

# Chapter 8

- ***Aircraft Load Planning and Airline teletype communication***
- Air cargo load planning is the decision process to generate planned CBL (Cargo boarding list) about whether a commodity will be loaded to the aircraft and the location of the commodity if loaded.

# Aircraft Load Planning

- Every aircraft has certain structural weight restrictions, which is determined by manufacturer.
- There are fixed limits to the payload (the total weight of passengers, baggage and cargo)
- This payload must be distributed so that the aircraft's center of gravity is maintained within aircraft limitation.

# Aircraft Load Planning

- For passenger aircraft, a good loading plan will not only insure good weight balance to save fuel consumption and ensure flight safety, but also improve the operational efficiency, such as offloading time, moving effort and risk of mishandling.

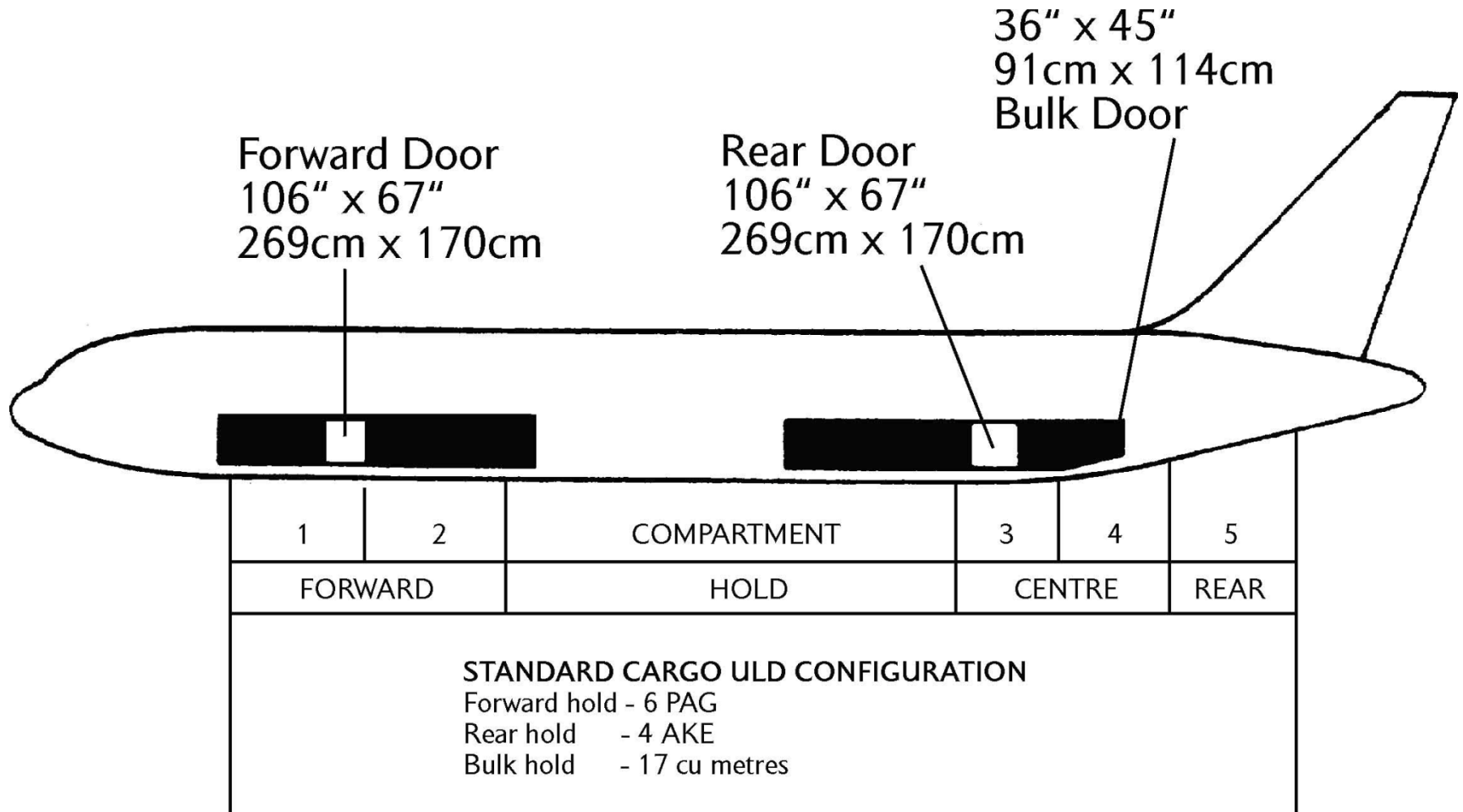
# Aircraft Load Planning

- Hermes(2009) stated that Narrow-body aircraft mostly can load without ULD( container, pallet). It means that it can load only loose cotton or piece by piece.
- However, some narrow-body aircraft types created by some manufacturers can use ULDs for loading.

# Aircraft Load Planning

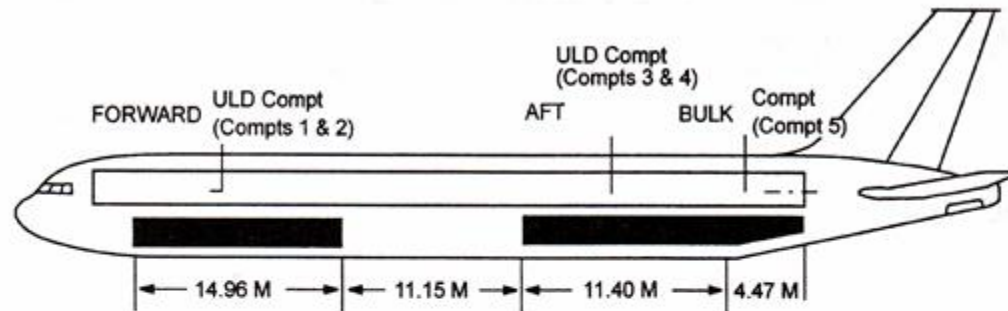
- Loading positions on narrow bodied aircraft are known as “holds”.
- It is the aircraft lower deck or compartment.
- Holds are stowage spaces which are accessible through external doors.
- Between front or forward hold and back or aft hold, there is a solid partition without any access to one another.

