



Chapter 7 Maritime Shipping

Book: International Logistics: Global Supply
Chain Management by Douglas Long

Slides made by Ta-Hui Yang



Outline

- Ships and shipping equipment
- Shipping company operations
- Maritime economics
- Shipping regulation
- Managing ocean carriers



1. Ships and Shipping Equipment

- Maritime shipping industry
 - Part of water transport that operates on open ocean, as contrasted to inland shipping
 - The companies are called ocean carriers, also known as shipping lines



1. Ships and Shipping Equipment

- There are several types of ship based on engineering and functions, which also determines type of operations and the business arrangement.
- The major types of ships
 - Containerized
 - Bulk
 - Bulk: tankers
 - Bulk: dry bulk
 - Bulk: roll-on/roll-off
 - Breakbulk
 - Refrigerated
 - Barges
 - Mixed



1. Ships and Shipping Equipment

- Some ships are self-loading, which means they have the means of loading or unloading themselves. This generally means a crane, may also mean the pumping system.
- Most of the modern ships only call on ports that have equipment, so self-loading ships are limited to the less-modern trades.
- Shipbuilding is undergoing a transition.
- Western countries have historically been the major builders, but now the countries that are building the most ships are Korea and Japan.
 - Korea 34%, Japan 32%, China 11%, EU 15%, US 1%, other 7%



2. Shipping Company Operations

- The decision of what type of ocean carrier to use depend on the cargo characteristics and to a lesser extent the service needs.
- Low value cargo would most likely move in bulk carriers.
- Medium and high value cargo goes with a containership.



2. Shipping Company Operations

- The rankings of the largest ocean carriers based on imports into the US
 - 1. Maersk Sealand (Denmark)
 - 2. Evergreen (Taiwan)
 - 3. APL (owned by NOL, Singapore)
 - 4. Hanjin (Korea)
 - 5. Cosco (PRC)
 - 6. P&O Nedlloyd (Great Britain)
 - 7. Hyundai (Korea)
 - 8. OOCL (Hong Kong)
 - 9. K Line (Japan)
 - 10. Yangming (Taiwan)



2. Shipping Company Operations

- Three basic business arrangements
 - Liners
 - The ship follows a regular route and a regular schedule, which are publicized.
 - Tramps
 - The ship has no set schedule, but operates on a voyage-by-voyage basis.
 - Private carriers
 - The ship is operated as a private carrier. The ship itself may be owned by the user or chartered.



2. Shipping Company Operations

○ Port rotations

- Liners follow fixed routes, known as port rotations
- Arranging the port rotation is one of the very sophisticated skills of this business.
- Need to look at trade flows, locally, regionally and even globally
- When a ship arrives at a port, it does not necessarily pick up or drop off cargo. Some ports will only do one but not the other.



2. Shipping Company Operations

- Labor issues
 - The fact that ships are off by themselves for the vast majority of the time, traveling the globe as if they had no home
 - It is not uncommon for a ship to drop off workers in foreign countries.
 - A division of labor similar to a caste system
 - Officers are from developed countries, particularly Japan, Hong Kong, Britain or Norway.
 - Crew is usually from poor countries.



2. Shipping Company Operations

- Ship terms

- Port and starboard: left and right of the ship
- Bow and stern: the front and back of the ship
- Draft: how deep a ship goes underwater
- Beam: the width of a ship
- Freeboard: the height of a ship above the water
- Bridge: the common post of the ship

- Measuring ship size

- Deadweight tonnage (DWT): weight it can carry including fuel and supplies
- Gross revenue tonnage (GRT): space available for cargo
- Displacement: total weight of the ship.



3. Maritime Economics

- The economics of the maritime shipping is affected by many variables:
 - Ship size
 - Almost nothing limiting the size of ship, which is why this industry has been taking advantage of
 - Economies of scale in larger ships
 - Consolidation of the shipping companies
 - Shippers like to work with as few carriers as possible.
 - If carrier offers service to anywhere in the world, that would probably be preferred to one that only services a few regions.



