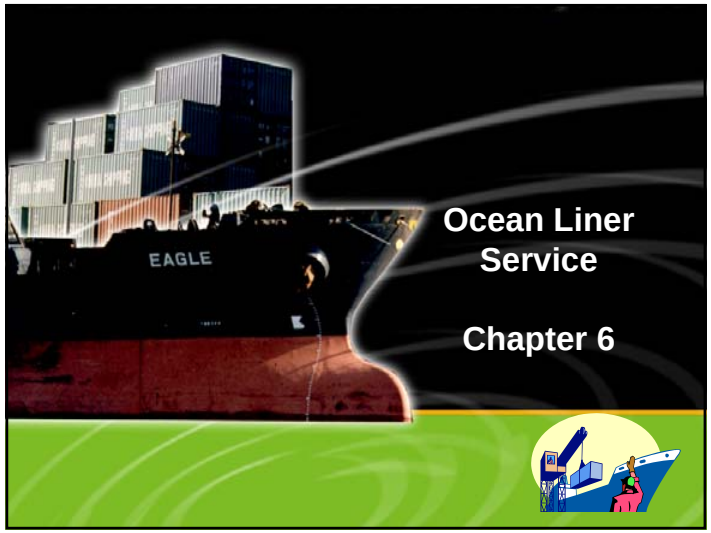


Ocean Liner Service

Chapter 6

Learning Objectives

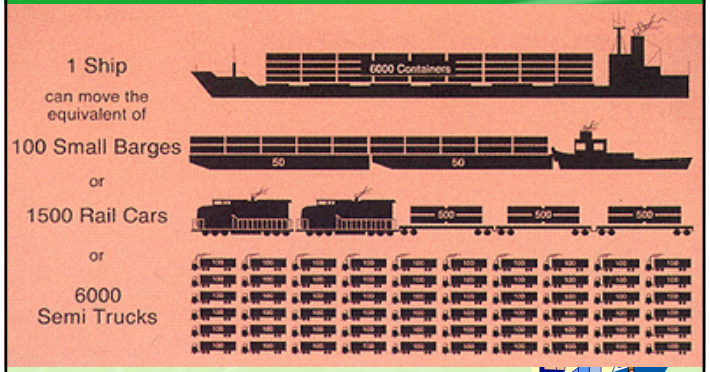
- Structure of Liner Market
  - Alliances & Pooling
- Terminology
- Rates
- OSRA '98
- Future Trends

Example Container Ship

Container ship
Built by the Chantiers Samsung Heavy Industries in Korea
Put into service in January 1992
Length : 275,60 m
Width : 37,10 m
Gross tonnage : 55445 tons
Speed : 24,04 knots
Capacity : 4419 TEUs

Cellular Containership

Why Container Ships?

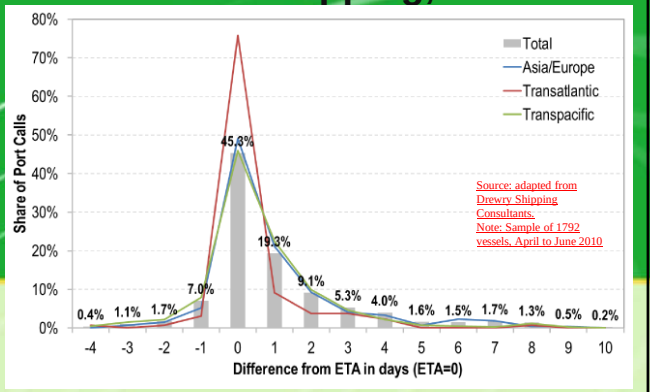


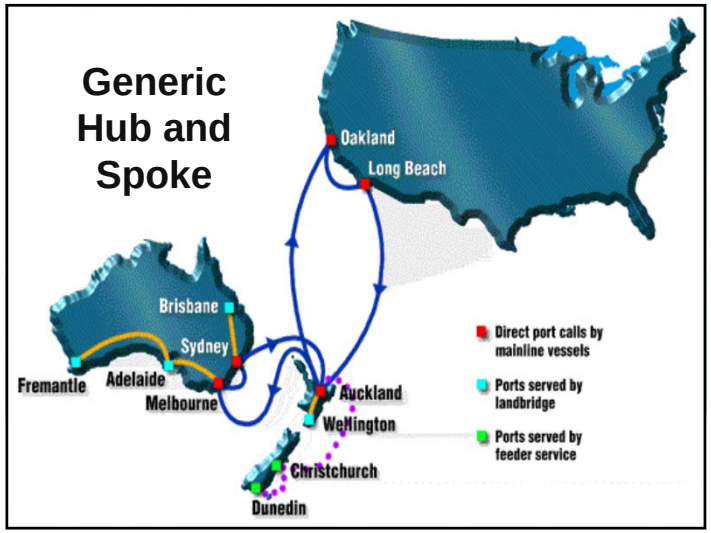
http://www.nap.usace.army.mil/dredge/d1.htm

