


International Logistics and Transportation



Chapter 10 & 11

Road Map to Success

Chapter Objectives:

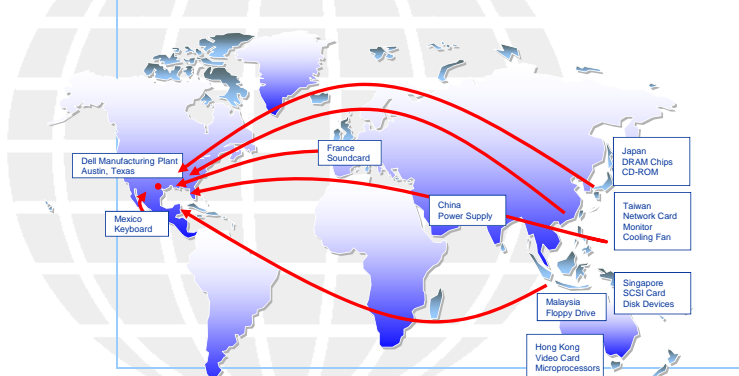
- Where are the global markets and trade partners/trade organizations?
- What are the structures of ocean trade/ports/land bridge?
- What is the role of air cargo in int'l trade? Airports – Cargo Types?
- How do the other modes contribute to int'l trade (intermodal too)?
- What are the likely trends in int'l trade and logistics/transportation?

 International

 Quality

 Specialty Areas

Global Supply Chain: Dell Computer

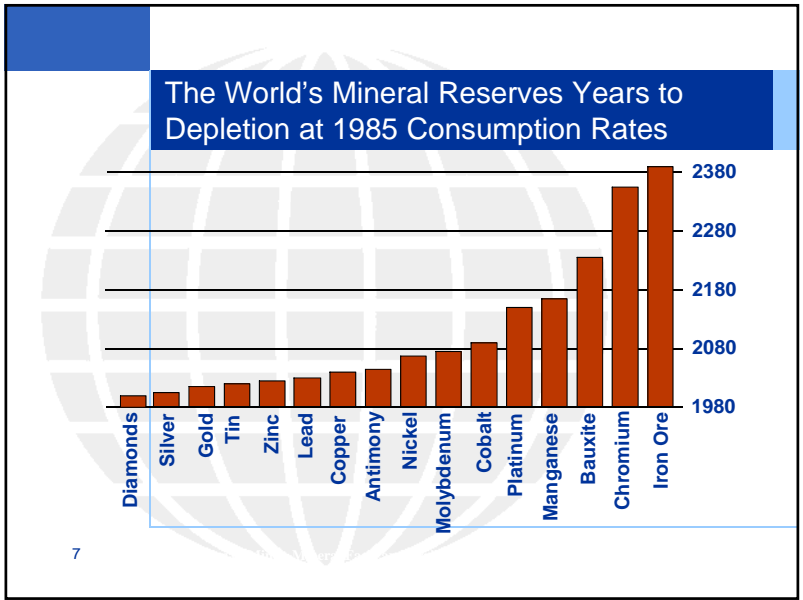
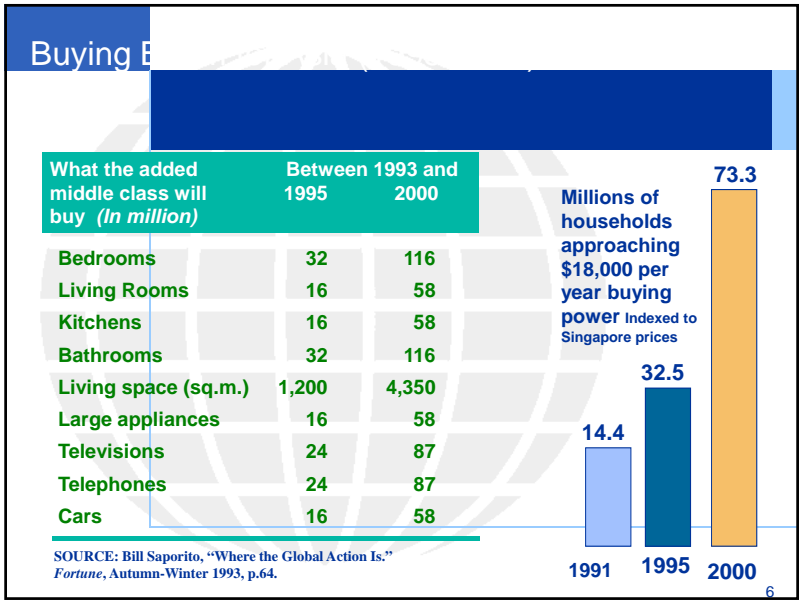


3
Source: Abbey, Twist and Koonmen. 2001

What's So Important About the Global Economy?

