

International Air Operations
Chapter 12

Learning Objectives

- **Benefits & Drawbacks to Air**
- **Int'l Air Trends**
 - *Size, Players, Capacity, etc.*
- **Equipment**
 - *Aircraft Types, Carrying Ability*
- **Current Trends**
 - *Open Skies, Alliances, New Equipment*

Key Questions to Consider

- **What reason might be given for using international air freight services?**
- **How can you segment the international air service industry?**
- **Who are the major players in each segment?**
- **How much does air service cost?**
- **How are rates calculated?**

Why Use Air Service?

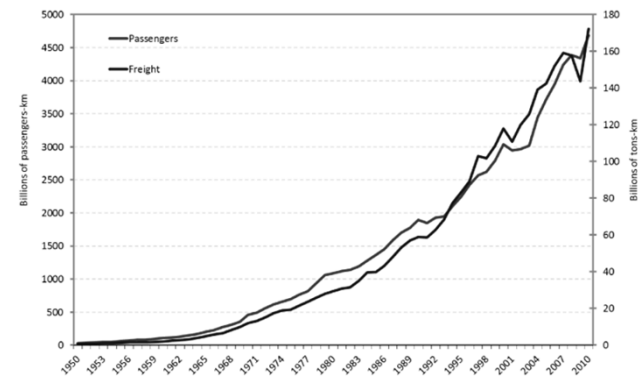
- **Need for fast delivery speed**
- **Need to reduce inventory**
- **Need rapid inventory replenishment**
- **Need for shipment safety**
- **Need to reduce packaging**
- **Need to cut insurance costs**
- **Need flexibility**

Air Service vs. Ocean Service

- **Benefits of Air**
 - *speed*
 - *dependability*
 - *less damage*
 - *less packaging*
 - *lower insurance rates*
- **Benefits of Ocean**
 - *cost*
 - *carrying capacity*
 - *product mix*
 - *postponement*
 - *storage*

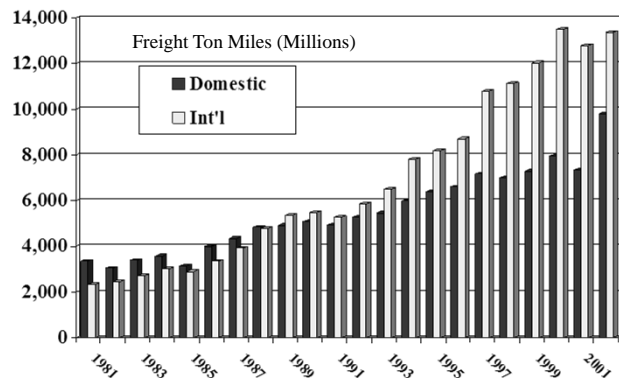


World Air Travel & Freight Carried 1950-2010



Source: [Air Transport Association](#)

USA Carriers Air Cargo & Freight



Source: [Air Transport Association](#)

Important Issues in the Development of Air Service

- **Control of international aviation**
 - *more restrictive than international shipping*
 - *bilateral agreements used to negotiate details of the five freedoms (see page 26)*
 - negotiations often result in market sharing
 - negotiations are often lengthy
- **Standardization issues handled by**



Types of International Air Service

- **Passenger-Cargo Scheduled Service**
 - *handle cargo in baggage holds*
- **All-Cargo Service**
 - *large volume shippers*
 - *many carriers are increasing their fleets*
 - Lufthansa, United, Cathay Pacific, etc.
 - fleet conversion is primary method

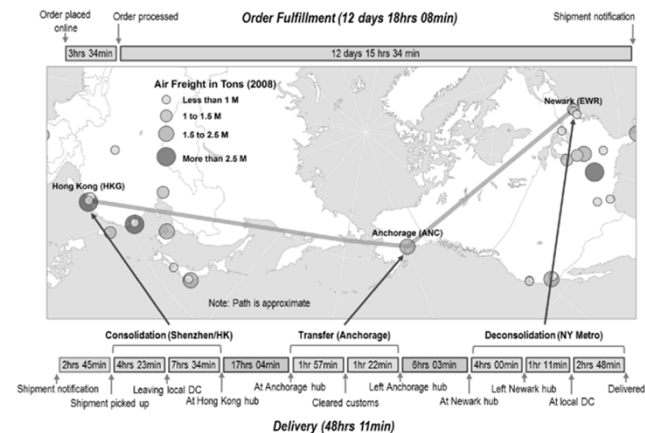
Types of International Air Service

- **Air Express Service**
 - *small-package service*
 - *integrated service carriers*
 - provide door-to-door service
 - dominate U.S. export market
 - UPS, FedEx, DHL, TNT
 - *non-integrated service carriers*
 - provide airport to airport service
 - rely on freight forwarders for PU/D

