

AIR CARGO OPERATIONS

IAV200 Week 5

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Cargo

- ▶ **Cargo** (or freight) is goods or produce transported, generally for commercial gain, by ship or aircraft, although the term is now extended to intermodal train, van or truck.
- ▶ In modern times, containers are used in most long-haul cargo transport.

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Air cargo

- ▶ Air cargo, commonly known as *air freight*, is collected by firms from shippers and delivered to customers. Aircraft were first used for carrying mail as cargo in 1911. Eventually manufacturers started designing aircraft for other types of freight as well.
- ▶ There are many commercial aircraft suitable for carrying cargo such as the Boeing 747 and the bigger AN-124, which was purposely built for easy conversion into a cargo aircraft. Such large aircraft employ quick-loading containers known as Unit Load Devices (ULDs), much like containerized cargo ships. The ULDs are located in the front section of the aircraft.
- ▶ Most nations own and utilize large numbers of military cargo aircraft such as the C-17 Globemaster III for logistical needs.

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Cargo Plane Boeing 747 Cargo



▶ 4

Cargo Plane Boeing AN124 Cargo



▶ 5

Cargo Plane Boeing AN124 Cargo



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AIRCRAFT VERSION

The aircraft fuselage is divided into 2 parts

- Cabin
- Compartment

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CABIN

- Is an upper part of the fuselage which is used to accommodate passengers and crews.

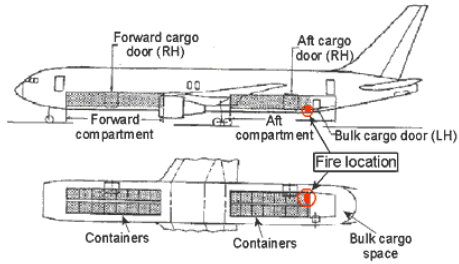
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COMPARTMENT

- ▶ Is a lower part of the fuselage which is used to carry cargo, mail and baggage.
- ▶ Divided into 3 parts
 1. Forward Compartment
 2. Afterward Compartment
 3. Bulk Compartment

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Figure 1: Compartment



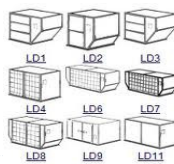
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Unit Load Device (ULD)

- ▶ Is used to contain baggage, cargo and mail
- ▶ 3 types
 1. Container
 2. Pallet
 3. Igloo

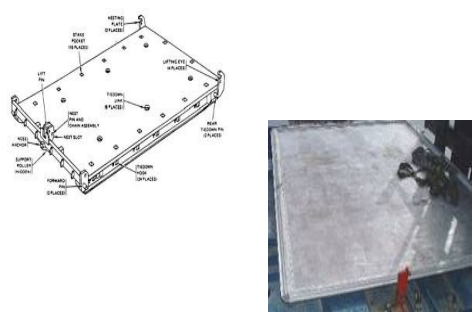
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Container



▶ 12

Pallet



The diagram on the left shows a top-down view of a pallet with various components labeled: 'SERVIC PLATE', 'RAMP PLATE', 'LIFT HOLES', 'WHEEL', 'CROSS RAIL', 'LONG RAIL', 'WHEEL HOLES', 'CROSS RAIL HOLES', 'SERVIC PLATE HOLES', 'WHEEL HOLES', 'CROSS RAIL HOLES', 'SERVIC PLATE HOLES', 'WHEEL HOLES', 'CROSS RAIL HOLES', 'SERVIC PLATE HOLES', 'WHEEL HOLES', 'CROSS RAIL HOLES'. The photograph on the right shows a wooden pallet lying on a snowy surface.

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Igloo



The first image shows a white igloo-shaped container on a blue pallet with a red 'DHL' logo. The second image shows a traditional snow igloo with an arched entrance. The third image shows a silver metal igloo-shaped container with a door and a handle.

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AIR CARGO TRANSPORTATION

- ▶ Air cargo has now become the vital part of International Transportation System or Logistic System which is essential to the world trade.
- ▶ It is expected that our air-freight transportation will continue to grow every year.