- International is expanding rapidly
 - Elimination of trade barriers
 - Development of international trading groups
- opportunities are abroad
 - \$599.4 billion in U.S. exports
 - Expanding income in emerging countries
- Influx of goods
 - \$683.9 billion in U.S. imports
 - Expanding capabilities of emerging countries

4



Key US Trading Partners (2009)

Country	Value of Trade (\$ Bil)
1.	396.3
2.	360.6
3.	282.0
4.	143.1
5. Germany	110.0
6. United Kingdom	89.0

Source: http://dataweb.usitc.gov/scripts/cy_m3_run.asp

Long-term world growth is not uniform: Market shifts continue and will affect U.S. trade and transportation

(Country GDP Rank in Billions of Real (2003) U.S. Dollars)

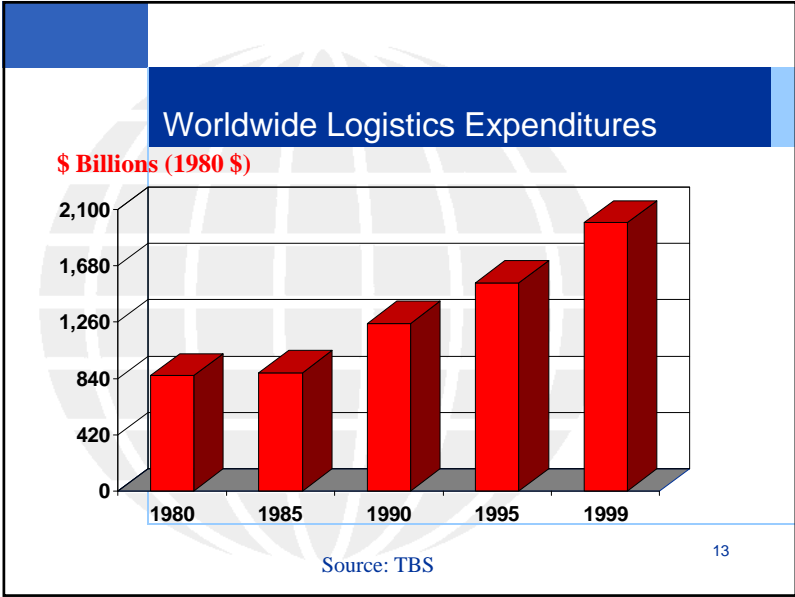
2000	2010	2020	2030	2040	2050
U.S.	U.S.	U.S.	U.S.	U.S.	China
Japan	Japan	China	China	China	U.S.
Germany	Germany	Japan	Japan	India	India
U.K.	China	Germany	India	Japan	Japan
France	U.K.	U.K.	Russia	Russia	Brazil
Italy	France	India	U.K.	Brazil	Russia
China	Italy	France	Germany	U.K.	U.K.
Brazil	India	Russia	France	Germany	Germany
India	Russia	Italy	Brazil	France	France
Russia	Brazil	Brazil	Italy	Italy	Italy

Source: Global Insight World Service and Goldman Sachs, 2006

What's So Significant About International Transportation?

- The
 - International = 25 to 35% of product price
 - Domestic = 8 to 10% of product price
- The potential
 - Border crossings and customs activity
 - Distances involved and transfers needed
- The increased
 - Additional paperwork involved
 - Nonstandard operating environments

11



13

International Logistics Channels

- Transaction channel
 - When, where key activities should take place
- Distribution channel
 - What modes, routes should be used
- Communication channel
 - What documentation must be used

14

Transaction Channel Issues

- When, where transfers should take place
 - Physical Goods
 - Payment
 - Legal Title
- Responsibility for
 - Insuring the goods
 - Paying for transportation services
 - Control, care for the goods