# Aircraft Load Planning

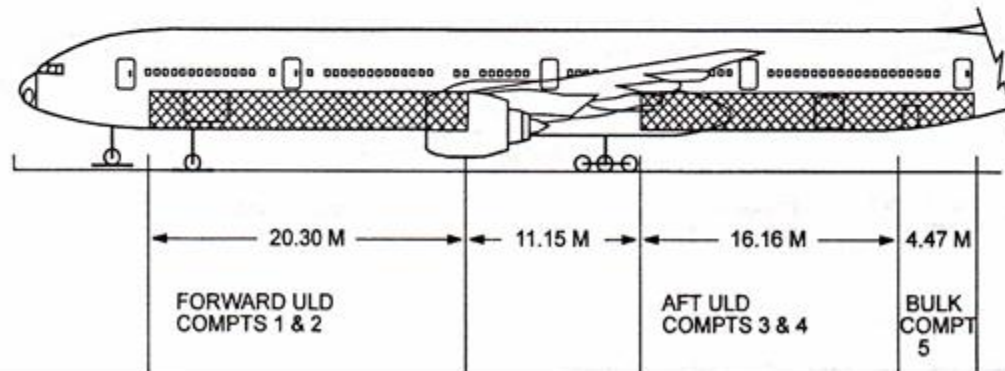


# Aircraft Load Planning

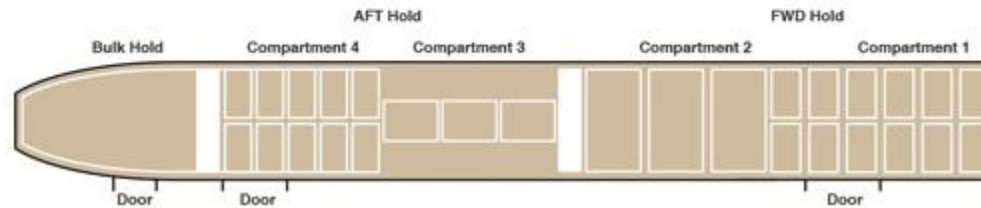
## MODEL 777-200/-200ER



## MODEL 777-300



# Aircraft Load Planning

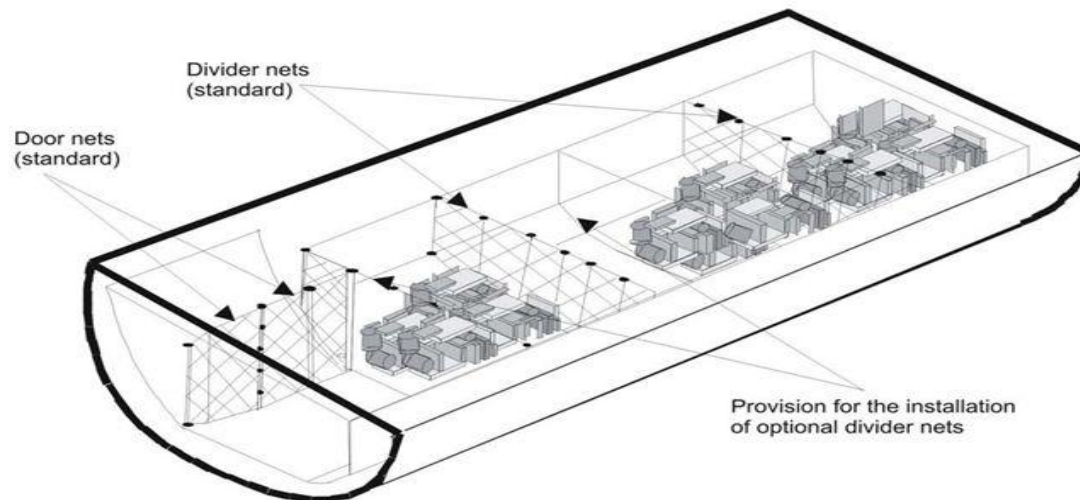




# Aircraft Load Planning

## Standard aircraft cargo configuration

### ATA 25 – Standard aircraft cargo configuration



**Example: A321 Forward cargo hold**

*Source: Cargo Configurations - Airbus Brochure Issue 2, December 2012*