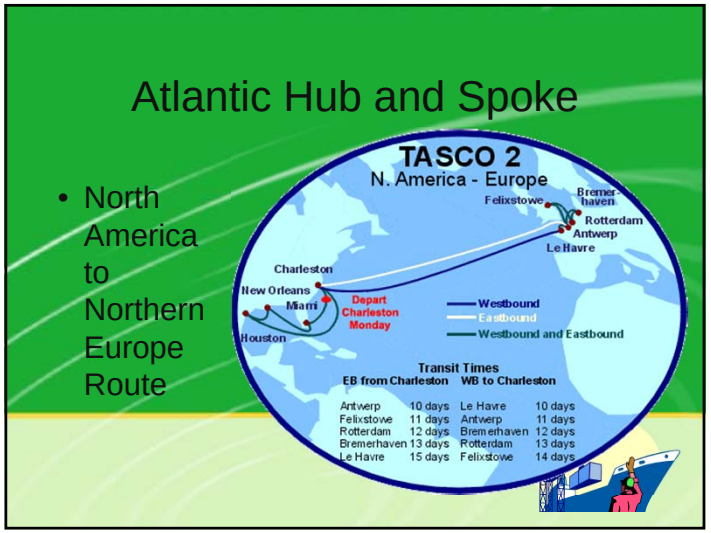
The Liner Market

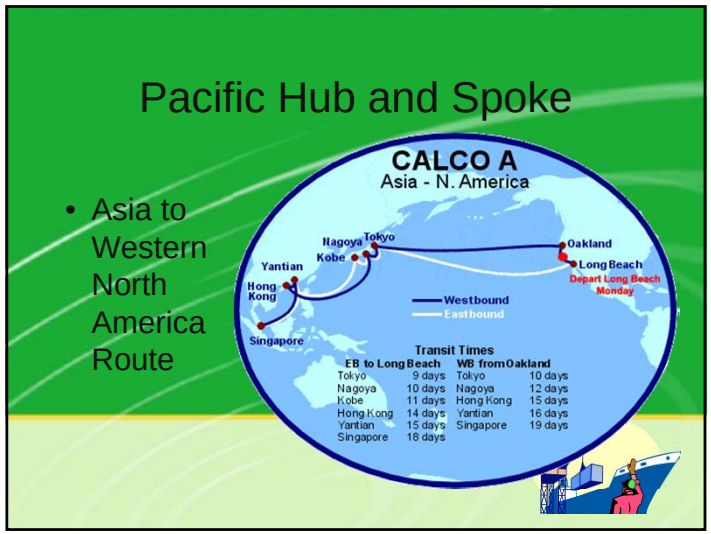
- Primary commodities moved
  - manufactured goods
  - high value materials
- Key service characteristics
  - regularly scheduled service
  - large blocks of capacity exist
    - rationalization used to control capacity
  - speed and service are factors
  - price is a secondary issue

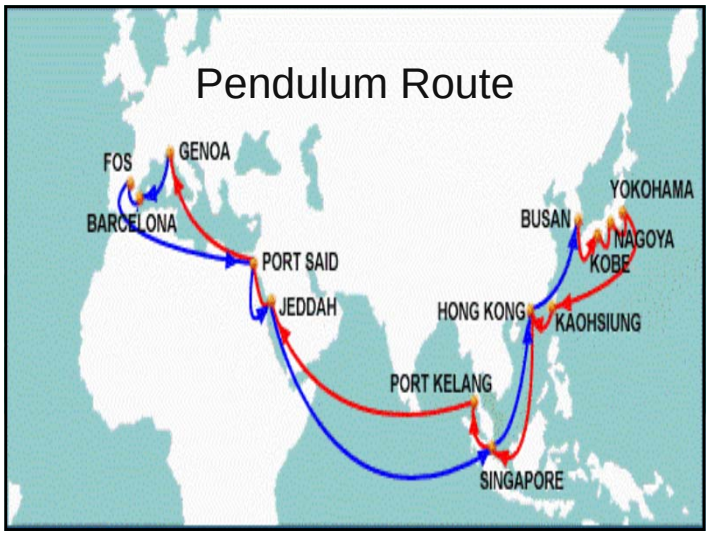
Schedule Reliability in Container Shipping, 2010