15

Transaction Channel Issues

- A Few possible transfer points
 - At seller's dock (ex-works)
 - At point of export (free alongside ship)
 - At point of export (free on board)
 - At point of import (delivered ex ship)
 - At point of import (delivered ex quay)
 - At customer's dock (delivered duty paid)

Terms of trade are critical since they determine who is responsible for the various stages of delivery, who bears what risk, and who pays for various elements

International Distribution Channel

- Basic transportation process

```

    graph LR
      ORIGIN --> HOME_PORT[HOME PORT]
      HOME_PORT --> LINEHAUL
      LINEHAUL --> FOREIGN_PORT[FOREIGN PORT]
      FOREIGN_PORT --> DESTINATION
  
```

18

International Distribution Channel

- Modal selection considerations
 - Origin and destination points
 - Physical characteristics of goods
 - Time sensitivity of freight
 - Size of the shipment
- Route selection considerations
 - Availability / capability of ports
 - Interim activities required
- Use of Ancillary Service Providers

19

Modal Option: Ocean Shipping


- Main intercontinental transport method
 - % of international freight (tonnage basis)
- Freight characteristics
 - Bulk shipments
 - Containerized freight
 - Not time sensitive
 - Low value commodities
 - Large volume shipments
- Capabilities like domestic water carriers

(C) Trans Pixs/Larry Smith photo

20

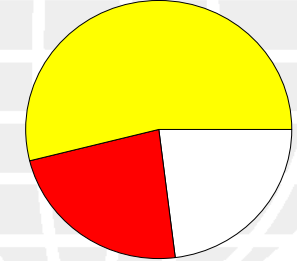
Modal Option: Ocean Shipping

- Industry structure
 - Liner service, charter service, private service
 - High fixed costs
- Liner rates
 - Collective rate making by conferences
 - Weight, contract, or time/volume based
- Charter rates
 - Individual rate development
 - Service based (destination, time, service)



22

Composition of the International Fleet



23

Container Ocean Shipping Trends and Primary Firms

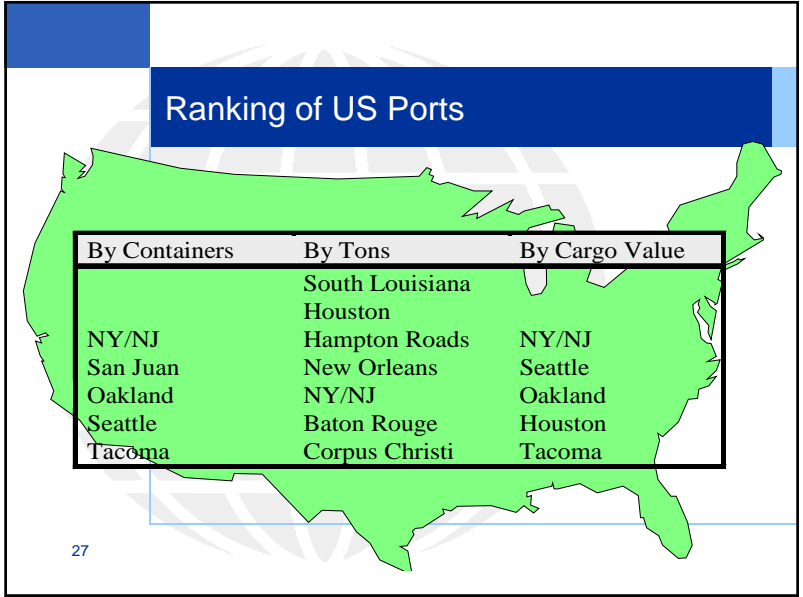
	1974	1989	2000
Int'l container loads (TEUs millions)	8.5	36.2	68.7
Containerized world liner trade (%)	40-50	90	90+
Largest container ships (TEUs)	2,600	4,600	6,500
Container size (feet)	20/35/40	20/40/45	20/40/48
US Intermodal rail carloads (%)	6	16	24

Source: TBS, 1991 & Logistics Mgt, Jul. 2001 & IANA

25

Top 10 Ocean Carriers (2010)

