

Air Cargo management chapter1

WHAT IS AIR CARGO ?



IT IS THE CARGO TRANSPORTED BY AIR.

WHAT CAN BE DEFINED AS AIR CARGO?

**EVERYTHING TRANSPORTED BY COMMERCIAL
AIRCRAFT CAN BE DEFINED AS AIR CARGO.**



PERIODIC TABLE OF ELEMENTS

■ indicates a radioactive element

1	2											10	11	12	13	14	15	16	17	18		
H	He											Ne	Ar	Kr	Xe	Rn						
Li	Be											B	C	N	O	F	Ne					
Na	Mg	Al	Si	P	S	Cl	Ar															
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr					
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe					
Cs	Ba	La-Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn					
Fr	Ra	Ac-Lr	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Cn	Uut	Uuq	Uup	Uuh	Uus	Uuo					
LANTHANIDES		La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu						
ACTINIDES		Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr						

123RF



123RF



123RF



123RF

123RF



123RF



Can cargo be loaded only in the compartment?



What can be cargo?



<https://unsplash.com/s/photos/garment>

What can be cargo?



<https://www.quora.com/Can-tanks-be-airlifted-in-a-cargo-plane>

What can be cargo?



<https://www.quora.com/Can-tanks-be-airlifted-in-a-cargo-plane>

What can be cargo?



What can be cargo?



www.quora.com/Can-tanks-be-airlifted-in-a-cargo-plane

What can be cargo?



<http://elephantaday.blogspot.com/2012/07/elephant-no-274-paper-airplanes.html>

What can be cargo?



<https://www.bloomberg.com/news/articles/2020-11-19/china-vaccine-arrives-in-sao-paulo-with-virus-cases-on-the-rise>

What can be cargo?



- <https://www.popularmechanics.com/military/a33084291/covid-19-air-force/>

What can be cargo?



<https://www.bangkokpost.com/business/1842184/face-mask-makers-cancel-holidays-as-demand-rises>



HEROES
WORK HERE

<https://www.iata.org/>



COVID-19

Action Air Cargo

<https://www.iata.org/>



<https://www.tielandtothailand.com/chiang-mai-smoky-season/>

Air Cargo management



- **Why we need to send cargo by air?**
- **Because it is a sensitive, vulnerable, valuable goods needed rapid delivery.**
- **Why does Air Cargo has a significant role in Economics?**
- **It is a part of supporting domestic and international trade.**

Air Cargo management



- How many type of aircrafts that cargo can be uplifted?
- Two types.
- Passenger aircraft
- Freighter aircraft





Air Cargo management



- Passenger aircraft divide into two decks.
- Upper deck called cabin used for passenger seating.
- Lower deck called compartment used for cargo.
- However: there are three decks for A380

Aircraft cabin



Compartment for cargo



 alamy stock photo

<https://www.alamy.com/stock-photo-boeing-777-cargo-plane-at-frankfurt-hahn-airport-lautzenhausen-rhineland-48840594.html>