3. Maritime Economics

- many types of alliances
 - A few carriers may work together on a trade lane
 - One carrier will service one route, and other carrier will service a different route
 - The spread of alliances and use of centralized hubs encourages the development of larger ships



3. Maritime Economics

- Pricing
 - Varies depending on the type of ship and the way it operates
 - Liners publish rates to the public, and there is little room for negotiation
 - Service contracts are being used instead



3. Maritime Economics

- Basic method for pricing
 - Containerized cargo is charged per container or by weight, and different rates are charged depending on the commodity
 - bulk cargo is charges per weight
 - Breakbulk cargo is charged in a variety of ways.
 - Charter a ship, paying for the entire ship
 - Containerized cargo is often medium to high value, with many additional services provided. Service is one issue too, not just price.
 - For low value cargo, such as bulk cargo, price is the issue



4. Shipping Regulations

- Regulation of the ocean shipping is unique because governments can only control one side of the shipment
- The regulations of all countries in which the ships visit need to be roughly aligned.
- Regulation of the maritime shipping has a few main priorities
 - National fleet for national defense
 - Access to international markets
 - Preservation of competition



4. Shipping Regulations

- Country's control extend
 - 1982, UN Convention on the Law of the Sea, 12 mile territorial limit
 - In some passages there is not enough space for a ship to stay in international water. In this case the Law of the Sea affirmed “innocent passage”, called “transit passage”
- Extraterritoriality
 - Governments often try to influence or control the behavior of parties outside of its territory, known as “extraterritoriality”
 - Governments have tried to enforce their own standard of safety, health and environmental protection by applying those standards to any ship that enters its territory



4. Shipping Regulations

- International organizations
 - International Maritime Organization (IMO): a UN agency dedicated to the ocean shipping industry
 - Comite Maritime International (CMI): an organization of lawyers to promote standardization of maritime law, based in Belgium, 1897
 - Shipping Conference
 - members were allowed to talk with their competitors to discuss rates and seek agreement on rates.
 - Exempt from some anti-trust regulations. The rules designed to prevent monopolies from forming do not apply in this case



4. Shipping Regulations

- Ocean Shipping Reform Act (OSRA)
 - A compromise between
 - Shippers which wanted conferences eliminated
 - Carriers that wanted to retain anti-trust immunity
 - OSRA allows confidential service contracts
 - Previously, if a carrier were in a conference, all of the members needed to know what prices were being offered.
 - OSRA eliminated the need to file tariffs with the government, but only need to post them on the Internet.
 - Currently the vast majority of ocean shipping is based on service contracts. The forwarder is operating under a service contract with carriers.



4. Shipping Regulations

- Registration

- Ships must be registered in a country, essentially like a citizenship
- The ship must adhere to the regulations of that country in which it is registered
- Flags of Convenience (FOC)
 - The countries offer to register ships, charge very low fees, but do not check their ships for safety



4. Shipping Regulations

○ Classification Societies

- Ships need to be inspected regularly to insure they are safe. The inspections are done by private companies called classification societies.
- Inspections are normally done every five years.



4. Shipping Regulations

- Top fleets in the world

| Country | No. of ships | Gross tonnage (,000) |
|--------------|--------------|----------------------|
| 1. Panama | 6,188 | 91,000 |
| 2. Liberia | 1,697 | 60,000 |
| 3. Bahamas | 1,221 | 25,500 |
| 4. Greece | 1,641 | 25,200 |
| 5. Cyprus | 1,650 | 23,600 |
| 6. Malta | 1,378 | 22,900 |
| 7. Norway | 715 | 19,700 |
| 8. Singapore | 1,656 | 18,800 |
| 9. Japan | 9,310 | 18,500 |
| 10. China | 3,175 | 16,300 |



4. Shipping Regulations

- Environmental issues
 - Spills of toxic substances
 - Oil spills
 - Bilge
 - Ballast



5. Managing Ocean Carriers

- Shippers have a different relationship with ocean carriers depending on the type of carrier
 - Tankers and bulk
 - carriers are usually chartered
 - Trip charter, also known as voyage charter
 - Time charter
 - Bareboat
 - Demise charter
 - Specified in the Contract of Affreightment



5. Managing Ocean Carriers

- Container lines
 - Deal with many shippers simultaneously, and the arrangement can be much more complex
 - Sometimes the shippers only want the ocean carriage
 - Sometimes the shippers want a point-to-point shipment
 - Big shippers can keep their shipping costs a secret with private service contracts
 - Small shippers are banding together in shipping associations