Ocean Carrier	Total TEU	Share %
APM-Maersk	2,098,945	14.6
Mediterranean Shg Co	1,726,269	12.0
CMA CGM Group	1,136,112	7.9
Evergreen Line	615,295	4.3
Hapag-Lloyd	603,447	4.2
APL	598,134	4.2
CSAV Group	534,760	3.7
COSCO Container L.	530,859	3.7
CSCCL	464,384	3.2
Hanjin Shipping	404,141	2.8



Source: IANA

USA Container Ports (TEUs) 2009

Ranking	Ports	2009	2008	2007	2006	2005
1		5,028,998	5,670,897	5,740,261	5,743,400	4,867,073
2		3,765,560	4,611,671	4,994,949	4,798,617	4,395,942
3		3,587,740	3,992,258	3,935,262	3,678,247	3,390,308
4		1,914,751	2,115,986	2,041,521	1,609,131	1,482,728
5	Oakland	1,398,420	1,394,684	1,451,326	1,414,782	1,372,231
6	Norfolk	1,375,632	1,591,566	1,573,273	1,424,993	1,318,831
7	Houston	1,256,049	1,370,759	1,415,657	1,295,366	1,231,186
8	Seattle	1,072,838	1,082,573	1,289,364	1,222,596	1,339,641
9	Charleston, SC	954,836	1,330,919	1,408,434	1,517,311	1,511,935
10	Tacoma	873,708	1,129,301	1,150,590	1,095,896	1,154,350
11	Miami	625,716	669,199	684,793	748,130	770,839
12	Port Everglades	543,387	680,536	691,645	639,481	580,179
13	Baltimore	405,552	435,135	427,902	409,526	380,574
14	New Orleans	229,869	239,792	254,782	177,487	174,072
15	San Juan	222,033	222,739	208,265	241,993	213,570
16	Jacksonville	197,656	158,119	151,110	153,009	144,635
17	Wilmington, NC	187,955	147,443	150,147	127,269	127,269
18	Philadelphia	180,091	218,618	196,827	176,901	158,706
19	Wilmington, DE	162,757	182,833	185,231	170,453	161,645
20	Gulfport	158,636	172,607	171,835	162,551	150,205

Source: IANA

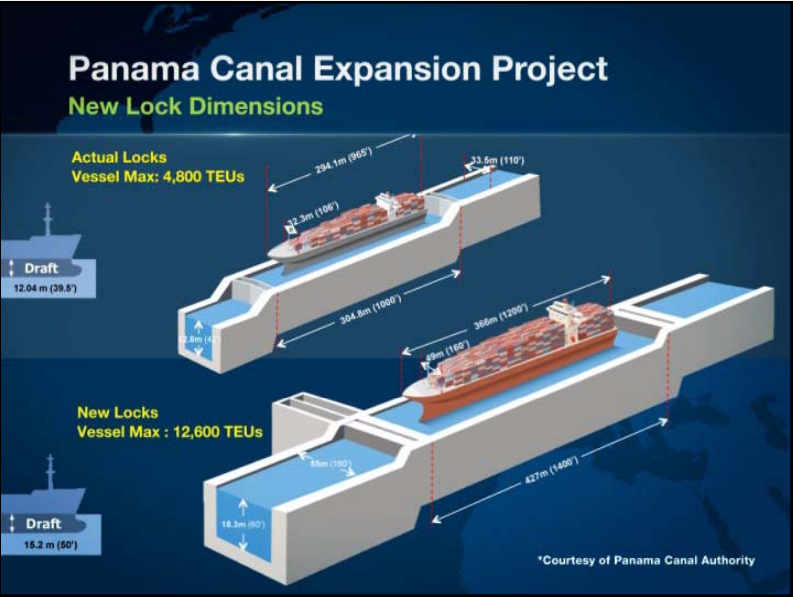
Int'l Container Ports (TEUs) 2008

Ranking	Ports	2008 (in TEUs)	2007 (in TEUs)	% Change
1	Singapore	29,973,000	27,900,000	7.4
2	Shanghai, China	28,006,400	26,152,000	7.1
3	Hong Kong, China	24,494,000	23,998,000	2.1
4	Shenzhen, China	21,416,400	21,099,000	1.5
5	Busan, South Korea	13,420,000	13,260,477	1.2
6	Dubai, United Arab Emirates	11,800,000	10,650,000	10.8
7	Guangzhou, China	11,000,400	9,260,000	18.8
8	Ningbo-Zhoushan, China	10,933,700	9,430,000	15.9
9	Rotterdam, Netherlands	10,800,000	10,790,604	0.1
10	Qingdao, China	10,024,400	9,462,000	5.9
11	Hamburg, Germany	9,700,000	9,890,000	-1.9
12	Kaohsiung, Taiwan	9,676,554	10,256,829	-5.7
13	Antwerp, Belgium	8,663,736	8,176,614	6.0
14	Tianjin, China	8,502,700	7,103,000	19.7
15	Klang, Malaysia	5,600,000	5,470,000	12.0