Generic Hub and Spoke
Oakland
Long Beach
Brisbane
Sydney
Fremantle
Adelaide
Melbourne
Auckland
Wellington
Christchurch
Dunedin
Direct port calls by mainline vessels
Ports served by landbridge
Ports served by feeder service


Atlantic Hub and Spoke
• North America to Northern Europe Route
TASCO 2
N. America - Europe
Felixstowe
Bremerhaven
Rotterdam
Antwerp
Le Havre
Charleston
New Orleans
Miami
Houston
Depart Charleston Monday
Westbound
Eastbound
Westbound and Eastbound
Transit Times
EB from Charleston
WB to Charleston
Antwerp 10 days
Felixstowe 11 days
Rotterdam 12 days
Bremerhaven 13 days
Le Havre 15 days
Le Havre 10 days
Antwerp 11 days
Bremerhaven 12 days
Rotterdam 13 days
Felixstowe 14 days


Pacific Hub and Spoke
• Asia to Western North America Route
CALCO A
Asia - N. America
Nagoya
Tokyo
Kobe
Yantian
Hong Kong
Singapore
Oakland
Long Beach
Depart Long Beach Monday
Westbound
Eastbound
Transit Times
EB to Long Beach
WB from Oakland
Tokyo 9 days
Nagoya 10 days
Kobe 11 days
Hong Kong 14 days
Yantian 15 days
Singapore 18 days
Tokyo 10 days
Nagoya 12 days
Hong Kong 15 days
Yantian 16 days
Singapore 19 days


Pendulum Route
FOS
GENOA
BARCELONA
PORT SAID
JEDDAH
PORT KELANG
SINGAPORE
HONG KONG
BUSAN
YOKOHAMA
NAGOYA
KOBE
KAOHSIUNG

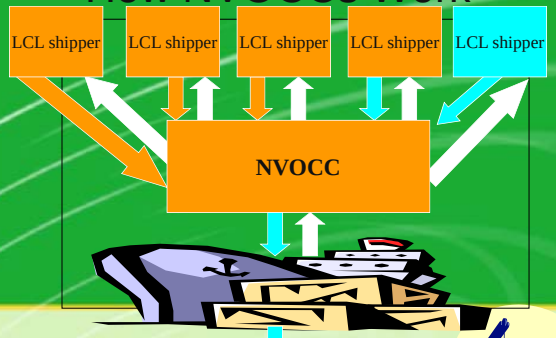
Asia to Europe with Transit Times

The Liner Market

- Market Structure
  - conference rates are fairly stable
    - go up as costs go up, not as demand increases
  - oligopolistic in nature
- Key players
  - conferences
  - shippers
  - NVOCC's and freight forwarders
  - government agencies

a

How NVOCCs Work



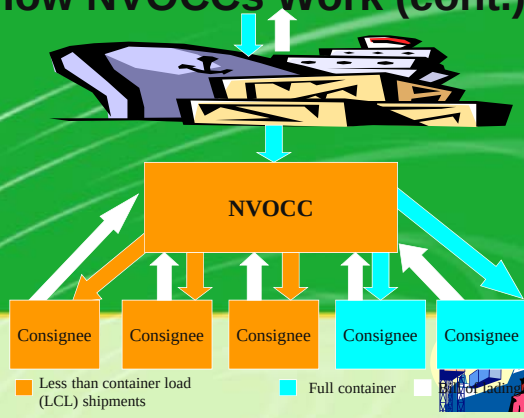
Less than container load (LCL) shipments

Full container

Bill of lading

1

How NVOCCs Work (cont.)



