A Study of Liner Shipping Services Into and Out of Australia, Vol 1

Report

Volume 1 of the Bureau's Report No 60, 'A Study of Liner Shipping Services into and out of Australia', presents a distillation of the findings of the study and was intended to address the interests of a wide audience and provide a succinct basis for an understanding of the liner shipping industry. Volume 2 presents the findings of the study in full, together with the details of the analyses carried out. Volume 2 will be of particular interest to those who wish to explore in sone depth the structure, conduct and performance of the industry.

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Report 60

A Study of Liner Shipping Services into and out of Australia

Volume 1

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FOREWORD

It is now more than 15 years since the introduction of the container method of handling cargo in the Australian overseas liner trades. Throughout this period, legislation governing Australian overseas liner shipping was essentially predicated on the closed conference system with the preservation of reasonable freight rates and service entrusted to the countervailing power of shipper organisations. Changes are now occurring which raise many issues for shipowners, shippers and governments. Developments such as round-the-world container services, the introduction of replacement ships by the existing conference operators, and any further expansion of the freight forwarders' role in the movement of overseas freight will all have to be assessed.

The changing environment and the lack of comprehensive information regarding Australia's overseas liner shipping services led the Minister for Transport, The Hon. Peter Morris, in August 1984, to ask the Federal Bureau of Transport Economics to undertake this study of liner shipping services. The Minister also established an industry Task Force to examine Australia's overseas commercial shipping arrangements.

The study has been confined to the collection, analysis and presentation of information. The understanding of liner shipping gained in the study will, however, provide the Bureau with a basis for further studies directed towards more specific issues. The study is structured so as to shed light on the main issues of concern to shipowners, shippers and governments, and was provided in draft form to the industry Task Force.

The Bureau is also currently conducting research for the industry Task Force examining shore-based shipping costs. The liner shipping study has therefore addressed land-side activities only to the extent required to explain the involvement of liner operators and to complement the work conducted by the Bureau for the Shore-Based Shipping Costs Task Force.

The study is presented in two parts. The first part, Volume 1, presents a distillation of the findings of the study together with some concluding remarks which are drawn from the findings and insights gained during the course of the study. Volume 1 is intended to address the interests of a wide audience and provide a succinct basis for an understanding of the liner shipping industry. Volume 2 of the study presents the findings of the study in full, together with the details of the analyses carried out. Volume 2 will be of particular interest to those who wish to explore in some depth the structure, conduct and performance of the industry.

The success of a study of this nature is heavily dependent on the good will of those who can provide information. I would like to acknowledge the interest, support and co-operation of all the organisations approached by the Bureau in the course of the study. The high degree of co-operation may reflect a genuine concern about the lack of factual information on liner shipping and, to some extent, a concern about the future.

The study team was directed by Mr C. Sayers, and Mr A. Smith, Ms S. Austen, Dr R. Mellor, Mr S. Wheatstone, Mr B. Honu, and Mr D. Dao all made significant contributions.

I hope that this report will provide a useful factual basis for consideration of the significant issues facing the liner shipping industry and their customers.

G. K. R. REID
Director

Bureau of Transport Economics
Canberra
February 1986

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CHAPTER 1 INTRODUCTION

The report of the liner shipping study has been prepared in two volumes. Volume 1 presents a distillation of the study findings structured to cater to a broad audience, particularly one interested in the strategic economic issues. These results are specifically addressed in Chapter 7. Volume 2 is essentially a compendium of factual information, aimed at highlighting the technical, commercial and institutional factors underlying the industry's current form.

Market power is a major element of the analyses carried out in the course of this study. This traditional theme of industry organisation analysis was chosen because it is relevant to the examination of legislative arrangements for liner shipping, which traditionally concede some market power to shipowners in return for the provision of stable and efficient services. The theme was also considered appropriate because many of the issues identified relate to aspects of market power, for example, the adequacy of services, rates and the effects of competition.

This introduction sets out the scope of the study and the definitions used in the analyses and presentation of information and outlines the structure of this volume of the report.

STUDY SCOPE

The Bureau was asked to investigate and report on:

1. the physical characteristics of the major inward and outward trade routes including the commodities carried and the types of service;
2. the size, ownership and organisation of fleets serving these trades, with particular reference to Australian-flag participation;
3. conference and non-conference capacity in these trades and the impact of trends in capacity and other relevant factors on the level and stability of services;

4. rates charged for key commodities and the factors associated with variations in rate structure;
5. the extent and nature of competition within conferences and by 'outsiders' and its effect on rates and other aspects of the industry; and
6. technological developments affecting liner shipping and their implications for the structure of Australia's shipping service and fleet replacement programs.

The Bureau was also invited to examine other related matters pertinent to the study.

A general aim of the study was to examine all of Australia's liner trades and present information that was as up to date as possible. Outlined below are some of the significant elements which defined the coverage of the study and this report.

Inward and outward services have been investigated with the intention of providing similar information for both. However, because of a general lack of consistent data on inward shipping there is a greater depth of analysis of outward services.

Wherever appropriate, information is reported for all of Australia's recognised shipping trades to give a comprehensive world-wide picture of the task and services.

The Terms of Reference call for the examination of rates in terms of key commodities. The key commodities were chosen on the basis of their:

- importance in the liner trades in terms of tonnage and value; and
- significance in regard to highlighting shipping problems by providing a range of demand elasticities, stowage characteristics and freight rates.

Information on the level of trade is current to June 1984. The majority of the information concerning trade and the fleet of ships serving Australia is for the 1983-84 financial year. The scheduled rates reported are, however, those which applied in January 1985.

DEFINITIONS

For the purpose of this study, liner services have been defined as

scheduled regular shipping services where at least part of the cargo is non-bulk. Services such as those offered by ABC Containerline which combine the carriage of mineral sands and containers are therefore included.

The freight quantities reported are measured in mass tonnes and not revenue tonnes. The freight value represents:

- *inward cargo:* the free-on-board (FOB) equivalent of the price when the sale of those goods is conducted under open market conditions;
- *outward cargo sold prior to shipment:* the FOB equivalent of the actual price paid to the exporter; and
- *outward cargo sold on consignment:* the FOB equivalent of the price that would have been paid to the exporter had the goods actually been sold to an importer in the country of their final destination.

Cargo commodities are classified according to the Australian Transport Freight Commodity Classification (ATFCC).

The fleet serving a particular trade area was defined by including only ships which carried 1000 tonnes or more of cargo, either inward from or outward to that trade area, in the 1983-84 study period. Ships which carried small amounts of cargo to or from a trade area *en route* to the other trade areas were therefore excluded from the trade area fleet.

The ship-type classification used throughout this report is an abbreviated version of the classification in *Lloyd's Register of Shipping, 1983*.

Ship capacity is measured as either:

- *nominal capacity:* the maximum number of Twenty Foot Equivalent Unit (TEUs) containers which a ship can carry in a single voyage; and
- *service capacity:* the maximum number of TEU containers which a ship could have carried in the study year given the actual number of voyages it made.

Capacity utilization of ships can be measured in terms of DWT (weight)

or TEUs (numbers of containers).[1] The more appropriate of these two measures of utilization in a particular trade is the one which is closer to 100 per cent. Where a trade consists mainly of bulky commodities then the TEU capacity of the ships employed is likely to be reached before the limits on DWT, and vice versa for a trade with predominantly high-density commodities. Both the DWT and TEU utilization of container and ro-ro ships in the inward and outward trades are therefore examined separately.

The TEU utilization measures were calculated using estimates of numbers of equivalent full containers derived for each commodity from the ABS Sea and Air Cargo Commodity Statistics (SACCS) information on tonnes of cargo carried and estimates of the commodity stowage factors on the following basis.[2]

Dry container numbers were estimated as follows:

- If the stowage factor for a commodity is greater than 1.7,

  $$\text{number of containers} = \frac{\text{tonnes} \times \text{stowage factor}}{31}$$

  (31 cubic metres representing an average volumetric capacity of a dry container)

- If the stowage factor for a commodity is less than 1.7,

  $$\text{number of containers} = \frac{\text{tonnes}}{18}$$

  (18 tonnes representing an average weight capacity of a dry container)

Reefer container numbers were estimated as follows:

- If the stowage factor for a commodity is greater than 1.5,

  $$\text{number of containers} = \frac{\text{tonnes} \times \text{stowage factor}}{26}$$

  (26 cubic metres representing an average volumetric capacity of reefer containers)

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1. $$\text{DWT utilization} = \frac{\text{tonnes carried + weight of containers carried}}{\text{nominal DWT capacity - weight of fuel}}$$

   $$\text{TEU utilization} = \frac{\text{full TEU carried}}{\text{nominal TEU capacity}}$$

2. The stowage factors allow for 'broken space' which includes pallets and space not utilized because of irregular shapes.

. If the stowage factor for a commodity is less than 1.5,

$$\text{number of containers} = \frac{\text{tonnes}}{17}$$

(17 tonnes representing an average weight capacity of reefer containers)

In reality, containers may not be fully loaded and the utilization of 'slots' by partially filled containers would of course be higher than the measures derived by this procedure.[3] The utilization of slots by all containers including empties (commonly called slot utilization) is higher again.

The calculation of capacity utilization relied on the records of the nominal capacity of ships reported in *Lloyd's Register of Shipping*. It should be recognised that the actual capacity of the ships used in particular trades may vary from these figures, however, because of operating restrictions such as draught limitations in certain ports and ship stability considerations. Furthermore, TEU capacity is constrained by the high costs of re-positioning containers on board ship when unloading and loading.

To assist with the investigation of ship utilization, a system of trade routes which closely approximate the common trading patterns of liner shipping to and from Australia were defined.

For the examination of conference and non-conference competition, a set of trades has been selected which encompasses a range of competitive situations. Trade areas, trade routes and the selected trade referred to in this volume of the report are defined in Appendix I of Volume 2.

REPORT OUTLINE

The historical background to conference formation, industry structure development, geographical basis of operation and regulation is summarised in Chapter 2. The background is intended to provide a perspective of how the industry arrived at its current form and, consequently, the institutional constraints on change. The material for the chapter was drawn from Chapters 2 and 3 of Volume 2.

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3. 'Slots' is the term given to container stowage positions on board a cellular container ship.

Chapter 3 outlines the current characteristics of liner cargoes and the industry response in terms of the ships deployed to meet the task. This information on demand and supply characteristics of the industry was drawn from Chapters 4, 5, 6 and 10 of Volume 2.

One of the main industry issues is the relative merits of conference and non-conference services and rates. Chapter 4 presents information on conference and non-conference operations, drawing out the trade-off between service and rates facing shippers in their choice between the two groups of operators. The information for this chapter was drawn from Chapters 4, 5, 6, 7 and 8 of Volume 2.

Chapter 5 describes current industry practices and discusses the economic issues involved. The information for this chapter was drawn from Chapters 2, 3, 7 and 8 of Volume 2.

Chapter 6 identifies the factors which influence the level of conference/non-conference competition and examines the expected effect of increased levels of competition on the level of service. The information for this chapter was drawn from Chapters 2, 8 and 9 of Volume 2.

Finally, Chapter 7 presents conclusions about the industry which can be drawn from the information collected and the analyses undertaken in the study. These conclusions, which address economic issues, are aimed at providing insight into how the industry may adjust to change within the commercial, institutional and regulatory regime.

The conclusions necessarily involve a degree of subjective assessment or may appear to be subjective where a large number of aspects considered has prevented a full justification of the conclusion in the context of a summary. Every endeavour has been made, however, to ensure that the conclusions are supported by an impartial assessment of the factual information collected in the study.

CHAPTER 2 HISTORICAL DEVELOPMENT OF AUSTRALIAN LINER SHIPPING SERVICES

This chapter describes the formation of conferences which have been the main feature of the industry since liner shipping operations commenced. The development of the industry structure, the operational geography and the regulations which have evolved around conferences are also described.

CONFERENCE FORMATION

A shipping conference is an association of competing liner operators engaged in a particular trade who have agreed to limit the competition amongst themselves (Sturmey 1972, 322).

Conferences evolved on most deep-sea routes between 1870 and 1914. They formed in response to rapid increases in shipping tonnage, and a consequent fall in freight rates, caused by the introduction of steamers and a rapid growth of non-British (US and Norwegian) merchant fleets. The form of conference agreements and the consequent industry organisation reflect these market conditions. The agreements provided for:

- pricing through agreements between the shipowners participating in the conference;
- the establishment of freight and earnings pools to allocate cargo and traffic revenue, respectively, between member operators (the aim of this was to prevent price cuts below the tariff and agreed rebates);
- common action against competition from non-member operators which usually took the form of 'fighting ships' conducting a rate war with the competition; and
- the tying of shippers to the conference through 'loyalty agreements' which provided deferred rebates on freight rates paid in return for shipper loyalty.

These various aspects of liner conference organisation were evident on the Australian inward trades prior to 1900.

Conference coverage of a route is normally in one direction only, although membership of the backhaul direction is often identical. The relationship between the conferences which operate in opposite directions is therefore usually close. They sometimes share administrative offices and may jointly program tonnage to serve the requirements of the inward and outward trade.

The role of conferences

The various functions of a present day conference may include:

- the co-ordination and rationalization of schedules and capacities to maximize utilization of capital-intensive operations (Sletmo & Williams 1981, XXIX-XXX);
- the co-ordination of members' transactions with shippers, shippers' councils and governments;
- the co-ordination of responses to non-conference competition; and
- the provision of administrative services to facilitate the gathering and distribution of information required for reasons of trade, government regulation and so on.

Amongst the major differences in conference responsibility which occur between trades is that caused by the distinctive regulatory environment operating in US trades where 'open' conferences are required by US regulation. Open conferences impose no restrictions on entry other than requiring a new member to charge published rates and observe conference rules. Operators are free to move tonnage in and out of the trade as desired (Trace 1981, 31). The level of co-ordination and rationalization of capacity is therefore limited. Conference relationships with shippers are also distinctive in US trades. Deferred rebates are prohibited and shippers' associations, prior to 1984, were not recognised.

The 'closed' conference is allowed on most other trades. This permits the conference participants to restrain the entry of new operators and impose conditions based on specific criteria for admission (Hermann 1983, 17).

Some characteristics of conference agreements

The conference agreement is the basic machinery that establishes co-operation between member operators. Its content reflects the desire of members to restrict competition but also to maintain their individual identities.

The scope of each agreement varies between trades according to differences in membership, the strength of shipper demands, trade conditions and regulatory frameworks. As a generalisation, the stronger and harder the outside competition which the conference has to face, the more likely it is that the ties among its members will be stronger (Hermann 1983, 21).

All conference agreements, however, provide for a uniform schedule of tariffs. Specific rules are provided which describe in detail the ways to calculate freight rates to prevent secret rate reductions in the form of a different classification of cargoes. Fines are levied on members for violations of these rules. Where the agreement is limited to pricing in this way, member operators are free to compete on a non-price basis for available cargo; that is, each member can schedule as many services as it finds remunerative and service any number of ports. Overtonnaging can result under these circumstances (Hermann 1983, 23).

Closed conference agreements may also provide for the allocation of sailings and ports between members. This fixing of members' itineraries avoids excess capacity and also helps ensure that the conference fulfils its obligations to the entire trade and not only to the most lucrative ports.

Further rationalization, to ensure discipline within the conference, can be undertaken by including pooling arrangements. Two forms of pools exist:

- cargo pools: in which the cargo carried by the members is pooled and then divided into precise shares; and
- revenue pools: in which the earnings of the members are also pooled and divided into predetermined shares.

Whilst the former provides incentive for competition between members for the higher rating cargoes, this incentive is removed by the latter option. Therefore, the two forms of pools are usually operated in conjunction with each other.

The extent of pooling varies amongst conferences. In some cases only a certain limited number of commodities are classified as 'pool' cargo. Such pooling arrangements are introduced to eliminate competition within the conference which is centred around certain types of commodities. Where the route is overtonnaged, cargo is diverse, or malpractice is common and no specific cargo is regarded as the major traffic component, pooling of the whole cargo is usual.

Cargo pools may also be introduced to complete the members' obligations as common carriers; that is, low-valued cargoes and cargoes from outports are often pooled. Some commodities, such as hazardous and bulk cargoes, are difficult to include in pooling arrangements.

The consequences of pooling cargoes and revenue largely reflect the members' aims of restricting competition and allowing the rationalization of services. Competition between members is largely eliminated, although the system still confers benefits on low cost operators. Entry into conferences is also made more difficult since the market is strictly divided and in order to gain a share of the market prior to joining the conference a newcomer will usually have to quote below-cost rates. Pooling arrangements also confer on the incumbents advantages of scale and increasing barriers to entry.