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AIR CARGO TRANSPORTATION

- ▶ Users of air cargo service have for many years enjoyed the advantages of speed and personalized, attention offered by air carriers which in many cases largely compensated by the relatively high cost for customers.

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Documents

- ▶ Air Waybill
- ▶ Manifest

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Air Waybill (AWB)

- ▶ The document made out by or on behalf of the shipper which evidences the contract between shipper and carrier for carriage of goods over route of carrier(s).

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Air Waybill (AWB)

- ▶ The AWB serves as:
- ▶ proof of receipt of goods for carriage
- ▶ a dispatch note on which the documents to accompany and the shipper's special
- ▶ instructions are noted
- ▶ an invoice for transportation charges
- ▶ an insurance certificate if insurance coverage has been obtained through the intermediary of carrier
- ▶ the document for export, transit and import to meet the requirements of custom authorities
- ▶ a guide to the carrier's personnel for purposes of handling, dispatching and delivering the
- ▶ consignment

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Air Waybill

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The Three AWB originals

- ▶ Original 3: Blue colour (for shipper)
- ▶ Original 2: Green colour (for issuing carrier)
- ▶ Original 1: Pink colour (for consignee)

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Cargo Manifest

- ▶ A shipping document used by customs personnel reviewing a particular transport vehicle's intended trip that summarizes all bills of lading that have been issued by the carrier or its representative for that particular shipment.

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Cargo Manifest

Ship to:	Shipper:	CARGO MANIFEST	Ship From:
Centro Super M. La Brea 1111 S. Figueroa Street Los Angeles, California 90015 United States tel: 9 000 555 5555	SUBCOM / Freight Right West	Supplier Invoice#: 107 System Invoice#: 0524 Invoice PO#: 1110000AA Service Order Account#: 90	Centro Super M. San Pedro 555 Chavez Street San Pedro, California 90729 United States tel: 310 124 1234
Vessel/Trailer: Route: 070607		Ship date: 07/06/13	

Package/Container/etc.		Description		Qty	Description	Unit	Length	Width	Height	Weight
EVNCLISAUSA-12	Detone	Solid Stone Dispenser with pump glass, 2.0 liter capacity. Includes cleaning solution. See manual in cleaning section.		90		90	20.0 mm	10.0 mm	15.0 mm	150.0 Pound
EVNCLISAUSA-14	Detone	Solid Stone Dispenser with pump glass, 2.0 liter capacity. Includes cleaning solution. See manual in cleaning section.		90		90	20.0 mm	10.0 mm	15.0 mm	150.0 Pound
EVNCLISAUSA-15	Pallet	Inventor cleaning machine, 100 lbs. Includes cleaning solution. See manual in cleaning section.		1		96	40.0 mm	40.0 mm	50.0 mm	150.0 Pound
EVNCLISAUSA-16	Pallet	Inventor cleaning machine, 100 lbs. Includes cleaning solution. See manual in cleaning section.		1		96	40.0 mm	40.0 mm	50.0 mm	150.0 Pound
EVNCLISAUSA-17	Pallet	Inventor cleaning machine, 100 lbs. Includes cleaning solution. See manual in cleaning section.		1		96	40.0 mm	40.0 mm	50.0 mm	150.0 Pound
EVNCLISAUSA-18	Pallet	Inventor cleaning machine, 100 lbs. Includes cleaning solution. See manual in cleaning section.		1		96	40.0 mm	40.0 mm	50.0 mm	150.0 Pound
EVNCLISAUSA-19	Pallet	Inventor cleaning machine, 100 lbs. Includes cleaning solution. See manual in cleaning section.		1		96	40.0 mm	40.0 mm	50.0 mm	150.0 Pound
EVNCLISAUSA-20	Pallet	Inventor cleaning machine, 100 lbs. Includes cleaning solution. See manual in cleaning section.		1		96	40.0 mm	40.0 mm	50.0 mm	150.0 Pound
EVNCLISAUSA-21	Pallet	Inventor cleaning machine, 100 lbs. Includes cleaning solution. See manual in cleaning section.		1		96	40.0 mm	40.0 mm	50.0 mm	150.0 Pound
Total weight: 780.0 Pound										