Types of International Air Service

- **Charter Service**
- **Parcel Post Service**
 - *USPS offers Global Package Link service*
 - rate advantage over UPS and FedEx
 - bulk service to eight countries
- **Freight Forwarding Service**
 - *indirect air carriers*
 - *consolidate small shipments*

Air Cargo - IPad



Air Cargo Carriers



Thousands of Tons in 2008

Rank	Airline	Tons	Rank	Airline	Tons
1.		1,891	11.	Air France	786
2.		1,603	12.	European Air Transport	733
3.		1,438	13.	British Airways	708
4.		1,382	14.	EVA Air	681
5.		1,339	15.	Japan Airlines	679
6.	Singapore Airlines	1,274	16.	Asiana	672
7.	United Airlines	1,257	17.	KLM	604
8.	Lufthansa	1,157	18.	Thai Airways	536
9.	China Airlines	1,086	19.	LAN	503
10.	Cargolux	794	20.	Malaysia Airlines	468

Source: Freight Transportation: Global Highlights, 2010 (U.S. Dept. of Transportation)



FedEx's Operations in Asia



Equipment & Cargo Capacity

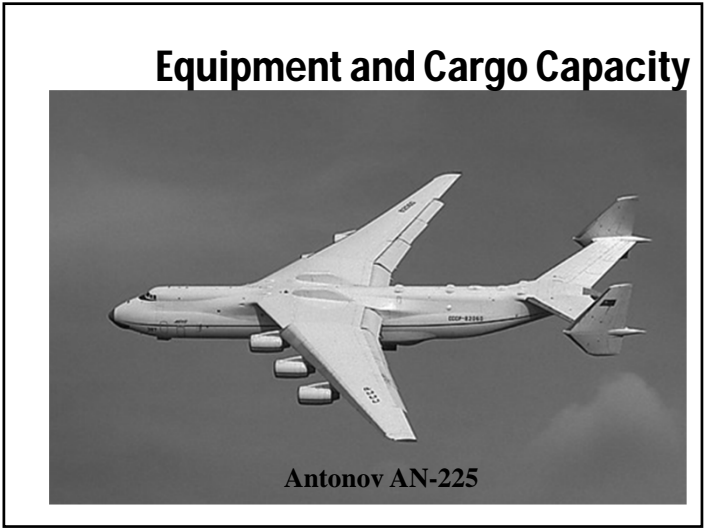
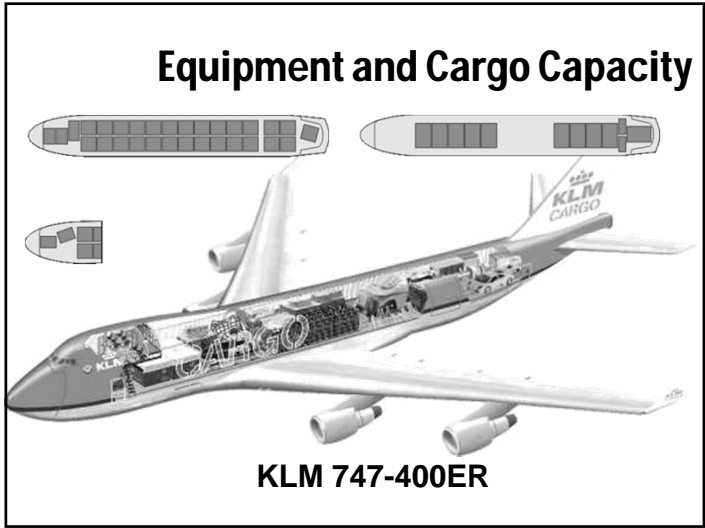
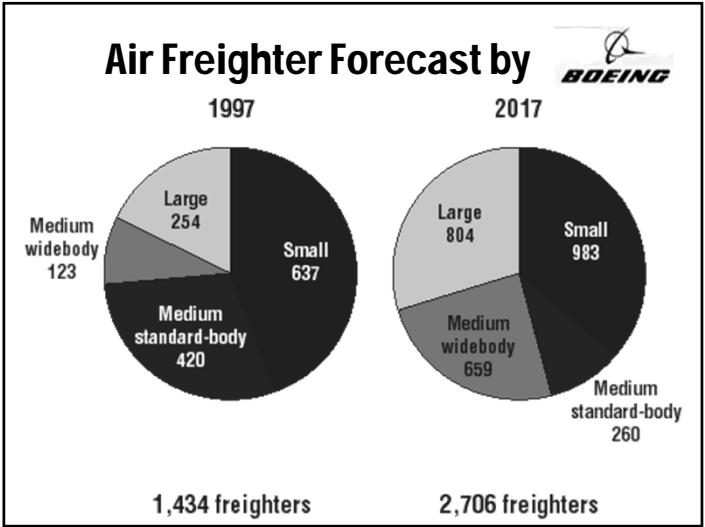
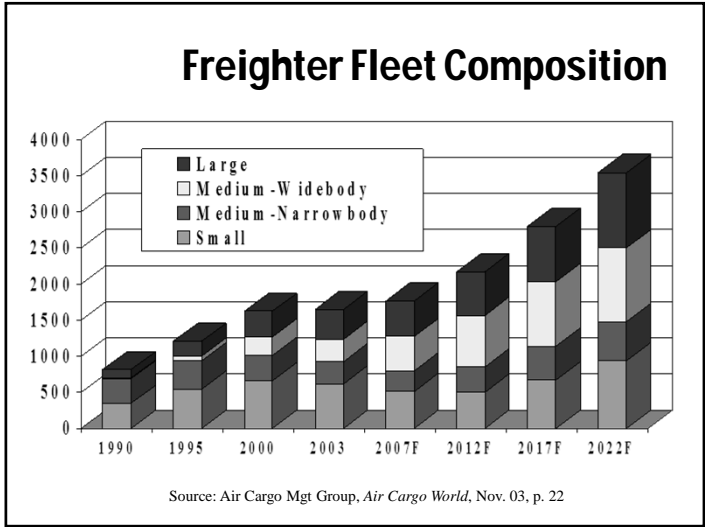
- **Passenger Aircraft**
 - from 2,000 - 100,000 lbs.
- **Freighters**
 - up to 300,000 lbs. in a Russian AN124
- **Combis and Convertibles**
 - up to 200,000 lbs. in a Boeing 747D
- **Containers**
 - must be lightweight
 - must be shaped to fit fuselage