Other consequences of pooling arrangements include a decline in malpractice, such as secret rebates and rate-cutting, because the benefit is removed by earnings sharing. The pooling system can also be used to divide cargoes between national flags.

The membership of closed conferences typically comprise operators which have historically dominated the trade. Admission of lines to membership of the conference is actively restrained and specific criteria for entry are imposed. To enter the conference an independent shipowner will need to display a permanent interest in the trade. National lines, rather than cross traders, therefore have a strong case. In addition there is usually a requirement that members own and not charter the ships they use (Deakin & Seward 1973, 56).

THE FORMATION OF INDUSTRY STRUCTURE

This section describes the major features of the industry which influence the industry structure on a particular trade.

Joint operations

In the post-war period to 1965, conferences remained as the dominant market organisation for co-operation between shipowners and negotiations with shippers and governments.

The advent of containerization and developments in international maritime policy, however, required a reorganisation of liner markets after 1965, to prevent the development of overcapacity, to reduce

financial pressure, and to strengthen the position of shipowners relative to both governments and shippers. Horizontal integration was the main form of industry restructuring with four main types of joint operations evolving, that is, cartels, consortia, container syndicates and joint ventures.

The form of joint operation introduced on each trade route reflected, in part, the strength of the conference organisation prior to the introduction of containerization. Cartels were established on those routes where the conference traditionally held a strong position, that is, in the Far East and Caribbean trades. Consortia and container syndicates were introduced in trades characterised by a strong bargaining position of consignors, for example, in the Australian trades. Joint ventures, the closest form of co-operation between independent lines, allowed the establishment of world-wide operations (von Schirach-Szmigiel 1979, 14). Each joint operation, however, had a similar purpose:

- to facilitate the withdrawal of ships from the trade, necessitated by the increase in productivity associated with large ships;
- to achieve economies of scale in operations through the development of a large and fairly homogeneous fleet; and
- to reduce financial pressure through the spreading of risk.

Containerization has resulted in a close integration of the activities of liner companies on most deep sea routes. This trend is continuing with integrated scheduling of ships between the major consortia and container syndicates, and even 'accords' between conference and non-conference operators are becoming evident.

Table 2.1 shows the main forms of co-operation.

Shippers' councils

Shippers' councils are collective organisations of shippers in particular countries or regions which have formed to further their interests in dealing with carriers, government departments, and other related bodies (Hermann 1983, 117).

The multiplicity of technological and economic factors facing shippers and the market organisation in which many shippers face relatively few carriers are the main reasons for shippers' councils (UNESCAP 1982b, 3). The objectives and functions of shippers'

councils reflect this rationale. The prime objective of a shippers' council is to attain strength for shippers in negotiations with the shipping industry. This is most commonly achieved by providing:

- greater analytical power through the provision of some technological and economic insight into the market not attainable by individual shippers; and
- some countervailing monopoly power to the shipping conferences.

Their functions include the rationalisation of shipments, packing, documentation, staging and consolidation of cargoes, and the joint chartering of ships; that is, the shippers' council may perform some freight forwarding functions. In addition, shippers' councils may act as representatives of shippers in government or industry sponsored investigations of matters relating to trade or maritime affairs and it may have responsibility for the monitoring of conference agreements.

The Australian Shippers' Council (ASC) was formed in August 1972 and has ever since been given Ministerial recognition in October 1972 (under the Trade Practices Act), as the representative body of

TABLE 2.1 FORMS OF CO-OPERATION BETWEEN OCEAN CARRIERS

Areas of co-operation	*Cartel*	*Syndicate*	*Consortium*	*Joint venture*
Service scheduling	Common	Common	Common	Common
Operation of				
Ships	Common	Common	Common	Common
Terminals	Common	Common	Common	Common
Tariffs	Common	Common	Common	Common
Revenues	Common	Common	Common	Common
Name	Common	Common	Common	Common
Marketing	Individual	Common	Common	Common
Inland container operations	Individual	Common	Common	Common
Management	Individual	Partly common	Common	Common
Investment plans	Individual	Partly common	Common	Common
Ownership				
Vessels	Individual	Individual	Individual	Common
Terminals	Individual	Individual	Common	Common

Source von Schirach-Szmigiel (1979, 149).

shippers for the Australian outward trades. The ASC Constitution states that the body was formed

> for the purpose of negotiations with shipowners and other carriers with regard to arrangements for, and the terms and conditions applicable to the carriage of cargo...from Australia...

The negotiation procedure adopted by the ASC is described in Chapter 5.

In the inward trades, shipper interests in the various exporting countries are most often represented either by national shippers' councils or via regional or sub-regional shipper organisations.

Commodity boards

Australian commodity authorities have been established to centralize the control of their industry's commodities and are responsible, *inter alia*, for transport arrangements associated with their industry's output. The authorities are mainly associated with rural industries and consequently in the Australian outward trades can control large volumes of cargo.

The functioning of commodity boards in the transport market is generally associated with their statutory roles as representatives of particular industries. In the export trades this responsibility is most commonly defined in terms of promoting the exports of the commodity and protecting the interests of the industry in relation to that export. This implies, in turn, a responsibility to participate in rate negotiations and investigate the commodity's transportation arrangements to enable lower handling and shipping charges.

Commodity boards generally negotiate rate and service agreements (including loyalty contracts). These negotiations are conducted either through the board's membership of the ASC or directly with operators.

Negotiations are commonly held outside the ASC in cases where the commodity trade is large enough to confer independent market power on the industry, or where a highly commercial matter (such as the granting of rebates) is involved which places negotiation outside the scope of the ASC.

Commodity boards also influence the operation of the liner market

through their appointment of 'licensed exporters' or 'marketers'. These traders commonly have authority to arrange shipping services within the limits imposed by the above negotiations. This may include the arranging of discounted rates.

Commodity organisations which operate price support schemes participate in the liner markets in another significant way. On an irregular basis they require shipment of large volumes of cargo. These cargoes may not be tied to any loyalty agreement and, therefore, provide an inducement for non-conference competition.

Freight forwarders

Forwarding is defined by the US Federal Maritime Commission as the preparation and processing of international transport documents, the co-ordination of transport, including the provision of warehousing, and the giving of expert advice (cited in NEDO (1970, 1)).

Broadly, the forwarder acts as an intermediary between consignors or consignees and the providers of transport. However, as there are no particular legal barriers which restrict the undertaking of forwarding and the initial capital requirements of the activity are low, it is not easy to identify freight forwarders.

The main role for freight forwarders is in the assistance of small or medium sized shippers in the conduct of the international transport arrangements. Shippers may employ a forwarder to:

- provide advice on existing transport services and rates;
- conclude the contracts of carriage; and/or
- organise transport from point of receipt to point of destination.[1]

Whilst large shippers have usually developed well organised shipping departments, they may employ a forwarder in an advisory capacity; as a consultant on port activities, developments in shipping markets, and so on. Alternatively, a large shipper may prefer to employ the services of freight forwarders on a needs basis, rather than keep specialist shipping advice 'in house'.

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1. A distinction is sometimes made between a 'freight forwarder' and a 'forwarding agent'. The former is said to be an organisation which assumes responsibility for the door-to-door transport of cargo. The latter performs only the narrower range of functions.

There is, therefore, a broad spectrum of possible functions performed by a freight forwarder. These will vary, not only according to the size distribution of shippers in a particular trade, but also according to the extent to which the ocean carriers provide through-transportation services, and according to the location of consignors and consignees.

The forwarder may also provide services directly, as a principal, rather than procuring services on behalf of the consignor or consignee. Those most commonly offered are:

- Groupage or Consolidation: The process of bringing together so-called less than container load (LCL) cargo so as to pack each container, as nearly as possible, with a full load.
- Road Haulage: The operation of a cargo collection and delivery service to and from sea ports.
- Container Services: Some freight forwarders own or lease containers to consolidate cargoes or provide services to consignees with full container load (FCL) consignments, and operate scheduled container services. Such forwarders are known as Non-vessel Operating Common Carriers (NVOCCs).

The multi-modal potential of containers has allowed ocean carriers to extend their operations, and hence control, into land based activities which is traditionally the sphere of the freight forwarder and other land transport operators (this development is discussed in Chapter 5). Freight forwarders in particular have claimed that through-transport ocean carriers have denied the achievement of economies in the transport of LCL cargoes in particular. They propose instead a division of responsibility for LCL and FCL shipments between freight forwarders and liner operators respectively.

On the other hand, containerization has enabled NVOCC's to use their market power derived from controlling larger cargo offerings to offset the market power of the established ocean carriers. This is of particular concern to the ocean carriers because of the perceived disparity between the risk borne by themselves and the NVOCC's.

Australian-flag participation

Australian shipping policy towards the development of national flag participation has traditionally been characterised by an acceptance of market determined allocations. The perceived role of national flag participation in the interests of commerce and defence, which

justified market intervention in the US case, was apparently not accepted in Australian policy. Indeed between 1927 and 1969 no Australian-flag ship participated in the overseas trades.

In 1969, the Federal Government-owned Australian National Line (ANL) entered the overseas trades. It was required to operate on a commercial basis, government policy in the 1970s being to continue to support and encourage entry of Australian-flag ships into the overseas trades where this would be 'economical and efficient'.[2] This proscribed the adoption of any protectionism or preferential policies that supported the development of a national fleet.

ANL was required to compete on commercial terms and does so as a member of the established shipping conferences.[3] Its perceived role in contributing to the achievement of more efficient overseas shipping was, at the time (DoT 1978, 61-62):

- through direct influence within a conference to support Australian trading interests or by itself meeting special shipping needs not catered for by a conference;
- through influence on foreign shipowners to improve their service rather than risk the entry of ANL service into a trade; and
- to encourage innovation through the employment of different types of vessels in different trades and the adoption of modern cost-saving techniques; and to afford the Government, as well as the ANL, a closer insight into the costs and conditions of operating in overseas shipping.

The fact that ANL operates within the conference structure has been cited as limiting the ANL's ability to capture larger shares of the available trade. The limitations imposed by conference pooling arrangements were demonstrated as early as 1970. ANL had inaugurated the Eastern Sea Road Service between Australia and Japan employing ro-ro ships, which, by common consent, had been able to give better service and faster delivery to its clients and has been favoured with reasonable loadings throughout (ASC 1970, 7).

ANL has been successful in negotiating higher conference shares in some trades in recent years. Australian maritime unions also have used the conference system to maintain Australian-manned ships in

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2. Liberal-National Party Policy 1975.
3. Operational subsidies, tax concessions and so on are provided in line with common OECD practice (see Crawford 1981).

overseas trades. The 'accords' to regulate non-conference competition in the northbound trade, which resulted from union action in support of ANL's operations, serves as an example.

Government policy retains the requirement that ANL be operated on a commercial basis.

> ...the only responsible way to expand our shipping industry is for the industry to become more efficient, more competitive and more aggressive in the marketing of its services... (Morris, MHR, Hansard, February 1984, 203).

Some recent willingness to intervene in support of Australian-flag participation, however, has been demonstrated. In 1984 the Government announced that Australian shipowners operating in the overseas liner trades would receive priority in the carriage of Commonwealth cargoes, provided the service offered is reasonably competitive in price, timeliness and reliability. Extended depreciation allowances were also introduced in 1984, as were investment allowances, on the condition of reduced manning levels (Income Tax Assessment Bill (No.5) February 1984).

THE GEOGRAPHY OF LINER SHIPPING

Another distinctive characteristic of the liner shipping industry is a trade route division of markets. Unlike the bulk or 'tramp' sector, in which ships ply for hire between trades according to demand, the operation of liner ships is geographically defined. The degree of division is increased in the liner sector by the separate arrangements for inward and outward services. This feature of the industry structure reflects a historical perspective of ship technology, government intervention and trade conditions that has only recently been challenged by an alternative geography, that is, round-the-world (RTW) services.

The initial impetus for a trade route division of markets came from the geographical allocation of mail rights between the major UK merchant shipping interests in the period 1837-48 (von Schirach-Szmigiel 1979, 12). The division, however, also reflected physical limitations of ship performance, and differences in trade conditions and regulatory environments between trade routes. The benefits which this division provided, through the restriction of competition, supported its retention by the conference system.

The partition of the inward and outward services in conference

arrangements had similar motives. Differences exist not only in the volume but also in the types of cargo moved in opposite directions on a trade route. Shipper demands and regulatory environments also differ at the two ends of the route, resulting in particular conference structures and requiring specific expertise. Furthermore, the diversity of cargoes and shippers involves an extensive management task to organise freight. This task could only be kept to a reasonable size within a confined market.

The advent of unitization, however, greatly redefined the physical and economic constraints on ship operations. Containerization and other forms of unitization has allowed the standardization of a diverse range of shipments. Ships and containers are therefore more easily deployed between trade routes. It has also provided scope for the freight forwarder to take over some of the land operations of the ocean carriers. For example, an operator may decide not to invest in containers and leave the organisation of freight into containers to the forwarder. The forwarder is charged on a per container basis and the operator's responsibility ends at the wharf. The forwarder is left to assess shipper needs and provide transport services accordingly.

A further consequence of unitization is the potential for inter-modality. Land bridging of transhipment operations may be implemented as a feeder service across continents or regions. These allow the achievement of economies of scale in ship operations by concentrating traffic on a few major routes.

All these factors, the standardization of shipments and ships, the potential for simplification of the management task, and the availability of land bridging options, have promoted the feasibility of RTW services.

THE DEVELOPMENT OF GOVERNMENT POLICY

The origins of current policy can be traced to early English common law interpretations of monopoly practice and to the findings of early Commonwealth and US investigations into the conference system.

In the UK, the principle of *disinterested malevolence* had a clear influence on early judicial interpretations of shipping practice and, thus, on the perceived need for government regulation. By this principle, an enterprise is not prevented from disposing of a rival provided that:

- it does not commit a recognised crime, that is, arson, libel, and so on; and
- the objective is commercial advantage.

In 1906, the Royal Commission on Shipping Rings was appointed to investigate shipping conference practice. The majority report supported the conference system, finding that it possessed only limited monopoly power and that the latent possibility of alternative transport modes coming into existence would limit the abuse of monopoly power of the conferences. Its major recommendations for the regulation of conference practice were:

- the establishment of representative shippers associations to bargain in the most favourable position with conferences;
- the vesting in the Board of Trade the power to investigate and act on complaints relating to national interest arising against shipping conferences; and
- greater publicity of the matter with conference agreements, rebate circulars and so on having to be lodged with the Board of Trade either confidentially or in published form.

These recommendations and conclusions largely defined the future public policy approaches to liner shipping adopted by most western maritime states.

The minority report of the 1906 Royal Commission was less supportive of conference practice. It found that the conference system had created a monopoly on which the limitations were, in many cases, illusory. They also noted that such a monopoly was not subject to statutory or legal control and saw this position as inadmissable. The perceived need to regulate shipping practice was therefore considered to be far greater. To ensure regulation, the minority recommended that the Board of Trade's powers to investigate and act on complaints should not be limited only to those relating to public interest. It also recommended greater publicity of conference agreements, requiring them to be presented annually to Parliament, and that publicity also be required of agreements with non-conference operators.

In 1912, the US House of Representatives approved a resolution to have the Committee on Merchant Maritime and Fisheries (the Alexander Committee) investigate shipping combinations. The committee issued its report of findings in 1914 and they subsequently formed the basis of the regulatory portions of the 1916 Shipping Act (Marx 1953, 49). This committee supported the continuation of conference agreements,

noting the advantages of greater regularity and frequency of service, stability and uniformity of rates, economy in the cost of service, and so on. However, an important rider was placed on these conclusions, that is, the conference agreements had to be fairly, honestly and openly conducted before the claimed advantages could be secured. The Committee continued, 'the disadvantages and abuses are inherent and can only be eliminated by effective government control'. Its recommendations therefore differed somewhat from that of the British Commission. As implemented in the 1916 Shipping Act, the Alexander Committee recommended:

- that the use of deferred rebates and/or 'fighting ships' be illegal in American trades;
- shipping companies be brought under the supervision of the Interstate Commerce Commission in respect of the regulation of rates and the approval of conference agreements; and
- that the Commission be empowered to investigate complaints and institute proceedings on its own initiative, and to order the discontinuance of unfair practice (Marx 1953, 66).

These two distinct approaches to the liner shipping industry provided the context for the development of Australian public policy and the future organisation of the Australian liner shipping trades.