# Aircraft Load Planning

- Wide bodied aircraft does have similar figure of holds as narrow bodied aircraft, but the holds are divided into compartments to accommodate the ***ULDs***.
- Every wide bodied aircraft has loose compartment called '***compartment 5' or bulk load***.
- For Airbus type A350 itself has a bulk hold on the left hand side.

# Aircraft Load Planning



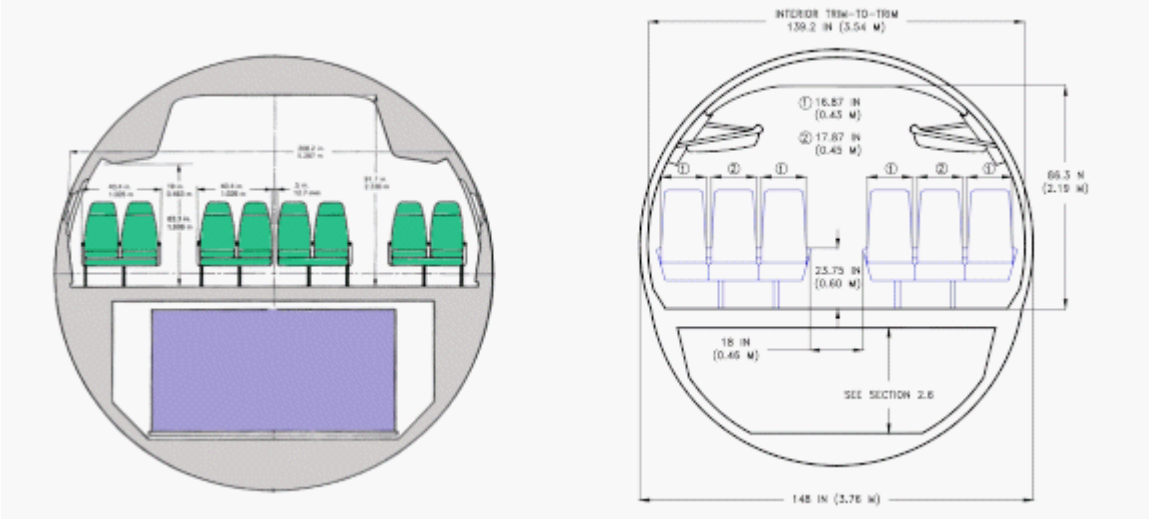
<http://www.aviationpros.com/product/10164715/jbt-aerotech-jetway-systems-rampsnake-bulk-loader>