Commercial Jet Freightier Fleet



Type	Small	Medium Narrow	Medium Wide	Large
Capacity (lbs)	>60k	60k-120k	70k-140k	<140k
Sub Total	615	310	311	413
Models	27 Bae14-QTS	39 B707-320s	48 A310-200s/300s	21 B747-100s
	59 B737-200/300s	110 B757-200s	67 A300B4s	144 B747-200s
	161 B727-100s	82 DC-8-50s/60s	76 A A300-600s	9 B747-300s
	267 B727-200s	79 DC-8-70s	22 B767-200s	89 B747-400s
	100 DC-9s (all)		40 B767-300s	56 DC-10-30s/40s
			53 DC-10-10s	94 MD-11s
			5 L1011s	

Source: Air Cargo Mgt Group, Air Cargo World, Nov. 03, p. 23



Equipment and Cargo Capacity -747



Equipment and Cargo Capacity



Loading/Unloading - ULD



Shift to Regional Jets

- Transforming the Industry
- Growth of Narrow and Medium Body
- Significant Challenge to Cargo



Air Containers

- For info regarding containers

- JAL Air Cargo Site

60.4" x 47"	DPN (LD-2)		32010-37010		91200-99210	
			L	119(47)	110(43)	767 LD
60.4" x 86"	DOF (LD-B)		7.1(251)		140(309)	
			L	244(96)	234(92)	767 LD
60.4" x 81.5"	AKE AVE (LD-3)		3.9(380)-4.4(1050)		85(187)-150(340)	
			L	157(62)	147(59)	7 LD
60.4" x 81.5"	DKN DVN (LD-3)		3.9(380)-4.1(145)		102(26)-188(304)	
			L	157(62)	150(59)	7R LD

Airline Freight Rates

- Rates are weight or space based
 - whichever creates the higher total cost
 - $DIM\ weight = (L \times W \times H) / 166$
- Types of rates
 - traditional tariff rates
 - Unit Load Devices (ULD) rates
 - contract rates