The *Trade Practices Act 1965* (and subsequent enactments) continued to reaffirm the philosophy of early legislation, that is, conferences 'suitably regulated' were in the 'public interest'.[4] Conferences were allowed (by exemptions provided by s.112 and s.113 in Part IV of the Act) to:

- fix and regulate freight rates;
- give or withhold special rates, privileges or advantages;
- allocate ports or restrict sailings; and
- restrict the volume or character of goods carried (DoT 1978, 31).

To ensure regulation of these activies, shipowners were required to negotiate with 'designated shipper bodies' (s. 122). To add force to this, in 1966, through an amendment to the Act, the Governor General was given discretion to disapprove a conference agreement if he was

4. Part X, which exempts liner conferences from the general provisions of the Act.

not satisfied on a number of grounds, including that the services were 'economical, efficient and adequate.'

A single designated shipper body was not nominated in the legislation until a 1972 amendment of the Act.

Since 1929, Australian government policy towards liner shipping industries has been characterised by the adoption of 'conference enfranchising, bilateral monopoly solutions' (Cassidy 1980a, 1) which feature:

- the acceptance of closed conference practice;
- the establishment of national shipping associations as a countervailing force on conference monopoly power so as to 'regulate' conference practice; and
- a role for government which is mainly supervisory and non-interventionist.

Two purposes for government intervention were cited in the Department of Transport (DoT) review of the legislation, 1978:

- to ensure that monopoly powers are not used to produce unreasonably high profits or to dull innovation and responsiveness so that costs or quality of service become unreasonable; and
- to ensure the reasonableness of commercial responses.

The final aspect of government liner shipping policy which warrants attention is the emphasis on outward trades. A reason suggested for the lack of weight given to inward shipper interest in liner shipping policy was that the higher rates on the inward trades were welcomed because they effectively increased protection for domestic import-competing industries (Cassidy 1980a, 11). However, a major reason for not attempting to regulate inward shipping is the need to maintain comity in international relations.

CHAPTER 3 CHARACTERISTICS OF AUSTRALIAN LINER TRADES

Liner shipping is the main form of transport used for carrying Australian high value imports and exports. In 1982 the expenditure on liner services was $A 1991 million, or 41.6 per cent of total expenditure on sea freight services. The Australian international liner task is significant in terms of world shipping markets with Australia ranked as the ninth largest generator of world container traffic (*Containerisation International* 1983).

In this chapter the characteristics of the Australian trades are examined in terms of the task and the fleet serving the task. The expected technological developments in the fleet and their impact on services are described and the results of an analysis of who bears the freight bill are presented.

TASK CHARACTERISTICS

To provide details of the characteristics of the Australian liner shipping trades, the following were examined:

- the overall pattern of overseas trade;
- the liner shipping task;
- characteristics of liner commodities (value per tonne, stowage factors, seasonality); and
- the scope for market power.

Pattern of trade

Taking Australian trades as a whole, imports comprise mainly manufactured goods and exports are dominated by mining and agricultural products. The orientation of Australia's trade has changed in recent years, reflecting a decline in the significance of Europe and an increase in importance of the Asian region.

The liner shipping task

Air transport, liner shipping and bulk shipping all make important

contributions to servicing Australia's trade. Air transport carries very high-valued commodities where speed and frequency of service are of paramount importance, bulk shipping carries low-valued commodities and liner shipping a great range of intermediate-valued commodities.

Liner ships carried about 5 per cent by weight and 45 per cent by value of Australia's total two-way trade in 1983-84. Table 3.1 presents the quantity and value of the freight task for each of the modes. Table 3.1 shows that in 1983-84 the total value of the inward liner cargo was much larger than the value of the outward cargo. The reverse was the case (by a smaller margin) in terms of tonnes.

Table 3.2 shows the quantity and value of the task in the major Australian liner trades. Comparison of the inward and outward task indicates a general imbalance.

Characteristics of liner commodities

The average value per tonne and the stowage factor for total liner inward cargo were $2 400 and 2 cubic metres per tonne in 1983-84, compared with $1 300 and 1.5 cubic metres per tonne for total liner outward cargo.

TABLE 3.1 QUANTITY AND VALUE OF INTERNATIONAL CARGO BY MODE, 1983-84

Direction of trade	*Mode*	*Quantity ('000 tonnes)*	*Value ('000 $A)*	*Average value ($A per tonne)*
Inward	Air	102	4 171	40 900
	Non-liner	16 885	6 149	364
	Liner			
	Conference	3 751	10 443	2 784
	Non-conference	1 932	2 776	1 437
	Total liner	5 683	13 219	2 326
Outward	Air	85	2 073	24 400
	Non-liner	203 519	13 588	66
	Liner			
	Conference	4 656	6 889	1 479
	Non-conference	1 660	1 541	928
	Total liner	6 316	8 430	1 335

Source ABS (1985a).

Commodities in the liner trades, however, vary greatly in terms of average value per tonne, stowage factor (cubic metres per tonne) and the responsiveness of demand to changes in prices (demand elasticities).

Major imported commodities were machinery, road vehicles and transport equipment, and textile yarns and fabrics, with values per tonne of $7 700, $6 000 and $4 500 respectively. The three cited commodities were also amongst some of the most bulky imported items with stowage factors of 2.8, 4.7 and 3.7 cubic metres per tonne respectively. Major exported commodities were wool, meat and metalliferrous ores. Average values per tonne and the stowage factors for these three commodities were $3 000, $2 200, $900 and 3.0, 1.9 and 0.7 cubic metres per tonne respectively. Overall, inward liner cargo comprised higher valued and more bulky commodities than outward cargo.

TABLE 3.2 QUANTITY AND VALUE OF THE TASK IN THE MAJOR AUSTRALIAN LINER TRADES, 1983-84

	Quantity ('000 tonnes)		*Value ($m)*	
Trade area[a]	*Inward*	*Outward*	*Inward*	*Outward*
Europe and North Mediterranean	1 491	897	3 835	2 091
Philippines, Hong Kong and Taiwan	610	674	1 439	696
Japan	629	1 314	2 834	1 544
South Korea	80	116	263	207
West Coast North America	714	332	1 381	479
East Coast North America	503	595	1 674	914
Middle East Gulf	6	134	10	164
Singapore, W. Malaysia, Indonesia and Thailand	432	754	602	787
New Zealand	388	317	482	500
Papua New Guinea and Solomon Islands	39	330	73	306
Other	791	854	626	741
All trades	5 683	6 317	13 219	8 429

a. Trade areas are defined in Appendix I of Volume 2.

Source Derived from ABS Shipping and Air Cargo Commodity Statistics.

The net effect of the inward and outward stowage and tonnage differentials is that there is a greater number of containers shipped inward. This creates an imbalance in container flows. This imbalance is expected to worsen as inward liner tonnages increase with respect to outward tonnages.

Relative market power

The scope for commodity groups to exercise market power in their negotiations of freight rates is influenced by their relative importance in the trades. From information on market shares it is apparent that the export trades are dominated by relatively few commodity groups. For example, wool is the dominant commodity in the Australia to Europe and North Mediterranean trade, accounting for more than 30 per cent (by weight) of the total task, and meat and metalliferrous ores account for 34 and 43 per cent (by weight) respectively of the total task in the Australia to East Coast North America trade. By contrast, there was a greater number of imported commodities and the individual shippers had smaller cargo offerings. This suggests that Australian exporters have greater potential market power and are in a better position than importers or overseas exporters to exercise their power by co-ordinating their efforts in their negotiations with operators.

FLEET CHARACTERISTICS

To provide information on the characteristics of the fleets engaged in Australian trades, the organisation, capacity, age and flag of operation of the fleet was examined.

Size and composition of fleet

There were 58 lines operating 185 ships in the Australian liner trades in 1983-84. Container ships were the most numerous type, accounting for 40.5 per cent of the fleet (see Table 3.3). These container ships provided 52.5 per cent of nominal TEU capacity (both dry and refrigerated) and 68.6 per cent of refrigerated container capacity.[1]

Organisation of the fleet

Generally, operators were consistently conference members in all the Australian trades in which they operated in or consistently non-conference operators. Many lines served more than one trade, and

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1. Nominal refers to the theoretical capacity of the ship.

frequently participated in several conferences. With the exception of the East Asia (Hong Kong and Taiwan) trade, there were more conference ships than non-conference ships in the major trades.

It was found that the 20 largest operators, representing 34 per cent of all operators, served Australian trades with 107 ships, which represented 58 per cent of the fleet. The level of concentration was greater on some of the major trades, and was effectively much greater where operators had combined into consortia.

Age of ships

The average age of the liner fleet serving Australia in 1984 was nine years. The distribution of age was skewed, with 61 per cent of the ships aged 10 years or less, 26 per cent of the ships between 10 and 15 years old, with the remaining 13 per cent 16 years or older. Non-conference operators were found to generally operate newer ships than conference operators.

Flags of operation

Only 6.5 per cent of the fleet (12 ships) were registered in Australia, compared with 10.8 per cent (20 ships) and 9.2 per cent (17

TABLE 3.3 DISTRIBUTION OF SHIP TYPES IN THE LINER FLEET SERVING AUSTRALIAN TRADES, 1983-84

Lloyd's ship type classification	*Number of ships*[a]	*per cent*
General cargo	40	21.6
General cargo/container	10	5.4
Container	75	40.5
Ro-ro	26	14.2
Container/ro-ro	8	4.3
Bulk carriers	16	8.6
Other	10	5.4
Total	185	100.0

a. A single ship may serve in several trades.

ships) in centrally planned and flag of convenience countries respectively.[2]

The average age of Australian registered ships was found to be 13 years, compared with 10 years for flag of convenience ships and six years for ships operated by centrally planned countries. The remainder of the ships had an average age of nine years.

TECHNOLOGICAL DEVELOPMENTS

The cost effectiveness of developments to the existing fleets were assessed for the Australia/Europe and North Mediterranean, Japan and New Zealand trades as long, medium and short haul routes respectively. Costs were primarily determined for the carriers (the operators), however, separate estimates of the cost to the customer of inventory and insurance whilst cargo is in transit were made to examine service aspects.

The cost effectiveness of various developments was used to draw conclusions about the future composition of the fleet and services. The findings identified are summarised as follows:

Replacement of ships

- A greater use of automation is expected in all aspects of ship, terminal and cargo management. Consequently, pressure for reduced crew sizes is likely to continue.
- Progressively, the smaller and older ships will be replaced by fewer but larger ships. These ships are expected to be capable of accommodating a higher proportion of Forty Foot Equivalent Unit containers (FEUs).
- With the exception of Port Botany, draught and length limitations in Australian ports are likely to constrain the ability to take advantage of the economies of plant size associated with ships.
- Greater use is likely to be made of con-bulk and con-ro (container roll-on roll-off) ships and less use of ro-ro ships.
- The replacement of some older ships with seven or eight year old ships of greater capacity is likely to be a preferred option for many operators.

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2. Centrally planned countries are defined to be Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, USSR, Yugoslavia and China; and flag of convenience countries are Bahamas, Bermuda, Costa Rica, Liberia and Panama.

Shipping services

- The use of larger ships is expected to lead to the amalgamation of consortia in order to maintain frequency of service.
- Loading methods at terminals can be expected to undergo further development to speed up loading and unloading operations. This may lead to further centralization of terminals.
- A greater degree of computerised control of container movement, aimed at improving container management in terminals and aboard ships, is expected.
- Container utilization can be expected to improve with a greater use of FEU containers, particularly with any increase in road vehicle limits.

INCIDENCE OF TRANSPORT COSTS

The distribution of transport costs between commodity suppliers and the ultimate consumers has important national welfare implications.[3] The degree to which transport costs are borne by suppliers and consumers theoretically depends on the relationship between the own price elasticity of demand and supply for the commodities being traded. If the elasticity of supply is low relative to the elasticity of demand, then in international trade exporters bear the larger proportion of the costs of transport. Conversely, if the elasticity of demand is low relative to the elasticity of supply, importers will bear the greater burden of a freight tariff. The analysis of the incidence of transport costs borne by Australian importers and exporters is presented in Appendix IX of Volume 2.

Despite the inadequacies surrounding the elasticity estimates underlying the analysis of the incidence of transport costs, the results indicate that, in general, the major burden of the costs of transporting Australia's international trade by liner shipping services is borne by Australian residents. For imports, the incidence ranges from 50 per cent to 80 per cent and for exports the range extends from 47 to 71 per cent.

It follows that the benefits from the significant reduction in liner shipping rates in most trades since the late 1970s should have mainly accrued to Australian residents.

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3. The distribution is often referred to as the incidence of transport costs.

CHAPTER 4 CONFERENCE AND NON-CONFERENCE OPERATIONS

There is a tradeoff between the higher levels of service offered by conference operators and the lower rates typically offered by non-conference operators. Furthermore, non-conference competition can have a significant impact on capacity and service levels.

In this chapter information on the various aspects of conference/non-conference operations are presented to enable the consequences of competition between these two groups of operators to be assessed. The aspects examined are:

- service pattern
- fleet capacity
- service capacity and market shares
- capacity utilization
- service levels
- rates.

SERVICE PATTERN

Australia's major liner trades are dominated by conference operators. Generally, the inward conference has an outward counterpart comprising the same members. Where there are operational advantages, New Zealand is served together with Australia. With the exception of the North American open conferences, the major conferences are closed and provide a high degree of service rationalization involving capacity controls and revenue pooling.

In the smaller trades, non-conference operators play a more significant role. Where conference arrangements exist they tend to be less structured and in many instances take the form of simple rate agreements.

The imbalance in the majority of Australia's liner trades together

with Australia's isolation from other trading routes creates difficult operating conditions for ship owners. In response to these difficulties, diverse service patterns have emerged, for example, ships are operated around the world, in both conference and non-conference services, to take advantage of trading patterns.

To characterise these operations, conference members generally operate direct services between trade areas and combine trades when transit times and frequency are not adversely affected. Non-conference operators generally employ smaller more flexible ships, and adopt diverse calling patterns to achieve adequate levels of ship utilization. As a consequence, non-conference operators do not provide the same level of service as conference operators.

Australian liner trades are typical of the world situation with a high degree of concentration. This high degree of concentration is the consequence of a natural response to market conditions which enable large joint operations and consortia, particularly when operating within conferences, to reduce costs and maintain high levels of service.

FLEET CAPACITY

Shippers cannot exercise any potential countervailing market power they might have unless there is competition for market shares. Table 4.1 shows the ratio of non-conference and conference ships and their nominal TEU capacity, reefer capacity and DWT capacity in the major trades.

In most trades, the TEU and DWT capacity of conference operators was greater than the combined capacity of non-conference operators. This was particularly apparent in the share of refrigerated capacity. The ratios presented in Table 4.1 indicate that there is the potential for competition for market shares in all of the major trades. The potential for competition in dry cargo is greater than that for reefer cargoes.

There was also a significant degree of concentration in capacity, with the 20 major operators controlling 75 per cent of TEU capacity. This signifies that these operators have larger ships than the remaining 28 operators. Conference ships were significantly larger than non-conference ships in most trades. Table 4.2 shows the average DWT of conference and non-conference ships in the major trades.

TABLE 4.1 VARIOUS MEASURES OF NON-CONFERENCE/CONFERENCE NOMINAL CAPACITY RATIOS OF SHIPS SERVING THE MAJOR AUSTRALIAN LINER TRADES, 1983-84

	Non-conference/conference ratio			
		TEU capacity		*DWT*
Trade area[a]	*Ships*	*Total*	*Reefer*	*capacity*
Europe and North Mediterranean	0.5	0.4	0.2	0.4[b]
Philippines, Hong Kong and Taiwan	1.1	0.7	0.3	0.7
Japan	0.4	0.4	0.1	0.3
South Korea	0.6	0.3	0.1	0.2
West Coast North America	0.9	0.5	0.1	0.9
East Coast North America	0.5	0.4	0.2	0.6[b]
South East Asia	0.8	0.5	0.3	0.5
New Zealand	0.7	0.3	0.1	0.3
Papua New Guinea and Solomon Islands	0.2	0.2	1.0	0.2

a. Trade areas are defined in Appendix I of Volume 2.
b. DWT capacity is high because non-conference ABC Containerline typical con-bulk (combined container and bulk) ships are significantly larger than conference ships.

TABLE 4.2 AVERAGE DWT CAPACITY OF CONFERENCE AND NON-CONFERENCE SHIPS SERVING THE MAJOR AUSTRALIAN TRADES, 1983-84

	Average DWT (tonnes)	
Trade area[a]	*Conference*	*Non-conference*
Europe and North Mediterranean	25 982	20 430
Philippines, Hong Kong and Taiwan	17 888	11 130
Japan	18 047	12 684
South Korea	22 333	9 419
West Coast North America	21 584	22 017
East Coast North America	23 326	29 335
Middle East Gulf	18 868	..
South East Asia	17 848	11 944
New Zealand	23 764	10 149
Papua New Guinea and Solomon Islands	11 835	9 933

a. Trade areas are defined in Appendix I of Volume 2.