Less than container load (LCL) shipments

Full container

Bill of lading

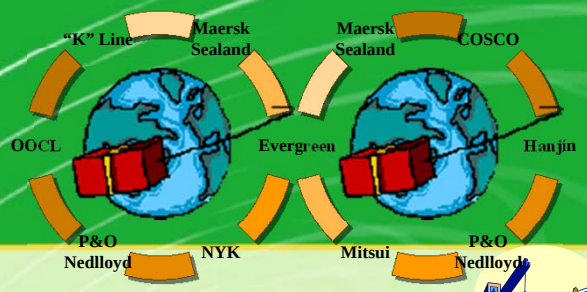
Key Terminology

- **Conference** - organizations of vessel operators serving similar markets who form cartels to regulate competition among themselves and protect their markets from nonconference carriers
- **Pooling Arrangements** - sharing of vessel capacity and the earnings generated by the conference members

Ocean Conferences

- Organizational Structure
  - group of carriers serving same market area
    - area usually focuses on port areas
    - uniform service offered
    - uniform price offered (collective rate-making)
  - carriers may belong to multiple conferences
  - conferences often share resources
  - open vs. closed conferences

Example Conference Members



Advantages of Conferences

- Stabilize
- Equal shipper treatment
- Improve service consistency
- Ensure adequate
- Carriers can remain profitable
- Balances shippers desires with those of the carriers

Disadvantages of Conferences

- Artificially forces rates up when excess capacity exists
- Price-cutting
- Inefficient carriers are not necessarily penalized
- Discourages rate innovation and free market forces
- Members often

Conference Rates

- Rates are based on
  - classification - freight handling characteristics
  - origin and destination of freight
  - shipment size
- Rates must be published
  - classification of freight is critical
  - most specific rate applies
  - lowest applicable rate applies

Conference Rates

- Rates are applied based on weight or volume, whichever is greater
  - short ton 2,000 lbs
  - short ton or 40 2,000 lbs 40 cubic feet
- Additions to base rates:
  - Currency adjustment factor (CAF)
  - Bunker adjustment factor (BAF)
  - Port congestion surcharges
  - Door to door rates
  - CY/CFS charge - assessed by ports

Conference Rates

- Service Contracts
  - contracts are used to avoid published rates
  - must be a bona fide contract
    - dual commitment
    - specified period of time
    - specified volume
    - penalties
    - filed with the FMC
  - mainly used for containerized freight

Maritime Transportation Rates for a 40 Foot Container between Selected Ports, 2010

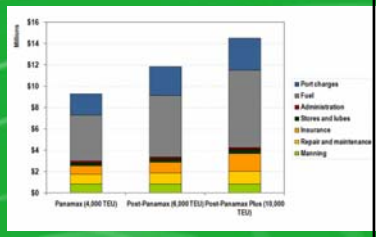
Source: Drewry Shipping Consultants. Note: Rates are for full container loads and include the base ocean shipping rate, port charges both at origin and at destination, fuel surcharges and all other surcharges

Liner Costs

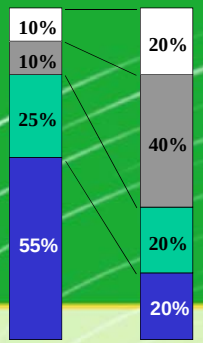
Costs

1. Commercial & Cargo Handling - 30.2%
2. Crew Costs - 15.8%
3. Depreciation - 13.0%
4. Fuel - 12.6%
5. Management - 8.3%
6. Repairs & Maint - 7.7%
7. Financial Charges - 7.0 %
8. Port Charges - 4.0%
9. Insurance - 1.4%

Economies of Scale



Cost Structures in Container Shipping



Sales, logistics, administration (Organization)

Container and inland transport

Port transhipment

Seatransport

U.S. Position on Conferences

- Conferences may exist if…
  - conferences are open
  - members are allowed to publish independent rates
  - service contracts are allowed
  - loyalty contracts and deferred rebates are not used