Panama Canal

- Panama Canal's expansion
 - \$2.7 billion for the upgrading of the locks system used to move shipping vessels across the canal
 - The costs of the new locks system is only half of the \$5.3 billion estimated for the complete project
 - The new locks will be 427meters long , 55 meters wide and 18.3 meters deep
- The Panama Canal Authority is not concerned with the economic crisis in global shipping
 - "We have seen crisis in the past in the 1980s, at the end of the 1990s and in the early part of this decade. We are used to the cyclical nature of the capitalist economy." - ACP marketing director Rodolfo Sabonge
 - "Maybe because of this global crisis we will not have to face the problem of capacity until the expansion is finished," - ACP marketing director Rodolfo Sabonge

Judgment day for Panama Canal bids, 2009/ Panama clinches \$2.3bn for expansion of canal, 2008



Increasing Canal Fees and their Impact on Ocean Shipping


- Due to the economic crisis felt by nearly all ocean shipping firms and the high price of canal fees many firms are redirecting traffic through non-canal routes
- Suez Canal rates are now upwards of \$600,000
 - MSC is now using a new route around the Cape of Good Hope in order to avoid these fees
 - Currently companies using large ships/high volume can pay fees of up to \$25 million annually
 - The falling price of fuel allows companies to bypass excessive fees
 - Rate freeze for Suez Canal for 2009
 - Panama Canal is currently less prone to these types of shifts in traffic

How are Carriers dealing with higher canal fees and the declining economy?

- Many shippers are looking for new routes in order to bypass canal fees all together
 - Logistics is becoming ever more important in route determination
 - Maersk has added one week to its shipping times
 - Boats arrive in port exactly one week after original arrival date
 - This allows Maersk to keep its current docking times
 - Shipment dates are just one week longer
- Many shippers are looking into alternate intermodal and routing opportunities
 - Northwest Passage
 - East-West rail

Modal Option: Air Cargo

- Alternative to ocean shipping
 - % of international freight (tonnage basis)
- Freight characteristics
 - Compact, boxed shipments
 - Containerized freight
 - Time sensitive
 - High value commodities
 - Small volume shipments
- Characteristics like domestic air carriers



36

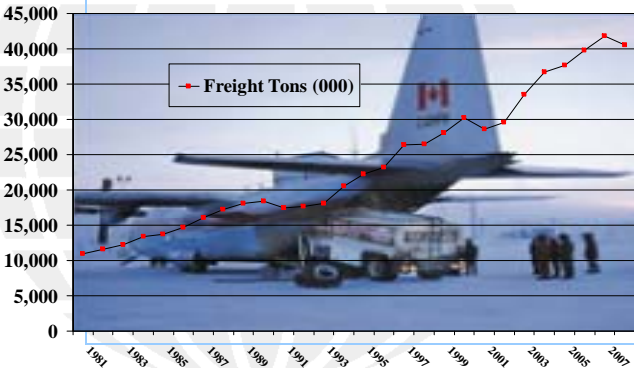
Modal Option: Air Cargo

- Industry structure
 - Air parcel post, courier, combination, cargo
 - High variable costs
- Rate development
 - Collective rate making by IATA
 - Independent action by carriers
 - Commodity based (general, class, commodity)
 - Space utilization (density, container size)



38

World Carriers Air Cargo & Freight




Year	Freight Tons (000)
1981	10,000
1982	11,000
1983	12,000
1984	13,000
1985	14,000
1986	15,000
1987	16,000
1988	17,000
1989	18,000
1990	19,000
1991	18,000
1992	19,000
1993	20,000
1994	22,000
1995	24,000
1996	26,000
1997	27,000
1998	28,000
1999	29,000
2000	28,000
2001	30,000
2002	32,000
2003	35,000
2004	38,000
2005	40,000
2006	42,000
2007	41,000