.. not applicable

SERVICE CAPACITY AND MARKET SHARES

The non-conference share of service capacity and the liner task are presented in Table 4.3 and Table 4.4 respectively.

As a generalisation, it can be seen from Tables 4.3 and 4.4 that the non-conference task share is slightly lower than the share of service capacity, signifying that non-conference ships do not generally achieve the same level of utilization as conference ships.

The non-conference market shares indicates that the degree to which the trades were open was disparate, ranging from less than 20 per cent on the Japan and South Korea trade to almost 100 per cent in some

TABLE 4.3 DEADWEIGHT SERVICE CAPACITY AND NON-CONFERENCE SHARE BY TRADE ROUTE, 1983-84

Trade route[a]	*Capacity ('000 DWT tonnes)*		*Non-conference share of capacity*[b] *(per cent of DWT)*	
	Inward	*Outward*	*Inward*	*Outward*
Europe, Mediterranean and Red Sea ports[c]	3 710	3 140	27	16
East Asia	1 350	1 290	33	33
Japan and South Korea[c]	2 130	2 420	12	19
West Coast North America	1 660	1 070	32	31
East Coast North America, Latin America and Caribbean[c]	1 980	1 900	18	31
Africa[c]	280	270	74	98
South Asia	530	380	2	6
Middle East Gulf	60	300	0	4
South East Asia	1 160	1 390	15	24
New Zealand	1 000	1 080	72	63
Papua New Guinea and Solomon Islands	520	580	41	32
Pacific Islands	500	950	75	46
All trades	14 270	14 160	26	26

a. Trade routes are defined in Appendix I of Volume 2.
b. The figures reported here for non-conference operations are the per cent shares of total operations in each case.
c. Trade areas have been combined to reflect the normal operational itineraries of liner services.

Source Derived from ABS Shipping and Air Cargo Commodity Statistics, 1983-84.

smaller trades. In aggregate, the non-conference share was less in the major trades at 27 per cent inward and 28 per cent outward than in the smaller trades where it was 77 per cent inward and 40 per cent outward.

Tables 4.5 and 4.6 reveal some of the differences in the commodity composition of the task of conferences, non-conference and Australian-flag operators.

In the inward trades, conferences concentrated more on high-valued commodities such as machinery, vehicles and transport equipment (which together accounted for 38 per cent by value of the total conference trade) than did the non-conference operators (where the above items accounted for 26 per cent). In the outward trades, high-valued wool

TABLE 4.4 TASK AND NON-CONFERENCE SHARE IN THE MAJOR AUSTRALIAN TRADES, 1983-84[a]

Trade area[b]	*Quantity ('000 tonnes)*		*Non-conference share (per cent)*	
	Inward	*Outward*	*Inward*	*Outward*
Europe and North Mediterranean	1 491	897	23	19
East Asia	610	674	26	31
Japan	629	1 314	12	19
South Korea	80	116	17	20
West Coast North America	714	332	30	16
East Coast North America	503	595	15	47[c]
Middle East Gulf	6	134	0	3
South East Asia	432	754	17	26
New Zealand	388	317	77	66
Papua New Guinea and Solomon Islands	39	330	31	33
Other	791	584	77	40
All trades	5 683	6 317	34	29

a. Task shares relate to the tonnes of cargo shipped.
b. Trade areas are defined in Appendix I of Volume 2.
c. This figure is high because of shipments of high-density mineral sands in con-bulk ships.

Source Derived from ABS Shipping and Air Cargo Commodity Statistics, 1983-84.

accounted for a relatively high proportion of the non-conference task compared with conference operations. On the other hand, the non-conference operators carried large volumes of low-valued metal ores and cereals. Furthermore, non-conference operators carried only modest quantities of high-valued meat.

Table 4.7 presents total quantities and values of cargo carried by conference and non-conference operators in the inward and outward trades in 1983-84. The data show that, overall, conference operators (and Australian-flag operators) specialized in high-valued commodities more than non-conference operators. This was particularly true for the inward trades where the average dollar value per tonne for conference cargo was nearly twice that for non-conference cargo. This suggests that, in developing their markets, non-conference operators did not necessarily direct their efforts towards high-valued commodities which tended to attract high rates. Rather they may have tailored their service for some of the lower-valued commodities where competition with conferences may have been less intense. The distributions of conference and non-conference scheduled rates

TABLE 4.5 SHARES OF MAJOR INWARD COMMODITIES CARRIED BY CONFERENCE AND NON-CONFERENCE OPERATORS IN THE AUSTRALIAN TRADES, 1983-84

(per cent by value)

Commodity[a]	*Task share*	
	Conference	*Non-conference*
Machinery and equipment	31	23
Textile yarns and fabrics	8	10
Road vehicles and transport equipment	7	3
Paper and paper articles	4	3
Chemicals	3	4
Manufactures of metal	3	4
Other	44	53
Total	100	100

a. Some commodities are affected by confidentiality embargoes for trade purposes and are excluded from their ATFCC category, however, they are included in the 'Other' category.

Source Derived from ABS Shipping and Air Cargo Commodity Statistics, 1983-84.

TABLE 4.6 TASK SHARES OF MAJOR OUTWARD COMMODITIES CARRIED BY CONFERENCE AND NON-CONFERENCE OPERATORS IN THE AUSTRALIAN TRADES, 1983-84

(per cent by value)

Commodity[a]	*Task share*	
	Conference	*Non-conference*
Textile fibres[b]	22	27
Meat	17	6
Machinery and equipment	6	5
Non-ferrous metals	5	5
Metal ferrous ores and metal scrap	4	13
Dairy products	5	2
Cereals	3	5
Hides and skins	3	5
Fruit and vegetables	2	1
Iron and steel	2	1
Other	31	30
Total	100	100

a. Some commodities are affected by confidentiality embargoes for trade purposes and are excluded from their ATFCC category, however, they are included in the 'Other' category.
b. Mostly wool.

Source Derived from ABS Shipping and Air Cargo Commodity Statistics, 1983-84.

TABLE 4.7 QUANTITY AND VALUE OF CARGO CARRIED BY CONFERENCE AND NON-CONFERENCE OPERATORS IN THE AUSTRALIAN TRADES, 1983-84

	Conference			*Non-conference*		
	Quantity ('000 tonnes)	*Value ($m)*	*Average value ($ per tonne)*	*Quantity ('000 tonnes)*	*Value ($m)*	*Average value ($ per tonne)*
Inward	3 751	10 443	2 784	1 932	2 776	1 437
Outward	4 656	6 889	1 479	1 660	1 541	928

Source Derived from ABS Shipping and Air Cargo Commodity Statistics, 1983-84.

reported in Appendix IX of Volume 2 supports this conclusion for the outward trades, but the situation is much less clear for the inward trades.

CAPACITY UTILIZATION

The proportion of service capacity provided which is actually used for the shipment of commodities has an impact on both the cost and the quality of service provided. For example, increasing capacity utilization by reducing the frequency of service (removing a ship from the trade) or replacing existing ships with the same number of smaller ones would reduce total shipping costs but would also reduce the quality of service to some extent. If existing capacity utilization was already quite high, the impact on service could be serious with some shippers unable to obtain shipping space when required.

The utilization of ships fluctuates over time because of both random and seasonal variations in demand, although the supply of shipping capacity can respond to anticipated demand variations to some extent. For example, extra ships may be chartered to cope with seasonal peaks. However, the provision of a service which is stable and regular in the presence of short term changes in demand usually implies that a significant proportion of voyages must be operated at utilization rates well below 100 per cent. The average utilization measured over a year must therefore also be below 100 per cent.

It was mentioned early in this chapter that some of the capacity of ships calling at Australian ports was not always available for Australian cargo because of requirements for space to be allocated for cargo carried between other ports. An average measure of the capacity utilization of the ships used in the Australian trades over the whole of their itineraries would therefore be desirable. However, incomplete information about the quantities of cargo loaded and discharged at different ports in the itineraries prevented this calculation. Capacity utilization rates were determined initially on the basis of the quantities of Australian inward and outward cargo only, without taking into account the cargo carried between the other countries by the same ships. Later in the chapter, utilization rates, adjusted approximately to account for New Zealand freight, are presented for the Australia/Europe North Mediterranean and North America trades.

Utilization of ships by Australian imports and exports

Table 4.8 shows the utilization of container and ro-ro ships with

Australian inward and outward cargo in 1983-84. Details are provided for the ships dedicated to particular trade routes, and for ships serving several trade routes. Dedicated ships are defined as those for which a single trade route accounted for more than 75 per cent of their Australian cargoes, both inward and outward.[1] The degree to which each ship is dedicated to a particular trade route is shown in Appendix IV of Volume 2.

The utilization rates in Table 4.8 under-estimate the overall

TABLE 4.8 CAPACITY UTILIZATION OF CONTAINER AND RO-RO SHIPS CARRYING AUSTRALIAN INWARD AND OUTWARD CARGO[a], 1983-84

(per cent)

Operational characteristic	*Utilization of DWT*		*Utilization of TEU capacity*	
	Inward	*Outward*	*Inward*	*Outward*
Ships dedicated primarily to a single trade route				
Conference	47	49	50	47
Non-conference	59	41	69	47
Ships serving several trade routes				
Conference	42	37	44	36
Non-conference	43	37	48	36
All ships				
Conference	46	46	49	45
Non-conference	53	40	61	43

a. The various assumptions employed to calculate capacity utilization rates are explained in Chapter 6 of Volume 2. It is important to recognise that cargo carried between countries other than Australia has been excluded in the calculation of these utilization rates.

1. Most of the conference ships used in the Australia/Europe and East Coast North America trade routes served Australia and New Zealand simultaneously. However, because they did not carry significant quantities of trans-Tasman trade, they were classified as 'dedicated' to the Australia/Europe or East Coast North America trade routes.

utilization rates of ships in the Australian trades because of the contributions from cargoes loaded and discharged in New Zealand and Asia destined for and received from Europe and North America. The New Zealand cargoes had a large impact on conference utilization, and Asian cargoes on non-conference utilization.

The measures in Table 4.8 show that the effective utilization of conference and non-conference ships with Australian inward and outward cargo were quite similar despite the differences in the relative bulkiness of commodities carried. Ships in the dedicated trades were utilized more fully with Australian commodities than ships serving several trade routes. There were, however, generally more opportunities for the latter to achieve higher utilization rates by cross-trading.

Capacity utilization rates for a number of important Australian trade routes are shown in Table 4.9. The table indicates: higher inward utilization in the Australia/Europe, Mediterranean and Red Sea ports East Asia, West Coast North America and New Zealand trade routes; approximate balance in the Austalia/East Coast North America and Latin America trade route; and higher outward utilization in the other trade routes.

The DWT and TEU measures of capacity utilization are quite similar for a number of trade routes implying that a ship operated at the deadweight limit would also be operating quite close to TEU capacity, or vice versa. However, this was not always the case and a mismatch in the two measures is of particular interest when it occurs in the high utilization leg of a trade route because this is the leg which is more likely to experience capacity constraints.

Table 4.10 presents estimates of capacity utilization for both Australian and New Zealand cargoes carried in dedicated container and ro-ro conference ships. The utilization measures are in terms of either TEU or DWT whichever is greater. The comparisons must be treated with caution because of the incomplete picture of cargo flows and the impact of seasonal variations. On the information available, conference operations in the Australia/South East Asia and Papua New Guinea trade routes had the most opportunity for improved utilization of capacity in 1983-84. The better utilized Australia/Europe, Mediterranean and Red Sea ports, West Coast North America and East Asia trade routes had less scope for reducing capacity without affecting service quality.

SERVICE LEVELS

The perceived quality of service to a region is affected by the frequency of departures, the time taken to reach the destination, the ability to keep to sailing schedules and the proximity or convenience of the nearest port of call to the ultimate destination. Other less

TABLE 4.9 CAPACITY UTILIZATION OF DEDICATED CONFERENCE AND NON-CONFERENCE CONTAINER AND RO-RO SHIPS CARRYING AUSTRALIAN INWARD AND OUTWARD CARGO, BY TRADE ROUTE, 1983-84

(per cent)

Trade route[a]	*Utilization of DWT*		*Utilization of TEU capacity*[b]	
	Inward	*Outward*	*Inward*	*Outward*
	Conference ships			
Europe, Mediterranean and Red Sea ports	51	35	51	35
East Asia	67	62	81	58
Japan and South Korea	40	64	45	57
West Coast North America	52	40	46	34
East Coast North America and Latin America	32	35	34	36
South East Asia	52	61	54	57
New Zealand	31	32	65	68
Papua New Guinea and Solomon Islands	10	59	11	63
	Non-conference ships			
Europe, Mediterranean and Red Sea ports	65	77	63	43
East Asia	59	47	74	50
New Zealand	52	35	72	49

a. Trade routes are defined in Appendix I of Volume 2.
b. The various assumptions employed to calculate capacity utilization rates are explained in detail in Chapter 6 of Volume 2. It is important to recognise that cargo carried between countries other than Australia has been excluded in the calculation of these utilization rates.

TABLE 4.10 SUMMARY OF CAPACITY UTILIZATION OF DEDICATED CONTAINER AND RO-RO CONFERENCE SHIPS, BY TRADE ROUTE, 1983-84[a]

Trade route[b]	*Capacity utilization*	
	Inward	*Outward*
Europe, Mediterranean and Red Sea ports	72	72
East Asia	80	62
Japan and South Korea	45	65
West Coast North America	70	75
East Coast North America and Latin America	50	66
South East Asia	55	60
New Zealand	65	68
Papua New Guinea	10	60

a. The utilization measures in this table are in terms of either TEU or DWT whichever is the greater figure for the particular trade route. The measures include Australian cargoes and estimates of New Zealand cargoes. The various assumptions employed in the calculation of the capacity utilization rates are explained in Chapter 6 of Volume 2.
b. Trade routes are defined in Appendix I of Volume 2.

important factors include the quality of transhipment services and various booking, documentation and financial services. Generally, the conferences were found to provide a greater frequency of direct services than non-conference operators combined. In the Australia/East Asia and New Zealand trades, and also in the smaller African and Pacific trades, the reverse was true. Conference transit times tended to be less than those for non-conference operators. In most of the trades, differences in arrival delays between conference and non-conference ships were small. For all trades taken together, average delays of about 6.5 days for conference ships and 6 days for non-conference ships were measured, although delays varied widely around the average measures.

Individual shippers have their own perceptions of the service performance of the conference and non-conference operators. Their choice will be influenced by these perceptions as well as differences in rates, however, their freedom of choice may be restricted in the short run. In order to evaluate shipper perceptions of service and to examine the link between service and price, the BTE carried out a telephone survey of exporters and importers. Shippers were asked to

compare the performance of the conference and non-conference operators for each of the service factors and to rank the service factors in order of their importance to the overall quality of service.

One of the more important findings was that conferences were perceived by shippers to have a clear superiority in service frequency. It was noted previously that conferences generally operated higher frequency services than the non-conference operators combined. However, the strength of the shipper perceptions indicated that they tended to compare the conference frequency, as a whole, with the frequency of individual non-conference operators.

The survey also revealed that freight forwarders are providing services to only a small proportion of export shippers.

A substantial number of shippers provided information on the price difference as well as the service comparisons between the conference and non-conference operators in a specific trade. This information was used to analyse the impacts of price and service on the shipper's choice. From the analysis, the following conclusions were reached:

- on average, the overall service advantage of the conferences was equivalent to a rate discount of 14 per cent; and
- the frequency advantage of conferences was equivalent to a 6 or 7 per cent rate discount.

Empirical analyses of conference/non-conference choice suggested that the superior service of conferences was almost off-set by lower non-conference rates which were found to be 11 per cent (on average) below the conference rate. The analyses also indicated that there would be a residual preference for conferences, even if the non-conference operators could provide an equivalent service. Furthermore, those shippers who chose to ship with conferences generally had larger cargo offerings. In balance, shippers were found to favour the conferences, however, those who use non-conference services are compensated for the difference in service by receiving lower rates.

RATES

In this section comparisons are made between the weighted average inward and outward rates for conference and non-conference liner services on selected trades.