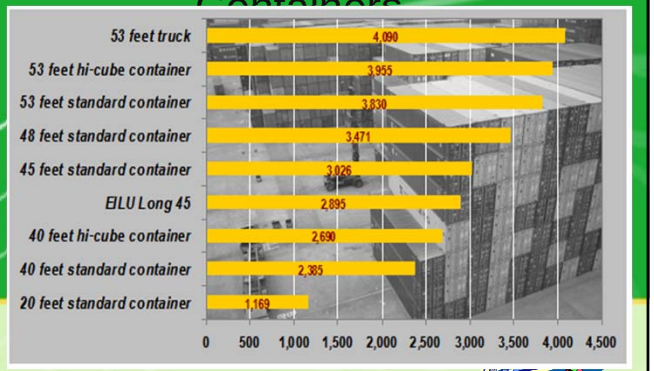
Ocean Shipping Reform Act of 1998

- The Law
- Updates Shipping Act of 1984
- Confidential Contracts
  - Do not have to file all tariffs with FMC
  - Allow innovative provisions w/o competitors viewing
- The Impact
- Move to negotiation away from rate tables
- Rate changes
  - in both directions
  - lane, shipper size, commodity
- Weaker USA Conferences

Advantages of Containers

- Less loss and damage
- Reduced handling costs
- Unitization of size, higher equipment utilization rates
- Facilitates intermodal transportation
- Can reduce transit times

Carrying Capacity of Containers

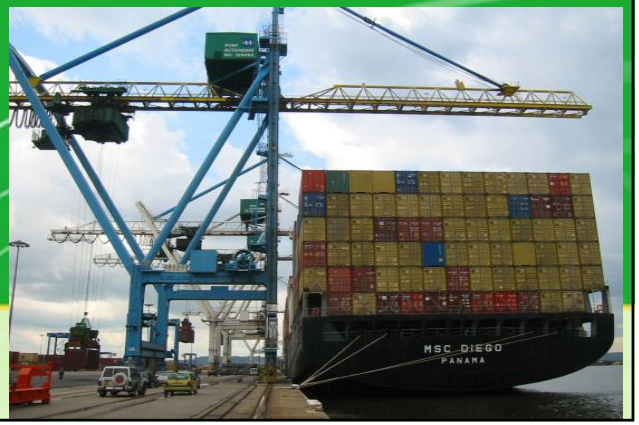


Stacked 40-Foot Containers

Constraints of Container Operations

- High capital costs in land, equipment, and information systems
- Space
- Requires investment in containers
- Requires special loading equipment
- Labor difficulties
- issues

Post Panamax Containership



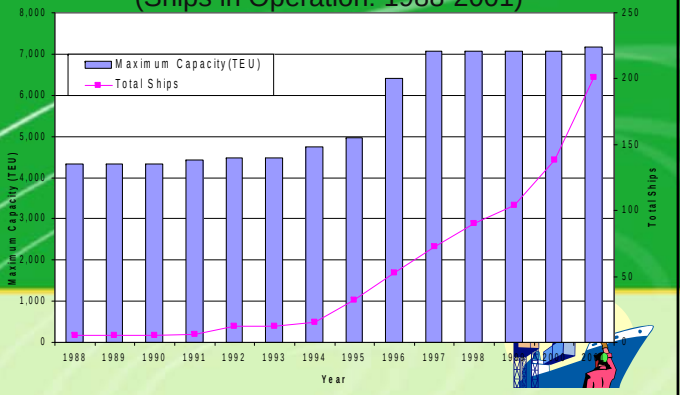
Six Generations of Containerships

		Length	Draft	TEU
First (1956-1970)	Converted Cargo Vessel / Converted Tanker	135 m / 200 m	< 9 m / < 30 ft	500 / 800
Second (1970-1980)	Cellular Containership	215 m	10 m 33 ft	1,000 – 2,500
Third (1980-1988)	Panamax Class	250 m / 290 m	11-12 m 36-40 ft	3,000 / 4,000
Fourth (1988-2000)	Post Panamax	275 – 305 m	11-13 m 36-43 ft	4,000 – 5,000
Fifth (2000-2005)	Post Panamax Plus	335 m	13-14 m 43-46 ft	5,000 – 8,000
Sixth (2006-)	New Panamax	397 m	15.5 m 50 ft	11,000 – 14,500

Largest Across Time

Post-Panamax Containerships

(Ships in Operation: 1988-2001)