Documentation & Related Issues

- Air Waybill
 - bill of lading which covers both the domestic and international flights transporting the goods
 - non-negotiable instrument
- Shipper's Letter of Instructions*
- Export Declaration*
- Commercial Invoice*
 - *only needed for dutiable shipments with a value in excess of \$2500

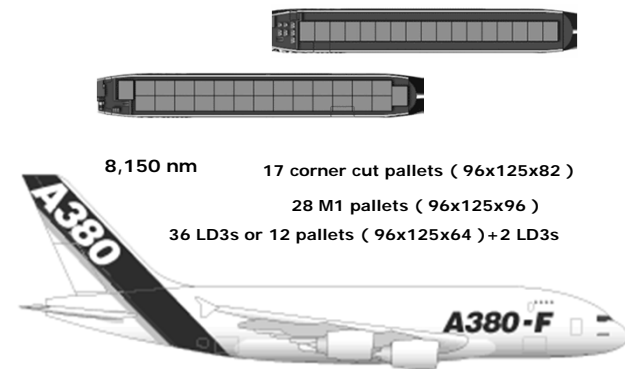
Key Trends and Issues

- Fuel costs
 - exceeding 70 cents per kilo vs. 60 cents in 1995
- Pilot wages
 - potential work stoppages by UPS and others
- Cargo safety concerns
 - crashes and hazmat incidents have raised the level of awareness and enforcement

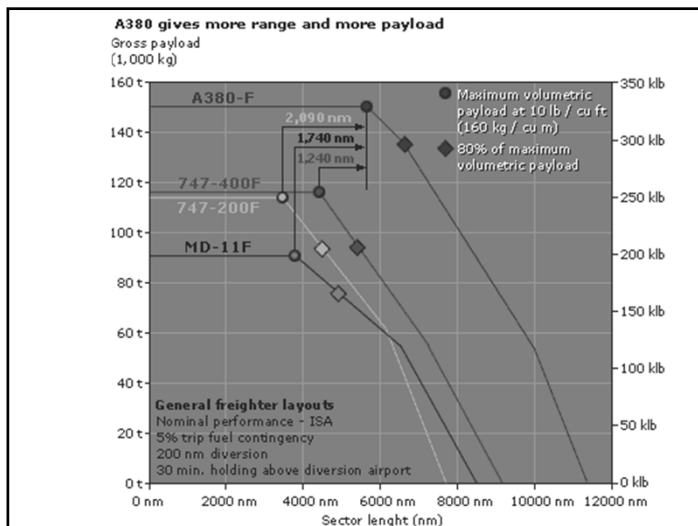
Key Trends and Issues

- **Market opportunities**
 - *growth estimates range from 5 - 20%*
- **Service expansion by US carriers**
 - *Far East*
 - *Europe*
- **Cooperation and alliances**
 - *more major carriers are working together*
 - *consolidation of aircraft manufacturers*

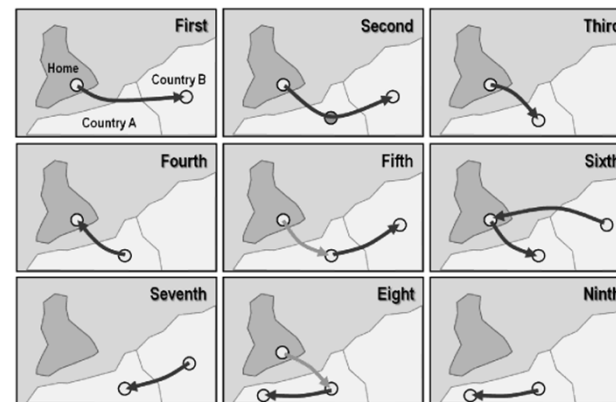
Key Trends and Issues



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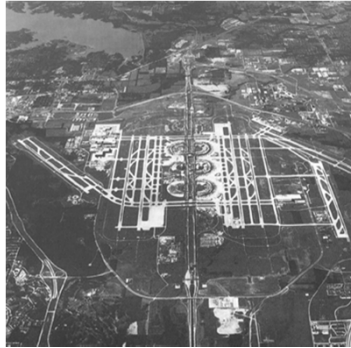


"Five" Freedoms of Aviation



Types of Air Cargo Airports

- **Local market station**
 - *offers service to surrounding market area or catchment area*
- **Hub (regional and national)**
 - *consolidates and distributes network flows*
- **International gateway**
 - *consolidates and processes international material*



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