To undertake these analyses, conference scheduled rates applying at 1 January 1985 were weighted on a commodity basis by the estimated

number of containers shipped in the 1983-84 financial year. Due to lack of detailed information on non-conference schedule rates the rates were set at 10 per cent below the corresponding conference scheduled rates for all commodities except meat.[2]

Comparison of inward and outward scheduled rates

Table 4.11 presents the parameters of the distributions of inward and outward scheduled rates for the selected trades, that is, the weighted average rate and the measure of relative dispersion (coefficient of variation) of rates about the mean.

A comparison of the inward and outward rate statistics for the selected trades in Table 4.11 shows that outward rates were, on average, lower than inward rates for the same type of service on corresponding trades. The relative dispersion of outward rates (as indicated by the coefficients of variation) are greater than inward rates with the exception of the Australia/New Zealand and East Coast North America trades. There was significant variability in the rates in terms of the absolute dispersion. For example, in the Australia/ East Coast North America trades the standard deviations of the scheduled rates per TEU ranged from $928 to nearly $2980.

Comparison of conference and non-conference average freight rates

In respect of inward rates, Table 4.11 shows that in the Australia/ Europe and North Mediterranean trade, the average scheduled rate for conference services is lower than for non-conference services, implying that the non-conference operators carried higher rated cargoes on this trade. In the other inward trades, the average rates are higher for the conference operators, although the difference is generally less marked than for the outward trades.

In respect of outward rates, the average scheduled rate for conference services was higher than the rate for the corresponding non-conference services. In the Australia to Europe and North Mediterranean, Japan and East Coast North America and West India trades, the difference between the weighted average conference and non-conference outward scheduled rate for 1983-84 is significantly greater than the 10 per cent differential assumed for individual rates, suggesting that in these outward trades, non-conference operators carry comparatively lower rated cargoes.

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2. The estimated distribution of conference and non-conference freight rates together with a description of their derivations are presented in Appendix IX of Volume 2.

TABLE 4.11 CHARACTERISTICS OF CONFERENCE AND NON-CONFERENCE SCHEDULED RATES FOR SELECTED TRADES, JANUARY 1985

	Inward					*Outward*				
	Conference		*Non-conference*			*Conference*		*Non-conference*		
Trade area[a]	*Weighted average rate*[b] *($ per TEU)*	*Coefficient of variation (per cent)*	*Weighted average rate*[b] *($ per TEU)*	*Coefficient of variation (per cent)*	*Conference as a percentage of non-conference weighted average rate (per cent)*	*Weighted average rate*[b] *($ per TEU)*	*Coefficient of variation (per cent)*	*Weighted average rate*[b] *($ per TEU)*	*Coefficient of variation (per cent)*	*Conference as a percentage of non-conference weighted average rate (per cent)*
Europe and North Mediterranean	3 320 (1 132)	34	3 481 (1 066)	31	95.4	1 984 (1 151)	58	1 610 (916)	57	123.2
Japan	4 027 (1 012)	25	3 499 (779)	22	115.1	2 495 (1 236)	35	1 559 (670)	43	160.0
East Coast North America	6 410 (2 908)	45	5 319 (2 479)	47	120.5	4 782 (1 786)	37	2 486 (928)	37	192.4
West India	5 015 (1 194)	24	4 633 (846)	18	108.2	2 300 (948)	41	1 832 (637)	35	125.5
New Zealand	2 051 (464)	23	1 826 (299)	16	112.3	2 031 (196)	10	1 940 (87)	4	104.7

a. Trade areas are defined in Appendix I of Volume 2.
b. Standard deviations are shown in brackets.

Finally, comparison of the lowest conference commodity rate levels on the selected trades with the estimated short run avoidable cost[3] of transporting a TEU on each trade, suggests that conference operators set rates down to or below avoidable costs (refer to Table 4.12). For example, the minimum freight rate of $1073 per TEU in the Australia to Europe and North Mediterranean trade was above the avoidable cost of $968, while the minimum rate in the Australia to Japan trade of $780 was marginally below the estimated avoidable cost of $816.

TABLE 4.12 COMPARISONS OF THE LOWEST MINIMUM CONFERENCE SCHEDULED RATES WITH CONFERENCE AVOIDABLE COSTS FOR SELECTED TRADES, JANUARY 1985

	Inward		*Outward*	
Trade area[a]	*Lowest minimum rate per TEU*	*Avoidable TEU cost*[b]	*Lowest minimum rate per TEU*	*Avoidable TEU cost*[b]
Europe and North Mediterranean	1 731	968	1 073	968
Japan	1 286	838	780	816
East Coast North America	2 801	1 129	1 609	1 085
West India	2 342	762	1 268	654
New Zealand	1 526	719	1 469	799

a. Trade areas are defined in Appendix I of Volume 2.
b. Includes container repair and maintenance, wharfage, cargo stevedoring, container cleaning and cargo agency fees at both ends of the trip. See Appendix VI of Volume 2 for details.

3. Avoidable costs are those costs of the production which would not be incurred if a given output were not produced. These cost categories are also often referred to as separable and non-separable costs respectively. An example of the avoidable costs in liner shipping opertions are those costs directly associated with the loading of each container, such as on-shore labour and loading equipment costs. The non-avoidable or common costs of operation, which constitute the greater proportion of total costs, include interest on capital, depreciation, maintenance, port costs, crew and fuel costs (See Appendix V of Volume 2).

CHAPTER 5 INDUSTRY PRACTICES

The liner shipping industry has many unusual practices which set it apart from other organisational forms. In this chapter some of the more significant practices are described and their economic implications examined.

VERTICAL INTEGRATION

Vertical integration is a management strategy employed by firms in a number of industries, which is designed to reduce costs and minimise uncertainty and risk and can be considered as a form of diversification. Manufacturing firms, for example, may integrate 'upstream' or 'backwards' by producing raw materials or other inputs to their production process, or may integrate 'downstream' or 'forwards' by moving into distribution or transportation. In the transport industry, firms vertically integrate by extending their involvement to additional links in the door-to-door transport chain.

Vertically integrated firms have the opportunity of controlling markets and hence limiting competition. This opportunity is exploited in different ways and, to a greater or lesser extent, by different firms. Operators who are vertically integrated may keep cargo out of the hands of rivals or establish a price structure which squeezes profit margins of less integrated competitors. In this context it has been suggested that the ownership of container terminals by operators may be a barrier to entry as the ownership may be used in some circumstances to inhibit the access of entrants to terminals. Alternatively, potential entrants may be concerned that they might suffer from the pricing policy instituted by vertically integrated terminal/liner operators.

In addition to allowing firms to better manage uncertainty by being able to control critical supplies and to limit competition, vertically integrated firms can reduce uncertainty by modifying the environment in which they operate. In the liner shipping industry this is accomplished through industrial negotiations, and controlling technological developments.

The major Japanese liner operators have been successfully integrated into upstream industries. The lines are located within industrial groupings of Japanese companies which feature in the Japanese economy. As holding companies are not permitted in Japan, each industrial grouping tends to conform to a pattern where leader companies form a core group surrounded by key member companies in various industrial sectors.

Included in each line's list of shareholders are its financiers, insurers and ship building contractors. Its major customers also play an influential role in each line's development, reflecting the emphasis placed by both industry and government upon the intrinsic importance of shipping facilities structured to meet the overall requirements of the Japanese economy (LSE 1981d, 40).

Vertical integration of associated transport activities also followed containerization on many trades, and has become a significant feature of the supply of shipping services. This integration in some cases was achieved by the taking of shares in existing companies in associated transport sectors, and/or the establishment of affiliate companies. In other cases, ocean carriers form part of a broad industrial organisation which include these activities. Table 5.1 shows the general fields of activities into which liner operators have diversified.

The co-ordinated door-to-door transport service made possible by vertical integration into associated transport activities provides considerable potential for improving operational efficiency. Certainly, in Europe and Japan there is evidence that common ownership of terminals, ships and other elements in the transport chain has brought about rationalization and efficiency in transport systems. However, there is danger in the accompanying concentration of shipping and terminal operations in the hands of a small number of vertically integrated firms. Shippers will only benefit from such an arrangement if there is competition throughout the transport chain. Otherwise, vertically integrated firms can set tariffs in such a way as to extract maximum profits at whatever point in the chain they hold special market power, including monopoly power.

Since the advent of containerization, the ownership of container terminal operations in Australia has become highly concentrated. Table 5.2 schedules the operators and owners of the major container terminals. Ownership of Australian container terminals is dominated by five groups, Australian National Line, P&O Australia, Overseas Containers Australia, Patrick Operations and Associated Container

Transportation (Australia). Four of these groups are controlled by shipping interests, whilst the fifth is owned by a diverse company with, *inter alia*, stevedoring and shipping interests. The companies controlled by shipping interests are almost exclusively members of the various shipping conferences serving Australia. Three of the groups which own the major terminals are controlled by overseas companies whilst the remaining two are Australian owned.

Opportunities arising from vertical integration

Large diversified companies which have interests in shipping, terminal and stevedoring operations, depots and warehouses have flexibility in recording the revenues from and the costs of their activities between the various companies within the group. This flexibility can be used to maximise overall profits of the group or pursue some other

TABLE 5.1 TYPICAL AREAS OF DIVERSIFICATION OF LINER OPERATORS

Stage in the transport chain from production to consumption	*Involvement of shipping company*
1. Production[a]	
2. Land transport	. heavy lift transport
	. forwarding
	. depots
	. road hauling
3. Port	. terminals
	. bunkering
	. agencies
	. container leasing
	. stevedoring
4. Sea transport	. ship brokering
	. consultancy
	. ship chartering
5. Port	. see above (3)
6. Land transport	. see above (2)
7. Consumption[b]	

a. Involvement in commodity production is usually restricted to operators of specialised carrier services.
b. Involvement in companies which consume the commodity is not usual. A 'mother company' of the whole chain, however, may be involved, especially in the case of specialist carriers.

Source Adapted from Beth (1980, 224).

TABLE 5.2 OWNERSHIP OF MAJOR AUSTRALIAN CONTAINER TERMINALS, 1984

Terminal	*Operator*	*Owner(s)*
Melbourne		
Webb Dock	Australian National Line (ANL)	ANL
Swanson Dock West	Seatainer Terminals Ltd	OCAL (50 per cent) P&O Aust Ltd (50 per cent)
Swanson Dock East	Patrick Stevedoring Co	Patrick Operations Pty Ltd (Howard Smith Ltd)
Swanson Dock East	Trans Ocean Terminals Pty Ltd	ACT(A) Ltd (66.67 per cent) ANL (33.33 per cent)
Swanson Dock East	F.G. Strang Pty Ltd	F.G. Strang Pty Ltd
Sydney		
Glebe Island	Glebe Island Terminals Pty Ltd	Patrick Operations Pty Ltd (Howard Smith Ltd)
Botany Bay	ANL	ANL
Botany Bay	Container Terminals Australia Ltd	OCAL (51.0 per cent) Mitsui OSK (10.46 per cent) Nippon Yusen Kaisha (9.63 per cent) Yamashita - Shinnihon (4.41 per cent) Hapag Lloyd (7.96 per cent) Lloyd Triestino (4.28 per cent) Compagnie Generale Maritime (6.13 per cent) Nedlloyd (6.13 per cent)
Brisbane		
Newstead	ANL	ANL
Fisherman Islands	Brisbane Amalgamated Terminals Ltd	P&O Aust Ltd (74 per cent) ANL (26 per cent)

TABLE 5.2 (Cont.) OWNERSHIP OF MAJOR AUSTRALIAN CONTAINER TERMINALS, 1984

Terminal	*Operator*	*Owner(s)*
Fremantle North Quay	Fremantle Terminals Ltd	Seatainer Terminals (OCAL (50 per cent) P&O Aust (50 per cent)) (60 per cent), Fremantle Cargo Services (P&O Aust (75 per cent) Knutsen Line (25 per cent)) (40 per cent)
Adelaide Outer Harbour	Trans Ocean Terminals Pty Ltd	ACT(A) Ltd (66.67 per cent) ANL (33.3 per cent)

corporate objective. Examples are the granting of rebates or the charging of special prices to companies within the group and the use of a variety of accounting practices.

In 1977 the Prices Justification Tribunal (PJT) reported on their investigations of two major Australian cargo handling companies, Seatainer Terminals Ltd and James Patrick and Co Pty Ltd. Goss (1982) summarised the PJT reports and provided some relevant comment. The PJT found that Seatainers gave discounts to their own shareholders and also to clients with very large volumes of containers and those prepared to give all their custom to Seatainers. The Australian Shippers' Council (ASC) was not aware of this practice, and hence it was not taken into account in negotiating rates with relevant conferences. It has not been possible to establish whether such rebating still occurs, however, it has been suggested to the BTE by liner operators that discriminatory pricing by terminal authorities no longer occurs in an overt way because of the negative connotations of the practice.

Terminal companies usually make a loss in their early years of operation because of the large capital investment requirement to set up a container terminal. During the 1970s, terminals in Australia appeared, generally, to operate profitably after the initial

establishment period. However, in more recent times, with the world-wide economic recession and some degree of excess capacity, profits (if any) seem to have been quite small and losses have not been uncommon. As a result, the opportunities for secret rebating or discounting appear to have been limited in recent years.

If a liner operator owns a container terminal (or, of course, if a terminal operator is also involved in a shipping operation) it may be in a position to give preference for berth space and associated loading and unloading services to its own ships, or those of related or associated operators, particularly at times when there is a shortage of berth space or delays in providing stevedoring services. However, in the current circumstances in Australia where there is generally an excess of terminal space, it would seem that such ownership would only lead to an occasional advantage in that a preference could be obtained at peak or congested times.

It is often suggested that vertical integration by operators, which results in possible berth preference and pricing advantage, is a barrier to the entry of new companies to the liner shipping trade, given the large capital cost of terminals and other factors such as the shortage of suitable land for terminals at convenient locations. The shipping companies which also operate container terminals are almost exclusively members of shipping conferences. Therefore, in contemplating entry to the liner shipping industry, a potential operator has the knowledge that there will be competition from established conference operators who may also be terminal operators.

Another aspect of vertical integration is related to its impact on industrial relations. There are indications that terminal operators, guided by the strong desire of their parent companies to avoid shipping delays, may be in a weakened position when it comes to labour negotiations. In addition, shippers who negotiate with vertically integrated shipping/terminal operators, may be at a disadvantage because they generally have a lack of detailed knowledge about the costs associated with the various steps in the transport chain.

Vertically integrated firms also have advantages in regard to the control of technological developments. Since cargo carried must be loaded onto and unloaded from a ship, generally through a terminal of some kind, it is clearly important for the cargo handling technology at the terminal to be compatible with that on the ship. A firm which controls both the terminal and the ship clearly has greater scope to keep technological developments on the ship in harmony with those at the terminal.

CARGO CENTRALIZATION

Prior to the introduction of containerized cargo handling in overseas liner trades, a large number of Australian ports had direct services from overseas cargo ships. As a result of containerization, the number of calls into ports was significantly reduced in order to maximize utilization of the specially constructed and expensive port facilities and to minimise the overall in-port time (and hence cost) of container ships. Sydney, Melbourne, Fremantle and, to a lesser extent, Brisbane have developed as the key centralized ports in Australia.

Under centralization arrangements, overseas cargo moving to and from traditional ports is shipped to a central port by alternative means of transport (mainly rail), with the liner shipping operators meeting the transportation costs from the traditional port to the centralized port. The conferences, at the time centralization arrangements were introduced, undertook to meet this cost only for existing cargoes and customers. Whether or not new cargoes and customers have their centralization costs paid is subject to commercial negotiation (both conference and non-conference lines have met these costs in some cases). While centralization arrangements were an important aspect of the introduction of containerization and are in most cases an integral part of the current process of negotiating rates, which take place under the auspices of Part X of the Trade Practices Act, the arrangements are essentially a commercial matter for negotiation between operators and shippers.

The decision to introduce centralization arrangements into Australia was made by liner operators because they determined that the cost to them of these arrangements would be less than costs associated with providing the necessary container handling equipment at the 'non-centralized' ports and with making a larger number of port calls. By restricting the number of ship calls centralization arrangements have been an important factor in allowing conference operators to use larger ships, and hence achieve lower unit operating costs while maintaining high levels of service.

A justification for the introduction of both centralization and pan-Australian rates (rates which are the same for each port of call in Australia) was to achieve the distributional objective of allowing all exporters to compete on essentially uniform terms (BAE 1981). However, it is clear that the cost of transporting goods from the Brisbane hinterland, which are railed to Sydney before being put on a ship for their overseas destination, is greater than the cost of

transporting those same goods from the Sydney region to the same overseas destination (the difference being the cost of sending the goods from Brisbane to Sydney by rail or road). Yet the total freight charge for sending the goods from Brisbane or Sydney to the overseas destination is the same, under centralization arrangements. Centralization therefore tends to obscure the actual cost of transportation and because producers close to centralized ports bear a larger share of actual costs than those distant from those ports, it almost certainly leads to a misallocation of resources. Such a misallocation may have implications for wider government policy, particularly in relation to trade.