Source: [Air Transport Association](#)

39

Modal Option: Motor Carriage

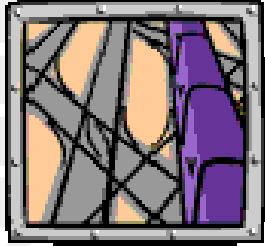
- Transportation is **intracontinental**
 - Adjacent / appropriate infrastructure
- Freight characteristics
 - Compact, boxed shipments
 - Time sensitive
 - High value commodities
 - Small volume shipments
- Capabilities, industry structure, rate making like domestic motor carriers



40

Modal Option: Railroads


- Transportation is also
 - Adjacent / appropriate infrastructure
- Freight characteristics
 - Bulk shipments
 - Not time sensitive
 - Low value commodities
 - Large volume shipments
- Capabilities, industry structure, rate making like



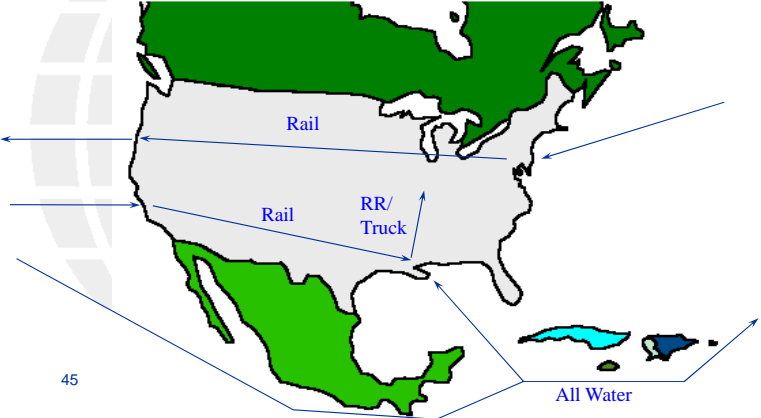
42

Modal Option: Intermodalism

- Used for both inter- and intra- continental transportation of freight
- Rail-Motor
- Air-Motor
- Water-Motor
- Rail-Water (next slide)
 - Land bridge, minibridge, micro bridge

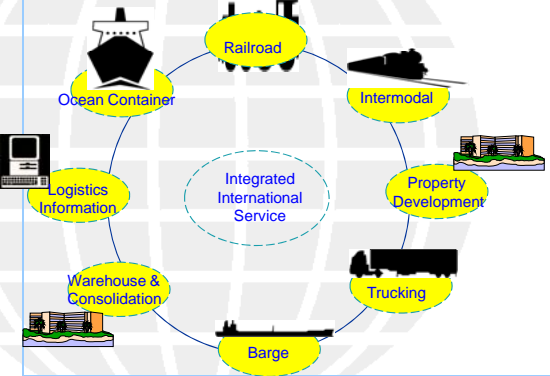


Intermodal Shipping Decisions



45

CSX as an International Corporation



47

Source: CSX Corporation

Ancillary Service Providers

- International freight forwarders
 - Facilitate through movement of shipments
 - Perform key shipping functions
 - Provide expertise in international shipping
- NVOCC
 - Provide scheduled ocean shipping service
 - Do not own equipment
 - Handle less than containerload shipments

48

Ancillary Service Providers

- Ship brokers
 - Coordinate customer needs with charter ship owner capabilities
- Ship agents
 - Portside representatives of liner companies
 - Arrange loading, unloading, fee payment
- Customs house brokers
 - Oversee movement of goods thru customs

49

Communication Channel

- Multiple documents needed
 - From 10 to 100 documents required for export
 - Most must be ready at port of export
 - All must be available at point of import
- Linked to other channels
- Major cost issue
- Little consistency between countries



50

Key Export Documents

- Letter of credit
 - Escrow-like agreement between buyer's and seller's banks which guarantees payment if seller meets specified terms of the sale
- Certificate of origin
 - Declaration of where product was made so that appropriate duties are charged
- A contract for transportation between a shipper and the carrier, also is a cargo receipt

51

Bill of Lading

- A bill of lading is a document issued by a transportation carrier (such as a motor, rail, or air carrier) to a shipper acknowledging that the carrier has received the shipment of goods. The bill of lading also acknowledges that the goods have been placed on board a particular vessel [or truck or other conveyance] for delivery to a specific destination. The B/L states the terms in which the goods are to be carried. The bill of lading serves as the contract between the shipper and the carrier. It stipulates where, when, and by whom goods are to be delivered and freight charges paid, and may transfer ownership of the goods.