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Classification of Cargo

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Oil or Gas Pipe

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Bus (HEA, BIG)

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Consumer Products

▶ 27



Gold Bar

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Automobile

▶ 29



Live Animal

▶ 29



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Carrying Cargoes Onboard

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- Classification of Cargo**
-
- ▶ 1. General Cargo
 - ▶ 2. Special Cargo
 - ▶ 3. Dangerous Goods
 - ▶ 4. Diplomatic Mail
 - ▶ 5. Service Cargo
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- ▶ 33

I. General Cargo

Any consignments are dry, clean, odorless, non-dangerous and other than valuable cargo.



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2. Special Cargo

Requires special procedures for acceptance, declaring, handling, packing, loading, unloading and stowing

Types of Special Cargo

- 2.1 Fragile Cargo
- 2.2 Heavy Cargo
- 2.3 Human Remains
- 2.4 Live Animals
- 2.5 Magnetized Materials
- 2.6 Outsized Cargo
- 2.7 Perishable Cargo
- 2.8 Valuable Cargo
- 2.9 Vulnerable Cargo
- 2.10 Wet Cargo

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2.1 Fragile Cargo

May easily be damaged if exposed to jolting, dropping, bumping or rough during transportation.



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Fragile Label

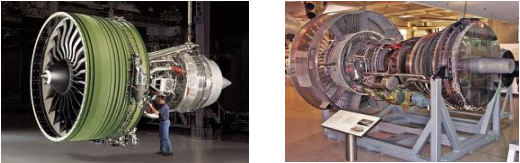


The image shows two types of fragile labels: a red wine glass icon with the word 'FRAGILE' below it, and a red rectangular label with two white upward-pointing arrows and the text 'THIS SIDE UP FRAGILE'. To the right is a wooden crate with 'FRAGILE' printed on its side.

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2.2 Heavy Cargo (HEA)

Weighing 150 Kgs or more per piece.



Two photographs of large jet engines. The left one shows a person standing next to a large engine for scale. The right one shows an engine on a display stand.

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2.3 Human Remains (HUM)

- Human Remains, also Human Corpses
- Human Ash or Cremated Human Remains



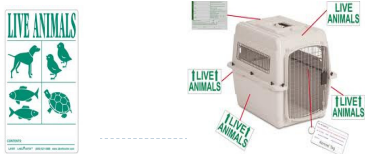
The image shows a wooden coffin, two glass urns, and two certificates. One is a 'Death Certificate' and the other is a 'Certificate of Cremation'.

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2.4 Live Animals (AVI)

The conditions applicable for acceptance of AVI

- a. Health and condition of animals must not show any sign of illness. Pregnancy is prohibited.
- b. Packing must be clean, leak-proof. Live Animals label shall be affixed.



The conditions applicable for acceptance of AVI (con't)

- c. Food and additional articles must be charged
- d. Reservation
- e. Documents: Health documents and Shipper's Certification for Live Animals

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2.5 Magnetized Materials (MAG)

- a. Any materials that exerts a magnetic force.
- b. Heavy Machinery made on iron or steel
 - Item weighing above 300 Kgs
 - Assemblies or single piece weighing more than 150 Kgs and more than 200 cm long.



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2.6 Outsized Cargo (BIG)

Cargo does not allow loading in lower compartment or on one pallet.



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2.7 Perishable Cargo (PER)

Items subject to decay, deterioration or decomposition.

Perishables shall be accepted without any responsibility for any loss or damage due to changes in climate, temperature, altitude or other ordinary exposure.