Cargo centralization also results in locational inefficiency as there is little incentive to locate production plants, storage depots and so on in localities which will minimise transportation costs. It also has an impact on decisions such as whether to slaughter animals in the area where they are located or to transport live animals to an abbattoir close to an appropriate port. In addition, as centralization arrangements do not encourage producers to send their product through the port which will result in the minimum total cost of transportation, these arrangements are likely to lead to a distortion in the pattern of port utilization.

It is also relevant to ask what effect centralization arrangements might have on competition between conference operators and non-conference operators (who are not usually tied to centralization agreements) or on Non-vessel Operating Common Carriers (NVOCCs). First, it should be recognised that centralization costs (that is the land component of the cost) are a relatively small part, about 5 to 8 per cent, of the total cost of moving cargo from an Australian origin to an overseas destination, or from an overseas origin to an Australian destination. In addition, whilst the effect of centralization on transportation costs can be examined, it must be borne in mind that scheduled rates do not closely reflect costs.

In the case of cargo moved from an outer or 'feeder' port, the actual cost of the movement for a conference operator will be higher than the cost that is attributed to movements from the outer port, since the land component of the cost is averaged over all (including centralized) ports. Another shipping company which wished to operate from such a port and which is not involved with centralization arrangements probably would also be faced with higher costs on the land leg of the trip because conference operators with a large volume of centralized cargo are in a position to secure favourable train load rates for the land sector of the movement.

Given the relatively small component of total cost which land costs represent it is probably difficult for non-conference operators to compete with centralized services by direct calls because conference ships tend to be larger and hence have lower per unit operating costs than those of conference operators. This disadvantage may, however, be partially offset because the additional per unit cost of making an extra port call is generally lower for the non-conference operator than for the conference one, where non-conference operators deploy smaller ships.

In regard to the movement of cargo from a centralized port by conference operators, there is a component of the per unit cost which arises because of centralization. In other words, a land transport component is notionally attributable to the movement of cargo from the central port even though it is not incurred. It is sometimes argued that this provides a cost advantage to a non-conference operator who is not a party to centralization arrangements. However, once again, because of the relatively small proportion of the cost attributable to centralization, a non-conference operator from centralized ports would need to have similar ship operating costs to those of the conference operators in order to achieve lower overall transportation costs. It should be recognised, however that if non-conference operators were to obtain a significant proportion of the trade from centralized ports this would lead to an increase in the per unit centralization cost attributed to the remaining conference cargo as the relative share of cargo moved from outer ports increased in relation to cargo moved from centralized ports. This would make the cost structure even more favourable for non-conference operators moving freight from a centralized port.

Centralization agreements generally only apply to those ports and cargoes affected at the time container services were introduced. Therefore it would be expected that, as new operators enter the various trades and new commodities are exported and imported, a smaller proportion of all goods moved would be subject to centralization arrangements. Hence centralization is likely to decline in importance as an issue in aggregate. Also outer ports, particularly Adelaide, have made substantial efforts to attract direct services, and especially conference operators, to their ports. Arrangements have recently been made, for example, for members of the Australia Northbound Shipping Conference to call at Adelaide. With regard to particular cargoes, for example, meat centralisation is likely to remain a sensitive issue, particularly if the commodity markets remain tight.

CONSULTATION

Hermann (1983, 119) defines two categories of consultations between ocean carriers and shippers. The first includes questions of a routine, practical nature (such as freight rate variations), and is regarded by the concerned parties as 'negotiation'. The second includes questions of principle and policy and is regarded as 'consultation' *per se*. Matters for 'consultation' include surcharges, scheduling and loyalty agreements.

In Australia and most other countries, the direct negotiation of rates for specific commodities is not considered the responsibility of the shippers' council. The council may be responsible for negotiation of scheduled rate variations with conferences. Individual shippers, however, are left to negotiate specific commodity rates, perhaps within a range defined by a council's negotiations.

Conferences are usually required by the consultative framework to consult with a designated shipper body prior to the implementation of a general freight increase (*Trade Practices Act 1974*, s.122; UNCTAD Code, Art. 14). The conference may also be required to submit any information required for the purposes of the negotiations. This information may comprise a report from independent accountants which includes aggregated data on the costs and revenues of the conference membership. In all cases, the details of individual operators are not disclosed.

In the process of the negotiations conducted by the ASC (usually on an annual basis), the aggregated information is contained within the conference submission. The information varies but all submissions include:

- costs and revenue for the year ended, projected to cover the period under negotiations;
- some data on utilization;
- a comparison of the year's results with that of previous years; and
- a summary of sailings.

The costs are allocated between the inward and outward services, and where practicable, to the trades to which they relate. Those costs which can be allocated include loading and discharging costs, terminal costs, port charges, Australian inland transport costs, and charter hire for ships. Extra costs, due to reefer (refrigerated container)

capacity, are allocated between the routes on the basis of filled reefer container movements. The remaining costs (running costs, bunkers, and replacement and capital allowances) are allocated between the routes on a basis of relative container flows.

On receipt of this information the council normally 'monitors' the conference claims using both its own data sources and the results of questionnaires sent to relevant member shippers. The shippers' council will have available data on such items as bunker and Australian terminal costs with which it checks the conference data. It is also able to assess the return on capital claimed by the conference from its own assessment of current market conditions.

Cassidy (1980a) provides a critique of this 'cost plus' approach. Two main sources of weakness in the implementation of the approach were identified. First, the lack of provision of meaningful and adequate business and accounting data from conference sources and second, inherent problems in the technique itself. These inherent problems raised by Cassidy are summarised below:

- The use of average cost data rather than best practice levels in the computations for freight rate adjustments introduces a bias into the consequent resource allocations;

  > If an industry is already behaving competitively, prices should clearly be related to best-practice costs if the price surveillance process is not actually to worsen resource allocation. On the other hand, if the industry is not competitive then the adoption of best-practice pricing criteria by the price authority would contribute to an improvement in efficiency of resource allocation as well as to the moderation of inflation (Parmenter and Webb 1974, 59).

- The approach ignores the demand side of the equation and takes no account of changes in productivity (see also Bennathan and Walters 1966, 96-97). Consequently, whilst shippers are insulated from rate increases caused by dramatic increases in demand, rationing of shipping space on a price basis during trade boom conditions is not allowed for.

- The practice sanctions a cementation of profit relativities between liner shipping and other industries through the allowance for a 'reasonable profit'. As a consequence, quasi rents become 'price determining' rather than 'price determined' and the relevance of the price mechanism for allocative efficiency is removed.

- Cost-plus contracts transfer the risk involved in a business venture entirely on to one partner (see also Arrow, 1971). Thus the incentives to cost-reduction are removed and 'consumer contractees are also called upon to shoulder all the commercial risk involved as well' (see also Scott 1979, 3).
- The approach strengthens conferences *vis-a-vis* competitive shipping alternatives and introduces unnecessary rigidities into rate-making.

Some dissatisfaction with present consultation procedures in Australia has been voiced by both shippers and operators. Amongst the shippers' grievances are claims that the council lacks effectiveness in countering conference claims for rate increases. The reasons put forward for the lack of effectiveness include the inability of the council to ensure the preservation of non-conference competition, the lack of 100 per cent commodity support for the council, and a lack of sufficiently accurate, reasonable and detailed information on conference operations. At the same time, shipowners also complain of the heavy demands for financial and statistical information imposed on them when a negotiation may be finalised on the basis of quite different commercial parameters (Various Liner Conferences, 1984, 3).

The claims relating, in turn, to non-conference competition and the unity of member shippers are outlined below.

Non-conference competition

The amount of capacity available, particularly the availability of alternative carriers, is a major determinant of the strength of shippers' councils in negotiations with conferences. The ability of councils to ensure the continued existence of competitive shipping services, however, appears limited.

The ASC gives specific mention to this in its 1984 paper 'Proposals to Amend Australian Legislation on Outwards Liner Shipping' (ASC 1984). Shippers, it claims, have great difficulty in establishing commercial objections to an expanded conference membership and are powerless when confronted with a rate fixing and cargo sharing agreement between conferences and independent lines. Conference agreements, it argues, should be subject to approval prior to their registration and implementation.

Commodity support for council negotiations

Another major determinant of a shippers' council's strength is the

degree of unity of its members.

> No shippers' council can expect to hold meaningful consultations with a shipping conference unless it really does represent the shippers which it purports to represent. A substantial majority of the shippers using a liner service must be represented by the council... (UNCTAD 1976, 12).

LOYALTY ARRANGEMENTS

The cartel-like system of conferences and their rate fixing practices make it essential that they achieve some sort of loyalty arrangement. The most usual form of loyalty agreement operating on liner trades (including Australia but not US trades) is the dual rate contract. The contract is a written agreement which explicitly sets out the rights and obligations of the parties. It provides for a discounted rate in return for an undertaking by the shipper to ship only by the conference. The discount is direct and is enjoyed by shippers immediately. This discount is usually about 10 per cent (Hermann 1983, 46).

In return for this assurance of loyalty the conference normally agrees 'to maintain berth sailings for the ordinary requirements of the trade' (Australia to Europe Shipping Conference Memorandum of Agreement for General Cargo). In the event of a breach of the agreement by either party, liquidated charges are levied as a proportion of the tariff which would have otherwise been paid. In the event of an alleged breach of the agreement by a shipper, the burden of proof is on the shipper and must be provided to the satisfaction of the conference.

The agreements normally contain provisions which exempt the conferences from liability in respect of occurrences of any kind which are outside its control and which in its reasonable opinion renders it impracticable or partially impracticable for the conference to carry out such obligations (Hermann 1983).

The agreements may also contain provisions for increases in rates or the imposition of surcharges in the event of significant variation of circumstances relevant to the fixing of the rates for which contingency provision has not already been made and which, in the opinion of the conference, increases or will increase the cost of operation of the services. Agreement of the designated shipper body is required for such an increase and, failing agreement, independent accountants may review the respective cases.

In 1923 the Imperial Shipping Committee on the Deferred Rebate System enquired into the system following complaints from the Australian Government concerning its operation. The committee issued its support for the system, concluding that 'conferences must be allowed to extract some assurance of continuous support from shippers as would limit intermittent and irresponsible competition'. However, opposition to loyalty contracts by shippers has been increasing both in Australia and overseas. The ASC, in its 'Proposals to Amend Australian Legislation on Outwards Liner Shipping' (1984), claims that the conferences' uniform demands for 100 per cent loyalty are unwarranted. The ASC also maintains that the system has been a major deterrent to non-conference competition, and a means by which conferences have maintained high rates. The ASC support instead the recognition of time/volume or service contracts. The uniform demand for 100 per cent loyalty, it claims, should therefore be proscribed.

The European Shippers' Council has adopted a similar position, reportedly claiming that, with the growth of containerization, 'doubts are growing concerning the validity and practicability of these loyalty arrangements as a matter of principle and more still as specific conditions, rights and obligations of the parties'.

PRICE DIFFERENTIATION

The pricing strategy of liner operators results in a regime of differential rates comprising different rates for different cargoes as well as different rates for similar cargoes.

Price differentiation, in the form of different rates for similiar cargoes, is referred to as price discrimination when the difference in prices cannot be explained by the difference in production costs. It follows that, in the context of liner shipping, rates are not discriminatory if the difference in rates charged for dissimilar cargoes can be explained fully by the difference in transport requirements (for example if price differentials reflect the difference in the cost of transporting refrigerated and non-refrigerated cargoes).

Evidence of price discrimination in the liner trade can be gleaned from a perusal of conference rate schedules. These schedules set out rates according to commodity classifications with each classification normally comprising a range of rates. For example, in the rate schedule for the Australia/Eastern USA Shipping Conference there are 186 different commodity classifications but 440 rates. To illustrate the number of rates applying to commodity classifications,

there are 10 different rates for aluminium and 10 different rates for machinery.

Discrimination within commodities is also apparent. For example, in the Australia/Eastern USA Shipping Conference the scheduled rates for hides in 1985 ranged from $2285 when the value of hides did not exceed $350 FOB per tonne, to over $2700 when the value of hides was in excess of $350 FOB per tonne.

The use of pan-Australian rates represents a more subtle form of price discrimination. Shippers in Western Australia, therefore, pay the same rate for cargo shipped to North America as their competitors in the eastern States, despite the longer distance. Hence, the uniformity in the rate structure masks the discrimination with respect to variations in distance over trade routes. This form of price discrimination may lead to the misallocation of resources through its effects on industry location decisions (as discussed previously).

Loyalty agreements and some other types of rate discounting practices of conference members and non-conference operators, alluded to earlier, are further illustrations of price discrimination in the liner industry.

Economic theory suggests that the long-term objective of multi-product firms is to at least equate total revenue from production to total costs. Structuring price on the principle of charging what the market will bear affords the opportunity to maximise revenue contributions from each product or service to the common costs of production. Thus, in the short term, the 'economic' price of the output is determined by demand subject to a lower limit set by the avoidable costs associated with each output or service. Rates are then both cost and market oriented in that they are related to relevant costs and to demand elasticities; in the former case to cover short-run avoidable costs and in the latter to contribute towards recouping the non-avoidable costs and making a profit.

Thus discriminatory pricing by multi-product firms is a rational economic pricing strategy. For liner shipping to achieve the benefits of scale economies in ship size for all users of the services, charging a relatively low price for the carriage of commodities with highly elastic demand for shipping services generates cargo which would not otherwise be transported. In other words, setting prices below the average cost of providing the services (but subject to a lower limit set by the avoidable costs) for this class of cargo will,

when capacity is avalaible, generate traffic which contributes to the common costs of joint production.

It is erroneous to claim that discriminatory pricing, structured within the framework described above and in the absence of barriers to entry, results in higher rated cargoes subsidising lower rated cargoes. One fallacy of this claim is the failure to recognise the potential benefits to the higher rated cargo from scale economies in ship size. Excluding the lower rated cargo by setting rates too high can lead to still higher rates for the cargo with less elastic demand for the same level of services.

The economic significance of basing price on these criteria is that, in the short term, the strategy encourages a more efficient utilization of existing assets, while in the longer term the strategy indicates whether replacement of assets or expansion of capacity is justified.

CHAPTER 6 COMPETITION IN AUSTRALIAN LINER TRADES

An examination of the extent of competition amongst operators and an evaluation of the consequences for the level and structure of rates was undertaken for some Australian liner trades. The trades were selected with the purpose of identifying factors which were responsible for different competitive environments.

The chapter commences by outlining the shippers' perception of competition on some selected trades and the factors which they see as affecting the competitive environment. The industry structure of these trades and market power are then examined to identify the economic conditions which have a bearing on the level of competition.

The level of rates with respect to costs is a recognised indication of the degree of competition in a market. Therefore, the level of rates, their distribution and their trend over time are also examined to identify the degree of correspondence between the actual market situation and that expected, taking cognizance of shippers' perceptions and the industry structure.

Finally, the effects that increased levels of competition would have on service levels are discussed.

SHIPPER PERCEPTION OF COMPETITION

The bargaining power of the shippers of a commodity depends on the importance of the commodity in the total trade task and the seasonality and predictability characteristics of its cargo offerings, as well as the availability of competitive shipping operators or competitive sources of supply of the commodity to the same destination. Shippers' perceptions of competition in a particular trade therefore tended to vary somewhat among the commodity groups. Nevertheless, a generally consistent conclusion regarding the comparative strengths of the competitive pressures in the trades was apparent.

In the Australia to Europe/North Mediterranean trade, shippers of wool, meat, hides, dairy products, fruit, manufactured items and metals and minerals emphasised that the impact of non-conference competition had become very significant in recent years. This is reflected in the decline in rates since 1980. An increase in the confidence of shippers in the quality and stability of service provided by non-conference operators such as Polish Ocean Lines (POL) had been a contributing factor in this development.

Cotton was an example of a commodity where the competition had come from other trades rather than non-conference operators in the same trade. Low conference rates for the shipment of Australian cotton to Europe had been established to meet competition from United States and Middle East producers.