CRCTJX
www.alamy.com

Air Cargo management

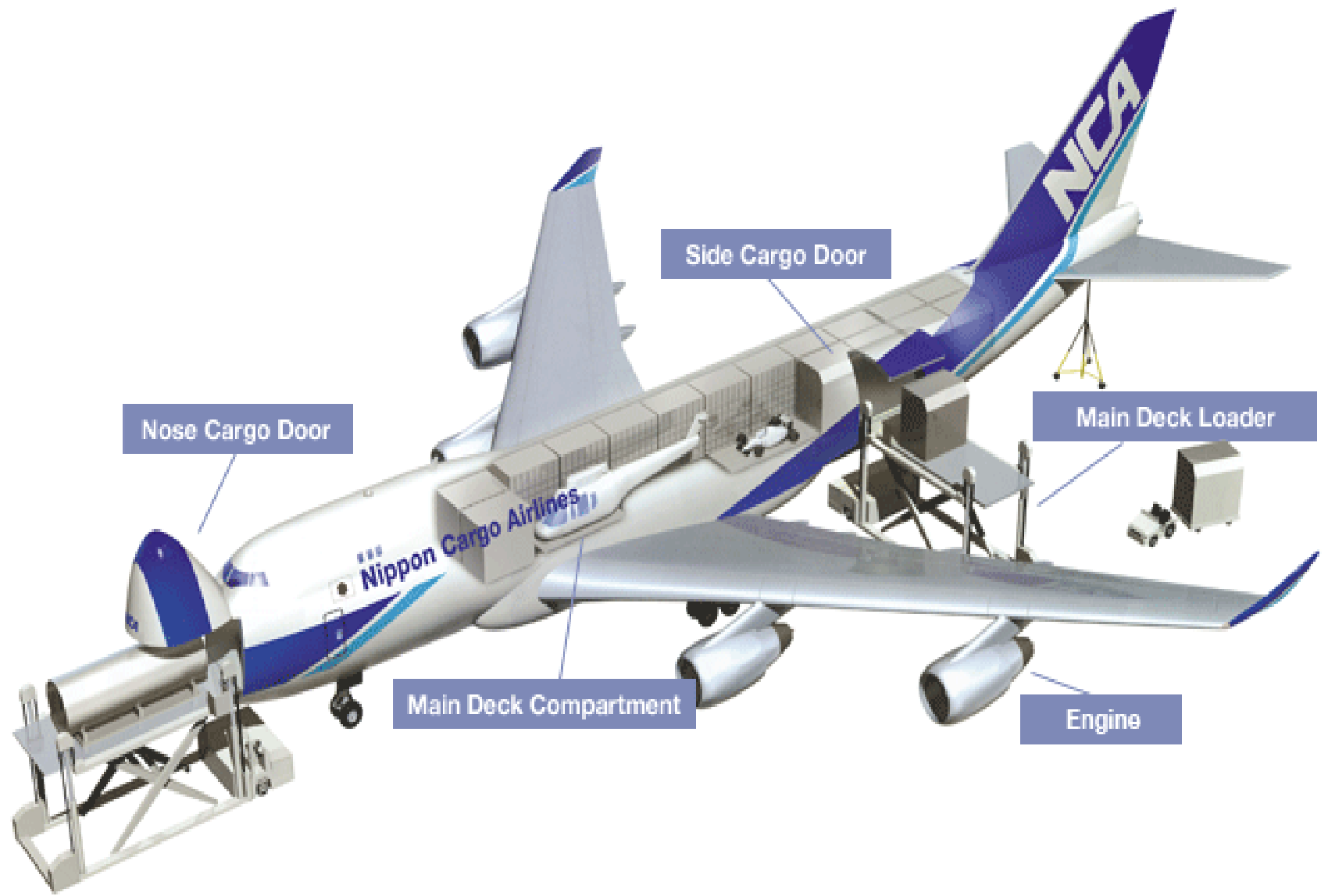


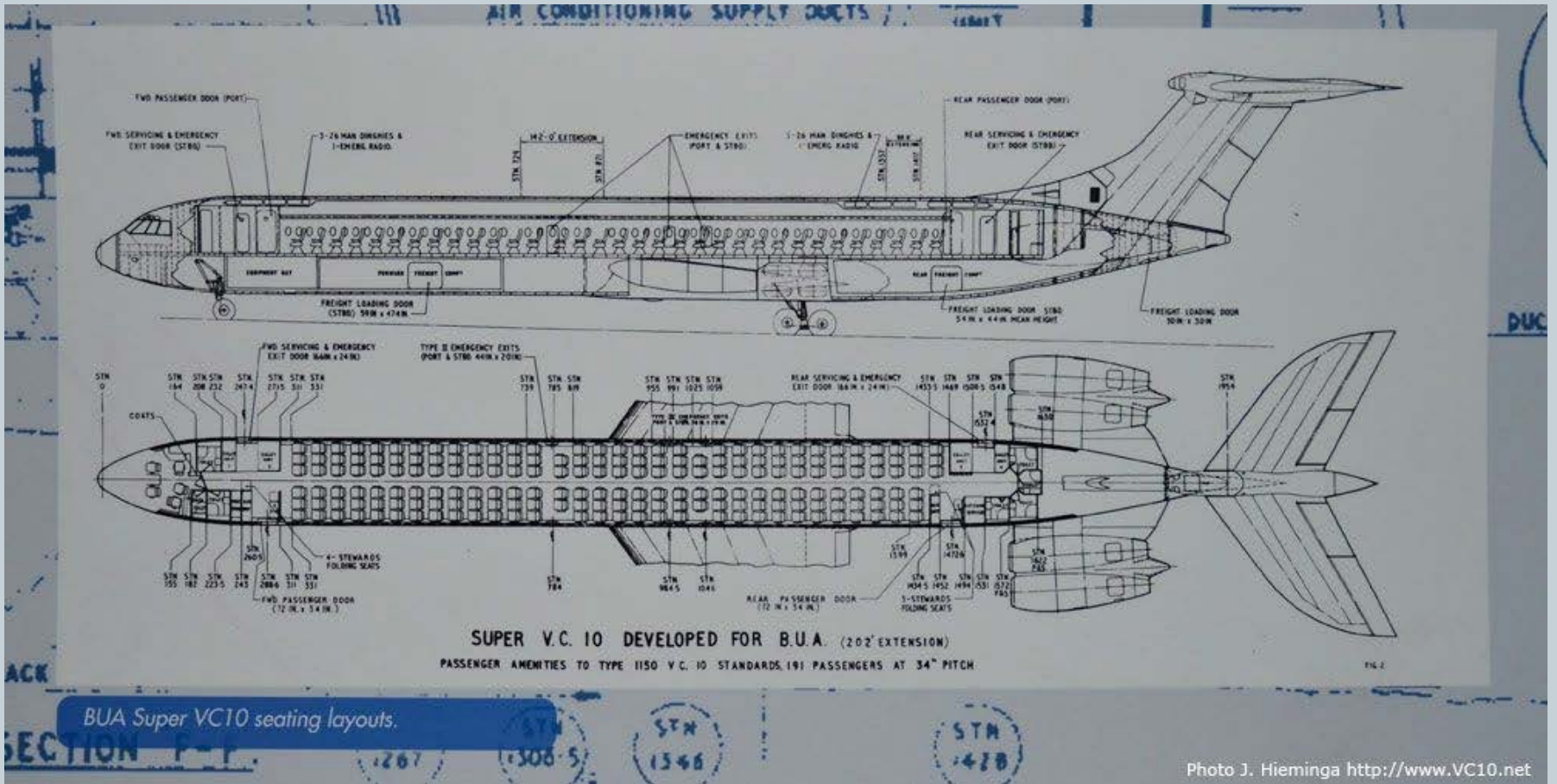
- There 4 basic types of carriers.
 1. Freighter (all- cargo carriers)
 2. Express (Integrator/express carrier)
 3. Scheduled (Commercial service passenger airlines)
 4. Ad-hoc cargo charter carriers





[Click to enlarge](#)





<https://www.pinterest.com/pin/358106607850196781/>



Air Cargo management



- The air cargo service has three types.
- Integrator/express service
- Freight forwarding service
- Airport-to-airport service







Integrator/express service



- There are many procedures.
- Door-to-door
- Pick up
- Ship via air / truck and delivery
- Most of operators are Fed-EX, UPS, DHL, TNT, NIPPON Express etc.

Ship via air (Air-Land)



Model schedule for shipments from Japan



Freight forwarding



- **Freight forwarder operates as an agent between shippers and the carriers.**
- **Gather all kinds of cargo and necessary documents, process custom , conduct with carriers and load cargo into ULD**
- **Freight forwarder also operates at transit and final destination.**

Agent or freight forwarder



<https://thecsrarena.com/panalpina-2018-sustainability-report-facts-and-figures/>

Agent or freight forwarder



<http://www.koreaherald.com/view.php?ud=20160415000531>

Airport-to-airport service



- This type of service provided by
- Passenger airlines
- Freighter
- Ad-hoc charter



<https://www.aircargonews.net/airlines/freighter-operator/cargolux-in-jakarta-race-horse-charter-flight/>

Airport Infrastructure



- Air cargo hub or warehouse provides export, import, express and transit cargo warehouse.
- Rather than those areas it also provides facilities, such as strong room for valuable cargo, cool room for perishable cargo, Hum room for Human remain and so forth.