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Examples of Perishable Cargo



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2.8 Valuable Cargo (VAL)

Any shipment having a declared value of carriage of USD 1,000 or more per gross kilogram or

- a. Any piece of gold or platinum.
- b. Legal bank notes, travelers, stamp and credit cards
- c. Precious stones such as diamond, rubies, etc.
- d. Jewelry and watches made of silver, gold or platinum

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Examples of Valuable Cargo



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2.9 Vulnerable Cargo (VUN)

Goods which are extremely liable to be stolen and readily marketable.



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2.10 Wet Cargo (WET)

- a. Marine and fresh water products
- b. Shellfish
- c. Vegetables frozen or seafood



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Styrofoam box

Used for preventing spillage or leakage

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3. Dangerous Goods (DG)

Articles or substances that are capable of posing a significant risk to health, safety or property when transport by air.


9 classes of DG

Class I: Explosives




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Class2 : Gases




Class3 : Flammable Liquids





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Class4 : Flammable Solids



Class5 : Oxidizing and Organic Peroxides



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Class6 : Toxic and Infectious Substances




Class7 : Radioactive Materials




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Class8 : Corrosive



Class9 : Miscellaneous Dangerous Goods



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4. Diplomatic Mail (DIP)

Diplomatic bag or pouch contains official correspondence

5. Service Cargo

Three categories of service cargo

- 5.1 Maintenance Material (MMM)
- 5.2 Service 1 (S1)
- 5.3 Service 2 (S2)

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Applicable Rate

- ▶ Cargo rates are published in the TACT Books (The Air Cargo Tariff)
- ▶ 3 kinds of rating
 - 1. General Cargo Rates (GCR)
 - 2. Specific Commodity Rates (SCR)
 - 3. Commodity Classification Rates (CCR)

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General Cargo Rates (GCR)

- ▶ M - Minimum Charge
- ▶ N - Normal Charge
- ▶ Q - Quantity Rates

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Specific Commodity Rates (SCR)

- 0001-0999 Edible animal and vegetable products
- 1000 -1999 Live animals & inedible animal and vegetable products
- 2000-2999 Textiles; fibers and manufactures
- 3000-3999 Metals and manufacturer, excluding machinery, vehicles and electrical equipment
- 4000-4999 Machinery, vehicles and electrical equipment

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Specific Commodity Rates (SCR)

- 5000-5999 Non-metallic minerals and manufacturers
- 6000-6999 Chemicals and related products
- 7000-7999 Paper, reed, rubber and wood manufactures
- 8000-8999 Scientific, professional and precision instruments, apparatus and supplies
- 9000-9999 Miscellaneous

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Commodity Classification Rates (CCR)

- ▶ Surcharge
 - VAL (200% of Normal GCR)
 - AVI (All animal 150% of Normal GCR except baby poultry-Normal GCR)
 - HUM (Coffin-Normal GCR, Ashes-Applicable GCR)
- ▶ Rebate
 - (50% of the Normal GCR)
 - Ex. Newspaper, Magazines, Periodicals, Books

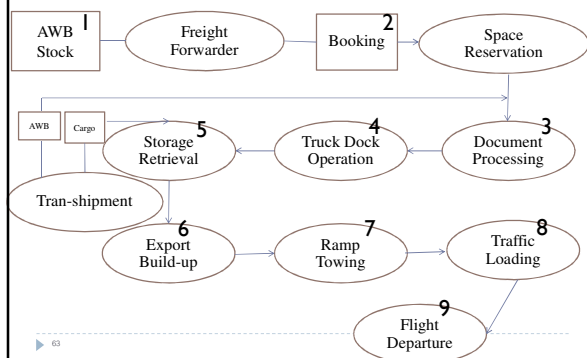
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Consignments Ready for Carriage

- ▶ Air Waybill
- ▶ Documentation
- ▶ Marking of Packages
- ▶ Packing
- ▶ Labeling of Packages
- ▶ Shipper's Declaration for Dangerous Goods
- ▶ Shipper's Certification for Live Animals

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Process Mapping Export



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