In the Australia to East Coast North America trade, there was competition within the conference in terms of service quality, as a consequence of the restrictions on the co-ordination of capacity. The ABC Containerline and transhipment from West Coast North America services provided some price competition for the conference. Wool shippers regarded the trade as very competitive. In the case of meat, which accounted for half of the outwards trade by value, shipping operators (including ABC Containerline) were designated as meat carriers by the AMLC and common rates were established following joint discussions between shippers and operators.

Nearly all shippers contacted by the BTE regarded the Australia to Japan trade as the least competitive of the major trades because of the effect of the 'accords' which greatly limited their bargaining power. Competition from non-conference operators was also restricted by the close links between Japanese importers (and exporters) and some of the conference operators. Japanese importers frequently purchased commodities from Australia on an FOB basis or directed Australian shippers to use a particular operator.

INDUSTRY STRUCTURE AND COMPETITION

Competition in the liner trades is likely to occur where a number of operators are providing similar services and are acting independently of one another in their efforts to attract business and earn profits. In these circumstances, rates are likely to be kept at levels just sufficient to encourage operators to remain in the trade.

It might be expected that the greater the number of operators in a trade, the greater the probability of a competitive environment.

However, as discussed in Chapter 2, it is very common in the liner trades for shipping operators to group themselves into organisations such as joint ventures, consortia and conferences in order to co-ordinate their service schedules, rationalize capacity, agree on rate schedules and co-operate in various other ways such as revenue and cost pooling arrangements. As a result of this kind of co-operation, opportunities for independent action by operators are reduced and competition is restricted.

Table 6.1 gives the numbers of conference operators in each of the selected outward trades in 1983-84. Although the numbers were quite large for some of the trades, the table indicates that most of the operators were involved in consortia or joint operation agreements. Furthermore, co-operative agreements generally extended in varying degrees to all the operators within each conference. The conference serving the East Coast of North America differed from the others in that membership was open to any line wishing to belong and there were, until recently, US Government restrictions on pooling arrangements, slot sharing and co-ordination of capacities among the operators.

In its effect on competitive pressures, the most important feature of all the conferences was the agreement to charge the same cargo rates for the same commodities. This agreement generally removes the pressure on members to compete with each other for cargo by charging a lower rate.

Most of the competitive pressures in a trade must come from the non-conference operators because of the severe limits on competition within the conferences. Table 6.1 also shows the number of non-conference operators and their share of the task value for each of the selected trades. This information indicates that the Australia to Europe and North Mediterranean trade was more competitive than the Australia to East Coast North America and Japan trades. The small non-conference share (by value) of the Japan trade suggests that this trade was the least competitive of these three major trades. This conclusion is reinforced by the existence of 'accords' or agreements between the conference and the non-conference operators in the Australia/Japan trade. These accords restored stability to the trade, restricted the non-conference rate for a commodity to within 10 per cent of the conference scheduled rate, and also restricted the quantity of cargo which could be carried by the non-conference operators.

MARKET POWER AND COMPETITION

Competition for market shares bestows market power on shippers,

TABLE 6.1 STRUCTURE OF SELECTED OUTWARD TRADES, 1983-84

Selected trade area[a]	*Number of different operators in conferences*[b]	*Number of consortia/ joint operations*	*Number of operators involved in consortia/ joint operations*	*Number of non-conference operators*[b]	*Non-conference share of task value (per cent)*
Europe and North Mediterranean	10	2	7	7	22
Japan	10	3	7	3	6
Each Coast North America	4	1	2	2	14
West India	2	1	2	2	4
New Zealand	2	1	2	3	64

a. Selected trade areas are defined in Appendix I of Volume 2.
b. Includes operators making more than two trips for which the relevant trade route accounted for 75 per cent or more of Australian cargo carried by that ship; excludes operators providing a transhipment service to the trade area.

allowing the shippers or a representative body such as the ASC to influence the level of service and rates.

The degree of influence a shipper may hold in rate and service negotiations is generally related to three main factors:

- the size and reliability of the commodity trade;
- the degree of unity of commodity interests in negotiations; and
- the terms of the sales contracts.

Outside of these negotiations, a commodity board may also achieve leverage in the market through concentrating export flows to enable volume discounts. Australian examples are used here to illustrate these points.

The size and reliability of the commodity trade

The proportion of the task and, particularly, specialised capacity on a route reliably accounted for by any one commodity, is an obvious indicator of that commodity groups' influence in negotiations. On the Australian trades this 'volume' influence varies between commodity boards and trades. The potential influence of such commodity boards as the Australian Meat and Livestock Corporation (AMLC) in the meat-dominated Australia to North American reefer markets can be contrasted, for example, with the influence of commodity boards which represent smaller volumes of cargo on more diverse routes.

The degree of unity of commodity interests in negotiations

Similarly, the influence of commodity boards in negotiations varies according to their ability to represent, solely, their industry's various export interests. Contrast, for example, the Australian Canned Fruits Corporation (ACFC) whose statutory authority gives it power to acquire the total Australian production of canned fruits, with the situation experienced by the AWC, where wool cargoes are spread amongst Australian wool buyers, growers, the AWC itself, as well as importers in various countries. When each of these groups is represented in negotiations, conflicts of interest will probably arise and their bargaining position *vis-a-vis* carriers weaken.

The terms of the sales contract

Where shipments are arranged on an FOB basis the influence of the commodity board is reduced, as the importer may nominate the operator(s) to be employed. In the Australia to East Europe and Japan trades this is common practice.

The ability of exporters to achieve volume discounts on the rates negotiated by their commodity board is the other aspect of market power. Marketers or exporters licenced by a board if sufficiently large, are able to provide economies of scale attractive to operators and, hence, achieve discounted rates. The top 40 companies licensed by the AMLC to export accounted for 85 per cent of the total beef and veal market in 1982-83 (AMLC 1983, 27). The Australian Canned Fruits Corporation (ACFC) appoints only four 'marketers' to organise the export of canned fruit from Australia. The Australian Dairy Corporation similarly licences several manufacturers to export produce, and, like the AWC, exports large volumes directly.

Commodity boards, by virtue of their activities, have a comparative advantage over other industries that ship on a less cohesive basis. Where these boards also control large volumes of cargo, which represents a significant share of the task in a trade, this comparative advantage is increased, and will be maximised if other circumstances allow this power to be exercised.

Influence of market power on rate levels

Under the above pricing strategy, the level of rates set by an operator for given cost and demand conditions will depend on their market power. The expected influence on rates of the balance of market power between ship operators and shippers is outlined below.

Ship operators having a high degree of market power are in a position to set relatively high rates to extract higher than normal profits. If the market power of operators is reduced through the presence of actual competition or a credible threat of competition for market shares, then their assessment of the level at which rates can be set will be modified. The level of rates which maintain a market share will be lower if shippers are able to bid down rates by exercising, or threatening to use, alternative shipping services. In these situations cargoes, which offer consistent returns in the long run, could be expected to become more attractive to ship operators attempting to retain a market share.

Where a particular commodity shipper or group has significant market power compared to other shippers, the rates for the commodity may be forced down below average costs toward avoidable costs. The cargo will be carried provided that total average revenue at least equals long-run average costs (with avoidable costs setting the lower limit to individual rates).

Where there is intense competition for market shares ship operators will be unable to earn above-normal profits through rate discrimination. Rates in general can be expected to fall towards long-run average costs. In the short-run, the average rate may even fall below long-run average cost, however, ship operators will not be able to continue to offer services at these rate levels.

COMPETITION AND THE LEVEL OF RATES

In this section the effect of competition on current rate levels, their distribution and movement over time are examined.

Current rates

Having examined the various industry factors and commercial arrangements which affect the extent of competition in selected trades, this section addresses the implications for scheduled rates. The analysis is directed towards answering the following questions:

- How much of the variation in the level of rates amongst the trades is attributable to differences in the competitive environment?
- What are the links between the commercial arrangements, the competitive environments and the level of rates?

Table 6.2 shows estimates of the average inward and outward conference

TABLE 6.2 AVERAGE SCHEDULED CONFERENCE RATES AND COSTS FOR SELECTED TRADES, JANUARY 1985

Selected trade area[a]	*Average scheduled rate ($A per TEU)*		*Index of the ratio of estimated revenue to synthesised cost*	
	Inward	*Outward*	*Inward*	*Outward*
Europe and North Mediterranean	3 320	1 985	1.2	0.7
Japan	4 027	2 491	2.2	1.4
East Coast North America	6 371	4 743	2.0	1.5
New Zealand	2 051	2 031	1.3	1.3
West Coast India	5 016	2 705	1.5	0.7

a. Selected trade areas are defined in Appendix I of Volume 2.

scheduled rates per TEU for selected trades. The rates are weighted averages of the commodity rates listed in the tariff schedules at January 1985, as described in Appendix IX of Volume 2. Embodied in the estimates are the assumptions used in associating data on commodity quantities with rates in the tariff schedules, and the assumptions required to translate rates per kilogram and rates per cubic metre into rates per TEU. No allowance has been made for 'hidden' rebates. Freight forwarder operations would also have an impact on the actual rates paid by shippers.

A major source of variation in rates from one trade to another is the difference in cost due to differences in distance, typical ship size and type, price of fuel, number of ports of call, and so on. The contributions of these kinds of factors to differences in rates was investigated using a cost model (described in Appendix VI of Volume 2). This model provided 'synthesised' measures of average shipping costs per TEU for each of the selected trades. The costs were 'synthesised' in the sense that they were based on typical ships operated over simplified itineraries for the various trades at specified levels of capacity utilization, with crew costs based on Australian manning standards and pay scales. The differences in assessed costs between trades are due primarily to differences in geographical characteristics of the trade flows, and are not responsive to differences in the competitive environment or in commercial arrangements established in the trades. It was not possible to indicate differences in centralization costs between the trades because of measurement difficulties.

An index of the ratio of estimated revenue (or rate) to synthesised cost for each of the selected trades, both inward and outward, is given in Table 6.2.[1] This index indicates the extent of the variation in rates among trades which is due to factors other than those incorporated in the synthesised costs. Although differences in centralization costs probably contributed to the variation in the index, most of the variation is a reflection of the impact of competition amongst incumbents, the threat of entry, and the ability of shippers to exert their market power in the negotiation of rates. The index does not indicate the level of profitability in a trade.

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1. The ratio was calculated by dividing the average rate per TEU by the synthesised cost per TEU. The same cost per TEU was used for both the inward and outward legs, and was calculated for a capacity utilization of 80 per cent on the more utilized leg and proportionately less on the other leg (based on 1983-84 freight volumes).

Although a high index for a trade may be indicative of relatively high profitability in comparison with other trades, another explanation may be that actual costs in the trade were high in relation to the synthesised costs. Either of these effects could result from the competitive conditions which exist in the trade.

For each of the selected trades except the Australia/New Zealand trade, the average scheduled conference rates and revenue/cost indices are larger for the inward trade than the outward trade.[2] It is difficult to provide an explanation of this phenomenon in terms of higher capacity utilization or less competition amongst shipping lines in the inward trades on the basis of the limited evidence available. One plausible explanation is that the market power exercised by Australian exporters is greater than that exercised by overseas shippers to Australia. On most trades, Australian shippers were dominated by large commodity groups with considerable negotiating power. Australian import commodities, on the other hand, were more diverse and the shippers may be less able to co-ordinate their negotiating efforts (freight forwarders serving inward shippers may, however, have considerable market power but the rates they receive are not reflected in the scheduled rates). Furthermore, imports tended to be high valued commodities with their demand less affected by high rates. The Australia/New Zealand trade differed from the other trades in these respects and there is less reason to expect differences in the market power of shippers between the inward and outward trades. In addition the incentive for Cost, Insurance, Freight (CIF) shippers to reduce inward rates is not as great because, to a large extent, transport costs are passed on to Australian importers. Australian importers who buy FOB are unable to influence the rates because they are not generally represented on overseas shipper associations.

The relative values of the revenue/cost indices presented in Table 6.2 are in accordance with the analysis of industry structure and commercial arrangements and supports the shippers' perception of the level of competition. For example, the revenue/cost indices for the Australia/Europe and North Mediterranean trade are 40 to 50 per cent below the indices for the Australia/Japan trade (both inward and outward).

The variation in the level of competition might be explained as

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2. It is possible that the assumptions employed in deriving the estimates of average scheduled rates (see Appendix IX of Volume 2) may have slightly biased inward rates upward in comparison with outward rates.

follows. Low rates were achieved in the Australia/Europe and North Mediterranean trade, where the closed conference system was subjected to significant independent non-conference competition. The accords between conference and non-conference operators and other restrictions on competition resulted in high rates in the Australia/Japan trade. High rates were also experienced in the Australia/East Coast North America trade where there was an open conference system with rate agreements, and limited non-conference competition. Rates were at moderate levels in the Australia/New Zealand trade which was characterised by competition among existing operators and barriers to entry by operators with non-Australasian crews.

Trends in conference scheduled freight rates

Conference scheduled rates for outward cargo from Australia were examined for the period 1973 to 1985 to gain an indication of trends over time.

In all trades there was a general upward trend in the real level of total rates from the early to late 1970s followed by a general decline. For trades other than the Australia to Europe and North Mediterranean trade, the decline in total rates was arrested around 1982 to 1984, when rates rose again. In the Australia to New Zealand and West India trades, rates began to decline again from 1984 and 1985 respectively.

There are a number of possible explanations underlying the general trend in scheduled rates. During the period of general rate increases up to the mid to late 1970s conferences faced little, if any, competition from independent operators. Furthermore, throughout the 1970s the economies achieved by some conference operators (through the introduction of new technology in the form of cellular and ro-ro ships) were, to some extent, offset by other operators continuing to use higher cost conventional cargo ships. The phasing out of obsolete technology towards the end of the 1970s with the concomitant reduction in costs, as well as the advent of competition from non-conference operators from about this time, are probably the main reasons for the general decline in rates from the late 1970s onwards.

The extent of the decline in the real level of total rates in the absence of any significant change in technology and consequently costs suggests that above-normal profits may have been earned by conference operators prior to effective non-conference competition.

Competition and the distribution of rates

In Chapter 5, it was reported that commodity rates, expressed in dollars per TEU, varied considerably within each trade. Differences in the rates for reefer commodities and dry commodities could be expected on the basis of cost considerations. In the Australia/East Coast North America trade, for example, the extra cost for reefer cargo could be between $1 500 and $2 000 per TEU, primarily because of the much higher capital cost of reefer containers.[3]

It is not possible, however, to explain the full extent of the variations in rates within the trades in terms of cost differences. This is particularly true of the inward trades, where the range in rates tended to be at least as great as the corresponding outward trade, despite the absence of reefer commodities.

Probably the more important underlying cause of variations in rates relates to the supply and demand characteristics of the commodities being shipped and the impact of these characteristics on the demand for shipping services. Shipping operators seek to exploit varying demand elasticities in order to extract the maximum revenue from each shipper. The ability of shipping operators to charge a high rate for a commodity is limited in situations where shippers can use (or threaten to use) competitors or if importers can use competing sources of supply. Shippers can further strengthen their position by co-ordinating their bargaining strategies. This is particularly effective where a shipper body, representing a group of commodity shippers, has a strong influence over the choice of operator and can negotiate rates independently with competing operators.

COMPETITION AND SERVICE QUALITY

In Chapter 5 it was concluded that the non-conference operators offered shippers a service which was generally lower in quality, particularly frequency of service, than that offered by the conference operators. The difference in service quality was estimated to be equivalent to an average price difference of about 14 per cent, based on an analysis of responses from a sample of exporters. The valuations of the individual shippers were, of course, dispersed around this average figure.

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3. There are also extra fuel costs and costs of monitoring the refrigeration. Although the reefer container can be used for dry cargo on the return trip, its capacity is less than the capacity of a dry container and it is commonly returned empty.

By providing a service which was not greatly inferior in quality to the conference service, the non-conference operators were able to attract their share of freight by offering rates which were generally believed to be about 10 per cent below the conference rates on average. Sometimes non-conference operators have focused on providing specialized services and developing new markets rather than competing directly with conferences for established markets. Overall, their presence has probably resulted in a greater range of price-service options for meeting diverse shipper requirements.

It was argued earlier that competition provided by non-conference operators has resulted in lower rates. Since market penetration by non-conference operators can have some adverse implications for service quality, an assessment of the overall impact of non-conference competition is desirable. This assessment involves a judgement about the relative significance of any reduction in the quality of service and the reduction in rates which are the likely consequences of the competition. Although such a judgement would depend on many factors related to the particular trade, it is interesting to recall that rates in the Australia/Europe and North Mediterranean trade appeared to be at least 40 per cent below rates in the less competitive Australia/Japan trade, taking into account the cost differences which would be unaffected by the competitive environment. Based on the analysis of conference and non-conference service levels, rate discounts of this magnitude would outweigh the service penalty in the Australia/Europe and North Mediterranean trade which results from the current levels of non-conference penetration of the market.