Warehouse structure



- Warehouse in Thailand mostly can be divided into two parts. For example; (Thai airways international Cargo Department)
- The first one is for Thai airways international public company. (operate only Thai Airways)
- The second one is operated for customer Airlines, such as SQ, CX, KU, etc.



<https://www.jal.co.jp/en/jalcargo/office/inter/bkk.html>



<https://www.bangkokflightservices.com/home/bfs-services/cargo-handling-services/>

Containers



<https://www.thaicargo.com/en/main>

Location



<https://www.youtube.com/watch?v=VYcqVPCVPFc>

<https://www.thaicargo.com/en/main>

Warehouse structure



Each part above can be divide into many divisions

- Express division and Perishable Center (Under Export and Transit division)
- Export and Transit division
- ULD building up division
- Import division
- Service division
- ULD breaking down division

video



<https://www.youtube.com/watch?v=0kyPXHarMIk>

https://www.youtube.com/watch?v=YkW3DOoOFA8&feature=emb_rel_end

<https://www.freightforwarderquoteonline.com/news/agents-role-air-import-procedure/>

<https://www.youtube.com/watch?v=H2So3tvf4fI>
www.youtube.com/watch?v=tR-qV8vsQWM

Perishable Center



<https://www.thaicargo.com/en/main>

Warehouse structure



- **ULD service division**
- **Tracing division**
- **Documentation division**
- **Mechanical division**
- **Financial division**
- **Administration division**

Warehouse facilities



- There are a lot of facilities used in the warehouse.
- Cargo acceptance platform
- Scales
- Automated Storage/Retrieval System (ASRS)





Warehouse facilities



- **Trucks, Tow tractor**
- **Reach truck**
- **Folk lift, Hand lift**
- **Racks and bins**
- **Locations (small, big, od size cargo)**

Tow tractor and Reach truck





Reach truck



www.shutterstock.com · 535269760

<https://www.youtube.com/watch?v=c8c8dm08c8g>

Folk lift, Hand lift



www.shutterstock.com · 489110512



www.shutterstock.com · 248926984

Warehouse facilities



- Stand for loading
- Transfer vehicle for cool room (TV)
- Elevated transfer vehicles (ETV)
- https://www.youtube.com/watch?v=n7hoQlAar_I&t=62s
- ULD storage (Containers and Pallets)