53

Key Export Documents

- Insurance certificate
 - Assures consignee that loss and damage of the cargo will be covered during transit
- Dock receipt
 - Transfers accountability between domestic and international carrier at the terminal
- Document required by U.S. Dept. of Commerce to control exports (\$2,500)

54


Other Key International Transportation Issues

- Cargo safety
 - Proper packaging
 - Proper cargo stowage
 - Proper insurance coverage
- Cargo identification and marking
 - Shipper & consignee
 - Country of origin
 - Port of entry
 - International pictorial marking
 - Hazardous marking

56

Other Key International Transportation Issues

- Economic considerations
 - Exchange rates
 - Inflation
- Legal, political problems
 - Incompatible regulations
 - Official and unofficial trade barriers
- Geographical, infrastructure limits
- Cultural, educational differences



57

Foreign Trade Zones

- Savannah Airport Commission owns and operates Savannah Foreign Trade Zone 104. The Foreign Trade Zone is a specially designated area where domestic and international merchandise can be placed without formal customs entry and without payment of duties and taxes. The basic purpose of the Foreign Trade Zone is to encourage international commerce. The Zone has grown from a small 3,000 sq. ft. operation in 1984 to over 50,000 sq. ft. in 1996. Crossroads Business Center and Savannah Port Authority Industrial Park operate within Zone boundaries, as do Georgia Ports Authority, and the Savannah International Trade and Convention Center

58

International Transportation Keys to Success

- Understand
- Select the right mode/carrier
- Utilize effectively
- Prepare documentation properly
- Protect the freight
- Manage the

59

America's Biggest Exporters

Company	Export Sales (\$US Billions)	Exports as % of Sales
	17.5	57.5%
General	14.1	10.6
General	8.2	13.2
IBM	7.5	11.6
Ford	7.2	7.2
Chrysler	7.1	19.1
McDonnell Douglas	5.0	28.5
Philip Morris	3.8	7.6
Hewlett-Packard	3.7	22.6
du Pont	3.5	9.4

6

World's Largest Public Companies 2010

Company	Revenue (in US \$ Bil)
1. Wal-Mart Stores	408
2. Royal Dutch/Shell	285
3. Exxon Mobil	285
4. BP	246
5. Toyota Motor	204
6. Japan Post Holdings	202
7. Sinopec	188
8. State Grid	184
9. AXA	175
10. China National Petroleum	165
Other highly-ranked US Companies:	
11. Chevron/Texaco	164
13. General Electric	157
15. Bank of America	150
21. AT&T	123
23. Ford Motor	118
92. US Post Office	68

Source: Fortune 500 Global

63

Top Ten commodities traded between the U.S. and china

Commodity	1998 total trade	2006 total trade	Percent change
Commodity	14,522	75,083	417%
Electrical machinery	10,335	69,970	577%
Boilers and other mechanical appliances	10,604	20,943	98%
Furniture and lamps	3,993	19,483	388%
Footwear	8,038	13,948	74%
Clothing, not knitted or crocheted	3,814	11,868	211%
Plastics	2,519	10,180	304%
Iron and steel	1,197	8,763	632%
Clothing, knitted or crocheted	1,862	8,020	331%
Assorted instruments	2,906	7,728	166%

Extra Credit Assignment

- Voluntary assignment to provide feedback
- Typed -No more than one page
- Six portions to answer
 - 1. One thing you would definitely keep
 - 2. One thing you would definitely change
 - 3,4,5. Three things that could be improved
 - 6. One joke that could be told in class
- Due next class!!

Road Map to Success

Chapter Objectives:

- Where are the global markets and trade partners/trade organizations?
- What are the structures of ocean trade/ports/land bridge?
- What is the role of air cargo in int'l trade? Airports – Cargo Types?
- How do the other modes contribute to int'l trade (intermodal too)?
- What are the likely trends in int'l trade and logistics/transportation?