# Aircraft Load Planning



<http://avherald.com/h?article=49ec203d>

# Aircraft Load Planning



# Aircraft Load Planning

- Two industrial terms for the safe loading of an aircraft are “weight and balance” and “load planning” both refer to the same aspects of aircraft loading issues.
- ***Balance:***
- Balance refers to the location of the center of gravity along the longitudinal axis.
- An aircraft is flexible structure, and the fuselage contorts or twists during flight.

# Aircraft Load Planning

- To keep the fuselage from twisting beyond the maximum allowed.
- The position of the center of gravity within the
- Aircraft will vary according to the seating of passengers and loading of cargo and luggage.

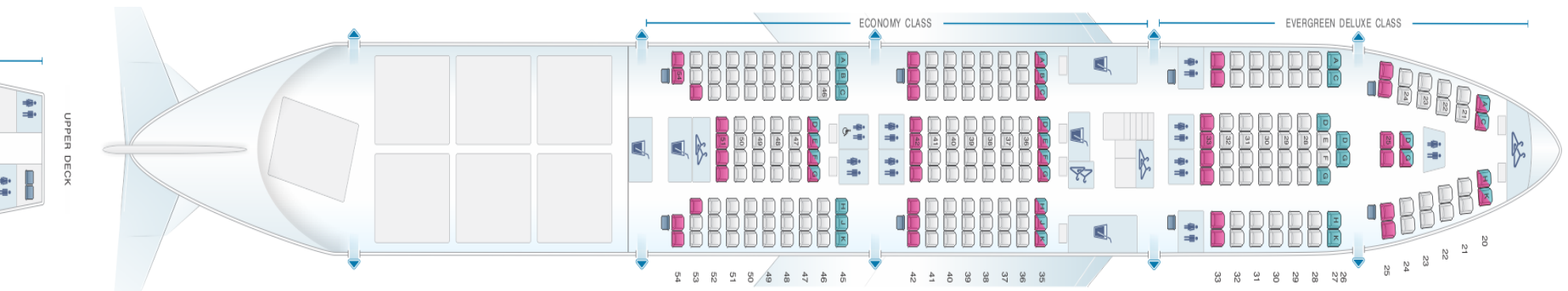
# Aircraft Load Planning

- In general, passenger aircraft has only lower deck for cargo loading. Some carrier converted their passenger aircraft to be able to load cargo in the same level of passenger cabin called 'combi'



# Aircraft Load Planning

- <https://www.seatmaestro.com/airplanes-seat-maps/eva-airways-boeing-747-400-combi-1/>



# Aircraft Load Planning

- Freighter carry cargo both main deck and lower deck.
- There are tremendous of cargo space.
- Freighter have greater option to load: larger cargo, larger quantities and fewer DG restrictions.

# Aircraft Load Planning



<http://www.aerospace-technology.com/features/featurethe-top-10-biggest-cargo-aircraft-4589609/>

# Aircraft Load Planning



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# Aircraft Load Planning

- In order to avoid accidents, the aircraft manufacturers have laid down weight and volume limitations to be considered called ***“loading limitation”***
- The limitations could be maximum load per compartment or section, maximum load for main deck plus lower deck. Each part of the holds using IATA codes such as

# Aircraft Load Planning

- 'C'=cargo
- 'F'=priority baggage
- 'B'=baggage
- 'M'=mail
- 'T'=transfer load
- And three letters code is to identify type of goods such as VAL, VUN, AVI, PER

# Aircraft Load Planning

- Designation of aircraft holds
- In order to prevent the mistake that can be occurred when loading, the designation of compartment, ULD bays and cabin section is standardized.
- There are three codes including both numbers and alphabet.



# Aircraft Load Planning

- For example;
- **31L**=the first number “**3**” refers the compartment number 3
- The second number “**1**” refers the position of row
- And the last letter “**L**” refers to Left hand and for the “Right” we use “**R**” for the right hand.