Fleet type of the Aircraft



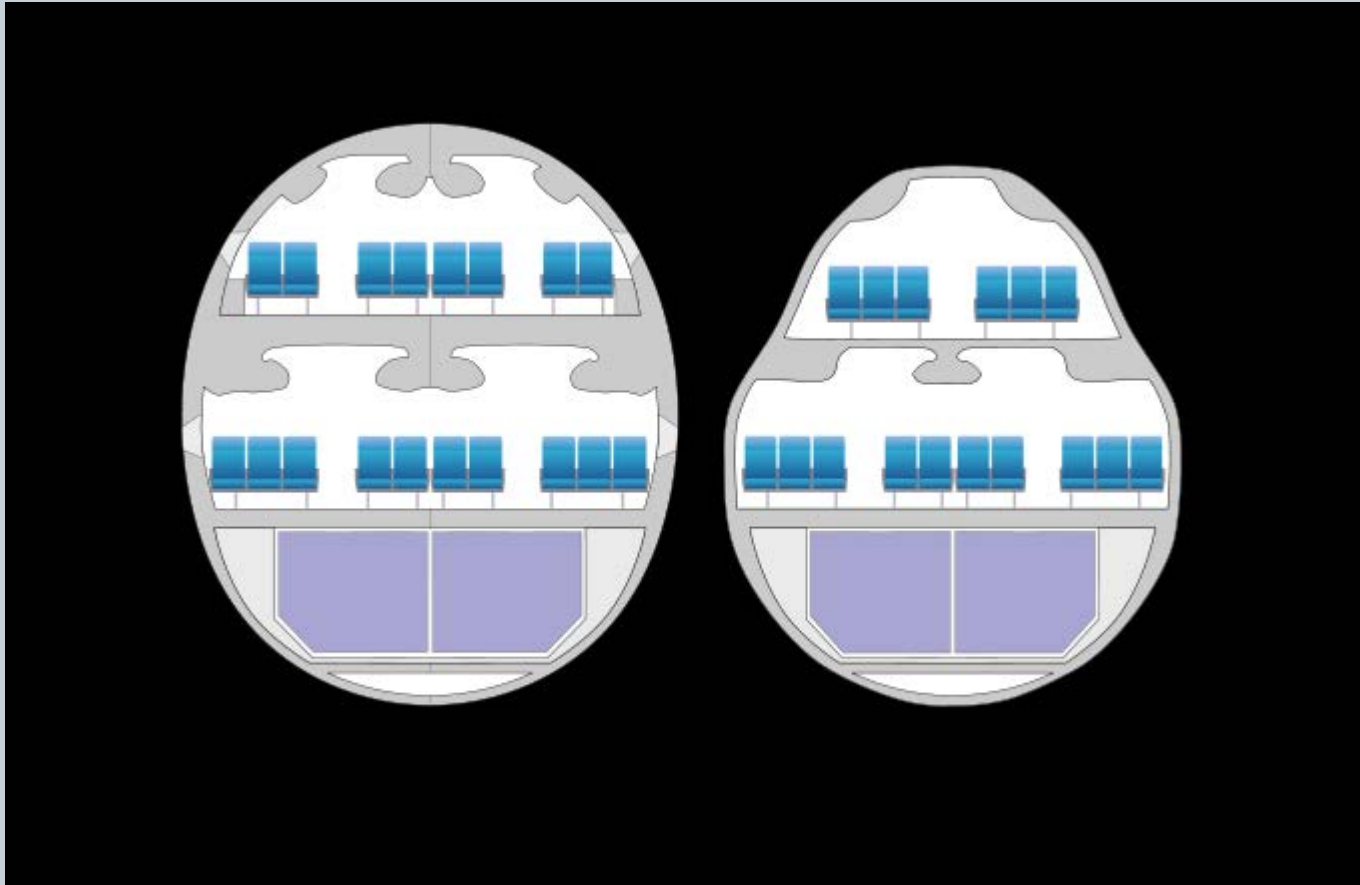
- The aircrafts served as air transportation in the world can be classified into 3 types.
- Wide-body jet
- Narrow-body jet
- Narrow-body turboprop aircraft



