results in a TSO Authorization delivered by the Authority, based on demonstration of conformity with the requirements of a technical reference standard:

- For ULD types approved prior to 2012, which may still be manufactured after that date under the original approval, the procedure was TSO (CTSO, ETSO, etc.) C90c or earlier, of which the technical reference standard is AIA (Aerospace Industries Association) National Aerospace Standard NAS 3610, revision 10, *Aircraft–Minimum airworthiness requirements and test conditions for certified air cargo unit load devices*, internationally recognized as ISO 8097.

**Note:**

*NAS 3610 revision 10, however, is not to be used alone for size R (96 x 196 in base) ULDs, since it contains technical errors in the relevant Figures, identified and corrected in both ISO 8097 of 2001 and TSO C90d of 2011.*

- For most ULD types approved or re-approved from 2012 on, the procedure is TSO (CTSO, ETSO, etc) C90d, of which the technical reference standard is International Standard ISO 21100, *Air cargo unit load devices–Performance requirements and test parameters*, or identical SAE Aerospace Standard AS 36100 revision A, with the same title.

ISO 21100/AS 36100A contains only Type 2 (see [3.3.1](#)) ULDs, and less base sizes than NAS 3610 revision 10. For Type 1 (“9g” restraint) ULDs and those with base sizes not covered in ISO 21100/AS 36100A nor in these Regulations, ISO 8097/NAS 3610 revision 10 remains applicable (see [3.3.3](#)).

# APPENDIX B—CORRESPONDENCE TABLE BETWEEN IATA/SAE/ISO STANDARDS

## ULD AND CARGO SYSTEMS – September 2017

IATA	SAE	ISO	Subject
SS 40/0	----	----	Marking of ULDs
SS 40/1	----	----	ULD ID code
SS 40/2	----	----	Intermodal containers marking
SS 40/3	----	----	Operational Damage Limits Notice (ODLN)
SS 50/0	----	----	ULD general technical requirements
50/0 Att. D/E	AS 1825C	ISO 10046	Methodology of Calculating Aircraft Cargo Volumes
50/0 Att. B/C	AS 33601A	ISO 7166	Aircraft rail and stud configuration (former MS 33601B)
SS 50/1	AS 1491B	ISO 4171	Aircraft pallet
SS 50/2	AS 1492B	ISO 4170	Aircraft pallet net (for air cargo pallet)
SS 50/2	AS 1131C	ISO 4115	Aircraft pallet net (for air-surface pallet)
SS 50/3	----	----	Non-structural igloo
SS 50/4	AS 5896	ISO 6517	Certified container (lower deck)
SS 50/4	----	ISO 10327	Certified container (main deck)
----	AS 4041A	ISO 4128	Certified container (intermodal sizes w/o corner fittings)
SS 50/4	AIR 4359	----	Hanging loads requirements
SS 50/5	ARP 36104A	----	Pallets and nets compatibility
SS 50/6	AS 832E	ISO 8323	Intermodal container (w/corner fittings)
SS 50/7	AS 1677D	ISO 4118	Non-certified container (lower deck)
SS 50/8	AS 6278 <sub>(draft)</sub>	ISO 19281	Fire resistant container (FRC) <small>(TSO in preparation)</small>
SS 50/9	AS 1130F	ISO 4117	Air-surface pallet (16/20 ft sizes)
SS 60/1	ARP 1988A	----	Pallet extensions
SS 60/2	AS 5385D	ISO 16049-1	Air cargo restraint straps (design & testing) <small>(TSO C-172)</small>
SS 60/3	AS 6554A	----	Cargo stopper devices <small>(TSO C-202)</small>
SS 60/4	----	ISO 9788	5000 lb double stud fittings <small>(revision in preparation)</small>
⊗ SS 70/1	AS 6453	ISO 14186	Pallet fire containment cover (FCC) <small>(TSO C-203)</small>
OS 6/00	----	----	ULD serviceability check
OS 6/01	ARP 5486	ISO 16412	Aircraft pallets utilization guidelines
OS 6/02	----	----	Aircraft pallet nets operation
OS 6/03	----	----	Pallet accessories operation
OS 6/04	----	----	Aircraft containers operation
OS 6/06	ARP 36103	----	ULD C.G. control methods
OS 6/07	ARP 5595B	ISO 16049-2	Air cargo restraint straps (utilization guidelines)
OS 6/08	----	----	ULD protection wrapping