# Aircraft Load Planning

- The loading codes are used for information to all concerned stations and department
- IATA Airport Handling Manual (2009) has defined the regulations of loading instruction for using as standard worldwide.
- **Loading *instruction report should contain;***
- Heading line

# Aircraft Load Planning

- Sketch of the *compartment layout* with *compartment door* indicated an arrival instruction part to be **completed by** load sheet agent/load planer.
- To inform other station about incoming of loading details.
- To instruct about the distribution of loading, weight and location of the unloading cargo and through loading cargo.

# Aircraft Load Planning

- To advise in terms of any other information might be considered for safety and loaded handling.
- The complete loading instruction report must be filed at the issuing station. If there is any figures passed verbally, load sheet staff has to confirm before aircraft departure, preferably in writing and the calculations must be checked before departure of the flight.

# Aircraft Load Planning

Station	Flight No.	A/C Reg	Configuration:	Date	Loading Instruction <b>LOWER DECK B747</b>	
<b>AT ARRIVAL</b>						
	MAX. R5 14880 LBS	MAX. R4 29110 LBS	MAX. R3 21450 LBS	MAX. F2 35570 LBS	MAX. F1 22800 LBS	
<b>DEP</b>						
	TTL	LBS	TTL	LBS	TTL	LBS
SEATING COND.	NOTE: <b>LBS</b> ALL WTS IN LBS ULD TARE WT INCLD			CODES TO BE USED		This aircraft has been loaded in accordance with these instructions including the deviations recorded. The load has been secured in accordance with SSR/AIC Airline regulations.  Signature of Ramp Agent
UD	PAX C/Y :			B - Baggage	P - Pallet	
OA	AD/CH/INF :			C - Cargo	S - Stowage	
OB	BAGG :			M - Mail	T - Transfer Load	
OC				E - Equipment	U - Unserviceable Container/Pallet	
OD				L - Left	X - Empty	
OE				R - Right	Z - Mixed Load	
TTL PASSENGERS	PREPARED BY:		APPROVED BY:			
						204

# Aircraft Load Planning

- From loading instruction of B747 above, the *heading of the form* must be **filled out** by load *sheet agent/load planner*. The information includes station, flight number, aircraft registration, date, and configuration.
- Special instruction must be completed if the flight has loaded special cargo such as AVI, PER, DG, HUM, VAL and so on.
- Last the responsible person is required.

# Aircraft Load Planning

- ***Airline Teletype Communications***
- Airline communication via teletype ***must be short, clear, simple(leave out unimportant words) using an abbreviations*** and effective both in cost and times.
- Even in the present day Internet allows us to communicate in many ways; however, airlines still use teletype to communicate among stations and interlines with a standard abbreviated message.
- In order to save the cost for the airlines, the teletype must be short, clear, simple and used abbreviations ***sending through SITA system***(*A multinational information technology company providing IT and telecommunication services to the air transport industry.*)

- ***Airline Teletype Communications***
- Like sending a letter, you need to write both the sender and receiver addresses and if you send telex pass SITA system, you must sent it with 7 letter IATA codes. You can see an example as following;
- RYT
- RECN 217-4475 2257 T15K250 KIXCDG EXTG623/31OCT XFTG930/01NOV
- SHPT ABV MSCA 1 OF 15 MIXED LDG WITH SHPT TO LHR, FRA ND MEL, ATTN: CONC DIV PLS IMDTLY RTN TO BKK IF FD AT UR STP/B/RGDS/KANG
- QD\* KIXFWTG MELFFTG LHRFWTG FRAFFLH BKKFSTG BKKFTTG BKKFKTG CPYXXXX FRAFWLH MELFWQF.BKKFVTG/\*X
- From telex above, the function which sent telex is BKKFVTG



- ***Airline Teletype Communications***
- The function which take actions are 7 functions.
- The function which take acknowledgement are two function.
- The original port or the Departure port is KIX
- The Destination port cargo is CDG.
- The first routing is from KIXBKK.
- The second routing is from BKKCDG.
- The first flight from original post is TG623/31OCT
- The second flight from transit station is TG930/01NOV
- The cause of sending telex is MSCA.