Wide-body aircraft

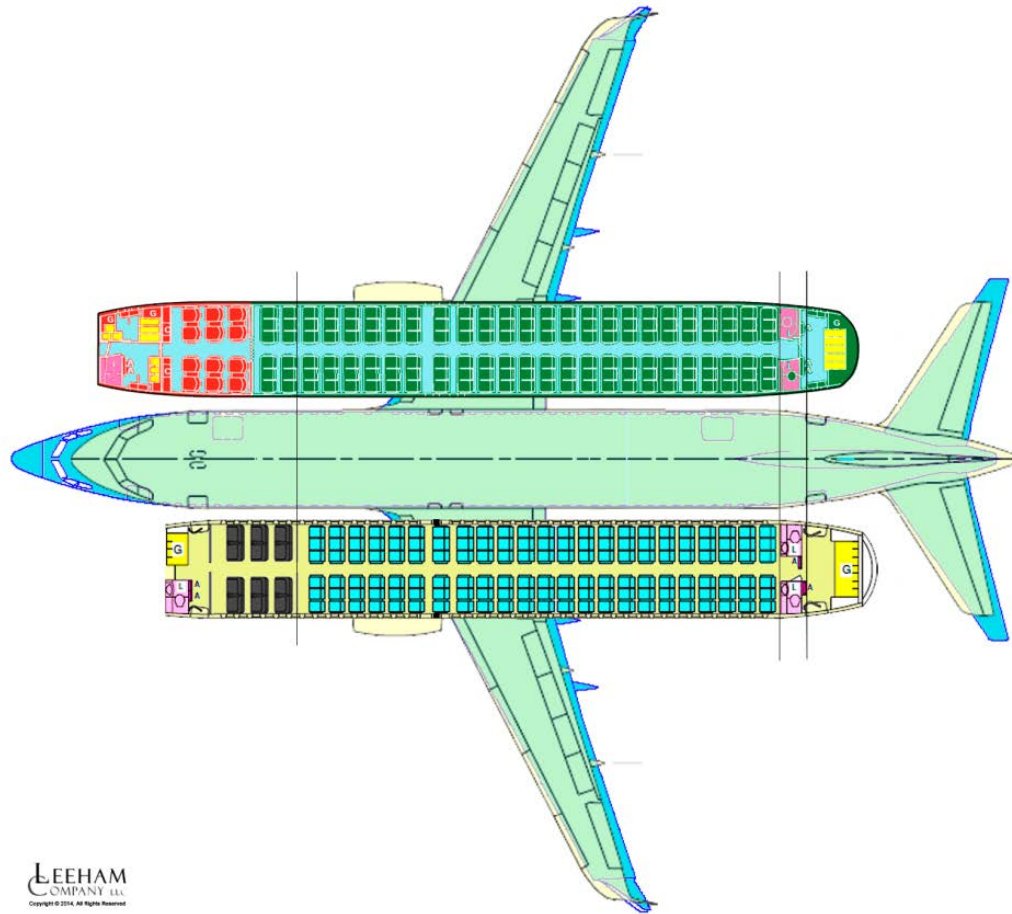


Wide-body aircraft





Narrow-body Boeing737



Fleet type of the Aircraft



- **The wide-body aircraft have two decks.**
- **One is main deck or cabin and another is lower deck for loading cargo.**
- **Both have rollers for moving ULD into the position.**

Fleet type of the Aircraft



- The narrow-body aircraft have two decks the similar to wide-body; however, its lower deck is just only bulk loaded or floor loaded.

Who involve in Cargo business?



- In Airline industries, we classified stakeholders into six types.
- Shipper or consignor is the one who want to transport the cargo
- Shipper may directly contact to the carrier or via agent (forwarder)
- Forwarder operates like a travel agent with passengers.

Who involve in Cargo business?



- **What do forwarders do?**
- **They manipulate everything starting from picking up cargo from-to warehouse.**
- **Process all documents concerning of Export, Import and Transit cargo, such as Custom, AOT**
- **Coordinate with carriers who transport those cargo.**

Who involve in Cargo business?



- Carrier staffs, cooperate with concerned persons, division, organization, such as
- forwarder, custom, Airport authority of Thailand, Agricultural officer
- Ramp officer, crew, Load controller and captain.

Who involve in Cargo business?



- **Consignee or importer stand for the one who receives the cargo or goods or product.**
- **Carrier means the company who provides the air delivery of cargo from original airport to destination airport**

Air cargo transportation procedures



- In most stations, they follow these steps.
- 1. Making reservation or booking by forwarder.
- Forwarder or individual person is needed to call carriers to inform the details of cargo in order to book a space.

Air cargo transportation procedures



- 2. Confirm booking; if the forwarder or individual person has already reserved space, the carrier will confirm space, then the forwarder will continue to do the next step.
- 3. Packaging/Packing; shipper may directly deliver to carrier's office or to agents.

Air cargo transportation procedures



- 4. Marking and Labeling; after all cargo are packed, shipper/forwarder has to fix marking and labeling to notify the contented products detailing the nature of goods, quantities, port of loading/unloading, routing and handle instruction.

Air cargo transportation procedures



- 5. Documentation;
- Forwarder will fill out the air waybill with the details received from shipper and ask he/she to sign the name and process to the custom.
- The custom office may locate at the free zone or at the shipper's factory in order to facilitate the shipper.

Air cargo transportation procedures



- **7. Loading**; this process refers to load all cargo not only for export cargo but also together with transited cargo at BKK station.
- Loading can be divided into 3 types.
- Container, pallet and bulk
- Bulk means loose cotton which cannot be loaded in container and pallet and loaded at the end of aircraft.

Air cargo transportation procedures



- 8. Boarding; After completed loading, all ULD must be hung with the tags which written with point of loading/unloading and towed to the aircraft side and lifted into the compartment.
- 9. Delivering; when cargo is already unloaded at the destination, the process of custom will be done and deliver to consignee by forwarder.

Air cargo transportation procedures



- **10. claim;**
- **The last process of shipping cargo by air is claiming. In case of lost or damage, consignee will claim to forwarder or carrier.**