World Cellular Fleet Future Deliveries

	Current		2000		2001		2002	
Size	**No.**	**TEU**	**No.**	**TEU**	**No.**	**TEU**	**No.**	**TEU**
0-499	**378**	**114,193**	**10**	**4,404**	**0**	**0**	**0**	**0**
500-999	**460**	**332,249**	**16**	**10,537**	**7**	**4,960**	**1**	**502**
1,000-1,999	**789**	**1,108,024**	**34**	**52,396**	**16**	**23,328**	**2**	**3,236**
2,000-2,999	**383**	**945,391**	**25**	**61,482**	**19**	**45,810**	**0**	**0**
3,000-3,999	**227**	**784,153**	**14**	**50,174**	**11**	**36,800**	**3**	**9,300**
4,000-4,999	**144**	**631,327**	**15**	**69,000**	**1**	**4,051**	**4**	**16,204**
5,000-5,999	**38**	**203,339**	**26**	**143,232**	**23**	**126,026**	**1**	**5,510**
Over 6,000	**25**	**160,372**	**0**	**0**	**11**	**69,000**	**1**	**6,500**
Total	**2,444**	**4,279,048**	**140**	**391,225**	**88**	**309,975**	**12**	**41,252**

2002 Projections: 2,684 ships 5 Million TEUs

Source: LMIS Limited, *Containerisation International*, Apr 2000, p. 9

Largest Container Carriers (2007)

Operator	Mkt Share	Total		Owned		Chartered	
		TEU	Ships	TEU	Ships	TEU	Ships
APM-Maersk	16.1%	1,874,502	524	975,054	184	899,448	340
MSC	10.5%	1,217,013	370	691,334	212	525,679	158
CMA CGM	7.4%	864,669	360	267,921	87	596,748	273
Evergreen	5.3%	618,458	175	376,331	107	242,127	68
Hapag-Lloyd	4.2%	487,283	139	247,831	60	239,452	79
China Shipping	3.8%	437,183	141	251,192	87	185,991	54
Cosco	3.6%	420,410	139	222,437	93	197,973	46
APL	3.4%	400,865	122	139,690	38	261,175	84
NYK	3.2%	375,949	125	229,333	48	146,616	77
OOCL	2.9%	343,228	81	195,759	34	147,469	47
Total Top 10	60.4%	7,039,560	2,276	3,596,882	950	3,442,678	1,226
Total Top 50	91.1%	10,310,241	3,936	5,134,563	1,652	5,475,678	2,284

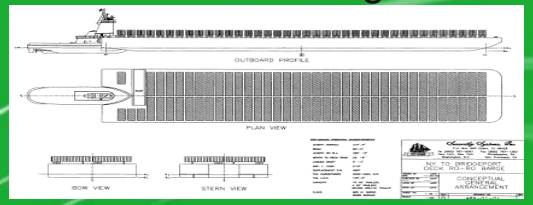
Source: Journal of Commerce

Distances, transit times
Hong Kong to southern Germany

	Distance (nm)	Time (days)	
Via Trieste with ECS service			
Sea distance Hong Kong to Trieste:	7,764	14	
Port & trucking Trieste to southern Germany*	190	2	
Total	7,954	16	
Via Trieste with Zim or Evergreen services			
Sea distance Hong Kong to Trieste	7,764	30	Zim
		32	Evergreen
Port & trucking Trieste to southern Germany*	190	3	
Total	7,954	33	Zim
		35	Evergreen
Via Hamburg with New World Alliance JEX service			
Sea distance Hong Kong to Hamburg:	9,997	21	
Port & trucking Hamburg to southern Germany	540	4	
Total	10,537	25	

Source: ComPairData database at www.compairdata.com and research by *American Shipper*. [American Shipper, August 2000, p.67]

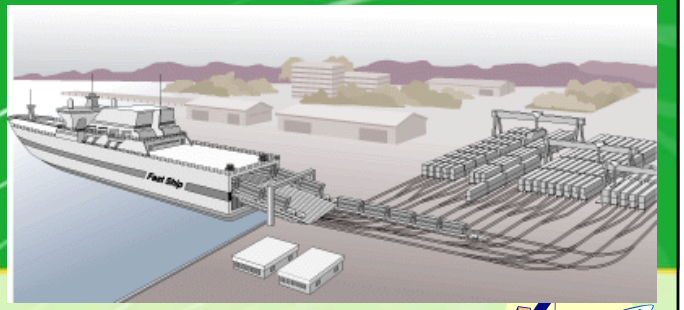
Containerbarges



FastShips

http://www.sciam.com/1097issue/1097gilesbox1.html

Loading of FastShips



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