CHAPTER 7 CONCLUDING REMARKS

The implications arising out of an assessment of the factual information collected and the insights gained in the course of the study are presented below. The implications for the structure, conduct and performance of the industry are presented first. Some conclusions are then drawn about the nature of competition, the current balance of market power and stability. Finally, some general observations pertinent to the current arrangements are made.

MARKET STRUCTURE

Australian liner trades can be characterised as isolated, long and relatively lightly trafficked. As such, large market shares must be sustained if high levels of service are to be provided using large efficient ships. The dominant operators have preferred to co-operate within conference frameworks so as to minimise the risk of losing market share and the consequent financial problems. Non-conference operators have generally provided services on the fringe as tolerated outsiders or operate on the smaller trades where high levels of service are not warranted.

Conference operators have traditionally carried Australia's meat exports and the specialised ships (high refrigerated capacity) required have probably provided an additional deterrent to non-conference competition. The specialized ships and the high levels of service required are not compatible with the usual non-conference mode of diverse, small scale operation and present a significant barrier to entry.

Penetration of the major trades by individual non-conference operators has been relatively infrequent although more common in recent times. Polish Ocean Lines (POL) in the Australia/Europe and North Mediterranean trade has had the greatest impact on a traditional conference market. Significantly, it has competed 'head-on' (instead of the usual non-conference practice in the Australian trades of adopting multi-trade or mixed con-bulk services), with the consequence that, in all aspects except frequency, POL was able to offer a

comparable service to the conference. It is expected that a similar approach by non-conference operators in other trades could significantly change the competitive situation in those trades.

The centralization services offered by operators and conferences in particular and the characteristics of the major exporting shippers (few in number and with large cargo offerings) have limited the market opportunities of freight forwarders in Australia. Consequently, forwarders are not expected to achieve the same level of significance which they have in North America and Europe.

The Australian Shippers' Council (ASC) is a significant feature of the current industry structure. Its strong collective representation has, in the past, enabled it to reflect the combined market power of member shippers. Effective use of this market power is to a large extent dependent upon the availability of alternate services (that is, competition) and the ASC has not always been able to negotiate from a position of strength. Notwithstanding this, increased levels of competition over recent years have, however, adversely affected the ASC's market power as its representation has been weakened by major shippers taking advantage of the situation to negotiate lower rates outside the ASC umbrella.

INDUSTRY CONDUCT

The marginal cost of liner operations is always less than average cost. Consequently, operators must charge rates above the level of avoidable costs to recover fixed expenditure and earn profits. Rates to an individual shipper are set in relation to marginal costs and the perceived elasticity of demand for the particular shipping service. This elasticity is affected by such factors as demand and supply elasticities for the commodity and the existence of competition from other operators and from other modes of transport. With competition, other factors relating to minimising the risks associated with maintaining profitability become significant to operators. These factors also bestow a relative market power advantage to the shippers of cargoes which are more attractive to operators endeavouring to maximise likely returns in an uncertain environment.

Despite the allocative efficiency of such pricing practices, that is, charging 'what the market will bear', an economically efficient outcome may not be realised where the market power of ship operators is sufficient to enable above-normal profits to be earned. In some cases shippers whose actions contribute to the retention of the operator's market power may be able to generate such profits. In

addition, technical inefficiencies are likely to manifest themselves under these circumstances. Where the balance of market power lies with shippers, some shipper groups will be able to achieve a greater level of benefit from the service than others. This may affect the allocation of resources by the groups receiving the lower cost services.

The relationship between costs and prices will vary between inward and outward trades because of the differences in market circumstances. Similarly the costs of centralization may not be directly reflected in individual commodity rates determined on the basis of 'what the market will bear'.

In respect of the level of rates, there is evidence to suggest that conference operators have in the past used their market power in the absence of effective non-conference competition to earn above-normal profits (see Chapter 6). There are, of course, safeguards against above-normal profits being earned over a prolonged period[1], because, to some indeterminate extent, the markets are contestable.[2] If a situation develops where above-normal profits are being earned, competitors will be attracted and rates will be forced down as a direct result of the competition. Recent experience in the Australian trades suggest, however, that it can take a long time for non-conference competition to have a significant impact on the overall level of rates.

In the Australian context, the dual rate system is used as the mechanism to ensure loyalty. Given the indivisibilities in the provision of liner services, some form of time/volume contractual arrangement has and will continue to be a necessary feature of industry conduct. Although the practice creates a barrier to entry, this is probably only minor in comparison to the cost to new entrants of attracting shippers away from incumbents to build up a viable market share.

The vertical integration of liner operators into agencies (and in some cases terminals) appears to be a natural consequence of the commercial risks involved with the very large investment required to participate

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1. A distinction is drawn here between the transitory profit-taking which may be compatible with a market which is 'reasonably contestable'.
2. A market is contestable if the threat of entry, which applies if certain market conditions are met, prevents above-normal profits being earned, even on a transitory basis by monopoly operators.

as operators. This practice can create barriers to entry through preferential treatment which discriminates against competitors. In the current environment, however, it is unlikely that these barriers to competition would be tenable.

Centralization practices of liner operators appear to be both commercially advantageous and technologically efficient in terms of providing better service at lower cost. The undesirable aspects of the practice relate to associated pricing practices and the barriers to competition they impose in respect of the cargo which is centralized and the resource allocation distortion they ultimately cause when associated with pan-Australia rates. The current trade-off between service and rates and the differences in conference and non-conference costs suggests that the centralization of cargo is a key element to the provision of conference services and would persist even if the cost was not included in pan-Australian rates. The pricing practices of liner operators prevent a determination of the extent to which the benefits of centralization are captured by shippers.

PERFORMANCE

The characteristics of the inward and outward liner task have probably resulted in the level of service provided being determined, to a large extent, by the inward task. This, together with the diverse characteristics of Australian export commodities and the high service levels characteristic of conference operations, is likely to result in some export shippers receiving a level of service above their real requirement.

Conference operators appear to be currently able to achieve a degree of balance of inward and outward capacity utilization (on an annual basis). New Zealand is included in services where the additional cargo alleviates Australia's container flow imbalance. This practice decreases unit operating costs and potentially benefits shippers in both countries. It is of interest to note that forecasts prepared by the BTE suggest that the problem of imbalance between Australia's inwards and outwards container flows will get worse over time.

Although it was not possible to assess the overall performance of non-conference operators in the Australian trades, their flexibility to operate in several trades simultaneously assists them to achieve satisfactory levels of capacity utilization. While greater levels of ship utilization are achieved by multi-trade operations, it is, however, at the expense of transit times and frequency which are important service characteristics.

The most significant difference in the service characteristics of conference and non-conference operators serving Australia were found to be frequency and transit times. These were also considered by the shippers surveyed by the BTE to be the most important of the various service characteristics. This suggests that conferences, through service rationalization, are better able to satisfy the perceived service requirements of shippers. The fact that shipper perceptions are consistent with measured differences and non-conference service characteristics suggests that shippers choices between conference and non-conference services are not being distorted by failure to correctly assess differences in relative service characteristics.

Since the introduction of fully containerized services by non-conference operators in the late 1970s, they have steadily built up services and generally demonstrated a long-term commitment to serving the trades. It is reasonable to expect that shipper concern about the stability of non-conference services will diminish if their current performance is maintained. The relative success of non-conference services in recent years suggests that shippers are prepared to trade off service levels against cost. There is also evidence to suggest that services specially tailored to meet market 'niches' can attract significant patronage.

COMPETITION

The decline in the level of real rates in most outward trades commenced with the introduction of container ships by non-conference operators and has continued while they increased their market shares. This observation reinforces the importance, from the shippers viewpoint, of maintaining a degree of openness with at least some competition for market shares.

Competition is expected to be greater in the outward trades partly because of lower levels of outward utilization of non-conference ships. The lower outward rate levels support this view, however, their relationship to inward rates may also reflect differences in the rates that the inward and outward commodities will bear.

A significant aspect of the non-conference competition is that it has provided shippers with a wider service/price mix which, in the absence of any curtailment of conference services, increased the overall benefit to shippers.

Competition for meat cargo has until recently been constrained by the AMLC's choice of designated carriers. This practice of designating

carriers was intended to ensure that appropriate levels of service are provided (the trade requires a frequent service), to prevent high costs arising out of overcapacity and to ensure that centralization requirements are met. This meant that the potential market power of meat shippers was not exercised until recently. While carrier designation was considered, overall, to be in the best interest of meat shippers, the recent negotiation of contracts has shown that lower rates can be obtained by encouraging greater competition.

BALANCE OF MARKET POWER

Conference operators serving Australian trades possess considerable market power. Even with the presence of non-conference operators competing for market shares, the service and cost advantage gained through service rationalization and specialization ensures that conferences dominate most major markets.

A fundamental change to the scope of the market power occurs, however, with even a moderate degree of competition. When competing for market shares operators cannot set rates at the levels which they might otherwise seek. They must take into account the affect the rates will have on their market share and revenue. Similarly, transport alternatives such as air freight and bulk shipping services diminish the market power the operators have over the shippers of some commodities.

The balance of power is expected to continue to move toward shippers in the immediate future. Over-tonnaging of the world liner fleet is expected to foster greater competition despite the special requirements of Australian trades. These special requirements are likely to inhibit the redeployment of the majority of the excess tonnage to Australian trades. While ever operators are competing for market shares, shippers can increase their market power by combining to control larger and more regular cargo volumes or, alternatively, use freight forwarders where the forwarders are prepared to pass on some of the benefits they receive from controlling large cargo offerings.

STABILITY

There is no evidence to suggest that competition has led to service instability. Services have not generally diminished in the Australia/Europe and North Mediterranean trade where the impact of competition has been the greatest. There is, however, some evidence to suggest that the competition has led to concerns about conference

viability. The members of the inward and outward Europe conferences have deferred replacement of their older ships. Unions have also acted to restrict further development of competition with the Australian Northbound Shipping Conference in the Australia to East Asia and Japan Korea trades because of related concerns about ANL's overall viability and in particular retaining ANL ships in the trade.

If some restructuring did occur it does not necessarily mean that services will be severely affected. Some operators have already ceased services (for example, Jumbo Line) without major disruptions to the trade whilst some services are expanding. There are options available to operators which will avoid curtailment of services and other operators may provide equivalent replacement services. Before there is a 'shakeout' in the industry, operators can decide to reach agreements which will bring a halt to the competition for market shares and restore, at least temporarily, financially viable returns (as has recently occurred in the North Atlantic trade). Conference operators can also combine into larger joint operations or consortia (increasing the level of concentration), to introduce fewer but larger ships (while still providing satisfactory service levels) and thereby increase their cost advantage over their competitors.

Shippers need not be significantly disadvantaged by some 'shakeout' in the industry. The inefficient operators are likely to be the first casualties. Shippers are likely to be able, at minor inconvenience, to ship with the remaining operators and maintain acceptable service levels.

Defence related concerns that a major 'shakeout' may change the national composition of the fleet to an extent which will compromise Australia's trade in times of external political instability (particularly if the Australian-flag operators are amongst those affected), must also be taken into consideration but were beyond the ambit of this study.

IMPLICATIONS FOR FUTURE ARRANGEMENTS FOR AUSTRALIAN OVERSEAS LINER SHIPPING SERVICES

The increased pressure from non-conference operators has changed the competitive environment to the extent that the existing closed conference arrangements have been weakened. Conference operators can no longer claim to be able to rationalize capacity on most major trades as a whole. Furthermore, the market power that the competition has bestowed on some shippers has allowed them to negotiate outside the ASC and compromise its role as the custodian of the collective

shipper interest. Consequently it may be desirable to modify the existing traditional conference framework, dominated by closed conferences, to better meet Australia's needs in the future.

Reliable liner shipping services are extremely important because of Australia's isolation from major international markets. This isolation makes frequent and fast direct services between overseas ports almost an essential requirement of adequate liner services. Australian importers and exporters appear to bear the major share of the cost of liner services. Therefore, it is in the national interest as well as the shippers' interests that rates are as low as possible which means that the service level 'required' by shippers should not be exceeded.

There is an inherent tendency for operators to form into large groups for the abatement of risks. This is particularly relevant in the Australian context where an operator needs a large market share to be able to provide a high level of service at low cost. Given Australia's requirement of high levels of service at the lowest possible cost, and inasmuch as conferences are an industry phenomenon which is universally accepted, their continued acceptance appears to be in the best interests of shippers and the nation as long as the conference operators remain efficient and are not able to earn above-normal profits.

If conferences are sanctioned for these reasons, an efficient closed conference system with its internal controls will theoretically offer greater advantages than an open system where rationalization of capacity and services is less likely to be achieved to the same degree. In addition, the traditional closed conference is more amenable to the maintenance of the existing cargo centralization arrangements. On the other hand closed conferences in Australian trades have not, in recent years, been able to retain a sufficiently large market share to effectively rationalise capacity. Consequently there could be merit in considering some form of open conference for particular trades on the basis that open conferences generally offer greater potential for competition.

To offset the market power of conferences, shippers should have effective countervailing power under arrangements which sanction the formation of conferences. This conclusion is supported by indications of the apparent above-normal profit-taking of conferences in the past and the high level of rates relative to efficient costs in some of the trades where competition is not strong.

Adequate competition in the market is essential for shippers to have effective countervailing power which, to a large extent, then reduces the need for government intervention. While on some trades adequate levels of competition appear to exist, there is no guarantee that this situation will continue given the traditional tendency for non-conference operators who capture a significant market share to join the relevant conference.

It is worth noting that State-owned operators have provided a major source of competition in recent times. While this source of competition may be considered to be 'unfair' (if they are not charging to recover all of the costs involved in their operation) their operation enhances competition to the general advantage of shippers.

Barriers to competition such as business-house patronage, shipper bias and some union activities apparent in Australian trades adversely effect the countervailing market power of shippers. If effective countervailing power is considered important, it will be necessary to pay attention to those aspects.

The threat to conferences of direct competition at comparable levels of frequency and cost is very remote because of the specialized service requirements of Australia's 'long and thin' trades. To safeguard against the more serious aspects of an absence of competition, consideration should be given to monitoring rates and costs to ensure that above-normal profits are not being earned by operators.

The ramifications of shippers exercising market power to the extent that stability is jeopardised is not fully understood. Consequently, shippers will need to act responsibly in their use of market power to ensure that appropriate service levels are maintained. The importance Australian shippers in general place on service stability and quality suggests that safeguards are warranted to prevent the use of market power by some shippers to the extent that other users of liner services are adversely affected.

If it is deemed necessary to assist shippers to develop market power then shippers which currently negotiate within the ASC will need special attention to ensure that they obtain an equitable share of the benefits which may be derived from competition. If, as the Australian conferences suggest, only a quarter of the trade is being included under negotiations with the ASC, then there may be merit in a two-tiered structure of shipper associations, such as that suggested by

the US legislation. Under this system, an association of shippers would be responsible for those shippers who do not negotiate separately. These associations would perform a freight forwarding function by being responsible for organising the consolidation of cargo and its placement between conference and non-conference operators. This would allow the associations to negotiate the terms and conditions of service on a commercial basis. If time/volume contracts were used then the negotiations would also involve shared responsibility for the rationalization of service levels.

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ABBREVIATIONS

ABS	Australian Bureau of Statistics
ACFC	Australian Canned Fruits Corporation
ACT(A)	Associated Container Transport (Australia) Ltd
AMLC	Australian Meat and Livestock Corporation
ANL	Australian National Line (Australian Shipping Commission)
ASC	Australian Shippers' Council
ATFCC	Australian Transport Freight Commodity Classification
AWC	Australian Wool Corporation
BAE	Bureau of Agricultural Economics
BTE	Bureau of Transport Economics
DoT	Department of Transport
DWT	Deadweight tonnes
FEU	Forty foot Equivalent Unit
FOB	Free-on-board
LCL	Less than Container Load
LSE	Lloyds Shipping Economist
NEDO	National Economic Development Office
NVOCC	Non-vessel Operating Common Carrier
OCAL	Overseas Containers Australia Ltd
OECD	Organisation for Economic Co-operation and Development
PJT	Prices Justification Tribunal
POL	Polish Ocean Lines
RTW	Round-the-world
SACCS	Sea and Air Cargo Commodity Statistics
TEU	Twenty foot Equivalent Unit
UNCTAD	United Nations Conference on Trade and Development
UNESCAP	United Nations Economic and Social Commission for Asia and